

## **INTRODUCTION**

For years, Koyker Manufacturing Company of Lennox, South Dakota, has provided the farm loader industry with innovative ideas for a more efficient and dependable means of material handling. Now, with the increasing popularity of the (Mechanical Track) tractor, Koyker has again met the challenge and provided the market with a loader that will allow the efficient use of these tractors in material handling. The KOYKER CK306 Loader provides you with state-of-the-art design and innovation for your on-farm handling chores.

Features such as quality construction, ease of maintenance, and high performance operating capacities, all at a low price, make the new CK306 Loader one of the most efficient loaders ever. With proper care and handling, it will provide many years of dependable service.

This manual is designed to provide you with important information regarding the basic loader and bucket. Our sincere intent, in providing this manual, is to help you, or those involved, better understand the machine and to prevent accidents.

Should you have any questions, comments, improvements, or suggestions regarding the contents of any of the manuals provided, please contact Koyker Manufacturing Company at 1-800-456-1107.

**We care about your safety!**

## **SAFETY ALERT SYMBOL**

The symbol shown below is used to call your attention to instructions concerning your personal safety. Watch this symbol it points out important safety precautions. It means **ATTENTION! Become Alert! Your Personal Safety Is Involved!**

Read the message that follows and be alert to the possibility of personal injury or death.



**WARNING!**

Anyone who will operate or work around a front-end loader shall first read this manual.

# SPECIFICATIONS

## CK306 Loader

Bucket Size	60"
Maximum Lift Height (A)	101"
Clearance W/Bucket Dumped (B)	83"
Reach at Maximum Height (C)	16"
Maximum Dump Angle (D)	45°
Reach W/Bucket on Ground (E)	59"
Bucket Rollback (F)	17° **
Digging Depth	6"
Overall Height In Carry Position (H)	64"
*Lift Capacity to Full Height at 1600 PSI	1200 lbs 2" Cylinder; 920 lbs-1 3/4" Cylinder
*Breakaway Capacity at 1600 PSI	2200 lbs 2 Cylinder; 1650 lbs-1 3/4" Cylinder
Hydraulic Control Valve Requirements	Two Spool Selective Control Valve required for Loader and Hydraulic controlled Bucket Cylinders. Double Acting Hydraulic Twin Cylinders 5 ft. Material 2" Bore or 1 3/4" Bore x 19 1/32" Stroke 2" Bore or 1 3/4" Bore x 27 27/32" Stroke 597 lbs.
Lift and Bucket Cylinders	
Bucket Control	
Standard Bucket	
Bucket Cylinder Size (Twin)	
Lift Cylinder Size	
Approximate Weight W/5ft.Bucket (Less Mounts)	
*Raising Time	6.5 Seconds 2" Cylinder; 5 Seconds 1 3/4" Cylinder
*Lower Time	5.0 Seconds 2" Cylinder; 3 Seconds 1 3/4" Cylinder
*Bucket Dump Time	5.0 Seconds 2" Cylinder; 4 Seconds 1 3/4" Cylinder
*Bucket Rollback Time	4.0 Seconds 2" Cylinder; 3 Seconds 1 3/4" Cylinder

\*Will vary depending upon tractor system capacity.



**\*\*NEVER ATTEMPT FULL ROLLBACK IN RAISED POSITION WITH BUCKET FULL.**

# SAFETY

Improper use of a loader can cause serious injury or death. The following safety precautions, and those given on the tractor mount installation instructions, should be thoroughly understood before attempting to operate this machine.

## **BEFORE OPERATING:**

Carefully study and understand this manual, the specific tractor mount instructions, and the attachment (s) manual (s).

Prior to operation, inspect the loader for system leaks and damaged, missing, or malfunctioning components in an effort to avoid the possibility of a dangerous failure involving structural members or hydraulic system components.

Be certain any repairs necessary are completed prior to loader operation.

Follow recommended maintenance procedures and precautions on Page 12.

Completely familiarize yourself and others involved with the operation of the hydraulic control valve before operating the loader.

Be certain all bystanders are clear of the machine and operation area prior to operation.

It may be necessary to add wheel ballast or rear weights as recommended by the tractor manufacturer to maintain stability of the machine to prevent tipping or upset which could result in serious injury or death. See mounting instructions for specific information.

It is recommended that both front and rear wheel treads be set to the widest recommended width to prevent tipping or upset which could result in serious injury or death.

This loader is designed for farm type operations such as snow removal, barn and feedlot cleaning or light grading and digging. It's design is **NOT** intended for commercial and /or industrial use.

## **DURING OPERATION:**

Never operate the machine other than from the tractor operator's seat.

Be sure operating area is clear of others during machine operations.

Never lift, hoist, or carry humans in the bucket or on any portion of the loader or loader attachments. Failure to heed, may result in serious injury or death.

## **SAFETY CONTINUED**

Transport the machine load at the slowest speed possible and with the loader boom at the lowest transport position to avoid tipping or upsetting, which may result in serious injury or death.

Be extremely careful when working on inclines or near loose fill, rocks, and holes as they can cause tipping or upsetting which may result in serious injury or death.

Be certain to avoid overhead electrical wires when operating loader. Contact with power lines may cause serious injury or death.

Avoid sudden stops when lowering or lifting the loader boom to prevent loss of control over the machine and/or load, which may result in serious injury or death.

Use maximum ballast and the widest recommended wheel setting on your tractor when handling large shiftable loads.

Never attempt to ram with the bucket at high speed or full tractor power. Sudden impact may result in structural failure and possible serious injury or death.

Never adjust or perform maintenance on the loader or tractor with the unit in motion, or without power source locked out.

Never get under bucket or lift arms or reach through the lift arms or bucket linkage when the loader is in operation. Inadvertent movement may cause serious injury or death.

### **FOLLOWING OPERATION:**

Whenever machine is not in operation, lower the loader boom and set the tractor brakes, disengage drive, shut the engine off, and remove the ignition key before dismounting the tractor.

If loader is to be disengaged from tractor, be sure that loader is securely supported on a hard, level surface and that the stand is securely engaged. Be certain all connections between tractor and loader are free before disengaging.

### **TRANSPORTING:**

Use safety lights and SMV emblem in addition to whatever local codes require when equipment is being transported on the road or highway. Check with proper authorities for legal limitations.

Transport all loads at a slow and safe speed.

Carry the load as low as possible and maintain adequate visibility and good round clearance at all times.

# SAFETY CONTINUED

## **PERFORMING MAINTENANCE:**

Carefully review, understand, and follow the “maintenance” section in this owners manual before attempting to service loader.

Lower the bucket or attachment to the ground, shut off tractor engine, and relieve pressure in the hydraulic system before adjusting, lubricating, or servicing the loader.

Escaping hydraulic oil under pressure can penetrate the skin. Never use body to check for hydraulic leaks. Use cardboard when checking for leaks. See Fig. 1-1. Relieve hydraulic pressure before disconnecting any hydraulic line. Failure to heed may result in serious injury or death.

Before disconnecting hydraulic lines, lower the loader and attachments. Lock out the hydraulic supply and relieve all hydraulic pressure.

Replace any damaged or painted-over decals. See Page 8 for replacement decals.

## **REMEMBER:**

1. Move Slowly!
2. Always use care and common sense!
3. Be careful for your own sake and for that of others!

FIG. 1-1

## **SAFETY DECALS**



# **CAUTION**

**Serial Number** \_\_\_\_\_

**DO NOT OPERATE LOADER WITHOUT FIRST READING OPERATORS MANUAL.**

**OPERATE LOADER FROM TRACTOR SEAT ONLY.**

**MOVE AND TURN TRACTOR AT LOW SPEEDS.**

**LOWER LOADER ARMS WHEN PARKING OR SERVICING.**

**CARRY LOADER ARMS AT A LOW POSITION DURING TRANSPORT.**

**ADD RECOMMENDED WHEEL BALLAST OR REAR WEIGHT FOR STABILITY.**

**MOVE WHEELS TO WIDEST SETTING RECOMMENDED FOR STABILITY.**



**This symbol means caution! Stay Alert! Watch for it!**

**KOYKER MANUFACTURING CO.  
P.O. BOX 409, 200 N. CLEVELAND  
LENNOX, SD 57039**

**ASAE R355**



# **WARNING**

**HYDRAULIC OIL UNDER PRESSURE  
CAN PENETRATE THE SKIN!**

- **NEVER USE ANY PART OF YOUR BODY TO CHECK FOR LEAKS IN HYDRAULIC LINES.**
- **IF YOU SUSPECT YOU HAVE A LEAK IN YOUR LINES ALWAYS USE CARDBOARD TO CHECK.**
- **BE SURE TO ALWAYS RELIEVE HYDRAULIC PRESSURE BEFORE DISCONNECTING LINES.**

**FAILURE TO HEED WILL RESULT  
IN SERIOUS INJURY OR DEATH!**

**85505**

**02-0360**

# **CAUTION**

## **LIFTING OBJECTS**

- 1. USE OF FRONT LOADERS FOR HANDLING HEAVY OBJECTS SUCH AS LARGE ROUND OR RECTANGULAR BALES, LARGE BALES, LOGS, DRUMS, ETC. IS NOT RECOMMENDED.**
- 2. HANDLING LARGE HEAVY OBJECTS CAN BE EXTREMELY DANGEROUS DUE TO:**
  - DANGER OF ROLLING THE TRACTOR OVER.**
  - DANGER OF UP-ENDING THE TRACTOR.**
- 3. DANGER OF THE OBJECT ROLLING OR SLIDING DOWN THE LOADER ARMS ONTO THE OPERATOR.**

**IF YOU MUST PERFORM THIS TYPE OF WORK, PROTECT YOURSELF BY:**

- NEVER LIFTING HIGHER THAN NECESSARY TO CLEAR THE GROUND WHEN MOVING.**
- BALLAST TRACTOR REAR TO COMPENSATE FOR LOAD.**
- NEVER LIFT OBJECTS WITHOUT ADEQUATE ANTI-ROLLBACK GUARDING.**
- ALWAYS MOVE SLOWLY AND CAREFULLY. AVOID ROUGH TERRAIN.**

77281

77281



## OPERATION



### **WARNING:**

Never allow anyone to operate the loader until they have carefully reviewed and understood this owner's manual.

### **FILLING THE BUCKET:**

Approach and enter the pile with the bucket level.

Roll bucket back gradually as the loader moves through the pile.

### **RAISING THE BUCKET:**

### **WARNING:**



Make sure material in bucket cannot spill out on to tractor when loader boom is raised. Keep clear of overhead obstructions such as trees, limbs or power lines when raising the bucket.

Side cutting is the best method of reducing large stockpiles. If the sides of the pile are too high, use the loader to pull them down and reduce the possibility of slides.

### **WARNING:**



**NEVER** attempt to operate the loader with someone near the loader frame or bucket.

## **LOADER INSPECTION, LUBRICATION, AND MAINTENANCE**

Lower the bucket to the ground, shut off tractor engine, and relieve the pressure in the hydraulic system before adjusting, lubricating, or servicing the loader.

Inspect all pins and grease fittings before each use and lubricate with heavy duty grease as indicated in this manual.

Periodically check all bolts for looseness and retorque if necessary

Before storage, be certain all hydraulic cylinders are fully collapsed so that the rod will not be exposed to the elements or damaged.

Be certain hydraulic system remains sealed at all times to prevent inclusion contaminants.

Check and maintain an adequate fluid level in the tractor reservoir prior to use.

Inspect all hydraulic system hoses and fittings. Replace prior to further operation if damaged.



### **WARNING:**

Escaping hydraulic oil under pressure can penetrate the skin. Never use body to check for hydraulic leaks. Use cardboard when checking for leaks. See Fig. 1. Relieve hydraulic pressure before disconnecting any hydraulic line. Failure to heed may result in serious injury or death.

FIG. 1-1

## HYDRAULIC SYSTEM PARTS LIST

KEY	PART NUMBER	DESCRIPTION	QUANTITY
1	658710	1st Oil Line	1
2	658711	2nd Oil Line	1
3	658735	24"Hydraulic Hose	2
4	658417	2" Lift Cylinder	2
5	658416	2" Bucket Cylinder	2
6	657776	16" Hydraulic Hose	6
7	658436	42" Hydraulic Hose	2
8	658734	Adapter	6

# HYDRAULIC SYSTEM PARTS DIAGRAM

# KOYKER "CK306" LOADER PARTS DIAGRAM

# PARTS IDENTIFICATION SCHEDULE

KEY	PART NUMBER	DESCRIPTION	QUANTITY
1	658420	Main Frame	1
2	658418	RH Pedestal	1
3	658419	LH Pedestal	1
4	658416	2" Bucket Cylinder	2
5	658417	2" Lift Cylinder	2
6	658414	Crossmember	1
7	658415	Upright Support	2
8	658710	1st Bucket Oil Line	1
9	658711	2nd Bucket Oil Line	1
10	658735	24" Hydraulic Hose	2
11	658700	Muffler	1
12	658475	Axle Plate	2
13	650074	HH Capscrew; 5/8" x 1 1/2"	4
14	640159	Lockwasher; 5/8"	10
15	640142	Hexnut; 5/8"	4
16	540671	#3 Hitch Pin	2
17	666944	Decal "Caution Lifting Objects"	1
18	666943	Decal "Hyd. Oil Pressure	5
19	654629	Decal (American Made)	2
20	650834	6" Pivot Pin	6
21	640021	HH Capscrew; 5/16" x 2 1/4"	12
22	640128	Locknut; 5/16"	12
23	657199	4 1/2" Pivot Pin	4
24	651719	HH Capscrew; 16MM x 2.0P x 60MM	6
25	640162	Lockwasher; 3/4"	4
26	657776	16" Hydraulic Hose	6
27	658734	Adapter	6
28	658736	42" Hydraulic Hose	2
29	652393	14" Nylon Tie	2
30	640096	HH Capscrew; 3/4" x 1 3/4"	4
31	640146	Hexnut; 3/4"	4
32	640881	HH Capscrew; 10MM x 1.5P x 80MM	2
33	640153	Lockwasher; 3/8"	2
34	655984	Dual Oil Line Backup	3
35	655165	Oil Line Clamp	3
36	655164	Oil Line Holder	3
37	640126	Locknut; 1/4"	5
38	658413	Mount Spacer	2
39	658412	Oil Line Cover	1
40	658712	Decal; CK306	2
41	658535	5' Standard Bucket	1

## WARRANTY

Koyker Manufacturing Company (Koyker) warrants to the original purchaser only that the goods manufactured by Koyker are free from defects in material and workmanship under normal use and service and when properly installed for a period of one (1) year from the date of purchase. Any defective part or component must be returned to the factory at the purchaser's expense for inspection by Koyker. The obligation on Koyker is limited to repairing or replacing at its factory any part or component determined to its satisfaction to be defective. **KOYKER SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.** All transportation charges shall be paid by purchaser. Purchaser must notify Koyker of a claim by registered or certified mail, return receipt requested, within thirty (30) days after discovery or the claim shall be deemed waived.

**THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** No warranty is given by Koyker for parts, components, or trade accessories furnished by Koyker but not manufactured by it. They are covered by the warranty of their manufacturer, if any. No person, firm, or corporation including the selling dealer is authorized to assume for Koyker any other liability in connection with the sale of these goods.

User shall notify KOYKER in writing within 30 days, of any accident or occurrence involving KOYKER products resulting in personal injury of property damage and shall cooperate fully with KOYKER in investigating and determining the cause of such accident or occurrence. In the event that user fails to give such notice to KOYKER and so cooperate, user agrees to indemnify and waive KOYKER harmless from all loss or damage arising from such accident or occurrence.

## **CYLINDER WARRANTY**

All cylinder claims shall be handled by Koyker Dealers or Distributors. All hydraulic cylinders are thoroughly inspected before shipment from factory. Therefore, no claim can be granted where a cylinder has been damaged or abused (including, but not limited to, bent tubes, dents, nicks, abused threads, attempted alterations, or welding), nor unless made to Koyker within one (1) year from sale to original purchaser.

Any defective cylinder reported to Koyker within one (1) year from sale by dealer to original purchaser will be replaced after properly inspected by Koyker. In such case, notify your Koyker Dealer and he will give you proper instructions.

If inspection proves cylinder is not defective and has been abused or otherwise damaged, any charges will be paid by original purchaser immediately after he has been notified of the result of Koyker's inspection of the cylinder sent in for inspection.

Cylinders requiring factory repair more than one (1) year after sale to original purchaser, can be given to Dealer for return to Koyker with transportation charges prepaid. Leaks around the shaft seal and internal bypass leaks can be field repaired. Service kits are available for this repair.



# HYDRAULIC CYLINDERS

## INSPECTION AND MAINTENANCE:

Periodically check all hydraulic system connections to insure a leak-free condition. Also, be certain to maintain proper fluid levels in the tractor hydraulic system as in accordance with the method and frequency recommended in the tractor operator's manual.

Use only hydraulic fluids recommended for your tractor hydraulic system by the manufacturer. Recommended hydraulic fluid for operation of the loader is DTE Light Hydraulic Oil Viscosity 150 SUS at 100 Degrees F (SAE 10W).

Keep hydraulic system clean. Be certain to maintain recommended oil filter service intervals.

All internal surfaces of the hydraulic system on your loader have been factory cleaned, inspected, and plugged with protective caps prior to shipment. Be certain all protective caps are securely in place until hydraulic system assembly is completed.

Care must be taken with your loader cylinders. Nicks, scratches, rust or other shaft damage can cause seal damage resulting in cylinder leakage and poor performance.

## IMPORTANT:

Read these service tips before beginning assembly of cylinder gland or piston

1. Keep seals clean from the time they are removed from package until they are installed.
2. Clean the groove or bore into which the seal is to be fitted before installing the seal.
3. Never touch the seal lip in handling. Always pick up the seal by its outer member.
4. Inspect each seal lip carefully for nicks, scratches, and dirt at time of installation. If dirty, use a soft, clean cloth and carefully wipe off seal. **DO NOT** wipe seal with fingers as this only imbeds dirt in the seal.

## NOTE:

Seals can be made more pliable and easier to install, if first heated in hydraulic oil to 160 degrees F. Never use direct heat on any seals.

## IMPORTANT:

Never clean rubber related seals with a mineral based solvent! Clean rubber seals in denatured alcohol or non-mineral based solvents only.

## 2" CYLINDER SERVICE KITS

### KIT NO. 1D:

Complete kit with all seals needed to service one (1) 2" Cylinder. Consists of:

1 each	2" Gland "O" Ring	7404-13
1 each	2" Backup Ring	7404-14
1 each	1 1/4" EZ Squeeze Rod Seal	7404-12
1 each	1 1/4" Rod Wiper	7404-15
2 each	2" EZ Squeeze Piston Seal	7404-10
1 each	3/4" Rod "O" Ring	7404-11

### KIT NO. 2D:

Complete assembled 2" Cylinder Gland with all seals. Consists of:

1 each	2" Aluminum Gland	7404--9
1 each	2" Gland "O" Ring	7404-15
1 each	2" Backup Ring	7404-14
1 each	1 1/4" EZ Squeeze Rod Seal	7404-12
1 each	1 1/4" Rod Wiper	7404-15

### KIT NO. 3D:

Complete assembled 2" Cylinder Piston with all seals. Consists of:

1 each	2" Aluminum Piston	7404-8
2 each	2" EZ Squeeze Piston Seal	7404-10
1 each	3/4" Rod "O" Ring	7404-11

### KIT NO. 4D:

All seals needed to service one (1) 2" Cylinder Gland. Consists of:

1 each	2" Gland "O" Ring	7404-13
1 each	2" Backup Ring	7404-14
1 each	1 1/4" EZ Squeeze Rod Seal	7404-12
1 each	1 1/4" Rod Wiper	7404-15

### KIT NO. 5D:

All seals needed to service one (1) 2" Cylinder Piston. Consists of:

2 each	2" EZ Squeeze Piston Seal	7404-10
1 each	3/4" Rod "O" Ring	7404-11

# HYDRAULIC CYLINDER PARTS LIST

## 2" CYLINDER PARTS LIST

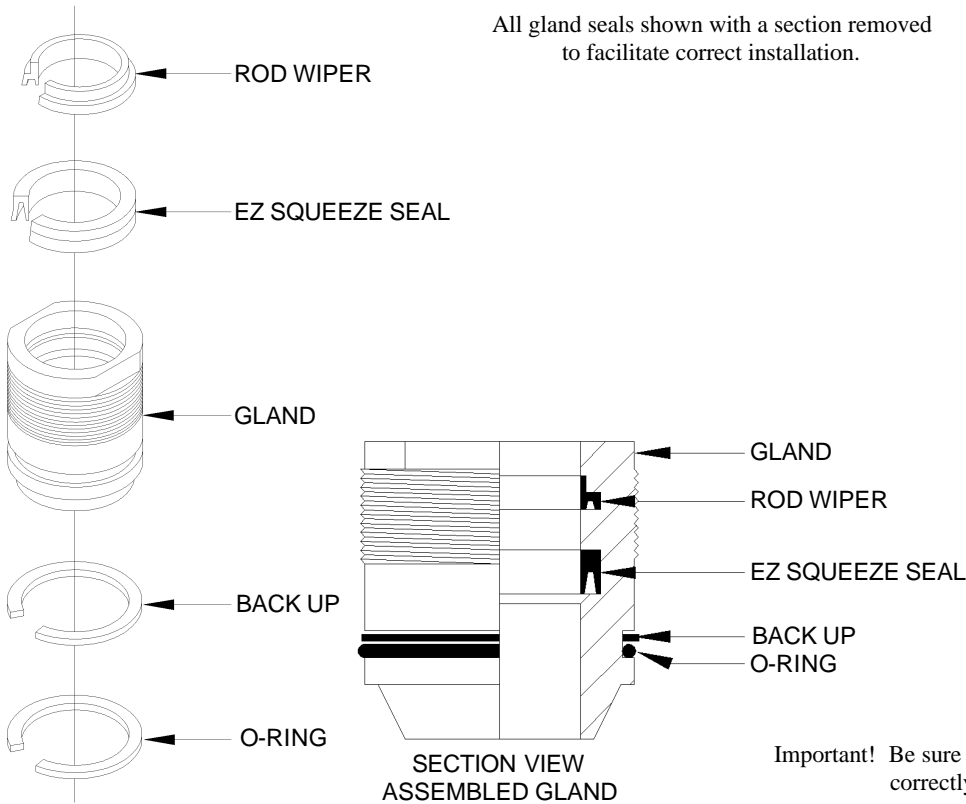
### LIFT CYLINDER (Part No. 658416)

Key	Part Number	Description	Quantity
1	658423	Tube Weldment	1
2	7404-7	3/4" Jamnut	1
3	651548	Piston Assembly	1
4	7404-11	1" "O" Ring	1
5	651549	Gland Assembly	1
6	658424	Rod Weldment	1
	1D	Seal Kit	1

### BUCKET CYLINDER (Part No. 658417)

1	658426	Tube Weldment	1
2	7404-7	3/4" Jamnut	1
3	651548	Piston Assembly	1
4	7404-11	3/4" "O" Ring	1
5	651549	Gland Assembly	1
6	658427	Rod Weldment	1
	1D	Seal Kit	1

# CYLINDER GLAND SERVICE DIAGRAM

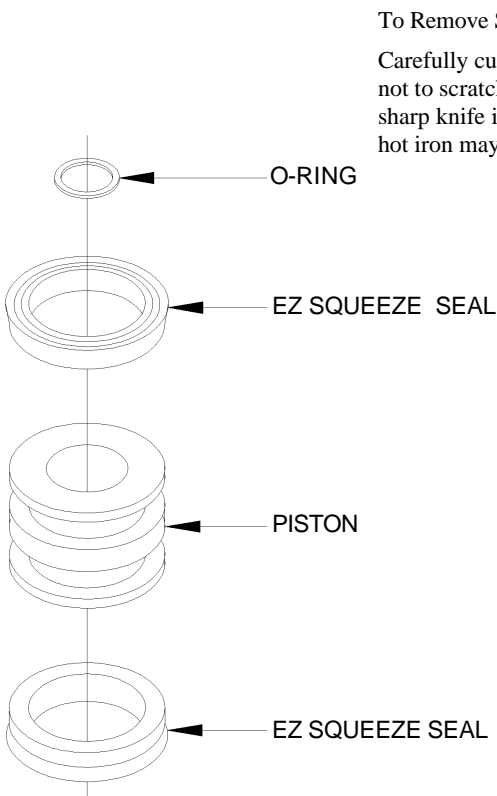


All gland seals shown with a section removed to facilitate correct installation.

Note: To install rod wiper and EZ-squeeze seal, fold similar to shape shown below, slip into gland bore and locate each in its respective groove. Tools are used to fold seals, take care not to damage sealing surfaces.

Important! Be sure all gland and piston seals have been installed correctly before cylinder is assembled!

# CYLINDER PISTON SERVICE DIAGRAM



### To Remove Seals

Carefully cut across each seal with a sharp knife. Be sure not to scratch sealing surfaces of aluminum piston. If a sharp knife is not available. An electric soldering gun or hot iron may be used to melt throughout seals

### To Install Seals:

1. Thoroughly clean piston sealing surface of all foreign matter.
2. Heat new seals in hydraulic oil to 160° F. Never use a direct flame or heated water on hydraulic seals.
3. Remove seals from oil, wipe dry and install in piston grooves as shown in illustration at left. Be sure seals have completely seated in piston grooves before allowed to cool.
4. Replace piston on cylinder shaft and assemble cylinder when seals have cooled to room temperature.

