MODEL YA1544A / YA1545
4 TON / 10 TON CAPACITY
HYDRAULIC
BODY REPAIR KIT

OWNER/OPERATOR MANUAL

SAFETY INSTRUCTIONS

For your *safety, read, understand, and follow* the information contained within. The owner and operator shall have an understanding of these products and safe operating procedures before attempting to use. Instructions and Safety information shall be conveyed in the operators native language before use of these products is authorized. Make certain that the operator thoroughly understands the inherent dangers associated with the use and misuse of the product. If any doubt exists as to the safe and proper use of this product as outlined in this factory authorized manual, remove from service immediately.

Inspect before each use. Do not use if there are broken, bent, cracked or otherwise damaged parts (including labels). If any component of these products has been or suspected to have been subjected to a shock load (a load dropped suddenly, unexpectedly upon it), discontinue use until checked out by a Snap-on authorized service center. Owners and operators of this equipment shall be aware that the use and subsequent repair of this equipment may require special training and knowledge. It is recommended that an annual inspection be done by qualified personnel and that any missing or damaged parts, decals, warning / safety labels or signs be replaced with Snap-on authorized replacement parts only. Any component of these Body Repair Kits that appears to be damaged in any way, is worn or operates abnormally shall be removed from service immediately until such time as it can be repaired/ replaced. Labels and Operator's Manuals are available from manufacturer.

PRODUCT DESCRIPTION

Blue-Point Hydraulic Body Repair Kits are designed to be used for pushing, spreading, and pressing of vehicle body panels as well as various component parts and assemblies. YA1544A is rated 8,000 psi with a 4 Ton ram and YA1545 is rated 10,000 psi with a 10 Ton ram.

WARNING: when extension tubes and/ or offset attachments are used, the rated capacity is always reduced by 50 % for each tube or offset attachment connected. See Parts Section for identification of "offset" attachments.

BEFORE USE

1. Read the manual completely and familiarize yourself thoroughly with the product, its components and recognize the hazards associated with its use before using this product.
2. Inspect before each use. Do not use if there are bent, broken, leaking or damaged components (including labels).
3. Ensure the product and application are compatible and all parts of your kit are included (see illustration and parts list).
4. *Carefully* remove the dust caps and plugs from hose coupler and ram coupler.
5. Connect hose coupler to ram coupler.
6. Ensure there are no fluid leaks.
7. Locate and open release valve, pump handle a few strokes to purge air from system. Close release valve and pump handle until ram is fully extended, then open release valve until ram has fully retracted.
8. Place pump in horizontal position with ram fully retracted and release valve open.
9. Locate and open oil filler screw (on reservoir body, near the back). This will release air trapped within the reservoir. Retighten the oil filler screw.

(continued)

General Safety Information:

1. Ensure the attachments are fully engaged before applying load.
2. Ensure the load is centrally applied to attachment or ram saddle. Do not load off center.
3. Always monitor the force applied to workpiece by using a load cell and indicator or you may monitor pressure developed in the ram by using an inline pressure gauge, then calculate the applied force using the formula: $F = P \times A$,
   where F = lbs force, P = pressure in PSI, and A = effective ram area in in².
   Ram Area of YA1544A is: 1.00 in²
   Ram Area of YA1545 is: 2.41in²
   (refer to page 7 for load-pressure correlation)
4. If bowing or bending of ram or any attachment occurs during use, **"STOP"**, release pressure immediately and reconsider application. Application may not be compatible with product, a ram kit with a higher capacity may be needed.

⚠WARNING

- **All WARNING** statements must be carefully observed to help prevent personal injury. Do not exceed rated capacity. Monitor pressure and load at all times. Always verify load with calibrated load cell and indicator, known good pressure gauge or equivalent devices. Wear appropriate shoes. Do not wear sandals when operating this equipment. Do not wear jewelry when operating this equipment.

Wear protective clothing and safety goggles to reduce the risk of injury.

Hydraulic Hoses and Fluid Transmission Lines

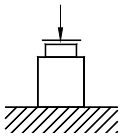
- Avoid short runs of straight line tubing. Straight line runs do not provide for expansion and contraction due to pressure and/ or temperature changes.
- Reduce stress in tube lines. Long tubing runs should be supported by brackets or clips. Before operating the pump, all hose connections must be tightened with the proper tools. Do not overtighten. Connections should only be tightened securely and leak-free. Overtightening can cause premature thread failure or high pressure fittings to burst.
- Should a hydraulic hose ever rupture, burst or need to be disconnected, immediately shut off the pump and release all pressure. Never attempt to grasp a leaking pressurized hose with your hands. The force of escaping hydraulic fluid can inflict injury.
- Do not subject the hose to potential hazard such as fire, sharp objects, extreme heat or cold, or heavy impact.
- Do not allow the hose to kink, twist, curl, crush, cut or bend so tightly that the fluid flow within the hose is blocked or reduced. Periodically inspect the hose for wear, because any of these conditions can damage the hose and possibly result in personal injury.
- Do not pull, position or move setup by the hose. Doing so can damage the hose and possibly cause personal injury.

⚠WARNING

such as battery acid, creosote-impregnated objects and wet paint. Hose deterioration due to corrosive material can result in personal injury. Never paint a coupler or hose.

- For good performance, do not expose equipment to high temperature. Extreme heat may damage hose materials, packing and sealing.
- The user must be a qualified operator familiar with the correct operation, maintenance, and use of rams. Lack of knowledge in any of these areas can lead to personal injury.
- Read and understand all safety and warning decals and instructions.
- Use only approved accessories and approved hydraulic fluid. Hoses, seals and all components used in a system must be compatible with the hydraulic fluid used.
- Do not exceed the rated capacities of the rams. Excess pressure can result in personal injury.
- Inspect each ram and coupler before each use to prevent unsafe conditions from developing.
- Do not use rams if they are damaged, altered or in poor condition.
- Do not use rams with bent or damaged coupler or damaged threads.
- Under certain conditions, the use of an extension with a ram may not be advisable and could present a dangerous condition.
- Avoid pinch points or crush points that can be created by the load or parts of ram.
- To help prevent material fatigue if the ram is to be used in a continuous application, the load should not exceed 85% of the rated capacity.
- Ram must be on a stable base which is able to support the load while pushing or lifting.
- Ensure ram is fully engaged into/onto adapters, extension accessories.
- To help prevent personal injury, use shims, friction material or constraints to prevent slippage of the base or load.
- Do not off-center loads on a ram. The load can tip or the ram can "kick out" and cause personal injury.

⚠WARNING



Center loads on ram

- Do not use the locking collar on threaded piston as a stop. The threads may shear resulting in loss of the load.
- If this component is used to lift or lower loads, be certain that the load is under operator control at all times and that others are clear of the load. Do not drop the load.
- As the load is lifted, use blocking and cribbing to guard against a falling load.
- Never allow personnel to work on, under or around a load before it is properly supported by appropriate mechanical means. Never rely on hydraulic pressure alone to support load.
- All personnel must be clear before lowering.
- Never try to disassemble a hydraulic cylinder, Refer repairs to qualified, authorized personnel.

IMPORTANT

- Keep ram clean at all times.
- When the ram is not in use, keep the ram(s) fully retracted.
- Use an approved, high-grade pipe thread sealant to seal all hydraulic connections. Teflon tape can be used if only one layer of tape is used and it is applied carefully (two threads back) to prevent the tape from being introduced into hydraulic system. A piece of tape could travel through the system and obstruct the flow of fluid and adversely affect function.
- Never attach ANY component not authorized by manufacturer.
- Never use other than factory provided and/or authorized fasteners.

KNOW YOUR SYSTEM

Your ram, hose(s), couplings and pump all must be rated for the same maximum operating pressure, correctly connected and compatible with the hydraulic fluid used. An improperly matched system can cause the system to fail and possibly cause serious injury. If you are in doubt, consult your nearest Snap-on Dealer.

OPERATION

Caution: Never operate pump connecting with hydraulic hoses but without application. If operated in this condition, the hydraulic hose and connections become pressurized. This increases burst hazard. Damage may occur to pump and its components.

1. Locate and close release valve by turning it clockwise until firmly closed. (Do not over tighten)
2. Operate by pumping handle. This will send fluid from the pump reservoir into the high pressure hose assembly and into the ram assembly.
3. Continue pumping until ram reaches desired position.

Note: To protect the ram, stop pumping when ram is fully extended. Continued pumping will pressurize the system.

4. Pump may be used in horizontal and vertical position as illustrated below.

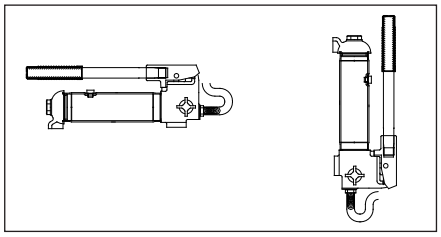


Figure 1 - Horizontal and Vertical Position

To Release Pressure on work piece:
Slowly, carefully, turn the release valve counter-clockwise until ram retracts to desired position. Never turn release valve more than 1/2 full turn.

How to bleed air from ram:
Place ram upside down, fully extend and retract the ram 2 or 3 times.

To avoid crushing and related injuries: NEVER work on, under or around a load supported only by a ram. ALWAYS use adequately support device.

Be sure all tools and personnel are clear before lowering load.

MAINTENANCE

Important: Use only a good grade hydraulic oil. Avoid mixing different types of fluid and Never use brake fluid, turbine oil, transmission fluid, motor oil or glycerin. Improper fluid can cause premature failure of the ram and the potential for sudden and immediate loss of load. We recommend Mobil DTE 13M or equivalent.

Adding oil
1. Lower ram fully
2. Set pump unit in its normal, level position.
3. Locate and remove oil filler screw .
4. Fill until oil is within 3/8" of the filler hole opening
5. Reinstall oil filler screw.

Changing oil
For best performance and increased

(continued)
system life, replace the complete fluid supply at least once per year.

1. Lower ram fully
2. Remove the oil filler screw from the pump reservoir as above.
3. Lay the pump on its side and drain the fluid into a suitable container.

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

4. Set pump in its level upright position.
5. Fill with good quality hydraulic oil to within 3/8" of the oil filler screw hole opening.
6. Reinstall oil filler screw.

Lubrication
A coating of light lubricating oil to pivot points, axles and hinges will help to prevent rust and assure that pump assemblies move freely.

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

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

Storage
When not in use, store with the pump piston and ram fully retracted.

How to remove a faulty coupler
If ram does not retract, secure load by other means. Open pump release valve to depressurize pump and hose. To avoid the spilling from hydraulic oil, wraps the grasping tool with rags or similar padding. Remove the ram from application. Disconnect and replace coupler.

- KNOW YOUR PRODUCT -

Model	Pump Capacity	Ram Capacity	Ram		Number of Attachments
			Closed Height	Extended Height	
YA1544A	8,000 psi	4 Ton	10-3/4”	15-5/8”	14
YA1545	10,000 psi	10 Ton	13-3/4”	19-3/4”	13

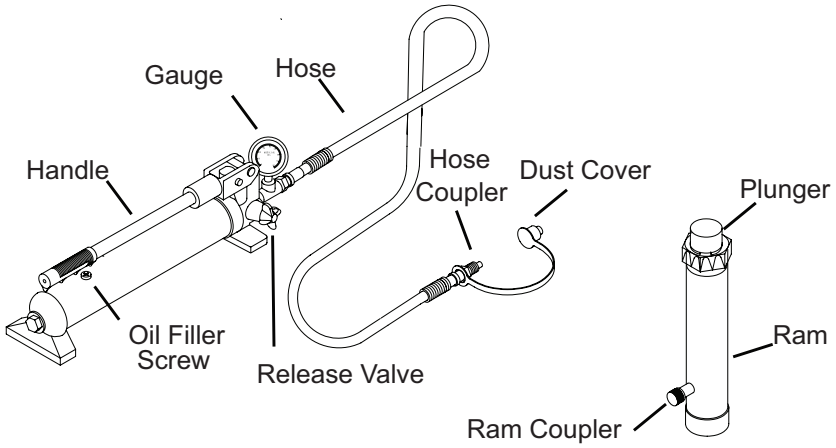


Figure 2 - Pump and Ram Components

TROUBLESHOOTING

Symptom	Possible Causes	Corrective Action
Ram will not extend	• Release valve not tightly closed • Overload condition	• Ensure release valve tightly closed • Remedy overload condition
Ram *bleeds off after extending	• Release valve not tightly closed • Hydraulic unit malfunction	• Ensure release valve tightly closed • Contact Service Center
Ram will not lower after un-loading	• Hand pump reservoir overfilled • Ram damaged	• Drain fluid to proper level • Replace ram
Poor performance	• Hand pump fluid level low • Air trapped in hand pump system	• Ensure proper fluid level • With ram fully retracted, remove oil filler screw to let pressurized air escape, then reinstall oil filler screw
Will not lift to full extension	• Hand pump fluid level low	• Ensure proper fluid level

* "Bleeds off" means that ram begins to slowly retract rather than maintain position.

REPLACEMENT PARTS

Please refer to Parts drawing when ordering parts. Not all components of the body repair kit are replacement items. When ordering parts, give model number, serial number and parts description. Write for current pricing: Snap-on Tools Company, Kenosha, WI 53141-1410

Replacement Parts for Model YA1544A

Item	Part No.	Description	Qty
1	F040-90211-K01	Pump Assembly	1
2	F040-90009-K06	Ram Assembly	1
3	F040-22000-000	Hose Assembly (with coupler)	1
4	F040-00001-000	Blow Molded Case	1
5	F040-42000-000	Hydraulic Spreader (1000 lb. capacity)	1
6	F040-40002-000	Combination Head	1
7	F040-43000-000	Rubber Head	1
8	F040-40004-000	Ram Toe	1
9	F040-40005-000	Plunger Toe	1
10	F040-44000-000	Flat Base	1
11	F040-40003-000	Serrated Saddle	1
12	F040-40001-000	Wedge Head	1
13	F040-41600-000	Male connector	1
14	F040-41400-000	Extension Tube (3")	1
15	F040-41300-000	Extension Tube (6-1/8")	1
16	F040-41200-000	Extension Tube (8-1/2")	1
17	F040-41100-000	Extension Tube (16-1/2")	1
18	F040-41500-000	Extension Tube (19-1/2")	1
19	F040-22200-000	Release Valve Knob	1
20	F040-90009-K04	Ram Coupler Assy, Female	1
21	F040-20012-000	Dust Cover - Hose	1
22	F040-90009-K03	Pump Handle	1
23	F040-90107-K02	Oil Filler Screw	1
24	F100-80001-000	Gauge	1
-	F0400S-85	Repair Kit	-
-	YA1544A-L0	Label	1
-	YA1544A-M0	Manual	1

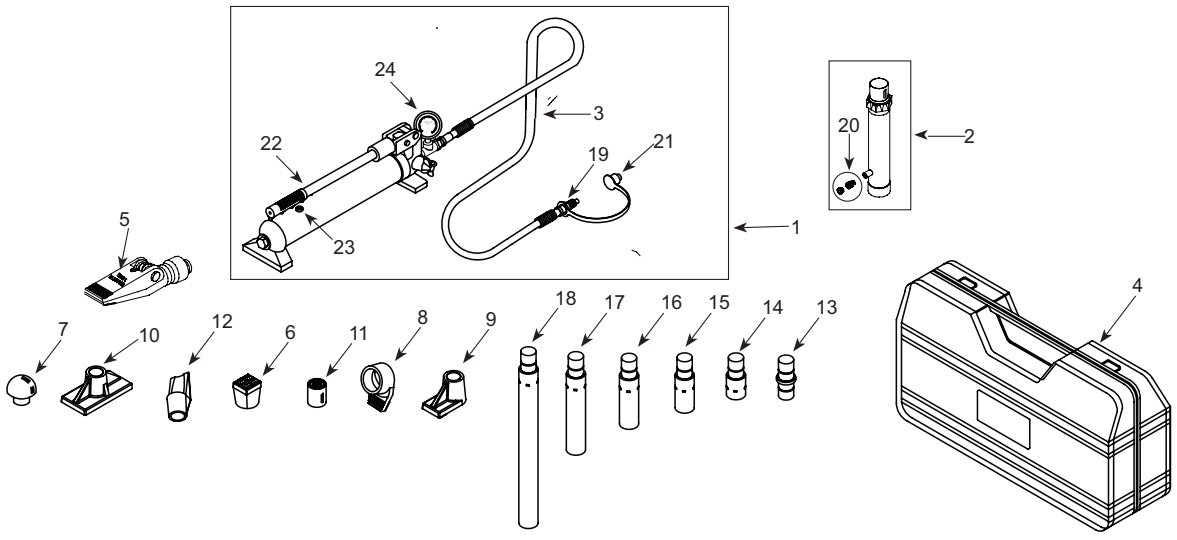


Figure 3 - Replacement Parts for Model YA1544A

Load - Pressure Correlation For Model YA1544A & YA1545

Always monitor the force applied to workpiece by using a load cell and indicator or you may monitor pressure developed in the ram by using an inline pressure gauge, then calculate the applied force using the formula:

$$F = P \times A$$

where F = Force/ Load (lbs);
P = Hydraulic working pressure (psi) and;
A = Ram effective area (in^2)

For model BK104, **A** = 0.998 in^2 ;
For model BK105, **A** = 2.411 in^2

Example1
Model YA1544A lifting 5,000 lbs will require what presure?
Pressure = 5,000 lbs ÷ 0.998 in^2 = 5,010 psi

Example2
Model YA1545 operating at 6,000 psi will generate what force?
Force = 6,000 psi x 2.411 in^2 = 14,466 lbs

Load (lbs)	Pressure of 4 Ton Ram, where A = 0.998 in² (psi)	Pressure of 10 Ton Ram, where A = 2.411 in² (psi)
1,000	1,002	415
2,000	2,004	830
3,000	3,006	1,244
4,000	4,008	1,659
5,000	5,010	2,074
6,000	6,012	2,489
7,000	7,014	2,903
8,000	8,016	3,318
9,000		3,733
10,000		4,148
11,000		4,562
12,000		4,977
13,000		5,392
14,000		5,807
15,000		6,221
16,000		6,636
17,000		7,051
18,000		7,466
19,000		7,881
20,000		8,295

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.

Manufactured for Snap-on Tools Company
2801 80th Street Kenosha, WI 53141-1410
Made in China