



# Operating Instructions and Parts Manual

## 16 ga. x 50 in. Bench Box and Pan Brake

Model BPB-1650



Shown on optional stand #754200

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## 1.0 IMPORTANT SAFETY INSTRUCTIONS

READ ALL INSTRUCTIONS BEFORE USING THIS BOX AND PAN BRAKE.

### **WARNING – To reduce the 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 the warning labels if they become obscured or removed.
4. This box and pan brake 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 brake, do not use until proper training and knowledge have been obtained.
5. Do not use this brake 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. Always wear ANSI Z87.1 approved safety glasses or face shield while using this drum sander. (Everyday eyeglasses only have impact resistant lenses; they are *not* safety glasses.)
7. Before operating this machine, remove tie, rings, watches and other jewelry, and roll sleeves up past the elbows. Do not wear loose clothing. Confine long hair. Non-slip footwear or anti-skid floor strips are recommended.
8. Wear ear protectors (plugs or muffs) if noise reaches unsafe levels.
9. Do not operate this machine while tired or under the influence of drugs, alcohol or any medication.
10. Remove adjusting keys and wrenches. Form a habit of checking to see that keys and adjusting wrenches are removed from the machine before turning it on.
11. Keep safety guards in place at all times when the machine is in use. If removed for maintenance purposes, use extreme caution and replace the guards immediately after completion of maintenance.
12. Check damaged parts. Before further use of the machine, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
13. Provide for adequate space surrounding work area and non-glare, overhead lighting.
14. Keep the floor around the machine clean and free of scrap material, oil and grease.
15. Keep visitors a safe distance from the work area. Keep children away.
16. Make your workshop child proof with padlocks, master switches or by removing starter keys.
17. Give your work undivided attention. Looking around, carrying on a conversation and "horse-play" are careless acts that can result in serious injury.
18. Maintain a balanced stance at all times so that you do not fall into the blade or other moving parts. Do not overreach or use excessive force to perform any machine operation.
19. Use recommended accessories; improper accessories may be hazardous.
20. Maintain tools with care. Keep blades sharp and clean for the best and safest performance. Follow instructions for lubricating and changing accessories.
21. Do not stand on the machine. Serious injury could occur if the machine tips over.
22. Remove loose items and unnecessary work pieces from the area before operating the machine.
23. Don't use in dangerous environment. Don't use machine in damp or wet location, or expose to rain. Keep work area well lighted.
24. Sheet metal stock has sharp edges; use caution when handling to prevent cuts.
25. Keep hands clear of bending area while operating.
26. Do not exceed rated capacity of brake.
27. Brake must be secured to a bench or stand using appropriate fasteners.

**⚠ WARNING:** This product can expose you to chemicals including lead which is known to the State of California to cause cancer and 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, or possibly even fatal, injury.

**⚠ WARNING:** Some dust, fumes and gases created by power sanding, sawing, grinding, drilling, welding and other construction activities contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead based paint
- crystalline silica from bricks, cement and other masonry products
- arsenic and chromium from chemically treated lumber

Your risk of exposure varies, depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area and work with approved safety equipment, such as dust masks that are specifically designed to filter out microscopic particles. For more information go to <http://www.p65warnings.ca.gov/> and <http://www.p65warnings.ca.gov/wood>.

## SAVE THESE INSTRUCTIONS

### 2.0 About this manual

This manual is provided by JET, covering the safe operation and maintenance procedures for a JET Model BPB-1650 Box and Pan Brake. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. Your machine has been designed and constructed to provide consistent, long-term operation if used in accordance with the instructions as set forth in this document.

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

Retain this manual for future reference. If the machine transfers ownership, the manual should accompany it.

**⚠ WARNING** Read and understand the entire contents of this manual before attempting assembly or operation! Failure to comply may cause serious injury!

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## 4.0 Specifications

Model number .....	BPB-1650
Stock number .....	754105
Capacity (mild steel).....	16 gauge (1.5mm)
Bending length capacity .....	50 in. (1270mm)
Maximum box depth .....	4 in. (100mm)
Maximum lift of beam .....	1-1/2 in. (38mm)
Beam adjustment, front to rear.....	5/8 in. (16mm)
Recommended minimum flange in capacity material.....	1 in. (25.4mm)
Number of fingers and width .....	4@2 in., 6@3 in., 6@4 in.
Finger nose angle .....	45
Finger nose radius .....	1/32 in. (0.79mm)
Overall dimensions, assembled (LxWxH) .....	76-3/4 x 18-7/8 x 35 in. (1950 x 480 x 890mm)
Overall dimensions, shipping (LxWxH) .....	66 x 23-1/2 x 32-1/4 in. (1680 x 590 x 820mm)
Weight, net.....	450 lbs. (202 kg)
Weight, shipping.....	550 lbs. (247 kg)

*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.*

## 5.0 Setup and assembly

**⚠WARNING** Read and understand all assembly instructions before attempting assembly. Failure to comply may cause serious injury.

### 5.1 Shipping contents

Refer to Figure 1.

- 1 Box and pan brake
- 1 Counterweight – A
- 1 Counterweight rod – B
- 2 Pipe handles – C
- 1 Stop rod with cotter pin – D
- 1 Stop collar – E



Figure 1

### 5.2 Tools required for assembly

Set of metric hex wrenches  
pliers

### 5.3 Unpacking and cleanup

1. Remove all contents from shipping crate and compare to the contents list in this manual. If shipping damage or any part shortages are identified, contact your distributor. Do not discard packing material until brake is assembled and operating satisfactorily.
2. Carefully clean all rust protected surfaces with a mild solvent or kerosene and a soft rag. Do not use lacquer thinner, paint thinner, or gasoline – these will damage painted surfaces.
3. Coat all machined surfaces with a light coat of oil to inhibit rust.

### 5.4 Assembly

Refer to exploded view if additional clarification is needed for assembly.

1. Remove all crating from around machine, and remove bolts holding brake to pallet.
2. Use hoist or forklift to carefully move brake to a dry, well-lighted area on a sturdy bench or stand. Use appropriate fasteners (not included) to secure brake to stand. Machine location must allow room for loading and offloading stock, and access on all sides for maintenance.

**⚠WARNING** Do not allow anyone beneath the brake while moving it into

position and until it is secured on bench or stand.

NOTE: An optional JET stand (p/n 754200) is designed for the brake, and is available by calling customer service or visiting our website, [www.jettools.com](http://www.jettools.com)

3. Verify that brake is level; use shims if necessary.
4. Install counterweight rod (B, Figure 2) into left hinge, and tighten set screws (B<sub>1</sub>). Slide counterweight (A) onto rod and tighten screw (A<sub>1</sub>).

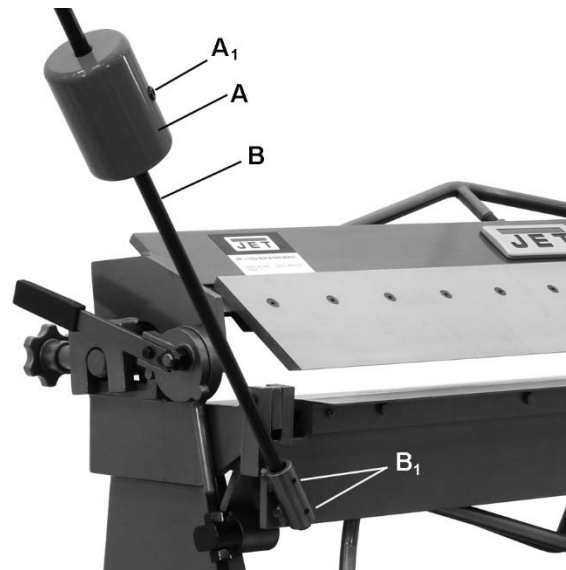


Figure 2

5. Install stop rod (D) through hole in weldment, as shown in Figure 3. Insert cotter pin (D<sub>1</sub>) at end of rod, and bend the ends to secure. Install stop collar (E) at opposite end and tighten set screw.

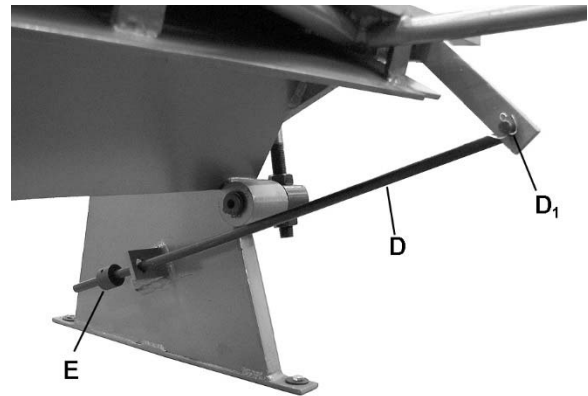


Figure 3

The pipe handles (C, Figure 1) can be installed onto the apron handles for extended leverage, if desired.

## 6.0 Adjustments

### 6.1 Counterweight position

Proper counterweight position determines amount of leverage for the bend, and most efficient movement of apron for the operator.

To adjust counterweight, back out screw (A<sub>1</sub>, Figure 2) and slide counterweight to desired position. Retighten screw.

### 6.2 Apron and finger alignments

The apron assembly has been adjusted by the manufacturer for use with material having the capacity listed in the Specifications section. If any misalignment occurs, correct as follows.

The forward edge of hold-down fingers (F, Figure 4) should be adjusted parallel to pivot edge of clamping table. Release clamping pressure on hold-down assembly by pushing clamp handles (G) slightly to the rear. Turn hand knobs (H) to adjust hold-down assembly for parallel.

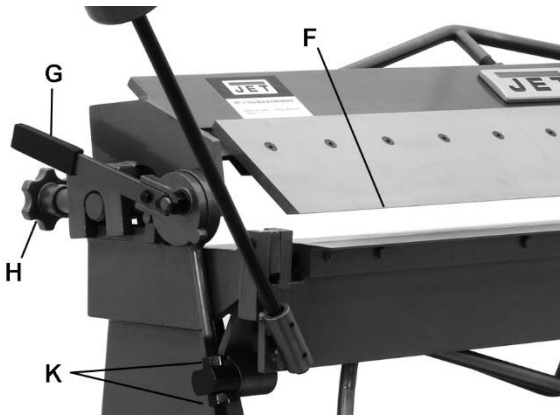


Figure 4

The truss nuts (J, Figure 5) can be used to help achieve alignment in apron and hold-down assemblies, by eliminating any bowing at the center of these assemblies.

Finger alignment can be achieved by loosening all cap screws (F, Figure 5) and raising apron to 90-degree position. Push fingers forward against apron bar for alignment. Retighten all screws.



Figure 5

## 7.0 Operation

### 7.1 Adjusting for metal thickness

The hold-down assembly must be adjusted to allow for clearance when making bends according to material thickness. Clearance for material within four gauges of the capacity should be twice the thickness of the material. For lighter gauges use 1-1/2 times the thickness.

Turn both knobs (H, Figure 4) the same amount to maintain parallelism of fingers with apron.

### 7.2 Adjusting clamping pressure

Clamping pressure should be adjusted according to material thickness. Clamping pressure should be great enough to hold material securely in place but not so much that it is difficult to lock the clamping handles (G, Figure 4). Clamping pressure can be adjusted by turning the nuts on threaded rod portion of yoke assembly (K, Figure 4).

### 7.3 Repeat bends

Adjust stop collar on stop rod (Figure 3) to limit apron swing.

## 8.0 User-maintenance

### 8.1 Lubrication

The machine must be lubricated every day of service with a few drops of oil at the pivot points. Oil pinholes are located at both yoke assemblies (A, Figure 6) and the apron assembly near the hinge pin (B).

Lightly oil all machined (unpainted) parts when not in use, to inhibit rust.

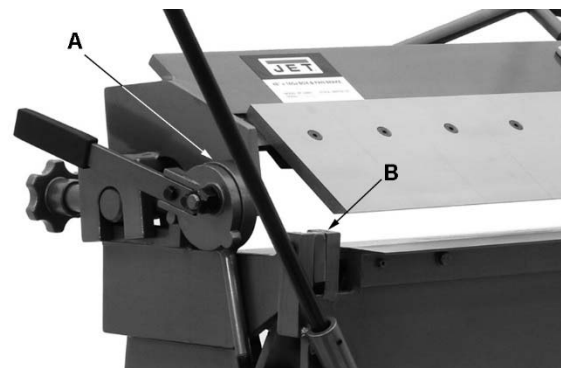
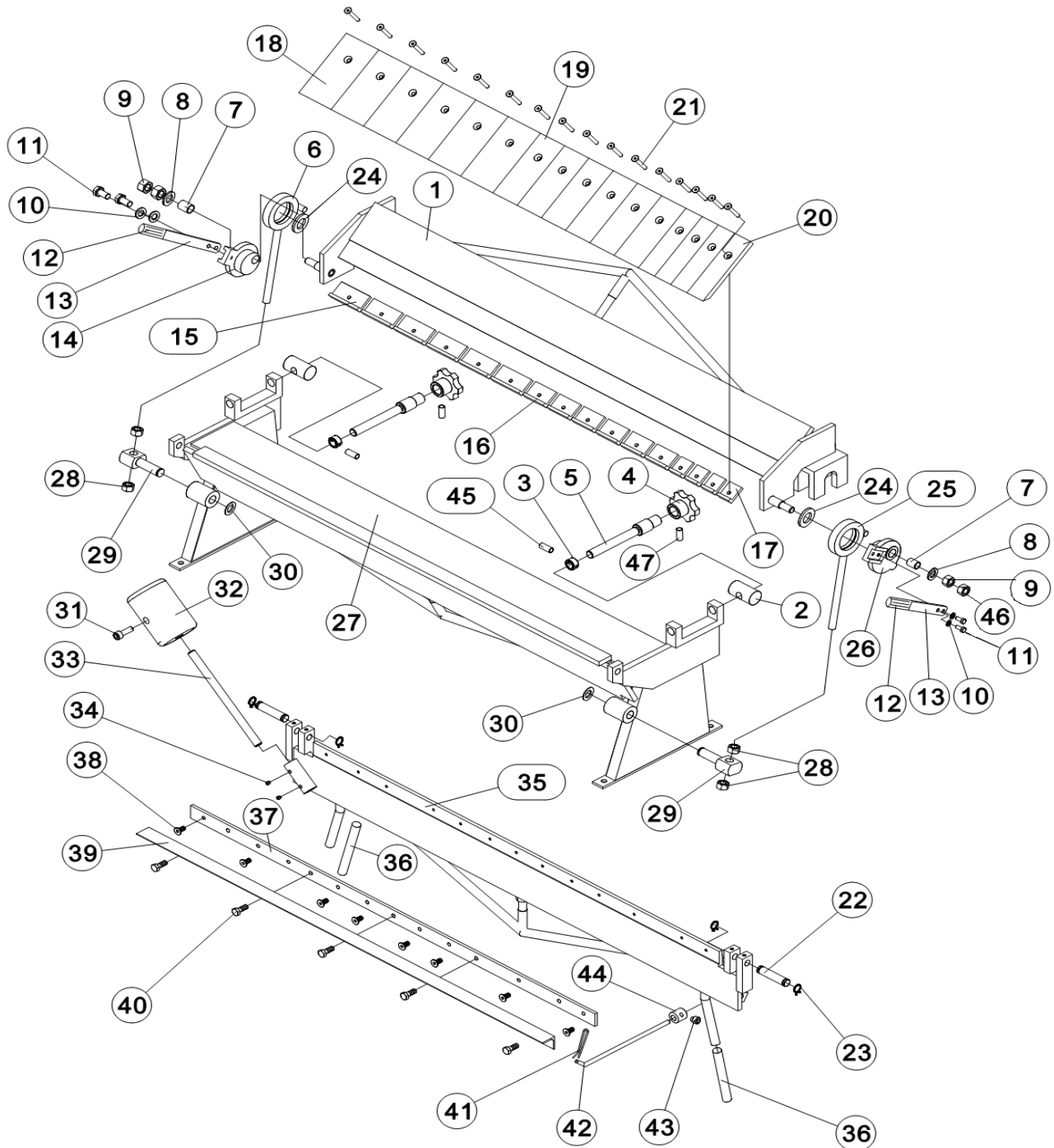


Figure 6

## 9.0 Replacement Parts

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.

### 9.1.1 BPB-1650 Bench Box and Pan Brake – Exploded View



### 9.1.2 BPB-1650 Bench Box and Pan Brake – Parts List

Index No	Part No	Description	Size	Qty
1	BPB1650-01	Hold-Down Assembly		1
2	BPB1650-02	Adjusting Screw Nut		2
3	BPF1248-33	Stop Nut		2
4	BPF1248-35	Knob		1
5	BPF1248-47	Lead Screw		1
6	BPB1650-06	Yoke Assembly (LH)		1
7	BPB1650-07	Bushing		2
8	F002650	Flat Washer	ø16xØ30x3 mm	2
9	F003088	Hex Nut	M16	2
10	F002640	Flat Washer	ø8xØ16x1.6 mm	4
11	F008785	Hex Cap Bolt	M8-1.25x16	4
12	BPB1650-12	Handgrip		2
13	BPB1650-13	Clamp Handle Assembly (includes #12)		2
14	BPB1650-14	Eccentric Block (LH)		1
15	BPB1650-15	Clamp		6
16	BPB1650-16	Clamp		6
17	BPB1650-17	Clamp		4
18	BPB1650-18	Finger 4 in.		6
19	BPB1650-19	Finger 3 in.		6
20	BPB1650-20	Finger 2 in.		4
21	F010971	Flat Head Socket Cap Screw	M8-1.25x30	16
22	BPB1650-22	Shaft		2
23	F006044	Retaining Ring, External	16 mm	4
24	BPB1650-24	Flat Washer, Special		2
25	BPB1650-25	Yoke Assembly (RH)		1
26	BPB1650-26	Eccentric Block (RH)		1
27	BPB1650-27	Base Assembly		1
28	F003127	Hex Nut	M16-2.0	4
29	BPB1650-29	Swivel Pin		2
30	F006044	Retaining Ring, External	16 mm	2
31	F009498	Hex Cap Bolt	M10-1.5x30	1
32	BPB1650-32	Counterweight		1
33	BPB1650-33	Rod		1
34	F010407	Socket Set Screw	M8-1.25x8	2
35	BPB1650-35	Apron Assembly		1
36	BPB1650-36	Pipe Handle		2
37	BPB1650-37	Bending Blade	5 in	1
38	F005402	Socket Head Cap Screw	M8-1.25x16	8
39	BPB1650-39	Angle Support		1
40	F008788	Hex Cap Bolt	M8-1.25x20	5
41	F003864	Cotter Pin	6x30 mm	1
42	BPB1650-42	Stop Rod		1
43	F010400	Socket Set Screw	M6-1.0x6	1
44	BPF1248-39	Stop Collar		1
45	BPF1248-46	Round Pin	6x30 mm	2
46	BPB1650-46	Thin Hex Nut	M16	2
47	BPF1248-45	Round Pin	4x40 mm	2
	LM000078	ID Label, BPB-1650 (not shown)		1
	LM000133	Warning Label (not shown)		1
	JET-165	JET Logo with adhesive (not shown)	165x68 mm	1

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

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



# 10.0 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
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; Air Tools

NOTE: JET is a division of JPW Industries, Inc. References in this document to JET also apply to JPW Industries, Inc., or any of its successors in interest to the JET brand.

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