

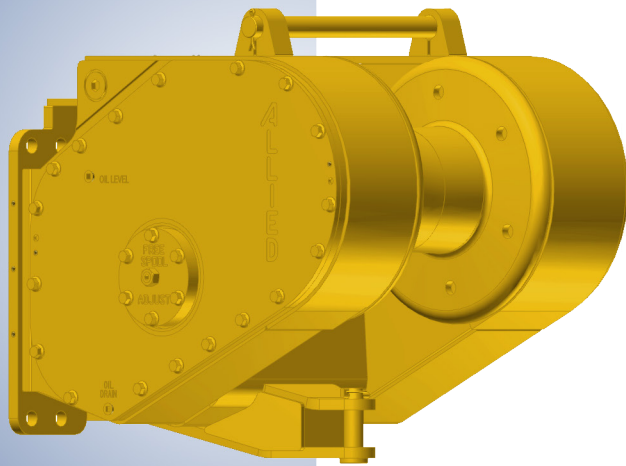


# Parts Manual

## Allied H4A

## Hydraulic Winch

for Komatsu Dozers



Please check the Allied Systems website  
regularly for updates to this manual.  
[www.alliedsystems.com](http://www.alliedsystems.com)

# Customer Edition

**NOTE:**

For winch models using internal options B,  
E, R, and Z, refer to manual 599015W.

For serial numbers prior to 1162, refer to  
manual 599015W.

A PRODUCT OF  
**Allied Systems**  
COMPANY

SHERWOOD, OREGON USA

P/N 599015W-KOMATSU

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## **Safety Precautions**

**Read, understand and observe the Safety Summary on pages 1 through 3 to prevent injury to personnel and damage to equipment.**

**Winch serial number** \_\_\_\_\_

**Date put into service** \_\_\_\_\_

**NOTE: This publication may be translated to different languages for sole purpose of easy reference in non-English speaking locations.**

**Should there be differences in interpretations to the text, please refer to the English language edition published by Allied Systems Company as the controlling document.**

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## Safety Summary

### General Safety Notices

The following pages contain general safety warnings which supplement specific warnings and cautions appearing elsewhere in this manual. All electrical and hydraulic equipment is dangerous. You must thoroughly review and understand the Safety Summary before attempting to operate, troubleshoot or service this winch.

The following symbols and terms are used to emphasize safety precautions and notices in this manual:

### DANGER

The “DANGER” symbol indicates a hazardous situation which, if not avoided, will result in serious injury or death. Carefully read the message that follows to prevent serious injury or death.

### WARNING

The “WARNING” symbol appears wherever incorrect operating procedures or practices could cause serious injury or death. Carefully read the message that follows to prevent serious injury or death.

### CAUTION

The “CAUTION” symbol appears where a hazardous situation which, if not avoided, could result in minor to moderate injury and equipment damage.

### NOTICE

This signal word alerts to a situation that is not related to personal injury but may cause equipment damage.

NOTE: ...

The term “NOTE” highlights operating procedures or practices that may improve equipment reliability and/or personnel performance.

### Safety Regulations

Each country has its own safety legislation. It is in the operator’s own interest to be conversant with these regulations and to comply with them in full. This also applies to local bylaws and regulations in force on a particular worksite.

Should the recommendations in this manual deviate from those in the user’ country, the national regulations should be followed.

### Operation, Inspection, and Maintenance Warnings

### WARNING

Multiple hazards.

Ignoring safety warnings may cause equipment damage, personal injury or death.

All possible safety hazards cannot be foreseen and included in this manual. The operator must always be alert to possible hazards that could endanger personnel or damage the equipment.

### Training

- Do not operate the winch unless your are authorized and trained to do so.
- Read, understand, and follow the operating, inspection, and maintenance instructions in this manual.
- Keep yourself informed of any applicable codes, regulations and standards for the job.

### Personnel Safety

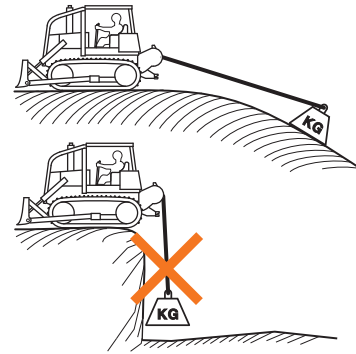
- Stay in the operator’s seat when operating the winch.
- Do not stand on the vehicle when operating the winch.
- Avoid winch operation near people or other machines.
- Never stand nor permit others to stand in the bight (loop) of a wire rope.

- Do not stand nor permit others to be near the winch or wire rope when there is tension on the wire rope.



- Make sure ground personnel are in plain view of the operator, and at a distance of at least 1½ times the working length of the wire rope.
- Observe jobsite rules.
- Do not use the control levers for hand holds when entering or leaving the vehicle.
- Be in complete control at all times.
- Do not use the control levers as hangers for clothes, water bags, grease guns, lunch pails, etc.
- Do not leave the vehicle when the winch wire rope is under tension.
- Do not permit riders on the vehicle or load.
- Operation Warnings
- Do not operate the winch unless the vehicle is equipped with a screen to protect the operator if the wire rope breaks.
- Be aware of the ground conditions, and make sure the ground and tractor are stable enough to pull the intended load.
- Do not attempt to pull loads in excess of the rated capacity of the winch.
- Make sure that any hand signals used by ground personnel are clearly defined and understood by everyone involved.
- Do not attempt to “jerk” or “shock” a load free. Doing so can cause loads in excess of the rated capacity of the wire rope, winch, or mounting hardware.

- Your winch may have temperature shut-off system for protection of tractor and winch. Manual override of high temperature shut-off will cause damage to tractor and winch.
- This winch is neither intended, designed, nor rated for any application involved in the lifting or moving of personnel.
- Do not use the winch as an anchor for a double or two-part line.
- Do not pull the hook through the throat or over the drum, which will cause damage.
- When the winch is not in use, make sure the control lever is in **BRAKE-ON** position and the winch brake is applied.
- Do not use winch as a hoist. Tractor and skidder mounted winches are designed for towing.



### Wire Rope Safety

- Always inspect wire rope, tail chain and other rigging components for wear, damage, broken strands or abuse before use.
- Never use wire rope, tail chain or other rigging that is worn-out, damaged or abused.
- Never overload wire rope, tail chain or rigging.
- Wire rope and tail chain will fail if worn-out, overloaded, misused, damaged, improperly maintained or abused.

## **WARNING**

**Wire rope or tail chain failure may cause serious injury or death.**

**Inspect rigging before use and obey all safety warnings.**

- Do not terminate wire rope to tail chain by the use of a knot.
- Do not handle wire rope if the hook end is not free. A load could break away, suddenly tensioning the wire rope, resulting in serious injury or death.
- Stay clear of wire rope entry areas (fairlead or arch rollers, winch drum etc).
- Maintain a **minimum of three (3) complete wraps of wire rope** on the drum for normal operation. It may help to paint the last five wraps of wire rope a contrasting color, to serve as a visual indicator.
- Do not handle wire rope with bare hands. Wear leather gloves at all times.
- Align the tractor with the load to prevent side loading the winch, and to maintain even spooling of the wire rope.
- If applying tension to the wire rope manually during spooling:
  - ... ensure that the operator is winching in slowly,
  - ... keep your hands and clothing well clear of any rollers or the winch drum,
  - ... do not maintain tension by letting the wire rope to slip through your hands,
  - ... use a hand-over-hand technique to maintain tension.
- The hydraulic system must be kept clean and free of contamination at all times.
- Do not weld on any part of the winch. Contact Allied Systems if weld repairs are needed.

### Hydraulic Hazards

- Wear personal protective equipment, such as gloves and safety glasses, whenever servicing or checking a hydraulic system.
- Assume that all hydraulic hoses and components are pressurized. Relieve all hydraulic pressure before disconnecting any hydraulic line.
- Never try to stop or check for a hydraulic leak with any part of your body; use a piece of cardboard to check for hydraulic leaks.
- Small hydraulic hose leaks are extremely dangerous, and can inject hydraulic oil under the skin, even through gloves.

 **DANGER**

#### Injection hazard.

**Infection and gangrene will result when hydraulic oil penetrates the skin. See a doctor immediately to prevent loss of limb or death.**

**Use a piece of cardboard to check for hydraulic leaks.**

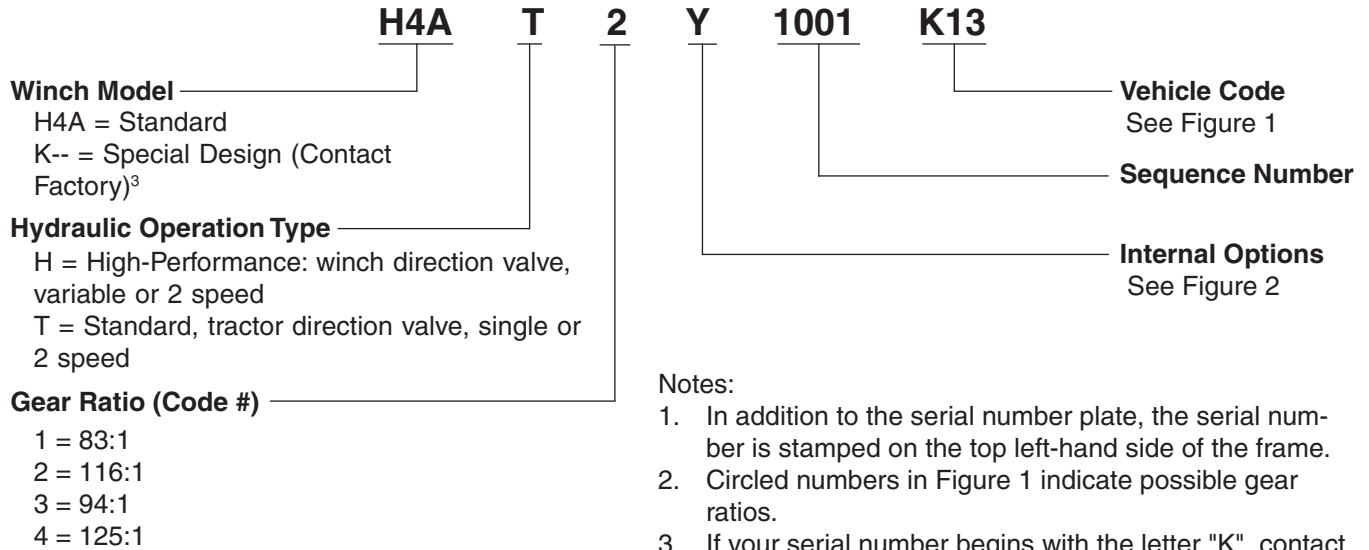


### Maintenance Warnings

- Do not permit other people near the control area when you inspect or repair a machine.
- Never inspect, repair, or perform maintenance on a machine that is in motion.
- Inspect the winch before each use:
  - ... Make sure that the controls and instruments operate correctly.
  - ... Report the need for repairs immediately.
  - ... Do not work with a damaged or worn wire rope.
  - ... Do not use a winch that needs repairs.
  - ... If the wire rope and ferrule must be removed from the drum, make sure the end of the wire rope and ferrule are controlled when the ferrule is released. The end of the wire rope can suddenly move from the drum like a compressed spring when the ferrule is released, and cause an injury.
- Replace any parts only with genuine Allied Winch parts.
- Use only the lubricants listed in the Recommended Oil List. See page 8.

## Unit Identification

Allied Winch Serial Number Nameplate Data For Dozer Mountings



**Notes:**

1. In addition to the serial number plate, the serial number is stamped on the top left-hand side of the frame.
2. Circled numbers in Figure 1 indicate possible gear ratios.
3. If your serial number begins with the letter "K", contact the factory for parts and service information.
4. If your serial number ends with the letter "M", contact the factory for parts and service information.

C O D E	<b>K</b> Komatsu
<b>13</b>	D37-D39X-22 ②
<b>14</b>	D39-23/24 ② ③

**Figure 1, Dozer or Skidder Identification Codes and Available Gear Ratios**

Circled numbers in Figure 1 indicate possible gear ratios.

	Y	C
<b>Freespool</b>	X	
<b>External (Pump) Hydraulics (Non-SCH)</b>	X	
<b>Power Forward &amp; Reverse (PFR)</b>	X	
<b>Open Frame</b>	X	
<b>Integral Mounting Plate, Fairlead, Manual Freespool</b>		X

**Figure 2, Internal Options**

**NOTE:**

For winch models using internal options B, E, R, and Z, refer to manual 599015W.

For serial numbers prior to 1162, refer to manual 599015W.



## Using this Manual

### When the part number and the next higher assembly is not known:

1. Determine the function and application of the part required. Turn to the illustrated index page immediately behind the front cover, and select the most appropriate area.
2. Use the table of contents at the beginning of each chapter to determine the assembly which would normally contain the part required. Proceed then to locate the part on the assembly breakdown page.

### When the part number is not known and the next higher assembly is known:

1. Determine the assembly the required part is used on. Turn to the master index (which immediately follows the illustrated index).
2. Locate the assembly on which the required part is used, and turn to the page indicated for that assembly. Proceed to locate the part on the assembly breakdown page.

### When the part number is known:

Use the numerical index to find the part number. Turn to the page listed and locate the part as indicated by the reference number.

### General:

The assembly breakdowns include part numbers, descriptions, quantities required, keys and footnotes to help in selecting the correct parts.

Keys are used to show effective serial numbers for two or more similar assemblies, LH and RH assembly parts, etc. Select the appropriate key, "A," "B," "C," or "D" and the corresponding quantity column to find the required parts.

Indent dots are used to indicate assemblies and sub-parts of assemblies. No dot indicates the major assembly. Part descriptions which are indented with dots are sub-parts of the major assembly shown above.

Quantities shown are for one assembly. Note that when two assemblies are shown, but the quantity of the sub-parts is indicated as three, this means three per assembly, for a total of six. AR means As Required, and NSS indicates Not Sold Separately.

Serial numbers are shown to allow for the most current parts information to be incorporated into the parts manual. See page 4 for serial number information.

### Abbreviations

Abbreviations are used both on the winch and in this manual. For example, a manifold may have a port stamped "FS". That port is related to the "freespool" circuit. This abbreviation is also used on pages in this manual that reference this port, or the ports connected to this port. Figure 3 lists the most common abbreviations used in this manual.

Abbreviation	Full Name
P	Pressure
T	Tank
BO	Brake Off
FA	Filter Outlet
FE	Filter Inlet
FS	Freespool
HS	High Speed
LS	Load Sense
PD	Pilot Drain
PP	Pilot Pressure
PS	Pilot Supply
RI	Reel In
RO	Reel Out
TP	Test Port
TS	Temperature Switch

Figure 3, Abbreviations

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## Oil Specifications

### Oil Selection

For winches using tractor-supplied hydraulics for winch operation, use the dozer manufacturer's specified fluids. For gear oil, use the oils specified listed here. The winch gear housing factory fill is Mobil 424, which has an ASTM Viscosity Index 145.

The hydraulic circuit and winch gear housing have different fluids.

**Note: Some hydraulic system oils are not recommended for use inside the winch case.**

	Hydraulic System (Pump)	Winch Case (Gear Train)
<b>Chevron</b>	Use Tractor Fluid	Drive Train Fluids HD
<b>Exxon-Mobil</b>	Use Tractor Fluid	Mobil Trans HD Series

**Figure 5, Recommended Oil List**

### Oil Capacity

The oil capacity for an H4A winch case (gear train) without self-contained hydraulics (Non-SCH) is 17 quarts (16 liters).

## Ordering Parts

When ordering replacement parts, give the unit serial number, part number, name of part and quantity required.

For any further information on parts, service or ordering, consult your local winch dealer, or contact Allied Systems Company:

**Allied Systems Company**  
21433 SW Oregon Street  
Sherwood, OR 97140 U.S.A.

Phone: 503-625-2560

Fax: 503-625-5132

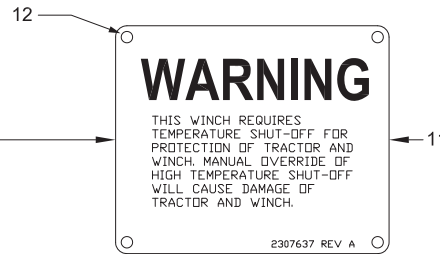
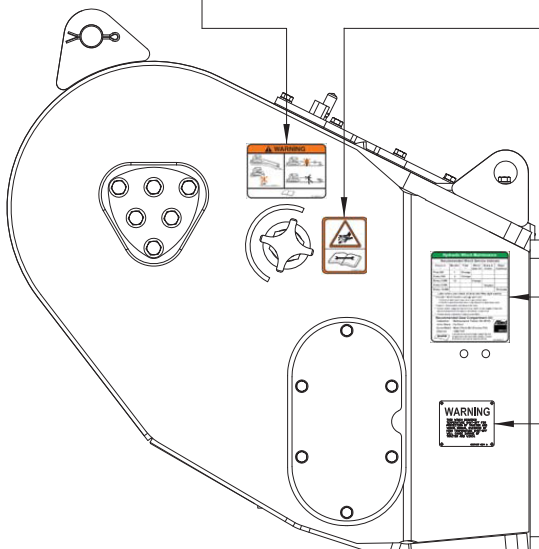
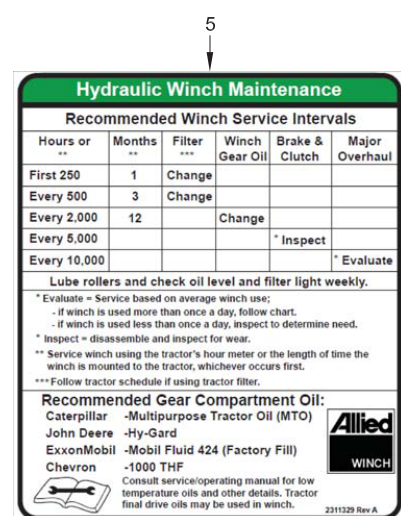
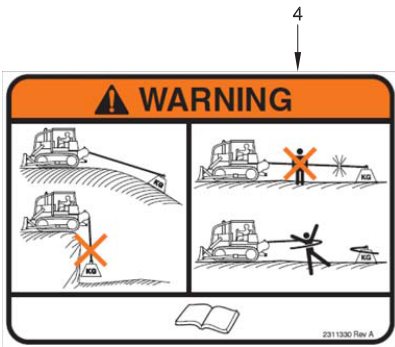
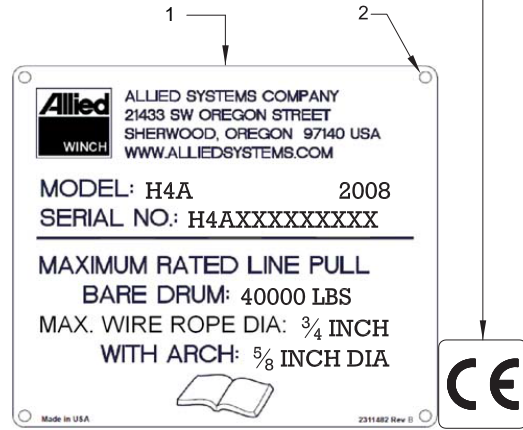
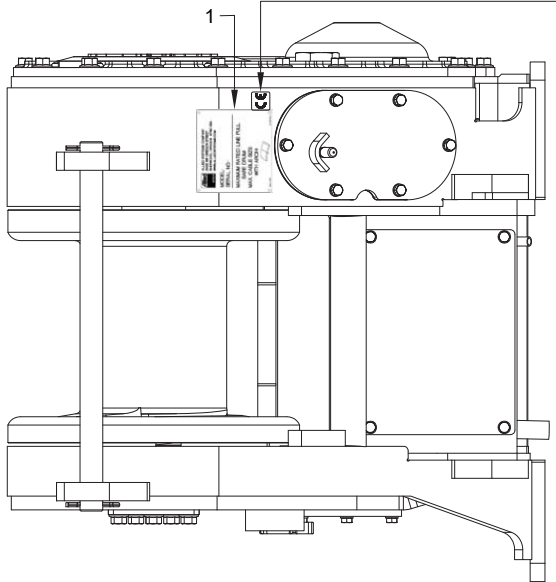
E-mail: [parts@alliedsystems.com](mailto:parts@alliedsystems.com)

Also see our website, [www.alliedsystems.com](http://www.alliedsystems.com), where the most current copy of this manual is always available.

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# Nameplate & Decals

CONTACT ALLIED SYSTEMS WINCH DEPARTMENT IF THE CE MARK LABEL IS NEEDED.



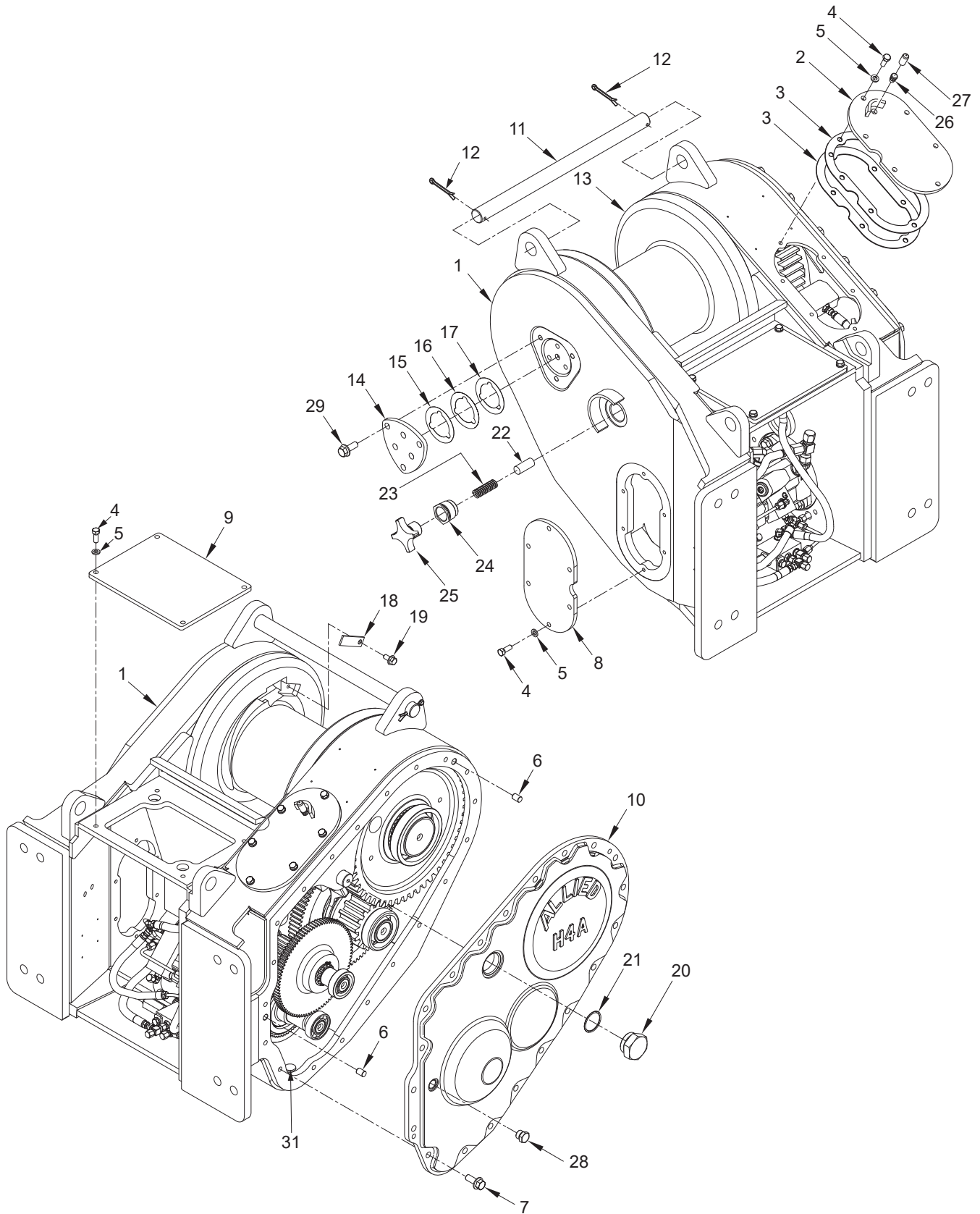
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	*	-----	1 Nameplate	5	2311329	1	Decal, Maintenance
2	16602W	4	Screw	11	2307637W	1	Plate, Warning*
3	1321665W	1	Decal, Warning	12	16602W	4	Screw
4	2311330	1	Decal, Load & Wire Rope				

\*Contact Factory

**Section 1**  
**Frames/Covers/Mounting Parts**

**Frame/Covers**

Komatsu  
Page 1 of 2



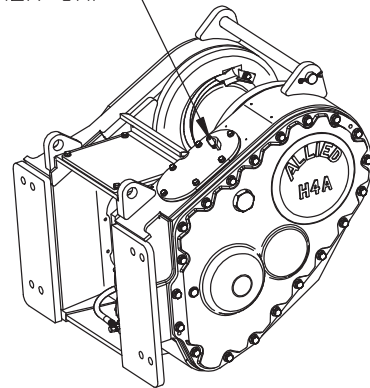
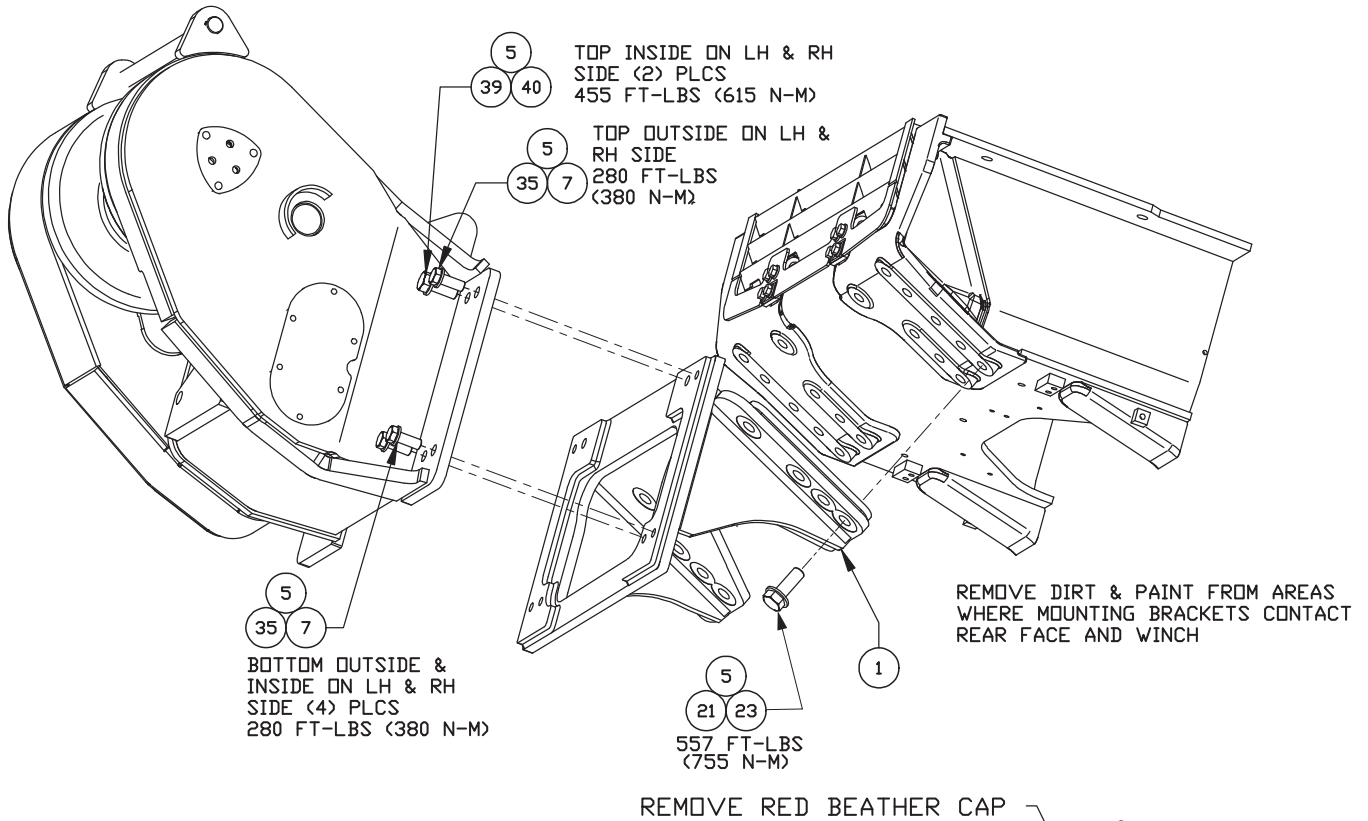
## Frame/Covers

Komatsu  
Page 2 of 2

Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	2305645W	1	Frame	17	2304124W	AR	Shim, .020
2	2305663W	1	Cover, Breather	18	1314503W	1	Keeper, Ferrule
3	2315377	2	Gasket, Breather	19	1348034W	1	Screw, Flange
4	179443W	16	Capscrew	20	2304174W	1	Plug, Freespool Shaft
5	15156W	16	Washer	21	16984W	1	O-Ring
6	176208W	2	Pin	22	2311889	1	Pad, Freespool Drag
7	2303848W	20	Screw, Flanged	23	1314502W	1	Spring, Freespool Drag
8	*a 2304099W	1	Cover	24	2300174W	1	Insert
9	2305662W	1	Cover, Top	25	1314547W	1	Knob, Freespool Drag
10	*a 2304092W	1	Cover, LH	26	21420W	1	Plug, Breather
11	2305020W	1	Bar, Tie (Except w/ Arch)	27	2300962W	1	Cap, Breather
12	15256W	2	Pin (Except w/Arch)	28	14595W	1	Fitting, O-Ring
13	2304069W	1	Drum	29	2303848W	16	Screw, Flanged
14	2304070W	1	Cover, Drum Shaft	31	R525293	1	Magnet
15	2304122W	AR	Shim, .005				
16	2304123W	AR	Shim, .007				
				*a	Use 313022W Adhesive		

### Mounting Parts

Komatsu D37-D39X-22 (H4AT2Y\*\*K13)

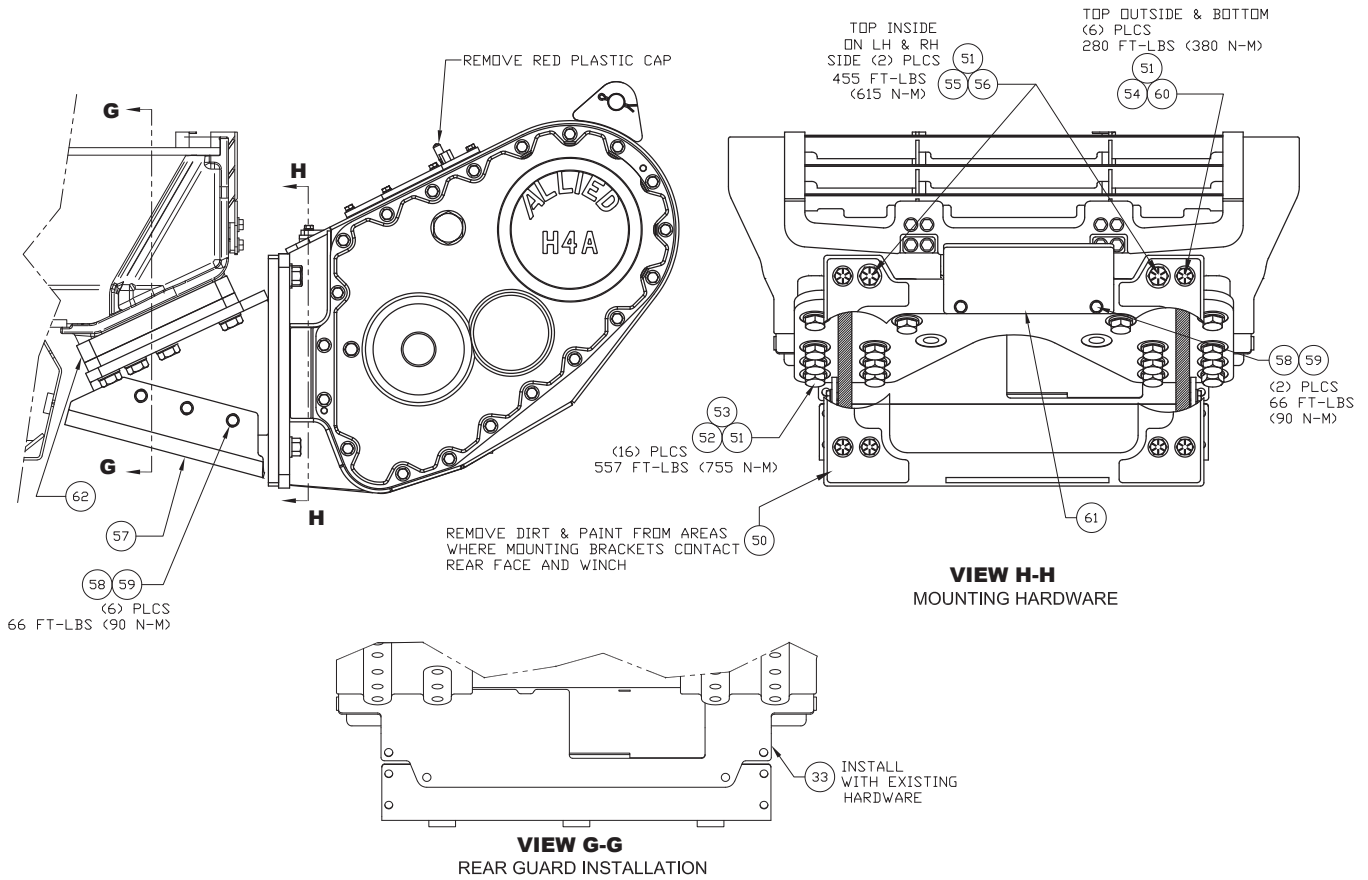


Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	2307301W	1	Bracket, Mounting	23	296434W	16	Washer
5	318702W	AR	Threadlock	35	221675W	2	Capscrew
7	221777W	6	Washer	39	221779W	1	Guard
21	1308451W	16	Capscrew	40	221672W	8	Capscrew



## Frame and Covers

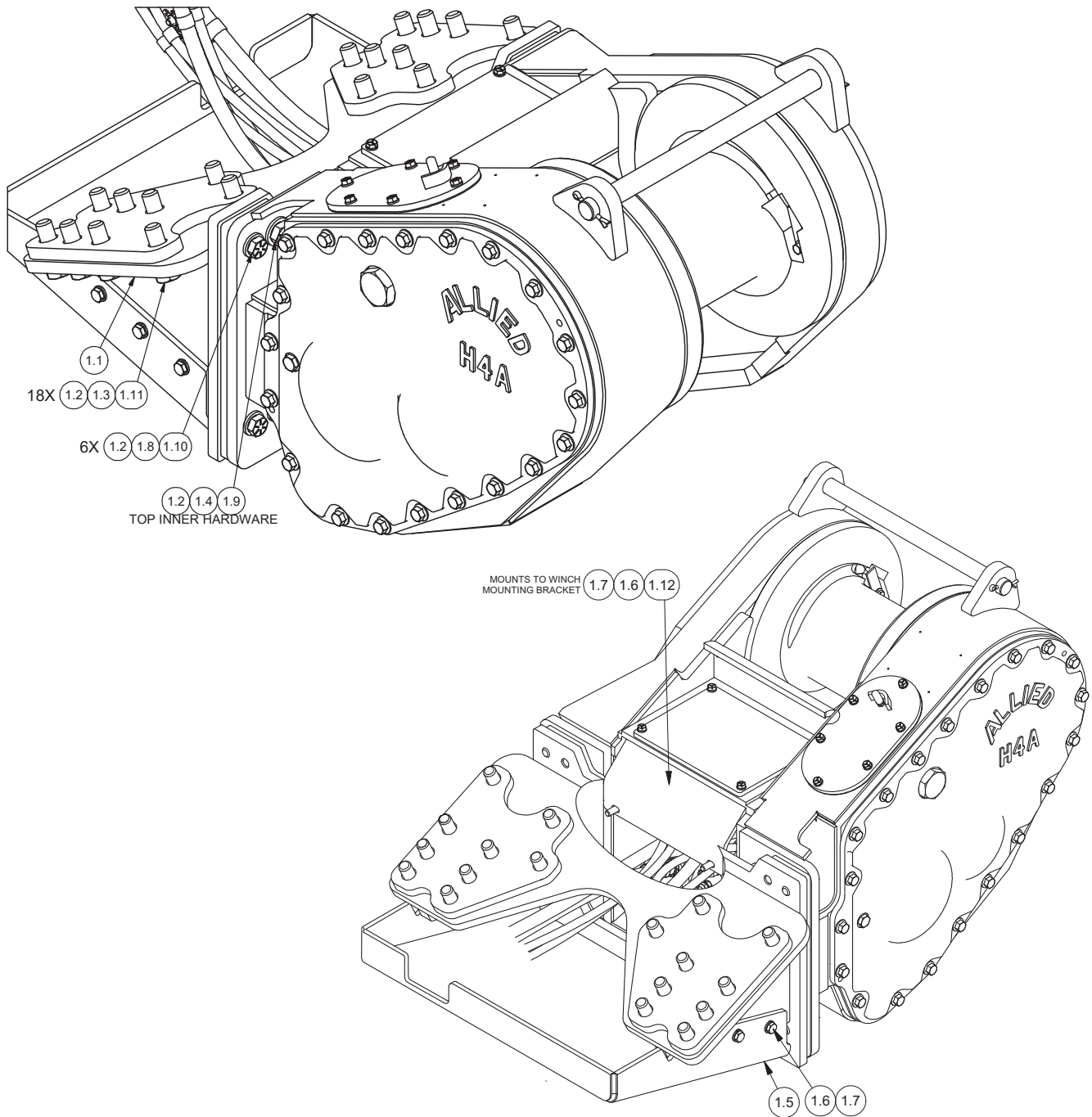
### Komatsu D37-D39X-22 (H4AT2Y\*\*K13)



Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
33	2311288	1	Guard, Tractor	56	221672W	2	Capscrew
50	2314539	1	Bracket, Mounting	57	2311421	1	Guard
51	318702W	AR	Threadlock	58	293646W	8	Capscrew
52	293731W	16	Capscrew	59	296422W	8	Washer
53	296434W	16	Washer	60	221777W	6	Washer
54	221657W	6	Capscrew	61	2314526	1	Guard, Top
55	R13813326	2	Washer	62	2313037	2	Plate

### Mounting Parts

Komatsu D37/39-23/24 (H4AT2Y\*\*K14)



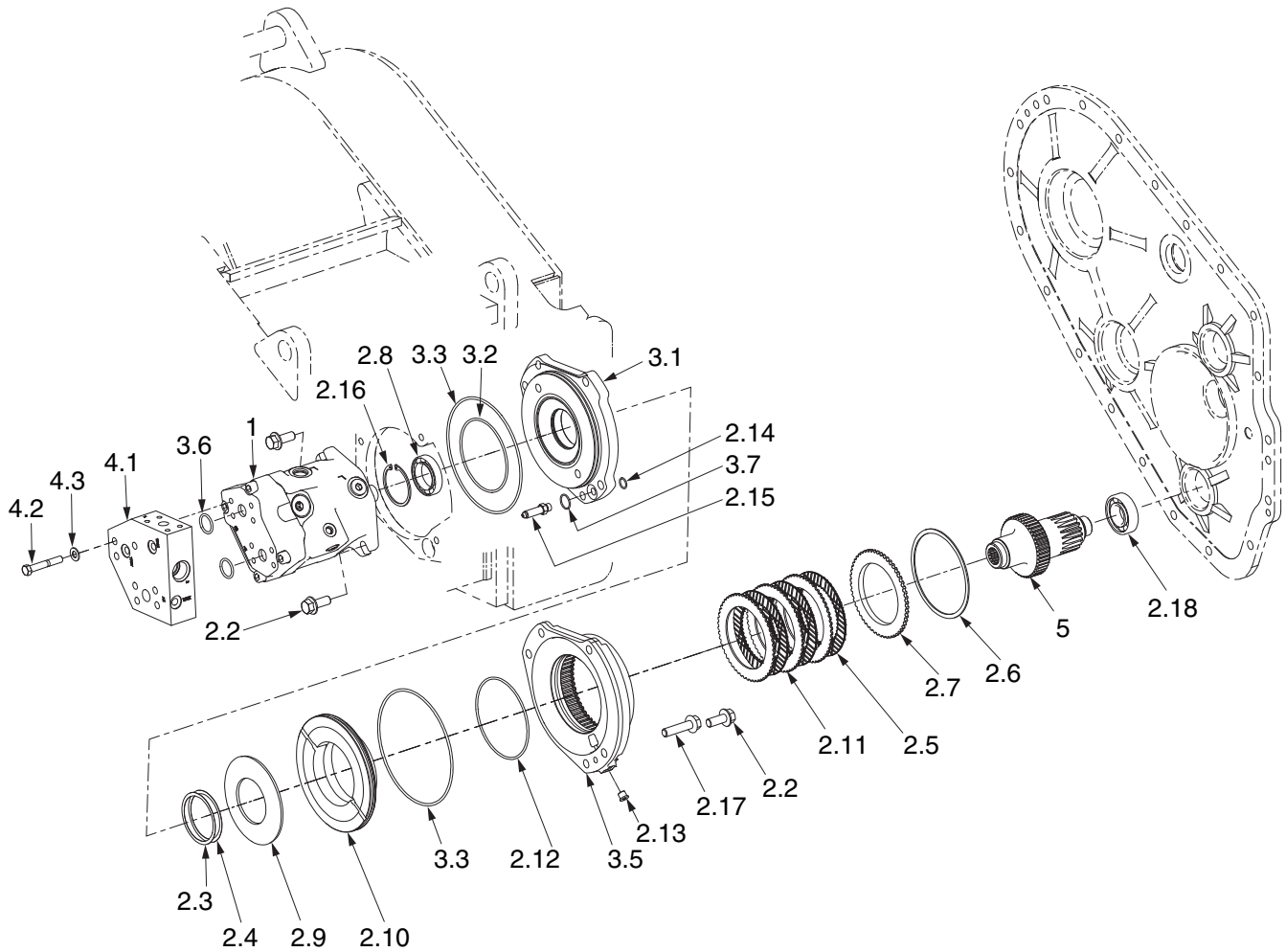
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1.1	2314539	1	Bracket, Mounting	1.7	296422W	8	Washer
1.2	318702W	AR	Threadlock	1.8	221777W	6	Washer
1.3	296434W	18	Washer	1.9	221672W	2	Capscrew
1.4	R13813326	2	Washer	1.10	221657W	6	Capscrew
1.5	2314524	1	Guard, Bottom	1.11	1308451W	18	Capscrew
1.6	293646W	8	Capscrew	1.12	2314526	1	Guard, Top

**Intentionally Blank**

**Section 2**  
**Gear/Shaft Train**

### Motor Shaft Assembly

Komatsu D37-D39X-22 (H4AT2Y\*\*K13), D37/39-23/24 (H4AT2Y\*\*K14)



Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	*c 2303788W	1	Motor, Hydraulic	3.2	*b 15888W	1	O-Ring
1	*d 2314620	1	Motor, Hydraulic	3.3	*a*b 2316507	2	O-Ring
2.2	2303848W	4	Screw, Flange	3.5	2316526	1	Housing, Brake
2.3	*a 2304711W	AR	Shim, 0.005"	3.6	*b 2304110W	2	O-Ring
2.4	*a 2304712W	AR	Shim, 0.007"	3.7	*b 17064	1	O-Ring
2.5	*a 2304873W	3	Disc, Friction	4.1	2307568W	1	Assy, Manifold
2.6	334475W	1	Ring, Snap, Int		2307567W	1	. Manifold
2.7	334442W	1	Plate, Pressure		222442W	1	. Fitting
2.8	*a 2300831W	1	Bearing, Ball		2310978	1	. Orifice
2.9	2303845W	1	Spring, Belleville	4.2	180959W	3	Capscrew
2.10	2316525	1	Piston, Brake	4.3	221767W	3	Washer
2.11	*a 2304874W	3	Plate, Separator	5	2303835W	1	Motor Shaft, 21T (83:1)
2.12	*a*b 2316517	1	O-Ring	5	2311303	1	Motor Shaft, 19T (94:1)
2.13	222442W	1	Fitting	5	2303829W	1	Motor Shaft, 16T (116:1)
2.14	*b 26883	1	O-Ring	5	2311305	1	Motor Shaft, 15T (125:1)
2.15	16547W	1	Fitting				
2.16	12921W	1	Snap Ring				
2.17	918906W	3	Screw				
2.18	*a 41206W	1	Bearing, Ball				
3.1	2305651W	1	Motor Mounting Plate				

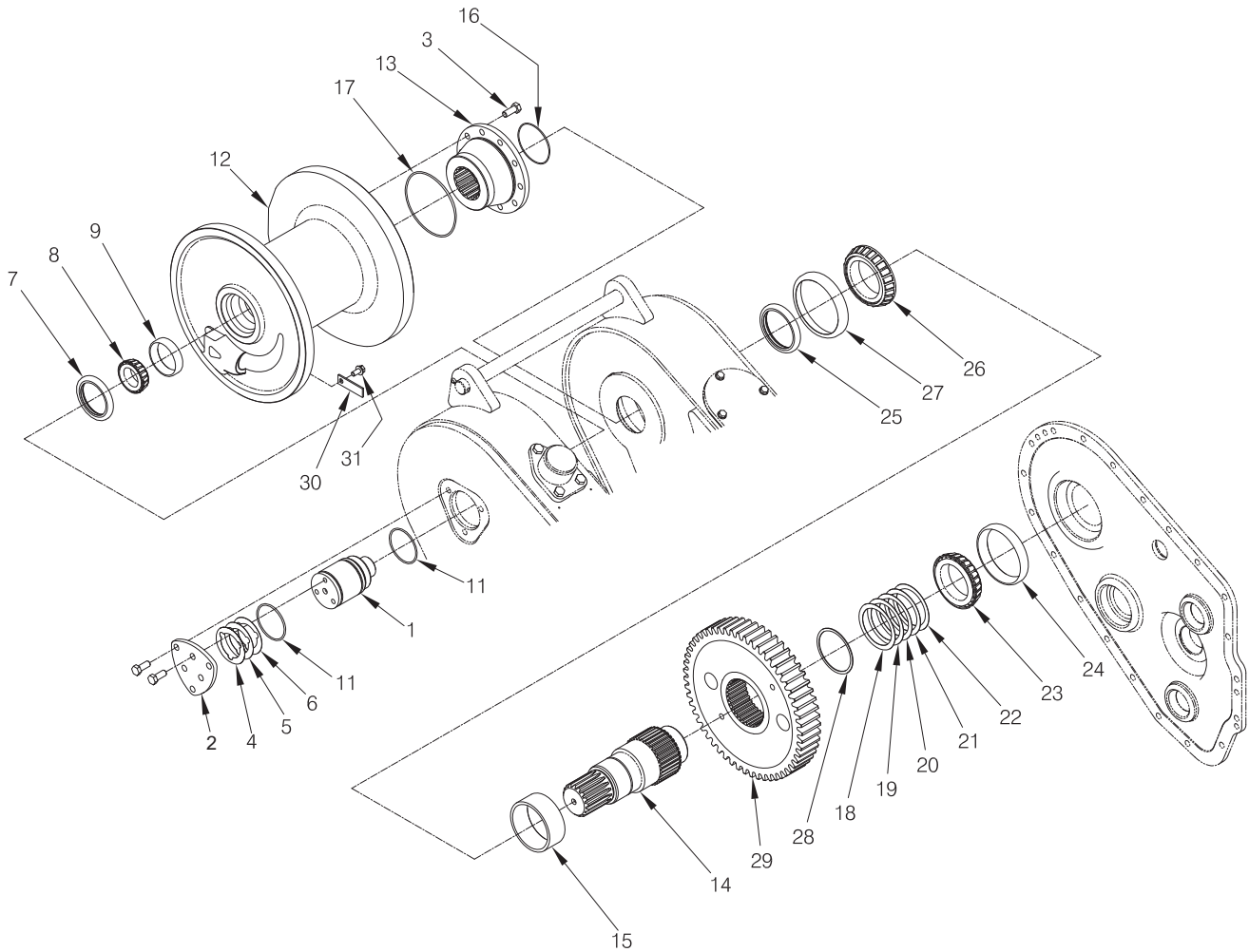
\*a Included in Brake Kit 2306545W

\*b Included in Motor Shaft Rebuild Kit 2315351

\*c Used on Tractor Code K13 Only

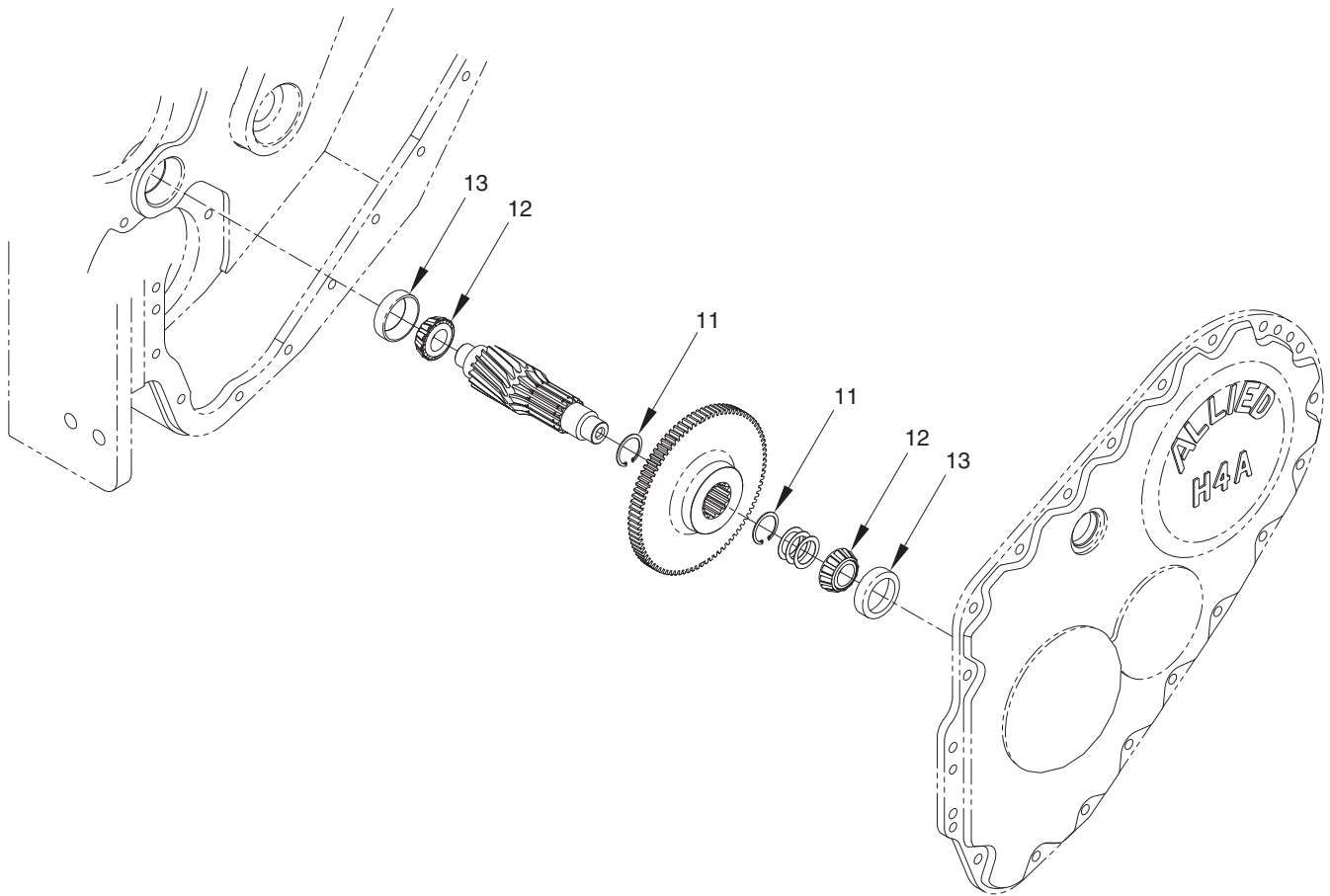
\*d Used on Tractor Code K14 Only

Drum Shaft



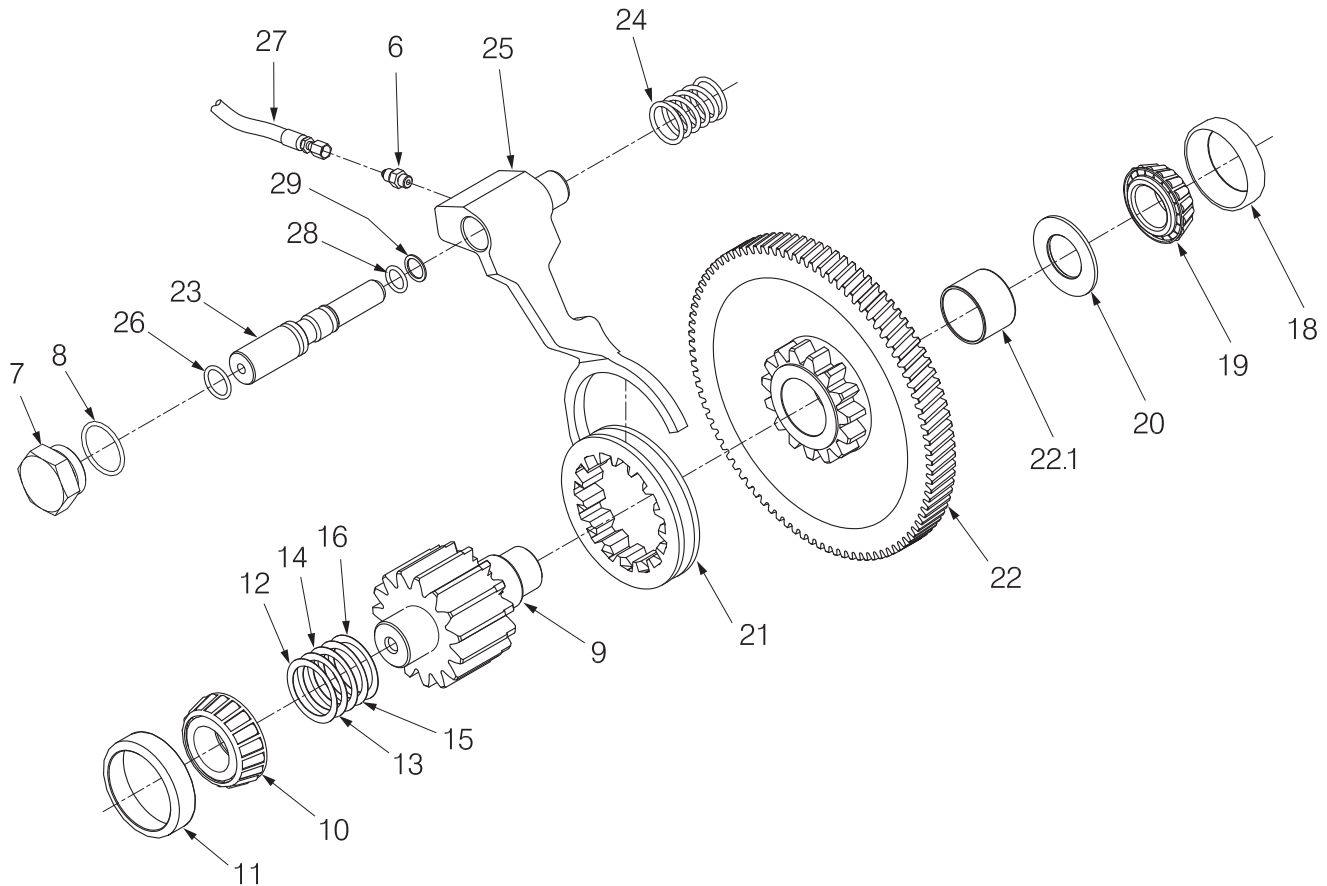
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	2305653W	1	Shaft, Drum	18	1314470W	AR	Shim, .025
3	2303848W	16	Capscrew	19	1314485W	AR	Shim, .015
4	2304122W	1	Shim, .005	20	1314486W	AR	Shim, .018
5	2304123W	1	Shim, .007	21	1314487W	AR	Shim, .020
6	2304124W	6	Shim, .020	22	1314488W	AR	Shim, .022
7	87355W	1	Seal, Oil	23	1314483W	1	Cone, Bearing
8	2303853W	1	Cone, Bearing	24	30190W	1	Cup, Bearing
9	2303854W	1	Cup, Bearing	25	R2109170	1	Seal
11	203525	2	O-Ring	26	2304126W	1	Cone, Bearing
12	2304069W	1	Drum	27	2304127W	1	Cup, Bearing
13	2304060W	1	Adapter, Drum	28	2304128W	1	Retaining Ring
14	2304058W	1	Shaft, Drum	29	2303827W	1	Gear, 55T
15	2304125W	1	Spacer	30	1314503W	1	Keeper, Ferrule
16	46629W	1	O-Ring	31	134803W	1	Capscrew
17	15895W	1	O-Ring				

Shaft, Idler



Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	2305564W	1	Shaft, Idler, 16T	8	2304199W	AR	Shim, .015
2	2304179W	2	Cone, Bearing	9	*a 2305566W	1	Gear, Idler, 88T
3	2304180W	2	Cup, Bearing		*b 2305565W	1	Gear, Idler, 83T
5	12916W	2	Ring, Snap		*c 2311304	1	Gear, Idler, 85T
6	2304197W	AR	Shim, .010		*d 2311306	1	Gear, Idler, 89T
7	2304198W	AR	Shim, .012				
					*a		Used on 116:1 Gear Ratio Only
					*b		Used on 83:1 Gear Ratio Only
					*c		Used on 94:1 Gear Ratio Only
					*d		Used on 125:1 Gear Ratio Only

## Intermediate Gear Shaft With Freespool



Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
6	16538W	1	Fitting	21	2304171W	1	Collar, Freespool
7	2304174W	1	Plug, Freespool Shaft	22	2316504	1	Assy, Gear, Intermed, 92T
8	16984W	1	O-Ring	22.1	2304181W	1	. Bushing
9	2303825W	1	Shaft	23	2305563W	1	Shaft, Freespool
10	225262W	1	Cone, Bearing	24	2303906W	1	Spring, Freespool
11	230351W	1	Cup, Bearing	25	2305562W	1	Fork, Freespool Shifter
12	* 1314433W	AR	Shim, .020	26	61056W	1	O-Ring
13	* 1314434W	AR	Shim, .022	27	2305580W	1	Assy, Hose
14	* 1314435W	AR	Shim, .025	28	100153W	1	O-Ring
15	* 1314467W	AR	Shim, .015	29	238671	1	Ring, Backup
16	* 1314468W	AR	Shim, .018				
18	R1314774	1	Cup, Bearing				
19	R1314773	1	Cone, Bearing				
20	2304172W	1	Washer, Thrust				

\* Shim as required to achieve 0.002" to 0.005" bearing endplay.

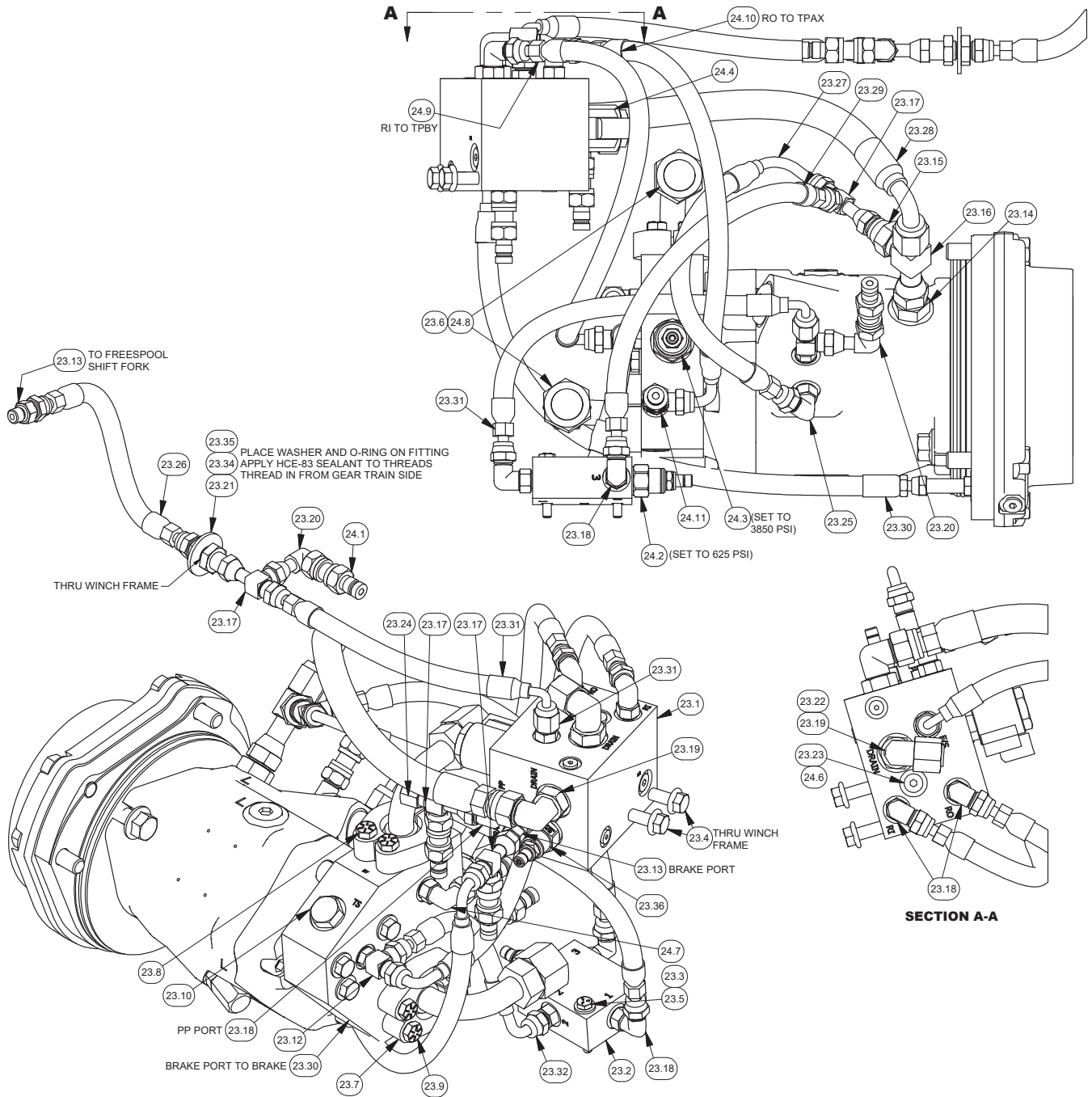


**Section 3**  
**Hydraulics/Electrical/Controls**

# Hydraulic Group

Komatsu D37-D39X-22 (H4AT2Y\*\*K13)

Page 1 of 3



## Hydraulic Group

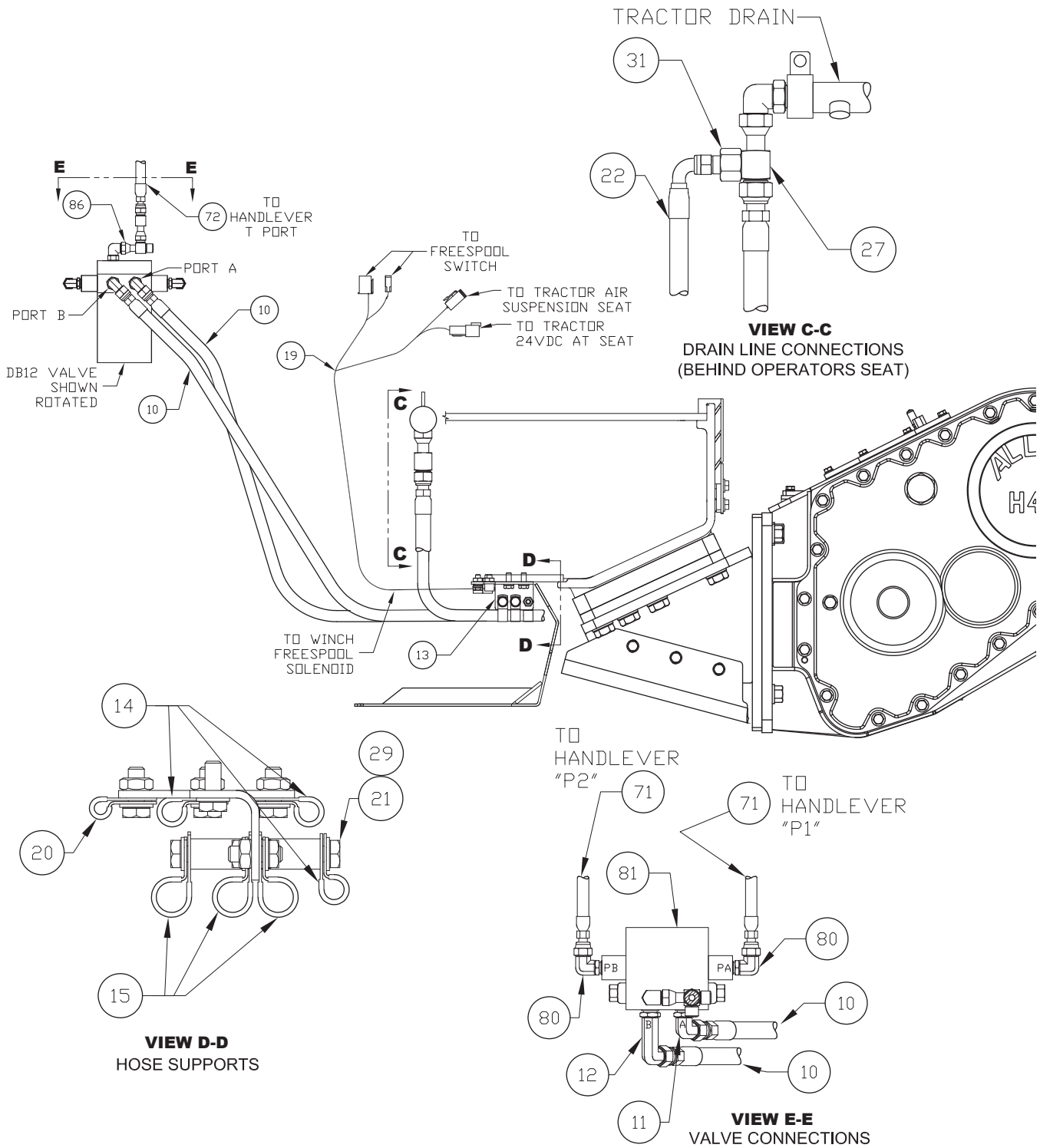
Komatsu D37-D39X-22 (H4AT2Y\*\*K13)  
Page 2 of 3

Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
23.1	2311591	1	Assy, Rescue Control Manifold (See p. 33)	23.25	2311500	1	Fitting Assembly
23.2	248918	1	Valve Body	23.26	2311356	1	Hose Assembly
23.3	221763W	2	Washer	23.27	2311235	1	Hose Assembly
23.4	398599W	2	Capscrew	23.28	242111	1	Hose Assembly
23.5	Y01C-0428	2	Capscrew	23.29	2311353	1	Hose Assembly
23.6	2311360	2	Assy, Fitting w/O-Rings	23.30	2311233	1	Hose Assembly
23.7	222535W	4	Fitting	23.31	2311744	2	Hose Assembly
23.8	Y17C-0624	4	Capscrew	23.32	2311234	1	Hose Assembly
23.9	221518W	4	Capscrew	23.34	15178W	1	Washer
23.10	210709	1	Fitting	23.35	211564	1	O-Ring
23.12	R833400	2	Fitting	25.1	232984	2	Fitting
23.13	231439	4	Fitting	25.2	2310976	1	Cartridge, Valve
23.14	R833114	1	Fitting		2501643	1	. Seal Kit
23.15	R833700	1	Fitting	25.3	2311130	1	Cartridge, Pressure Reducing
23.16	R834052	1	Fitting		234655	1	. Seal Kit
23.17	236855	4	Fitting	25.4	250365	1	Cartridge, Valve
23.18	R833251	5	Fitting		250589	1	. Coil
23.19	231452	2	Fitting		250590	1	. Seal Kit
23.20	R833800	2	Fitting	25.5	254002	6	Fitting
23.21	R834100	1	Fitting	25.6	2310634	6	Nipple
23.22	R834253	1	Fitting	25.8	231821	2	Fitting
23.23	222442W	1	Fitting		232382	1	. O-Ring
23.24	232984	1	Fitting	25.9	209423	1	Fitting
				25.10	15961W	1	Fitting
				25.12	231439	1	Fitting

# Hydraulic/Electrical Installation

Komatsu D37-D39X-22 (H4AT2Y\*\*K13)

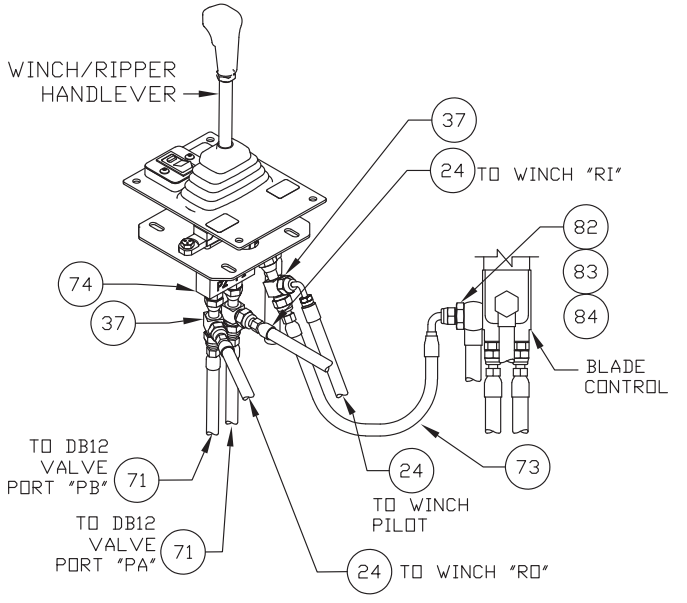
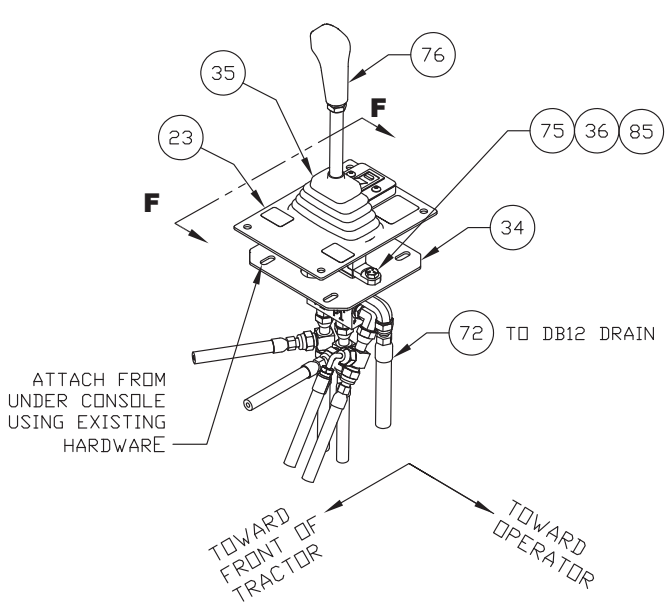
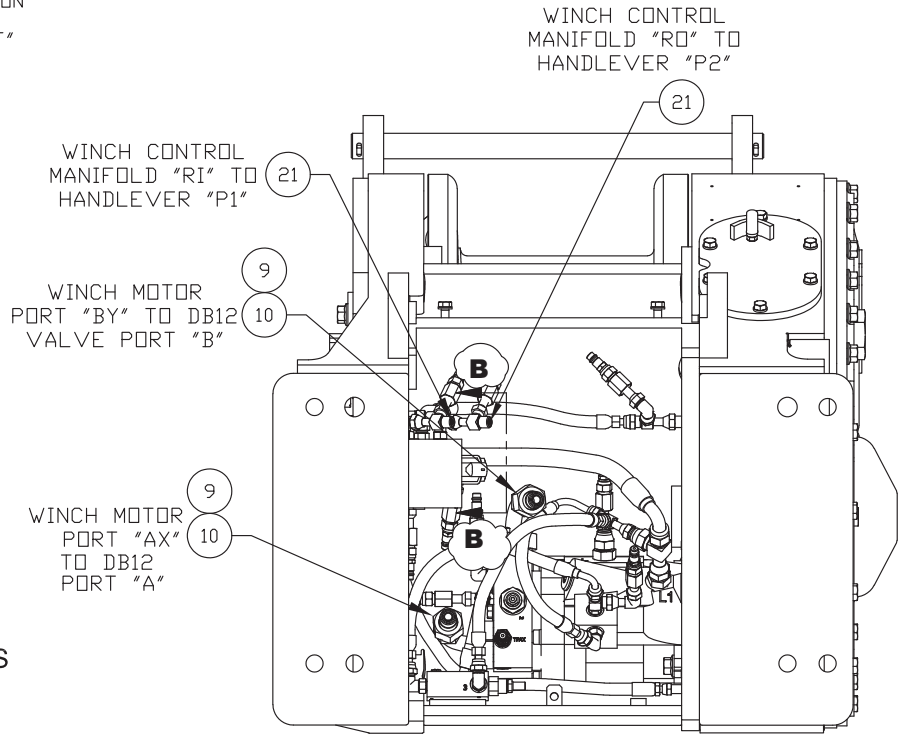
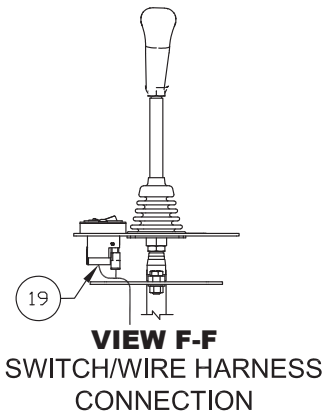
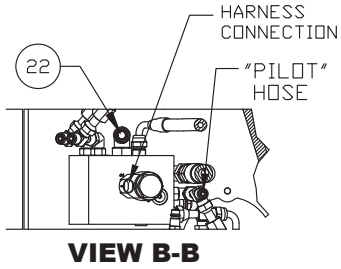
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# Hydraulic/Electrical Installation

Komatsu D37-D39X-22 (H4AT2Y\*\*K13)

Page 2 of 3



## Hydraulic/Electrical Installation

Komatsu D37-D39X-22 (H4AT2Y\*\*K13)

Page 3 of 3

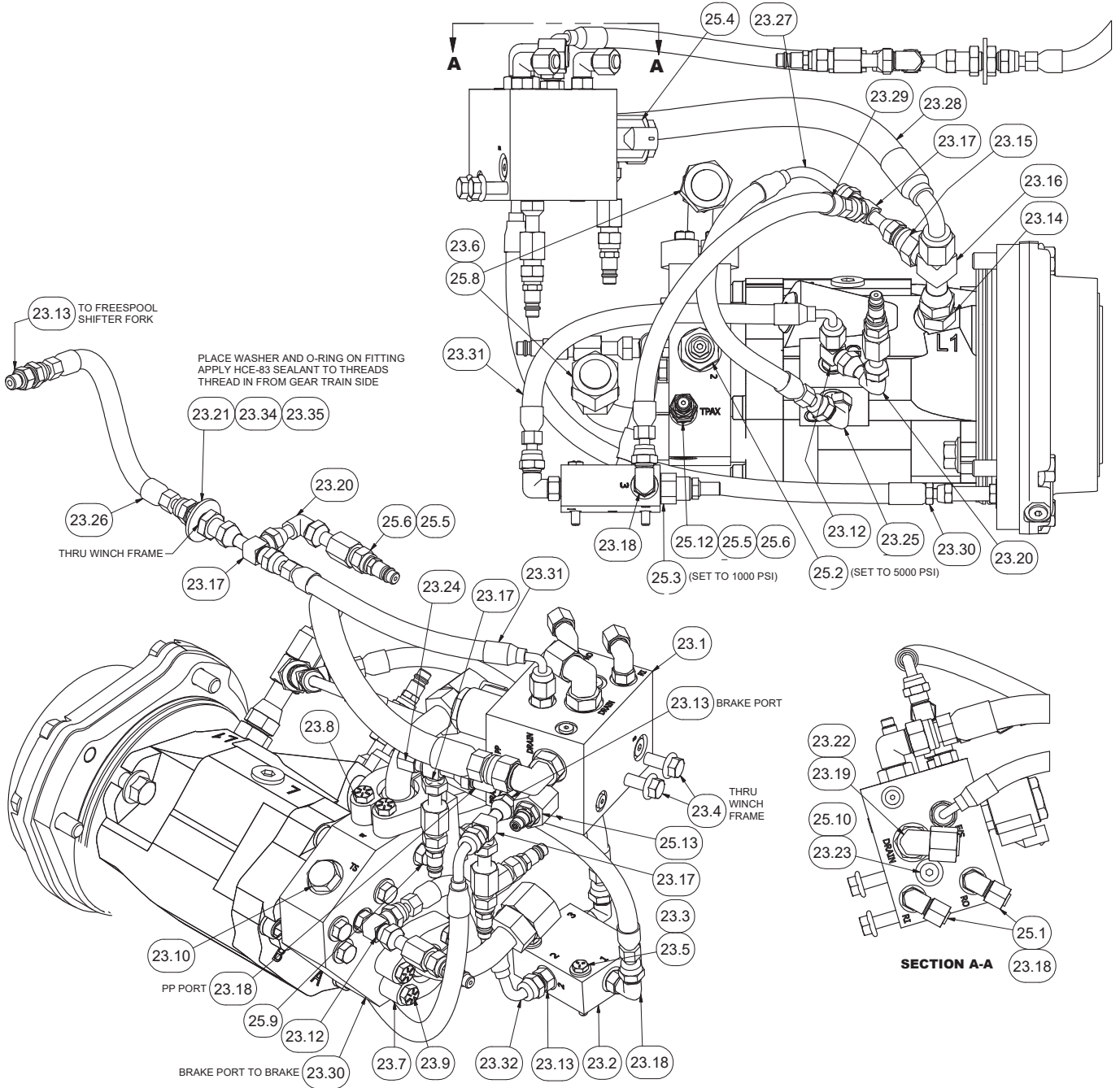
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
4	137852W	10	Cable Tie	37	236855	3	Fitting
9	2307958W	2	Fitting	71	2313929	2	Hose Assembly
10	2311300	2	Hose Assembly	72	2313314	1	Hose Assembly
11	2311440	1	Fitting	73	2313147	1	Hose Assembly
12	2311441	1	Fitting	74	2313146	1	Control Lever Assy (See p. 32)
13	2312503	1	Bracket Weldment				
14	209579	3	Clip, Insul	75	Y27E-06	2	Washer
15	209695	3	Clamp	76	2311043	1	Knob, Handlever
19	2312501	1	Harness	77	R13813295	4	Capscrew
20	R13801359	1	Clip, Insul	78	296418W	4	Washer
21	293628W	9	Capscrew	79	2311041	4	Ring
22	2311289	1	Hose Assembly	80	2311285	2	Fitting
23	2311409	1	Lever Assy (See p. 34)	81	2311036	1	Valve Assembly
24	2311290	3	Hose Assembly	82	2311047	1	Fitting
27	R834055	1	Fitting	83	2311045	2	O-Ring
28	15052W	1	Nut	84	Y098629-012	1	O-Ring
29	296420W	9	Washer	85	16598W	2	Capscrew
31	2307958W	1	Fitting	86	231955	2	Fitting
33	2311288	1	Guard, Tractor				
34	2311281	1	Plate				
35	2311042	1	Boot, Handlever				
36	221707W	2	Hex Nut				

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# Hydraulic Group

Komatsu D37/39-23/24 (H4AT2Y\*\*K14)

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## Hydraulic Group

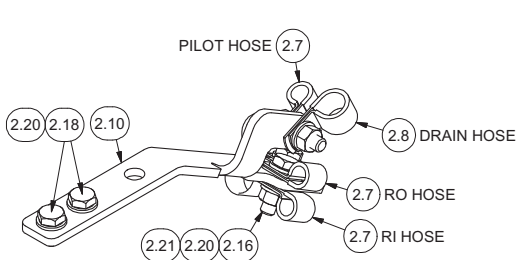
Komatsu D37/39-23/24 (H4AT2Y\*\*K14)  
Page 1 of 2

Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
23.1	2311591	1	Assy, Rescue Control Manifold (See p. 33)	23.25	2311500	1	Fitting Assembly
23.2	248918	1	Valve Body	23.26	2311356	1	Hose Assembly
23.3	221763W	2	Washer	23.27	2311235	1	Hose Assembly
23.4	398599W	2	Capscrew	23.28	242111	1	Hose Assembly
23.5	Y01C-0428	2	Capscrew	23.29	2311353	1	Hose Assembly
23.6	2311360	2	Assy, Fitting w/O-Rings	23.30	2311233	1	Hose Assembly
23.7	222535W	4	Fitting	23.31	2311744	2	Hose Assembly
23.8	Y17C-0624	4	Capscrew	23.32	2311234	1	Hose Assembly
23.9	221518W	4	Capscrew	23.34	15178W	1	Washer
23.10	210709	1	Fitting	23.35	211564	1	O-Ring
23.12	R833400	2	Fitting	25.1	232984	2	Fitting
23.13	231439	4	Fitting	25.2	2310976	1	Cartridge, Valve
23.14	R833114	1	Fitting	25.3	2311130	1	Cartridge, Pressure Reducing
23.15	R833700	1	Fitting	25.4	250365	1	Cartridge, Valve
23.16	R834052	1	Fitting		250589	1	. Coil
23.17	236855	4	Fitting		250590	1	. Seal Kit
23.18	R833251	5	Fitting	25.5	254002	6	Fitting
23.19	231452	2	Fitting	25.6	2310634	6	Nipple
23.20	R833800	2	Fitting	25.8	231821	2	Fitting
23.21	R834100	1	Fitting		232382	1	. O-Ring
23.22	R834253	1	Fitting	25.9	209423	1	Fitting
23.23	222442W	1	Fitting	25.10	15961W	1	Fitting
23.24	232984	1	Fitting	25.12	231439	1	Fitting

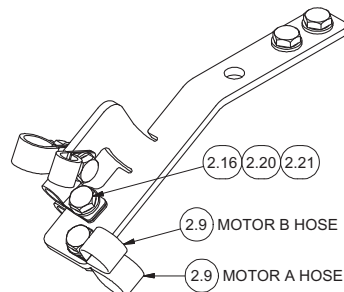
# Hydraulic/Electrical Installation

Komatsu D39-23/24 (H4AT2Y\*\*K14)

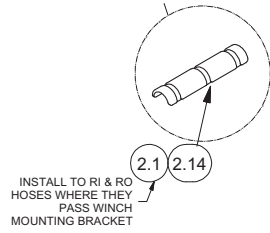
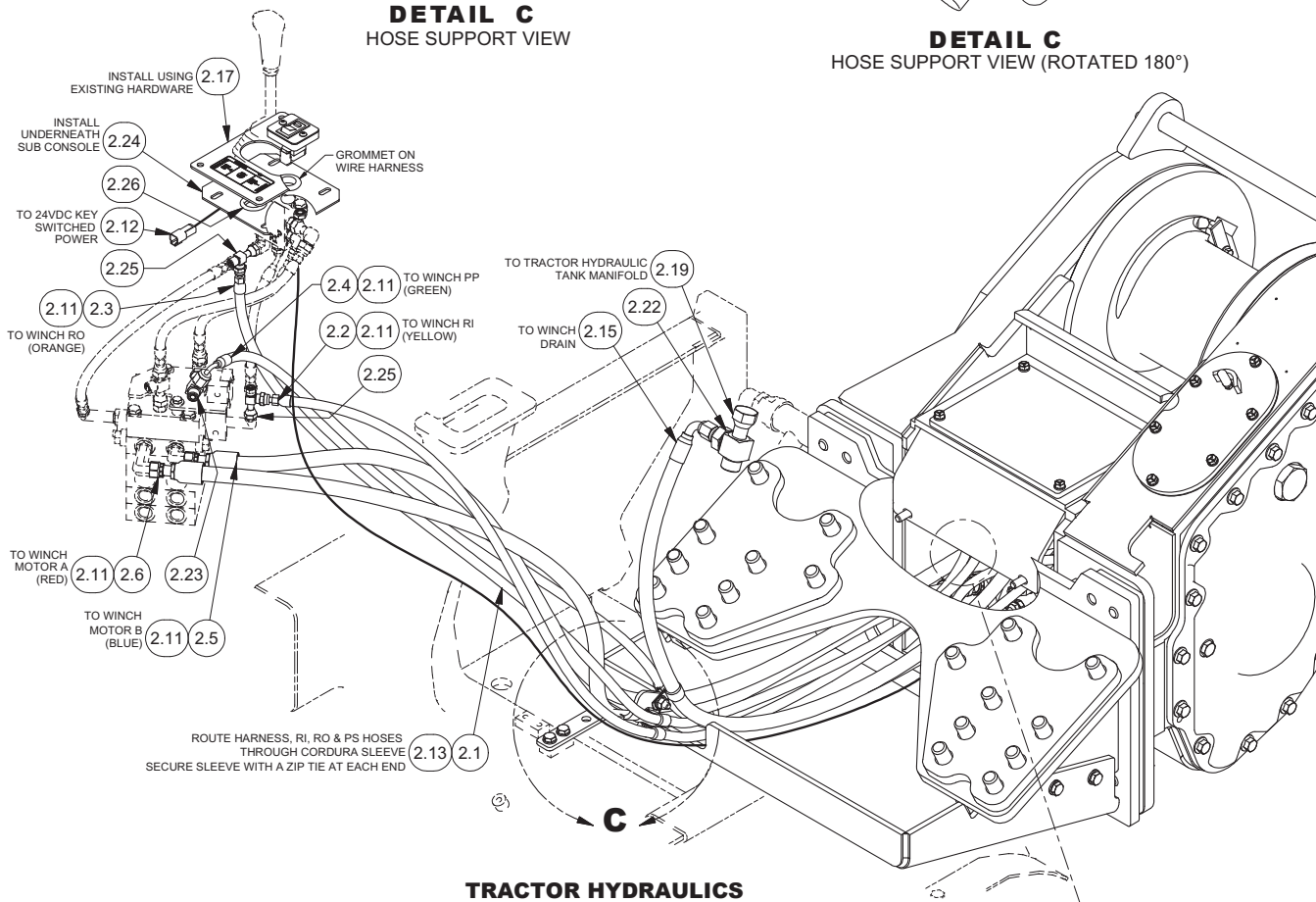
Page 1 of 2



**DETAIL C**  
HOSE SUPPORT VIEW



**DETAIL C**  
HOSE SUPPORT VIEW (ROTATED 180°)



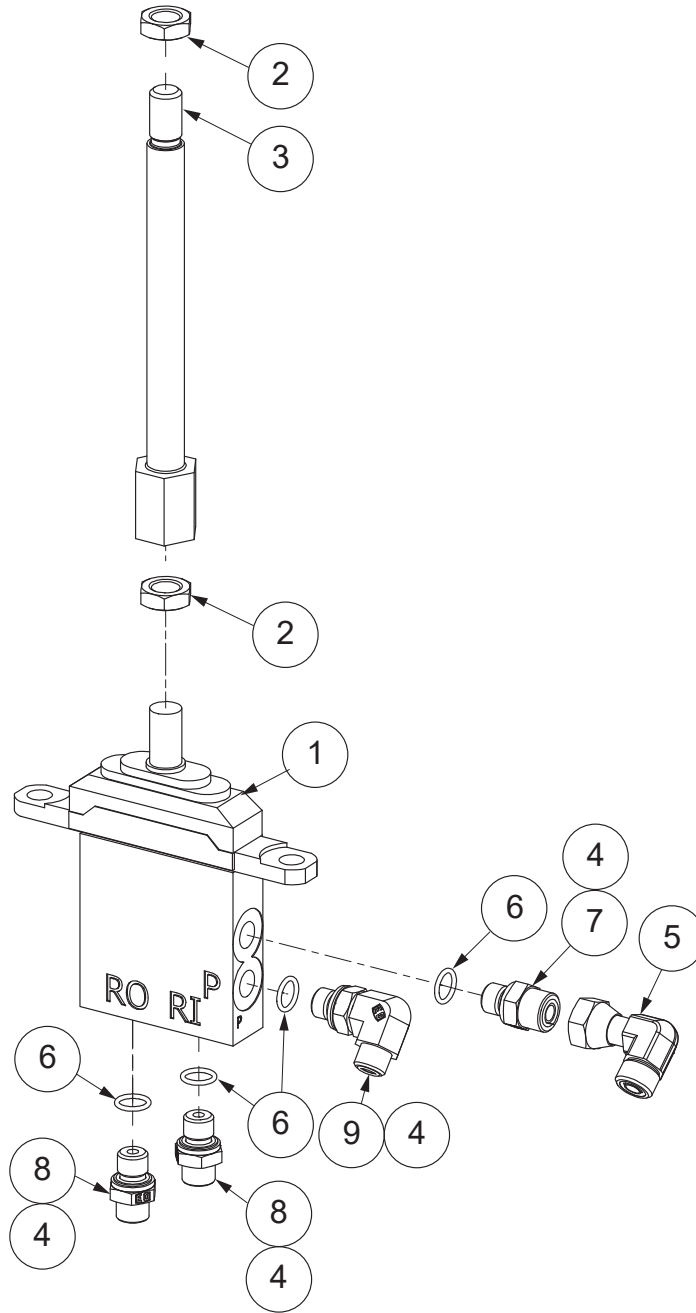
## Hydraulic/Electrical Installation

Komatsu D39-23/24 (H4AT2Y\*\*K14)

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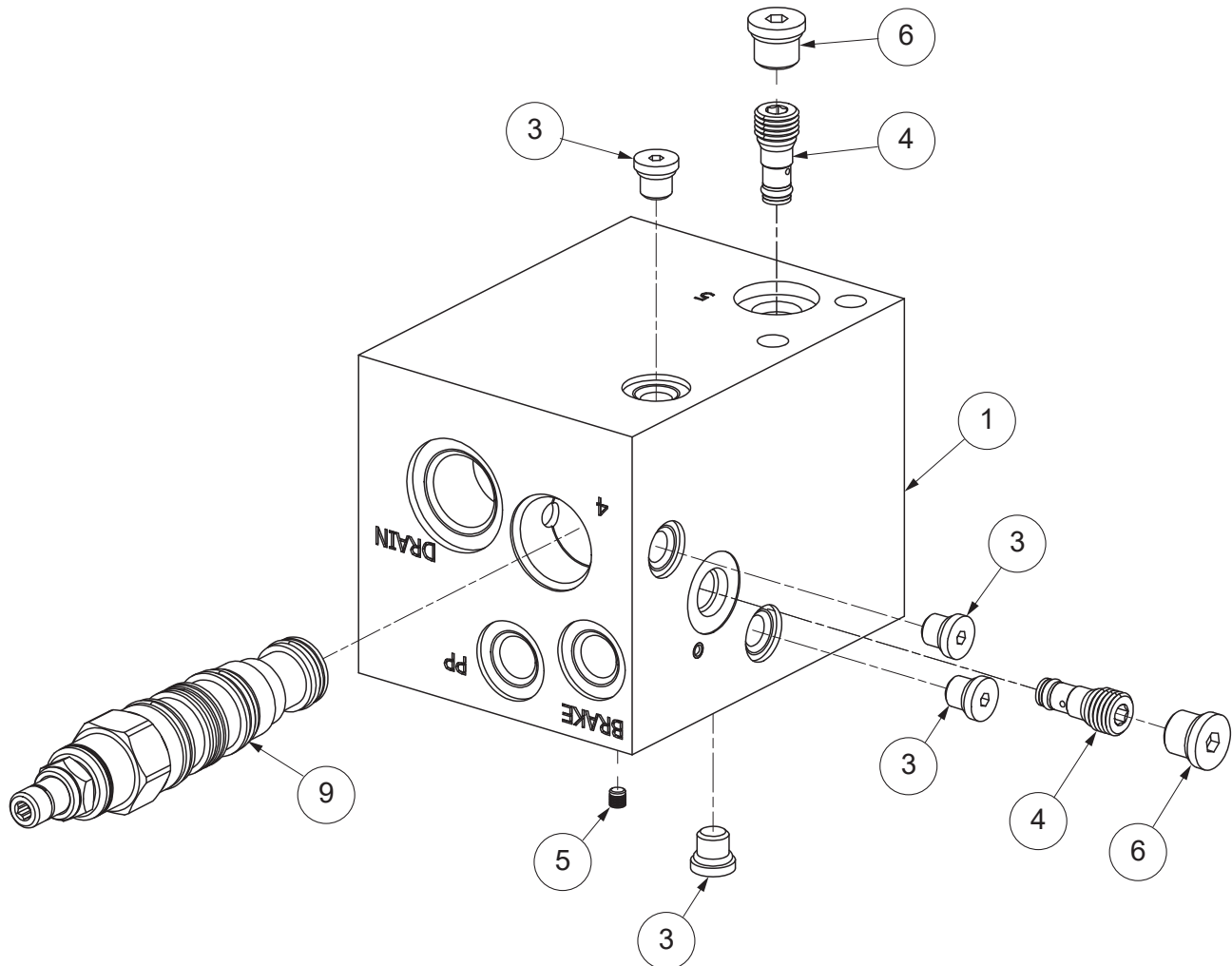
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
2.1	137852W	10	Cable Tie	2.15	2311289	1	Hose Assembly
2.2	2314545	1	Hose Assembly	2.16	R13811210	3	Capscrew
2.3	2314546	1	Hose Assembly	2.17	2311409	1	Lever Assy (See p. 34)
2.4	2314547	1	Hose Assembly	2.18	236805	2	Capscrew
2.5	2314548	1	Hose Assembly	2.19	R834055	1	Fitting
2.6	2314549	1	Hose Assembly	2.20	296420W	8	Washer
2.7	209579	3	Clip, Insul	2.21	292655W	3	Nut
2.8	209695	1	Clamp	2.22	2307958W	1	Fitting
2.9	209696	2	Clamp	2.23	231955	1	Fitting
2.10	2314527	1	Plate, Support Hose	2.24	2314583	1	Control Lever Mounting
2.11	2304988W	1	Kit, Tie Strap	2.25	236855	2	Fitting
2.12	2314589	1	Harness, Wire, Tractor	2.26	R1933988	1	Button, Plug
2.13	R13846	2'	Sleeve, Cordura				
2.14	HSP0000004	1	Hose Protector				

### Control Lever Assembly



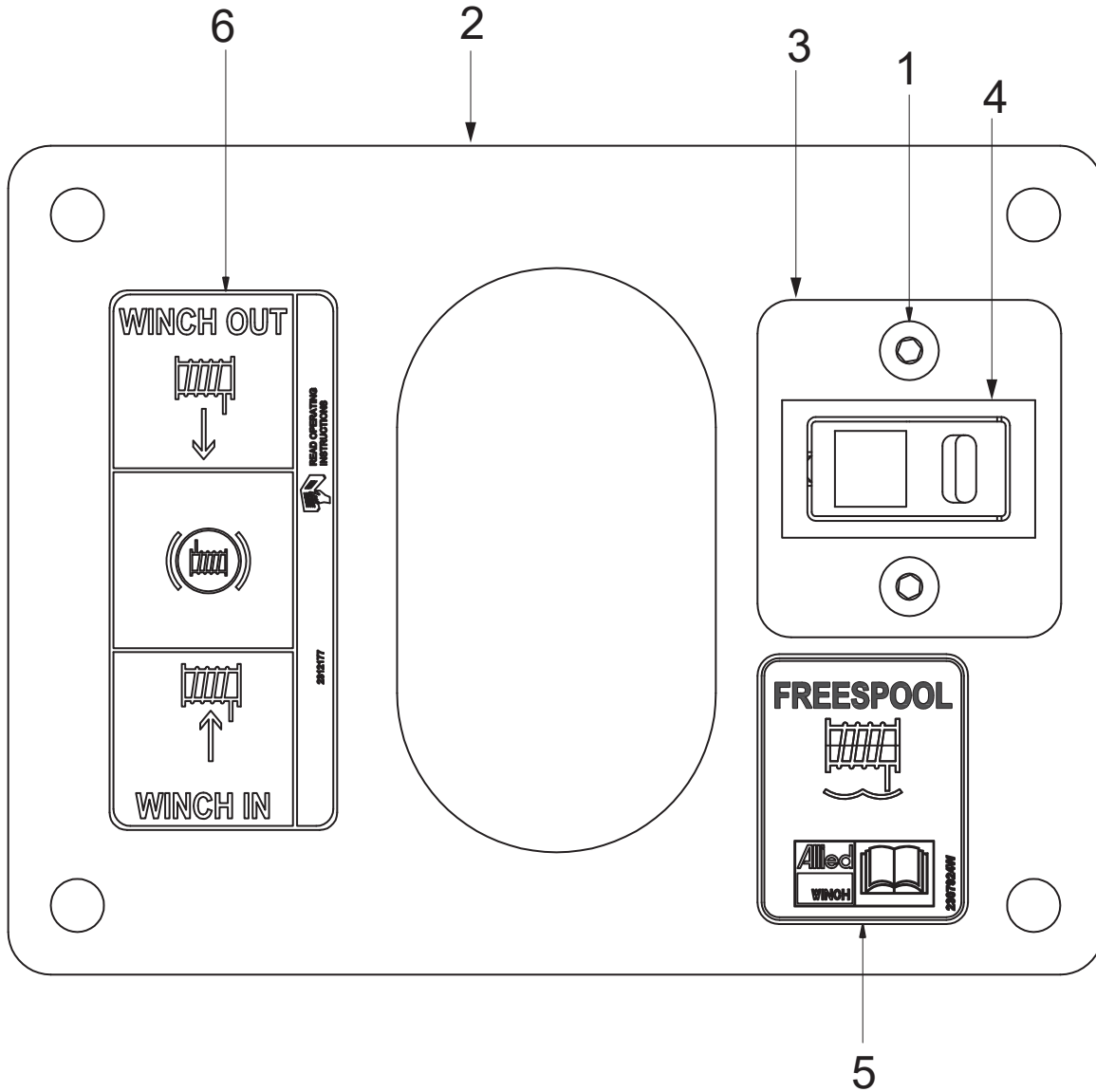
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
	<b>2313146</b>		<b>Control Lever Assembly</b>				
1	2311044	1	. Valve, Pilot	7	249005	1	. Fitting
2	296133W	2	. Jam Nut	8	248854	2	. Fitting
3	2311280	1	. Rod, Lever	9	2313145	1	. Fitting
5	R833801	1	. Fitting				
6	211564	4	. O-Ring				

## Rescue Control Manifold



Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
	<b>2311591</b>		<b>Assy, Manifold, Rescue Control</b>				
1	2311590	1	. Manifold, Control	5	2307480W	2	. Plug, Expansion
3	242230	4	. Fitting	6	235387	2	. Fitting
4	2307227W	2	. Valve, Shuttle	9	2311592	1	. Directional Valve
	2307231W	1	.. Seal Kit		252566	1	.. Seal Kit

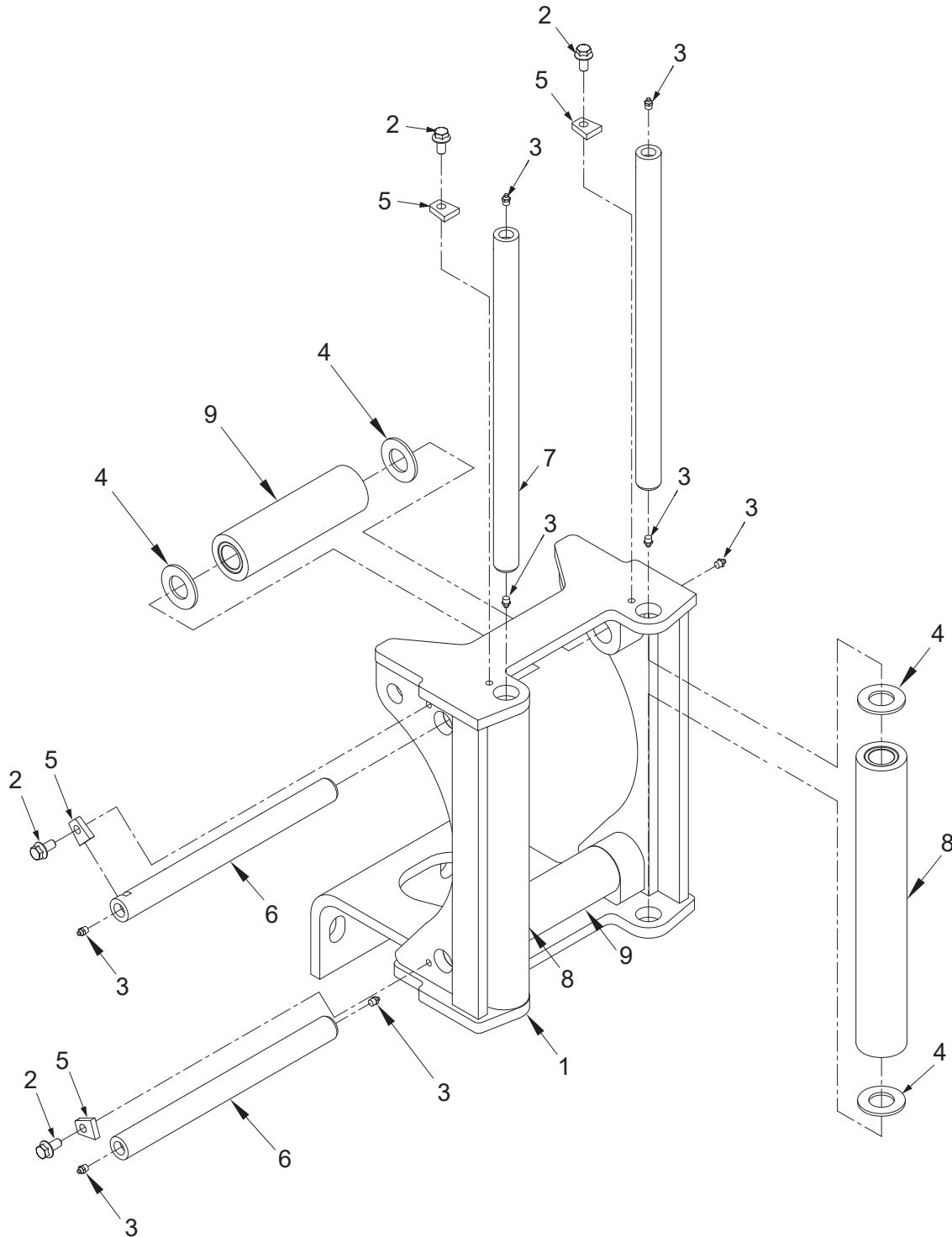
Lever Assembly



Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
	<b>2311409</b>		<b>Lever Assembly</b>				
1	Y25G-0408	2	. Capscrew				
2	2311406	1	. Handlever Mounting				
3	2307643W	1	. Plate				
4	2310017	1	. Switch, Yellow LED				
5	2312177	1	. Decal, Winch In, Winch Out				
6	2307924W	1	. Decal, Switch Panel				

**Section 4**  
**Optional Equipment**

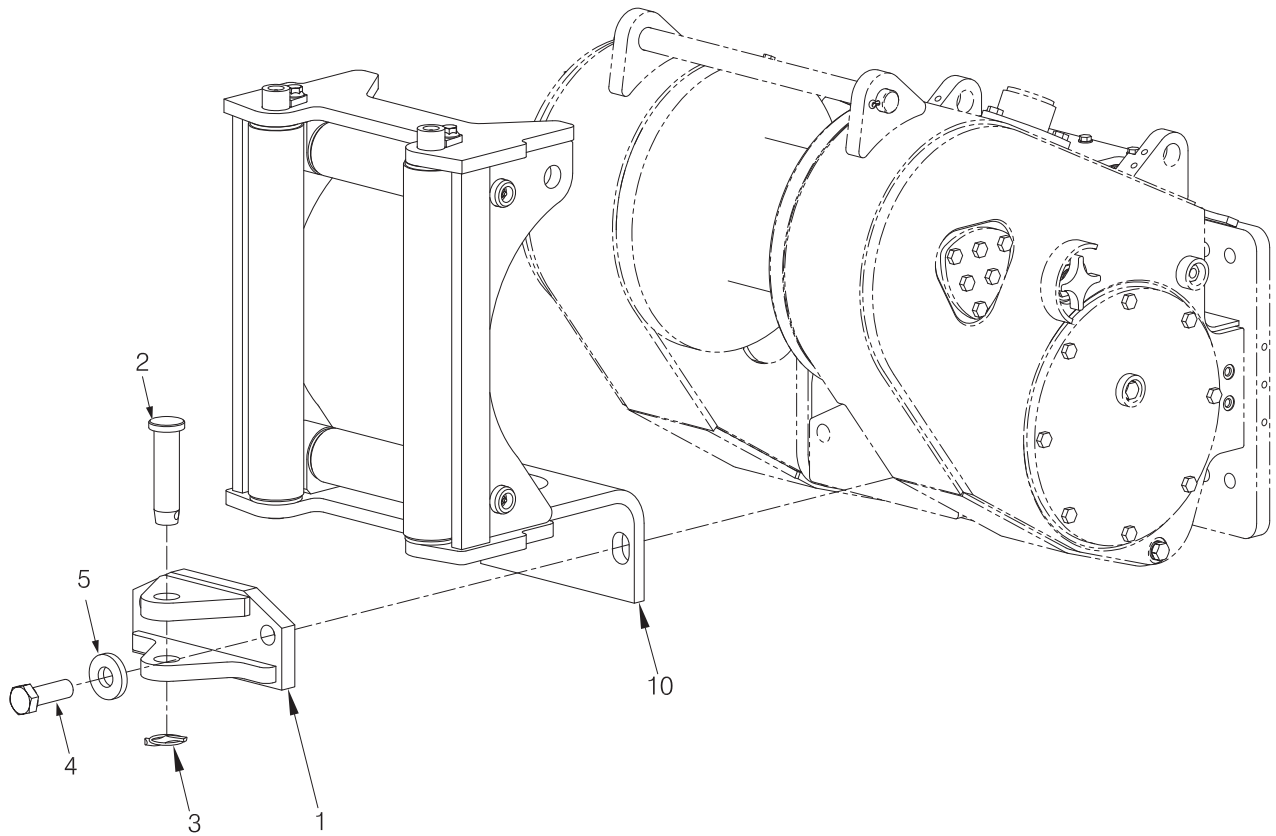
# Fairlead Assembly



Item	Part No.	Qty	Description	Item	Part No.	Qty A/B	Description
	<b>2305252W</b>		<b>Assembly, Fairlead</b>				
1	2305251W	1	. Frame	7	2303754W	2	. Shaft
2	398817W	4	. Flangescrew	8	2303755W	2	. Assembly, Roller
3	16001W	8	. Fitting, Lube		59419W	2	.. Bushing
4	344825W	8	. Washer	9	2301708W	2	. Assembly, Roller
5	2303815W	4	. Keeper		59419W	2	.. Bushing
6	2305249W	2	. Shaft				



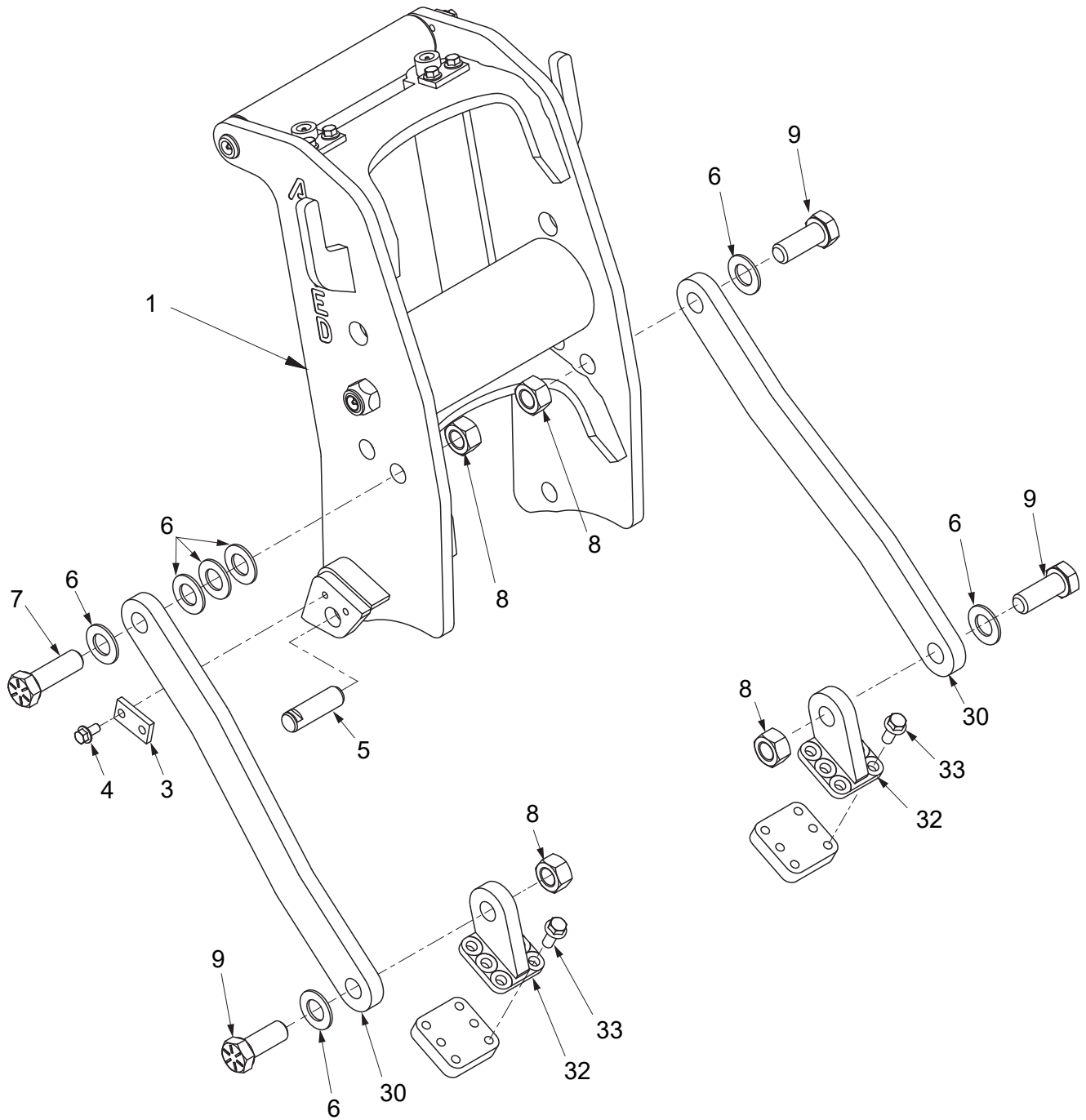
Fairlead/Drawbar Installation



- A. Fairlead Installation with Drawbar
- B. Fairlead Installation ONLY
- C. Drawbar Installation ONLY

Item	Part No.	Description	Qty	A	B	C	Item	Part No.	Description	Qty	A	B	C
1	2304155W	Drawbar	1	--	1			221694W	Capscrew	2	--	--	
2	2304161W	Pin, Drawbar	1	--	1	5	5	2305256W	Washer	2	2	--	
3	2303221W	Pin, Retaining	1	--	1			221780W	Washer	--	--	2	
4	221686W	Capscrew	--	2	2	10	10	2305252W	Assy Fairlead (See 4-6)	1	1	--	

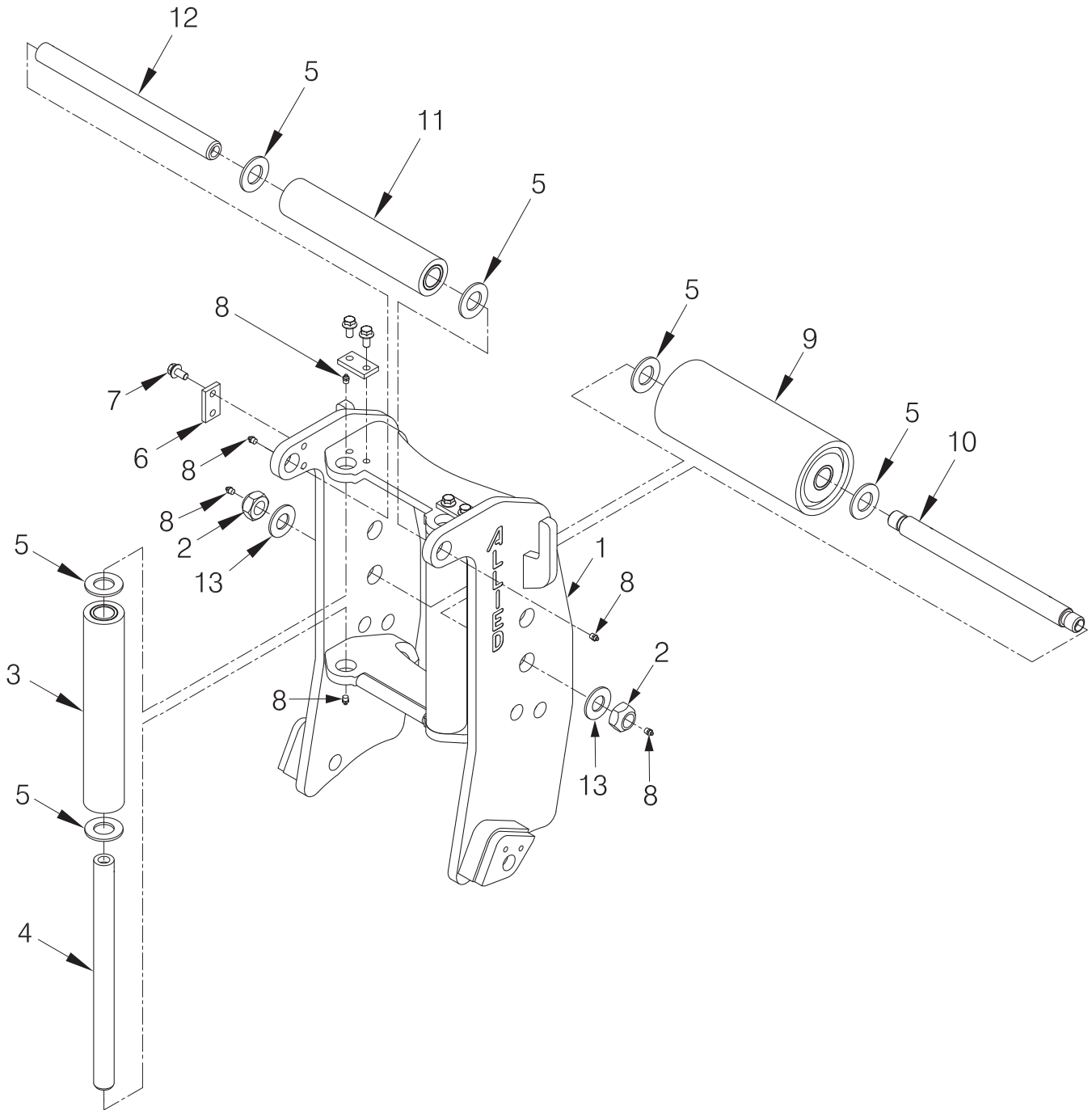
## Arch Installation



Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
1	2305145W	1	Assy, Arch (See p. 39)	30	2312995	2	Bar, Support, Arch
3	93166W	2	Keeper	32	2312997	2	Ear, Arch
4	398817W	4	Screw, Flange	33	918085W	12	Screw, Flange
5	1314629W	2	Pin				
6	225851	7	Washer				
7	2300478W	1	Capscrew				
8	*a 221372W	4	Locknut				
9	2305268W	3	Capscrew				

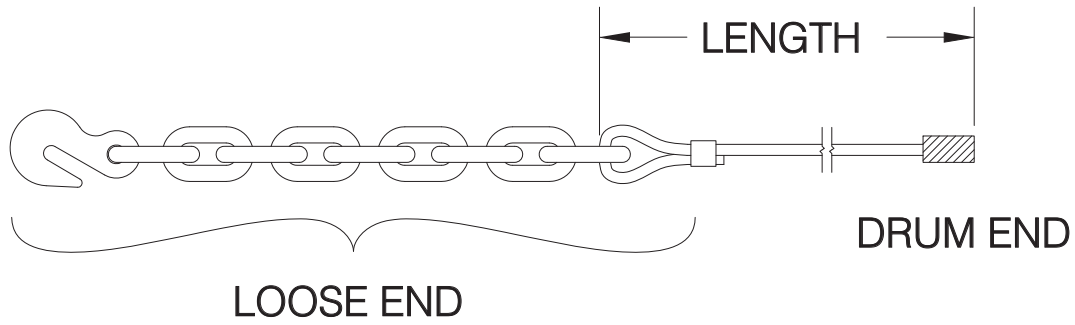
\*a Use 318702W Thread Lock

# Arch Assembly

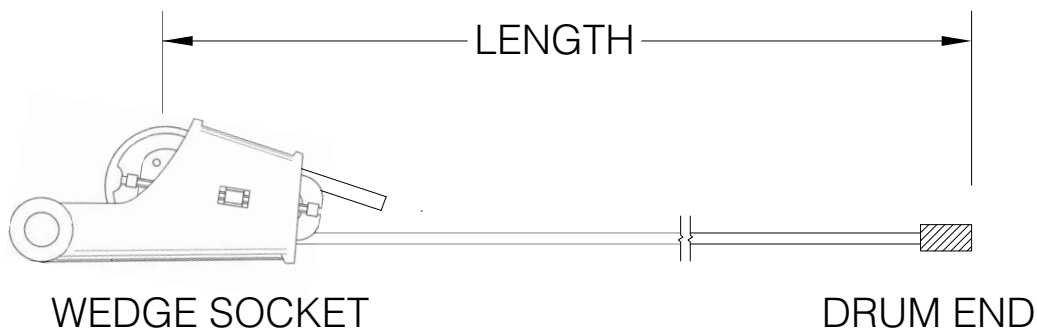


Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
	<b>2305145W</b>		<b>Assembly, Arch</b>				
1	2305142W	1	. Frame, 4 Roller	10	2300948W	1	. Shaft
2	221724W	2	. Hex Nut	11	344826W	1	. Roller Assembly
3	342448W	2	. Roller Assembly	12	344835W	1	. Shaft
4	342447W	2	. Shaft	13	225851	1	. Washer
5	344825W	8	. Washer				
6	93166W	3	. Keeper				
7	398817W	6	. Screw, Flange				*a Use 318702W Thread Lock
8	16001W	8	. Fitting, Lube				*b Use only if required to protect threads.
9	2300125W	1	. Roller				

**Wire Rope Assemblies**



**Figure A**



**Figure B**

Wire Rope Diameter Dia (in)	Wire Rope	Tail Chain & Hook
	Breaking Strength New (lbs)	Working Load Limit (lbs) 3.5:1 Design Factor
5/8	41,200	13,000
3/4	58,800	34,200
7/8	79,600	34,200

**⚠ CAUTION**

**Do not use larger than 5/8" diameter wire rope if winch is equipped with arch assembly.**

Part No.	Wire Diameter	Length FT (M)	Part No.	Wire Diameter	Length FT (M)
WR4-279B	*b 1/2"	279 (85)*	YS6-195BWS	*c 3/4"	195 (59)**
WR4-422B	*b 1/2"	422 (129)**			
WR5-183B	*b 5/8"	183 (56)*			
WR5-277B	*b 5/8"	277 (84)**			
WR6-129B	*b 3/4"	129 (39)*			
WR6-129BLP	*a 3/4"	129 (39)*			
WR6-195B	*b 3/4"	195 (59)**			
WR6-195BLP	*a 3/4"	195 (59)**			

\* Length to fill drum up to 2/3 capacity (recommended)  
 \*\* Length to fill drum to full capacity  
 \*a Does not include tail chain and hook  
 \*b WR series wire rope (illustrated in Figure A)  
 \*c YS series wire rope (illustrated in Figure B)

## **Section 5**

### **Recommended Service Parts, Intervals and Kits**

The following pages list some of the service parts and kits that are available for your Allied H4A Winch.

Page 83 shows the recommended service intervals and service kits for the H4A winch. Kits are shown on pages 84-87.

Page 88 lists gaskets and seals. Keep these parts in stock at all times for regular maintenance. Order parts from the table based on your winch.

Page 88 and page 89 contain kits for 5,000 hour and 10,000 hour scheduled maintenance. Order these kits in preparation for these intervals. Each kit includes all parts listed in the table. Order parts from the table based on your winch.

Page 89 also contains a list of operator controls components. Order parts or kits as required and as relevant for your installation.

Page 90 contains lists of wire rope assemblies and general spare parts. Order parts as required and as relevant for your installation.

Page 91 contains lists of tool kits and diagnostic tools, which are useful when you install, maintain and service your winches.

**Note: Allied Winch parts manuals are available for no charge download at <http://www.alliedsystems.com/pubs/pubs.htm>.**

## Recommended Winch Service Intervals and Kits

Follow the service schedule recommended here to help keep dozer winch downtime to a minimum, optimize winch operation, and extend the life of your investment. See Table 1 for recommended service intervals, and Table 2 for recommended service kits.

Recommended Winch Service Intervals					
Hours or **	Months **	Filter ***	Winch Gear Oil	Brake & Clutch	Major Overhaul
First 250	1	Change			
Every 500	3	Change			
Every 2,000	12		Change		
Every 5,000				*Inspect	
Every 10,000					*Evaluate
Lube rollers and check oil level and filter light every week.					

\* Evaluate = Service based on average winch use;

If used more than once a day, perform an overhaul.

If used less than once a day, remove covers and check to determine need.

\* Inspect = Disassemble and inspect for wear.

\*\* Service winch using the dozer's hour meter or the length of time the winch is mounted to the dozer, whichever occurs first.

\*\*\* Follow dozer schedule if using dozer filter.

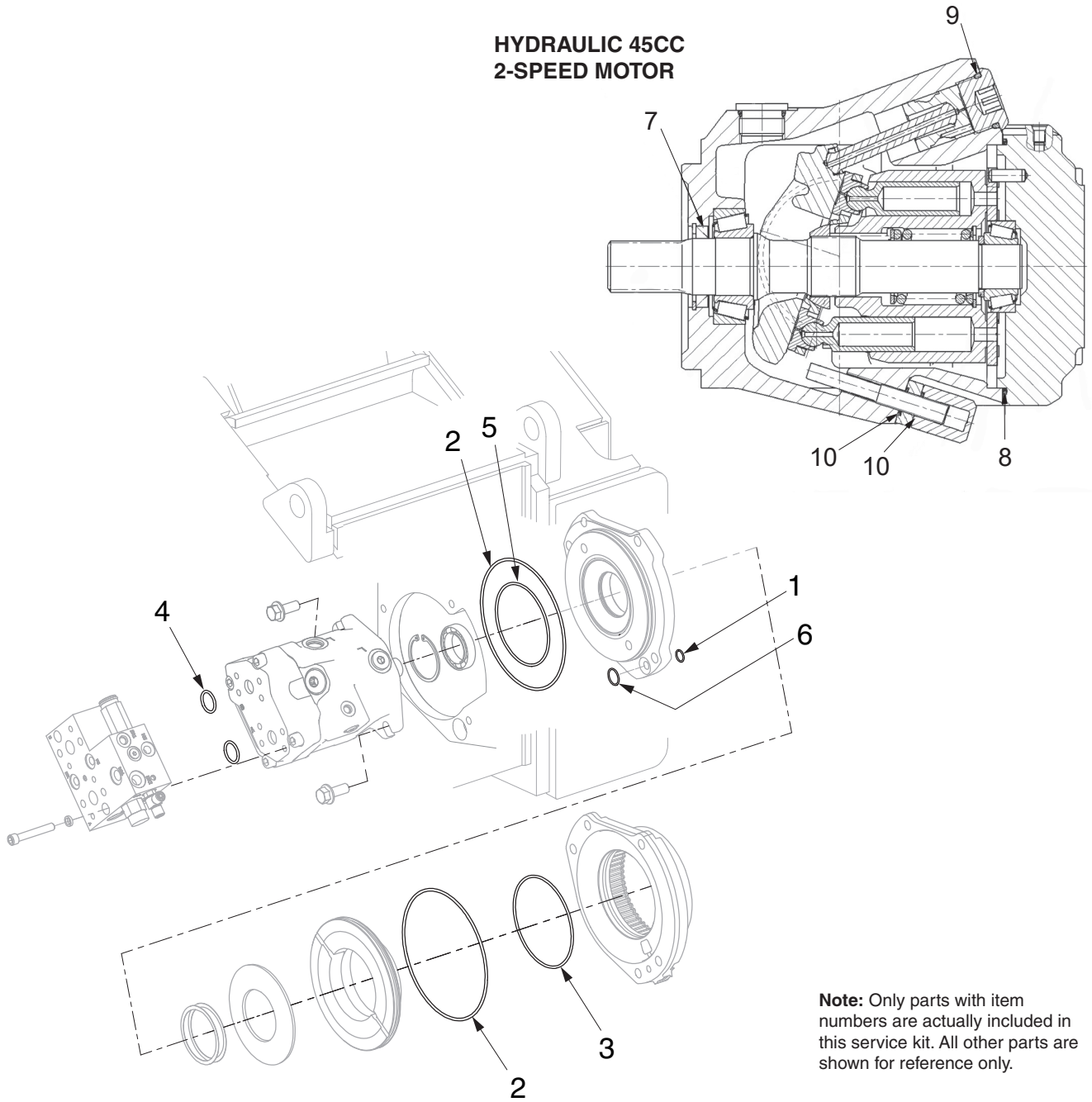
**Table 1 Recommended Winch Service Intervals**

Service Kits for H4A Winches			
Service Description	Kit Description	Winch Serial Number	Kit Part#
Filter change	Filter kit	All	Refer to dozer operator and service manuals
Complete oil change (every 1,000 hours)	N/A	All	Check our website for current operator's and service manuals for appropriate oils
Clutch and brake overhaul (every 5,000 hours)	Motor, reducer & brake assembly rebuild kit	All	2312857
Major overhaul (every 10,000 hours)	Intermediate/drum shaft & brake assembly rebuild kit	All	2311896

**Table 2 Routine Maintenance Kits**

### Motor Shaft Rebuild Kit: 2315351

Standard Winches without Self-Contained Hydraulics (Non-SCH)

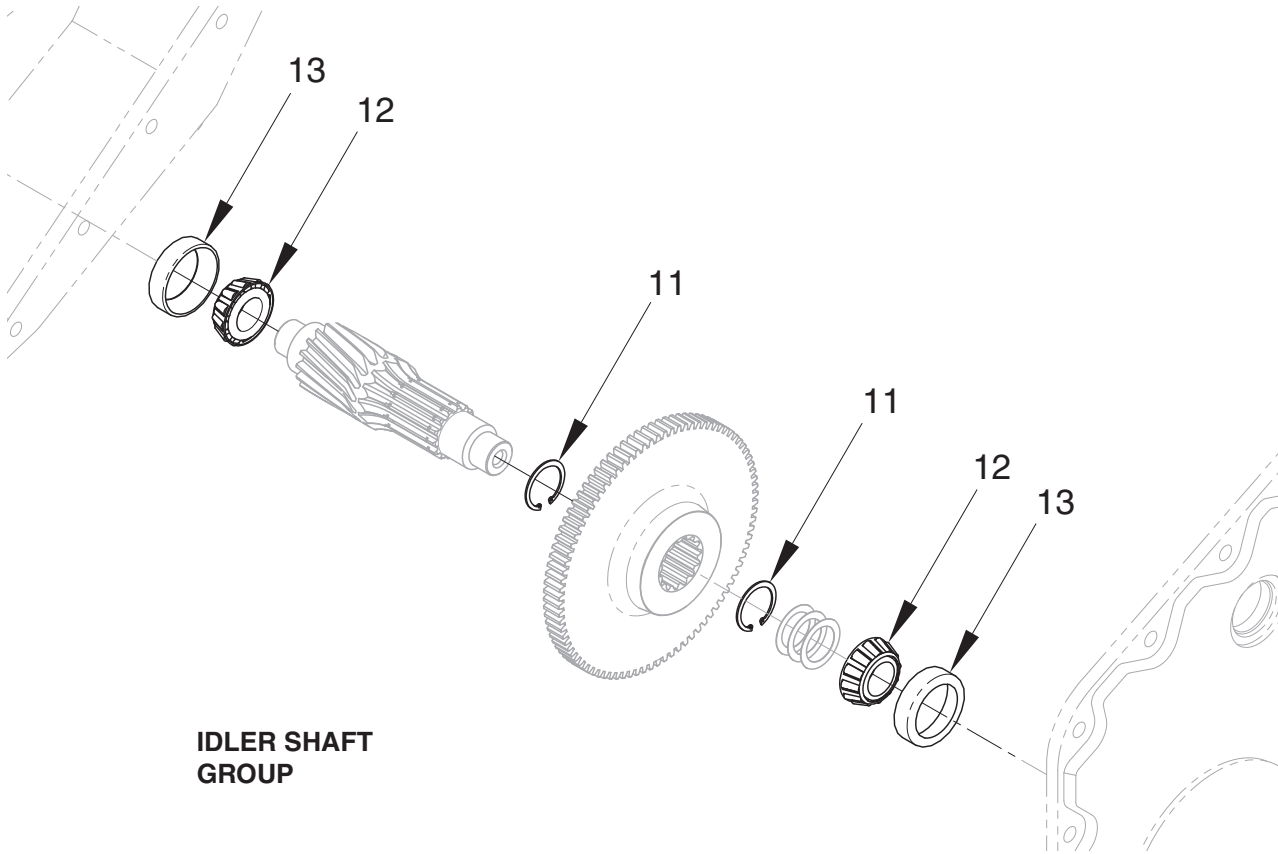


#### MOTOR & BRAKE GROUP

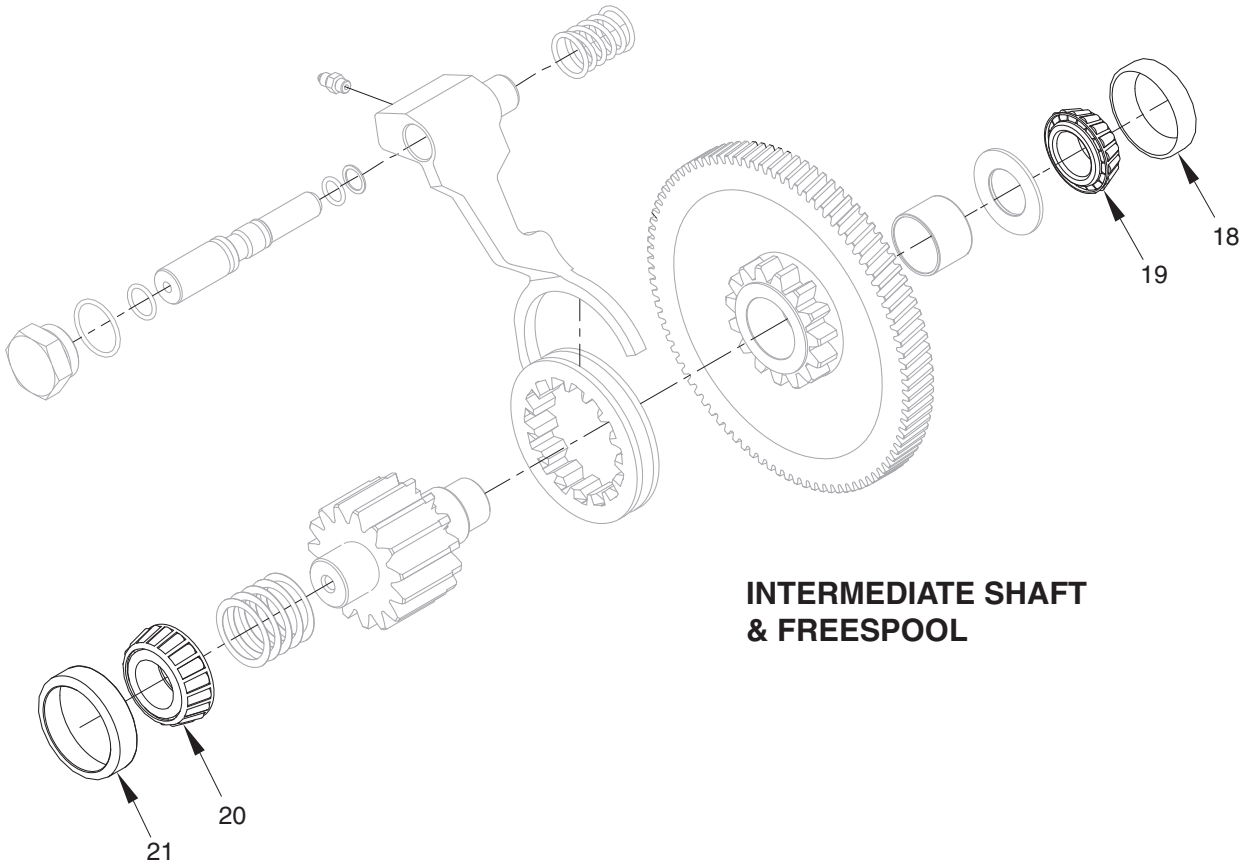
Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
	<b>2315351</b>	<b>1</b>	<b>Rebuild Kit, Motor Shaft</b>				
1	26883	1	. O-Ring	7	2305760W	1	. Seal, Shaft
2	2316507	2	. O-Ring	8	2305761W	1	. O-Ring
3	2316517	1	. O-Ring	9	2305762W	1	. O-Ring
4	2304110W	2	. O-Ring	10	2305763W	2	. O-Ring
5	15888W	1	. O-Ring				
6	17064	1	. O-Ring				

**Motor, Idler, Intermediate & Drum Shaft Rebuild Kit: 2315288**

Page 1 of 3



**IDLER SHAFT GROUP**



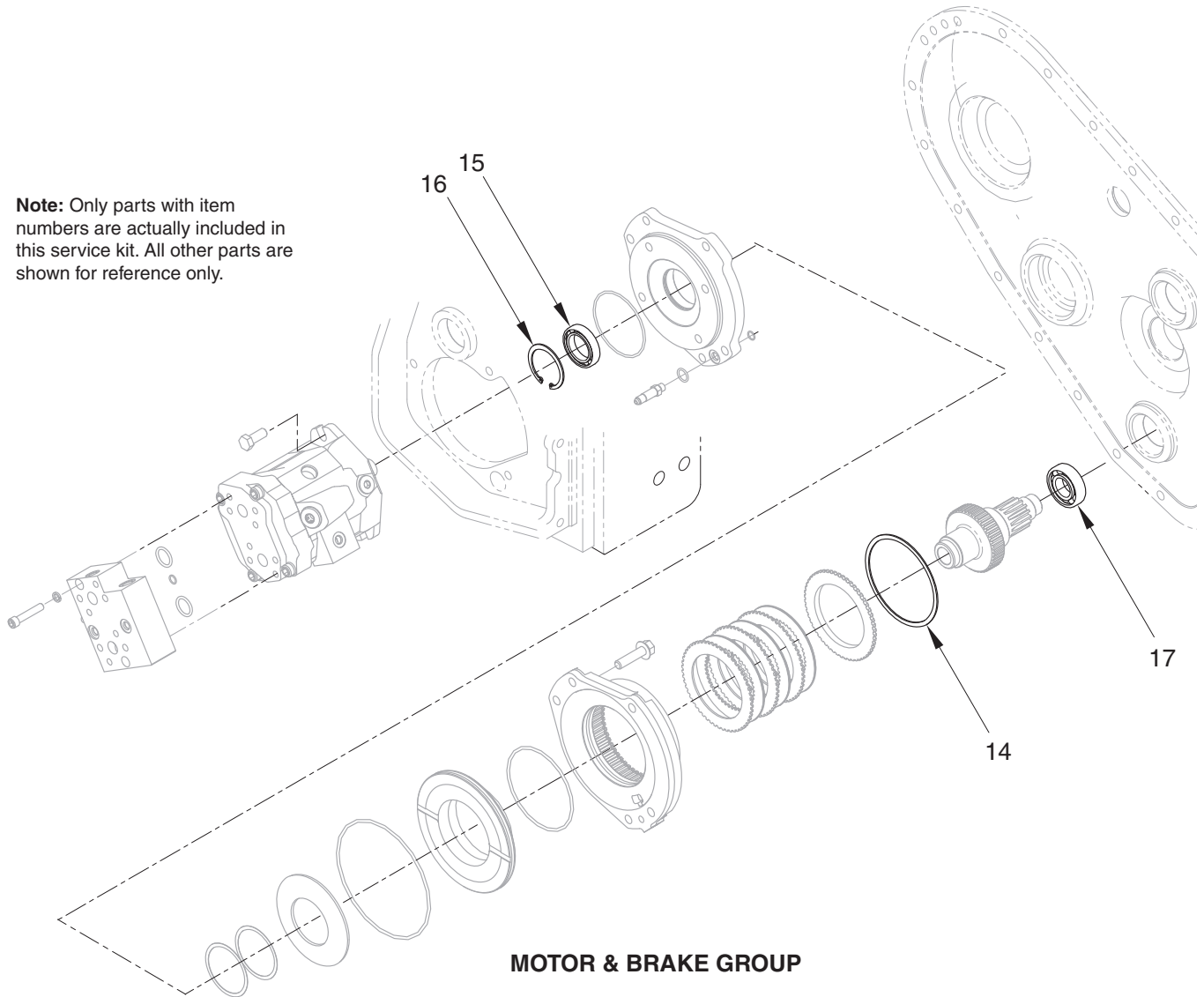
**INTERMEDIATE SHAFT & FREESPOOL**



**Motor, Idler, Intermediate & Drum Shaft Rebuild Kit: 2315288**

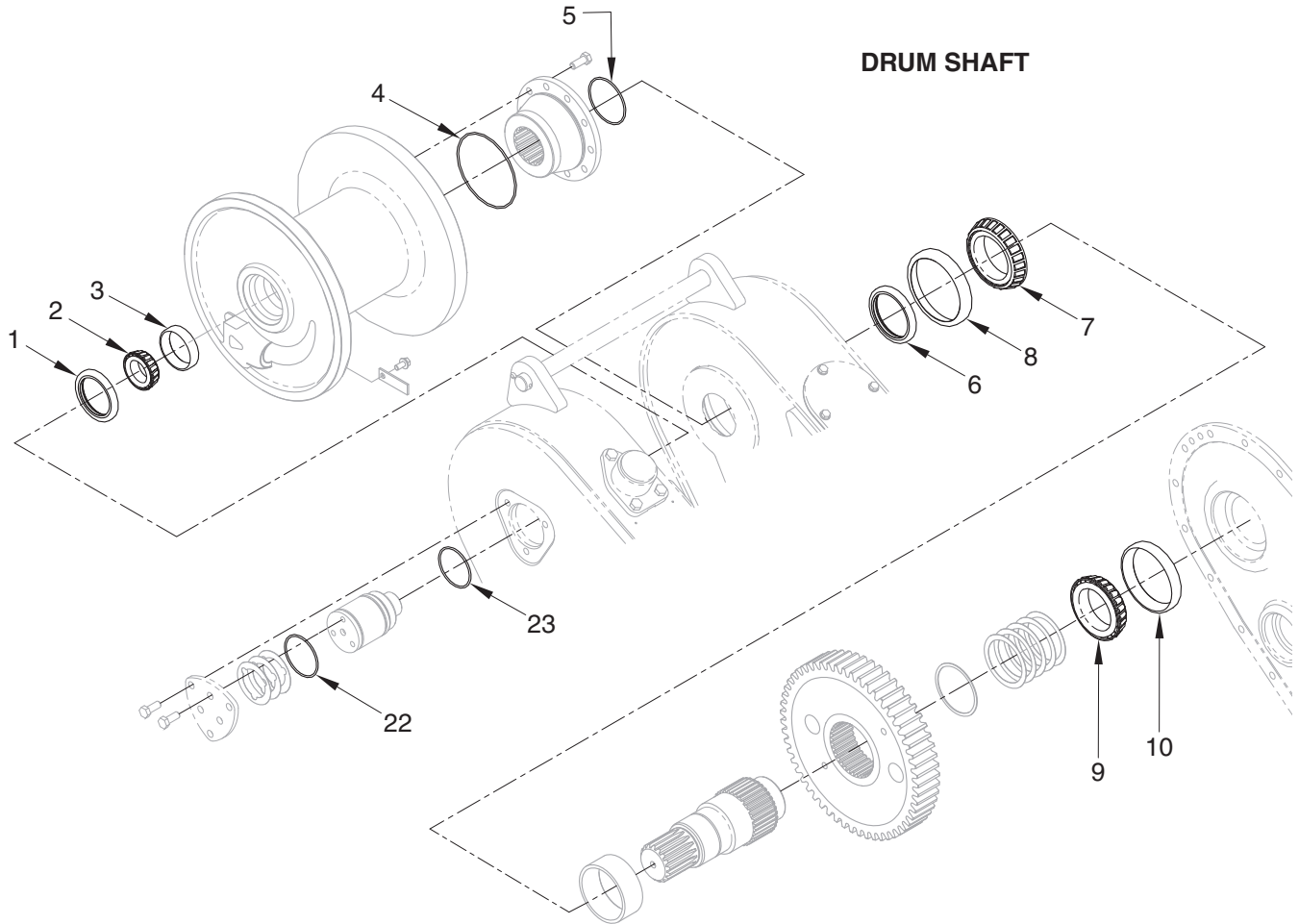
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**Note:** Only parts with item numbers are actually included in this service kit. All other parts are shown for reference only.

**MOTOR & BRAKE GROUP**

**Motor, Idler, Intermediate & Drum Shaft Rebuild Kit: 2315288**

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**Note:** Only parts with item numbers are actually included in this service kit. All other parts are shown for reference only.

Item	Part No.	Qty	Description	Item	Part No.	Qty	Description
	<b>2315288</b>	<b>1</b>	<b>Motor, Idler, Intermediate &amp; Drum Shaft Rebuild Kit</b>				
1	87355W	1	. Seal, Oil	13	2304180W	2	. Cup, Roller Bearing
2	2303853W	1	. Bearing Cone	14	334475W	1	. Ring, Snap, Int
3	2303854W	1	. Bearing Cup	15	2300831W	1	. Bearing, Ball
4	15895W	1	. O-Ring	16	12921W	1	. Snap Ring
5	46629W	1	. O-Ring	17	41206W	1	. Bearing, Ball
6	R2109170	1	. Seal	18	R1314774	1	. Bearing Cup
7	2304126W	1	. Bearing Cone	19	R1314773	1	. Bearing Cone
8	2304127W	1	. Bearing, Cup	20	225262W	1	. Bearing Cone
9	1314483W	1	. Bearing Cone	21	230351W	1	. Bearing Cup
10	30190W	1	. Bearing Cup	22	15881W	1	. O-Ring
11	12916W	2	. Snap Ring	23	203525	1	. O-Ring
12	2304179W	2	. Cone, Roller Bearing				

Gaskets & Seals		Order as Required		
Allied P/N	Description	Quantity on Winch	See Parts Manual Page	Order Quantity
2315377	Gasket, Breather Cover	1	Frames and Covers	
209744	O-Ring, Plug	2		
16984W	O-Ring, Plug	1		
2311041	Ring	4	4 to 5 Spool Valve Conversion	
252563	Seal Kit, Directional Cartridge Valve	1	Motor Valve Assembly H4AH*Y	
2307221W	Vent Cap Seal, Directional Cartridge Valve	1		
2307172W	Seal Kit, Sequence Valve	1		
2307171W	Seal Kit, Shuttle Valve	2		

### Motor Shaft Rebuild Kit, P/N: 2315351

Applies to: All

Service Interval: Every 5,000 Hours

Allied P/N	Description	Quantity in Kit	See Parts Manual Page	Order Quantity
<b>2315351</b>	<b>Rebuild Kit, Motor Shaft</b>			
26883	. O-Ring	1	Motor & Brake Group (Non-SCH)	
2316507	. O-Ring	2		
2316517	. O-Ring	1		
2304110W	. O-Ring	2		
15888W	. O-Ring	1		
17064	. O-Ring	1		
2305760W	. Seal, Shaft	1	Hydraulic 45CC 2 Speed Motor	
2305761W	. O-Ring	1		
2305762W	. O-Ring	1		
2305763W	. O-Ring	2		

**Motor, Idler, Intermediate and Drum Shaft Assembly Rebuild Kit, P/N: 2315288****Service Interval: Every 10,000 hours**

Allied P/N	Description	Quantity in Kit	See Parts Manual Page	Order Qty
<b>2315288</b>	<b>Rebuild Kit, Motor, Idler, Intermediate and Drum Shaft</b>			
12916W	. Ring, Snap	2	Idler Shaft Group	
2304179W	. Cone, Bearing	2		
2304180W	. Cup, Bearing	2		
R1314774	. Cup, Bearing	1	Intermediate Shaft & Freespool	
R1314773	. Cone, Bearing	1		
225262W	. Cone, Bearing	1		
230351W	. Cup, Bearing	1		
334475W	. Ring, Snap	1	Motor & Brake Group	
2300831W	. Bearing, Ball	1		
12921W	. Ring, Snap	1		
41206W	. Bearing, Ball	1		
87355W	. Seal, Oil	1	Drum Shaft Group	
2303853W	. Cone, Bearing	1		
2303854W	. Cup, Bearing	1		
15895W	. O-Ring	1		
46629W	. O-Ring	1		
R2109170	. Seal, Oil	1		
2304126W	. Cone, Bearing	1		
2304127W	. Cup, Bearing	1		
1314483W	. Cone, Bearing	1		
30190W	. Cup, Bearing	1		
15881W	. O-Ring	1		
203525	. O-Ring	1		

Wire Rope Assemblies		Order as Required		
Allied P/N	Description	Length	Will Fill Drum To:	Order Qty
WR4-279B	Wire Rope Assembly, 1/2"	279 (85)	2/3 Capacity (Recommended)	
WR4-422B	Wire Rope Assembly, 1/2"	422 (129)	Full Capacity	
WR5-183B	Wire Rope Assembly, 5/8"	183 (56)	2/3 Capacity (Recommended)	
WR5-277B	Wire Rope Assembly, 5/8"	277 (84)	Full Capacity	
WR6-129B	Wire Rope Assembly, 3/4"	129 (39)	2/3 Capacity (Recommended)	
WR6-195B	Wire Rope Assembly, 3/4"	195 (59)	Full Capacity	
WR6-129BLP	Wire Rope Assembly w/Loop, 3/4"	129 (39)	2/3 Capacity (Recommended)	
WR6-195BLP	Wire Rope Assembly w/Loop, 3/4"	195 (59)	Full Capacity	
YS6-129BWS	Wire Rope Assembly, 3/4"	129 (39)	2/3 Capacity (Recommended)	
YS6-195BWS	Wire Rope Assembly, 3/4"	195 (59)	Full Capacity	

LP = Loop

WS = Wedge socket

Spare Parts		Order as Required		
Allied P/N	Description	Qty on Winch	See Parts Manual Page	Order Qty
2303788W	Motor, Hydraulic	1	Motor & Brake Group	
2304873W	Plate, Friction	3		
2314620	Motor, Hydraulic (K14 Only)	1		
21420W	Plug, Breather	1	Frame/Covers	
2304161W	Pin, Drawbar	1	Fairlead/Drawbar Installation	
2303221W	Pin, Retaining	1		
59419W	Bushing	8		
134803W	Capscrew	1	Drum Shaft Group	
1314503W	Keeper, Ferrule	1		

**Tool Kits**

**Order these Tool Kits as required for installation, maintenance and service of your winch(es).**

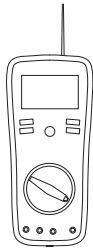
Allied P/N	Description	Order Quantity
588466	Socket Set, 3/8DR 3/8" to 7/8" STD/Deep, 22 PC	
588467	Socket Set, 1/2DR 3/8" to 1-1/4" STD/Deep, 30 PC	
588468	Socket Set, 3/4DR 7/8" to 2-3/8" STD, 29 PC	
588469	Wrench Set, 5/16" to 2-1/2", 31 PC	
588527	Hex Key Sets, .025" to 5/8", 18 PC	
588530	Socket Sets, 3/8DR 6mm-19mm 12 Point	
588529	Socket Sets, 1/2DR 10mm-26mm 12 Point	
588528	Wrench Sets, 7mm-24mm, 18 PC	
588526	Hex Key Sets, .07mm-17mm, 15 PC	

**Diagnostic Tools**

**Order as Required**

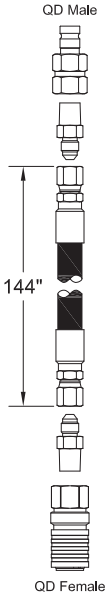
**Order these Tools as required for maintenance and service of your winch(es).**

Allied P/N	Description	Order Quantity
906601	0 to 8700 PSI Digital Pressure Gauge W/Female QD Connector	
69782	72" Hose Assembly W/QD Connectors Both Ends	
70381	144" Hose Assembly W/QD Connectors Both Ends	
69778	Multi-Meter, 12 Function	



**69778**  
Multi-Meter, 12 Function

AC/DC Voltage & Current,  
Resistance, Capacitance,  
Frequency, Type K & IR  
Temperature, Diode/Continuity,  
Duty Cycle Non-Contact  
InfraRed Thermometer  
CAT III Test Leads  
Type K Bead Wire Temp Probe

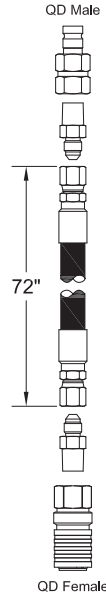


QD Male

144"

QD Female

**70381**  
Kit, Hose Assembly, W/QD Both Ends

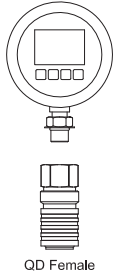


QD Male

72"

QD Female

**69782**  
Kit, Hose Assembly, W/QD Both Ends



**906601**  
Kit, Digital Pressure Gauge  
W/ Female QD Connector  
0 to 8700 PSI

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To find a dealer in your area,  
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Fax: (503) 625-7269, or  
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