

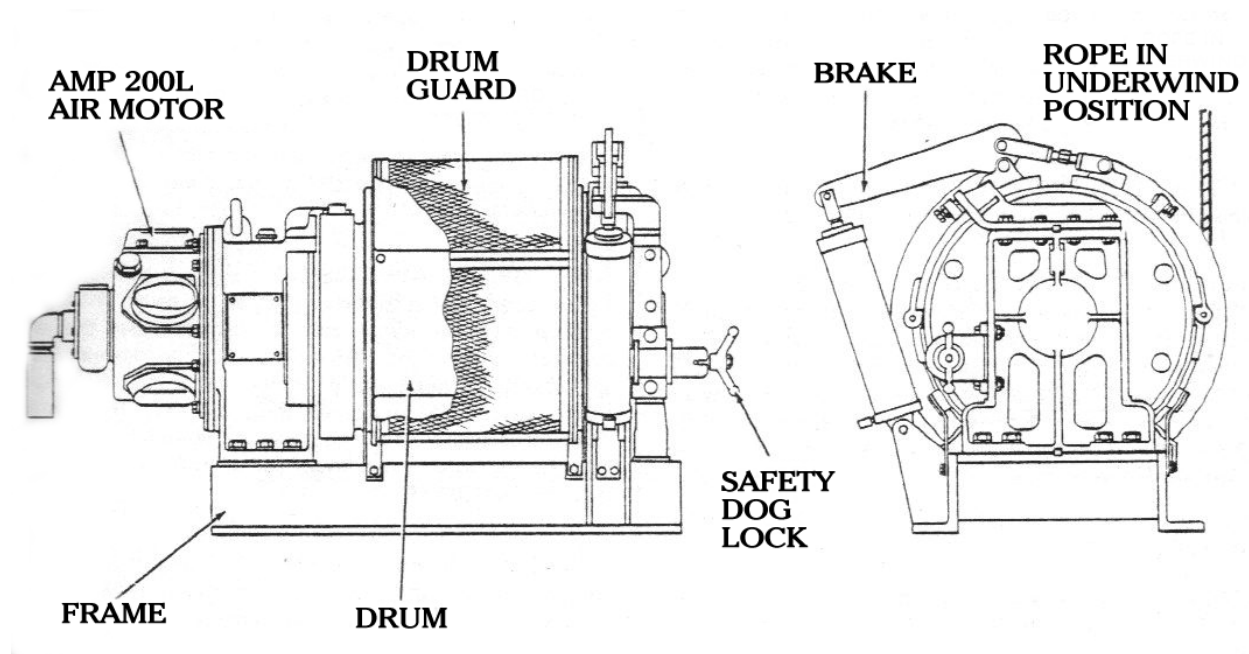


JOYWINCH

a division of GMS Industries Inc.

OPERATING AND MAINTENANCE MANUAL

Model: D-COK-R



Read this Owner's Manual thoroughly before operating the equipment. Keep it with the equipment at all times and make a copy to put on office file. Replacements are available from GMS Industries, Inc. PO Box 167, Buchanan MI, 49107 Tele. 269.695.2244 www.joywinch.com

IMPORTANT SERIAL # INFORMATION:

Please record all product information from the serial tag on the bottom of page 3 in this manual and have the information available when calling the GMS plant for information regarding your equipment.



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RECOMMENDED SAFETY PROCEDURES:

- This equipment and its accessories are NOT to be used for lifting or lowering people
- Operation should be restricted to designated trained personnel only.
- Always check equipment and accessories before operating
- Always check for load stability and do not operate if the winch or load is in any way unsafe.
- Never exceed rated load capacity.
- Do not permit people under or near load.
- Always keep hands away from nip points of sheaves, drum, gears and inspection holes specifically and any other moving parts.
- GMS does not supply cable. It is the equipment owner's responsibility to determine the type of cable, its maintenance plan, and to always inspect cable prior to operating. It is important to keep hands away from moving cable while operating.
- Never leave winch unattended while loaded or running.
- Check lubrication before use.
- Install cable to the winch drum securely and always keep at least 5 wraps of cable on drum to serve as "anchor wraps". Less than 5 wraps on the drum could cause the cable to come free resulting in the load to escape.
- Always ensure that brakes hold prior to making a complete lift by lifting load a short distance then releasing the control.
- If there is slack wire rope condition, the hoisting mechanisms should be inspected to ensure all cable is properly seated on the drums and in the sheaves before resuming the winch operations.
- Always disconnect the air supply before servicing the equipment.
- Do not modify the equipment in any way. To do so could cause equipment failure.
- Do not wrap the cable around the load. This damages the cable and could cause the load to escape. Use an approved lifting device.
- Do not operate the winch with drum guard or inspection covers either removed or improperly installed.
- Operators should never divert attention away from the working of the load or the winch itself. Stay alert to the possibility of accidents, and try to prevent them from happening.
- Do not jerk or swing the load. Avoid shock loads by starting and stopping the load smoothly. Shock loads overload the equipment and may cause damage.
- Never leave a suspended load unattended unless specific precautions have been taken to secure the load and keep people away from the winch and out from under the load.
- Do not adjust the brake with the load suspended.
- Never disassemble the air cylinder for the air band brake, improper disassembly could cause personal injury. It is important that you adjust the brake fittings and turnbuckle to adjust brake to your specific lifting layout.

FAILURE TO COMPLY WITH THESE AND OTHER IMPORTANT INFORMATION OUTLINED IN THIS MANUAL MAY CAUSE SERIOUS BODILY HARM, EQUIPMENT DAMAGE AND OR PROPERTY DAMAGE.

The Occupational Safety and Health Act of 1970 states that it is the employer's responsibility to provide a workplace free of hazard. To this end, all equipment should be installed, operated, and maintained in compliance with applicable trade, industrial, federal, state, and local regulations. It is the equipment owner's responsibility to obtain copies of these regulations and to determine the suitability of the equipment to its intended use.

This Owner's Manual, and any warning labels attached to the equipment, are to serve as guidelines for hazard-free installation, operation, and maintenance. These guidelines should not be understood to prepare you for every possible situation. The information contained in this manual is applicable only to the GMS D-COK-R Air Winches. Do not use this manual as a source of information for any other equipment.



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STATEMENT OF WARRANTY:

GMS Industries, Inc. warrants each new products to be free from defects in material and workmanship under normal use and service for a period of 12 months from the date of purchase by the original using buyer. Genuine GMS Industries, Inc. replacement parts and components will be warranted for 30 days from the date of purchase, or the remainder of the original equipment warranty period, whichever is longer.

Under no circumstances will this warranty cover a product or component thereof, which, in the opinion of the company, has been subjected to misuse, unauthorized modifications, alteration, an accident or shipping damage. It is the responsibility of the purchaser to ensure that adequate insurance is purchased with shipping company. Once the product leaves the GMS factory it becomes the responsibility of the buyer to negotiate any damages with the shipping company and their respective insurance carrier. All invoices should be paid within stated terms.

This warranty also shall not apply to products that are operated improperly, improperly maintained, improperly stored or operated with parts or components not manufactured by GMS Industries, Inc. This warranty does not cover any costs for removal of our product, downtime, or any other incidental or consequential costs or damages resulting from the claimed defects. Brake discs, piston rings, brake material, gaskets or other wear components are not covered under this warranty, as their life is subject to use conditions which vary between applications.

Any alteration, repair or modification of the product outside the GMS Industries Inc. factory shall void this warranty. GMS Industries, Inc. in no way warrants pneumatic, hydraulic or electric motors and control valves or other trade accessories since these items are warranted separately by their respective manufacturers. The use of any trade accessory without the written signed consent of GMS Industries, Inc. will void the warranty on any GMS Industries, Inc product.

FACTORY AUTHORIZED REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY TO THE CONSUMER. GMS INDUSTRIES, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS PRODUCT. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY. *

**Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.*

To make a claim under this warranty, contact the factory for an RGA number. The product must be returned, prepaid, directly to GMS Industries, Inc. A completed warranty claim form must accompany the product. If the product is found to be defective, it will be repaired or replaced free of charge, and GMS Industries, Inc. will return the product prepaid in similar fashion to the way it was received whenever possible.

When calling in to the factory for any reason please write down the specific unit information here for easy reference.

Model Number	Serial Number	Date of Purchase	Customer PO#	GMS Invoice#

Note: GMS Industries, Inc. reserves the right to change the design or discontinue the production of any product without prior notice.



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OPERATING AND MAINTENANCE MANUAL

Model: **D-COK-R**

PRODUCT & OPERATING DESCRIPTION:

OVERVIEW & OPTIONS:

The GMS D-COK-R is a single drum pistonair hoist. It is powered by an air operated AMP 200L motor and controlled by a remote hoist throttle valve. Other standard features include automatic band type brake, a safety dog and a full face expanded metal drum guard that helps to protect the operator while allowing them visual access to the cable. Optional equipment includes an air strainer, automatic disc brake, toggle type hand brake, and a remote brake control.

RATING:

The D-COK-R hoist has a nominal cable pull rating of 5000 LBS at 115 FPM @ 100 PSIG of air pressure with the drum half full.

FRAME & INSTALLATION:

The D-COK-R has a rigid one-piece welded frame with 10 tapped holes for firm anchoring of the end brackets and to provide positive alignment of parts.

WARNING

- All supporting structure, mounting hardware and attaching hardware must be in accordance with all applicable standards codes and regulations.
- Ensure proper selection and installation of cable and sheaves. Sheaves and sheave mounting must be designed and selected in accordance with all applicable standards, codes, and regulations. Improper installation of cable or sheave can cause uneven spooling and cable damage that could cause a load to escape.
- Do not install the winch in an area defined as hazardous by the National Electric Code, unless installation in such an area has been thoroughly approved.
- Do not install the winch near corrosive chemicals, flammable materials, explosives, or other elements that may damage the winch or injure the operator. Adequately protect the winch and the operator from such elements.
- Position the winch so the operator can stand clear of the load, and out of the path of a broken wire rope that could snap back and cause injury.
- Attach the winch to a rigid and level foundation that will support the winch and its load under all load conditions, including shock loading.

IMPORTANT

- ✓ Consult applicable codes and regulations for specific rules on installing the equipment.
- ✓ Install the winch on a horizontal surface. The winch is designed and assembled for horizontal base mounting only.
- ✓ Fasten the winch securely to the foundation. Use coarse thread fasteners, grade 8 or better. Be sure to check the torque required for your fastener selection before mounting the winch. Make sure the winch is secured to a solid foundation able to support the winch and the load under all conditions with design factors based on accepted engineering practices.
- ✓ Inspect the winch immediately following installation according to the Instructions for Periodic Inspection. This will give you a record of the condition of the winch with which to compare future inspections.
- ✓ A qualified professional should inspect or design the foundation to insure that it will provide adequate support and that it complies with local codes.
- ✓ Locate the winch so it will be visible during the entire operation.
- ✓ When moving and positioning the winch, lift using the lifting eyes in the frame or with a sling wrapped around drum.
- ✓ Do not weld the winch frame to the foundation or support structure. Welding the frame may void warranty, contact GMS Industries, Inc. Use fasteners as instructed.



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DRUM:

The large diameter steel drum reduces cable wear and the proper drum width assures good spooling of the cable. A safety dog lock is part of the drum's construction.

- ✓ Use a sheave or roller guide to direct the wire rope to the drum whenever possible.
 - *When wire rope travels over a sheave or through a roller guide – maintain fleet angle of $\frac{1}{2}$ - $1\frac{1}{2}$ degrees by locating the sheave or guide an appropriate distance from the drum as application requires.*
 - *When cable travels directly to the load – maintain fleet angle by controlling side-to-side movement of the load with tracks or guide rails. Allowing the load to move too far to one side causes stress on the drum flange which may cause damage.*
- ✓ Install sheaves, tracks and other equipment so they will remain fixed under all load conditions. Follow the recommendations of the equipment manufacturer.
- ✓ Use sheaves of proper diameter to minimize wear on the wire rope. Follow the recommendations of the sheave manufacturer.
- ✓ It is recommended that the rope is under-wound on the drum. Use of the drum guard will require that the rope is attached in the under-wound position. Then when the throttle is pulled the load will be raised.
- ✓ Cable is to be connected by placing the end of the cable in the cored hole provided in the cable drum, then by tightening the two setscrews securely.
- ✓ It is imperative that the cable be of sufficient length so that when lowering a load, there will always be five turns of cable left on the drum. If unwound to the end of the cable, certain failure will result.

THROTTLE CONTROL:

The throttle valve is used to control the raising and lowering of the load. For best performance, air supply must be adequate to provide 100 PSIG to the motor inlet at all times during hoist operation. The operation of the hoist is controlled by pushing the throttle handle forward to lower the load and pulling it back to raise the load. Regulate the speed of the drum rotation by controlling the amount the throttle is opened, whether raising or lowering the load. The automatic drum brake is controlled from the hoist throttle valve and should be adjusted to hold the load when the valve is in the neutral or "off" position. The load may also be lowered with an optional remote brake control valve which provides finer control.

REDUCTION GEARBOX & PLANETARY CLUTCH DRUM GEARS:

The reduction gearing and bearings are mounted in a heavy duty, totally enclosed cast steel housing, keyed and bolted to the frame to insure proper alignment. All gears are ball or roller bearing mounted and gears are precision cut from heat treated chrome nickel alloy steel. A high temperature, heavy duty tacky No. 2 grease is used in both sealed areas. See Lubrication instructions appendix for service and maintenance details.

BRAKE:

A spring set, air released external automatic band type brake provides smooth action and safe handling of the load. The braking is adjusted by loosening the check nut (turnbuckle) and tightening the adjusting screw, so that sufficient force is available to hold the load and not drag on the rim when discharged. Use a light oil or silicone grease to lubricate points on brake as indicated in lubrication instructions appendix.

- ✓ Keep the brake adjusted so that it will hold the load securely.
- ✓ Check the quick release valve at the brake cylinder to insure it is releasing air quickly allowing the spring in the cylinder to clamp the brake band properly.
- ✓ Check wear and replace brake linings before they are 1/3 worn and before linings are worn to within 1/16 of the rivets.
- ✓ Inspect drum for scoring and replace linings. Polish or turn out rough places on the drum before reattaching bands.



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PISTONAIR MOTOR:

The GMS AMP-200L pistonair motor is reversible and of 5-cylinder radial design, splash lubricated with ball bearing crankshaft construction and completely sealed for protection from dirt and water. Deadman throttle valve control will shut off the motor when handle is released and can be operated remotely. These motors provide ample power for this hoist. It is important to note that these motors are shipped without oil in the housing cavity. There may be the appearance of oil as the motors are tested on a special test stand prior to shipping to ensure performance. This motor operates best with a non wax based SAE 20W or SAE 30W motor oil based on conditions listed in the pistonair motor manual. For complete air motor information see the pistonair motor manual.

EXHAUST MUFFLER:

An exhaust muffler will substantially reduce the operating area noise, however it will also reduce the performance of the air motor. When a muffler is used it should be piped as close to the motor as possible, preferably in a horizontal position and directly into a closed nipple. The muffler should be cleaned frequently by washing in a solvent and blowing dry.

AIR STRAINER:

An air strainer should be placed in the air inlet to prevent passage of dirt from the air line into the Pistonair motor. It should be cleaned occasionally by removing the pipe plug and turning on the air for a few minutes. This will blow out any dirt, pipe scale, etc. the strainer has accumulated. The air screen should be removed, inspected and cleaned as often as necessary. Clean the screen by letting air blow through the opened strainer, holding the screen in the air stream. A dirty or plugged air strainer will cause loss of power and sluggish operation.

LINE LUBRICATOR:

A line lubricator should be placed on the air line to the air motor. For more complete information please see the pistonair motor manual.

AIR DRYER:

An air dryer should be placed on the air line going to the air motor to ensure that there is not excessive build up of moisture inside the unit. An air dryer is not to be used as an alternative to regular maintenance requirements of the air motor or the winch itself.

GENERAL OPERATING CARE:

- Check the hoist daily for loose connection, loose capscrews, loose filler, level, drain plugs or cocks, evidence of lubricant leakage and security of mounting.
- Always remember to blow out the air hose before connecting it to the air inlet of the motor. This will eject water and dirt from the air line.
- Always use the correct grade and same type of lubricant as instructed on the lubrication instruction. Do not deviate from the type and brand of grease until you clean and regrease all gearing. Please contact GMS if you have a specific type of grease you would like to use to ensure that it meets the required specifications.
- Should anything go wrong with the hoist or motor have it repaired at once. It is more economical to take time for minor maintenance repairs at the first sign of need than to risk excessive downtime for major repairs later.
- When a machine will be inoperative for a long period of time, service the motor and hoist units thoroughly with oil and grease to prevent rusting and deterioration while in storage.



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LUBRICATION & MAINTENANCE POINTS & SCHEDULE *See page 8 for drawing of points.

Drawing #	Item Description	Maintenance Instructions	Schedule
1A & 1B	Main Shaft Bearings	Lubricate bearing groups on main shaft via 1A's two grease fittings and 1B's single grease fitting with 4 or 5 pumps of HT #2 tacky grease on each. Prelubed with:	WEEKLY
2	AMP 200 L Air Motor	See Pistonair Motor Manual for Instructions	See Manual
3	Idler Gear Bearings	Lubricate bearings on planetary idler gears via two grease fittings on the top and bottom (both opposite ends) of the drum flange with 4 or 5 pumps of HT #2 tacky grease on each fitting. Prelubed with:	WEEKLY
4	Planetary Gears and ring (clutch drum) gear.	Lubricate gears via one 45 deg. grease fitting in the gap between the clutch drum housing and the main reduction gearbox housing next to inspection plug with 4-5 pumps of HT #2 tacky grease. To ensure grease is being applied open inspection plug to visually inspect grease. Add additional grease if necessary. Prelubed with:	WEEKLY
5	Gear Housing	Lubricate gear housing by removing the inspection plate on both sides of the housing. Ensure that air line is removed from unit prior to doing so. Maintain grease to the level of the plug (5A) which will require 6-8 pounds of HT #2 tacky grease. DO NOT USE OIL! Prelubed with:	MONTHLY
6	Misc. linkages, clutch handles, etc.	Lubricate with occasional applications of machine oil to ensure easier operation and reduce wear.	MONTHLY
6	Brake operating pins, threads and links	Lubricate points with a light soft grease.	
7	Air Thruster Cylinder Rod	Lubricate with a light oil or grease on rod surface	MONTHLY
*NOTE	AT REASSEMBLY	Upon reassembly during any repair or routine service be sure clean all gearing of old grease and recoat gear teeth with new HT #2 tacky grease.	BASED ON WEAR & USE
*NOTE	Deck bolts, clutch drum bolts, end bracket bolts, motor bolts, and disc brake bolts.	Check and tighten as necessary using standard applicable torque settings.	WEEKLY
*NOTE	Cable wire	Inspect your cable for wear, broken wires or kinks per the manual given to you by the cable manufacturer. GMS does not supply wire cable.	PER CABLE MANUFACTURER MANUAL

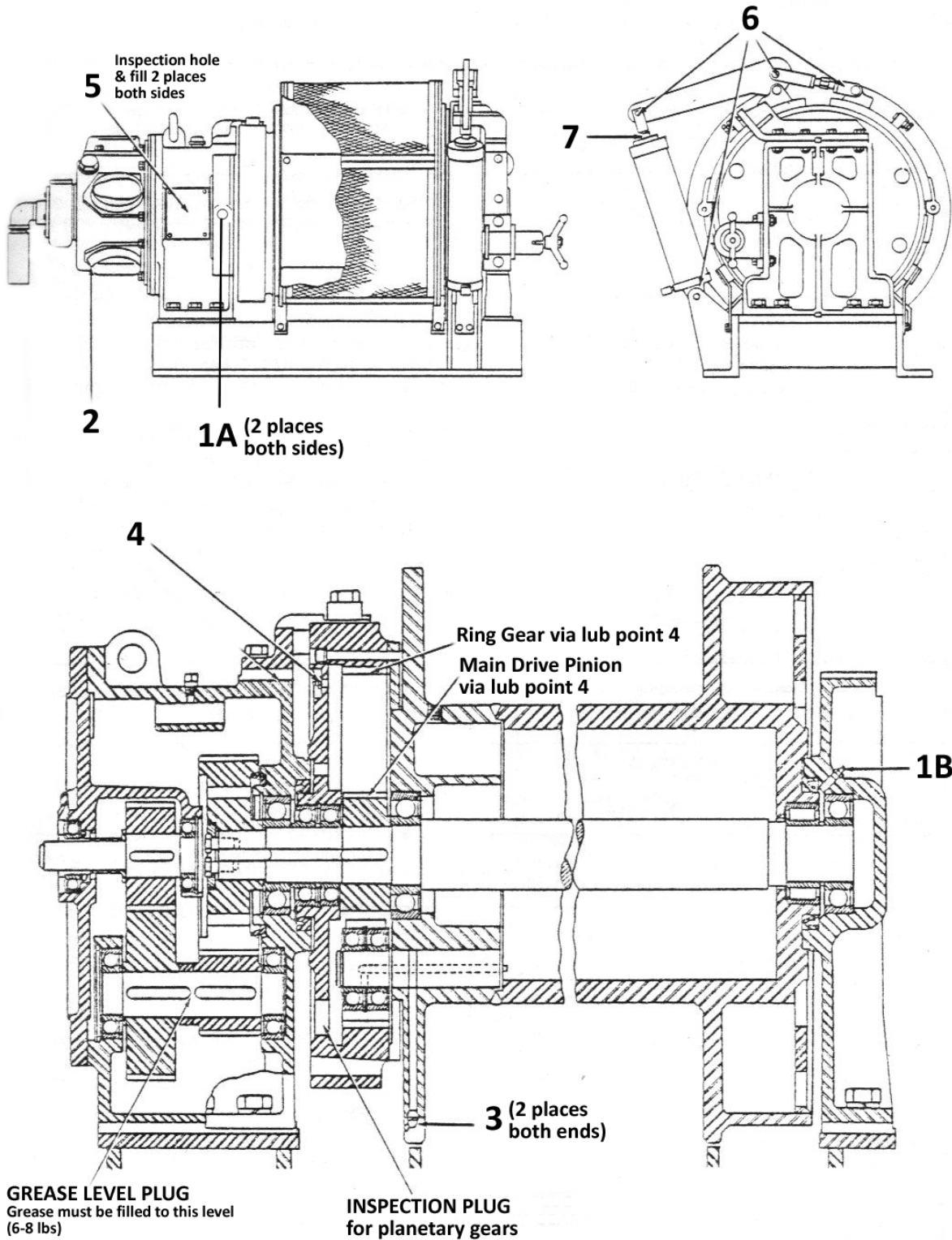


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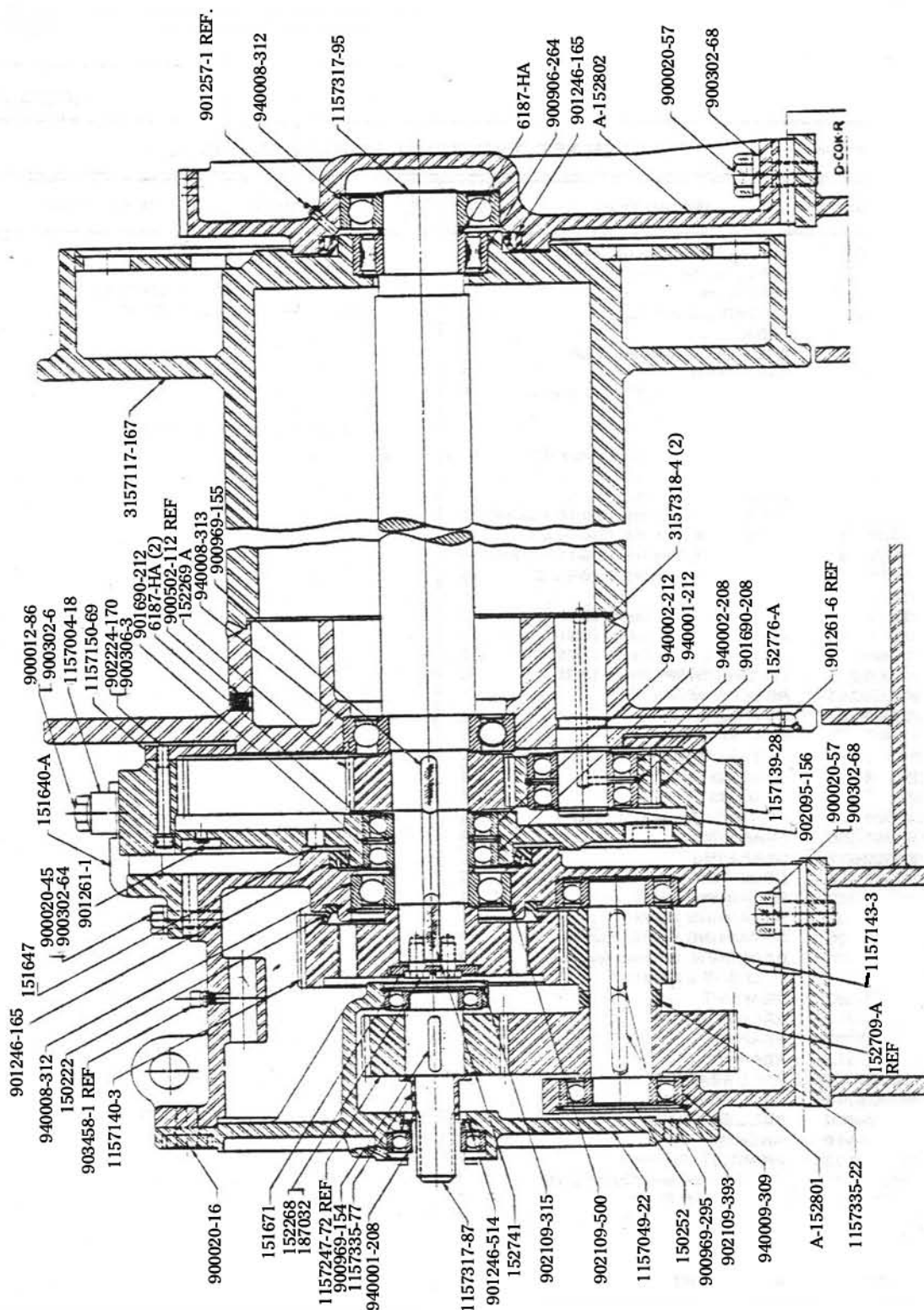
GMS INDUSTRIES
PO BOX 167
807 West 4th Street
Buchanan, MI 49107

OEM: GMS INDUSTRIES
269-695-2244
www.joywinch.com

Bill of Material Number:
700354-239

D-COK-R Hoist: Main Shaft &
Drum Assembly

REF #	PART NUMBER	DESCRIPTION	QTY	REF #	PART NUMBER	DESCRIPTION	QTY
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269-695-2244
www.joywinch.com

Bill of Material Number:
700354-239

D-COK-R Hoist: Main Shaft &
Drum Assembly

PART NUMBER	DESCRIPTION	QTY	PART NUMBER	DESCRIPTION	QTY
6187-HA	SPACER, Bearing	3	1157335-22	SPACER	1
150222	SEAL	1	940008-313	BALL BEARING	1
150252	SHAFT, Intermediate	1	901246-165	SEAL	2
1157143-3	PINION, Int. (24T)	1	901261-1	GREASE FITTING	1
152269A	PINION, Main (25T)	1	901690-208	SNAP RING, Int.	4
31577117-167	DRUM ASSEMBLY	1	901690-212	SNAP RING, Int.	2
151647	CORKS	2	902095-156	SNAP RING, Ext.	2
1157140-3	GEAR, Main (59T)	1	902109-393	RETAINING RING, Int.	1
151671	PLATE, End for main Shaft	1	902109-500	SNAP RING, Int.	1
152268	CAPSCREW	2	187032	WIRE, 2 Pieces	1 Ft.
1157317-95	SHAFT, Main	1	902109-315	RETAINING RING, Int.	1
3157318-4	SHAFT, Idler	2	940001-208	BEARING	2
152741	KEY	1	901246-514	OIL SEAL	1
152776-A	GEAR, Idler (24T) Haul Drum	2	151640-A	ANCHOR, Clutch	1
A152801	BRACKET, Housing	1	900020-45	CAPSCREW	4
1157049-22	BRACKET, Bearing	1	900302-64	LOCKWASHER	4
A152802	BRACKET, Bearing	1			
1157139-28	GEAR, Internal Drum (73T)	1			
1157150-69	GUARD, Grease	1			
1157317-87	SHAFT	1			
1157335-77	SPACER	1			
900020-16	CAPSCREW	4			
900020-57	CAPSCREW	10			
900306-3	LOCKWASHER	6			
900302-68	LOCKWASHER	10			
902224-170	CAPSCREW	6			
1157004-18	ANCHOR, Clutch Drum	1			
900012-86	CAPSCREW	2			
900302-6	LOCKWASHER	2			
900969-155	KEY	1			
940001-212	BALL BEARING	1			
940002-212	BALL BEARING	1			
900906-264	BEARING, Roller	1			
940002-208	BALL BEARING	4			
940009-309	BALL BEARING	2			
940009-312	BALL BEARING	2			
900969-295	KEY, Intermediate Gear	2			
900969-154	KEY, Motor Pinion	1			

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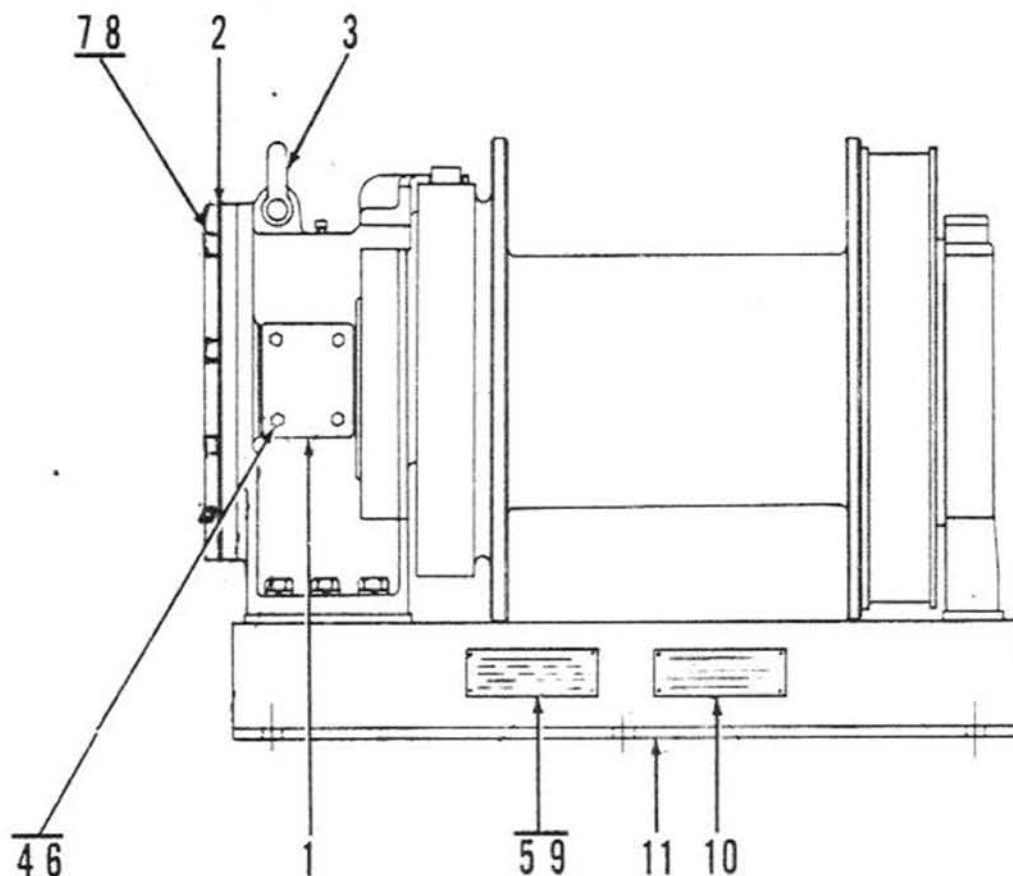
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Buchanan, MI 49107

OEM: GMS INDUSTRIES
269-695-2244
www.joywinch.com

Bill of Material Number:
700379-96

D-COK-R Hoist: Frame & Misc
Items

REF #	PART NUMBER	DESCRIPTION	QTY	PART NUMBER	DESCRIPTION	QTY
1	151633	PLATE, Housing Cover	2			
2	154787	GASKET, Motor Mounting	1			
3	A152143	SHACKLE, 7/8"	2			
4	900020-3	CAPSCREW, Hex Hd.	8			
5	900257-19	DRIVE SCREW	8			
6	900302-3	LOCKWASHER	8			
7	900302-4	LOCKWASHER	8			
8	902224-84	CAPSCREW	8			
9	1157256-26	INFORMATION PLATE	1			
10	1157256-32	LOAD RATING PLATE	1			
11	3157129-84	MAIN FRAME	1			



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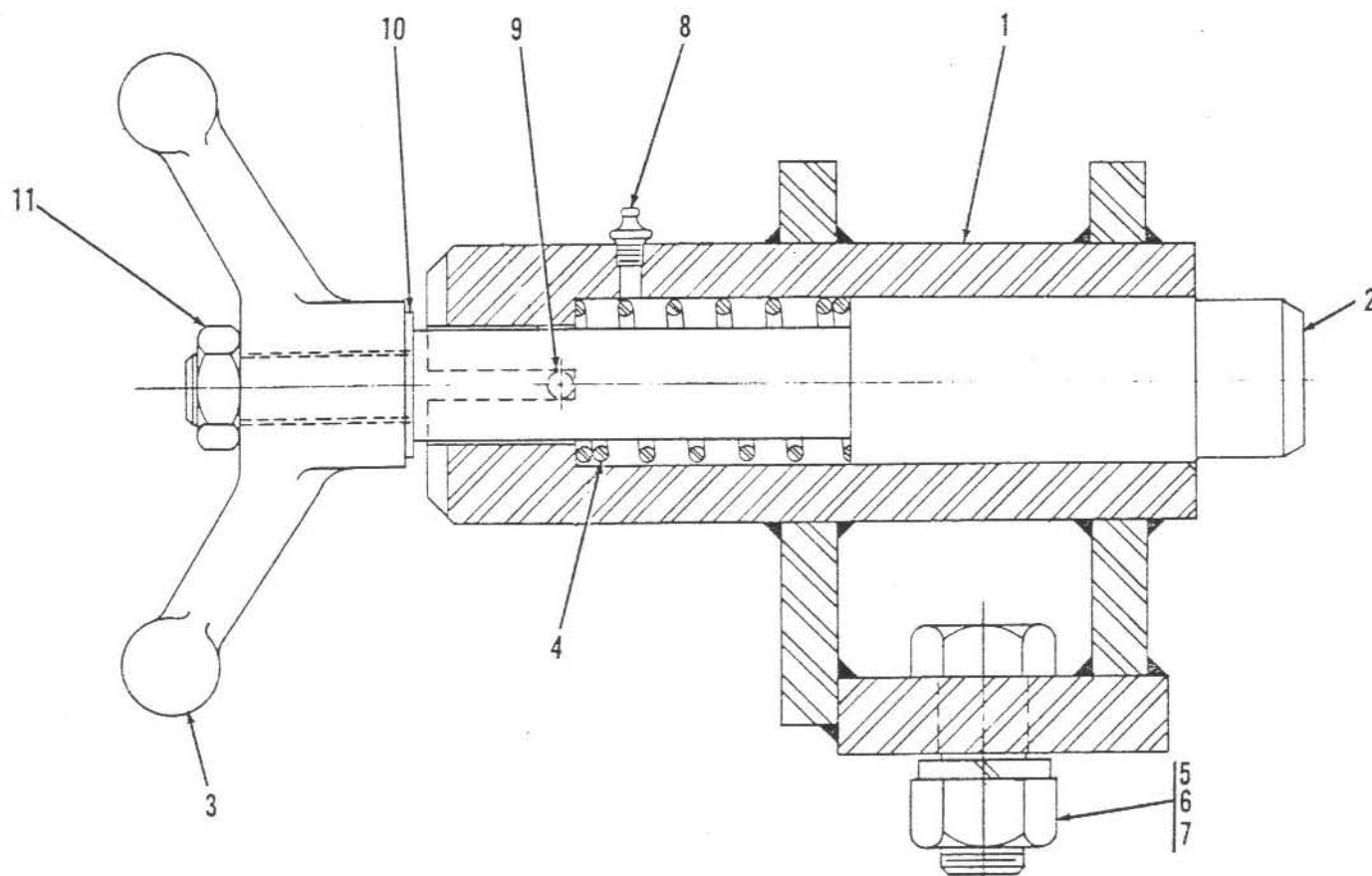
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PO BOX 167
807 West 4th Street
Buchanan, MI 49107

OEM: GMS INDUSTRIES
269-695-2244
www.joywinch.com

Bill of Material Number:
701499-81

Locking Pin Assembly

REF #	PART NUMBER	DESCRIPTION	QTY	PART NUMBER	DESCRIPTION	QTY
1	3157051-82	BRACKET	1			
2	1157243-72	PIN, Locking	1			
3	1157159-22	HANDLE	1			
4	156426	SPRING	1			
5	900020-66	CAPSCREW, Hed Hd.	4			
6	900160-7	NUT, Hex	4			
7	900302-6	LOCKWASHER	4			
8	901257-26	FITTING, Grease	1			
9	904685-131	PIN, Spring	1			
10	900322-13	WASHER, Plain	1			
11	900199-6	NUT, Jam	1			



HA-3159

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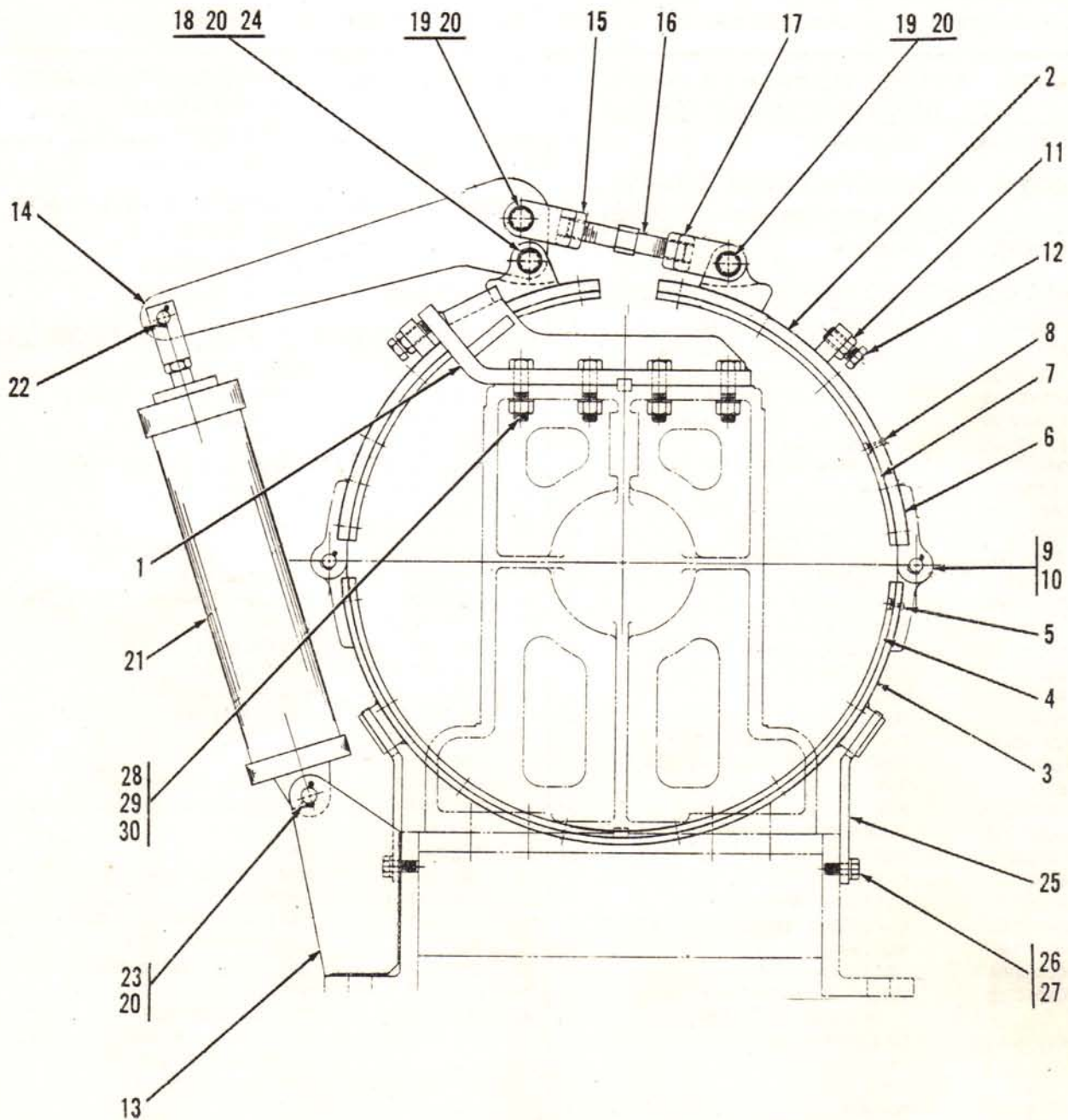
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807 West 4th Street
Buchanan, MI 49107

OEM: GMS INDUSTRIES
269-695-2244
www.joywinch.com

Bill of Material Number:
700356-221 (Overwind)
700356-220 (Underwind)

D-COK-R Brake Band Assembly:
Automatic Type

REF #	PART NUMBER	DESCRIPTION	QTY	REF #	PART NUMBER	DESCRIPTION	QTY
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Bill of Material Number:
700356-221 (Overwind)
700356-220 (Underwind)

D-COK-R Brake Band Assembly:
Automatic Type

REF #	PART NUMBER	DESCRIPTION	QTY	REF #	PART NUMBER	DESCRIPTION	QTY
700356-220	AUTOMATIC BRAKE & PARTS (Underwind Machine) (Shown)			700356-241	AUTOMATIC BRAKE & PARTS (Underwind Machine – Non-Asbestos)		
1	3157004-20	ANCHOR	1	1	3157004-21	ANCHOR, Brake Band	1
700356-221	AUTOMATIC BRAKE & PARTS (Overwind Machine) (Opposite)			700356-240	AUTOMATIC BRAKE & PARTS (Toggle Hand Brake – Non Asbestos)		
1	3157004-21	ANCHOR	1	1	3157004-20	ANCHOR, Brake Band	1
PARTS COMMON TO 700356-220 & 700356-221				PARTS COMMON TO 700356-241 & 700356-240			
2	3157016-19	BRAKE BAND – Includes:	1	2	3157016-27	BRAKE BAND ASSY. – Includes:	1
3	3157016-21	Brake Band Half – Includes:	1	3	3157016-26	Brake Band Half – Includes:	1
4	1157199-36	Brake Lining	1	4	3157199-47	Brake Lining	1
5	900670-112	Rivet	16	5	900670-112	Rivet	16
6	3157016-20	Brake Band Segment – Includes:	2	6	3157016-25	Brake Band Segment – Includes:	2
7	1157199-35	Brake Lining	1	7	3157199-46	Brake Lining	1
8	900670-118	Rivet	10	8	900670-118	Rivet	10
9	1157243-79	Pin	2	9	1157243-79	Pin	2
10	900620-17	Pin, Cotter	4	10	900620-17	Pin, Cotter	4
11	900199-6	Jam Nut	2	11	900199-6	Jam Nut	2
12	900020-35	Capscrew, Hex Hd.	2	12	900020-35	Capscrew, Hex Hd.	2
13	1157359-44	SUPPORT	2	13	1157359-44	SUPPORT	2
14	3157195-42	LEVER, Brake	1	14	3157195-42	LEVER, Brake	1
15	1157400-3	YOKE, for Lever	1	15	1157400-3	YOKE, for Lever	1
16	156716	TURNBUCKLE	1	16	156716	TURNBUCKLE	1
17	156762	YOKE, Band End	1	17	156762	YOKE, Band End	1
18	1157243-11	PIN	1	18	1157243-11	PIN	1
19	156718	PIN	2	19	156718	PIN	2
20	900620-18	PIN, Cotter	7	20	900620-18	PIN, Cotter	7
21	502009-5	THRUSTOR, Air (See Dwg. 502009-5)	1	21	502009-5	THRUSTOR, Air (See Dwg. 502009-5)	1
22	49-HA-1	PIN	1	22	49-HA-1	PIN	1
23	1157243-76	PIN	1	23	1157243-76	PIN	1
24	900322-15	WASHER, Plain (3/4)	2	24	900322-15	WASHER, Plain	2
25	1157359-41	SUPPORT	2	25	1157359-41	SUPPORT	2
26	900020-24	CAPSCREW, Hex Hd.	4	26	900020-24	CAPSCREW, Hex Hd.	4
27	900302-4	LOCKWASHER	4	27	900302-4	LOCKWASHER	4
28	900020-65	CAPSCREW, Hex Hd.	4	28	900020-65	CAPSCREW, Hex Hd.	4
29	900160-6	NUT, Hex	4	29	900160-6	NUT, Hex	4
30	900302-64	LOCKWASHER	4	30	900302-64	LOCKWASHER	4
*	501016-19	VALVE, Quick Release (See Dwg. 501016-19)	1	*	501016-19	VALVE, Quick Release (See Dwg. 501016-19)	1
*	901176-12	PIPE NIPPLE (3" x 1)	1	*	901176-12	PIPE NIPPLE (3/8 x 1)	1
* PARTS NOT ILLUSTRATED				* PARTS NOT ILLUSTRATED			



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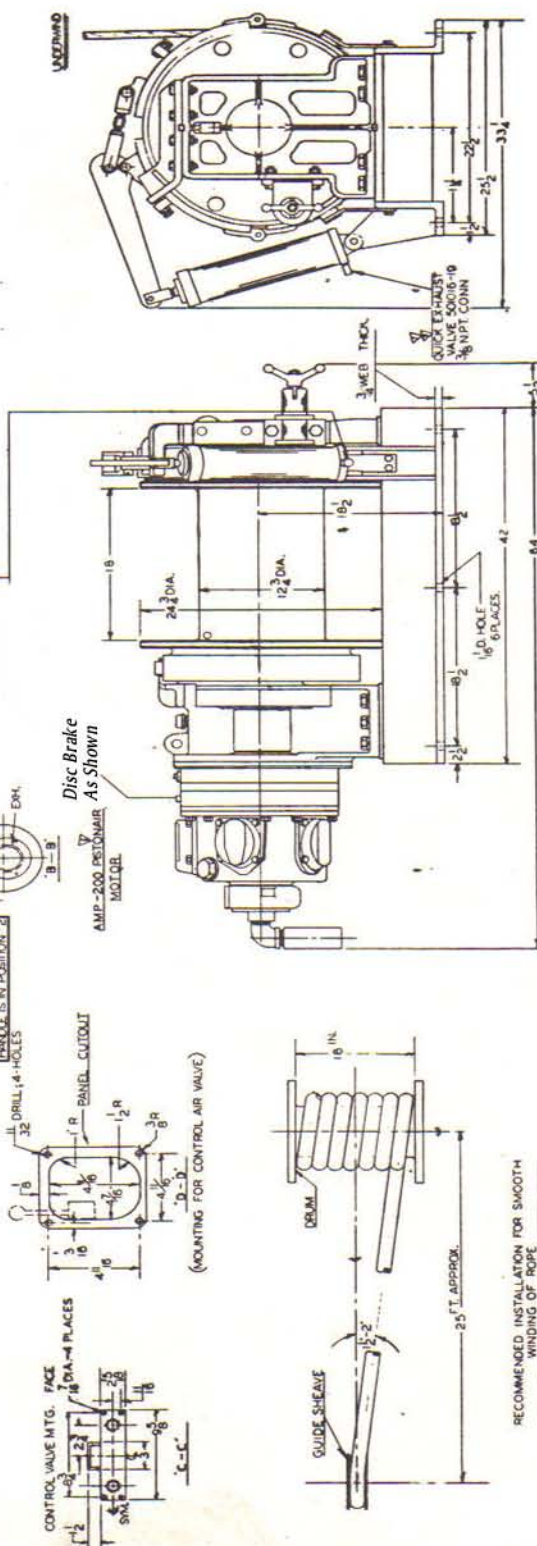
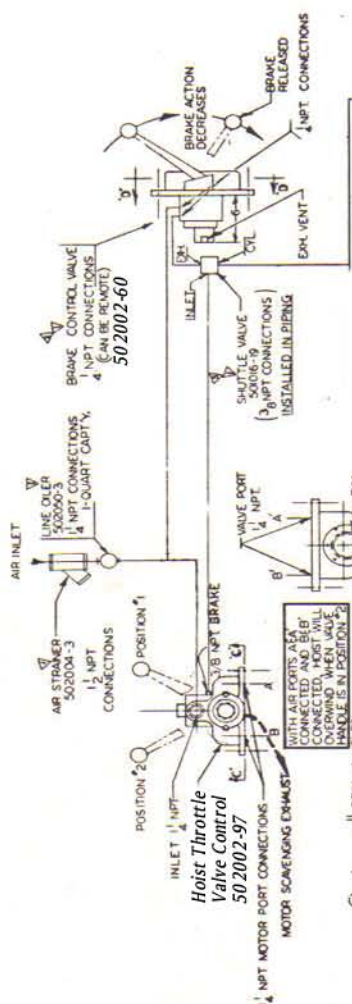
Drawing #3230

D-COK-R Hoist: Mounting & Piping Guide

ALL PRICES BY CUSTOMER
MOST RATED WITH BODY AIR TO MOTOR.
BOWLINE WIRELED UPON AIR FAILURE.
HIGHEST WIRE - 100% USE.
ROPE CAPACITY - 1000 LBS.

1ST ROPE LAYER	10 FT
2ND ROPE LAYER	10 FT
3RD ROPE LAYER	10 FT
4TH ROPE LAYER	10 FT
5TH ROPE LAYER	10 FT
6TH ROPE LAYER	10 FT
7TH ROPE LAYER	10 FT
8TH ROPE LAYER	10 FT
9TH ROPE LAYER	10 FT
MAX. CAPACITY	1000 LBS.

FLEET ANGLE TO
BE APPROX. 2° TO
3°
CUMULATIVE
DESIRABLE



RECOMMENDED INSTALLATION FOR SMOOTH
WINDING OF ROPE



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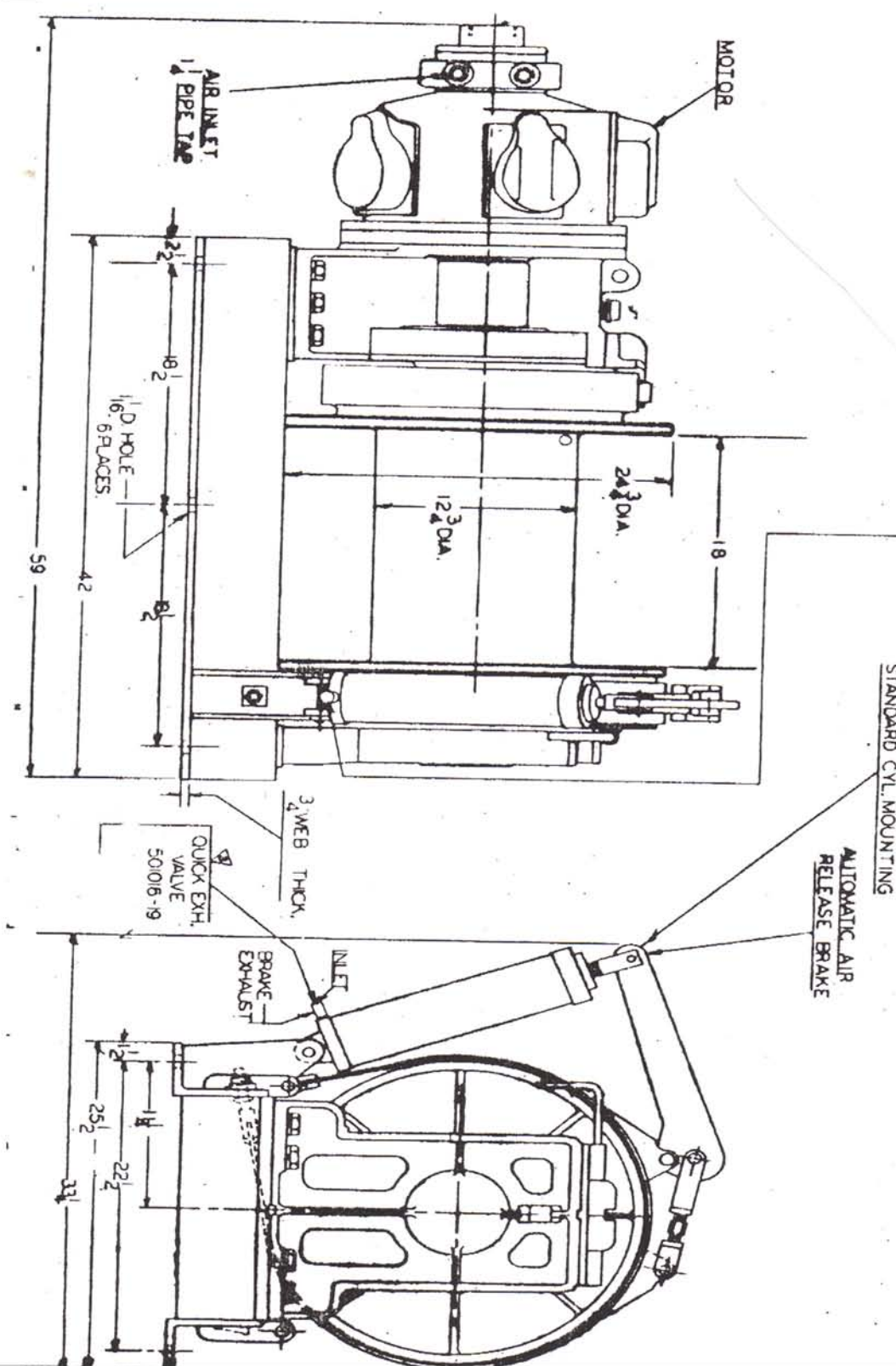


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Bill of Material Number:
HA 3098

D-COK-R Hoist Mounting Layout



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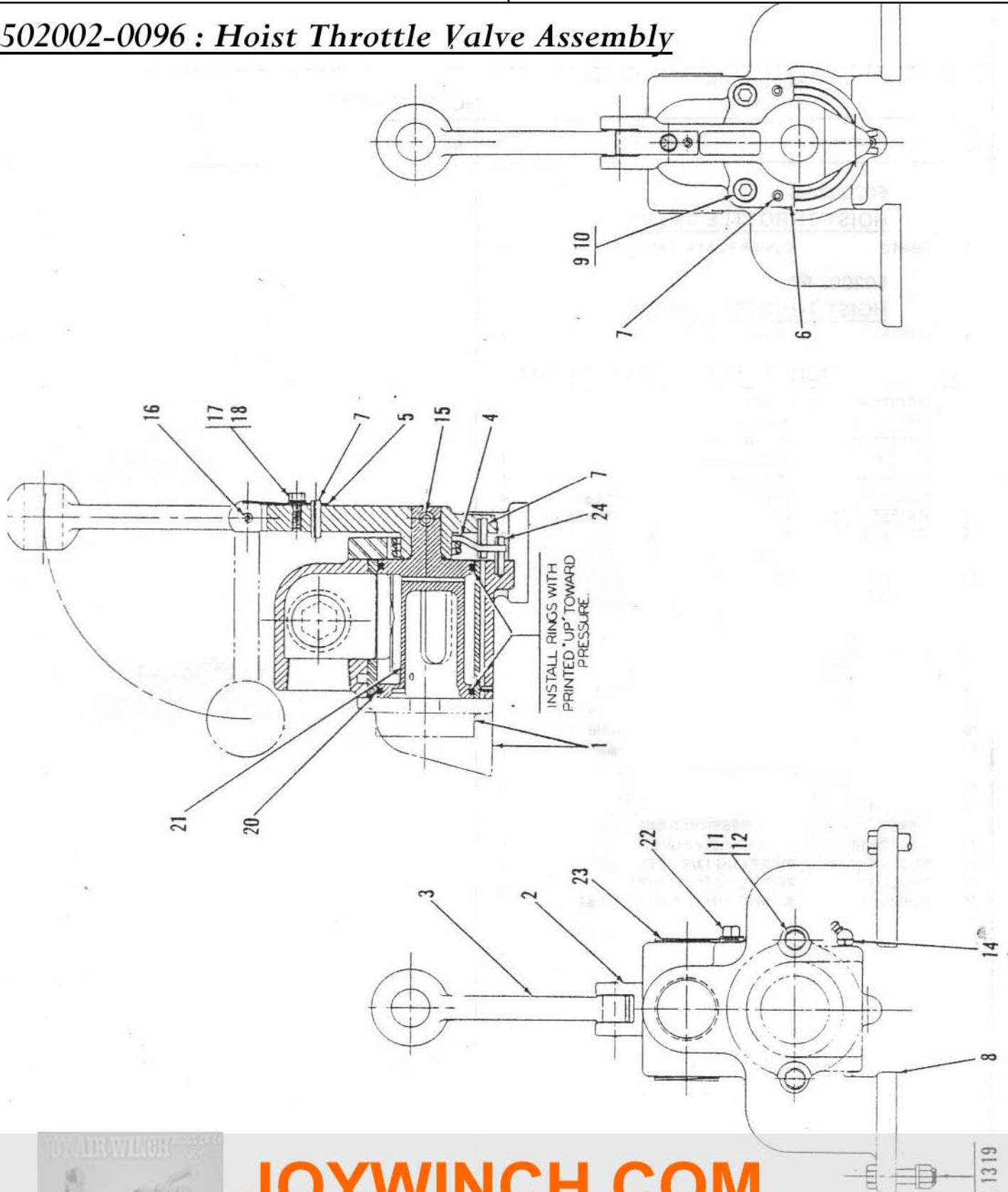
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Bill of Material Number:
502002-0096

HOIST THROTTLE VALVE
ASSEMBLY

REF #	PART NUMBER	DESCRIPTION	QTY	REF #	PART NUMBER	DESCRIPTION	QTY
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502002-0096 : Hoist Throttle Valve Assembly



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Bill of Material Number:
502002-0096

HOIST THROTTLE VALVE
ASSEMBLY

REF #	PART NUMBER	DESCRIPTION	QTY	REF #	PART NUMBER	DESCRIPTION	QTY
	502002-96	HOIST THROTTLE VALVE					
1	155812	COVER PLATE (Deflector)	1				
	502002-97	HOIST THROTTLE VALVE					
1	155813	COVER PLATE (1-1/2" NPT)	1				
<u>PARTS COMMON TO 502002-96 & 502002-97</u>							
2	1157051-85	HANDLE BRACKET	1				
3	1157159-27	HANDLE	1				
4	1157339-30	SPRING (Coil)	1				
5	1157339-32	SPRING (Flat)	1				
6	1157087-4	COLLAR	1				
7	904685-74	SPRING PIN	4				
8	3157037-16	THROTTLE VALVE BODY ASS'Y.	1				
9	902224-49	CAPSCREW, Soc. Hd.	2				
10	900306-3	LOCKWASHER	2				
11	900302-3	LOCKWASHER	6				
12	900020-3	CAPSCREW, Hex Hd.	2				
13	900020-33	CAPSCREW, Hex Hd.	4				
14	901261-4	GREASE FITTING	1				
15	904685-138	SPRING PIN	1				
16	904685-100	SPRING PIN	1				
17	900012-1	CAPSCREW, Hex Hd. (Grade 5)	1				
18	900302-1	LOCKWASHER	1				
19	900160-4	NUT, Hex	4				
20	155806	COMPRESSION RING	2				
21	1139028-14	THROTTLE VALVE	1				
22	901204-3	PIPE PLUG	1				
23	901220-7	PIPE PLUG	2				
24	904685-91	SPRING PIN	1				



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502002-60 Feather Valve, Control for D-COK-R Hoist Air Brake

INSTALLATION INSTRUCTIONS

1. Panel thickness must not exceed 0.25" to clear pipe bracket and cover flange. For thicker panel materials route this are out to 0.25" Max.
2. Remove pipe bracket on HD and HC valves.
3. Install valve through panel cut – out.
4. Replace pipe bracket.

MAINTENANCE INSTRUCTIONS:

1. Inspect for leakage at all times – if leaks found check bolts for tightness and tighten. If still leaking replace rubber or any worn parts.
2. Service annually with Dow Corning #55M Pnuematic Grease.



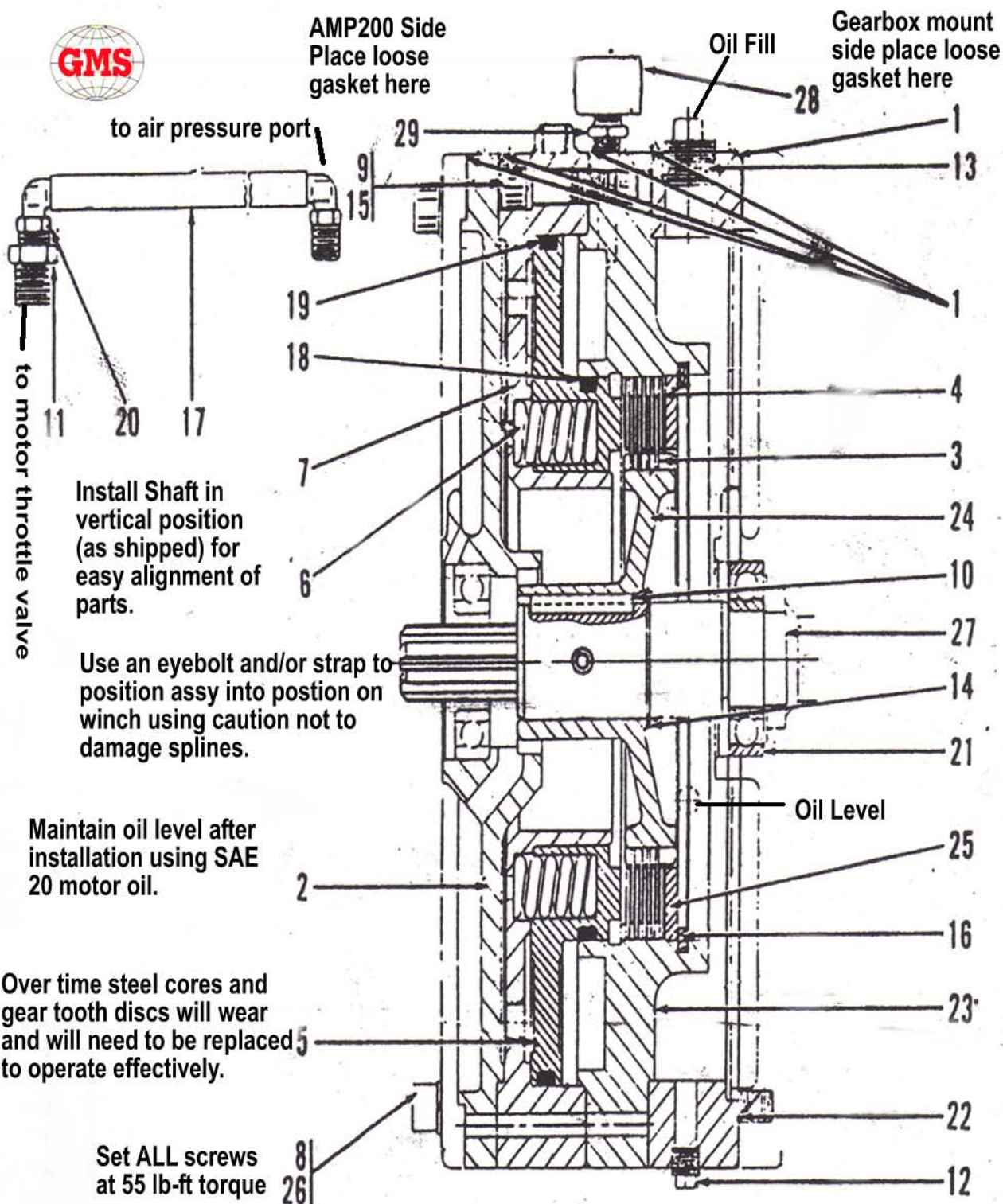


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Bill of Material Number:
502056-17

Disc Brake Assembly



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Bill of Material Number:
502056-17

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Disc Brake Assembly

REF #	PART NUMBER	DESCRIPTION	QTY
1	154787	GASKET, MOTOR MOUNTING	5
2	155534	BEARING BRACKET	1
3	156277	STEEL CORE	4
4	156278	GEAR TOOTH DISC	5
5	156281	PISTON, DISC BRAKE	1
6	156289	SPRING, DISC BRAKE	12
7	A156280-A	HOUSING, DISC BRAKE	1
8	900302-4	LOCKWASHER, SPRING	10
9	900306-4	LOCKWASHER, SPRING	5
10	900970-122	KEY	1
11	901162-3	BUSHING, BRASS	2
12	901204-2	PIPE PLUG	2
13	901204-5	PIPE PLUG	1
14	902095-187	RETAINING RING	1
15	902224-128	CAPSCREW	5
16	905361-900	RETAINING RING	1
17	906814-4	HOSE 1/4" (NOT INC. REMOTE)	n/a
18	907952-446	RING, QUAD (SMALLER)	1
19	907952-455	RING, QUAD (LARGER)	1
20	908397-44	NIPPLE, 90 DEG	2
21	940001-208	BEARING	1
22	1157000-40	ADAPTER RING	1
23	1157139-29	INTERMEDIATE GEAR	1
24	1157247-83	PINION	1
25	1157282-6	RING	1
26	1157309-24	CAP SCREW	10
27	3157317-134	SHAFT ASSEMBLY	1
28	501016-19	QUICK EXHAUST VALVE	1
29	906058-64	PIPE NIPPLE	1



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