



# MODEL YA704B/YA705B 1 TON/2 TON CAPACITY HYDRAULIC ENGINE CRANE

## OWNER/OPERATOR MANUAL

### SAVE THESE INSTRUCTIONS

For your safety, *read, understand, and follow* the information provided with and on these engine cranes. The owner and operator of this equipment shall have an understanding of these engine cranes and safe operating procedures before attempting to use. The owner and operator shall be aware that use and repair of these products may require special skills and knowledge. Instructions and safety information shall be conveyed in the operator's native language before use of these cranes are authorized. If any doubt exists as to the safe and proper use of these engine cranes, remove from service immediately. **Inspect before each use.** Do not use if there are broken, bent, cracked, or damaged parts (including labels). Any crane that appears damaged in any way, operates abnormally or is missing parts, shall be removed from service immediately. If the engine crane has been or suspected to have been subjected to a shock load (a load dropped suddenly, unexpectedly upon it), immediately discontinue to use until the engine crane has been inspected by a Snap-on authorized service center. It is recommended that an annual inspection be done by qualified personnel. Labels and Operator's Manual are available from manufacturer.

### PRODUCT DESCRIPTION

Snap-on Engine Cranes are designed to safely lift and lower rated capacity engines. Model YA704B and YA705B are space saver designs. The YA704B is foldable, while the YA705B comes with leg sections that can extend and retract.

### BEFORE USE

1. Inspect before each use. Do not use if bent, broken, leaking or damaged components are noted.
2. Ensure that product and application are compatible.
3. Read the operator's manual completely and familiarize yourself thoroughly with the product, its components and recognize the potential hazards associated with its use **before** using this product.

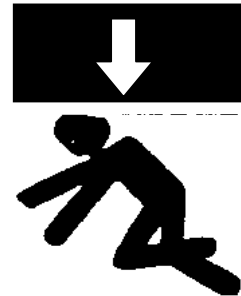
### ⚠️ WARNING

- Study, understand, and follow all instructions provided with and on this device before operating this device.
- Do not exceed rated capacity for each boom position.
- Use the device only on a hard, level surface.
- This engine crane is intended to be used to lift and lower rated capacity automotive and light truck engines.
- Only use chains and slings with a capacity equal to or greater than that of the crane.
- If loaded crane must be moved, make certain that load is stable, is in lowest possible position and is moved over a smooth, hard level surface.
- Do not modify this device.
- Do not allow load to swing or drop violently while lowering or moving.
- Avoid shock loads caused by the rapid opening and closing of release valve.
- Shock loads may cause the load to swing, causing the crane to flip violently, bend or break.
- Ensure the boom is fully lowered before checking or adding fluid to the hydraulic unit.
- Never extend boom extension beyond leg extension.
- Do not stand over loaded boom nor in its intended line of travel.
- Do not use adapters or accessories that are not provided initially.
- Do not use the device for any purpose other than that for which it is intended.
- Failure to heed these markings may result in personal injury and/or property damage.

### ⚠️ ADVERTENCIA

- Leer, comprender, y seguir las instrucciones antes de utilizar el aparato.
- El manual de instrucciones y la información de seguridad deben estar comunicado en lengua del operador antes del uso.
- No seguir estas indicaciones 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 crane. Immediately transfer the load to an adequately rated engine stand.

### ⚠️ WARNING

Be sure all tools and personnel are clear before lowering load. Dynamic shock loads are created by quickly opening and closing the release valve as the load is being lowered. The resulting overload may cause hydraulic system failure.

## ASSEMBLY

For Model YA704B (see Figure 3 on page 5):

**Note:** From step 1 to step 4. Hand tighten bolts and locknuts only.

1. Attach six casters (# 1) to base frame (# 31) and the two legs (# 32) using bolts and locknuts (# 2 & 3).
2. Attach two legs (# 32) to base frame (# 31) using bolt and locknut (# 5) then install locking pin and retaining clip (# 4).
3. Attach the upright (# 9) to the base frame (# 31) with bolts and locknuts (# 8).
4. Attach the two braces (# 7) to base frame (# 31) and upright (# 9) with bolts and nuts (# 6, # 10 & 11).

**Note:** The upright must lean toward the rear of the base frame as shown.

5. Tighten bolts between upright (# 9), base frame (# 31), and braces (# 7).
6. Attach the mounting plate (# 13) between mounting ears on upright (# 9) using bolt and nut (# 12 and # 14)
7. Attach hydraulic unit (# 17) to the mounting base (# 13) using bolts and nuts (# 15 and # 16).
8. Attach boom (# 19) to upright (# 9) using bolt and locknut (# 18 and # 20).
9. Hold boom (# 19) and pivot hydraulic unit (# 17) out away from upright (# 9) and position ram between mounting brackets on boom(# 19). Attach hydraulic unit (# 17) to boom (# 19) with bolt, spacer and locknut (# 21, 22 & 23). Tighten nut.
10. Slide boom extension (# 27) into boom and secure in retracted position using bolt, washer and locknut (# 24, 25 & 26). 3 positions available: 1/2 ton, 3/4 ton, and 1 ton.
11. Install chain/hook (# 30) to boom extension (# 27) using bolt and locknut (# 28 and # 29).
12. Make sure that all the bolts and nuts are tightened before operating the engine crane.

**Note:** Check all fasteners for tightness, including those pre-assembled at the factory. Tighten where required.

For Model YA705B (see Figure 4 on page 5):

**Note:** Do not tighten any bolts unless told to.

1. Attach the casters (# 1) to the extension legs (# 4) with bolts and locknuts (# 2 and # 3).
2. Slide the extension legs (# 4) into the base frame (# 5), and secure with bolts (# 6).
3. Attach the two braces (# 7) to base frame (# 5) using 2 bolts and nuts (# 8).
4. Attach the upright (# 9) to the base frame (# 5) using bolts and locknuts (# 10).

**Note:** The upright must lean toward the rear of the base frame as shown in Figure 4. Leave the bolts finger tight.

5. Attach the two braces (# 7) to the upright (# 9) with bolts and nuts (# 11).
6. Tighten bolts between upright (# 9) to base frame (# 5), and braces (# 7).
7. Attach the mounting plate (# 12) between mounting ears on upright (# 9) using bolt and nut (# 16 and # 17).
8. Attach hydraulic power unit (# 13) to the mounting base (# 12) using bolts and nuts (# 14 and # 15).
9. Attach boom (# 18) to upright (# 9) using bolt and locknut (# 19 and # 20).
10. Hold boom (# 18) and pivot hydraulic unit (# 13) out away from upright (# 9) and position ram between mounting brackets on boom(# 18). Attach hydraulic unit (# 13) to boom (# 18) with bolt, spacer and locknut (# 21& #22). Tighten nut.
11. Slide boom extension (# 23) into boom (# 18) and secure in retracted position using bolt, washer and locknut (# 24, 25 & 26). 4 positions available: 4000 lbs (P1), 3000 lbs (P2), 2000 lbs (P3), and 1000 lbs (P4).
12. Install chain/hook (# 27) to boom extension (# 23) using bolt and locknut (# 28 and #29).
13. **MAKE SURE** that all the bolts and locknuts are tighten before each operation of the engine crane.

**Note:** Check all fasteners for tightness, including those pre-assembled at the factory. Tighten where required. Do not load beyond rated capacity.

## WARNING

- Never extend leg extensions beyond factory marked position on each leg.
- Extend each leg extension an equal distance from frame.
- Never fold crane with safety hook attached to a load.
- Store folded crane with boom extension fully retracted.
- Move crane slowly and ONLY over smooth, level surfaces.
- Failure to heed these markings may result in personal injury and/or property damage.

## OPERATION

1. Ensure application is compatible with product.
2. Secure engine to chain/sling hook assembly, ensuring load is centered.
3. Follow vehicle service manual recommendations to remove engine. When ready to remove engine, turn release valve clockwise until firm. Pump handle until load is high enough to clear vehicle.
4. Immediately upon removal and when clear of the vehicle, lower the load to the lowest practical position by turning the release valve lever counter-clockwise slowly and carefully.

**Note:** Avoid rolling the loaded engine crane. To help position an engine stand if necessary, move only across smooth, level, seamless surfaces.

**Before** moving ensure the load:

- a. is lowered to the lowest practical position, but always below the center of gravity.
  - b. is prevented from swinging and inadvertent shifting.
5. Position a suitable engine stand near the removed engine, then immediately transfer the load to appropriate engine support device (engine stand). Check to ensure stand is secure before working on or around the load.

## WARNING

To reduce the risk of personal injury and property damage, NEVER extend boom extension beyond leg extension. Never work under loaded crane or engine stand.

## MAINTENANCE

**Important:** Use only a good grade hydraulic jack oil. We recommend Mobil DTE 13 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

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

### Changing oil

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

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

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

3. Set jack in its level upright position.
4. Fill with oil until just below the rim of the oil filler plug hole. Reinstall the oil filler plug.

### Lubrication

A periodic coating of light lubricating oil to pivot points, axles and hinges will help to prevent rust and assure that casters and pump assemblies 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

Fully retract the boom to its lowest position.

### Folding Instruction (for Model YA704B only, see Figure 2 on page 4):

Remove lock pins from the front legs. Fold the legs up until they pass the support bracket hole. Secure legs' position by inserting the pin and secure with retaining clip.

## TROUBLESHOOTING

Symptom	Possible Causes	Corrective Action
Hydraulic unit will not lift load	<ul style="list-style-type: none"> <li>• Release valve not tightly closed</li> <li>• Overload condition</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure release valve tightly closed</li> <li>• Remedy overload condition</li> </ul>
Hydraulic unit bleeds off after lift	<ul style="list-style-type: none"> <li>• Release valve not tightly closed</li> <li>• Hydraulic unit malfunction</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure release valve tightly closed</li> <li>• Contact Snap-on Tech. Service</li> </ul>
Hydraulic unit will not lower after unloading	<ul style="list-style-type: none"> <li>• Reservoir overfilled</li> <li>• Linkages binding</li> </ul>	<ul style="list-style-type: none"> <li>• Drain fluid to proper level</li> <li>• Clean and lubricate moving parts</li> </ul>
Poor lift performance	<ul style="list-style-type: none"> <li>• Fluid level low</li> <li>• Air trapped in system</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure proper fluid level</li> <li>• With ram fully retracted, remove oil filler plug to let pressurized air escape, reinstall oil filler plug</li> </ul>
Will not lift to full extension	<ul style="list-style-type: none"> <li>• Fluid level low</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure proper fluid level</li> </ul>

**- KNOW YOUR PRODUCT -**

Model	Boom Position	Capacity	Hook Height (MAX.)	Boom Length	Overall Height	Base Width Front	Base Length	Inside Legs
YA704B	1	2000 lbs.	82"	47"	65"	32"	Legs Up 25" Legs Down 64"	35"
	2	1500 lbs.	85"	53"				
	3	1000 lbs.	88"	59"				
YA705B	1	4000 lbs.	77"	51"	57"	39"	64"	30" Retracted 36" Extended
	2	3000 lbs.	84"	60"				
	3	2000 lbs.	90"	69"				
	4	1000 lbs.	97"	78"				

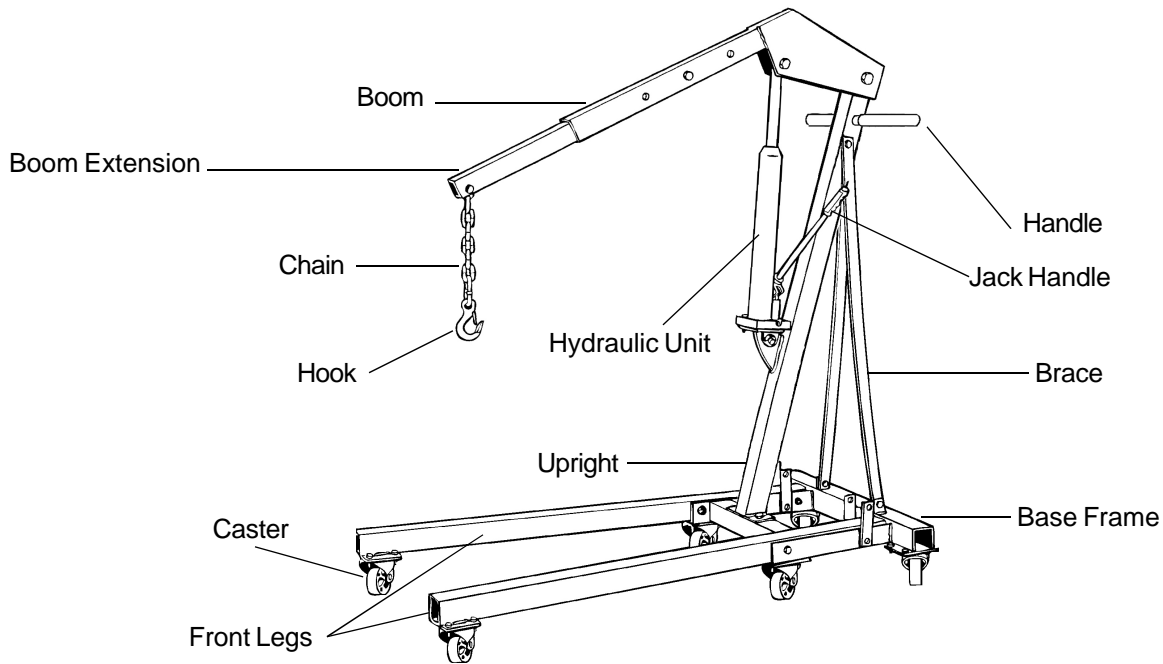


Figure 1 - Model YA704B Components (YA705B not Shown)

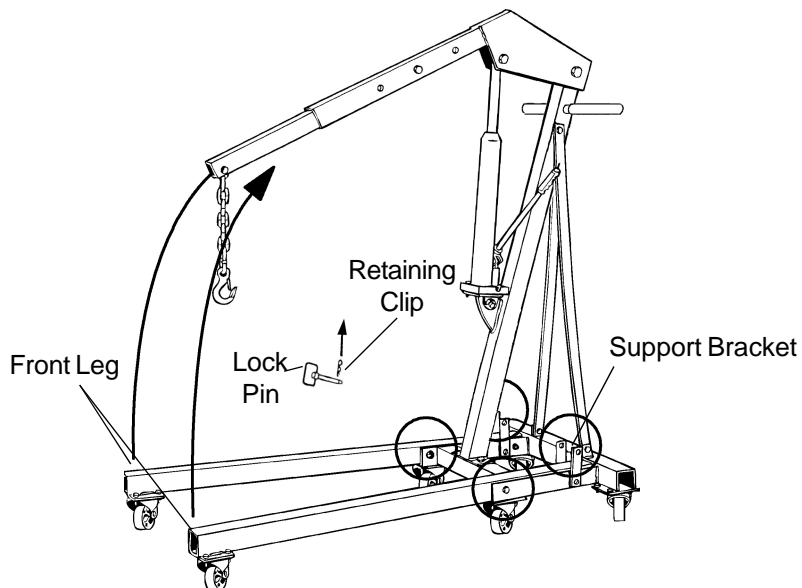


Figure 2 - Folding Illustration for Model YA704B

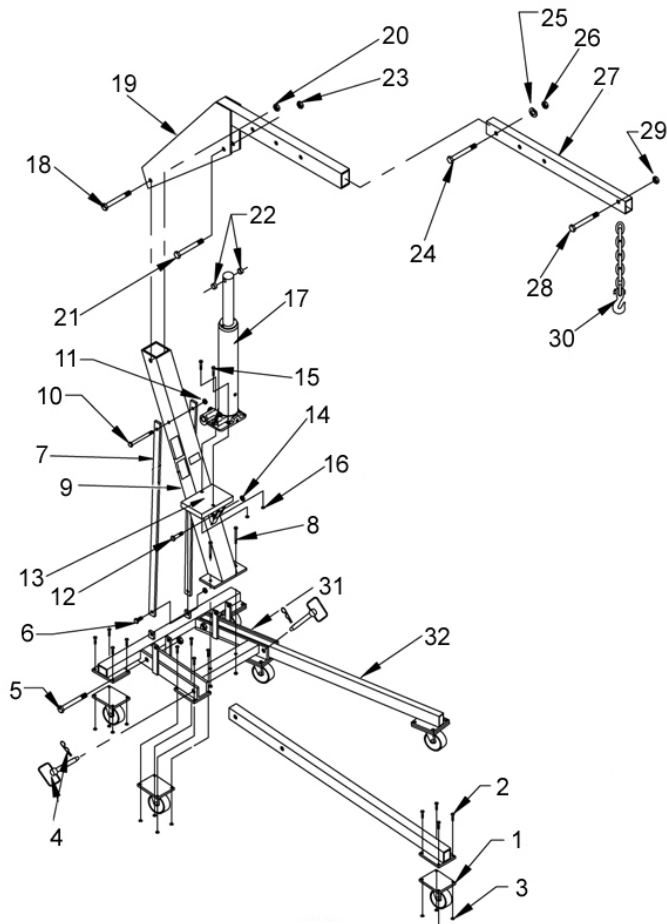


Figure 3 - Assembly Illustration for Model YA704B

Item No.	Size of Bolts and Locknuts	
2 and 3	5/16" x 3/4"	5/16"
5	1/2" x 4"	1/2"
6	1/2" x 1"	1/2"
8	1/2" x 4"	1/2"
10 and 11	1/2" x 4"	1/2"
12 and 14	5/8" x 2"	5/8"
15 and 16	3/8" x 1-3/4"	3/8"
18 and 20	3/4" x 4-1/2"	3/4"
21 and 23	5/8" x 4"	5/8"
24, 25 and 26	1/2" x 4"	1/2"
28 and 29	1/2" x 3"	1/2"

Item No.	Size of Bolts and Locknuts	
2 and 3	5/16" x 3/4"	5/16"
6	1/2" x 1"	1/2"
8	1/2" x 1"	1/2"
10	1/2" x 4"	1/2"
11	1/2" x 4"	1/2"
14 and 15	3/8" x 1-3/4"	3/8"
16 and 17	3/4" x 4-1/2"	3/4"
19 and 20	5/8" x 4-1/2"	5/8"
21 and 22	5/8" x 2-1/2"	5/8"
24, 25 and 26	1/2" x 3-1/2"	1/2"
28 and 29	1/2" x 3"	1/2"

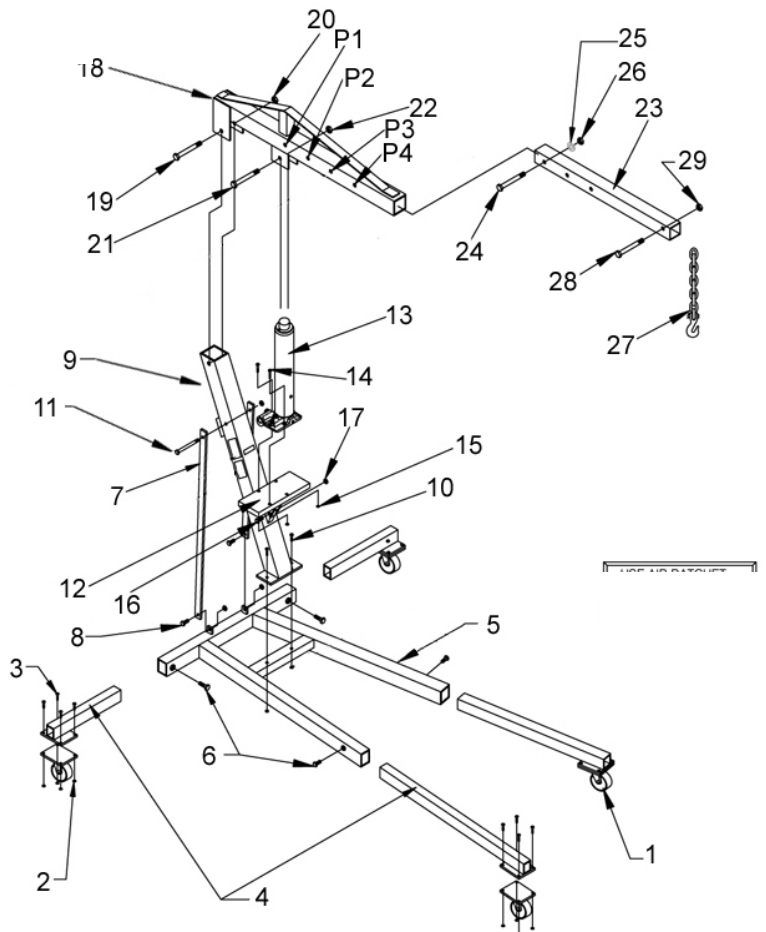


Figure 4 - Assembly Illustration for Model YA705B

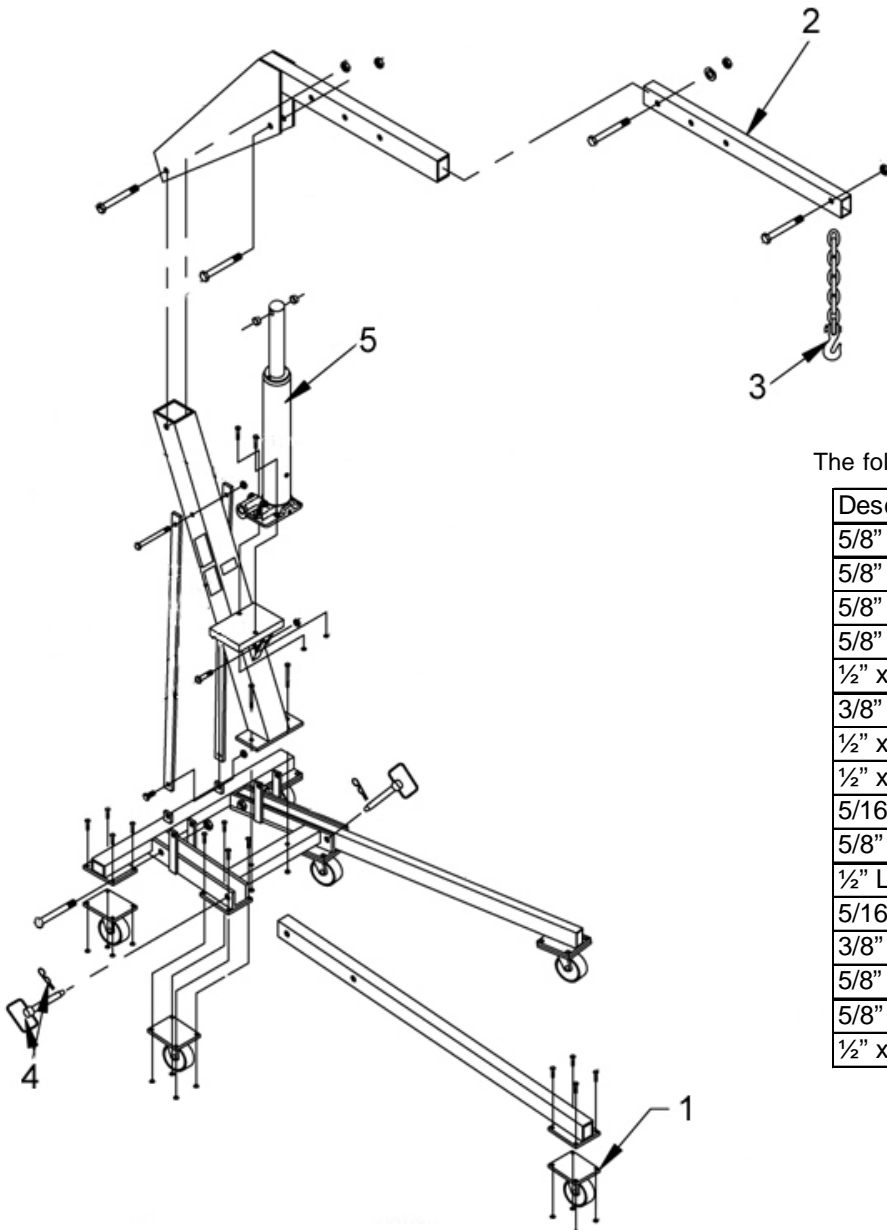
## REPLACEMENT PARTS

When ordering replacement parts, please refer to the model number / serial number found on the product, then give the part number and description.

Available Parts: Please refer to the Parts drawing when ordering parts. Not all components of the engine crane are replacement items, but are illustrated as a convenient reference of location and position in the assembly sequence. When ordering parts, give Model number, serial number and description below. Write for current pricing: Snap-on Tools Company, Kenosha, WI 53141-1410

Replacement Parts for Model YA704B

Item No.	Part No.	Description
1	248817	Caster
2	248818	Boom Extension
3	248761	Chain/Hook Assembly
4	420615	Locking Pin Kit
5	260437	Hydraulic Unit
-	247024	Hardware Kit



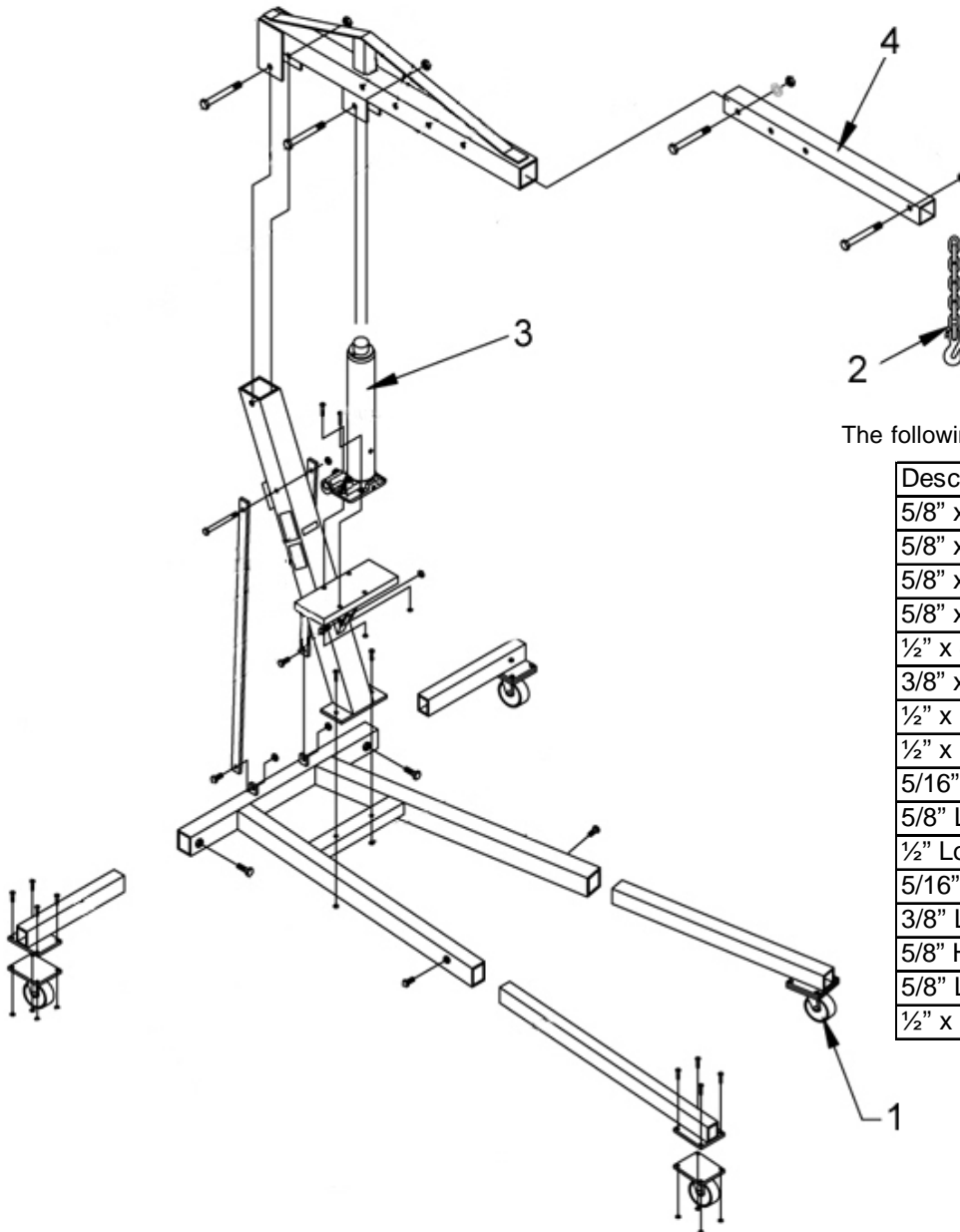
The following parts are included in the hardware kit

Description	Qty.
5/8" x 4" Hex Head Bolt	1
5/8" x 4 1/2" Hex Head Bolt	1
5/8" x 2" Hex Head Bolt	1
5/8" x 2 1/2" Hex Head Bolt	1
1/2" x 4" Hex Head Bolts	3
3/8" x 1" Hex Head Bolts	2
1/2" x 3" Hex Head Bolt	1
1/2" x 1" Hex Head Bolts	6
5/16" x 3/4" Hex Head Bolts	24
5/8" Lock Nuts	3
1/2" Lock Nuts	6
5/16" Lock Nuts	24
3/8" Lock Nuts	2
5/8" Hex Head Nut	1
5/8" Lock Washer	1
1/2" x 4 1/2" Locking Pins with Clips	2

Figure 5 - Replacement Parts for Model YA704B

Replacement Parts for Model YA705B

Item No.	Part No.	Description
1	248817	Caster
2	248761	Chain/Hook Assembly
3	260437	Hydraulic Unit
4	248825	Boom Extension
-	247024	Hardware Kit



The following parts are included in the hardware kit

Description	Qty.
5/8" x 4" Hex Head Bolt	1
5/8" x 4 1/2" Hex Head Bolt	1
5/8" x 2" Hex Head Bolt	1
5/8" x 2 1/2" Hex Head Bolt	1
1/2" x 4" Hex Head Bolts	3
3/8" x 1" Hex Head Bolts	2
1/2" x 3" Hex Head Bolt	1
1/2" x 1" Hex Head Bolts	6
5/16" x 3/4" Hex Head Bolts	24
5/8" Lock Nuts	3
1/2" Lock Nuts	6
5/16" Lock Nuts	24
3/8" Lock Nuts	2
5/8" Hex Head Nut	1
5/8" Lock Washer	1
1/2" x 4 1/2" Locking Pins with Clips	2

Figure 6 - Replacement Parts for Model YA705B

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## LIMITED WARRANTY STATEMENT

Snap-on Tools warrants this product to be free from defects in material and workmanship for a period of 1 year from date of purchase. This warranty applies to the original purchaser (end user) only and is not transferable. Damaged components and assemblies i.e. bent ram and pump pistons, dented reservoirs, cracked or altered components, are the result of mis-use, mis-application or a combination of both. These conditions will not be considered for warranty credit. We have complete confidence that the Snap-on product you purchase will meet or exceed your performance requirement. However in the unlikely event that a Snap-on product fails due to material or workmanship defect within the warranty period you may contact your retailer for disposition or you may contact an Authorized Service Center listed in the product owner's manual. Except where such limitations and exclusions are specifically prohibited by law, the consumer's sole and exclusive remedy shall be the repair or replacement of the defective product. Snap-on shall not be liable for any consequential or incidental damage or loss whatsoever, and the duration of any and all expressed and implied warranties, including without limitation, any warranties of merchantability and fitness for a particular purpose, is limited to a period of 1 year from date of purchase. Some States do not allow the exclusion or limitation of incidental or consequential damages, so the above may not apply to you. This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

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Manufactured for Snap-on Tools Company  
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