Blackhawk Automotive™

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2 Ton Foldable Engine Crane

Operating Instructions & Parts Manual

Model	Capacity
BH8026	2 Ton

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ ADVERTENCIA

- Leer, comprender, y seguir las instrucciónes antes de utilizar el aparato.
- El manual de instrucciónes y la información de seguridad deben estar comunicado en lengua del operador antes del uso.
- No seguir estas indicaciónes puede causar daños personales o materiales.

⚠ WARNING

To avoid **crushing and related injuries**:

NEVER work on, under or around a load supported only by a hydraulic jack. **Immediately** transfer the load to an appropriate work station.

⚠ **WARNING:** Cancer and Reproductive Harm.
⚠ **AVERTISSEMENT:** Cancer et dommages au système reproducteur.
⚠ **ADVERTENCIA:** Cáncer y daño reproductivo.
www.P65Warnings.ca.gov

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sales@blackhawk-automotive.com

Read this manual and follow all the Safety Rules and Operating Instructions before using this product.

Printed in China
BH8026-M0_082018

SAFETY and GENERAL INFORMATION

Save these instructions. For your safety, read, understand, and follow the information provided with and on this engine crane before using. The owner and/or operator of this equipment shall have an understanding of engine cranes and safe operating procedures before attempting to use. The owner and/or operator shall be aware that the use and repair of this product may require special skills and knowledge. Instructions and safety information shall be conveyed in the operator's native language before use of this engine crane is authorized. If any doubt exists as to the safe and proper use of this product, remove from service immediately.

Inspect before each use. Do not use if broken, bent, cracked, or damaged parts (including labels) are noted. Any engine crane that appears damaged in any way, operates abnormally or is missing parts, shall be removed from service immediately. If you suspect that the engine crane was subjected to a shock load (a load dropped suddenly, unexpectedly upon it), immediately discontinue use until it has been checked by a factory authorized service center (contact distributor or manufacturer for list of Authorized Service Centers). It is recommended that an annual inspection be done by qualified personnel. Labels and owner's manuals are available from manufacturer (see Replacement Parts, page 7)**.**

PRODUCT DESCRIPTION

This engine crane is intended to be used to remove, install and transport in the lowered position, rated capacity **automotive and light truck engines and engine assemblies**. It **must** be used with appropriately rated engine leveller, sling and/or chains which are NOT INCLUDED. After removing, **immediately** transfer the load to an **appropriately rated** work station such as an engine stand.

***Do not** use this device for **any** purpose other than that for which it is expressly intended (see above).*

Model	Boom Capacity	Boom Length	Hook Height		Base Length	Base Width (Front)	Base Width (Rear)
			Min.	Max.			
BH8026	2 Ton	48-5/8"	0"	59-1/4"	78-1/2"	37-7/8"	30-3/8"
	1-1/2 Ton	55-5/8"	0"	63"			
	1 Ton	62-7/8"	0"	66-5/8"			
	1/2 Ton	69-7/8"	0"	70-1/2"			

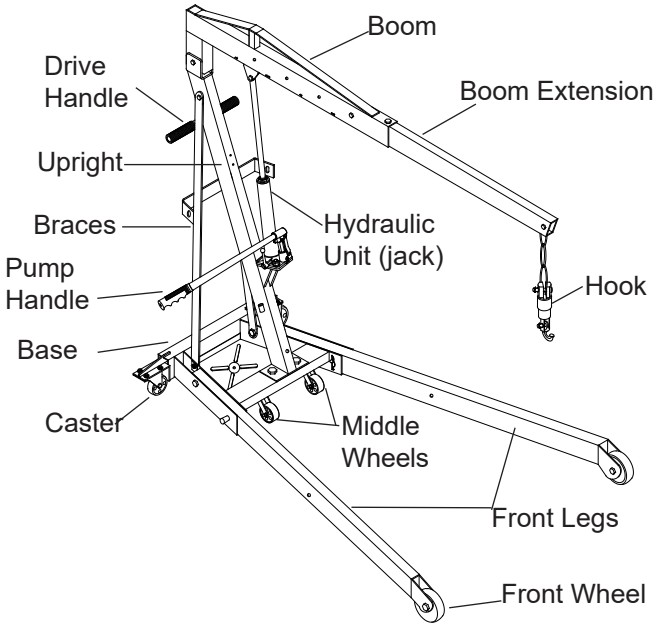


Figure 1- Model BH8026 Components

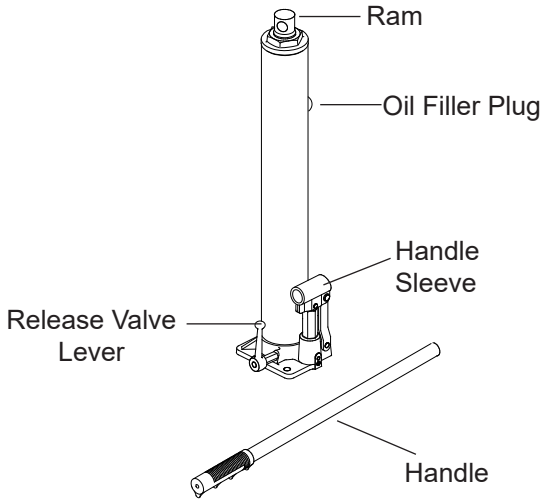


Figure 2 - Hydraulic Unit (jack) Components

ASSEMBLY

For Model BH8026 (see Figure 3):

1. Attach caster assembly (# 23) to base frame (# 24) using M8x16 bolts, washers and nuts (# 14, 21 & 22).
2. Install 3.5 " middle wheels (# 33) to base frame (# 24) using M8x60 bolts, rod cover, washers and nuts (# 31, 32, 22 & 21).
3. Attach two front legs (# 27 & 35) to base frame (# 24) using M16x85 bolts, washers and nuts (# 43 & 9). Then secure the legs with stop bar and pin (#25 & 34) to the front hole of the legs.
4. Attach upright (# 18) to base frame using M12x80 bolts, washers and nuts (# 20 & 10). Upright must lean towards the rear of the base frame as shown. Leave nuts finger tight.
5. Attach braces (# 17) to upright(# 18) with M12x80 bolt, washer and nut (# 13 & 2). Leave nut finger tight.
6. Attach braces (#17 to inside of base frame (24) using M12x35 bolts, washers and nuts (# 20 & 2).

Note: Braces assemble to inside of base frame.

7. Tighten upright to base frame, braces to upright, and braces to base frame bolts.
8. Attach hydraulic unit (# 41) to the bracket (# 39) using M10x30 bolts, washers and nuts (# 38, 37 & 36). Then position to mounting ears on post, attach using M16x75 bolt, washer and nut (# 10 & 9).

Note: Handle of hydraulic unit must face the front of the base frame as shown. Tighten nut. Lean hydraulic unit assembly back against post.

9. Connect boom (# 8) to upright (# 18) using M20x100 bolt, washer and nut (# 12 & 11).
10. Hold boom and pivot hydraulic unit out away from upright and position ram between mounting brackets on boom. Attach hydraulic unit to boom with M16x75 bolt, washer and nut (# 10 & 9). Tighten nut.
11. Slide boom extension (# 4) into boom and secure in retracted position using M12x70 bolt and nut (# 7 & 2). 4 positions available: 1/2 ton, 1 ton, 1 1/2 ton and 2 ton.
12. Slide square washer (# 5) into boom, secure using M8x16 bolt and washer (# 6, 22)
13. Insert hook (# 1) to boom extension using M12x60 bolt, washer and nut (# 3 & 2). Inpect the set screw on the hook to make sure it is in place.
14. Attach legs support bracket (# 19) to upright (# 18) with M6x10 bolts (# 42).
15. Attach handle to upright (# 18) with M8x16 bolts (# 14).

To fold for storage:

a. Remove stop bar and pin (# 25 & 34).
b. Raise leg until it leans on the leg support bracket (# 19).

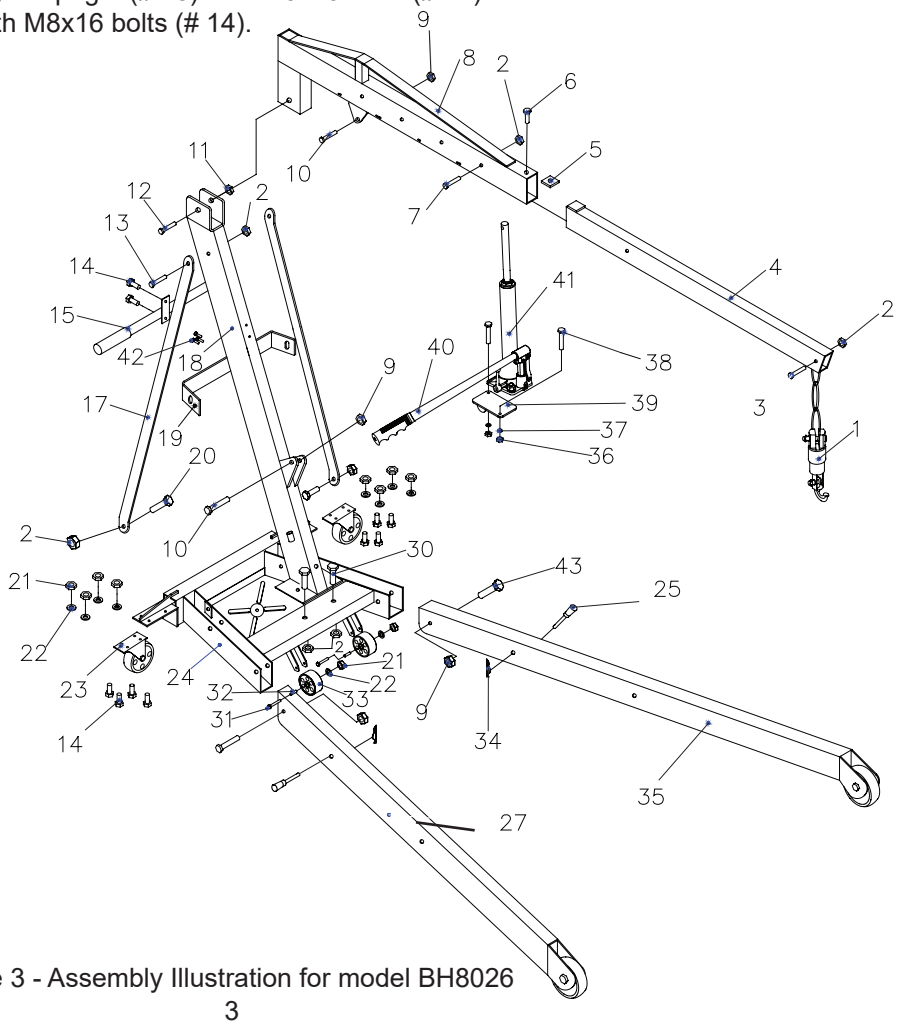
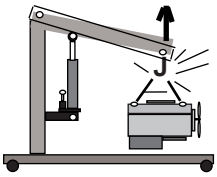


Figure 3 - Assembly Illustration for model BH8026

⚠WARNING

- **Study, understand**, and **follow all instructions** provided with and on this device **before use**.
- After removing, **immediately** transfer the engine to an appropriately rated work station such as an engine stand.
- **Do not** exceed rated capacity. **Do not** exceed rated capacity for **each boom and leg** position.
- Use **only** on hard, level surface.
- **Before moving** a loaded crane, make certain that load is stable, in its lowest possible position, and is moved over a smooth, hard level surface.
- Use of this engine crane is limited to the lifting, lowering, and transporting in the lowest possible position, automotive and light truck engines. It is **NOT** a work station and should never be used as a work station.
- Off center loading may cause the engine to tip unexpectedly and cause the loaded crane to tip over.
- Do not allow load to swing or drop violently while lowering or moving.
- Only attachments and/or adapters supplied by the manufacturer shall be used.
- No alterations shall be made on this product.
- **Failure to heed** these markings may result in **personal injury and/or property damage.**



⚠WARNING

To avoid personal injury and property damage:

- NEVER work on, under or around a loaded crane.
- **Immediately** transfer the load to an appropriately rated engine stand.
- **Be alert** and **sober** when using this product! **Never** operate this equipment when under the influence of drugs or alcohol.
- **DO NOT** place yourself or anyone else over the loaded boom or in its line of travel.
- Use **only** hardened, appropriately sized fasteners to secure engine to crane.
- Use **only** chains and slings with a **capacity equal to or greater** than that of the crane.

BEFORE USE (refer to Fig. 1~3 and Replacement Parts Illustration for location of components)

1. Before using this product, read the owner's manual completely and familiarize yourself thoroughly with the product, its components, and recognize the hazards associated with its use.
2. To familiarize yourself with basic operation turn the release valve lever:

a. Clockwise until firm resistance is felt to further thread engagement. This is the '**CLOSED**' release valve position used to pressurize the hydraulic fluid and **raise** the ram plunger.

b. Counter-clockwise, but no more than **2** turns from the closed position. This is the '**OPEN**' release valve position used to **lower** the ram plunger. The release valve requires **less than** 2 full turns when the crane is loaded.

⚠ *Make certain that all personnel are clear of the load before lowering. **Control** the rate of descent of the load **at all times**. The **more** you open the release valve, the **faster** the load descends.*

3. Check that the pump operates smoothly before putting into service. Replace damaged or missing parts with factory authorized replacements parts only. Repair of this product may require special skills and knowledge and should only be attempted by a factory authorized service center. Contact the manufacturer or distributor of this product for a list of factory authorized service centers. Lubricate as instructed in Maintenance Section.

Bleeding the system / Checking Oil (refer to assembly instructions as guideline for hydraulic unit removal)
Carefully remove hydraulic unit from crane. With release valve in the OPEN position (2b above), ram fully lowered pump piston fully depressed, set hydraulic unit in its upright, level position. Locate and remove oil filler plug. Insert the handle grip into the handle sleeve; then pump 6 to 8 strokes. This will help release any pressurized air which may be trapped within the reservoir. Oil level should be even with the bottom of the oil filler plug hole. Reinstall the oil filler plug.

OPERATION

ALWAYS refer to vehicle service manual and/or shop manual for location of appropriate engine lift points and removal procedures. Each engine removal/installation may require different tools, procedures, and level of expertise.

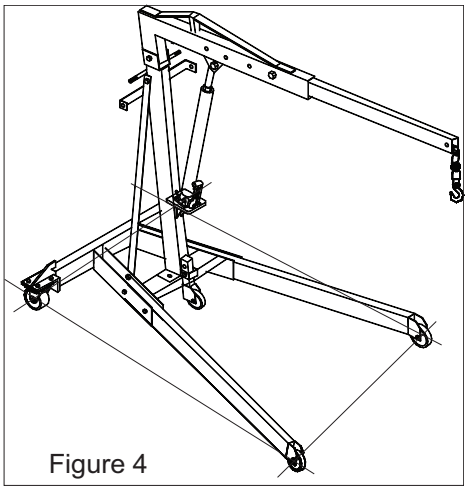


Figure 4

Lift only on areas of the engine as specified by the vehicle manufacturer.

***ALWAYS** lock legs into position with the provided locking means.*

1. Ensure that the load does not exceed the rated capacity of your chosen boom and leg position.

2. Secure appropriately rated engine leveler, chain or sling assembly (**NOT INCLUDED**) to the vehicle manufacturers' recommended engine lift points.

3. Secure the engine crane safety hook assembly to the engine leveler, chain or sling assembly.

***ALWAYS** verify that the crane and the application are compatible. **NEVER** load the engine crane with an engine that extends beyond an imaginary line drawn connecting the centerlines of the front and rear wheel caster axles as shown in Fig. 4.*

*Use **only** the handle provided by the manufacturer. The handle provided with this crane will safely engage and operate the pump assy. If the handle is bent or damaged, **STOP** using the crane until a factory replacement handle can be acquired.*

4. When ready to remove engine, turn release valve clockwise until firm resistance is felt. Pump handle until load is securely supported by crane.

5. Remove engine, then immediately transfer the engine to appropriate engine support device (engine stand). Turn the release vlave lever counter-clockwise to lower the load, but never more than 2 full turns.

6. Check to ensure stand is secure before working on or around.

***Never** put any portion of your body under engine when it is supported by the engine crane. **Do not** move crane off of hard, smooth, level surface! **Before moving crane**, lower the boom as far **below** horizontal as possible, yet still allowing movement!*

***Never** stand over loaded boom nor in its intended line of travel. Be sure all tools and personnel are clear before lowering load.*

CARE AND MAINTENANCE

Periodically inspect the engine crane and fasteners. Replace worn or damaged parts with factory replacement parts only. Ensure caster, wheels, boom extension, leg extensions (if equipped) and pump assembly move freely.
Important: Use only a good grade hydraulic jack oil. We recommend Mobil DTE 13M or equivalent. Avoid mixing different types of fluid and **Never** use brake fluid, turbine oil, transmission fluid, motor oil or glycerin. Improper fluid can cause failure of the jack and the potential for sudden and immediate loss of load.

Adding Oil to Hydraulic Unit

1. Carefully remove hydraulic unit from crane.
2. With ram fully lowered and pump piston fully depressed, set hydraulic unit in its upright, level position. Remove oil filler plug.
3. Fill with oil until just below the rim of the oil filler plug hole. Reinstall the oil filler plug and hydraulic unit.

Changing Oil of Hydraulic Unit

For best performance and longest life, replace the complete fluid supply annually.

1. Carefully remove hydraulic unit from crane.
2. With ram fully lowered and pump piston fully depressed, set hydraulic unit in its upright, level position. Remove oil filler plug.
3. Lay the hydraulic unit on its side and drain the fluid into a suitable container.

Note: Dispose of hydraulic fluid in accordance with local regulations.

4. Set hydraulic unit in its level upright position.
5. Fill with oil until just below the rim of the oil filler plug hole. Reinstall the oil filler plug and hydraulic unit.

Lubrication

A periodic coating of light lubricating oil to pivot points, axles and hinges will help to prevent rust and assure that wheels, casters, and pump assembly move freely.

Cleaning

Periodically check the pump piston and ram for signs of rust or corrosion. Clean as needed and wipe with an oily cloth.

Note: Never use sandpaper or abrasive material on these surfaces!

Storage

Store the engine crane with the pump piston, ram, and boom fully lowered and the release valve open, but never more than 2 full turns. This will help prevent rust and corrosion to those critical surfaces of hydraulic unit.

TROUBLESHOOTING

Symptom	Possible Causes	Corrective Action
Hydraulic unit will not lift load	• Release valve not tightly closed	• Ensure release valve tightly closed • Remedy overload condition
Hydraulic unit *bleeds off after lifting	• Release valve not tightly closed • Hydraulic unit malfunction	• Ensure release valve tightly closed • Contact Blackhawk Tech Services
Hydraulic unit will not lower after unloading	• Reservoir overfilled • Linkages binding	• Drain fluid to proper level • Clean and lubricate moving parts
Poor performance	• Fluid level low • Air trapped in system	• Ensure proper fluid level • With ram fully retracted, remove oil filler plug to let pressurized air escape, then reinstall oil filler plug
Will not lift to full extension	• Fluid level low	• Ensure proper fluid level

(*) "bleeds off" refers to an unexpected loss of load height due to a loss of hydraulic pressure

REPLACEMENT PARTS List for Model BH8026:

Ref.	Parts No.	Description	Qty.
01	T476-01000-000	Boom Extension	1
02	T476-08000-000	Rotating Knock-down Hook	1
03	BL80-70000-000	Hydraulic Pump	1
04	BL80-16001-000	Release Valve	1
05	T473-00005-000	Hydraulic Unit Bracket	1
06	BL80-20000-000	Hydraulic Pump Handle	1
07	T476-00001-000	Brace	2
08	T474-04000-000	Caster	2
09	T474-00002-000	Middle Wheel, 3 1/2"	2
10	T476-00003-000	Front Wheel, 5"	2
11	T940-03003-000	Handle Grip	2
12	T476-90156-K01	Leg Lock Pins	2
-	T476-09000-000	Hardware Kit (assembly nuts, bolts, washers)	-
-	BL800S-034	Repair Kit for Hydraulic Unit (not shown)	-

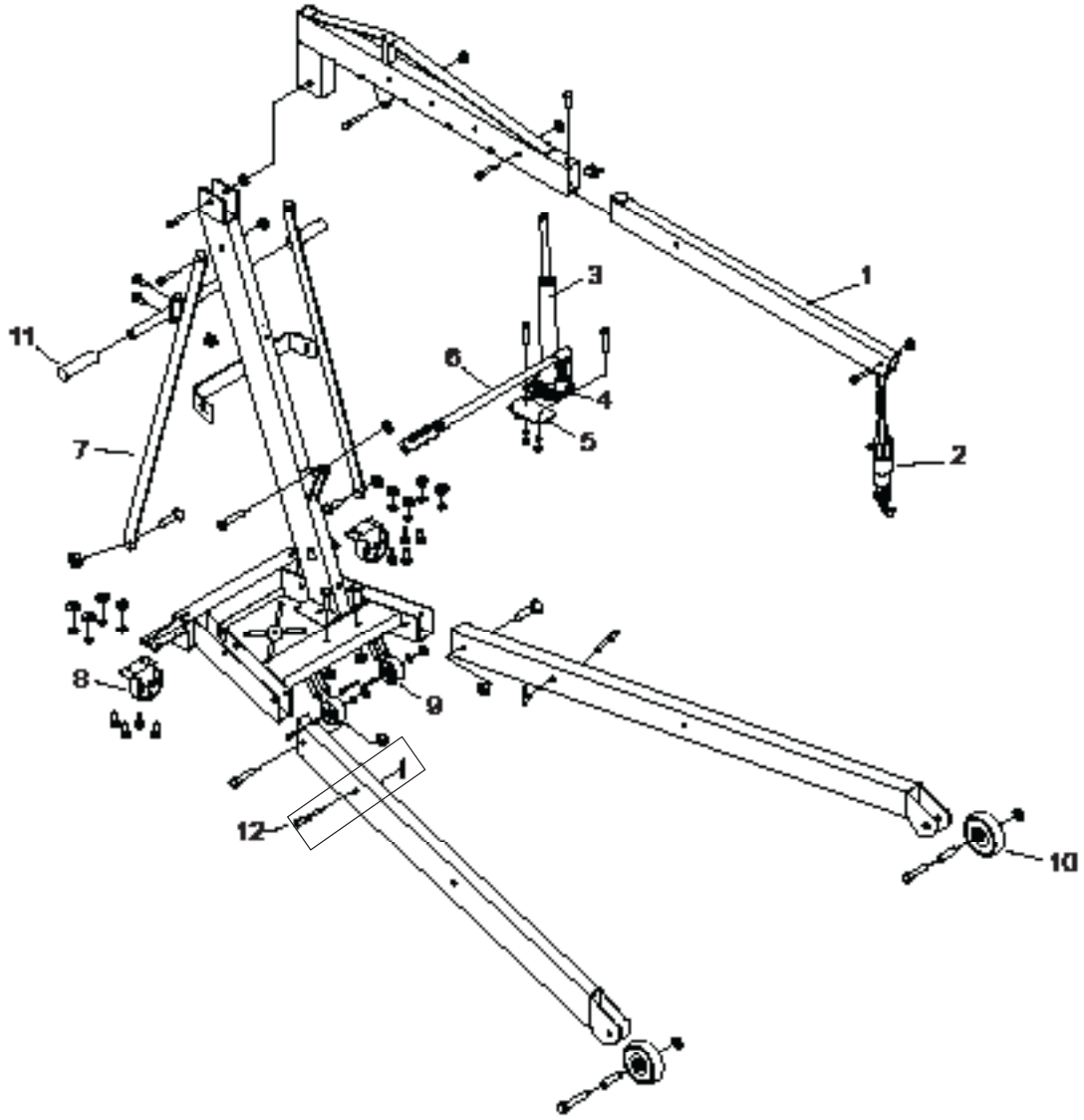


Figure 5 - Replacement Parts Illustration for Model BH8026

REPLACEMENT PARTS (refer to page 7)

Not all components of the jack are replacement items, but are illustrated as a convenient reference of location and position in the assembly sequence. When ordering parts, please give the Model number, part number and parts description. Call or write for current pricing: SFA Companies 10939 N. Pomona Ave. Kansas City, MO 64153, U.S.A. Tel: (888) 332-6419 Fax: (816) 891-6599 E-Mail: sales@blackhawk-automotive.com

ONE YEAR LIMITED WARRANTY

For a period of one (1) year from date of purchase, **SFA Companies** will repair or replace, at its option, without charge, any of its products which fails due to a defect in material or workmanship under normal usage. This limited warranty is a consumer's exclusive remedy.

Performance of any obligation under this warranty may be obtained by returning the warranted product, freight prepaid, to **SFA Companies** Warranty Service Department, 10939 N. Pomona Ave., Kansas City, MO 64153.

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