

Operating Instructions and Parts Manual 45-inch English Wheel

Model: WH-45T



JET 427 New Sanford Road LaVergne, Tennessee 30786 Ph.: 800-274-6848 www.jettools.com

Warranty and Service

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- 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.

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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.

Accessories; Shop Tools; Warehouse & Dock products; Hand Tools

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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.

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JET sells through distributors only. The specifications listed in JET printed materials and on official JET website are given as general information and are not binding. JET reserves the right to effect at any time, without prior notice, those alterations to parts, fittings, and accessory equipment which they may deem necessary for any reason whatsoever. JET® branded products are not sold in Canada by JPW Industries, Inc.

Product Listing with Warranty Period

	90 Days – Parts; Consumable items; Light-Duty Air Tools				
	1 Year – Motors; Machine Accessories; Heavy-Duty Air Tools; Pro-Duty Air Tools				
2 Year – Metalworking Machinery; Electric Hoists, Electric Hoist Accessories					
	5 Year – Woodworking Machinery				
	Limited Lifetime – JET Parallel clamps: VOLT Series Electric Hoists: Manual Hoists: Manual Hoist				

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The specifications in this manual are given as general information and are not binding. JET, reserves the right to effect, at any time and without prior notice, changes or alterations to parts, fittings, and accessory equipment deemed necessary for any reason whatsoever.



- 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 English wheel 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 an English wheel, do not use until proper training and knowledge have been obtained.
- Do not use this English wheel 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 approved safety glasses/face shields while using this English wheel. Everyday eyeglasses only have impact resistant lenses; they are not safety glasses.
- Before operating this English wheel, remove tie, rings, watches and other jewelry, and roll sleeves up
 past the elbows. Remove all loose clothing and confine long hair. Non-slip footwear or anti-skid floor
 strips are recommended.
- 8. Some dust created by power sanding, sawing, grinding, drilling and other construction activities contain chemicals known to cause cancer, 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 face or dust masks that are specifically designed to filter out microscopic particles.

- 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 using.
- 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.
- 12. If possible, the English Wheel should be secured to the floor before use.
- 13. 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.
- 14. Provide for adequate space surrounding work area and non-glare, overhead lighting.
- 15. Keep the floor around the machine clean and free of scrap material, oil and grease.
- 16. Keep visitors a safe distance from the work area. **Keep children away.**
- 17. Make your workshop child proof with padlocks, master switches or by removing starter keys.
- 18. Give your work undivided attention. Looking around, carrying on a conversation and "horse-play" are careless acts that can result in serious injury.
- 19. Do not overreach. Keep proper footing and balance at all times.



- 20. Use the right tool at the correct feed rate. Do not force a tool or attachment to do a job for which it was not designed. The right tool will do the job better and more safely.
- 21. Use recommended accessories; improper accessories may be hazardous.
- 22. Maintain tools with care. Keep wheels clean for best performance. Follow instructions for lubricating and changing accessories.
- 23. Use leather gloves when handling steel work pieces.
- 24. Do not stand on the machine. Serious injury could occur if the machine tips over.
- 25. Remove loose items and unnecessary work pieces from the area before using the machine.

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

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

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

Introduction

This manual is provided by JET, covering the safe operation and maintenance procedures for the JET WH-45T English Wheel. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. This machine has been designed and constructed to provide years of trouble free operation if used in accordance with instructions set forth in this manual. If there are any questions or comments, please contact either your local supplier or JET. JET can also be reached at our web site: www.jettools.com.

Specifications

Model	5T 51
Number of lower wheels provided	10 . 4
Construction: Frame	el 10
Capacities: Mild Steel 16 Gauge (0.06 Aluminum 1/ Copper 16 Gauge (0.05 Aluminum) 1/	/8"
Dimensions: 4 Throat	6" 28" "H
Weights: Shipping555 lb Net458 lb	

The above specifications were current at the time this manual was published, 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.

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

Unpacking and Setup

Cleanup

Exposed metal surfaces, including upper and lower wheels, are coated with a protectant to resist corrosion during shipment. Remove this coating with a soft rag and a solvent or cleaner-degreaser. Some parts may need to be removed for thorough cleaning. Do not use gasoline, acetone, lacquer thinner or other highly volatile solvents, as these will damage painted surfaces.

Site Considerations

Floor Stability – Refer to the weight and footprint specifications for the machine. Residential floors may require additional reinforcement to support both machine and operator.

Operating Clearances – When establishing a location for your machine, consider existing and anticipated needs, size of workpiece to be processed, space for auxiliary stands, work tables or other machinery that may be present.

do not allow unsupervised children or visitors in your shop at any time!

Moving the English Wheel

MWARNING The WH-45T is a heavy machine. Get assistance when unpacking.

Retractable wheels beneath the main column and support legs allow the machine to be moved by one person. Rotate the three square head bolts (Figure 1) with a wrench to lower or raise the wheels.

NOTE: Always retract the wheels before operating the machine.

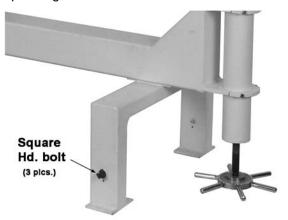


Figure 1

Securing to Floor

Mounting the machine to the floor is strongly recommended (floor mounting hardware is not included). Lag shield anchors with lag bolts and anchor studs are recommended for anchoring to a concrete floor. Research mounting methods and choose one that best fits your application.

ACAUTION Secure machine to the floor to prevent instability and possible tipping during operation.

Operation

Overview

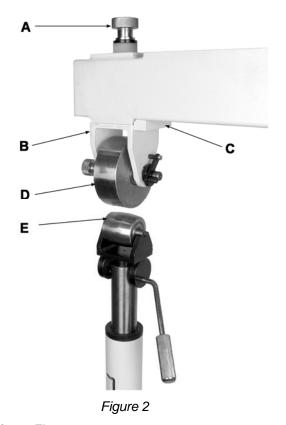
As the metal workpiece is rolled between the upper wheel and lower wheel, it becomes longer and thinner. At the same time, a track is pressed into the metal, creating a convex curve in the workpiece.

A variety of contours can be produced by varying the amount and pattern of the tracks. The English wheel can produce curves in mild steel up to 16 gauge (0.06"), copper up to 16 gauge (0.05") and aluminum up to 1/8".

Basic Operations

 Clean the workpiece and wheels thoroughly, removing any grit or abrasive particles.
 NOTE: Grit or dirt can mar the workpiece and even damage the wheels.

De-burr sharp metal edges and wear leather gloves while handling sheet metal, to prevent injury to your hands.



Refer to Figure 2:

2. Turn the *upper wheel knob* (A) clockwise to raise the *upper wheel bracket* (B) against the frame as shown.

Note: Make sure the *upper wheel bracket* (B) and *frame block* (C) edges are parallel so that they slide past each other when raising the upper wheel bracket. Otherwise, they may bind.

Check the distance between bottom of the upper wheel (D) and top of the lower wheel (E). They should be about an inch apart. To adjust the distance, rotate the adjusting wheel (shown in Figure 10) to raise or lower the lower wheel (E).

Refer to Figure 3:

Place the *quick release lever* (F) in the *engaged* position to raise the *lower wheel* (E) to the operating position. Engaged position is where the flat edge on the *cam*

(G) rests against the bottom of the *lower* wheel bracket (H).

ACAUTION Pinch Hazard! Do not place fingers in wheel path during operation.

AWARNING Sharp metal edges can cause lacerations. De-burr sharp edges and wear leather gloves when handling.

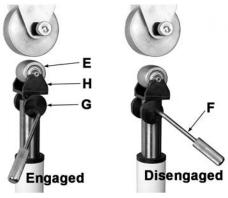


Figure 3

- 5. Insert the workpiece between the wheels.
- 6. Rotate the *adjusting wheel* (shown in Figure 10) counter-clockwise until there is light pressure on the workpiece.
- 7. Roll the workpiece up to an edge, rotate it slightly then pull it back.
- 8. Turn the adjusting wheel counterclockwise to increase pressure on the workpiece; turn the adjusting wheel clockwise to decrease pressure.

Note: To reinsert a workpiece or insert another workpiece of the same thickness, use the *quick release lever* (F, Figure 3).

Adjustments

Replacing the Wheel

The JET English Wheel is provided with 4 upper wheels and 10 lower wheels. Their profiles are shown at the back of this manual.

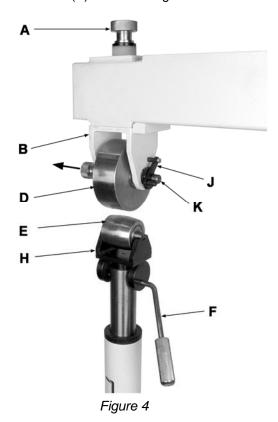
when installing or removing. Wear steel-toed footwear for personal safety.

To replace an upper wheel:

Refer to Figure 4.

1. Raise the *lower wheel* (E) until it contacts the bottom of the *upper wheel* (D). This ensures the upper wheel is supported.

2. Flip up the *latch* (J) and slide out the *upper* wheel axle (K) while holding the wheel.



- 3. Carefully remove the *upper wheel* (D) and set it on a bracket on the upper wheel rack.
- 4. Place a new upper wheel into position. Align the wheel bearing holes with the bracket mounting holes, insert the *axle* (K), and rotate the *latch* (J) to secure the *wheel*.

Note: Adjust the lower wheel height if you need more clearance replacing the upper wheel.

To replace a lower wheel:

- Disengage the *quick release lever* (F, Figure 4) and lower the *lower wheel bracket* (H, Figure 4) until there's sufficient clearance.
- 2. Remove the *lower wheel* (E, Figure 4) and replace it with another one.
- 3. Engage the *quick release lever* (F, Fig. 2) and raise the lower wheel to the operating position.

Rotating Wheels

The wheels can be positioned perpendicular to the frame (A, Figure 5) for long workpieces or parallel to the frame (B, Figure 5) for wide workpieces.

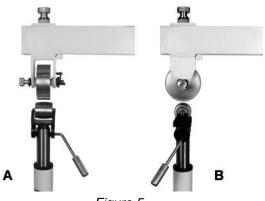


Figure 5

To rotate lower wheel:

Refer to Figure 6.

- 1. Disengage quick release lever (F).
- Remove lower wheel if needed for clearance.
- Lift the lower wheel assembly until the knurled screw (L) reaches the top of the groove in which it is currently positioned (L₁).

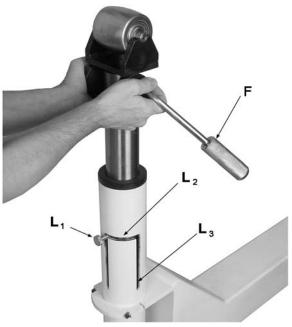


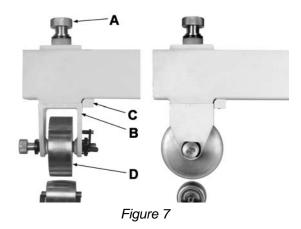
Figure 6

- Rotate the lower wheel assembly, sliding the knurled screw (L) along the entire distance of the horizontal groove (L₂).
- 5. Lower the lower wheel assembly until it reaches the bottom of the opposite groove (L₃).

To rotate upper wheel:

Refer to Figure 7.

- 6. Remove the lower wheel to provide clearance for the following steps.
- 7. Turn the *upper wheel knob* (A) counterclockwise to lower the *upper wheel bracket* (B) below the *frame block* (C).
- 8. Rotate the *upper wheel* 90 degrees (D), then raise the *upper wheel bracket* (B) until it is seated against the frame.
- Reinstall lower wheel, engage the quick release lever, and raise lower wheel to the operating position.



Rolling Tips

Observe the following tips for successful operation of the English Wheel:

- Make sure workpiece and wheels are clean and free of any debris.
- Start rolling slowly, then increase speed.
- Try rolling the wheels up to, but not past the workpiece edge.
- Mark the workpiece with a non-permanent marker to contour the metal or follow tracking patterns.
- Use the lightest wheel pressure possible to shape the workpiece. Too much pressure will crease or ruin the metal.
- Use light pressure for smoothing, high pressure for rough shaping.

Adjusting the Quick Release Lever

Refer to Figure 8:

The *quick release lever* is adjusted at the factory. However, it may have become loose during shipping. The set screws must engage the lever to prevent it from slipping.

To adjust the quick release lever:

1. Examine the flats on the *quick release lever*.



Figure 8

If a setscrew does not contact a flat on the lever:

2. Use a hex wrench to loosen the setscrews. Turn the *quick release lever* so that the setscrew is aligned with the flat on the lever, then tighten the setscrews.

Wheel Alignment

Wheel alignment can be adjusted by positioning the upper wheel with respect to the lower wheel.

Refer to Figure 9:

- 1. Loosen four setscrews (A).
- 2. Determine the direction that the upper wheel should be shifted to align with the lower wheel.
- 3. Turn the corresponding adjusting nut (B) outward (counterclockwise) in small incremental steps and the other adjusting nut inward by the same amount.
- 4. Tighten the four setscrews(A).

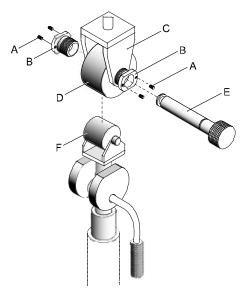


Figure 9

Lubrication

Refer to Figure 10:

The following areas should be kept lubricated:

Upper wheel bracket (A)

Lower wheel bracket (B)

Jack screw (C)

Upper wheel axle (D)

Cams (E)

Pivot points (F)

Upper and Lower Wheel Brackets

Periodically lower the upper wheel bracket, and apply a light coating of lithium grease to the post (A).

Apply a light coating of oil, such as SAE 30W, to the lower wheel bracket (B).

Jack Screw

Apply lithium grease as needed to the screw threads (C).

Cams

Apply a coating of lithium grease to the cams (E) where they contact the bottom of the lower wheel bracket.

Pivot Points

Apply a small amount of oil, such as SAE 30W, to the pivot points (F).

Wheels

When upper or lower wheels are not being used, or are stored away, apply a light coat of oil to prevent rust. Wipe off the oil before using the wheels.

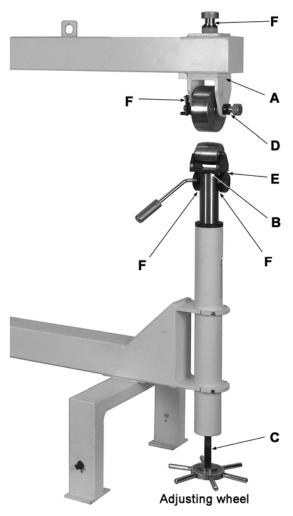


Figure 10

Troubleshooting the WH-45T English Wheel

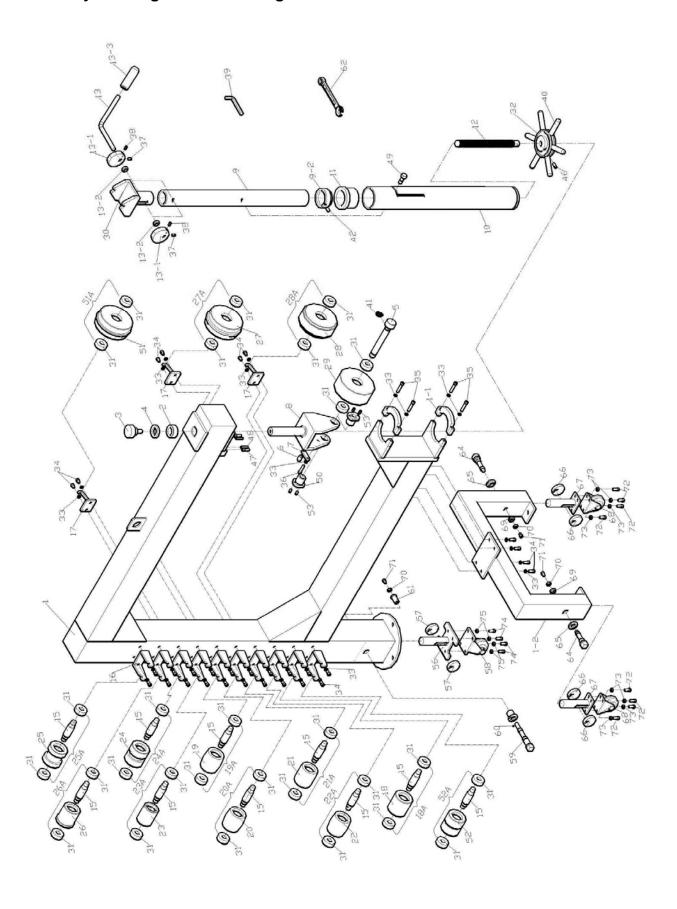
Trouble	Probable Cause	Remedy		
Quick release lever	Lower wheel bracket and cams are binding.	Lubricate contact points between top of cams and bracket.		
will not engage, or engages with difficulty.	Setscrews on cams loose, not contacting quick release lever flats.	Align setscrews with lever flats and tighten.		
Upper wheel swivels.	Upper wheel not secured to frame bracket.	Turn upper wheel knob clockwise until upper wheel bracket is snug against frame bracket.		
Wheel does not	Workpiece too thick.	Use sheet metal of appropriate thickness.		
shape workpiece.	Crown is too low.	Use a lower wheel with a higher crown.		
	Incorrect pressure.	Increase pressure on workpiece.		
Upper wheel bracket will not seat against frame.	Upper wheel bracket catches on frame block; surfaces are not parallel.	Align upper wheel and upper frame block surfaces when raising upper wheel bracket to frame.		
Wheels form too high a crown in workpiece.	Lower wheel flat is too small.	Use a lower wheel with a larger flat.		
Wheels form too low a crown	Lower wheel flat is too large.	Use a lower wheel with a smaller flat.		

Parts

Ordering Replacement Parts

To order parts or reach our service department, call 1-800-274-6848 Monday through Friday (see our website for business hours, www.jettools.com). Having the Model Number and Serial Number of your machine available when you call will allow us to serve you quickly and accurately.

Assembly Drawing for WH-45T English Wheel



Parts List for WH-45T English Wheel

Index No.		Description	Size	Qty
		.Frame		
		Post Clamp		
		Frame Support Stand		
		.Collar		
		Adjusting Lock Knob		
		Washer		
		Upper Wheel Shaft		
		Short Pin		
	_	Position Block		
		Upper Wheel Housing		
		Inner Tube Adjusting Post		
		Collar		
		.Outer Post		
		Flange Bushing		
		.Lead Screw		
		.Lifting Lever		
		Cam		
13-2	. WH45-13-2	Spacer		2
13-3	. WH45-13-3	Lifting Lever Handle		1
15	. WH45-15	Lower Wheel Shaft		10
16	. WH45-16	Lower Wheel Storage Bracket		10
17	. WH45-17	Upper Wheel Storage Bracket		3
18A	. WH45-18A	Lower Wheel 1 Assembly (Index #18, 15, 31)	1/8" Edge	1
18	. WH45-18	Lower Wheel 1		1
19A	. WH45-19A	Lower Wheel 9 Assembly (Index #19, 15, 31)	1/2" Ridged	1
19	. WH45-19	Lower Wheel 9		1
		Lower Wheel 7 Assembly (Index #20, 15, 31)		
		Lower Wheel 7		
		Lower Wheel 6 Assembly (Index #21, 15, 31)		
21	. WH45-21	Lower Wheel 6		1
22A	. WH45-22A	Lower Wheel 8 Assembly (Index #22, 15, 31)	3/4"	1
22	. WH45-22	Lower Wheel 8		1
		Lower Wheel 4 Assembly (Index #23, 15, 31)		
		Lower Wheel 4		
24A	. WH45-24A	Lower Wheel 3 Assembly (Index #24, 15, 31)	3/4"	1
		Lower Wheel 3		
25A	. WH45-25A	Lower Wheel 2 Assembly (Index #25, 15, 31)	1-29/64"	1
25	. WH45-25	Lower Wheel 2		1
		Lower Wheel 5 Assembly (Index #26, 15, 31)		
		Lower Wheel 5		
27A	. WH45-27A	Upper Wheel 10 Assembly (Index #27, 31)	3/4"	1
27	. WH45-27	.Upper Wheel 10		1
28A	WH45-28A	Upper Wheel 10 Upper Wheel 11 Assembly (Index #28, 31)	1-29/64"	1
28	WH45-28	Upper Wheel 11		1
29A	WH45-29A	Upper Wheel 12 Assembly (Index #29, 31)	.1/8" Edge	1
		Upper Wheel 12		
		Lower Wheel Housing		
		Ball Bearing		
		Adjusting Wheel		
		Lock Washer		
		Socket Head Cap Screw		
		Socket Head Cap Screw		
		Socket Head Cap Screw		
		Socket Set Screw		
		Socket Set Screw		
		Hex Wrench		
		Wheel Handle		
- ∪	. **! 170 70	***11001 1 1411410		

Parts List for WH-45T English Wheel

Index No. Part No.	Description	Size	Qty
41 WH45-41	Snap Ring	Ø20	1
42TS-1522031	Socket Set Screw	M5x10	1
46TS-1523021	Socket Set Screw	M6x8	1
47TS-1503071	Socket Head Cap Screw	M6x30	2
	Spring Pin		
49 WH45-49	Adjusting Lock Bolt		1
50 WH45-50	Adjusting Nut		2
51A WH45-51A	Upper Wheel 13 Assembly (Index #51, 31)	1/4"	1
51 WH45-51	Upper Wheel 13		1
52A WH45-52A	Lower Wheel 14 Assembly (Index #52, 15, 31).	1/4"	1
	Lower Wheel 14		
	Socket Set Screw		
56 WH45T-56	Rear Caster Post		1
	Rear Eccentric Wheel		
58 WH45T-58	Rear Caster	Ø70 mm	1
	Rear Eccentric Wheel Shaft		
	Rear Bushing Shaft		
61 WH45T-61	Bushing		1
	Open End Wrench		
64 WH45T-64	Front Eccentric Wheel Shaft		2
65 WH45T-65	Front Bushing Shaft		2
	Front Eccentric Wheel		
	Front Wheel Post		
68 WH45T-68	Front Wheel	Ø70 mm	2
	Shaft Bushing		
70 WH45T-70	Snap Ring		3
	Socket Head Cap Screw		
	Hex Cap Screw		
	Flat Washer		
	Socket Head Cap Screw		
75TS-1550041	Flat Washer	M6	4

Note: Upper and Lower Wheels can only be purchased as an assembly.

Part numbers beginning with TS- are standard fasteners and can usually be found at local hardware stores.

Wheel Chart

Index No.	Wheel	Description	Spec	Index No.	Wheel	Description	Spec
18		Lower wheel 1	1/8" Edge	25		Lower wheel 2	1-29/64"
19		Lower wheel 9	1/2" Ridged	26		Lower wheel 5	2-5/8"
20		Lower wheel 7	1/8" Ridged	52		Lower wheel 14	1/4"
21		Lower wheel 6	1/4"	27		Upper wheel 10	3/4"
22		Lower wheel 8	3/4"	28		Upper wheel 11	1-29/64"
23		Lower wheel 4	2-1/4"	51		Upper wheel 13	1/4"
24		Lower wheel 3	3/4"	29		Upper wheel 12	1/8" Edge

To purchase a particular wheel, select the *Index No.* from the column to the left of the wheel and use that number to determine the *Part No.* in the Parts List (preceding pages). Note that the wheel is sold as an *assembly only* that includes the wheel, ball bearings and shaft (lower wheel only). For example, when ordering Lower Wheel 1 (Index 18), order Part Number WH45-18A (Index 18A) from the Parts List on page 14.



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