



OPERATOR'S AND PARTS MANUAL

GRAPPLE BUCKETS Brush and Scrap



Scrap Grapple

**FOR
RTFL, TLB & WL**



Brush Grapple

SERIAL NUMBER: _____

MODEL NUMBER: _____

Manual Number: 76808
Part Number: 76808
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FOREWORD

Although Bradco has various scrap and brush grapple buckets available, we are continually designing new sizes and mountings. If your combination is not listed, please contact the factory. We have extensive mounting information available to generate the product you need. Below is a listing of the scrap and brush grapple buckets that are currently available. See the "Parts" section of this manual for the assemblies "Shown".

MOUNT	DESCRIPTION	ASSEMBLY
CASE		
CASE 221D/321D	1.00 Yard Scrap Grapple, 88" Wide (Shown)	12512
CASE 521D PIN-ON	1.75 Cubic Yard Scrap Grapple, 96" Wide (Shown)	13028
CASE 570LXT/MXT, 580L/M, & SL/SM PIN-ON	84" Wide Heavy Duty Brush Grapple (Shown)	104040
CATERPILLAR		
CAT 902/906/908	1.00 Cubic Yard Scrap Grapp, 88" Wide (Shown)	11053
CAT IT/TH	1.75 Cubic Yard Scrap Grapple, 96" Wide (Shown)	12439
CAT IT14/IT24	2.50 Cubic Yard Scrap Grapple, 96" Wide (Shown)	12311
CAT IT/TH	2.50 Cubic Yard Scrap Grapple, 96" Wide (Shown)	15201
CAT IT/TH	84" Wide Heavy Duty Brush Grapple (Shown)	13067
FFC		
FFC QCP 7000 HITCH	84" Wide Heavy Duty Brush Grapple (Shown)	13127
GEHL		
GEHL DYNACARRIER	1.75 Cubic Yard Scrap Grapple, 96" Wide (Shown)	12741
GRADALL		
GRADALL G6-42A	1.75 Cubic Yard Scrap Grapple, 96" Wide (Shown)	12700
JCB		
		11509
JCB 409 OLD STYLE	1.00 Yard Scrap Grapple, 78" Wide (With Edge) (Shown)	12434
JCB	1.00 Yard Scrap Grapple, 75" Wide (Shown)	12719
		12738
JCB 520 & 524	1.00 Yard Scrap Grapple, 88" Wide (Shown)	12783
JCB 506/508	84" Wide Heavy Duty Brush Grapple (Shown)	12726
JCB Q-FIT	84" Wide Heavy Duty Brush Grapple (Shown)	12867
JCB 411HT	84" Wide Heavy Duty Brush Grapple (Shown)	13055
JOHN DEERE		
JOHN DEERE 210LE	84" Wide Heavy Duty Brush Grapple (Shown)	13004
JRB		
JRB 416 SERIES LUGS	2.25 Yard Scrap Grapple, 96" Wide (Shown)	12723
KOMATSU		
KOMATSU	1.00 Yard Scrap Grapple, 75" Wide (Shown)	12719

FOREWORD

MOUNT	DESCRIPTION	ASSEMBLY
MANITOU		
MANITOU	1.00 Yard Scrap Grapple, 90" Wide (Shown)	12773
MANITOU HITCH	1.75 Yard Scrap Grapple, 96" Wide (Shown)	12847
NEW HOLLAND		
NEW HOLLAND LB90/110	1.25 Yard Scrap Grapple, 90" Wide (Shown)	12405
NEW HOLLAND LW80	1.00 Yard Scrap Grapple, 88" Wide (Shown)	12512
NEW HOLLAND LM 640-VERSATTACH	84" Wide Heavy Duty Brush Grapple (Shown)	12867
NO MOUNT		
NO MOUNT	84" Wide Heavy Duty Brush Grapple (Shown)	12954
SKYTRAK		
SKYTRAK	1.75 Yard Scrap Grapple, 96" Wide (Shown)	12759
SKYTRAK	84" Wide Heavy Duty Brush Grapple (Shown)	12726
TEREX		
TEREX SKL 834	84" Wide Heavy Duty Brush Grapple (Shown)	12951
VOLVO		
VOLVO L45	84" Wide Heavy Duty Brush Grapple (Shown)	13055

PREFACE

GENERAL COMMENTS

Congratulations on the purchase of your new attachment! This product was carefully designed and manufactured to give you many years of dependable service. Only minor maintenance (such as cleaning and lubricating) is required to keep it in top working condition. Be sure to observe all maintenance procedures and safety precautions in this manual and on any safety decals located on the product and on any equipment on which the attachment is mounted.

This manual has been designed to help you do a better, safer job. Read this manual carefully and become familiar with its contents.

WARNING! Never let anyone operate this unit without reading the "Safety Precautions" and "Operating Instructions" sections of this manual.



Always choose hard, level ground to park the vehicle on and set the brake so the unit cannot roll.

Unless noted otherwise, right and left sides are determined from the operator's control position when facing the attachment.

NOTE: The illustrations and data used in this manual were current (according to the information available to us) at the time of printing, however, we reserve the right to redesign and change the attachment as may be necessary without notification.

BEFORE OPERATION

The primary responsibility for safety with this equipment falls to the operator. Make sure the equipment is operated only by trained individuals that have read and understand this manual. If there is any portion of this manual or function you do not understand, contact your local authorized dealer or the manufacturer to obtain further assistance. Keep this manual available for reference. Provide the manual to any new owners and/or operators.

SAFETY ALERT SYMBOL



This is the "Safety Alert Symbol" used by this industry. This symbol is used to warn of possible injury. Be sure to read all warnings carefully. They are included for your safety and for the safety of others working with you.

SERVICE

Use only manufacturer replacement parts. Substitute parts may not meet the required standards.

Record the model and serial number of your unit on the cover of this manual. The parts department needs this information to insure that you receive the correct parts.

SOUND AND VIBRATION

Sound pressure levels and vibration data for this attachment are influenced by many different parameters: some items are listed below (not inclusive):

- prime mover type, age, condition, with or without cab enclosure and configuration
- operator training, behavior, stress level
- job site organization, working material condition, environment

Based on the uncertainty of the prime mover, operator, and job site, it is not possible to get precise machine and operator sound pressure levels or vibration levels for this attachment.

NOTE: A list of all Paladin Patents can be found at <http://www.paladinattachments.com/patents.asp>.

M-934 10-22-13-5

SAFETY STATEMENTS



THIS SYMBOL BY ITSELF OR WITH A WARNING WORD THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY OR THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.



DANGER

THIS SIGNAL WORD INDICATES A HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.



WARNING

THIS SIGNAL WORD INDICATES A HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.



CAUTION

THIS SIGNAL WORD INDICATES A HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN MINOR OR MODERATE INJURY.

NOTICE

NOTICE IS USED TO ADDRESS PRACTICES NOT RELATED TO PHYSICAL INJURY.

GENERAL SAFETY PRECAUTIONS

WARNING!



READ MANUAL PRIOR TO INSTALLATION

Improper installation, operation, or maintenance of this equipment could result in serious injury or death. Operators and maintenance personnel should read this manual, as well as all manuals related to this equipment and the prime mover thoroughly before beginning installation, operation, or maintenance. **FOLLOW ALL SAFETY INSTRUCTIONS IN THIS MANUAL AND THE PRIME MOVER'S MANUAL(S).**



READ AND UNDERSTAND ALL SAFETY STATEMENTS

Read all safety decals and safety statements in all manuals prior to operating or working on this equipment. Know and obey all OSHA regulations, local laws, and other professional guidelines for your operation. Know and follow good work practices when assembling, maintaining, repairing, mounting, removing, or operating this equipment.



KNOW YOUR EQUIPMENT

Know your equipment's capabilities, dimensions, and operations before operating. Visually inspect your equipment before you start, and never operate equipment that is not in proper working order with all safety devices intact. Check all hardware to ensure it is tight. Make certain that all locking pins, latches, and connection devices are properly installed and secured. Remove and replace any damaged, fatigued, or excessively worn parts. Make certain all safety decals are in place and are legible. Keep decals clean, and replace them if they become worn or hard to read.

GENERAL SAFETY PRECAUTIONS

WARNING!



PROTECT AGAINST FLYING DEBRIS

Always wear proper safety glasses, goggles, or a face shield when driving pins in or out, or when any operation causes dust, flying debris, or any other hazardous material.

WARNING!



LOWER OR SUPPORT RAISED EQUIPMENT

Do not work under raised booms without supporting them. Do not use support material made of concrete blocks, logs, buckets, barrels, or any other material that could suddenly collapse or shift positions. Make sure support material is solid, not decayed, warped, twisted, or tapered. Lower booms to ground level or on blocks. Lower booms and attachments to the ground before leaving the cab or operator's station.

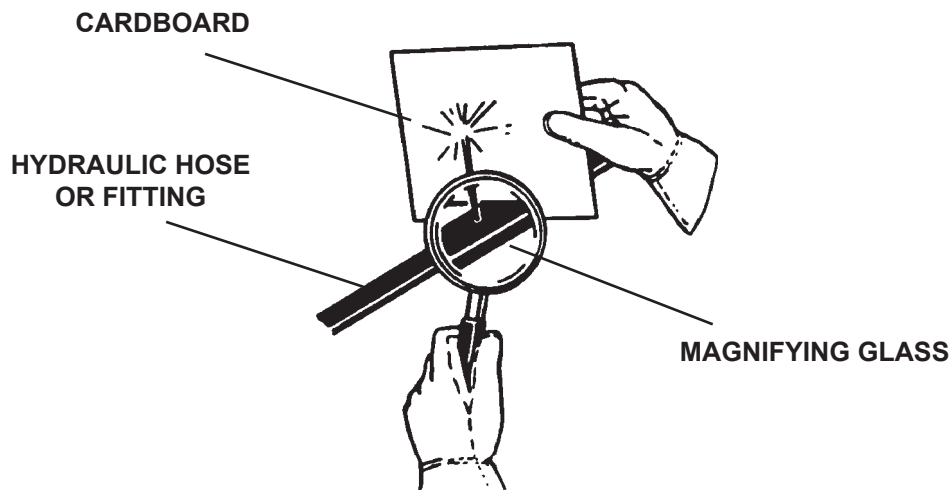
WARNING!



USE CARE WITH HYDRAULIC FLUID PRESSURE

Hydraulic fluid under pressure can penetrate the skin and cause serious injury or death. Hydraulic leaks under pressure may not be visible. Before connecting or disconnecting hydraulic hoses, read your prime mover's operator's manual for detailed instructions on connecting and disconnecting hydraulic hoses or fittings.

- Keep unprotected body parts, such as face, eyes, and arms as far away as possible from a suspected leak. Flesh injected with hydraulic fluid may develop gangrene or other permanent disabilities.
- If injured by injected fluid, see a doctor at once. If your doctor is not familiar with this type of injury, ask him or her to research it immediately to determine proper treatment.
- Wear safety glasses, protective clothing, and use a piece of cardboard or wood when searching for hydraulic leaks. **DO NOT USE YOUR HANDS! SEE ILLUSTRATION.**



GENERAL SAFETY PRECAUTIONS

WARNING!



DO NOT MODIFY MACHINE OR ATTACHMENTS

Modifications may weaken the integrity of the attachment and may impair the function, safety, life, and performance of the attachment. When making repairs, use only the manufacturer's genuine parts, following authorized instructions. Other parts may be substandard in fit and quality. Never modify any ROPS (Roll Over Protection Structure) or FOPS (Falling Object Protective Structure) equipment or device. Any modifications must be authorized in writing by the manufacturer.

WARNING!



SAFELY MAINTAIN AND REPAIR EQUIPMENT

- Do not wear loose clothing or any accessories that can catch in moving parts. If you have long hair, cover or secure it so that it does not become entangled in the equipment.
- Work on a level surface in a well-lit area.
- Use properly grounded electrical outlets and tools.
- Use the correct tools for the job at hand. Make sure they are in good condition for the task required.
- Wear the protective equipment specified by the tool manufacturer.



SAFELY OPERATE EQUIPMENT

Do not operate equipment until you are completely trained by a qualified operator in how to use the controls, know its capabilities, dimensions, and all safety requirements. See your machine's manual for these instructions.

- Keep all step plates, grab bars, pedals, and controls free of dirt, grease, debris, and oil.
- Never allow anyone to be around the equipment when it is operating.
- Do not allow riders on the attachment or the prime mover.
- Do not operate the equipment from anywhere other than the correct operator's position.
- Never leave equipment unattended with the engine running, or with this attachment in a raised position.
- Do not alter or remove any safety feature from the prime mover or this attachment.
- Know your work site safety rules as well as traffic rules and flow. When in doubt on any safety issue, contact your supervisor or safety coordinator for an explanation.

WARNING!



CALIFORNIA PROPOSITION 65 WARNING

This product may contain a chemical known to the state of California to cause cancer, or birth defects or other reproductive harm. www.P65Warnings.ca.gov

EQUIPMENT SAFETY PRECAUTIONS

WARNING!



KNOW WHERE UTILITIES ARE

Observe overhead electrical and other utility lines. Be sure equipment will clear them. When digging, call your local utilities for location of buried utility lines, gas, water, and sewer, as well as any other hazard you may encounter.

WARNING!



EXPOSURE TO RESPIRABLE CRYSTALLINE SILICA DUST ALONG WITH OTHER HAZARDOUS DUSTS MAY CAUSE SERIOUS OR FATAL RESPIRATORY DISEASE.

It is recommended to use dust suppression, dust collection and if necessary personal protective equipment during the operation of any attachment that may cause high levels of dust.

WARNING!



REMOVE PAINT BEFORE WELDING OR HEATING

Hazardous fumes/dust can be generated when paint is heated by welding, soldering or using a torch. Do all work outside or in a well ventilated area and dispose of paint and solvent properly. Remove paint before welding or heating.

When sanding or grinding paint, avoid breathing the dust. Wear an approved respirator. If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

WARNING!



END OF LIFE DISPOSAL

At the completion of the useful life of the unit, drain all fluids and dismantle by separating the different materials (rubber, steel, plastic, etc.). Follow all federal, state and local regulations for recycling and disposal of the fluid and components.



OPERATING THE GRAPPLE BUCKET

- Do not exceed the lifting capacity of your prime mover.
- Operate only from the operator's station.
- When operating on slopes, drive up and down, not across. Avoid steep hillside operation, which could cause the prime mover to overturn.
- Reduce speed when driving over rough terrain, on a slope, or turning, to avoid overturning the vehicle.
- An operator must not use drugs or alcohol, which can change his or her alertness or coordination. An operator taking prescription or over-the-counter drugs should seek medical advice on whether or not he or she can safely operate equipment.
- Before exiting the prime mover, lower the attachment to the ground, apply the brakes, turn off the prime mover's engine, and remove the key.
- Never heap load heavy material where the combined weight of the bucket and material could exceed the rated lifting capacity of the loader.
- Be sure the load does not stick out too far in front of the bucket. A light load sticking out too far can have the same tipping effect as a heavy load carried in close.
- When using the grapple, lift the load slightly and make sure that the load is secure. If the load appears to be unstable, lower the load, open the grapple and reposition the load to attain full stability.
-

EQUIPMENT SAFETY PRECAUTIONS



TRANSPORTING THE GRAPPLE BUCKET

- Travel only with the attachment in a safe transport position to prevent uncontrolled movement. Drive slowly over rough ground and on slopes.
- When driving on public roads use safety lights, reflectors, Slow Moving Vehicle signs etc., to prevent accidents. Check local government regulations that may affect you.
- Do not drive close to ditches, excavations, etc.; a cave-in could result.
- Do not smoke when refueling the prime mover. Allow room in the fuel tank for expansion. Wipe up any spilled fuel. Secure cap tightly when done.



MAINTAINING THE GRAPPLE BUCKET

- Before performing maintenance, lower the attachment to the ground, apply the brakes, turn off the engine, and remove the key.
- Never perform any work on the attachment unless you are authorized and qualified to do so. Always read the operator service manuals before any repair is made. After completing maintenance or repair, check for correct functioning of the attachment. If not functioning properly, always tag “DO NOT OPERATE” until all problems are corrected.
- Worn, damaged, or illegible safety decals must be replaced. New safety decals can be ordered from **The Major**.
- Never make hydraulic repairs while the system is under pressure. Serious personal injury or death could result.
- Never work under a raised attachment.

INSTALLATION AND OPERATION

INSTALLATION

Your Grapple Bucket was shipped complete with the appropriate mounting for your specific unit, and with the hydraulic hoses installed.

WARNING!



To prevent serious personal injury or death, only attach equipment that is designed for your vehicle.

Specified lift capacities must not be exceeded, otherwise machine stability will not be sufficient. Always observe lift capacity limits listed in machine specifications.

To Avoid Serious Personal Injury, make sure the grapple bucket is securely latched to the attachment mechanism of your unit. Failure to do so could result in separation of the attachment from the unit.

Please see your prime mover operator's manual for instructions on attaching your equipment.

1. Connect the hydraulic quick couplers to the auxiliary hydraulics, and route the hoses in such a fashion as to prevent chafing and pinching.
2. Start the engine and slowly cycle the cylinder several times to purge the system of air, and check for proper hydraulic connection, hose routing, and hose length.
3. Check the attachment for proper assembly, installation, and hydraulic leaks.

DETACHING

Please see your prime mover operator's manual for instructions on detaching (removing) your equipment.

1. On firm level ground, close the grapple and lower the boom arms completely down on the frame until the attachment is level, and approximately 2" off the ground.
2. Turn off the engine. Move the control levers back and forth to relieve pressure in the line.
3. Disconnect couplers.

NOTE: Connect the couplers together or install caps to prevent contaminants from entering the hydraulic system.

Lubricate the grease fittings at the end of the cylinder and pivot points frequently with a multi-purpose grease, to prolong the life of the product.

INSTALLATION AND OPERATION

OPERATION

All scrap grapple and brush grapple buckets are designed to pick up bulky, unusually shaped, or long materials that would not stay in an ordinary bucket.

1. Approach the load in such a fashion that the weight will be centered on the floor of the bucket. The heaviest side should be closest to the back of the bucket, and not near the bucket edge.
2. Before lifting, make certain the bucket is completely under the load and the bucket floor is level.
3. Close the grapples to their fullest extent possible, and lift the bucket slightly to be certain that the load is secure.

NOTE: If the load appears to be unstable, lower the bucket to the ground, open the grapples and reposition the load to attain full stability. Repeat until full stability is achieved.

When using the grapples as a rake to drag materials into position for pick up, THE GRAPPLES MUST BE COMPLETELY OPEN.



Applying a raking-type force to partially open grapples will greatly magnify the fluid pressure in the hydraulic hoses, fittings, and cylinders and may cause component failure.

Never heap load-heavy material where the combined weight of the bucket and material could exceed the rated lifting capacity of the loader.

Be sure the load does not stick out too far in front of the bucket. A light load sticking out too far can have the same tipping effect as a heavy load carried in close.

Operate the attachment only when properly seated at the operator's station.

When using the grapple, lift the load slightly and make sure that the load is secure. If the load appears to be unstable, lower the load, open the grapple and reposition the load to attain full stability.

Reduce speed when driving over rough terrain, on a slope, or turning, to avoid overturning the vehicle.

Avoid side slope travel whenever possible. Drive up the slope to pick up a load, and then down in reverse. Carry loads as close to the ground as possible.

Before exiting the prime mover, lower the bucket to the ground, apply the brakes, turn off the prime mover's engine, and remove the key.

INSTALLATION AND OPERATION TROUBLESHOOTING

ATTACHMENTS WITH HYDRAULICS

<u>PROBLEM</u>	<u>POSSIBLE CAUSE</u>	<u>POSSIBLE SOLUTION</u>
Excessive oil temperature.	1. Hydraulic oil level too low.	• Refer to your vehicle operator's manual.
	2. Obstruction in hydraulic lines.	• Remove obstruction and replace, if necessary.
	3. Couplers not engaged correctly.	• Engage couplers.
	4. Hydraulic system overloaded, and system relief open.	• Reduce load.
A hydraulic cylinder not operating.	1. Insufficient hydraulic flow from the prime mover.	• Refer to your vehicle operator's manual.
	2. Cylinder rod bent.	• Visually inspect the cylinder for damage.
	3. Cylinder seals damaged.	• Replace cylinder seals.
	4. Obstruction in hydraulic lines.	• Remove obstruction and replace, if necessary.

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MAINTENANCE & SERVICE

GENERAL INFORMATION

Regular maintenance is the key to long equipment life and safe operation. Maintenance requirements have been kept to an absolute minimum. However, it is very important that these maintenance functions be performed as described in this section.

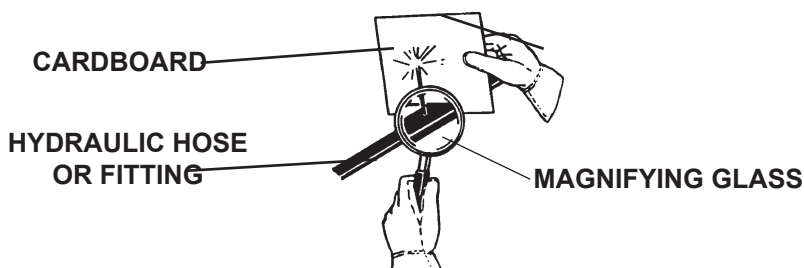
Procedure	Daily	Every 40 Hours
Check all bolts and nuts for tightness.	✓	
Replace any missing bolts or nuts with approved replacement parts.	✓	
Check hydraulic system for hydraulic oil leaks. See procedure below.	✓	
Visually inspect the machine for worn parts or cracked welds, and repair as necessary.	✓	
Check for missing or illegible Safety / Warning Decals.	✓	
Lubricate all grease fittings.		✓

WARNING! Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands to search for suspected leaks.



Keep unprotected body parts, such as face, eyes, and arms as far away as possible from a suspected leak. Flesh injected with hydraulic fluid may develop gangrene or other permanent disabilities.

If injured by injected fluid, see a doctor at once. If your doctor is not familiar with this type of injury, ask him or her to research it immediately to determine proper treatment.



IMPORTANT: When replacing parts, use only factory-approved replacement parts. Manufacturer will not accept responsibility for use of unapproved parts or accessories, and damages that result from their use.

MAINTENANCE AND SERVICE

CYLINDER SEAL REPLACEMENT

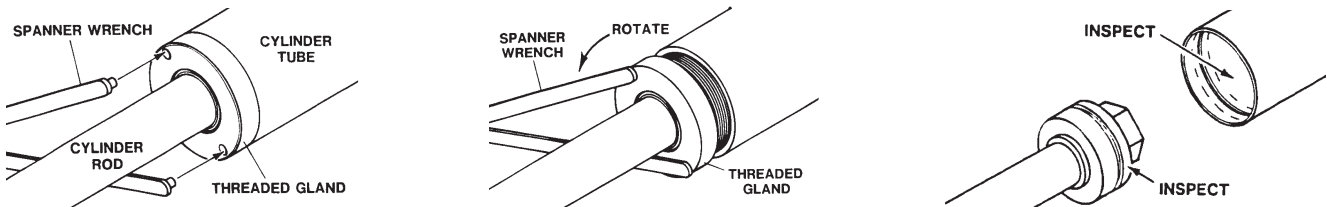
The following information is provided to assist you in the event you should need to repair or rebuild a hydraulic cylinder. When working on hydraulic cylinders, make sure that the work area and tools are clean and free of dirt to prevent contamination of the hydraulic system and damage to the hydraulic cylinders. Always protect the active part of the cylinder rod (the chrome section). Nicks or scratches on the surface of the rod could result in cylinder failure. Clean all parts thoroughly with a cleaning solvent before reassembly.

DISASSEMBLY PROCEDURE

IMPORTANT: Do not contact the active surface of the cylinder rod with the vise. Damage to the rod could result.

THREADED TYPE GLAND

1. Rotate the gland with a spanner wrench counterclockwise until the gland is free of the cylinder tube.
2. Pull the cylinder rod from the cylinder tube and inspect the piston and the bore of the cylinder tube for deep scratches or galling. If damaged, the piston AND the cylinder tube must be replaced.



3. Remove the hex nut, piston, flat washer or spacer tube (if so equipped), and gland from the cylinder rod. If the cylinder rod is rusty, scratched, or bent, it must be replaced.
4. Remove and discard all the old seals.

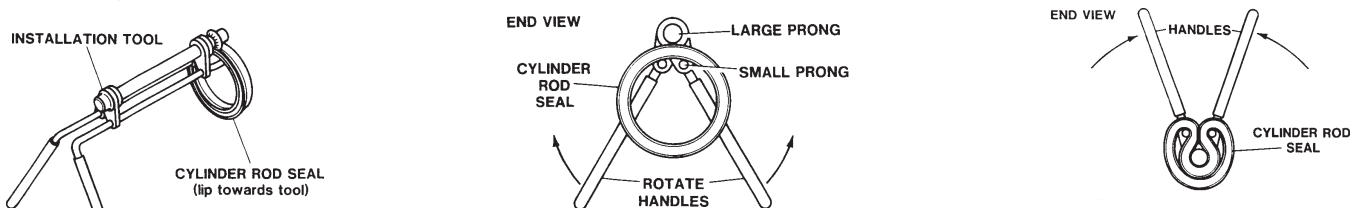


ASSEMBLY PROCEDURE

IMPORTANT: Replace all seals even if they do not appear to be damaged. Failure to replace all seals may result in premature cylinder failure. **NOTE:** Seal kits will service most cylinders of similar bore size and rod diameter.

1. Install the cylinder rod seal in the gland first. Be careful not to damage the seal in the process, as it is somewhat difficult to install.

NOTE: A special installation tool (Part #65349) is available to help with installing the seal. Simply fit the end of the tool over the seal so that the large prong of the tool is on the outside of the seal, and the two smaller prongs on the inside. The lip of the seal should be facing towards the tool. Rotate the handles on the tool around to wrap the seal around the end of the tool.



Rotate the handles on the tool around to wrap the seal around the end of the tool.

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MAINTENANCE AND SERVICE

Now insert the seal into the gland from the inner end. Position the seal in its groove, and release and remove the tool. Press the seal into its seat the rest of the way by hand.

2. Install the new piston ring, rod wiper, O-rings and backup washers, if applicable, on the piston.

Be careful not to damage the seals. Caution must be used when installing the piston ring. The ring must be stretched carefully over the piston with a smooth, round, pointed tool.

3. After installing the rod seal inside the gland, as shown in step #1, install the external seal.

NOTE: Threaded glands may have been equipped with a separate O-ring and backup washer system or a polypak (all in one) type seal. Current seal kits contain a polypak (all in one) type seal to replace the discarded seal types on ALL THREADED GLANDS.

4. Slide the gland onto the cylinder rod, being careful not to damage the rod wiper. Then install the spacer, or flat washer (if so equipped), small o-ring, piston, and hex nut onto the end of the cylinder rod.
5. Secure the cylinder rod (mounting end) in a vise with a support at its center. Torque the nut to the amount shown for the thread diameter of the cylinder rod (see chart).

Thread Diameter	POUNDS - FEET
7/8"	150-200
*1"	230-325
1-1/8"	350-480
1-1/4"	490-670
1-3/8"	670-900
* 1" Thread Diameter WITH 1.25" Rod Diameter	
Min. 230 ft. lbs. Max. 250 ft. lbs.	

IMPORTANT: Do not contact the active surface of the cylinder rod with the vise. Damage to the rod could result.

6. Apply a lubricant (such as Lubriplate #105) to the piston and teflon ring. Insert the cylinder rod assembly into the cylinder tube.

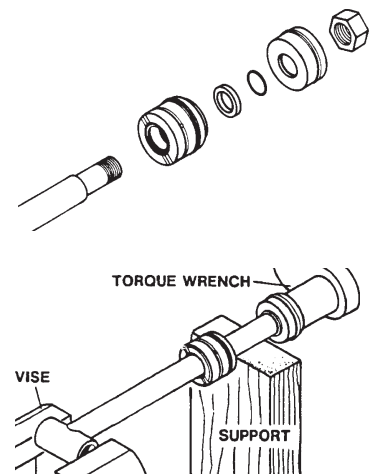
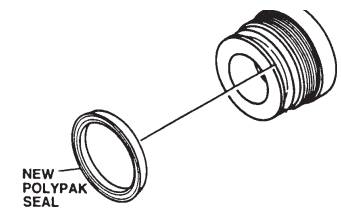
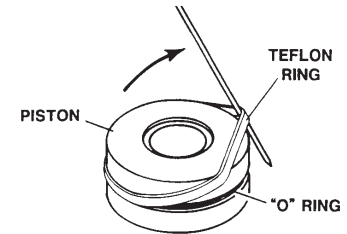
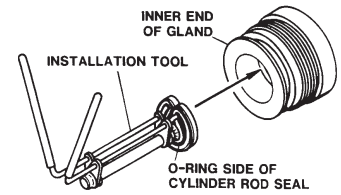
IMPORTANT: Ensure that the piston ring fits squarely into the cylinder tube and piston groove, otherwise the ring may be damaged and a leak will occur.

7. Use a spanner wrench to rotate the gland clockwise into the cylinder. Continue to rotate the gland with the spanner wrench until it is tight.

WARNING!



Cylinders serviced in the field are to be tested for leakage prior to the attachment being placed in work. Failure to test rebuilt cylinders could result in damage to the cylinder and/or the attachment, cause severe personal injury or even death.



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SPECIFICATIONS

SCRAP GRAPPLE SPECIFICATIONS			
	11053	11509	12311
Overall Width	88.50"	74.25"	97.00"
Overall Height	38.40"	38.15"	49.47"
Overall Length	44.93"	44.43"	56.74"
Grapple Hook - Opening	51.00"	51.00"	77.85"
Volume Heaped (Cubic Yard)	1.00	0.78	2.50
Weight (Lbs)	1503	1192	2450
Cylinder	102273	102277	11776
Bore	2.50"	2.50"	4.00"
Stroke	10.00"	10.00"	12.00"
Rod Diameter	1.25"	1.25"	2.00"
	12405	12434	12439
Overall Width	90.63"	78.00"	96.00"
Overall Height	35.00"	35.00"	40.68"
Overall Length	45.38"	45.38"	53.12"
Grapple Hook - Opening	42.69"	41.68"	56.19"
Volume Heaped (Cubic Yard)	1.25	0.78	1.75
Weight (Lbs)	1693	1350	1770
Cylinder	89113	89113	89117
Bore	2.50"	2.50"	2.50"
Stroke	8.00"	8.00"	10.00"
Rod Diameter	1.25"	1.25"	1.25"
	12512	12700	12719
Overall Width	88.50"	96.00"	75.75"
Overall Height	38.40"	40.42"	38.27"
Overall Length	46.30"	50.51"	44.05"
Grapple Hook - Opening	51.12"	63.88"	50.69"
Volume Heaped (Cubic Yard)	1.00	1.75	1.00
Weight (Lbs)	1572	1692	1650
Cylinder	89117	89117	88920
Bore	2.50"	2.50"	2.50"
Stroke	10.00"	10.00"	10.12"
Rod Diameter	1.25"	1.25"	1.25"
	12723	12738	12741
Overall Width	96.00"	88.00"	96.00"
Overall Height	55.86"	38.44"	40.50"
Overall Length	51.30"	41.25"	49.25"
Grapple Hook - Opening	56.85"	51.00"	55.94"
Volume Heaped (Cubic Yard)	2.25	1.25	1.75
Weight (Lbs)	3050	1875	1750
Cylinder	11776	102273	89117
Bore	4.00"	2.50"	2.50"
Stroke	12.00"	10.00"	10.00"
Rod Diameter	2.00"	10.00"	10.00"

SPECIFICATIONS

SCRAP GRAPPLE SPECIFICATIONS			
	<u>12759</u>	<u>12773</u>	<u>12783</u>
Overall Width	96.00"	90.63"	88.50"
Overall Height	44.29"	35.00"	38.40"
Overall Length	47.00"	41.00"	44.93"
Grapple Hook - Opening	67.12"	42.68"	50.88"
Volume Heaped (Cubic Yard)	1.75	1.00	1.00
Weight (Lbs)	1560	1375	1503
Cylinder	102273	89113	102273
Bore	2.50"	2.50"	2.50"
Stroke	10.00"	8.00"	10.00"
Rod Diameter	1.25"	1.25"	1.25"
	<u>12847</u>	<u>12954</u>	<u>13028</u>
Overall Width	96.00"	97.00"	96.00"
Overall Height	40.60"	49.47"	40.42"
Overall Length	47.64"	53.00"	48.59"
Grapple Hook - Opening	65.08"	77.86"	65.08"
Volume Heaped (Cubic Yard)	1.75	2.50	1.75
Weight (Lbs)	1800	2250	1875
Cylinder	102273	11776	102273
Bore	2.50"	4.00"	2.50"
Stroke	10.00"	12.00"	10.00"
Rod Diameter	1.25"	2.00"	1.25"
	<u>15201</u>		
Overall Width	96.00"		
Overall Height	47.12"		
Overall Length	60.25"		
Grapple Hook - Opening	62.18"		
Volume Heaped (Cubic Yard)	2.50		
Weight (Lbs)	2440		
Cylinder	89117		
Bore	2.50"		
Stroke	10.00"		
Rod Diameter	1.25"		

SPECIFICATIONS

BRUSH GRAPPLE SPECIFICATIONS			
	<u>12726</u>	<u>12867</u>	<u>12951</u>
Overall Width	84.75"	84.75"	84.75"
Overall Height	36.12"	36.12"	36.12"
Overall Length	48.69"	50.50"	44.67"
Grapple Hook - Opening	52.35"	52.35"	52.35"
Weight (Lbs)	1520	1673	1650
Cylinder	101280	101280	101280
Bore	2.50"	2.50"	2.50"
Stroke	9.00"	9.00"	9.00"
Rod Diameter	1.25"	1.25"	1.25"
	<u>13004</u>	<u>13055</u>	<u>13067</u>
Overall Width	84.75"	84.75"	84.75"
Overall Height	36.45"	36.45"	36.45"
Overall Length	50.89"	48.80"	53.03"
Grapple Hook - Opening	57.79"	57.79"	57.79"
Weight (Lbs)	1725	1654	1654
Cylinder	101280	101280	101280
Bore	2.50"	2.50"	2.50"
Stroke	9.00"	9.00"	9.00"
Rod Diameter	1.50"	1.25"	1.25"
	<u>13127</u>	<u>101040</u>	
Overall Width	84.75"	84.75"	
Overall Height	36.45"	53.08"	
Overall Length	52.36"	45.81"	
Grapple Hook - Opening	57.79"	57.71"	
Weight (Lbs)	1785	1654	
Cylinder	101280	101280	
Bore	2.50"	2.50"	
Stroke	9.00"	9.00"	
Rod Diameter	1.25"	1.50"	

BOLT TORQUE SPECIFICATIONS

GENERAL TORQUE SPECIFICATION TABLES


Use the following charts when determining bolt torque specifications when special torques are not given. Always use grade 5 or better when replacing bolts.

SAE BOLT TORQUE SPECIFICATIONS




NOTE: The following torque values are for use with extreme pressure lubricants, plating or hard washer applications. Increase torque 15% when using hardware that is unplated and either dry or lubricated with engine oil.

Bolt Size		SAE GRADE 5 TORQUE				SAE GRADE 8 TORQUE				Bolt head identification marks as per grade. NOTE: Manufacturing Marks Will Vary
		Pounds Feet		Newton-Meters		Pounds Feet		Newton-Meters		
Inches	Millimeters	UNC	UNF	UNC	UNF	UNC	UNF	UNC	UNF	
1/4	6.35	8	9	11	12	10	13	14	18	
5/16	7.94	14	17	19	23	20	25	27	34	
3/8	9.53	30	36	41	49	38	46	52	62	
7/16	11.11	46	54	62	73	60	71	81	96	
1/2	12.70	68	82	92	111	94	112	127	152	
9/16	14.29	94	112	127	152	136	163	184	221	
5/8	15.88	128	153	174	207	187	224	254	304	
3/4	19.05	230	275	312	373	323	395	438	536	
7/8	22.23	340	408	461	553	510	612	691	830	
1	25.40	493	592	668	803	765	918	1037	1245	
1-1/8	25.58	680	748	922	1014	1088	1224	1475	1660	
1-1/4	31.75	952	1054	1291	1429	1547	1700	2097	2305	
1-3/8	34.93	1241	1428	1683	1936	2023	2312	2743	3135	
1-1/2	38.10	1649	1870	2236	2535	2686	3026	3642	4103	




GRADE 2



GRADE 5






GRADE 8



METRIC BOLT TORQUE SPECIFICATIONS

NOTE: The following torque values are for use with metric hardware that is unplated and either dry or lubricated with engine oil. Reduce torque 15% when using hardware that has extreme pressure lubricants, plating or hard washer applications.

Bolt head identification marks as per grade.		
		

Size of Bolt	Grade No.	Pitch (mm)	Pounds Feet	Newton-Meters	Pitch (mm)	Pounds Feet	Newton-Meters
M6	5.6	1.0	3.6-5.8	4.9-7.9	-	-	-
	8.8		5.8-4	7.9-12.7		-	-
	10.9		7.2-10	9.8-13.6		-	-
M8	5.6	1.25	7.2-14	9.8-19	1.0	12-17	16.3-23
	8.8		17-22	23-29.8		19-27	25.7-36.6
	10.9		20-26	27.1-35.2		22-31	29.8-42
M10	5.6	1.5	20-25	27.1-33.9	1.25	20-29	27.1-39.3
	8.8		34-40	46.1-54.2		35-47	47.4-63.7
	10.9		38-46	51.5-62.3		40-52	54.2-70.5
M12	5.6	1.75	28-34	37.9-46.1	1.25	31-41	42-55.6
	8.8		51-59	69.1-79.9		56-68	75.9-92.1
	10.9		57-66	77.2-89.4		62-75	84-101.6
M14	5.6	2.0	49-56	66.4-75.9	1.5	52-64	70.5-86.7
	8.8		81-93	109.8-126		90-106	122-143.6
	10.9		96-109	130.1-147.7		107-124	145-168
M16	5.6	2.0	67-77	90.8-104.3	1.5	69-83	93.5-112.5
	8.8		116-130	157.2-176.2		120-138	162.6-187
	10.9		129-145	174.8-196.5		140-158	189.7-214.1
M18	5.6	2.0	88-100	119.2-136	1.5	100-117	136-158.5
	8.8		150-168	203.3-227.6		177-199	239.8-269.6
	10.9		175-194	237.1-262.9		202-231	273.7-313
M20	5.6	2.5	108-130	146.3-176.2	1.5	132-150	178.9-203.3
	8.8		186-205	252-277.8		206-242	279.1-327.9
	10.9		213-249	288.6-337.4		246-289	333.3-391.6

STORAGE

GENERAL INFORMATION

The following storage procedure will help you to keep your attachment in top condition. It will also help you get off to a good start the next time your equipment is needed. We therefore strongly recommend that you take the extra time to follow these procedures whenever your attachment will not be used for an extended period of time.

PREPARATION FOR STORAGE

1. Clean the attachment thoroughly, removing all mud, dirt, and grease.
2. Inspect for visible signs of wear, breakage, or damage. Order any parts required, and make the necessary repairs, to avoid delays when starting next season.
3. Tighten all loose nuts, capscrews, and hydraulic connections.
4. Lubricate all grease fittings.
5. Coat the exposed portions of the cylinder rods with grease.
6. Connect the hydraulic couplers together to protect the hydraulic system from contaminants.
7. Touch up all unpainted and exposed areas with paint, to prevent rust.
8. Replace decals, if damaged or in unreadable condition.
9. Store the attachment in a dry and protected place, with a cover, if possible. Leaving the attachment outside will materially shorten its life.

REMOVING FROM STORAGE

1. Remove all protective coverings.
2. Check hydraulic hoses for deterioration, and replace if necessary.

LIMITED WARRANTY

In order to provide you with the most UP-TO-DATE Warranty information, Paladin Warranty Statement and Warranty Procedures along with Warranty Registration and Claim Forms have been moved to our website at www.paladinattachments.com.

PARTS

The following section contains detailed diagrams and parts lists which include your attachment. Please use these diagrams and parts lists to locate replacement parts, prior to contacting the parts department.

When servicing your attachment, remember to use only original manufacturer replacement parts. Substitute parts may not meet the standards required for safe, dependable operation.

To facilitate parts ordering, have the model and serial number of your product ready, to ensure that you receive the correct parts for your specific attachment.

The model and serial number for your attachment should be recorded in the space provided on the cover of this manual. This information may be obtained from the serial number identification plate located on your attachment. **See the parts diagram for your attachment for the location.**

NOTE: Most daily and emergency orders received by 2:00 P.M. will be shipped the same day received, with “Emergency-Machine-Down” orders receiving first priority.



PARTS DEPARTMENT

(734) 996-9116

(800) 456-7100

We Encourage Fax Orders

(734) 996-9014

SCRAP GRAPPLE BUCKET

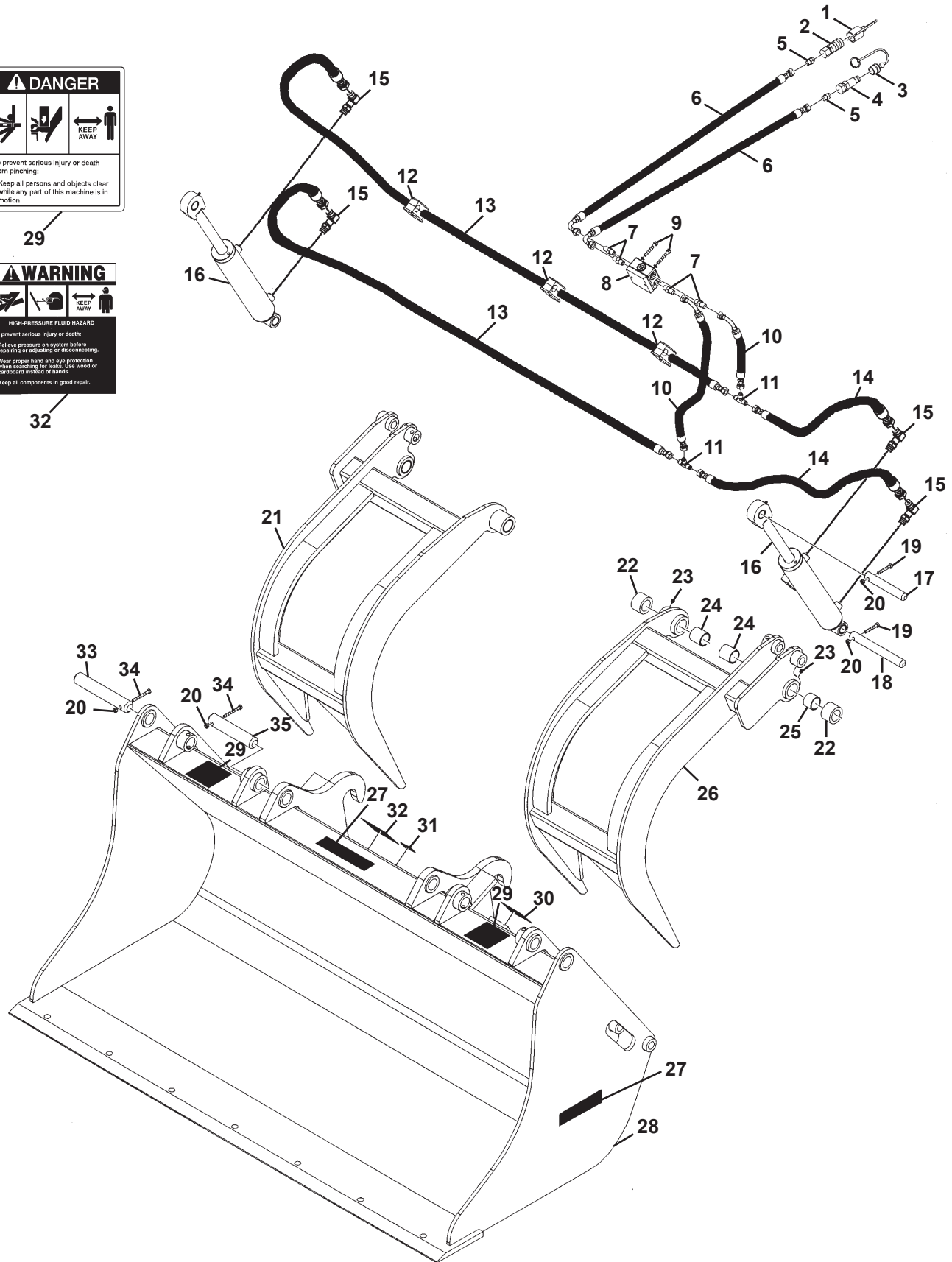
.78 CUBIC YARD, 74" WIDE - ASSEMBLY #11509



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M-2057 1-27-10-2

SCRAP GRAPPLE BUCKET

.78 CUBIC YARD, 74" WIDE - ASSEMBLY #11509

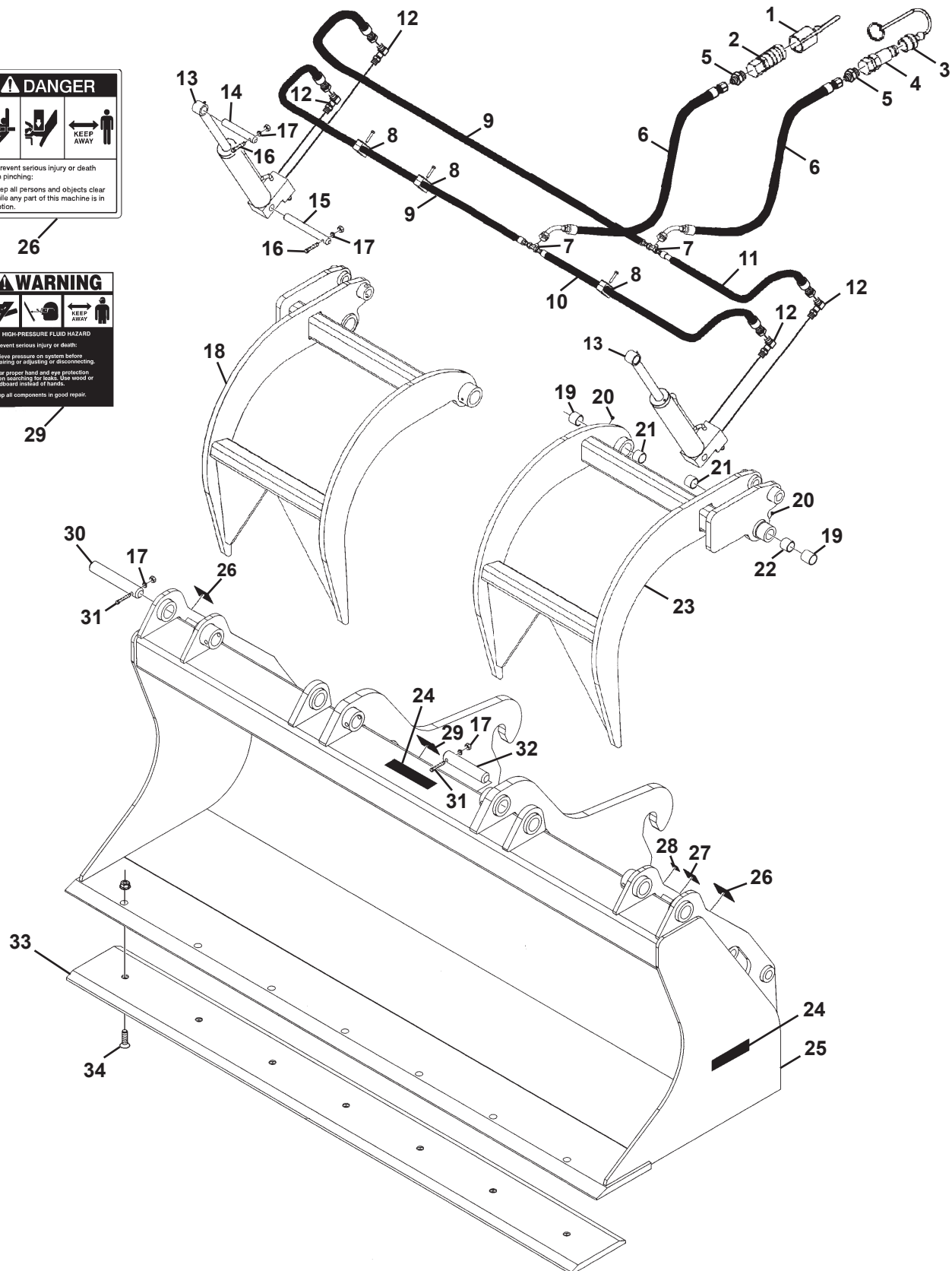
<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	32548	Female Quick Coupler Cover
2	1	84928	Female Quick Coupler
3	1	32549	Male Quick Coupler
4	1	84923	Male Quick Coupler
5	2	3269	Straight Connector, 8MBo-6MJ
6	2	37797	Hose .38" x 62.50" 6FJX-6FJX90°
7	4	3457	Straight Connector, 6MBo-6MJ
8	1	88536	Valve
9	2	1026	.31 UNC x 2.00" Hex Capscrew
	2	1502	.31" Lock Washer
10	2	37799	Hose .38" x 15" 6FJX-6FJX90°
11	2	3314	Tee, 6MJ-6MJ-6MJ
12	3	81358	Replacement Hose Clamp
13	2	37887	Hose .38" x 64" 6FJX-6FJX
14	2	38036	Hose .38" x 15" 6FJX-6FJX
15	4	3434	90° Elbow, 6MBo-6MJ
16	2	102277	Cylinder Assembly
17	2	14138	Cylinder Pin, 1.00" x 6.75"
18	2	14140	Cylinder Pin, 1.00" x 9.06"
19	4	1049	.38" UNC x 2.50" Hex Capscrew
20	8	1837	.38" UNC Deformed Lock Nut
21	1	100137	Right Grapple Hook
22	4	14550	Split Bushing, 1.75" x 1.50" x 1.75"
23	4	9371	Grease Fitting
24	4	14760	Split Bushing, 1.75" x 1.50" x 1.25"
25	2	14551	Spacer
26	1	100138	Left Grapple Hook
27	3	Varies	Logo
28	1	100126	Bucket
29	2	40149	Pinch Point Danger Decal
30	1	----	Serial Number Identification Tag Location
31	1	4338	Made in USA Decal
32	1	40151	High Pressure Warning Decal
33	2	14139	Outer Pivot Pin, 1.50" x 9.13"
34	4	1051	.38" UNC x 3.00" Hex Capscrew
35	2	14289	Inner Pivot Pin, 1.50" x 7.63"

NOTE: Optional cutting edge #100831 is available for this bucket.

M-2058 1-27-10-2

SCRAP GRAPPLE BUCKET

.78 CUBIC YARD, 78" WIDE - ASSEMBLY #12434



SCRAP GRAPPLE BUCKET

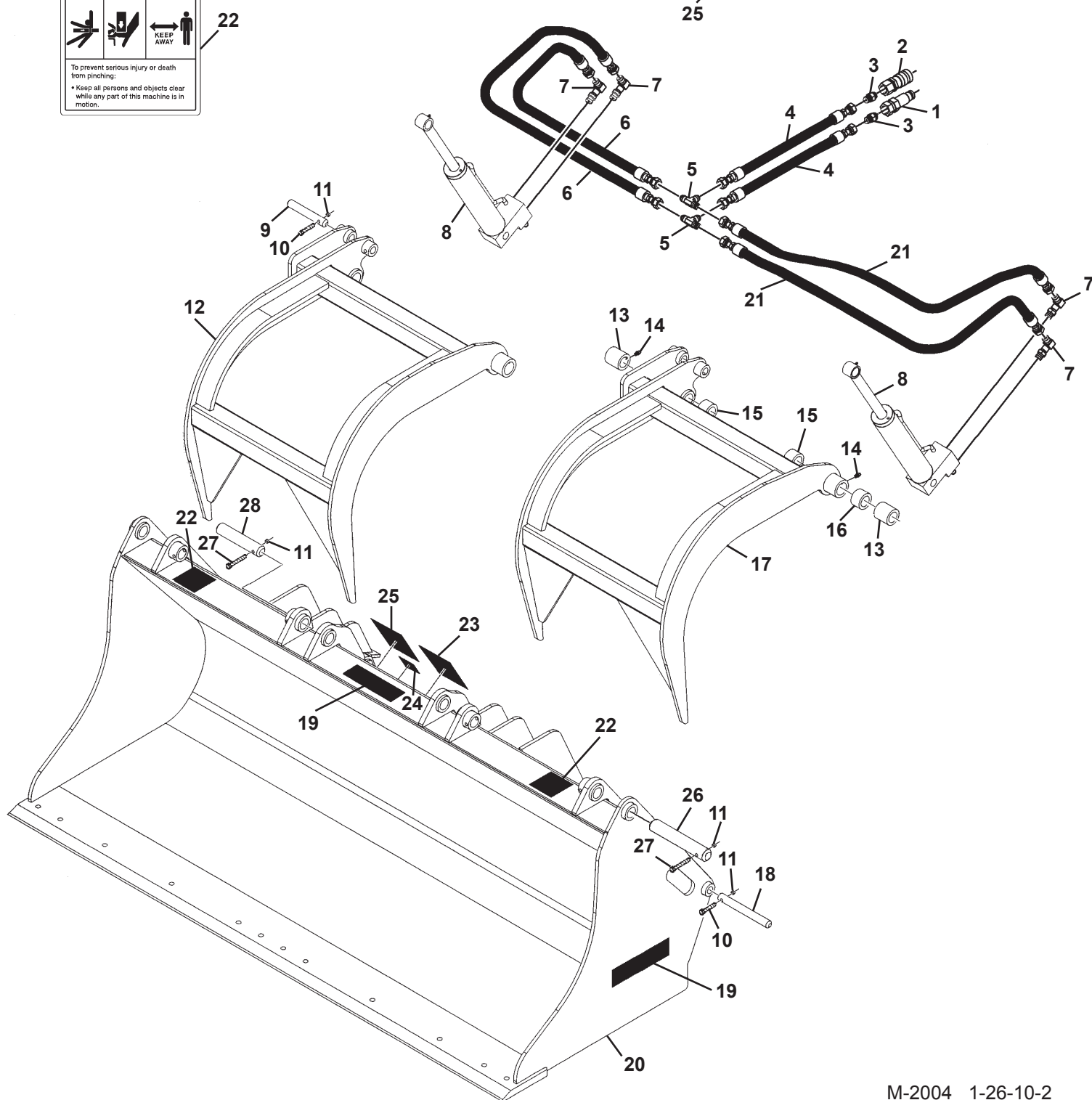
.78 CUBIC YARD, 78" WIDE - ASSEMBLY #12434

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	32548	Female Quick Coupler Cover
2	1	84928	Female Quick Coupler
3	1	32549	Male Quick Coupler Cover
4	1	84923	Male Quick Coupler
5	2	3269	Straight Connector, 8MBo-6MJ
6	2	37882	Hose .38" x 76" 6FJX-6FJX90°
7	2	3314	Tee, 6MJ-6MJ-6MJ
8	3	81358	Replacement Hose Clamp
9	2	37887	Hose .38" x 64" 6FJX-6FJX
10	1	37884	Hose .38" x 21" 6FJX-6FJX
11	1	37883	Hose .38" x 23" 6FJX-6FJX
12	4	3434	90° Elbow, 6MBo-6MJ
13	2	89113	Cylinder Assembly
14	2	14138	Cylinder Pin, 1.00" x 6.75"
15	2	14140	Cylinder Pin, 1.00" x 9.06"
16	4	1299	.38" UNF x 2.50" Hex Capscrew
17	8	1503	.38" Lock Washer
	8	1476	.38" UNF Hex Nut
18	1	32658	Right Grapple Hook
19	4	14550	Split Bushing, 1.75" x 1.50" x 1.75"
20	4	9371	Grease Fitting
21	4	14760	Split Bushing, 1.75" x 1.50" x 1.25"
22	2	14551	Spacer
23	1	32659	Left Grapple Hook
24	3	Varies	Logo
25	1	16918	Bucket
26	2	40149	Pinch Point Danger Decal
27	1	-----	Serial Number Identification Tag Location
28	1	4338	Made in USA Decal
29	1	40151	High Pressure Warning Decal
30	2	14139	Outer Pivot Pin, 1.50" x 9.13"
31	4	1301	.38" UNF x 3.00" Hex Capscrew
32	2	14289	Inner Pivot Pin, 1.50" x 7.63"
<u>Cutting Edge #12597: Includes #33 & #34</u>			
33	1	11517	.75" x 8" x 78" Cutting Edge
34	7	1937	.75" UNC x 2.50" Plow Bolt
	7	1936	.75" UNC Deformed Lock Nut

M-2060 1-27-10-2

SCRAP GRAPPLE BUCKET

1.00 CUBIC YARD, 88" WIDE - ASSEMBLY #11053



SCRAP GRAPPLE BUCKET

1.00 CUBIC YARD, 88" WIDE - ASSEMBLY #11053

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	22519	Male Quick Coupler
2	1	22518	Female Quick Coupler
3	2	30201	Straight Connector, 12MBo-6MJ
4	2	37896	Hose .38" X 52" 6FJX-6FJX
5	2	3314	Tee, 6MJ-6MJ-6MJ
6	2	35424	Hose .38" X 76" 6FJX-6FJX
7	4	3434	90° Elbow, 6MBo-6MJ
8	2	102273	Cylinder Assembly
9	2	14138	Cylinder Pin, 1.00" x 6.75"
10	4	1048	.38" UNC x 2.25" Hex Capscrew
11	8	1837	.38" UNC Deformed Lock Nut
12	1	18022	Right Grapple Hook
13	4	14550	Split Bushing, 1.75" x 1.50" x 1.75"
14	4	9371	Grease Fitting
15	4	14760	Split Bushing, 1.75" x 1.50" x 1.25"
16	2	14551	Spacer
17	1	18023	Left Grapple Hook
18	2	14140	Cylinder Pin, 1.00" x 9.06"
19	3	Varies	Logo
20	1	18043	Bucket
	3	81358	Replacement Hose Clamp
21	2	37837	Hose .38" X 24" 6FJX-6FJX
22	2	40149	Pinch Point Danger Decal
23	1	-----	Serial Number Identification Tag Location
24	1	4338	Made in USA Decal
25	1	40151	High Pressure Warning Decal
26	2	14139	Outer Pivot Pin, 1.50" x 9.13"
27	4	1050	.38" UNF x 2.75" Hex Capscrew
28	2	14289	Inner Pivot Pin, 1.50" x 7.63"

NOTE: Optional cutting edge #24508 is available for this bucket.

SCRAP GRAPPLE BUCKET

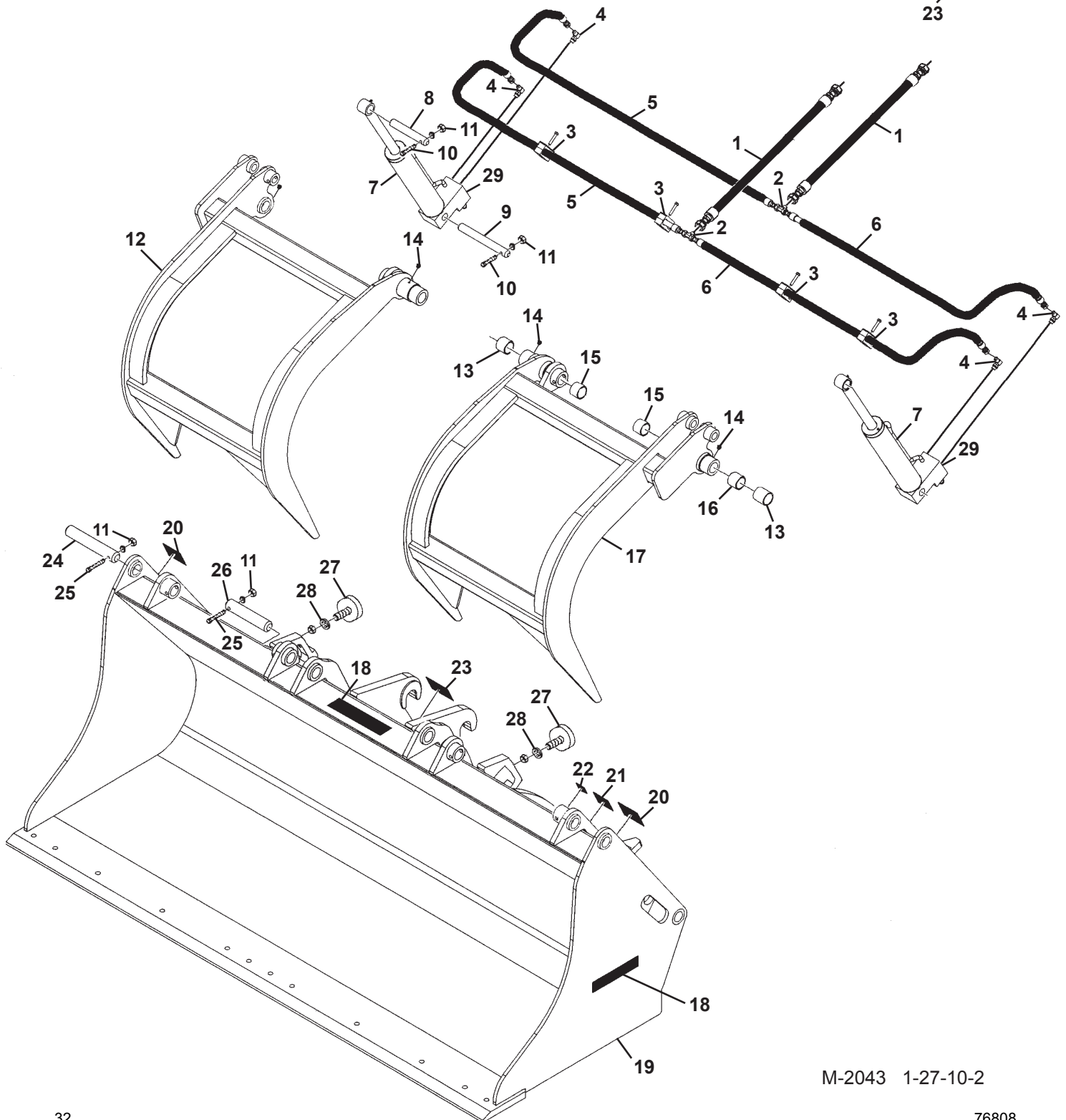
1.00 CUBIC YARD, 88" WIDE - ASSEMBLY #12512



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M-2043 1-27-10-2

SCRAP GRAPPLE BUCKET

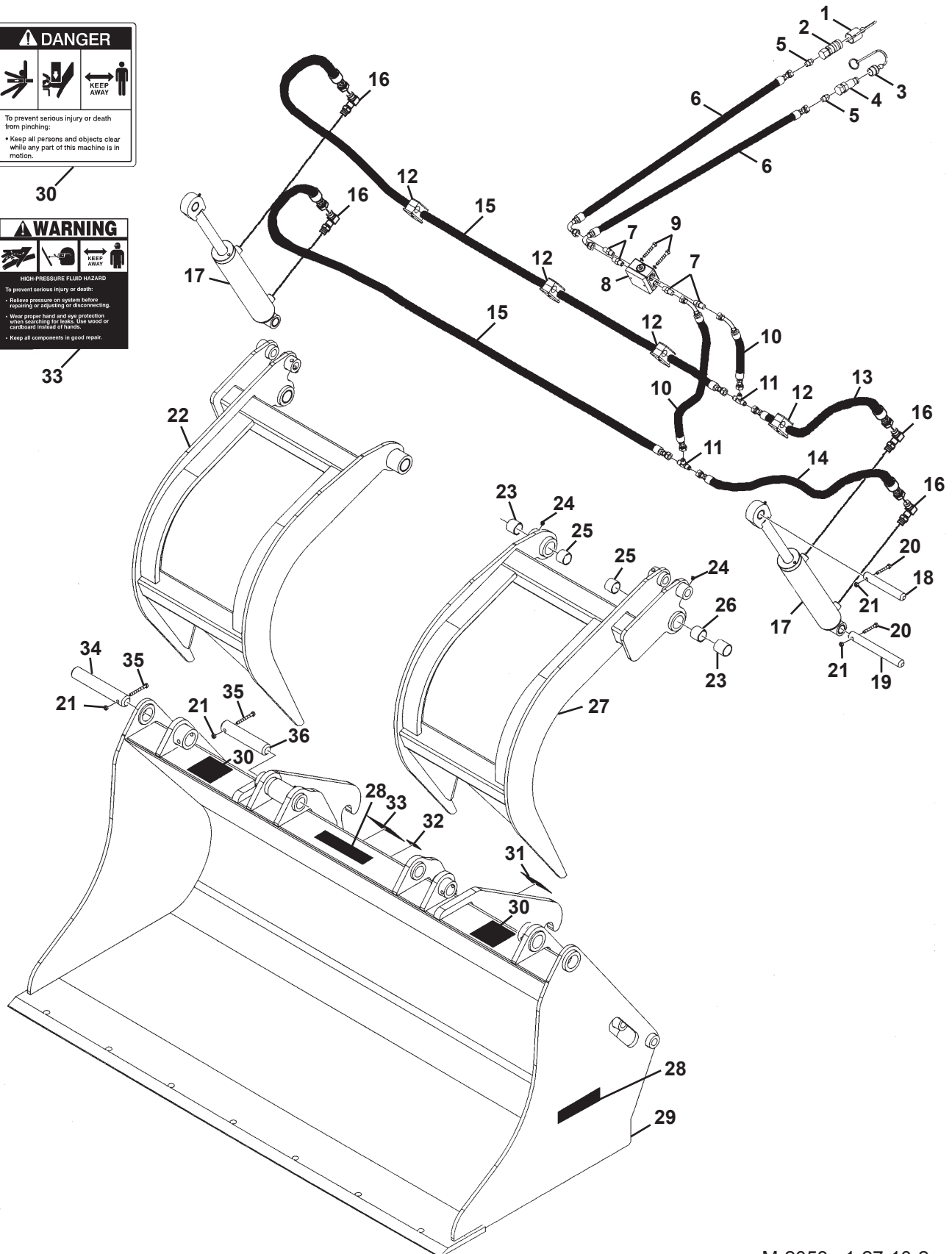
1.00 CUBIC YARD, 88" WIDE - ASSEMBLY #12512

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	2	37896	Hose .38" X 52" 6FJX-6FJX
2	2	3314	Tee, 6MJ-6MJ-6MJ
3	4	81358	Replacement Hose Clamp
4	4	3434	90° Elbow, 6MBo-6MJ
5	2	35424	Hose .38" X 76" 6FJX-6FJX
6	2	37837	Hose .38" X 24" 6FJX-6FJX
7	2	89117	Cylinder Assembly
8	2	14138	Cylinder Pin, 1.00" x 6.75"
9	2	14140	Cylinder Pin, 1.00" x 9.06"
10	4	1277	.31" UNF x 2.25" Hex Capscrew
11	8	1502	.31" Lock Washer
	8	4845	Nut, .31-24
12	1	18022	Right Grapple Hook
13	4	14550	Split Bushing, 1.75" x 1.50" x 1.75"
14	4	9371	Grease Fitting
15	4	14760	Split Bushing, 1.75" x 1.50" x 1.25"
16	2	14551	Spacer
17	1	18023	Left Grapple Hook
18	3	Varies	Logo
19	1	18182	Bucket
20	2	40149	Pinch Point Danger Decal
21	1	-----	Serial Number Identification Tag Location
22	1	4338	Made in USA Decal
23	1	40151	High Pressure Warning Decal
24	2	14139	Outer Pivot Pin, 1.50" x 9.13"
25	4	1279	.31" UNF x 2.75" Hex Capscrew
26	2	14289	Inner Pivot Pin, 1.50" x 7.63"
27	2	308688	Rollback Bumper
28	2	2533	Lock Washer, 12MM
	2	2560	M12 Hex Nut

NOTE: Optional cutting edge #24508 is available for this bucket.

SCRAP GRAPPLE BUCKET

1.00 CUBIC YARD, 75" WIDE - ASSEMBLY #12719



M-2053 1-27-10-2

SCRAP GRAPPLE BUCKET

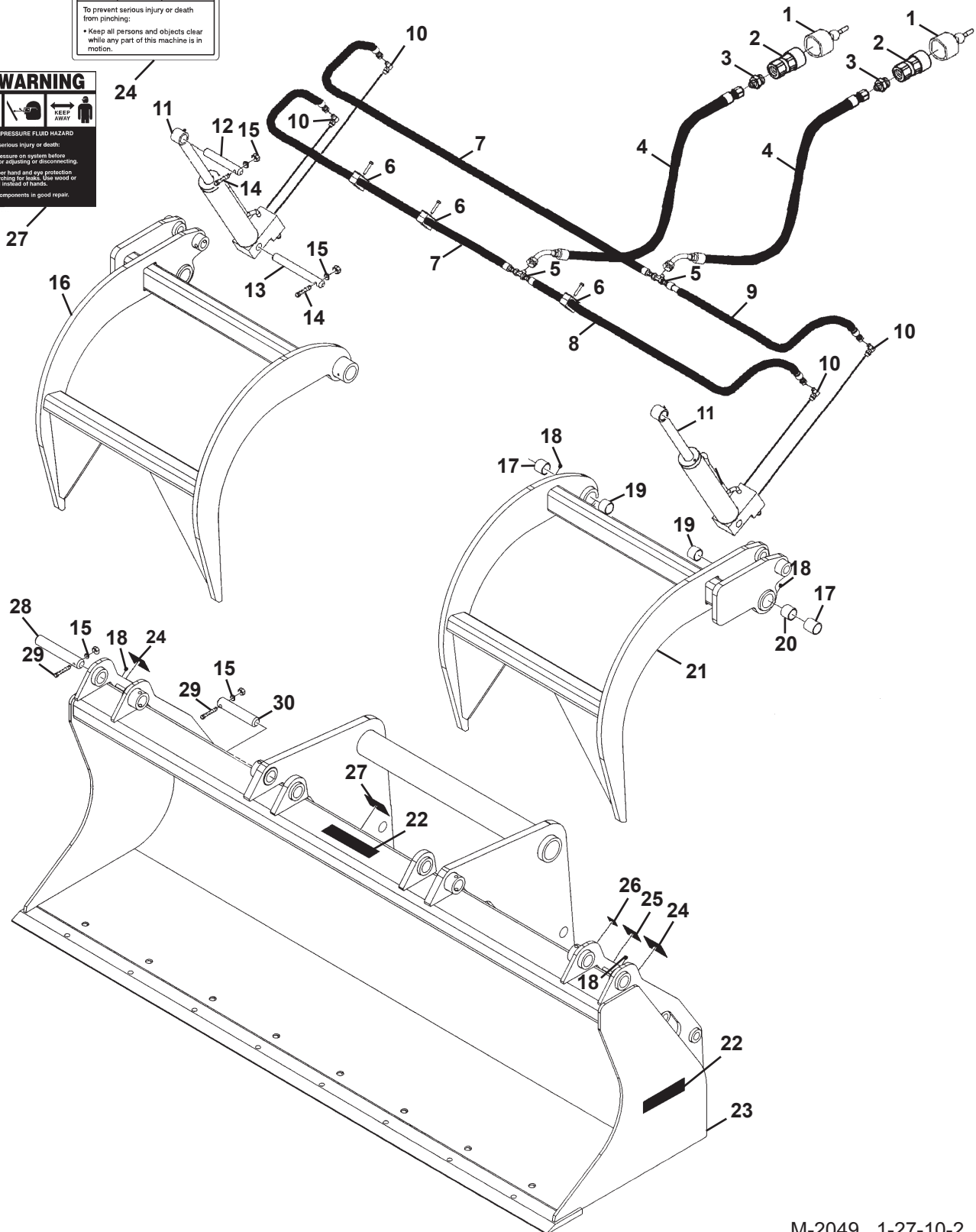
1.00 CUBIC YARD, 75" WIDE - ASSEMBLY #12719

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	32548	Female Quick Coupler Cover
2	1	84928	Female Quick Coupler
3	1	32549	Male Quick Coupler
4	1	84923	Male Quick Coupler
5	2	3269	Straight Connector, 8MBo-6MJ
6	2	37882	Hose .38" x 76" 6FJX-6FJX90°
7	4	3457	Bulkhead Connector, 6MBo-6MJ
8	1	88536	Valve
9	2	1026	.31 UNC x 2.00" Hex Capscrew
	2	1502	.31" Lock Washer
10	2	37860	Hose .38" x 22" 6FJX-6FJX90°
11	2	3314	Tee, 6MJ-6MJ-6MJ
12	4	81358	Replacement Hose Clamp
13	1	37883	Hose .38" x 23" 6FJX-6FJX
14	1	37884	Hose .38" x 21" 6FJX-6FJX
15	2	37887	Hose .38" x 64" 6FJX-6FJX
16	4	3434	90° Elbow, 6MBo-6MJ
17	2	102277	Cylinder Assembly
18	2	14138	Cylinder Pin, 1.00" x 6.75"
19	2	14140	Cylinder Pin, 1.00" x 9.06"
20	4	1050	.38" UNF x 2.75" Hex Capscrew
21	8	1837	.38" UNC Deformed Lock Nut
22	1	16114	Right Grapple Hook
23	4	14550	Split Bushing, 1.75" x 1.50" x 1.75"
24	4	9371	Grease Fitting
25	4	14760	Split Bushing, 1.75" x 1.50" x 1.25"
26	2	14551	Spacer
27	1	16113	Left Grapple Hook
28	3	Varies	Logo
29	1	16112	Bucket
30	2	40149	Pinch Point Danger Decal
31	1	----	Serial Number Identification Tag Location
32	1	4338	Made in USA Decal
33	1	40151	High Pressure Warning Decal
34	2	14139	Outer Pivot Pin, 1.50" x 9.13"
35	4	1048	.38" UNC x 2.25" Hex Capscrew
36	2	14289	Inner Pivot Pin, 1.50" x 7.63"

NOTE: Optional cutting edge #12720 is available for this bucket.

SCRAP GRAPPLE BUCKET

1.00 CUBIC YARD, 90" WIDE - ASSEMBLY #12773



M-2049 1-27-10-2

SCRAP GRAPPLE BUCKET

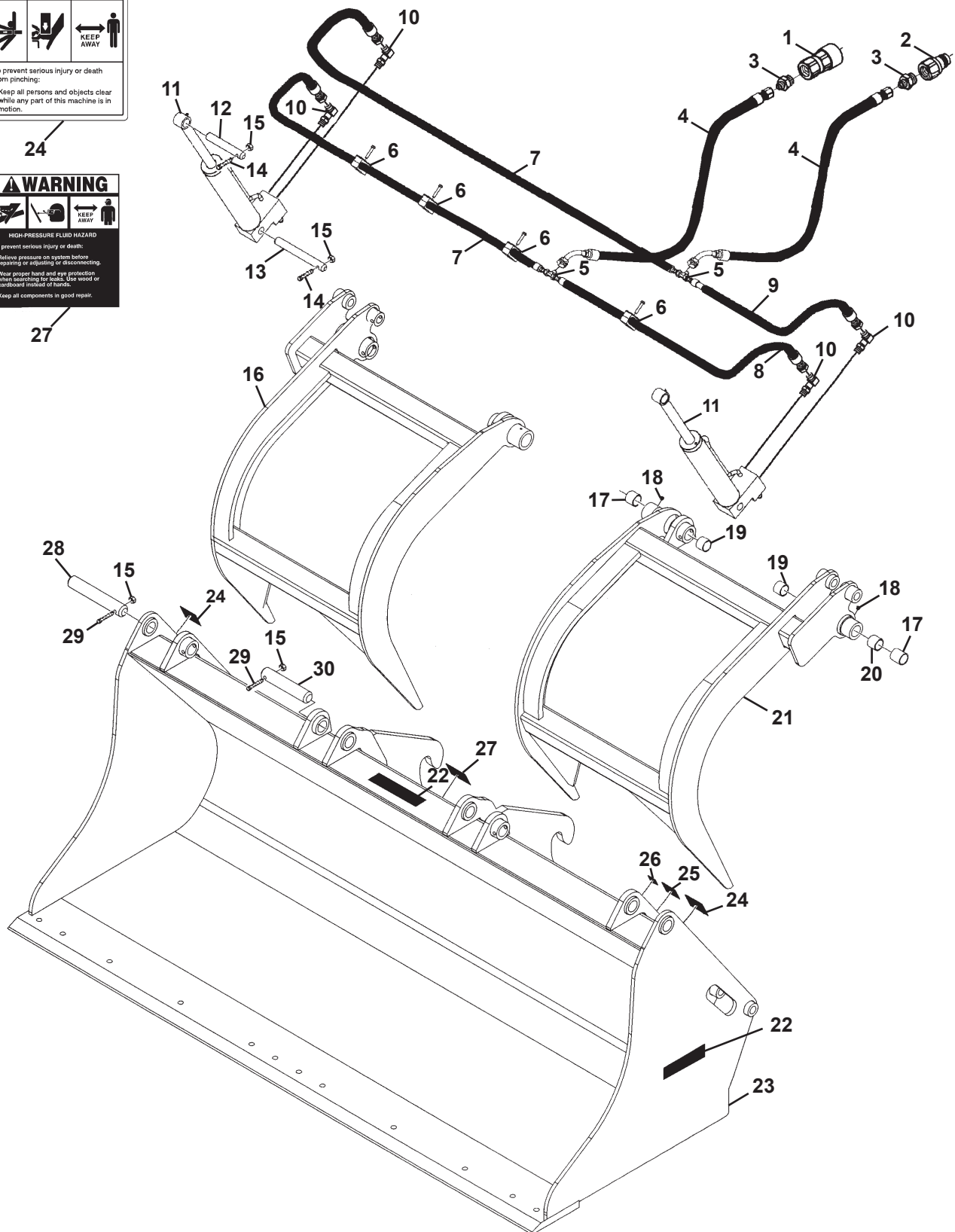
1.00 CUBIC YARD, 90" WIDE - ASSEMBLY #12773

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	2	32548	Female Quick Coupler Cover
2	2	84928	Female Quick Coupler
3	2	3269	Straight Connector, 8MBo-6MJ
4	2	37882	Hose .38" x 76" 6FJX-6FJX90°
5	2	3314	Tee, 6MJ-6MJ-6MJ
6	3	81358	Replacement Hose Clamp
7	2	37782	Hose .38" x 70" 6FJX-6FJX
8	1	37884	Hose .38" x 21" 6FJX-6FJX
9	1	37883	Hose .38" x 23" 6FJX-6FJX
10	4	3434	90° Elbow, 6MBo-6MJ
11	2	89113	Cylinder Assembly
12	2	14138	Cylinder Pin, 1.00" x 6.75"
13	2	14140	Cylinder Pin, 1.00" x 9.06"
14	4	1299	.38" UNF x 2.50" Hex Capscrew
15	8	1503	.38" Lock Washer
	8	1476	.38" UNF Hex Nut
16	1	32145	Right Grapple Hook
17	4	14550	Split Bushing, 1.75" x 1.50" x 1.75"
18	4	9371	Grease Fitting
19	4	14760	Split Bushing, 1.75" x 1.50" x 1.25"
20	2	14551	Spacer
21	1	32146	Left Grapple Hook
22	3	Varies	Logo
23	1	103871	Bucket
24	2	40149	Pinch Point Danger Decal
25	1	----	Serial Number Identification Tag Location
26	1	4338	Made in USA Decal
27	1	40151	High Pressure Warning Decal
28	2	14139	Outer Pivot Pin, 1.50" x 9.13"
29	4	1301	.38" UNF x 3.00" Hex Capscrew
30	2	14289	Inner Pivot Pin, 1.50" x 7.63"

NOTE: Optional cutting edge #12297 is available for this bucket.

SCRAP GRAPPLE BUCKET

1.00 CUBIC YARD, 88" WIDE - ASSEMBLY #12783



SCRAP GRAPPLE BUCKET

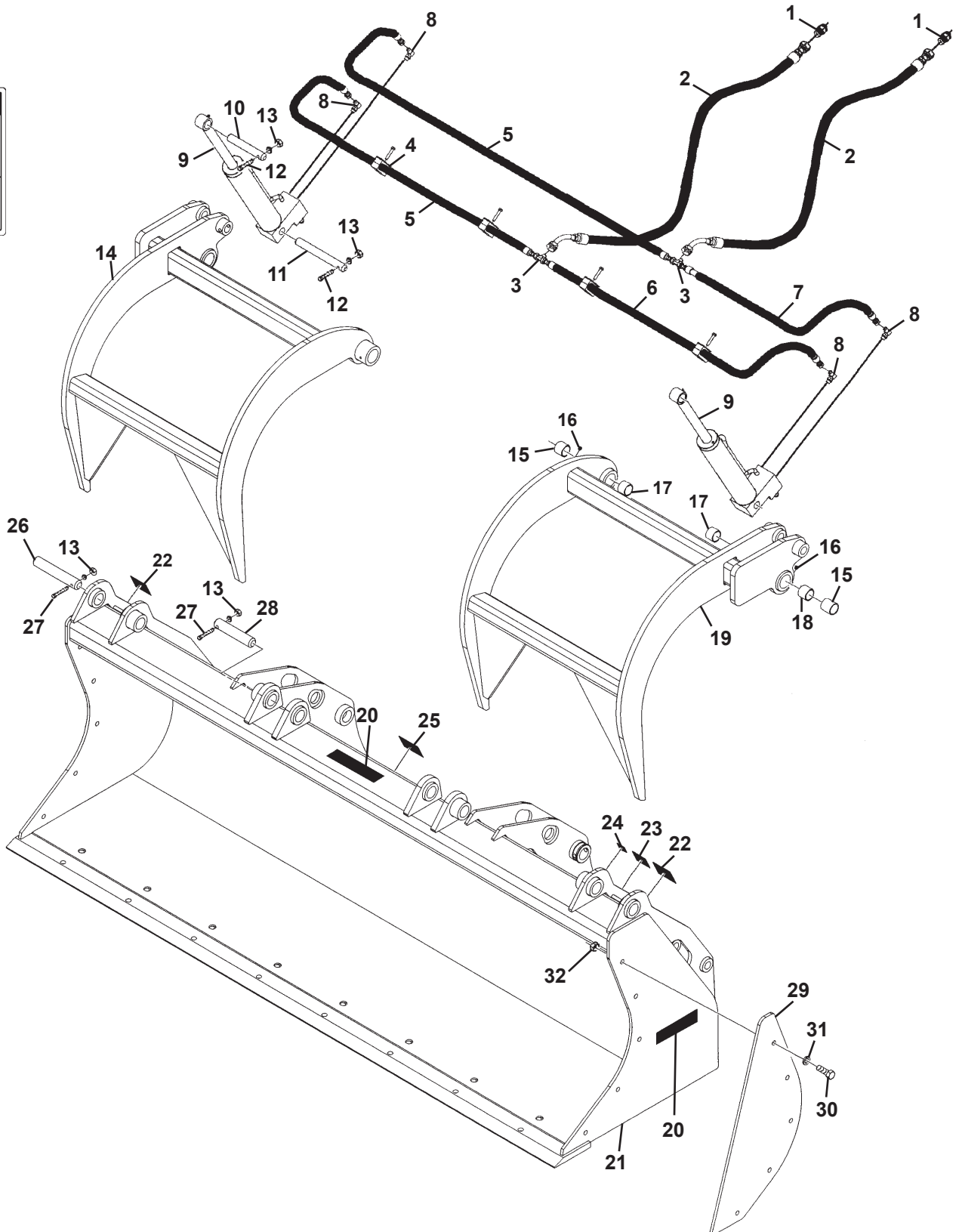
1.00 CUBIC YARD, 88" WIDE - ASSEMBLY #12783

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	84928	Female Quick Coupler
2	1	84923	Male Quick Coupler
3	2	3269	Straight Connector, 8MBo-6MJ
4	2	37882	Hose .38" x 76" 6FJX-6FJX90°
5	2	3314	Tee, 6MJ-6MJ-6MJ
6	4	81358	Replacement Hose Clamp
7	2	35424	Hose .38" x 76" 6FJX-6FJX
8	1	37884	Hose .38" x 21" 6FJX-6FJX
9	1	37883	Hose .38" x 23" 6FJX-6FJX
10	4	3434	90° Elbow, 6MBo-6MJ
11	2	102273	Cylinder Assembly
12	2	14138	Cylinder Pin, 1.00" x 6.75"
13	2	14140	Cylinder Pin, 1.00" x 9.06"
14	4	1048	.38" UNC x 2.25" Hex Capscrew
15	8	1837	.38" UNC Deformed Lock Nut
16	1	18022	Right Grapple Hook
17	4	14550	Split Bushing, 1.75" x 1.50" x 1.75"
18	4	9371	Grease Fitting
19	4	14760	Split Bushing, 1.75" x 1.50" x 1.25"
20	2	14551	Spacer
21	1	18023	Left Grapple Hook
22	3	Varies	Logo
23	1	104342	Bucket
24	2	40149	Pinch Point Danger Decal
25	1	-----	Serial Number Identification Tag Location
26	1	4338	Made in USA Decal
27	1	40151	High Pressure Warning Decal
28	2	14139	Outer Pivot Pin, 1.50" x 9.13"
29	4	1050	.38" UNC x 2.75" Hex Capscrew
30	2	14289	Inner Pivot Pin, 1.50" x 7.63"

NOTE: Optional cutting edge #24508 is available for this bucket.

SCRAP GRAPPLE BUCKET

1.25 CUBIC YARD, 90" WIDE - ASSEMBLY #12405



M-2045 1-27-10-2

SCRAP GRAPPLE BUCKET

1.25 CUBIC YARD, 90" WIDE - ASSEMBLY #12405

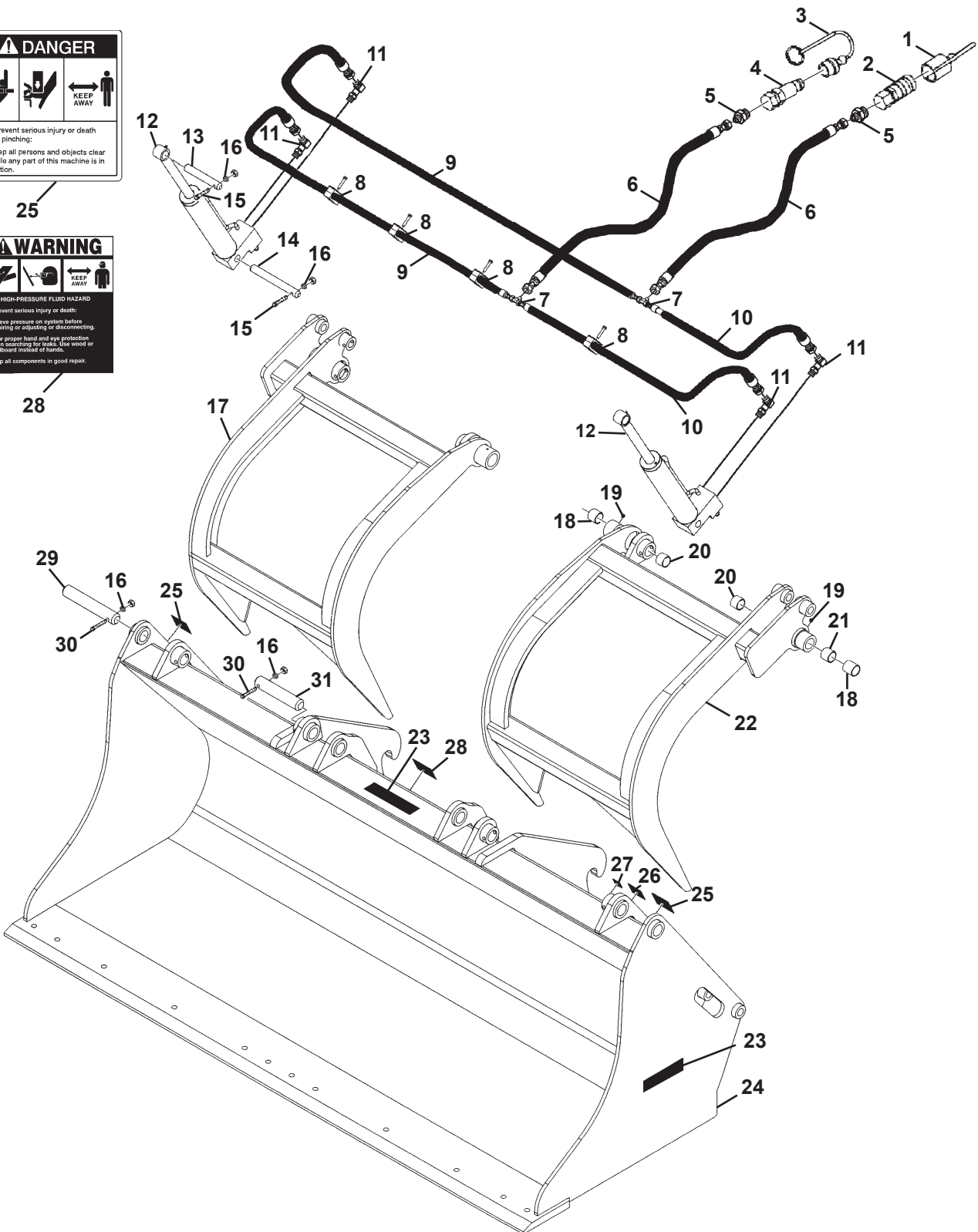
<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	2	30201	Straight Connector, 12MB0-6MJ
2	2	37882	Hose .38" x 76" 6FJX-6FJX90°
3	2	3314	Tee, 6MJ-6MJ-6MJ
4	4	81358	Replacement Hose Clamp
5	2	37782	Hose .38" x 70" 6FJX-6FJX
6	1	37884	Hose .38" x 21" 6FJX-6FJX
7	1	37883	Hose .38" x 23" 6FJX-6FJX
8	4	3434	90° Elbow, 6MBo-6MJ
9	2	89113	Cylinder Assembly
10	2	14138	Cylinder Pin, 1.00" x 6.75"
11	2	14140	Cylinder Pin, 1.00" x 9.06"
12	4	1299	.38" UNF x 2.50" Hex Capscrew
13	8	1503	.38" Lock Washer
	8	1476	.38" UNF Hex Nut
14	1	32145	Right Grapple Hook
15	4	14550	Split Bushing, 1.75" x 1.50" x 1.75"
16	4	9371	Grease Fitting
17	4	14760	Split Bushing, 1.75" x 1.50" x 1.25"
18	2	14551	Spacer
19	1	32146	Left Grapple Hook
20	3	Varies	Logo
21	1	308523	Bucket
22	2	40149	Pinch Point Danger Decal
23	1	-----	Serial Number Identification Tag Location
24	1	4338	Made in USA Decal
25	1	40151	High Pressure Warning Decal
26	2	14139	Outer Pivot Pin, 1.50" x 9.13"
27	4	1301	.38" UNF x 3.00" Hex Capscrew
28	2	14289	Inner Pivot Pin, 1.50" x 7.63"
29	1	308550	Bolt-On Side Plate
30	10	1811	.50" UNC x 1.50" Hex Capscrew, Grade 8
31	10	1505	.50" Lock Washer
32	10	1844	.50" Hex Nut, Grade 8

NOTE: Optional cutting edge #12297 is available for this bucket.

M-2046 1-27-10-2

SCRAP GRAPPLE BUCKET

1.25 CUBIC YARD, 88" WIDE - ASSEMBLY #12738



SCRAP GRAPPLE BUCKET

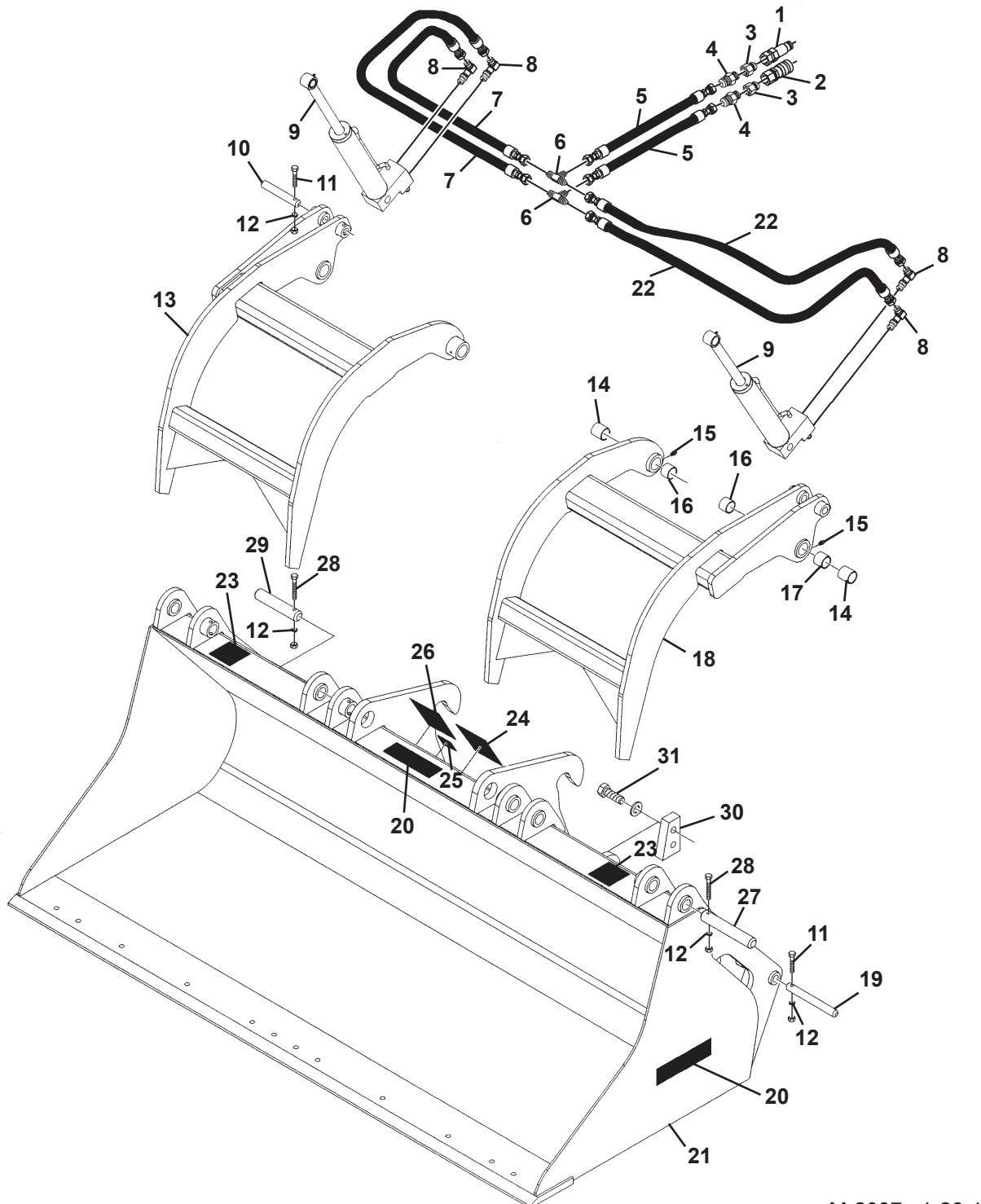
1.25 CUBIC YARD, 88" WIDE - ASSEMBLY #12738

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	32548	Female Quick Coupler Cover
2	1	84928	Female Quick Coupler
3	1	32549	Male Quick Coupler Cover
4	1	84923	Male Quick Coupler
5	2	3269	Straight Connector, 8MBo-6MJ
6	2	35424	Hose .38" x 76" 6FJX-6FJX
7	2	3314	Tee, 6MJ-6MJ-6MJ
8	4	81358	Replacement Hose Clamp
9	2	37896	Hose .38" x 52" 6FJX-6FJX
10	2	37837	Hose .38" x 24" 6FJX-6FJX
11	4	3434	90° Elbow, 6MBo-6MJ
12	2	102273	Cylinder Assembly
13	2	14138	Cylinder Pin, 1.00" x 6.75"
14	2	14140	Cylinder Pin, 1.00" x 9.06"
15	4	1277	.31" UNF x 2.25" Hex Capscrew
16	8	1502	.31" Lock Washer
	8	4845	.31-24 UNF Nut
17	1	18022	Right Grapple Hook
18	4	14550	Split Bushing, 1.75" x 1.50" x 1.75"
19	4	9371	Grease Fitting
20	4	14760	Split Bushing, 1.75" x 1.50" x 1.25"
21	2	14551	Spacer
22	1	18023	Left Grapple Hook
23	3	Varies	Logo
24	1	102507	Bucket
25	2	40149	Pinch Point Danger Decal
26	1	----	Serial Number Identification Tag Location
27	1	4338	Made in USA Decal
28	1	40151	High Pressure Warning Decal
29	2	14139	Outer Pivot Pin, 1.50" x 9.13"
30	4	1279	.31" UNF x 2.75" Hex Capscrew
31	2	14289	Inner Pivot Pin, 1.50" x 7.63"

NOTE: Optional cutting edge #24508 is available for this bucket.

M-2056 1-27-10-2

1.75 CUBIC YARD, 96" WIDE - ASSEMBLY #12439



M-2007 1-26-10-2

SCRAP GRAPPLE BUCKET

1.75 CUBIC YARD, 96" WIDE - ASSEMBLY #12439

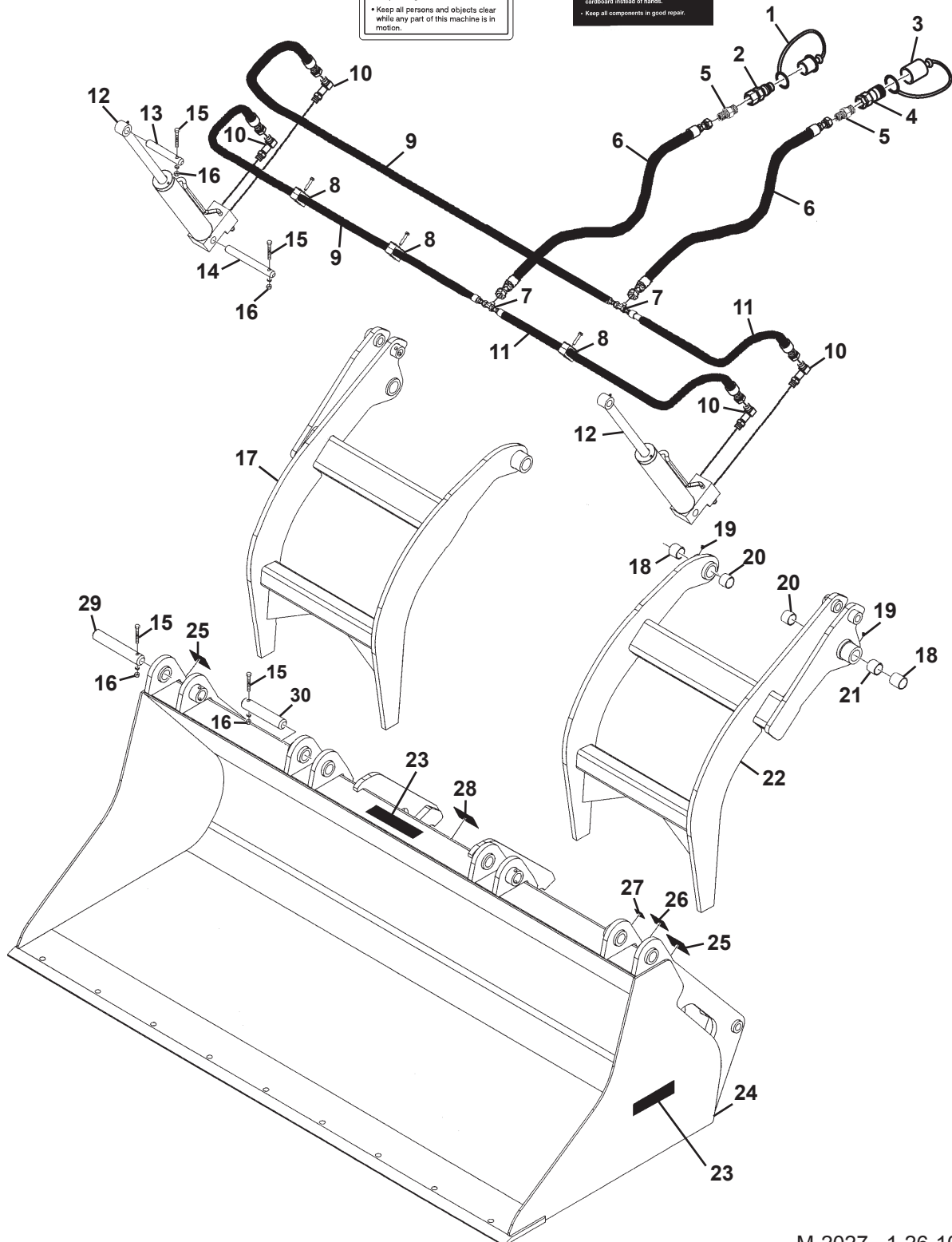
<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	22519	Male Quick Coupler
2	1	22518	Female Quick Coupler
3	2	30198	Straight Connector, 12MBo-10FBo
4	2	22552	Straight Connector, 10MBo-8MFF
5	2	37998	Hose .38" X 45.50" 8FFS-6FFS, HS
6	2	30203	Tee, 6MFS-6MFS-6MFS
7	2	37787	Hose .38" X 68" 6FFS-6FFS
8	4	30204	90° Elbow, 6MBo-6MFS, Adj
9	2	89117	Cylinder Assembly
10	2	14138	Cylinder Pin, 1.00" x 6.75"
11	4	1277	.31" UNF x 2.25" Hex Capscrew
12	8	1502	.31" Lock Washer
	8	4845	.31" UNF Nut
13	1	32522	Right Grapple Hook
14	4	14550	Split Bushing, 1.75" x 1.50" x 1.75"
15	4	9371	Grease Fitting
16	4	14760	Split Bushing, 1.75" x 1.50" x 1.25"
17	2	14551	Spacer
18	1	32523	Left Grapple Hook
19	2	14140	Cylinder Pin, 1.00" x 9.06"
20	3	Varies	Logo
21	1	17073	Bucket
	3	81358	Replacement Hose Clamp
22	2	37786	Hose .38" X 43" 6FFS-6FFS
23	2	40149	Pinch Point Danger Decal
24	1	-----	Serial Number Identification Tag Location
25	1	4338	Made in USA Decal
26	1	40151	High Pressure Warning Decal
27	2	14139	Outer Pivot Pin, 1.50" x 9.13"
28	4	1279	.31" UNF x 2.75" Hex Capscrew
29	2	14289	Inner Pivot Pin, 1.50" x 7.63"
30	2	14228	Stop Block
31	4	10012	.75" UNC x 2.25" Hex Capscrew, Grade 8
	4	1507	.75" Lock Washer

NOTE: Optional cutting edge #14611 is available for this bucket.

M-2008 1-26-10-2

SCRAP GRAPPLE BUCKET

1.75 CUBIC YARD, 96" WIDE - ASSEMBLY #12700



M-2027 1-26-10-2

SCRAP GRAPPLE BUCKET

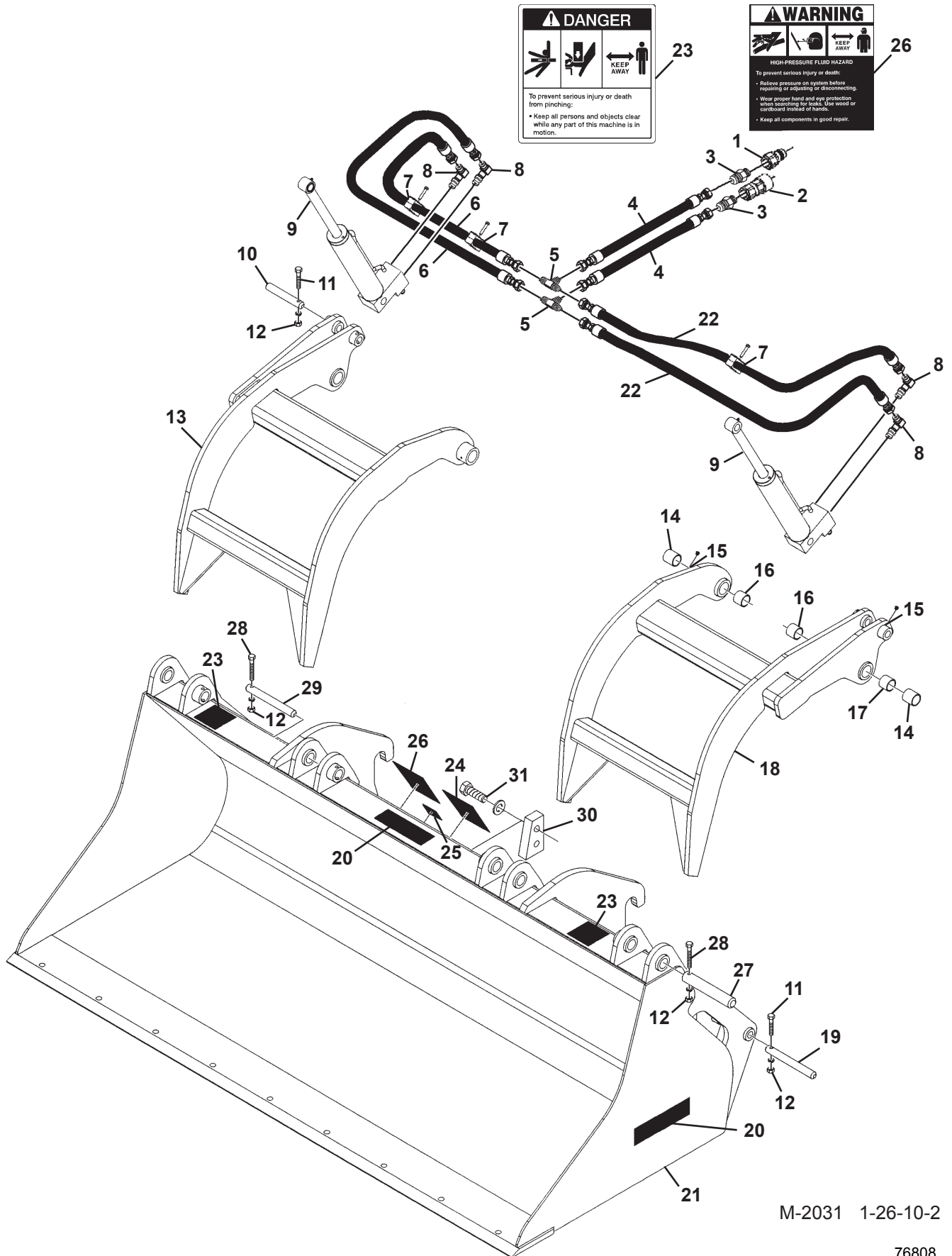
1.75 CUBIC YARD, 96" WIDE - ASSEMBLY #12700

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	51753	Dust Cap
2	1	15109	Male Quick Coupler
3	1	51754	Dust Plug
4	1	15110	Female Quick Coupler
5	2	3125	Straight Connector, 6MJ-8MP
6	2	35424	Hose .38" X 76" 6FJX-6FJX
7	2	3314	Tee, 6MJ-6MJ-6MJ
8	3	81358	Replacement Hose Clamp
9	2	37887	Hose .38" X 64" 6FJX-6FJX
10	4	30169	90° Elbow Long, 6MBo-6MJ
11	2	37407	Hose .38" X 44" 6FJX-6FJX
12	2	89117	Cylinder Assembly
13	2	14138	Cylinder Pin, 1.00" x 6.75"
14	2	14140	Cylinder Pin, 1.00" x 9.06"
15	8	1299	.38" UNF x 2.50" Hex Capscrew
16	8	1503	.38" Lock Washer
	8	1476	.38" UNF Hex Nut
17	1	18263	Right Grapple Hook
18	4	14550	Split Bushing, 1.75" x 1.50" x 1.75"
19	4	9371	Grease Fitting
20	4	14760	Split Bushing, 1.75" x 1.50" x 1.25"
21	2	14551	Spacer
22	1	18264	Left Grapple Hook
23	3	Varies	Logo
24	1	101932	Bucket
25	2	40149	Pinch Point Danger Decal
26	1	----	Serial Number Identification Tag Location
27	1	4338	Made in USA Decal
28	1	40151	High Pressure Warning Decal
29	2	14139	Outer Pivot Pin, 1.50" x 9.13"
30	2	14289	Inner Pivot Pin, 1.50" x 7.63"

NOTE: Optional cutting edge #11002 is available for this bucket.

SCRAP GRAPPLE BUCKET

1.75 CUBIC YARD, 96" WIDE - ASSEMBLY #12741



M-2031 1-26-10-2

SCRAP GRAPPLE BUCKET

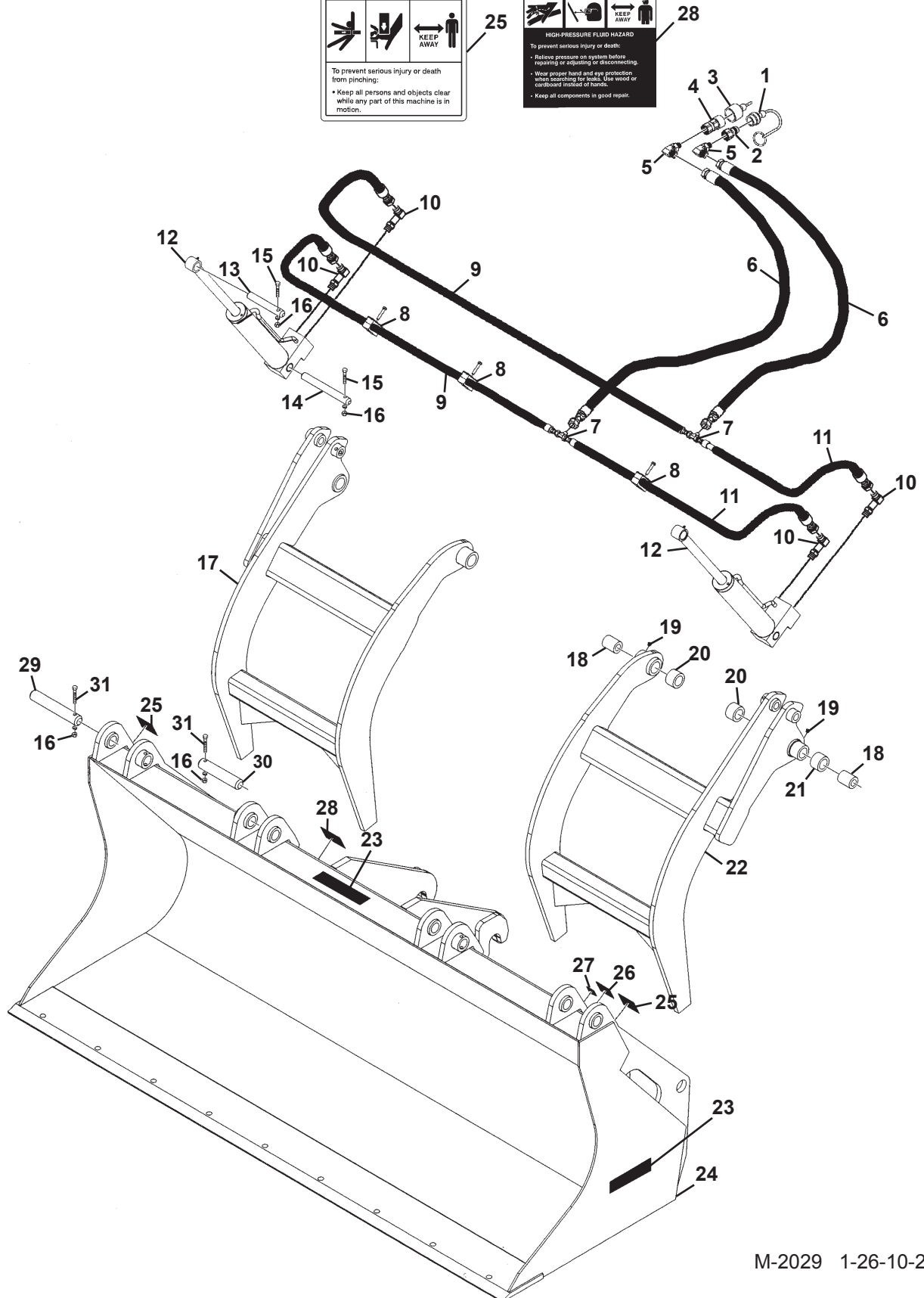
1.75 CUBIC YARD, 96" WIDE - ASSEMBLY #12741

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	17139	Male Quick Coupler
2	1	17140	Female Quick Coupler
3	2	30286	Straight Connector, 8MBo-8MFS
4	2	37998	Hose .38" X 45.50" 8FFS-6FFS, HS
5	2	30203	Tee, 6MFS-6MFS-6MFS
6	2	37787	Hose .38" X 68" 6FFS-6FFS
7	3	81358	Replacement Hose Clamp
8	4	30204	90° Elbow, 6MBo-6MFS, Adj
9	2	89117	Cylinder Assembly
10	2	14138	Cylinder Pin, 1.00" x 6.75"
11	4	1277	.31" UNF x 2.25" Hex Capscrew
12	8	1502	.31" Lock Washer
	8	4845	.31"-24 UNF Nut
13	1	32522	Right Grapple Hook
14	4	14550	Split Bushing, 1.75" x 1.50" x 1.75"
15	4	6616	Grease Fitting
16	4	14760	Split Bushing, 1.75" x 1.50" x 1.25"
17	2	14551	Spacer
18	1	32523	Left Grapple Hook
19	2	14140	Cylinder Pin, 1.00" x 9.06"
20	3	Varies	Logo
21	1	102599	Bucket
22	2	37786	Hose .38" X 43" 6FFS-6FFS
23	2	40149	Pinch Point Danger Decal
24	1	-----	Serial Number Identification Tag Location
25	1	4338	Made in USA Decal
26	1	40151	High Pressure Warning Decal
27	2	14139	Outer Pivot Pin, 1.50" x 9.13"
28	4	1279	.31" UNF x 2.75" Hex Capscrew
29	2	14289	Inner Pivot Pin, 1.50" x 7.63"
30	2	14228	Stop Block
31	4	10012	.75" UNC x 2.25" Hex Capscrew, Grade 8
	4	1507	.75" Lock Washer

NOTE: Optional cutting edge #11002 is available for this bucket.

SCRAP GRAPPLE BUCKET

1.75 CUBIC YARD, 96" WIDE - ASSEMBLY #12759



M-2029 1-26-10-2

SCRAP GRAPPLE BUCKET

1.75 CUBIC YARD, 96" WIDE - ASSEMBLY #12759

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	51753	Dust Cap
2	1	17139	Male Quick Coupler
3	1	51754	Dust Plug
4	1	17140	Female Quick Coupler
5	2	30142	90° Elbow LG, 8MBo-6MJ
6	2	35424	Hose .38" X 69" 6FJX-6FJX
7	2	3314	Tee, 6MJ-6MJ-6MJ
8	3	81358	Replacement Hose Clamp
9	2	37887	Hose .38" X 64" 6FJX-6FJX
10	4	30169	90° Long Elbow, 6MBo-6MJ
11	2	37407	Hose .38" X 44" 6FJX-6FJX
12	2	102273	Cylinder Assembly
13	2	14138	Cylinder Pin, 1.00" x 6.75"
14	2	14140	Cylinder Pin, 1.00" x 9.06"
15	4	1277	.31" UNF x 2.25" Hex Capscrew
16	8	1502	.31" Lock Washer
	8	4845	.31"-24 UNF Nut
17	1	18263	Right Grapple Hook
18	4	14550	Split Bushing, 1.75" x 1.50" x 1.75"
19	4	9371	Grease Fitting
20	4	14760	Split Bushing, 1.75" x 1.50" x 1.25"
21	2	14551	Spacer
22	1	18264	Left Grapple Hook
23	3	Varies	Logo
24	1	18605	Bucket
25	2	40149	Pinch Point Danger Decal
26	1	----	Serial Number Identification Tag Location
27	1	4338	Made in USA Decal
28	1	40151	High Pressure Warning Decal
29	2	14139	Outer Pivot Pin, 1.50" x 9.13"
30	2	14289	Inner Pivot Pin, 1.50" x 7.63"
31	4	1279	.31" UNF x 2.75" Hex Capscrew

NOTE: Optional cutting edge #11002 is available for this bucket.

SCRAP GRAPPLE BUCKET

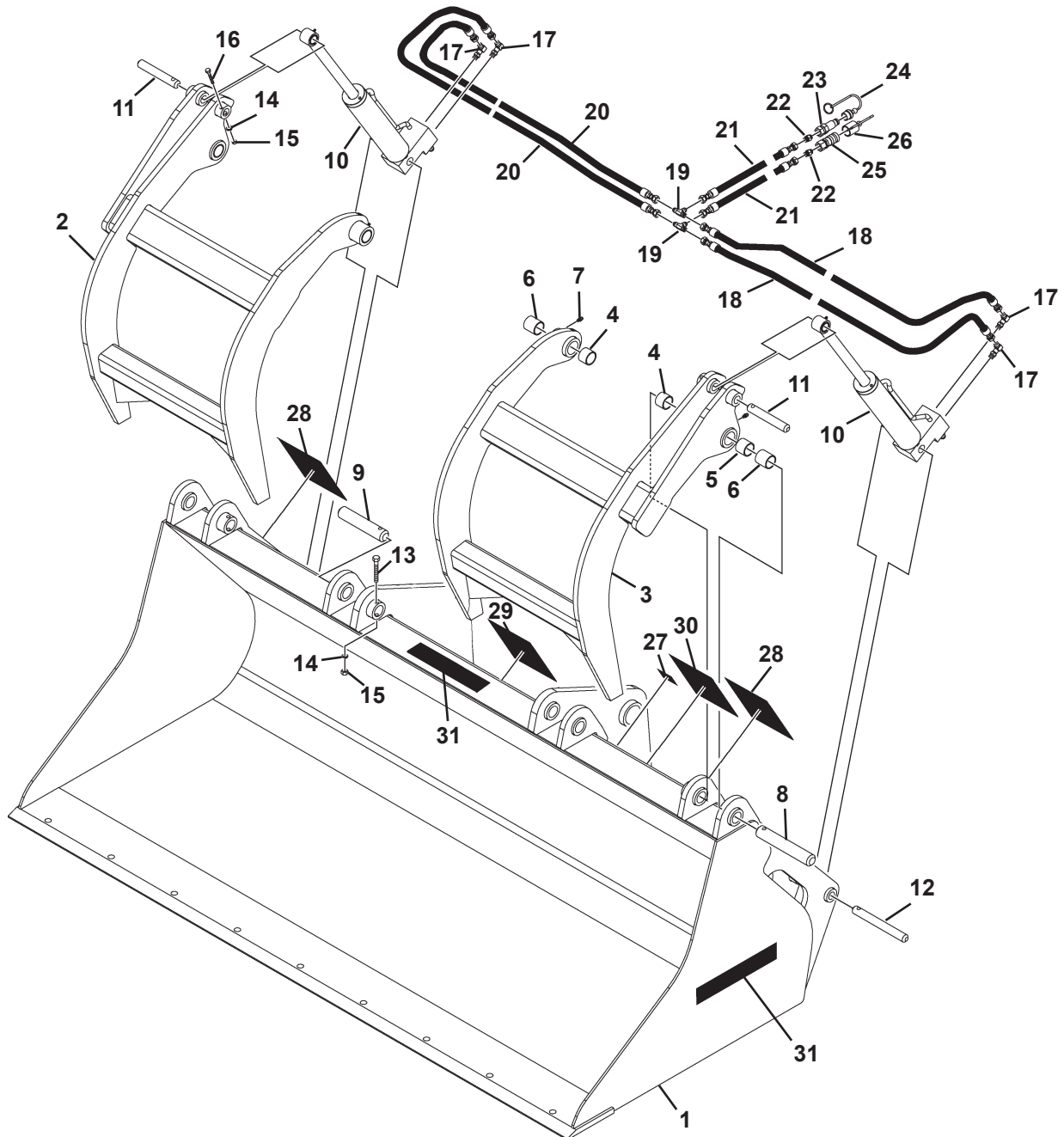
1.75 CUBIC YARD, 96" WIDE - ASSEMBLY #12847



28



29



M-1034 1-26-10-3

SCRAP GRAPPLE BUCKET

1.75 CUBIC YARD, 96" WIDE - ASSEMBLY #12847

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	105922	Bucket
	3	81358	Replacement Hose Clamp
2	1	18263	Right Grapple Hook
3	1	18264	Left Grapple Hook
4	4	14760	Split Bushing, 1.75" x 1.50" x 1.25"
5	2	14551	Spacer
6	4	14550	Split Bushing, 1.75" x 1.50" x 1.75"
7	4	9371	Grease Fitting
8	2	14139	Outer Pivot Pin, 1.50" x 9.13"
9	2	14289	Inner Pivot Pin, 1.50" x 7.63"
10	2	102273	Cylinder Assembly
11	2	14138	Cylinder Pin, 1.00" x 6.75"
12	2	14140	Cylinder Pin, 1.00" x 9.06"
13	4	1279	.31" UNF x 2.75" Hex Capscrew
14	8	1502	.31" Lock Washer
15	8	4845	.31" UNF Nut
16	4	1277	.31" UNF x 2.25" Hex Capscrew
17	4	3434	90° Elbow, 6MBo-6MJ
18	2	38438	Hose .38" X 54.00" 6FJX-6FJX
19	2	3314	Tee, 6MJ-6MJ-6MJ
20	2	37887	Hose .38" X 64.00" 6FJX-6FJX
21	2	37886	Hose .38" X 60.00" 6FJX-6FJX
22	2	3269	Straight Connector, 8MBo-6MJ
23	1	84923	Male Quick Coupler
24	1	32549	Male Quick Coupler Cover
25	1	84928	Female Quick Coupler
26	1	32548	Female Quick Coupler Cover
27	1	4338	Made in USA Decal
28	2	40149	Pinch Point Danger Decal
29	1	40151	High Pressure Warning Decal
30	1	-----	Serial Number Identification Tag Location
31	3	Varies	Logo

NOTE: Optional cutting edge #11002 is available for this bucket.

SCRAP GRAPPLE BUCKET

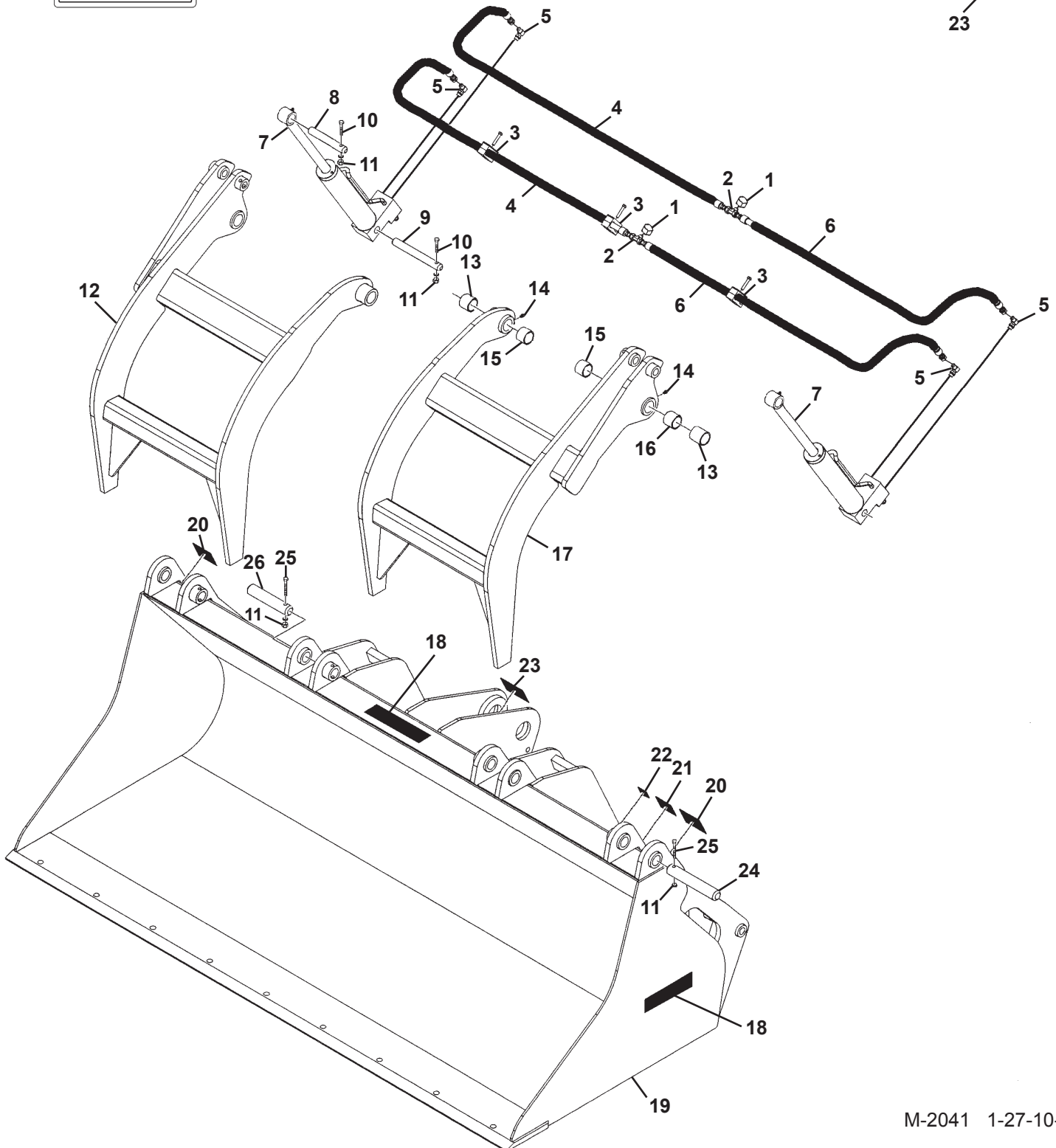
1.75 CUBIC YARD, 96" WIDE - ASSEMBLY #13028



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M-2041 1-27-10-2

SCRAP GRAPPLE BUCKET

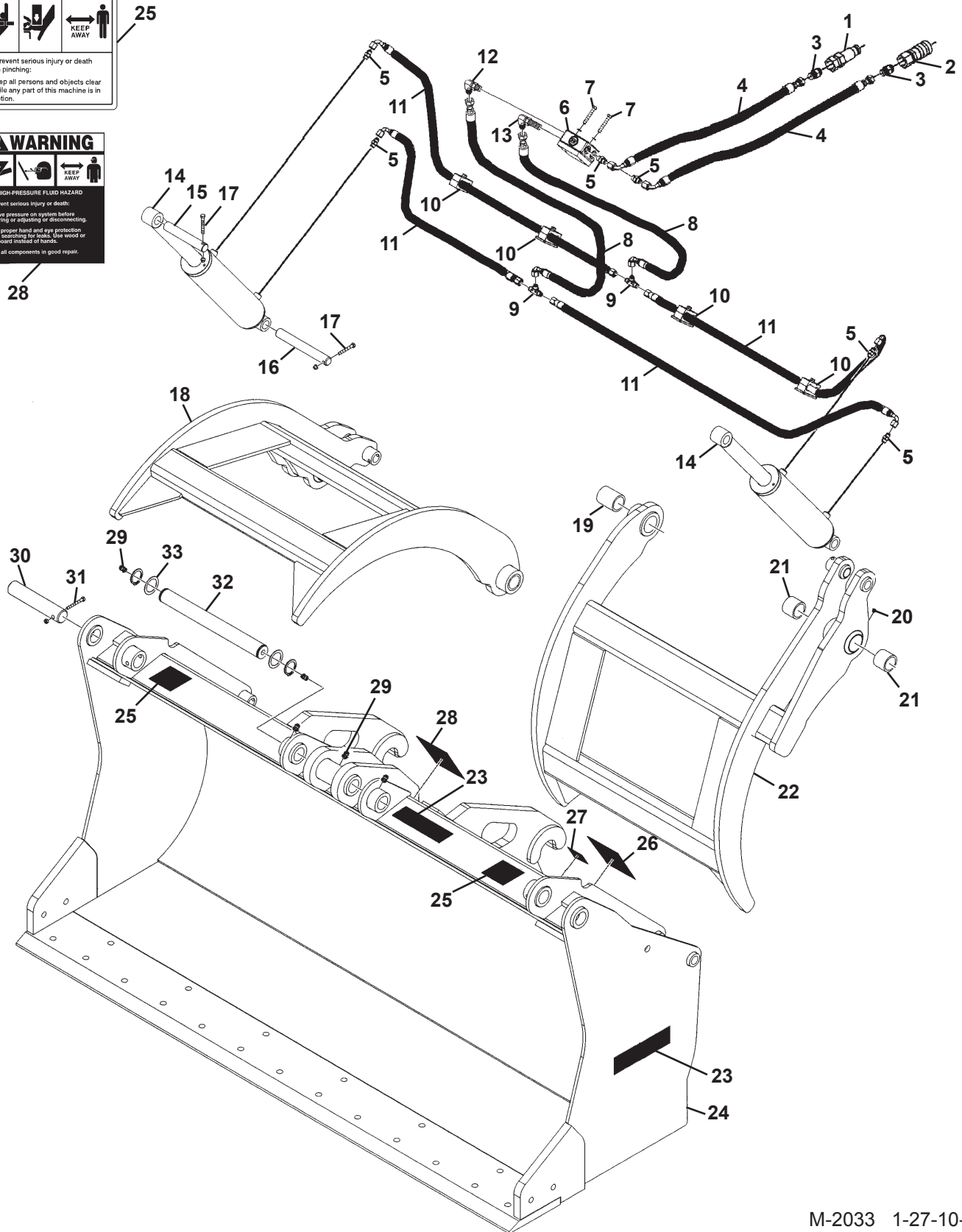
1.75 CUBIC YARD, 96" WIDE - ASSEMBLY #13028

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	2	3285	Cap
2	2	3314	Tee, 6MJ-6MJ-6MJ
3	3	81358	Replacement Hose Clamp
4	2	37887	Hose .38" X 64" 6FJX-6FJX
5	4	3434	90° Elbow, 6MBo-6MJ
6	2	38438	Hose .38" X 54" 6FJX-6FJX
7	2	102273	Cylinder Assembly
8	2	14138	Cylinder Pin, 1.00" x 6.75"
9	2	14140	Cylinder Pin, 1.00" x 9.06"
10	4	1277	.31" UNF x 2.25" Hex Capscrew
11	8	1502	.31" Lock Washer
	8	4845	.31" UNF Nut
12	1	18263	Right Grapple Hook
13	4	14550	Split Bushing, 1.75" x 1.50" x 1.75"
14	4	9371	Grease Fitting
15	4	14760	Split Bushing, 1.75" x 1.50" x 1.25"
16	2	14551	Spacer
17	1	18264	Left Grapple Hook
18	2	Varies	Logo
19	1	109505	Bucket
20	2	40149	Pinch Point Danger Decal
21	1	-----	Serial Number Identification Tag Location
22	1	4338	Made in USA Decal
23	1	40151	High Pressure Warning Decal
24	2	14139	Outer Pivot Pin, 1.50" x 9.13"
25	4	1279	.31" UNF x 2.75" Hex Capscrew
26	2	14289	Inner Pivot Pin, 1.50" x 7.63"

NOTE: Optional cutting edge #11002 is available for this bucket.

SCRAP GRAPPLE BUCKET

2.25 CUBIC YARD, 96" WIDE - ASSEMBLY #12723



M-2033 1-27-10-2

SCRAP GRAPPLE BUCKET

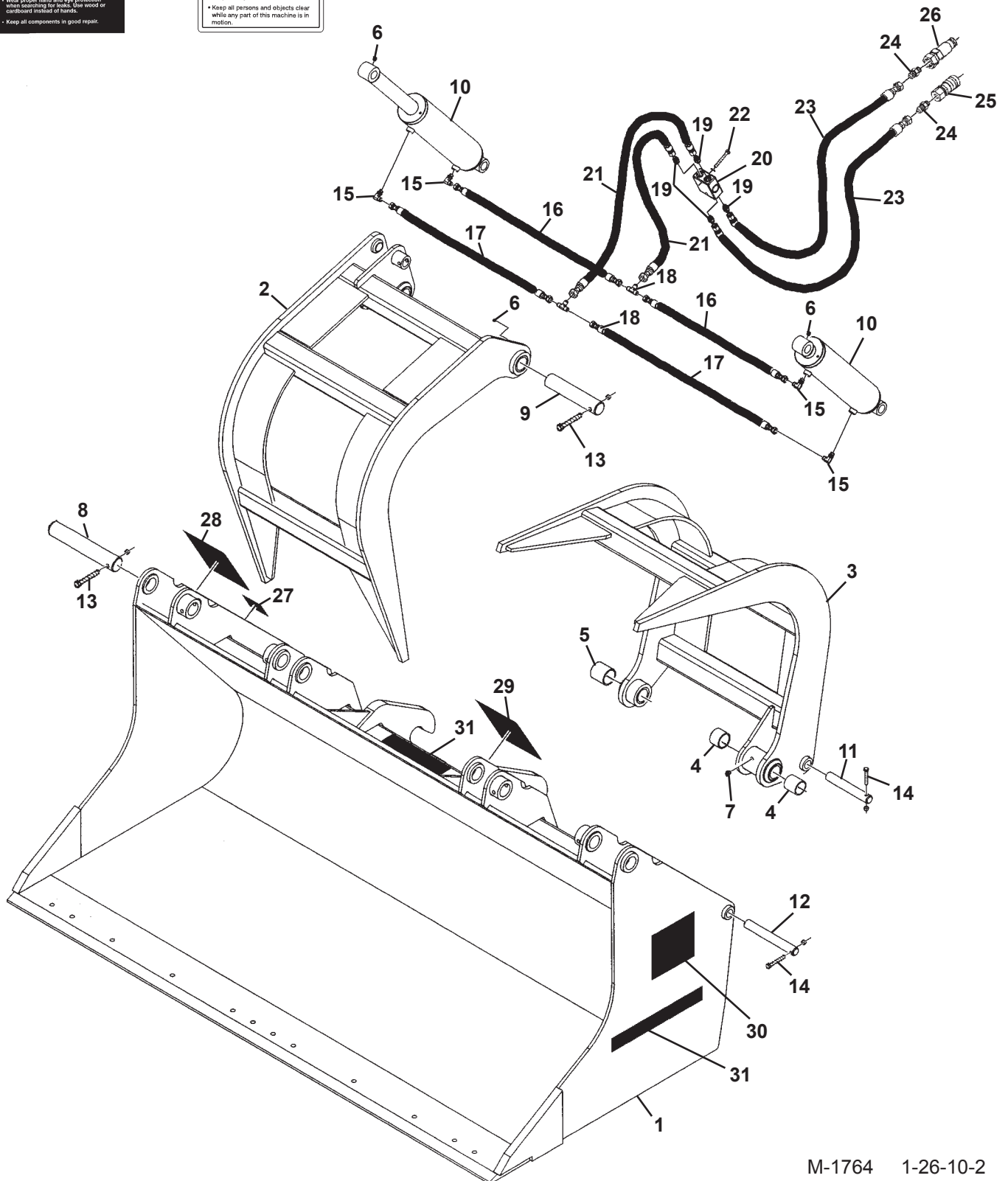
2.25 CUBIC YARD, 96" WIDE - ASSEMBLY #12723

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	22519	Male Quick Coupler
2	1	22518	Female Quick Coupler
3	2	30201	Straight Connector, 12MBo-6MJ
4	2	37783	Hose .38" X 74" 6FJX-6FJX90°
5	6	3457	Straight Connector, 6MBo-6MJ
6	1	88536	Valve
7	2	1026	.31 UNC x 2.00" Hex Capscrew
	2	1502	.31" Lock Washer
8	2	37860	Hose .38" x 22" 6FJX-6FJX90°
9	2	3314	Tee, 6MJ-6MJ-6MJ
10	4	81358	Replacement Hose Clamp
11	4	38413	Hose .38" X 51" 6FJX-6FJX90°
12	1	3434	90° Elbow, 6MBo-6MJ
13	1	30140	90° Elbow, 6MBo-6MJ, Extra Long
14	2	11776	Cylinder Assembly
15	2	105727	Cylinder Pin, 1.25" x 7.50"
16	2	32951	Cylinder Pin, 1.25" x 9.75"
17	4	1050	.38" UNC x 2.75" Hex Capscrew
	4	1837	.38" UNC Deformed Lock Nut
18	1	16179	Right Grapple Hook
19	2	14066	Split Bushing, 2.50" x 2.00" x 3.00"
20	2	9371	Grease Fitting
21	4	31122	Split Bushing, 2.50" x 2.00" x 2.00"
22	1	16178	Left Grapple Hook
23	3	Varies	Logo
24	1	102338	Bucket
25	2	40149	Pinch Point Danger Decal
26	1	----	Serial Number Identification Tag Location
27	1	4338	Made in USA Decal
28	1	40151	High Pressure Warning Decal
29	5	6616	Grease Fittings
30	2	31657	Outer Pivot Pin, 2.00" x 10.00"
31	2	1099	.50" UNC x 3.75" Hex Capscrew
	2	1841	.50" UNC Deformed Lock Nut, Grade 8
32	1	106131	Inner Pivot Pin, 2.00" x 18.81"
33	2	82611	Thrust Washer
	2	1901	Snap Ring

NOTE: Optional cutting edge #24508 is available for this bucket.

SCRAP GRAPPLE BUCKET

2.50 CUBIC YARD, 96" WIDE - ASSEMBLY #12311



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SCRAP GRAPPLE BUCKET

2.50 CUBIC YARD, 96" WIDE - ASSEMBLY #12311

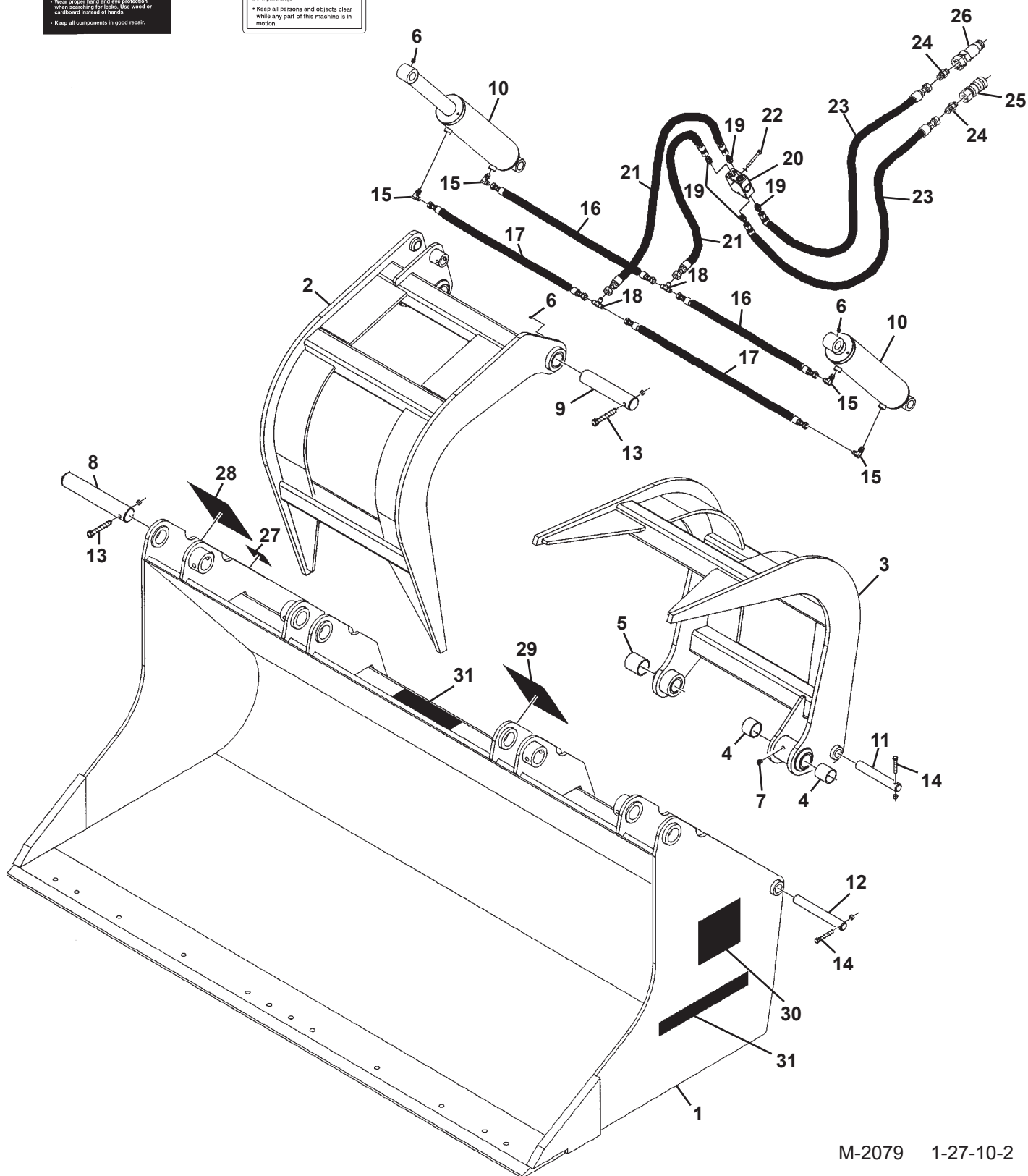
<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	105405	Bucket
	4	81358	Replacement Hose Clamp
2	1	105414	Right Grapple Hook
3	1	105413	Left Grapple Hook
4	4	31122	Split Bushing, 2.50" x 2.00" x 2.00"
5	2	14066	Split Bushing, 2.50" x 2.00" x 3.00"
6	4	6616	Grease Fitting, .25 UNF
7	2	9371	Grease Fitting, .12 NPT
8	2	31657	Outer Pivot Pin, 2.00" x 10.00"
9	2	105412	Inner Pivot Pin, 2.00" x 7.12"
	2	6616	Grease Fitting, .25 UNF
10	2	11776	Cylinder Assembly
11	2	105727	Cylinder Pin, 1.25" x 7.50"
12	2	32951	Cylinder Pin, 1.25" x 9.75"
13	4	1098	.50" UNC x 3.50" Hex Capscrew
	4	1841	.50" UNC Deformed Lock Nut
14	4	1049	.38" UNC x 2.50" Hex Capscrew
	4	1837	.38" UNC Deformed Lock Nut
15	4	3434	90° Elbow, 6MBo-6MJ
16	2	38438	Hose .38" X 54" 6FJX-6FJX
17	2	37796	Hose .38" X 65" 6FJX-6FJX
18	2	3314	Tee, 6MJ-6MJ-6MJ
19	4	3457	Straight Connector, 6MBo-6MJ
20	1	103552	Valve
21	2	38361	Hose .38" X 11" 6FJX-6FJX
22	2	1026	.31" UNC x 2.00" Hex Capscrew
	2	1502	.31" Lock Washer
23	2	37145	Hose .38" X 60" 8FJX-6FJX
24	2	3103	Straight Connector, 8MBo-8MJ
25	1	14175	Female Quick Coupler
26	1	19628	Male Quick Coupler
27	1	4338	Made in USA Decal
28	1	----	Serial Number Identification Tag Location
29	1	40151	High Pressure Warning Decal
30	2	40149	Pinch Point Danger Decal
31	3	Varies	Logo

NOTE: Optional cutting edge #14611 is available for this bucket.

M-1765 1-26-10-2

SCRAP GRAPPLE BUCKET

2.50 CUBIC YARD, 97" WIDE - ASSEMBLY #12954



SCRAP GRAPPLE BUCKET

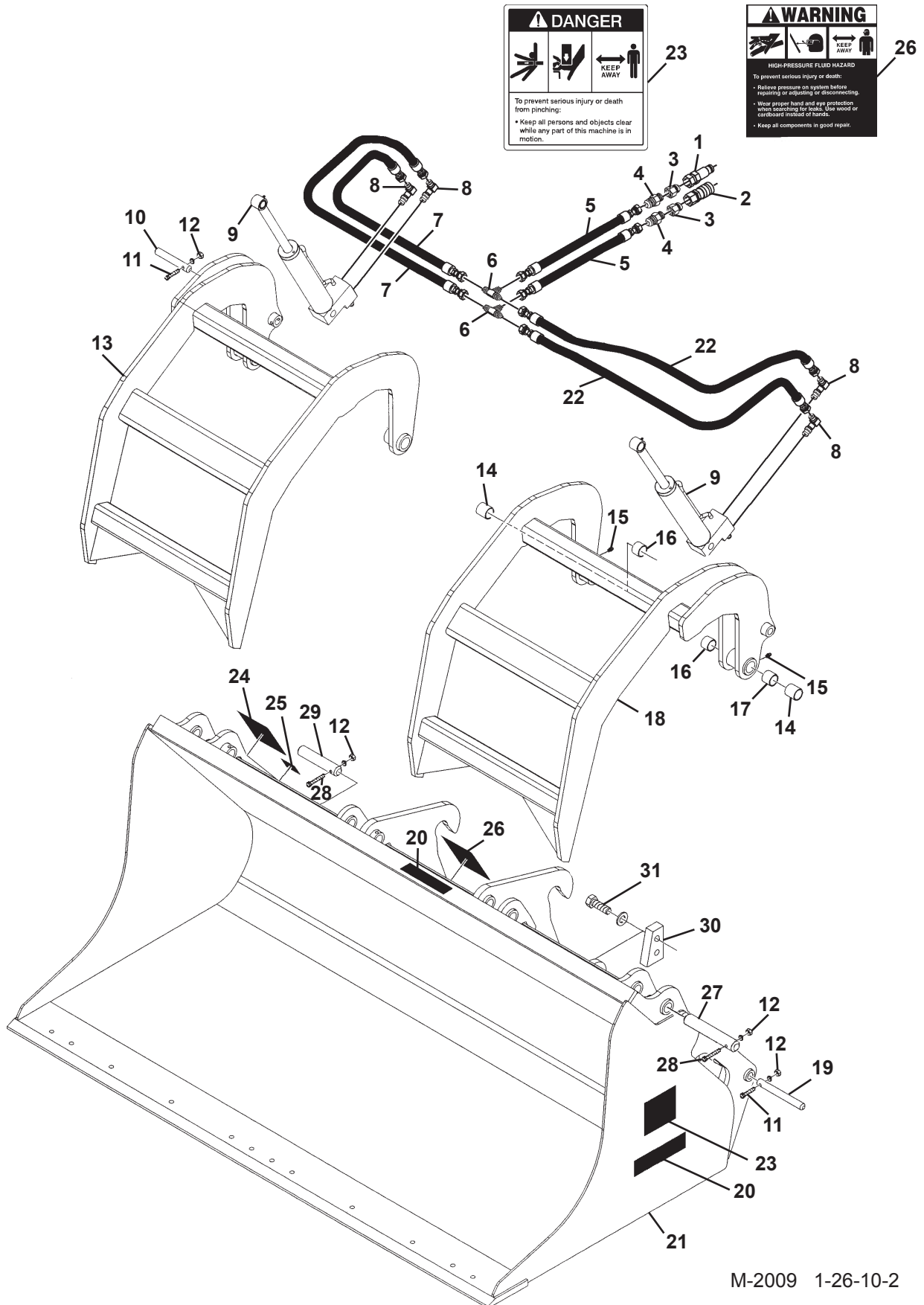
2.50 CUBIC YARD, 97" WIDE - ASSEMBLY #12954

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	107951	Bucket
	4	81358	Replacement Hose Clamp
2	1	105414	Right Grapple Hook
3	1	105413	Left Grapple Hook
4	4	31122	Split Bushing, 2.50" x 2.00" x 2.00"
5	2	14066	Split Bushing, 2.50" x 2.00" x 3.00"
6	6	6616	Grease Fitting, .25 UNF
7	2	9371	Grease Fitting, .12 NPT
8	2	31657	Outer Pivot Pin, 2.00" x 10.00"
9	2	105412	Inner Pivot Pin, 2.00" x 7.12"
	2	6616	Grease Fitting, .25 UNF
10	2	11776	Cylinder Assembly
11	2	105727	Cylinder Pin, 1.25" x 7.50"
12	2	32951	Cylinder Pin, 1.25" x 9.75"
13	4	1098	.50" UNC x 3.50" Hex Capscrew
	4	1841	.50" UNC Deformed Lock Nut
14	4	1049	.38" UNC x 2.50" Hex Capscrew
	4	1837	.38" UNC Deformed Lock Nut
15	4	3434	90° Elbow, 6MBo-6MJ
16	2	38438	Hose .38" X 54" 6FJX-6FJX
17	2	37796	Hose .38" X 65" 6FJX-6FJX
18	2	3314	Tee, 6MJ-6MJ-6MJ
19	4	3457	Straight Connector, 6MBo-6MJ
20	1	103552	Valve
21	2	38361	Hose .38" X 11" 6FJX-6FJX
22	2	1026	.31" UNC x 2.00" Hex Capscrew
	2	1502	.31" Lock Washer
23	2	37145	Hose .38" X 60" 8FJX-6FJX
24	2	3103	Straight Connector, 8MBo-8MJ
25	1	14175	Female Quick Coupler
26	1	19628	Male Quick Coupler
27	1	4338	Made in USA Decal
28	1	----	Serial Number Identification Tag Location
29	1	40151	High Pressure Warning Decal
30	2	40149	Pinch Point Danger Decal
31	2	Varies	Logo

NOTE: #14611 optional bolt-on cutting edge available for this bucket.

SCRAP GRAPPLE BUCKET

2.50 CUBIC YARD, 96" WIDE - ASSEMBLY #15201



M-2009 1-26-10-2

SCRAP GRAPPLE BUCKET

2.50 CUBIC YARD, 96" WIDE - ASSEMBLY #15201

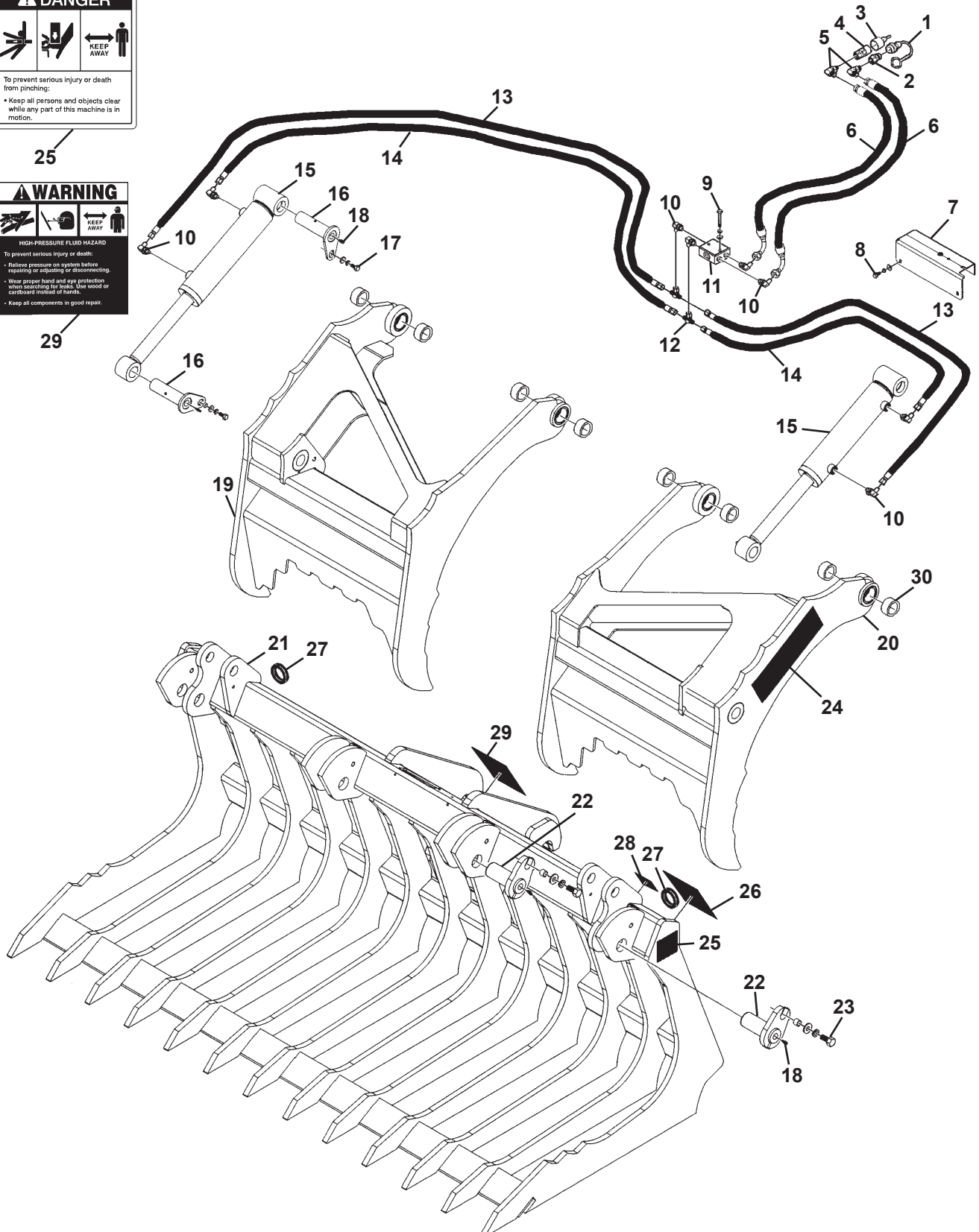
<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	22519	Male Quick Coupler
2	1	22518	Female Quick Coupler
3	2	30198	Straight Connector, 12MBo-10FBo
4	2	22552	Straight Connector, 10MBo-8MFF
5	2	37998	Hose .38" X 45.50" 8FFS-6FFS, HS
6	2	30203	Tee, 6MFS-6MFS-6MFS
7	2	37787	Hose .38" X 68" 6FFS-6FFS
8	4	30204	90° Elbow, 6MBo-6MFS, Adj
9	2	89117	Cylinder Assembly
10	2	14138	Cylinder Pin, 1.00" x 6.75"
11	4	1277	.31" UNF x 2.25" Hex Capscrew
12	8	1502	.31" Lock Washer
	8	4845	.31" UNF Nut
13	1	14903	Right Grapple Hook
14	4	14550	Split Bushing, 1.75" x 1.50" x 1.75"
15	4	6616	Grease Fitting
16	4	14760	Split Bushing, 1.75" x 1.50" x 1.25"
17	2	14551	Spacer
18	1	14904	Left Grapple Hook
19	2	14140	Cylinder Pin, 1.00" x 9.06"
20	3	Varies	Logo
21	1	14901	Bucket
	3	81358	Replacement Hose Clamp
22	2	37786	Hose .38" X 43" 6FFS-6FFS
23	2	40149	Pinch Point Danger Decal
24	1	-----	Serial Number Identification Tag Location
25	1	4338	Made in USA Decal
26	1	40151	High Pressure Warning Decal
27	2	14139	Outer Pivot Pin, 1.50" x 9.13"
28	4	1279	.31" UNF x 2.75" Hex Capscrew
29	2	14289	Inner Pivot Pin, 1.50" x 7.63"
30	2	14228	Stop Block
31	4	10012	.75" UNC x 2.25" Hex Capscrew, Grade 8
	4	1507	.75 Lock Washer

NOTE: Optional cutting edge #14611 is available for this bucket.

M-2010 1-26-10-2

BRUSH GRAPPLE BUCKET

84" WIDE HEAVY DUTY - ASSEMBLY #12726



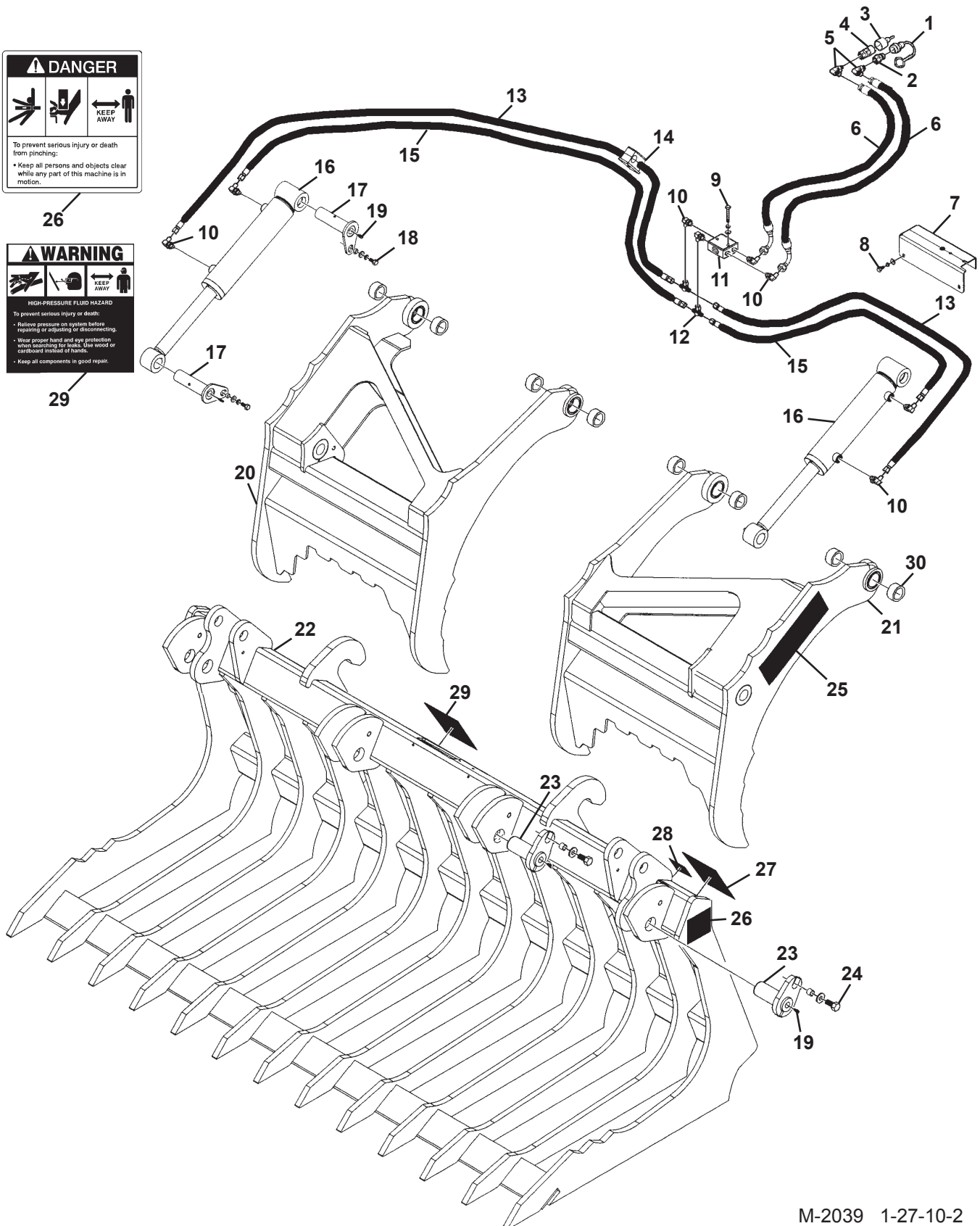
BRUSH GRAPPLE BUCKET

84" WIDE HEAVY DUTY - ASSEMBLY #12726

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>		
1	1	51753	Dust Cap		
2	1	17139	Male Quick Coupler		
3	1	51754	Dust Plug		
4	1	17140	Female Quick Coupler		
5	2	30142	90° Elbow, Long, 8MBo-6MJ		
6	2	37989	Hose .38" X 47" 6FJX-6FJX90°, HS		
7	1	102392	Valve Cover		
8	2	1021	.31" UNC x .75" Hex Capscrew		
	2	1502	.31" Lock Washer		
	2	1513	.31" Flat Washer		
9	2	1028	.31" UNC x 2.50" Hex Capscrew		
	2	1502	.31" Lock Washer		
	2	1513	.31" Flat Washer		
10	8	3434	90° Elbow, 6MBo-6MJ		
11	1	88536	Valve		
12	2	30031	Tee, 6MJ-6FJX-6MJ		
13	2	38142	Hose .25" x 57" 6FJX-6FJX		
14	2	37024	Hose .25" x 48" 6FJX-6FJX		
15	2	101280	Cylinder Assembly		
16	4	101017	Cylinder Pin, 1.38" x 5.13"		
17	4	1043	.38" UNC x 1.00" Hex Capscrew		
	4	1503	.38" Lock Washer		
	4	1514	.38" Flat Washer		
18	8	6616	Grease Fitting		
19	1	101039	Right Grapple Hook		
20	1	101038	Left Grapple Hook		
21	1	102393	Bucket		
22	4	101019	Pin, 1.75" x 4.25"		
23	4	1114	.62" UNC x 1.50" Hex Capscrew		
	4	1506	.62" Lock Washer		
	4	1627	.62" Hard Flat Washer		
	4	25075	Spacer		
24	2	Varies	Logo		
25	2	40149	Pinch Point Danger Decal		
26	1	----	Serial Number Identification Tag Location		
27	2	89088	Grommet		
28	1	4338	Made in USA Decal		
29	1	40151	High Pressure Warning Decal		
30	8	82402	Split Bushing, 2.25" x1.75" x 1.12"	M-2064	1-27-10-2

BRUSH GRAPPLE BUCKET

84" WIDE HEAVY DUTY - ASSEMBLY #12867



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BRUSH GRAPPLE BUCKET

84" WIDE HEAVY DUTY - ASSEMBLY #12867

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	51753	Dust Cap
2	1	17139	Male Quick Coupler
3	1	51754	Dust Plug
4	1	17140	Female Quick Coupler
5	2	30142	90° Elbow, Long, 8MBo-6MJ
6	2	37989	Hose .38" X 47" 6FJX-6FJX90°, HS
7	1	102392	Valve Cover
8	2	1021	.31" UNC x .75" Hex Capscrew
	2	1502	.31" Lock Washer
	2	1513	.31" Flat Washer
9	2	1027	.31" UNC x 2.25" Hex Capscrew
	2	1502	.31" Lock Washer
	2	1513	.31" Flat Washer
10	8	3434	90° Elbow, 6MBo-6MJ
11	1	88536	Valve
12	2	30031	Tee, 6MJ-6FJX-6MJ
13	2	38142	Hose .25" x 57" 6FJX-6FJX
14	1	81358	Replacement Hose Clamp
15	2	37024	Hose .25" x 48" 6FJX-6FJX
16	2	101280	Cylinder Assembly
17	4	101017	Cylinder Pin, 1.38" x 5.13"
18	4	1043	.38" UNC x 1.00" Hex Capscrew
	4	1503	.38" Lock Washer
	4	1514	.38" Flat Washer
	4	81807	Spacer
19	8	6616	Grease Fitting
20	1	101039	Right Grapple Hook
21	1	101038	Left Grapple Hook
22	1	110540	Bucket
23	4	101019	Pin, 1.75" x 4.25"
24	4	1114	.62" UNC x 1.50" Hex Capscrew
	4	1627	.62" Hard Flat Washer
	4	25075	Spacer
25	2	Varies	Logo
26	2	40149	Pinch Point Danger Decal
27	1	-----	Serial Number Identification Tag Location
28	1	4338	Made in USA Decal
29	1	40151	High Pressure Warning Decal
30	8	82402	Split Bushing, 2.25" x1.75" x 1.12"

BRUSH GRAPPLE BUCKET

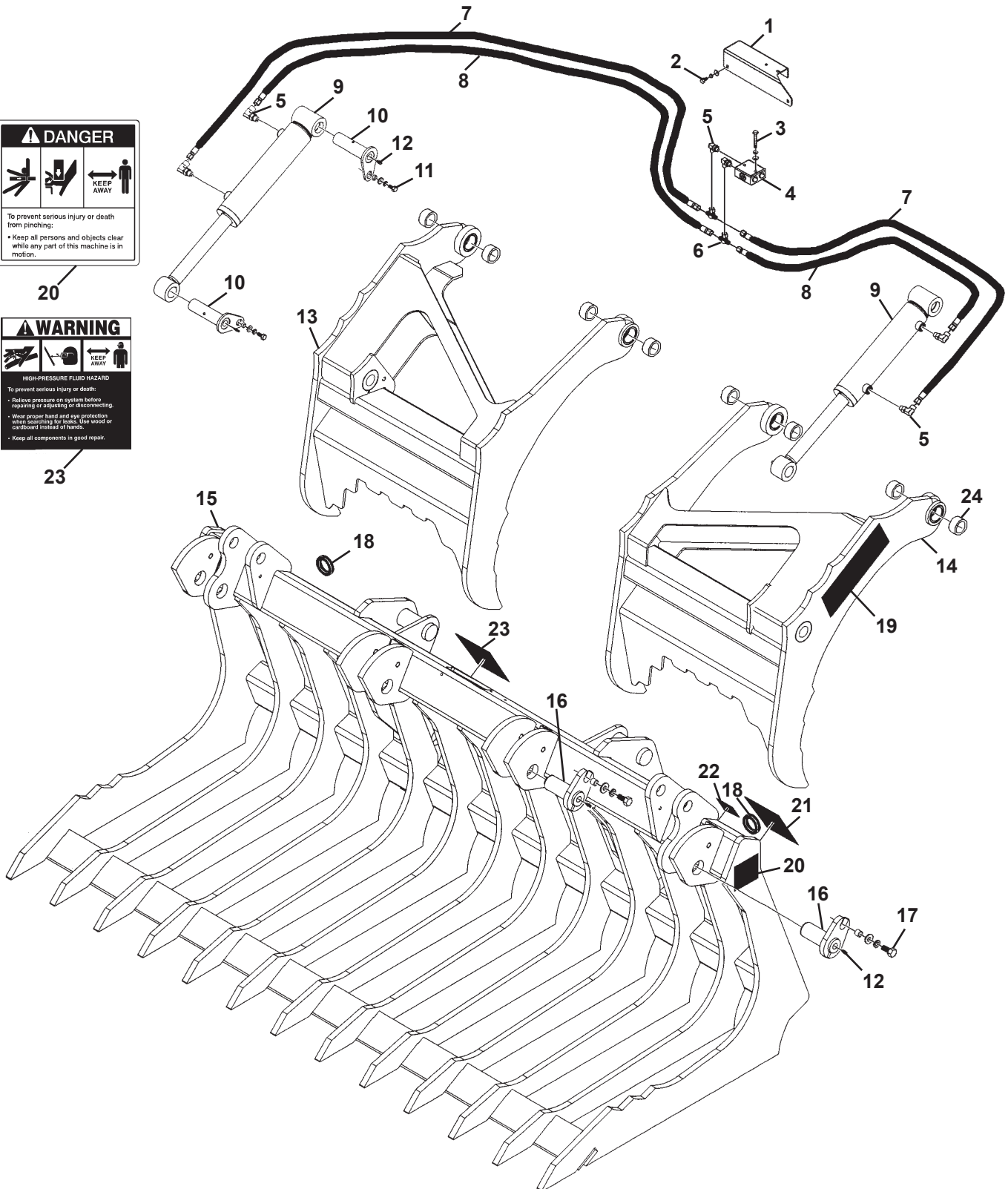
84" WIDE HEAVY DUTY - ASSEMBLY #12951



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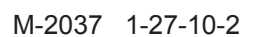


BRUSH GRAPPLE BUCKET

84" WIDE HEAVY DUTY - ASSEMBLY #12951

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	88401	Valve Cover
2	2	1021	.31" UNC x .75" Hex Capscrew
	2	1502	.31" Lock Washer
	2	1513	.31" Flat Washer
3	2	1028	.31" UNC x 2.50" Hex Capscrew
	2	1502	.31" Lock Washer
	2	1513	.31" Flat Washer
4	1	88536	Valve
5	6	30204	90° Elbow, 6MBo-6MFS, Adjustable
6	2	30381	Tee, 6MFS-6FFS-6MFS
7	2	38120	Hose .25" x 60" 6FFS-6FFS
8	2	38132	Hose .25" x 48" 6FFS-6FFS
9	2	101280	Cylinder Assembly
10	4	101017	Cylinder Pin, 1.38" x 5.13"
11	4	1043	.38" UNC x 1.00" Hex Capscrew
	4	1503	.38" Lock Washer
	4	1514	.38" Flat Washer
	4	81807	Spacer
12	8	6616	Grease Fitting
13	1	101039	Right Grapple Hook
14	1	101038	Left Grapple Hook
15	1	107827	Bucket
16	4	101019	Pin, 1.75" x 4.25"
17	4	1114	.62" UNC x 1.50" Hex Capscrew
	4	1506	.62" Lock Washer
	4	1627	.62" Hard Flat Washer
	4	25075	Spacer
18	2	89088	Grommet
19	2	Varies	Logo
20	2	40149	Pinch Point Danger Decal
21	1	-----	Serial Number Identification Tag Location
22	1	4338	Made in USA Decal
23	1	40151	High Pressure Warning Decal
24	8	82402	Split Bushing, 2.25" x1.75" x 1.12"

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BRUSH GRAPPLE BUCKET

84" WIDE HEAVY DUTY - ASSEMBLY #13004

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	88401	Valve Cover
2	2	1021	.31" UNC x .75" Hex Capscrew
	2	1502	.31" Lock Washer
	2	1513	.31" Flat Washer
3	2	1028	.31" UNC x 2.50" Hex Capscrew
	2	1502	.31" Lock Washer
	2	1513	.31" Flat Washer
4	1	88536	Valve
5	6	3434	90° Elbow, 6MBo-6MJ
6	2	30031	Tee, 6MJ-6FJX-6MJ
7	2	38142	Hose .25" x 57" 6FJX-6FJX
8	2	37024	Hose .25" x 48" 6FJX-6FJX
9	2	101280	Cylinder Assembly
10	4	101017	Cylinder Pin, 1.38" x 5.13"
11	4	1043	.38" UNC x 1.00" Hex Capscrew
	4	1503	.38" Lock Washer
	4	1514	.38" Flat Washer
	4	81807	Spacer
12	8	6616	Grease Fitting
13	1	101039	Right Grapple Hook
14	1	101038	Left Grapple Hook
15	1	108747	Bucket
16	4	101019	Pin, 1.75" x 4.25"
17	4	1114	.62" UNC x 1.50" Hex Capscrew
	4	1506	.62" Lock Washer
	4	1627	.62" Hard Flat Washer
	4	25075	Spacer
18	2	89088	Grommet
19	2	Varies	Logo
20	2	40149	Pinch Point Danger Decal
21	1	-----	Serial Number Identification Tag Location
22	1	4338	Made in USA Decal
23	1	40151	High Pressure Warning Decal
24	8	82402	Split Bushing, 2.25" x1.75" x 1.12"

BRUSH GRAPPLE BUCKET

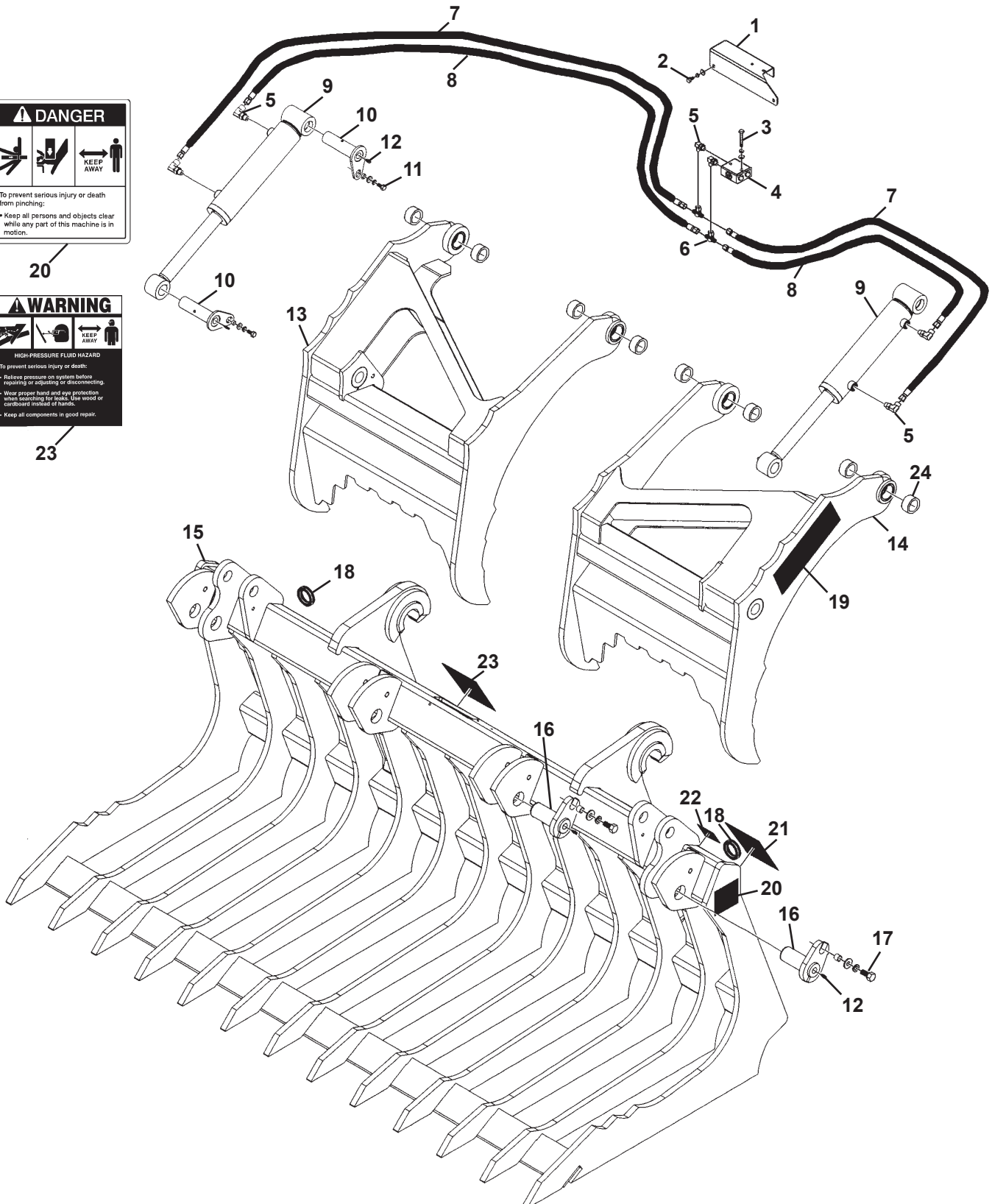
84" WIDE HEAVY DUTY - ASSEMBLY #13055



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M-2069 1-27-10-2

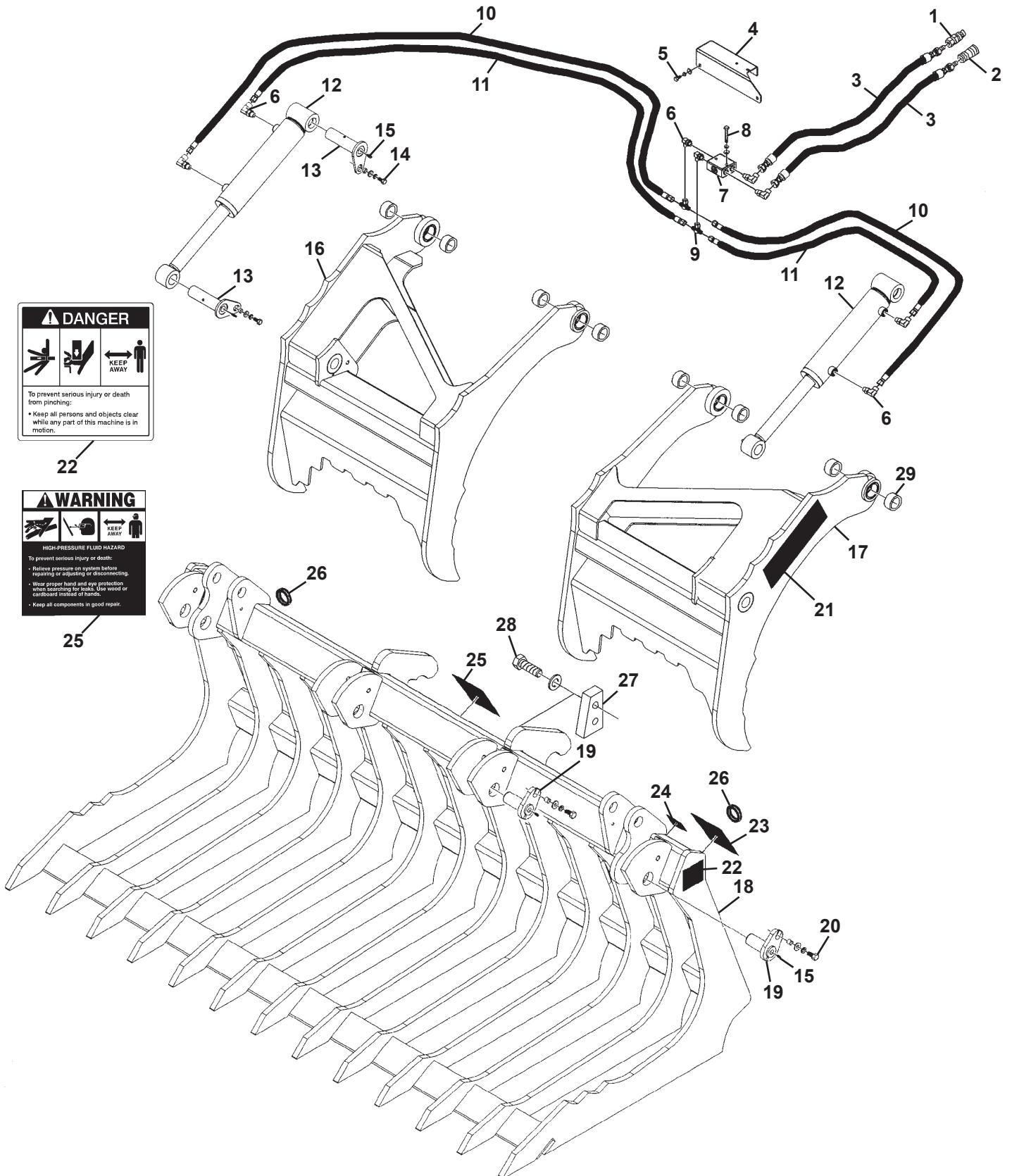
BRUSH GRAPPLE BUCKET

84" WIDE HEAVY DUTY - ASSEMBLY #13055

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	88401	Valve Cover
2	2	1021	.31" UNC x .75" Hex Capscrew
	2	1502	.31" Lock Washer
	2	1513	.31" Flat Washer
3	2	1028	.31" UNC x 2.50" Hex Capscrew
	2	1502	.31" Lock Washer
	2	1513	.31" Flat Washer
4	1	88536	Valve
5	6	30204	90° Elbow, 6MBo-6MFS, Adjustable
6	2	30381	Tee, 6MFS-6FFS-6MFS
7	2	38120	Hose .25" x 60" 6FFS-6FFS
8	2	38132	Hose .25" x 48" 6FFS-6FFS
9	2	101280	Cylinder Assembly
10	4	101017	Cylinder Pin, 1.38" x 5.13"
11	4	1043	.38" UNC x 1.00" Hex Capscrew
	4	1503	.38" Lock Washer
	4	1514	.38" Flat Washer
	4	81807	Spacer
12	8	6616	Grease Fitting
13	1	101039	Right Grapple Hook
14	1	101038	Left Grapple Hook
15	1	109540	Bucket
16	4	101019	Pin, 1.75" x 4.25"
17	4	1114	.62" UNC x 1.50" Hex Capscrew
	4	1506	.62" Lock Washer
	4	1627	.62" Hard Flat Washer
	4	25075	Spacer
18	2	89088	Grommet
19	2	Varies	Logo
20	2	40149	Pinch Point Danger Decal
21	1	-----	Serial Number Identification Tag Location
22	1	4338	Made in USA Decal
23	1	40151	High Pressure Warning Decal
24	8	82402	Split Bushing, 2.25" x1.75" x 1.12"

BRUSH GRAPPLE BUCKET

84" WIDE HEAVY DUTY - ASSEMBLY #13067



M-2067 1-27-10-2

BRUSH GRAPPLE BUCKET

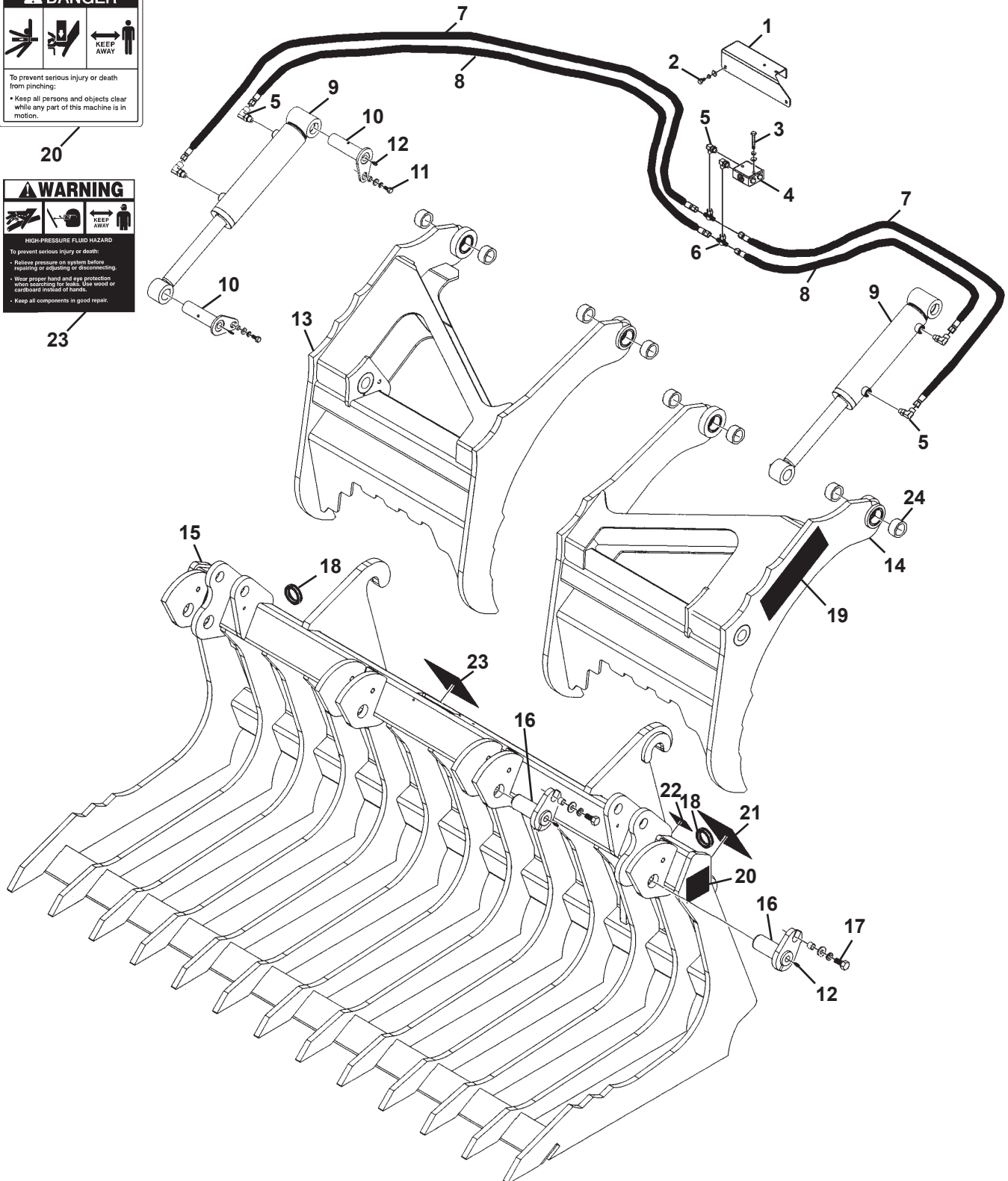
84" WIDE HEAVY DUTY - ASSEMBLY #13067

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	14176	Male Quick Coupler
2	1	14175	Female Quick Coupler
3	2	38076	Hose .38" X 53" 6FFS-8MBo
4	1	88401	Valve Cover
5	2	1021	.31" UNC x .75" Hex Capscrew
	2	1502	.31" Lock Washer
	2	1513	.31" Flat Washer
6	8	30204	90° Elbow, Adjustable, 6MBo-6MFS
7	1	88536	Valve
8	2	1028	.31" UNC x 2.50" Hex Capscrew
	2	1502	.31" Lock Washer
	2	1513	.31" Flat Washer
9	2	30381	Tee, 6MFS-6FFS-6MFS
10	2	38120	Hose .25" x 60" 6FFS-6FFS
11	2	38132	Hose .25" x 48" 6FFS-6FFS
12	2	101280	Cylinder Assembly
13	4	101017	Cylinder Pin, 1.38" x 5.13"
14	4	1043	.38" UNC x 1.00" Hex Capscrew
	4	1503	.38" Lock Washer
	4	1514	.38" Flat Washer
	4	81807	Spacer
15	8	6616	Grease Fitting
16	1	101039	Right Grapple Hook
17	1	101038	Left Grapple Hook
18	1	110252	Bucket
19	4	101019	Pin, 1.75" x 4.25"
20	4	1114	.62" UNC x 1.50" Hex Capscrew
	4	1506	.62" Lock Washer
	4	1627	.62" Hard Flat Washer
	4	25075	Spacer
21	2	Varies	Logo
22	2	40149	Pinch Point Danger Decal
23	1	----	Serial Number Identification Tag Location
24	1	4338	Made in USA Decal
25	1	40151	High Pressure Warning Decal
26	2	89088	Grommet
27	2	14228	Stop Block
28	4	10012	.75" x 2.25" Hex Capscrew, Grade 8
	4	1507	.75" Lock Washer
29	8	82402	Split Bushing, 2.25" x 1.75" x 1.12"

M-2068 1-27-10-2

BRUSH GRAPPLE BUCKET

84" WIDE HEAVY DUTY - ASSEMBLY #13127



BRUSH GRAPPLE BUCKET

84" WIDE HEAVY DUTY - ASSEMBLY #13127

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	88401	Valve Cover
2	2	1021	.31" UNC x .75" Hex Capscrew
	2	1502	.31" Lock Washer
	2	1513	.31" Flat Washer
3	2	1028	.31" UNC x 2.50" Hex Capscrew
	2	1502	.31" Lock Washer
	2	1513	.31" Flat Washer
4	1	88536	Valve
5	6	30204	90° Elbow, 6MBo-6MFS, Adjustable
6	2	30381	Tee, 6MFS-6FFS-6MFS
7	2	38120	Hose .25" x 60" 6FFS-6FFS
8	2	38132	Hose .25" x 48" 6FFS-6FFS
9	2	101280	Cylinder Assembly
10	4	101017	Cylinder Pin, 1.38" x 5.13"
11	4	1043	.38" UNC x 1.00" Hex Capscrew
	4	1503	.38" Lock Washer
	4	1514	.38" Flat Washer
	4	81807	Spacer
12	8	6616	Grease Fitting
13	1	101039	Right Grapple Hook
14	1	101038	Left Grapple Hook
15	1	112289	Bucket
16	4	101019	Pin, 1.75" x 4.25"
17	4	1114	.62" UNC x 1.50" Hex Capscrew
	4	1506	.62" Lock Washer
	4	1627	.62" Hard Flat Washer
	4	25075	Spacer
18	2	89088	Grommet
19	2	Varies	Logo
20	2	40149	Pinch Point Danger Decal
21	1	-----	Serial Number Identification Tag Location
22	1	4338	Made in USA Decal
23	1	40151	High Pressure Warning Decal
24	8	82402	Split Bushing, 2.25" x1.75" x 1.12"

BRUSH GRAPPLE BUCKET

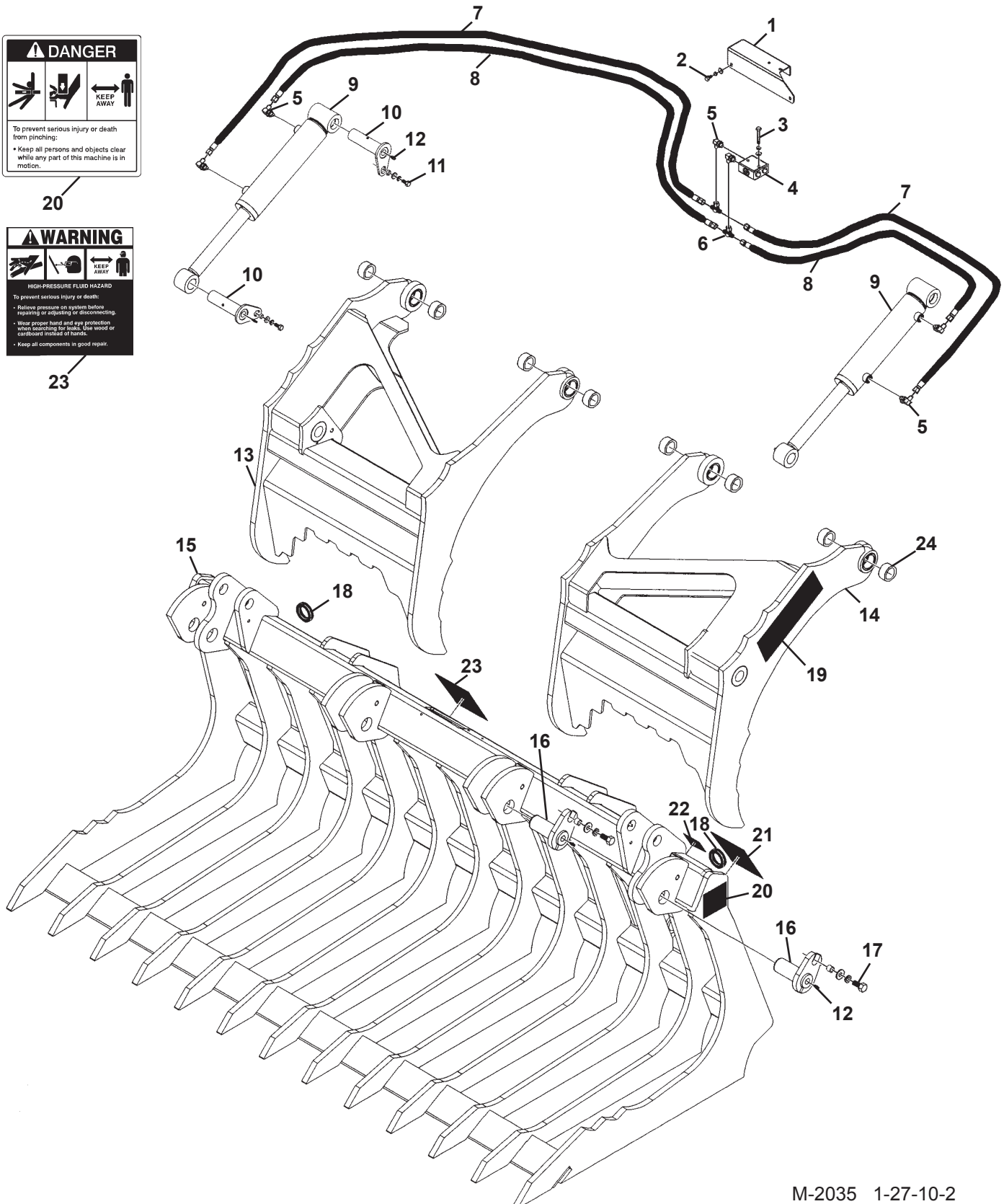
84" WIDE HEAVY DUTY - ASSEMBLY #101040



20



23



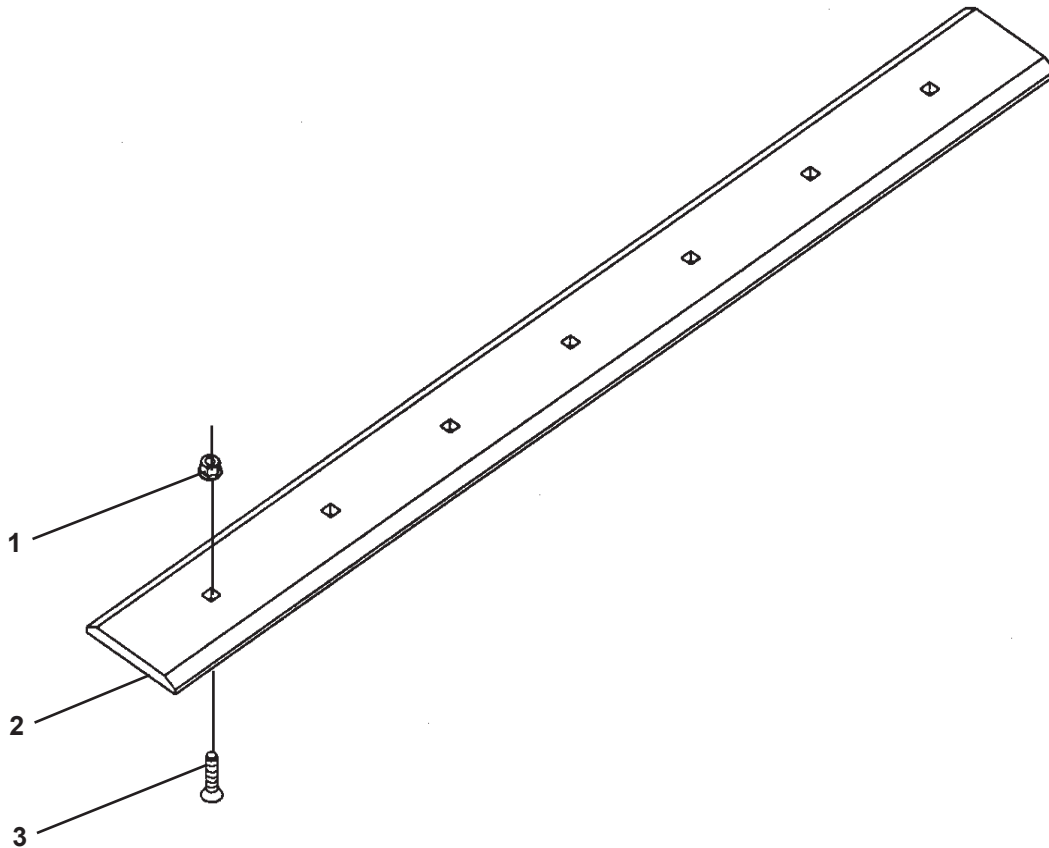
M-2035 1-27-10-2

BRUSH GRAPPLE BUCKET

84" WIDE HEAVY DUTY - ASSEMBLY #101040

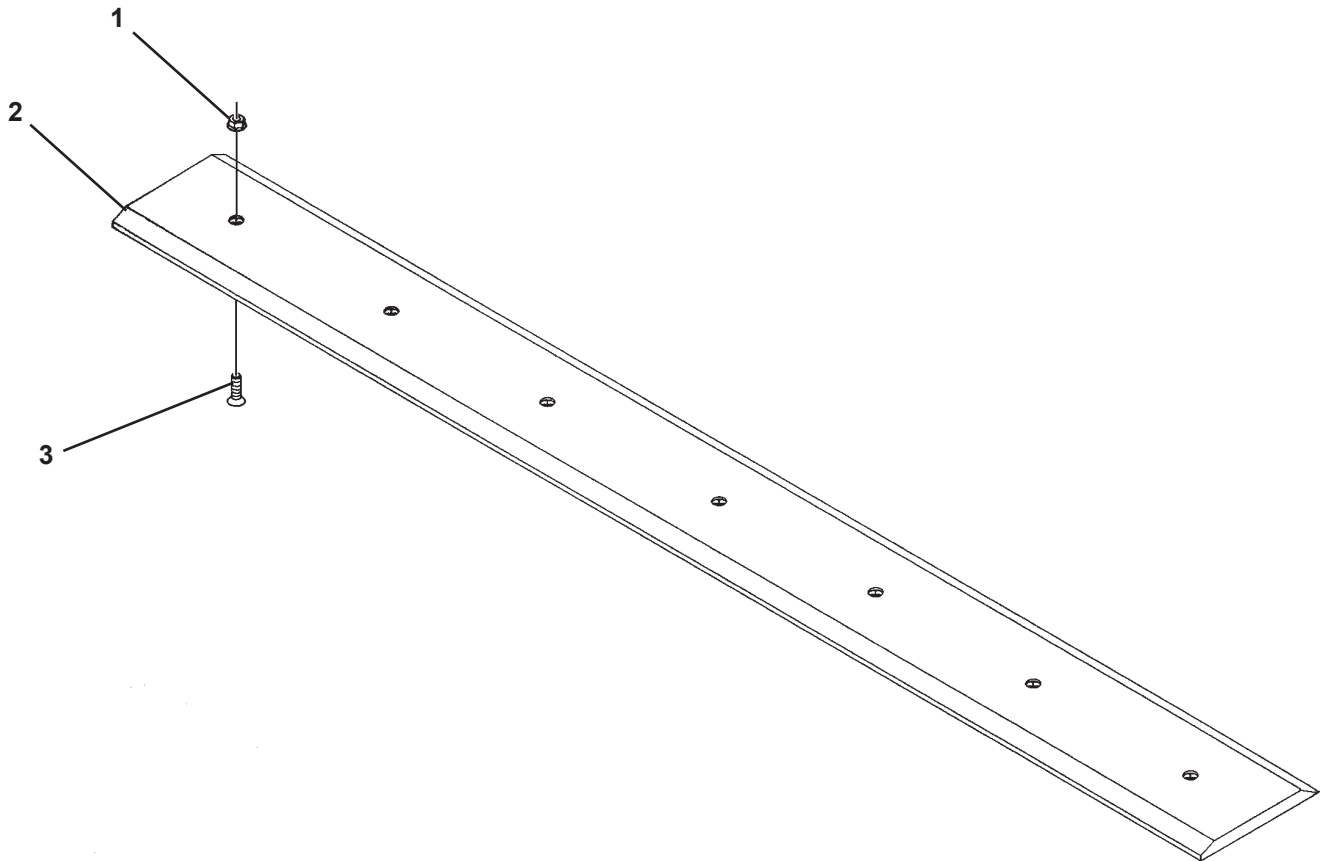
<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	88401	Valve Cover
2	2	1021	.31" UNC x .75" Hex Capscrew
	2	1502	.31" Lock Washer
	2	1513	.31" Flat Washer
3	2	1028	.31" UNC x 2.50" Hex Capscrew
	2	1502	.31" Lock Washer
	2	1513	.31" Flat Washer
4	1	88536	Valve
5	6	3434	90° Elbow, 6MBo-6MJ
6	2	30031	Tee, 6MJ-6FJX-6MJ
7	2	38142	Hose .25" x 57" 6FJX-6FJX
8	2	37024	Hose .25" x 48" 6FJX-6FJX
9	2	101280	Cylinder Assembly
10	4	101017	Cylinder Pin, 1.38" x 5.13"
11	4	1043	.38" UNC x 1.00" Hex Capscrew
	4	1503	.38" Lock Washer
	4	1514	.38" Flat Washer
	4	81807	Spacer
12	8	6616	Grease Fitting
13	1	101039	Right Grapple Hook
14	1	101038	Left Grapple Hook
15	1	101030	Bucket
16	4	101019	Pin, 1.75" x 4.25"
17	4	1114	.62" UNC x 1.50" Hex Capscrew
	4	1506	.62" Lock Washer
	4	1627	.62" Hard Flat Washer
	4	25075	Spacer
18	2	89088	Grommet
19	2	Varies	Logo
20	2	40149	Pinch Point Danger Decal
21	1	-----	Serial Number Identification Tag Location
22	1	4338	Made in USA Decal
23	1	40151	High Pressure Warning Decal
24	8	82402	Split Bushing, 2.25" x1.75" x 1.12"

CUTTING EDGE
74" BOLT-ON ASSEMBLY #100831



<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	7	1936	.75" UNC Deformed Lock Nut
2	1	100830	Cutting Edge, .75" x 8.00" x 74.00"
3	7	1937	.75" UNC x 2.50" Plow Bolt

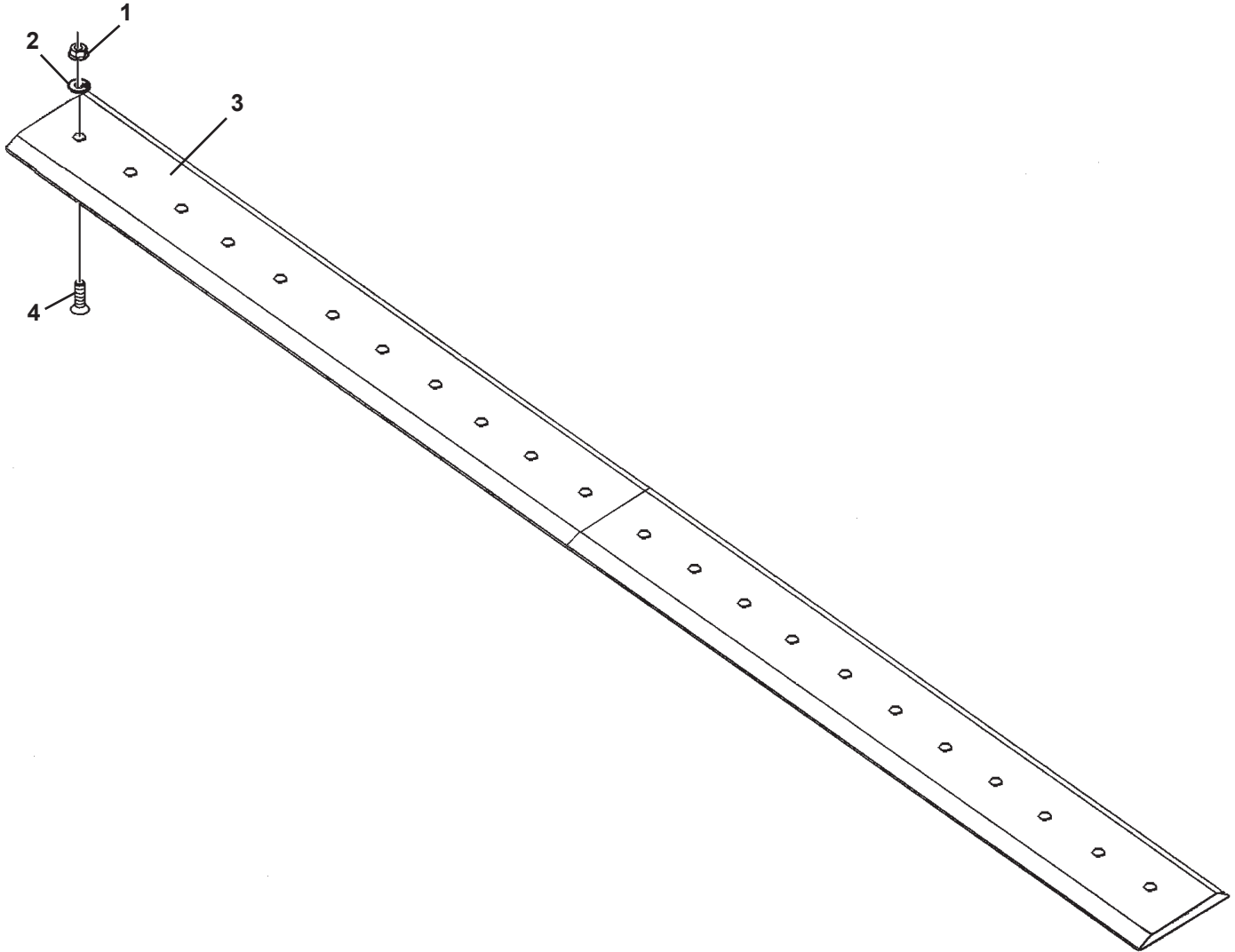
CUTTING EDGE
75" BOLT-ON ASSEMBLY #12720



<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	7	1936	.75" UNC Deformed Lock Nut
2	1	102304	Cutting Edge, .75" x 8.00" x 75.00"
3	7	1937	.75" UNC x 2.50" Plow Bolt

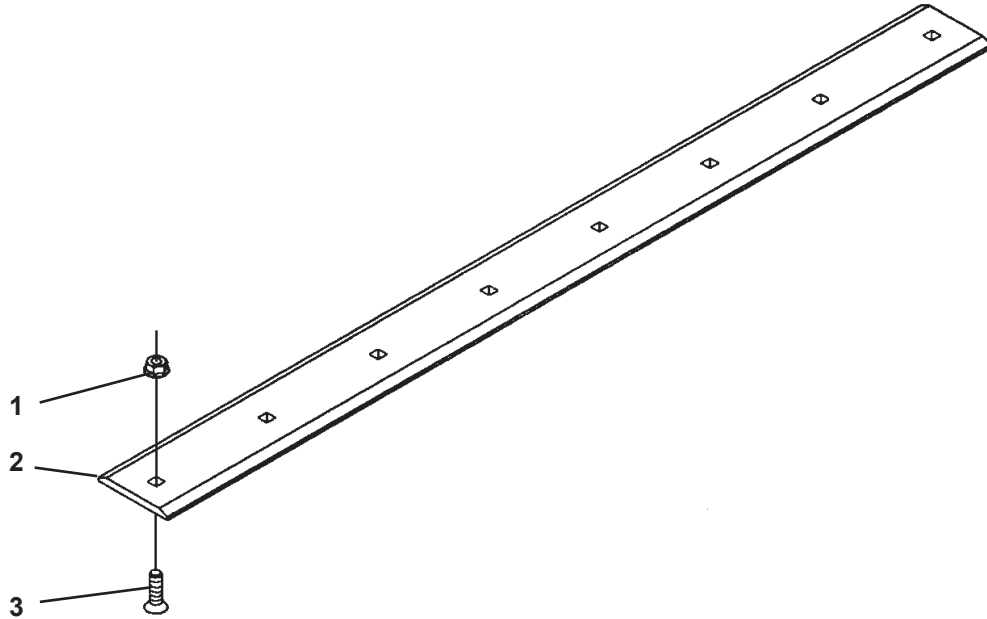
CUTTING EDGE

88.50" BOLT-ON ASSEMBLY #24508



<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	12	1230	.62" UNC Hex Nut
2	12	1506	.62" Lock Washer
3	2	24509	Cutting Edge, .75" x 10.00" x 44.19"
4	12	10021	.62" UNC x 2.50" Plow Bolt, Grade 8

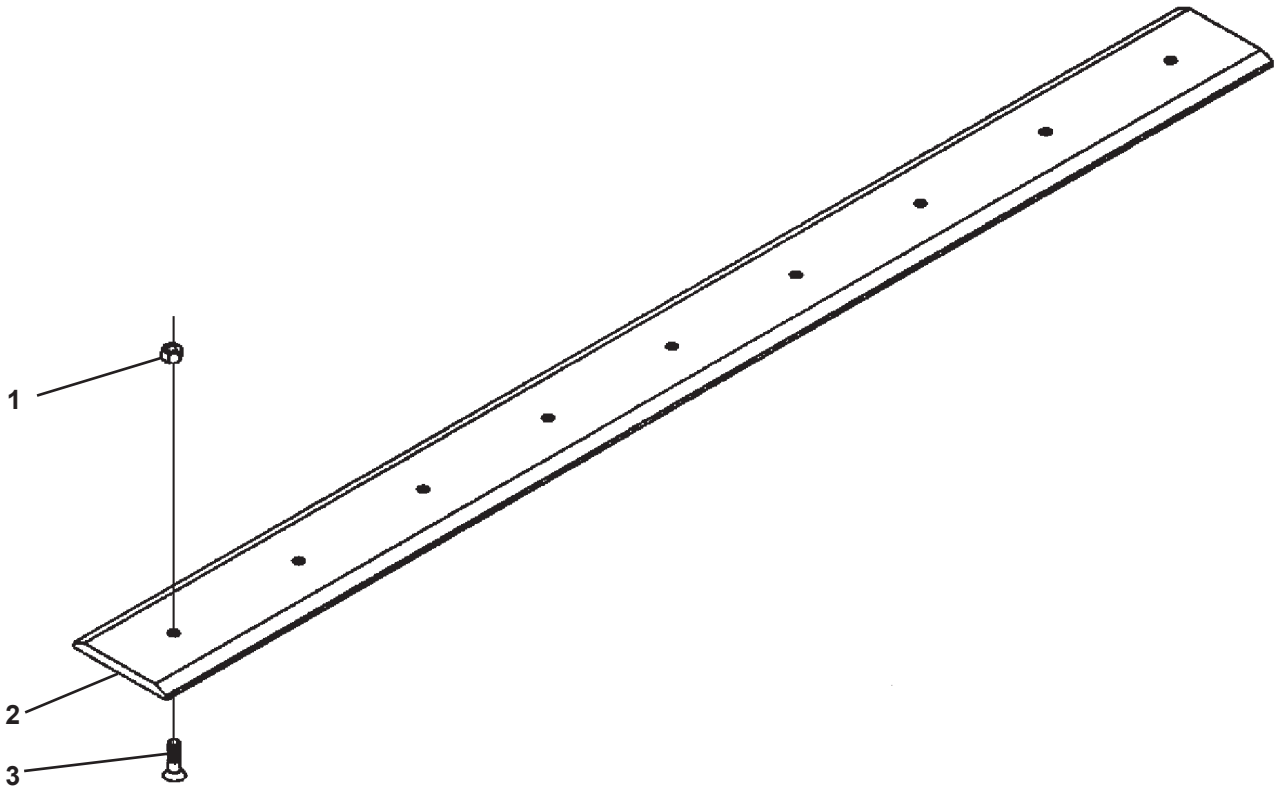
CUTTING EDGE
90.63" BOLT-ON ASSEMBLY #12297



<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	8	1839	.62" UNC Deformed Lock Nut
2	1	14928	Cutting Edge, .75" x 6.00" x 90.62"
3	8	10026	.62" UNC x 2.25" Bolt

CUTTING EDGE

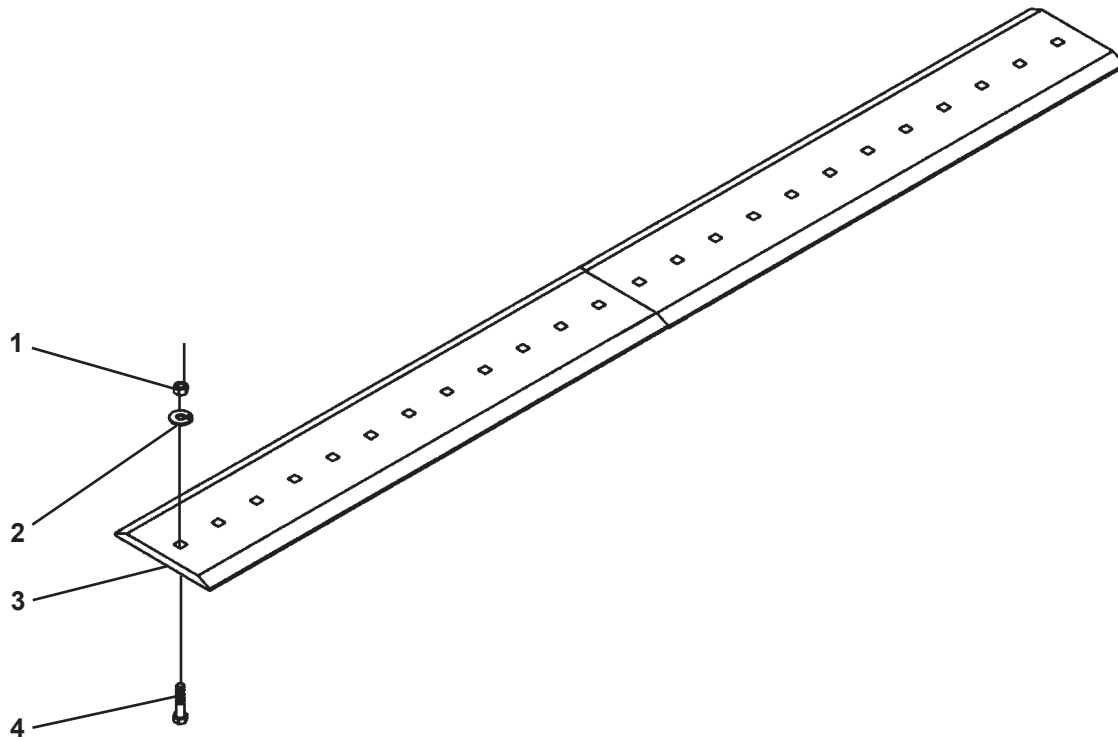
ASSEMBLY #11002



<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	9	1936	.75" UNC Deformed Lock Nut
2	1	12245	Bolt-On Cutting Edge, .75" x 8.00" x 96.00"
3	9	1937	.75" UNC x 2.50" Plow Bolt

CUTTING EDGE

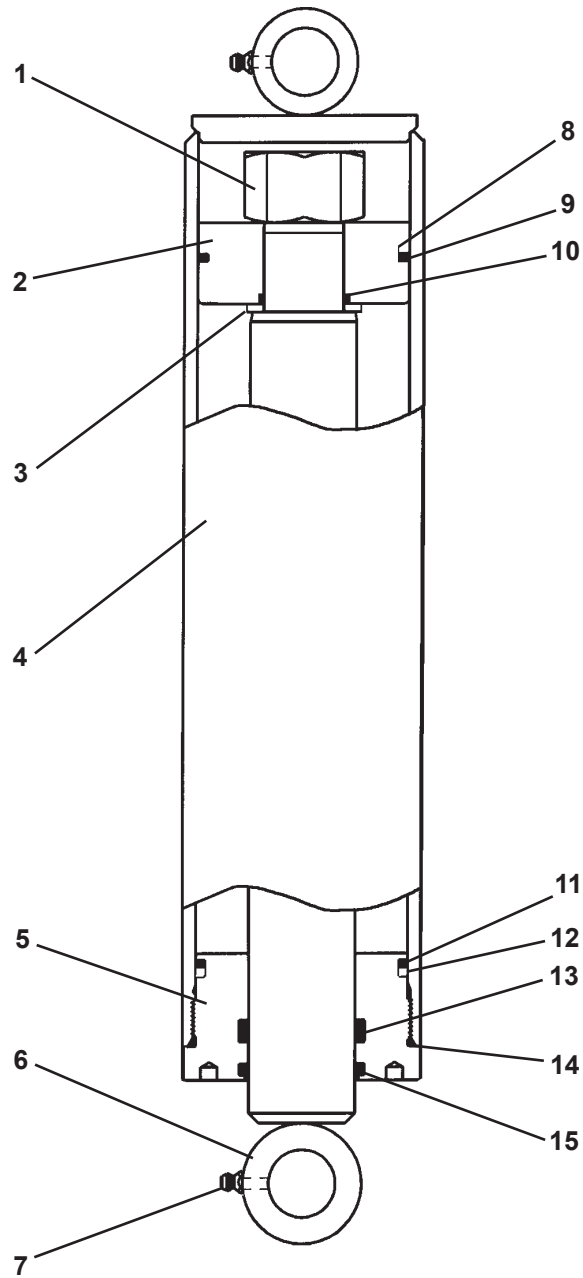
ASSEMBLY #14611



<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	12	1230	.62" UNC Hex Nut
2	12	1506	.62" Lock Washer
3	2	11586	Bolt-On Cutting Edge, .75" x 10.00" x 48.13"
4	12	10020	.62" UNC x 2.75" Plow Bolt, Grade 8

CYLINDER ASSEMBLY

ASSEMBLY #11776



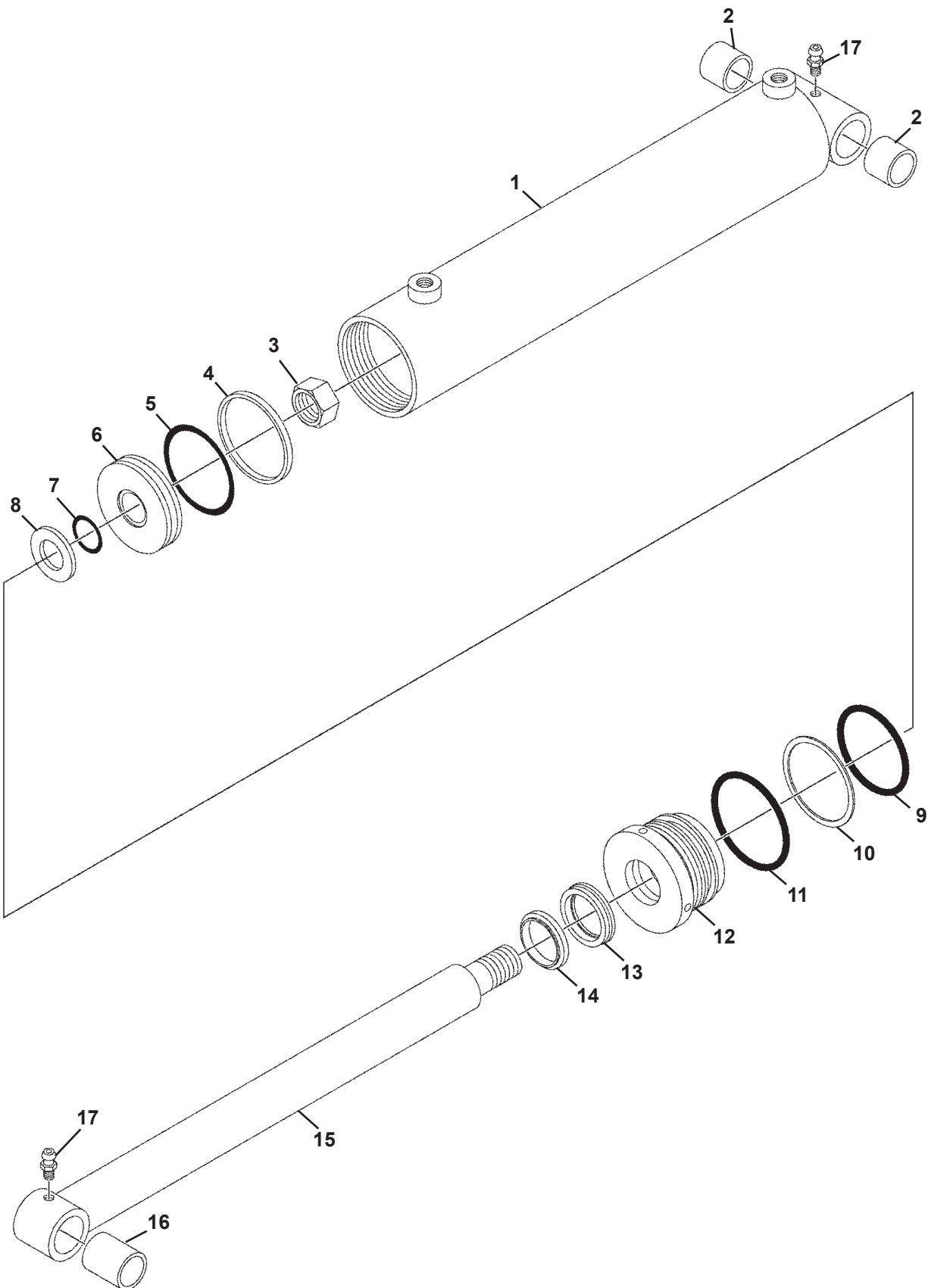
CYLINDER ASSEMBLY

ASSEMBLY #11776

<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	1487	Hex Nut
2	1	73834	Piston
3	1	54958	Washer
4	1	18063	Cylinder Tube
5	1	77455	Cylinder Gland
6	1	18066	Cylinder Rod
7	2	6616	Grease Fitting
8	1	45509*	O-Ring
9	1	4816*	Piston Ring
10	1	45109*	O-Ring
11	1	45516*	O-Ring
12	1	45515*	Back-Up Washer
13	1	45117*	Polypak Seal
14	1	45519*	O-Ring
15	1	45364*	Rod Wiper
	1	45813	Cylinder Seal Kit, Includes all parts marked separately.

CYLINDER ASSEMBLY

ASSEMBLY #88920



CYLINDER ASSEMBLY

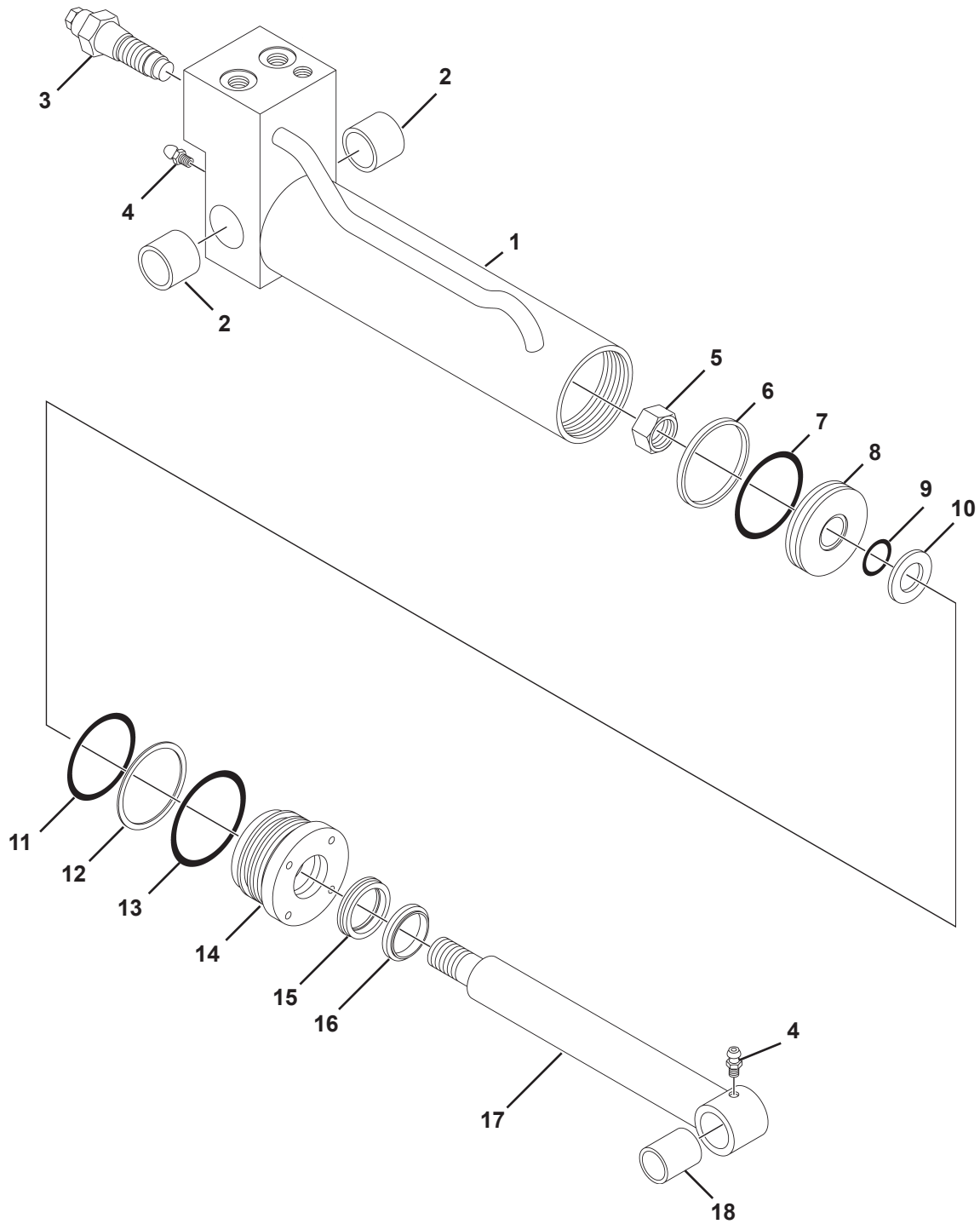
ASSEMBLY #88920

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	89112	Cylinder Tube, With Valve
2	2	88919	Bronze Bushing
3	1	1483	Hex Nut
4	1	4644*	Piston Ring
5	1	4645*	O-Ring
6	1	50252	Piston
7	1	4641*	O-Ring
8	1	5421	Washer
9	1	4509*	O-Ring
10	1	4510*	Back-Up Washer
11	1	45250*	O-Ring
12	1	77458	Cylinder Gland
13	1	45219*	Poly-Pak Seal
14	1	45389*	Rod Wiper
15	1	88915	Piston Rod
16	1	88918	Bronze Bushing
17	1	6616	Grease Zerk

NOTE: Seal Kit #45617 includes all parts marked with an asterisk (*). Parts are not sold separately.

CYLINDER ASSEMBLY

ASSEMBLY #89113



CYLINDER ASSEMBLY

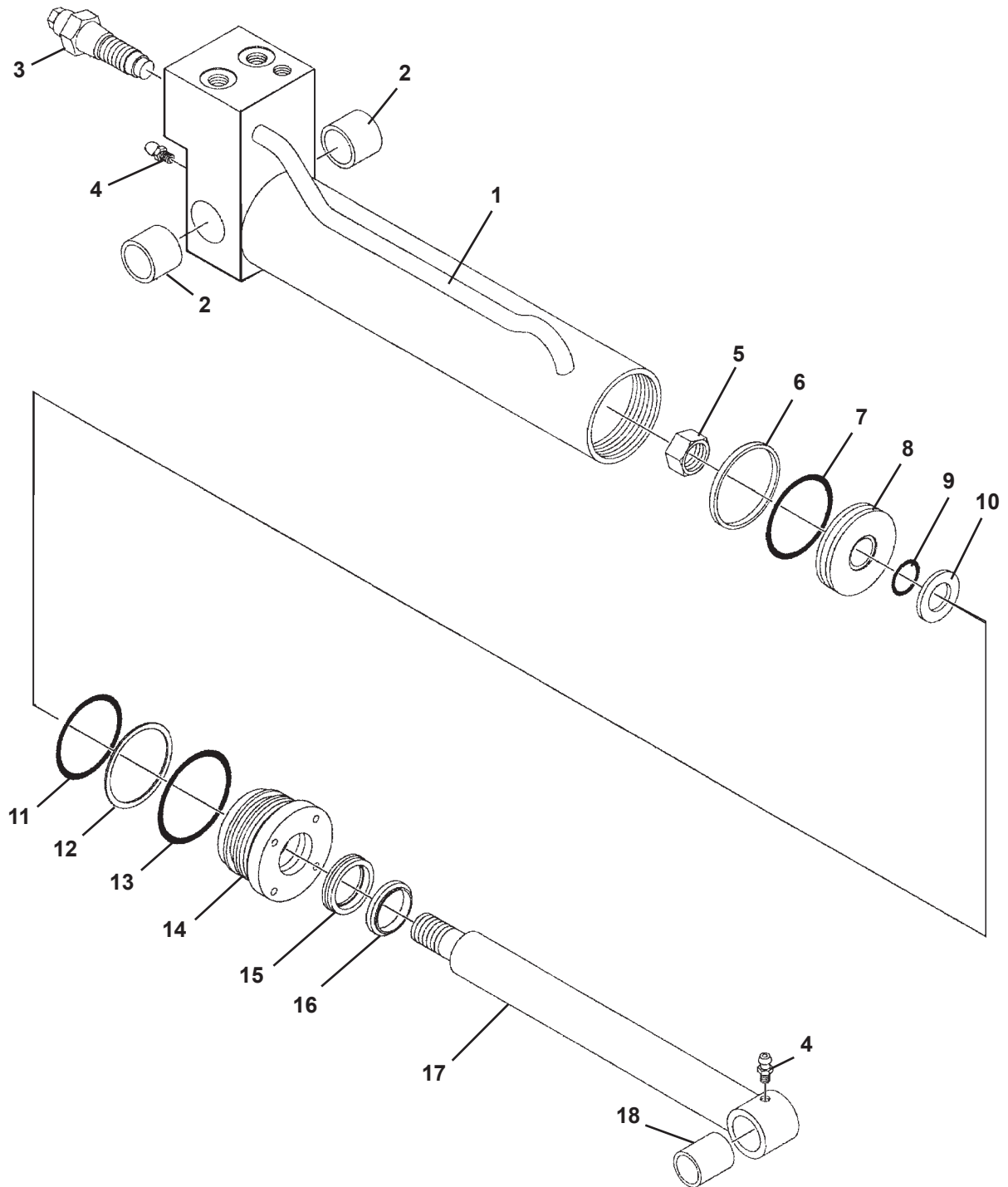
ASSEMBLY #89113

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	89114	Cylinder Tube, With Valve
2	2	88919	Bronze Bushing
3	2	89120	Valve Cartridge - Over Center
4	2	6616	Grease Zerk
5	1	1483	Hex Nut
6	1	4644*	Piston Ring
7	1	4645*	O-Ring
8	1	50252	Piston
9	1	4641*	O-Ring
10	1	5421	Washer
11	1	4509*	O-Ring
12	1	4510*	Back-Up Washer
13	1	45250*	O-Ring
14	1	77458	Cylinder Gland
15	1	45219*	Poly-Pak Seal
16	1	45389*	Rod Wiper
17	1	88927	Piston Rod
18	1	88918	Bronze Bushing

NOTE: Seal Kit #45617 includes all parts marked with an asterisk (*). Parts are not sold separately.

CYLINDER ASSEMBLY

ASSEMBLY #89117



CYLINDER ASSEMBLY

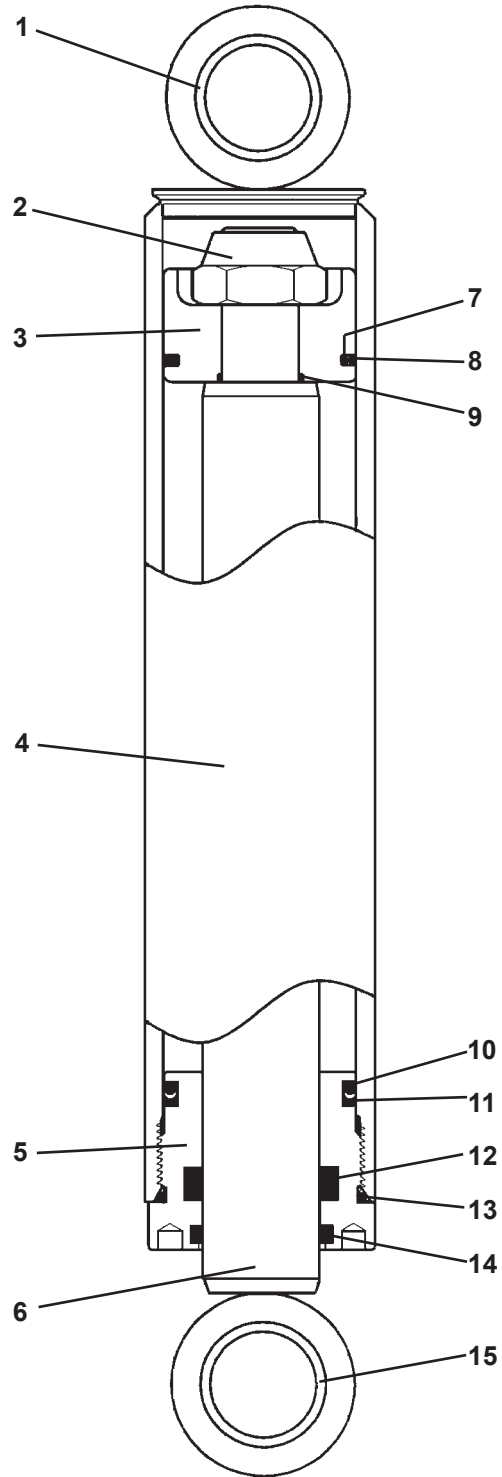
ASSEMBLY #89117

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	89118	Cylinder Tube with Valve
2	2	88919	Bronze Bushing
3	2	89120	Valve Cartridge - Over Center
4	2	6616	Grease Fitting
5	1	1483	Hex Nut
6	1	4644*	Piston Ring
7	1	4645*	O-Ring
8	1	50252	Piston
9	1	4641*	O-Ring
10	1	5421	Washer
11	1	4509*	O-Ring
12	1	4510*	Back-Up Washer
13	1	45250*	O-Ring
14	1	77458	Cylinder Gland
15	1	45219*	Polypak Seal
16	1	45389*	Rod Wiper
17	1	88915	Piston Rod
18	1	88918	Bronze Bushing

NOTE: Seal Kit #45617 includes all parts marked with an asterisk (*). Parts are not sold separately.

CYLINDER ASSEMBLY

ASSEMBLY #101280



CYLINDER ASSEMBLY

ASSEMBLY #101280

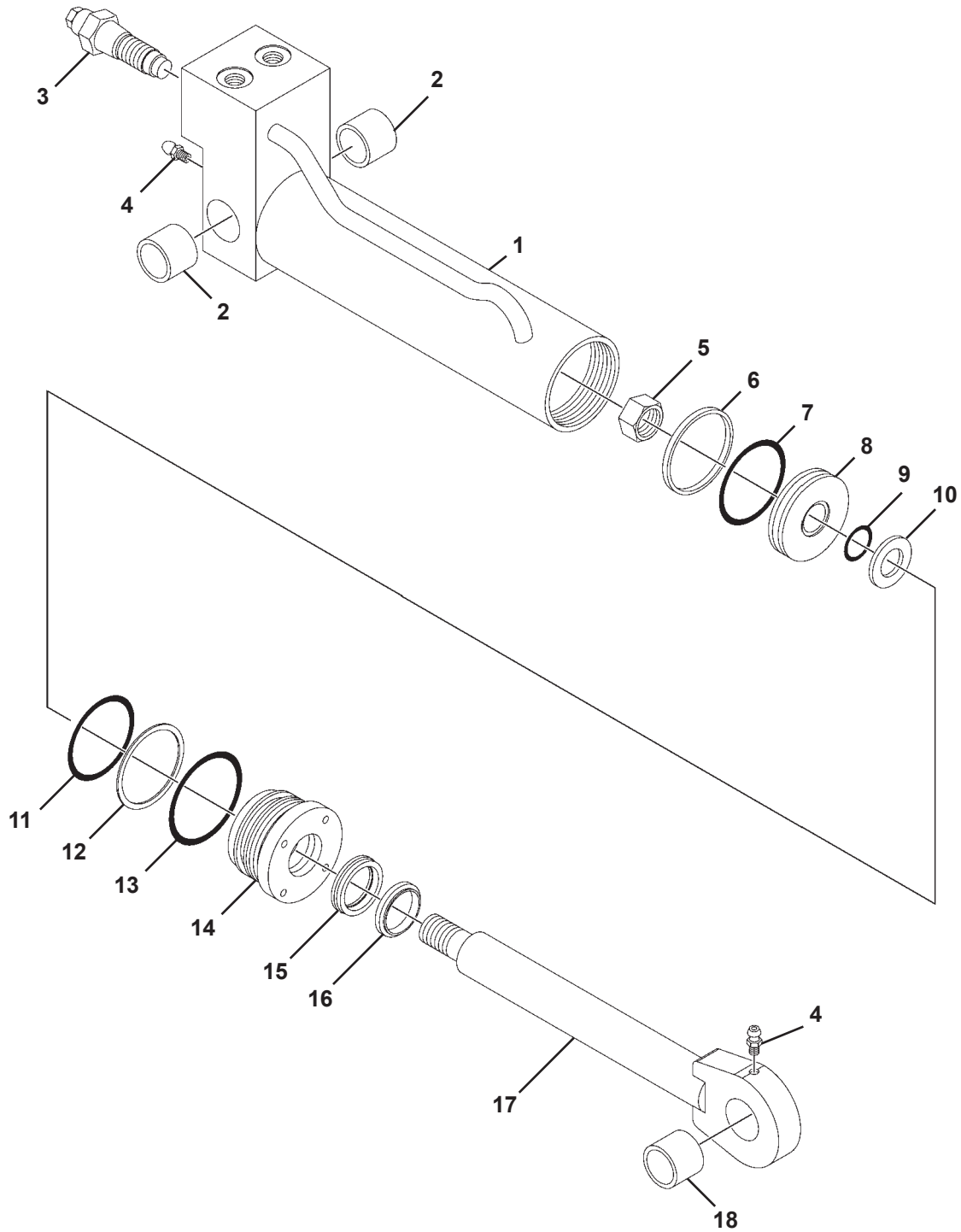
<u>ITEM</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	2	81828	Split Bushing
2	1	1483	Hex Nut (Torque to 230-250 ft. lbs.)
3	1	81963	Piston
4	1	101275	Cylinder Tube
5	1	86609	Gland
6	1	101278	Cylinder Rod
7	1	4645*	O'Ring
8	1	4644*	Piston Ring
9	1	4641*	O'Ring
10	1	4509*	O'Ring
11	1	4510*	Back-Up Washer
12	1	45225*	Poly-Pak Seal
13	1	45250*	O'Ring
14	1	45372*	Rod Wiper
15	1	81610	Split Bushing

NOTE: Seal Kit #45738 includes all parts marked with an asterisk (*). Parts are not sold separately.

M-1076 7-2-08

CYLINDER ASSEMBLY

ASSEMBLY #102273



CYLINDER ASSEMBLY

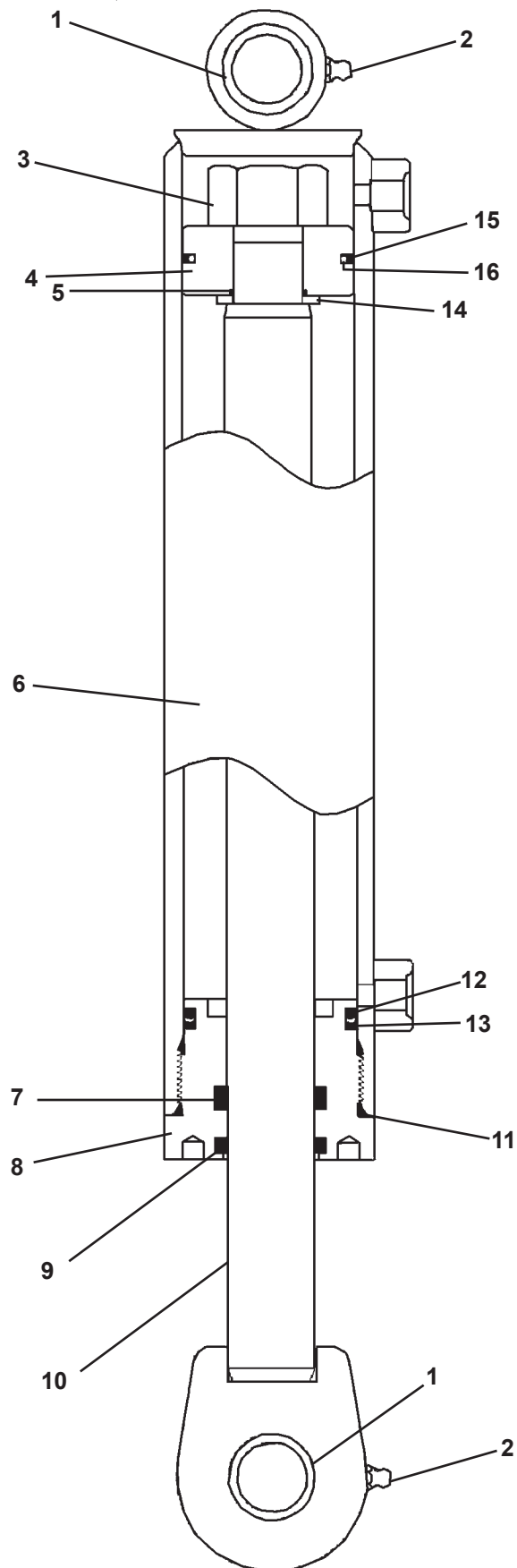
ASSEMBLY #102273

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	89118	Cylinder Tube, With Valve
2	2	88919	Bronze Bushing
3	2	89120	Valve Cartridge - Over Center
4	2	6616	Grease Zerk
5	1	1483	Hex Nut
6	1	4644*	Piston Ring
7	1	4645*	O-Ring
8	1	50252	Piston
9	1	4641*	O-Ring
10	1	5421	Washer
11	1	4509*	O-Ring
12	1	4510*	Back-Up Washer
13	1	45250*	O-Ring
14	1	77458	Cylinder Gland
15	1	45219*	Poly-Pak Seal
16	1	45389*	Rod Wiper
17	1	102272	Piston Rod
18	1	88918	Bronze Bushing

NOTE: Seal Kit #45617 includes all parts marked with an asterisk (*). Parts are not sold separately.

CYLINDER ASSEMBLY

ASSEMBLY #102277



CYLINDER ASSEMBLY

ASSEMBLY #102277

<u>ITEM</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	2	88919	Bronze Bushing
2	2	6616	Grease Fitting
3	1	1483	Hex Nut (Torque to 230-250 ft. lbs.)
4	1	50252	Piston
5	1	4641*	O'Ring
6	1	88912	Cylinder Tube
7	1	45219*	Poly-Pak Seal
8	1	77458	Gland
9	1	45389*	Rod Wiper
10	1	102272	Cylinder Rod
11	1	45250*	O'Ring
12	1	4509*	O'Ring
13	1	4510*	Back-Up Washer
14	1	5421	Spacer
15	1	4644*	Piston Ring
16	1	4645*	O'Ring

NOTE: Seal Kit #45617 includes all parts marked with an asterisk (*). Parts are not sold separately.



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