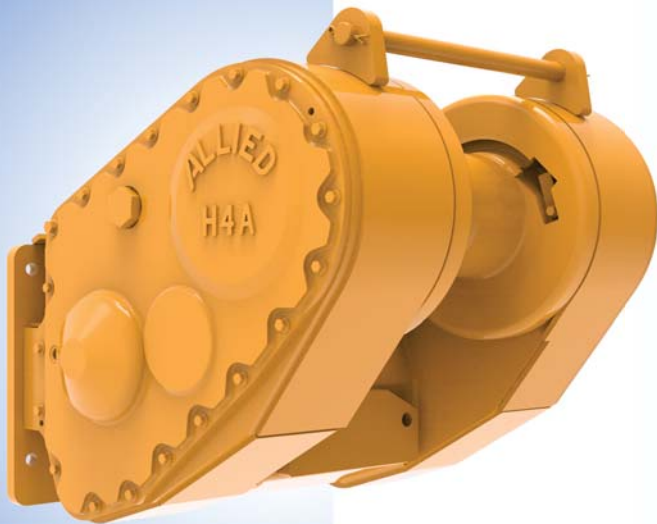




Parts Manual



Allied H4A Hydraulic Towing Winch

Please check the Allied Systems website
regularly for updates to this manual.
www.alliedsystems.com

CUSTOMER EDITION

A PRODUCT OF
Allied Systems
COMPANY

SHERWOOD, OREGON USA

P/N 599015W

Printed in USA

07/28/2017

Safety Precautions

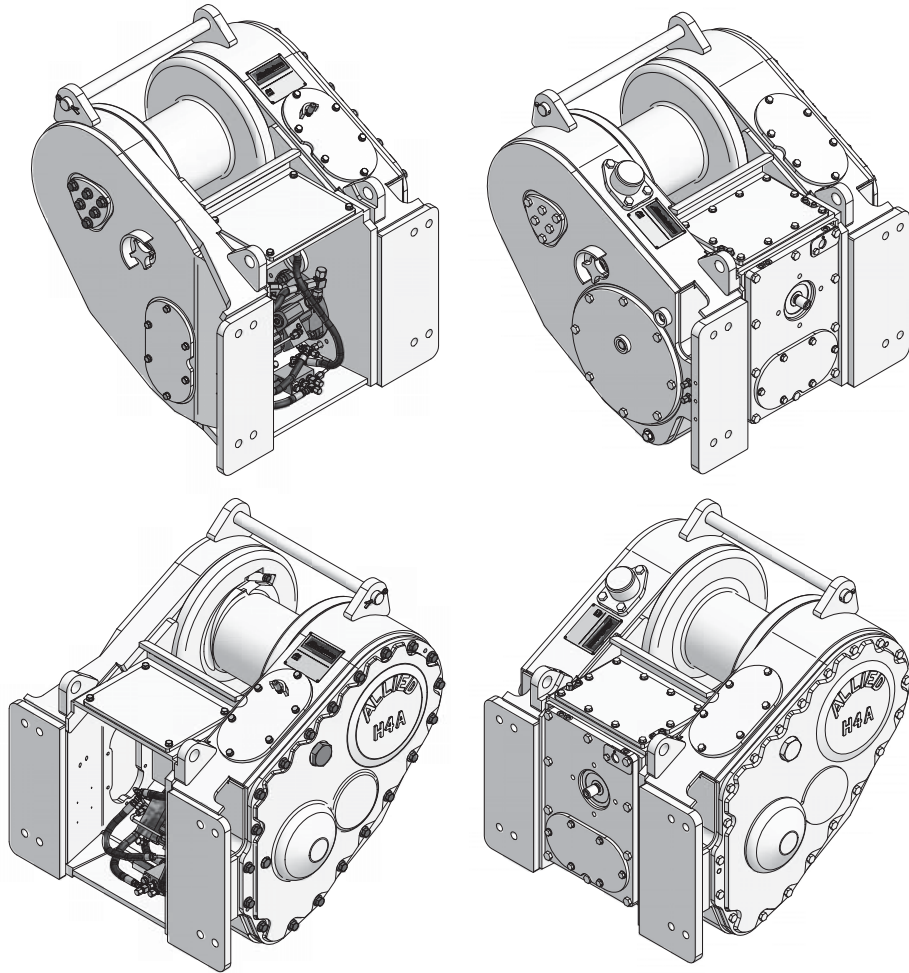
**Read, understand and observe the Safety Summary
on pages 0-3 through 0-5
to prevent injury to personnel and damage to equipment.**

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.**

Index



Ref	Item	Page
1	Frame/Covers/Mounting Parts	1-1
2	Gear Train/Shaft	2-1
3	Hydraulics/Controls	3-1
4	Optional Equipment	4-1
5	Recommended Service Kits	5-1
6	Suggested Spares Guide	6-1
7	Numerical Index	7-1

Index - Master

Description	Page No.
4 to 5 Spool Valve Conversion	3-121
Arch Assembly	4-5
Arch Installation	4-2 thru 4-4
BRAKE-OFF Group	2-2
Control Lever Assembly	3-150 thru 3-156
Control Lever Mounting	3-122 thru 3-148
Control Manifold Assembly	3-117
Controller	3-162
Diagnostic Tools	6-10
Drawbar Installation (Heavy Duty Extended Drawbar)	4-9
Drum Shaft Group	2-12
Fairlead Assembly	4-6
Fairlead/Drawbar Installation	4-7
Fairlead/Drawbar Installation (Heavy Duty Extended Drawbar)	4-8
Filter Assembly	3-104 thru 3-107
Firesleeve Kit	4-10 thru 4-11
Frame/Covers	1-2 thru 1-7
Gaskets & Seals	6-2 thru 6-3
Hose Kits	6-8 & 6-9
Idler Shaft Group	2-3
Intermediate Shaft & Freespool	2-4 thru 2-5
Manifold Assembly	3-114
Manifold Assembly, Valve	3-115 thru 3-116
Motor & Brake Group	2-6 thru 2-11
Motor and Related Hydraulics	3-18 thru 3-25
Motor Low Temperature Seal Kit	3-29
Motor Shaft Rebuild Kit, P/N 2315287	5-4
Motor Shaft Rebuild Kit, P/N 2315287	6-4
Motor Shaft Rebuild Kit, P/N 2315351	5-5
Motor Shaft Rebuild Kit, P/N 2315351	6-4
Motor, Hydraulic 45CC 2 Speed	3-26 thru 3-28
Motor, Idler, Intermediate & Drum Shaft Rebuild Kit, P/N 2315288	5-6 thru 5-8
Motor, Idler, Intermediate & Drum Shaft Rebuild Kit, P/N 2315288	6-5
Mounting Parts	1-8 thru 1-30
Nameplate & Decals	1-31 & 1-32
Operator Controls Components	6-7
Pump and Related Hydraulics	3-2 thru 3-5
Pump, Hydrostatic 45CC	3-6 thru 3-15
Pump, Hydrostatic 56CC	3-16 & 3-17
Pump, Through Drive Charge	3-118 thru 3-120
Recommended Service Kits	5-3
Recommended Service Kits	6-2
Recommended Winch Service Intervals	5-2
Spare Parts	6-6
Switch Assembly, 12V	3-158
Switch Assembly, 24V	3-157
Switch Assembly, Filter Light	3-159
Switch Panel Assembly	3-149
Tool Kits	6-10
Valve Assembly, Freespool	3-108 thru 3-109
Valve Assembly, Motor	3-110 thru 3-112
Valve Assembly, Shuttle	3-113
Winch External Hydraulics	3-52 thru 3-103
Winch Internal Hydraulics	3-30 thru 3-51
Wire Harness Installation	3-160 & 3-161
Wire Rope Assemblies	4-12
Wire Rope Assemblies	6-6

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.

NOTE: All possible safety hazards cannot be foreseen so as to be included in this manual. Therefore, you must always be alert to potential hazards that could endanger personnel and/or damage the equipment.

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

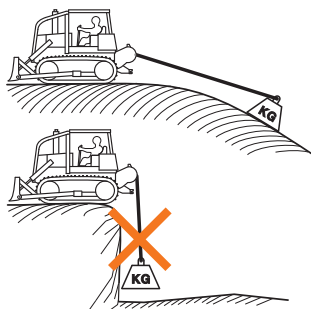


WARNING

Obey the following cautions and warnings before using your winch to avoid equipment damage, personal injury or death.

- Do not operate the winch unless your are authorized and trained to do so.
- Do not operate the winch unless the vehicle is equipped with a screen to protect the operator if the wire rope breaks.
- Read, understand, and follow the operating, inspection, and maintenance instructions in this manual.
- Do not use the control levers for hand holds when entering or leaving the vehicle.
- 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.
- 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.
- Observe jobsite rules.
- 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.
- 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.
- 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. Wire rope or tail chain failure may cause serious injury or death!



- 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).
- 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.
- 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.
- Replace any parts only with genuine Allied Winch parts.
- 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.
- 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.
- Keep yourself informed of any applicable codes, regulations and standards for the job.
- 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.
- Use only the lubricants listed in the Recommended Oil List. See page 0-11.
- Do not weld on any part of the winch. Contact Allied Systems if weld repairs are needed.
- The hydraulic system must be kept clean and free of contamination at all times.
- Be aware of the hazards of pressurized hydraulics:
 - » 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.
 - » Infection and gangrene are possible when hydraulic oil penetrates the skin. See a doctor immediately to prevent loss of limb or death.



Serial Number Codes

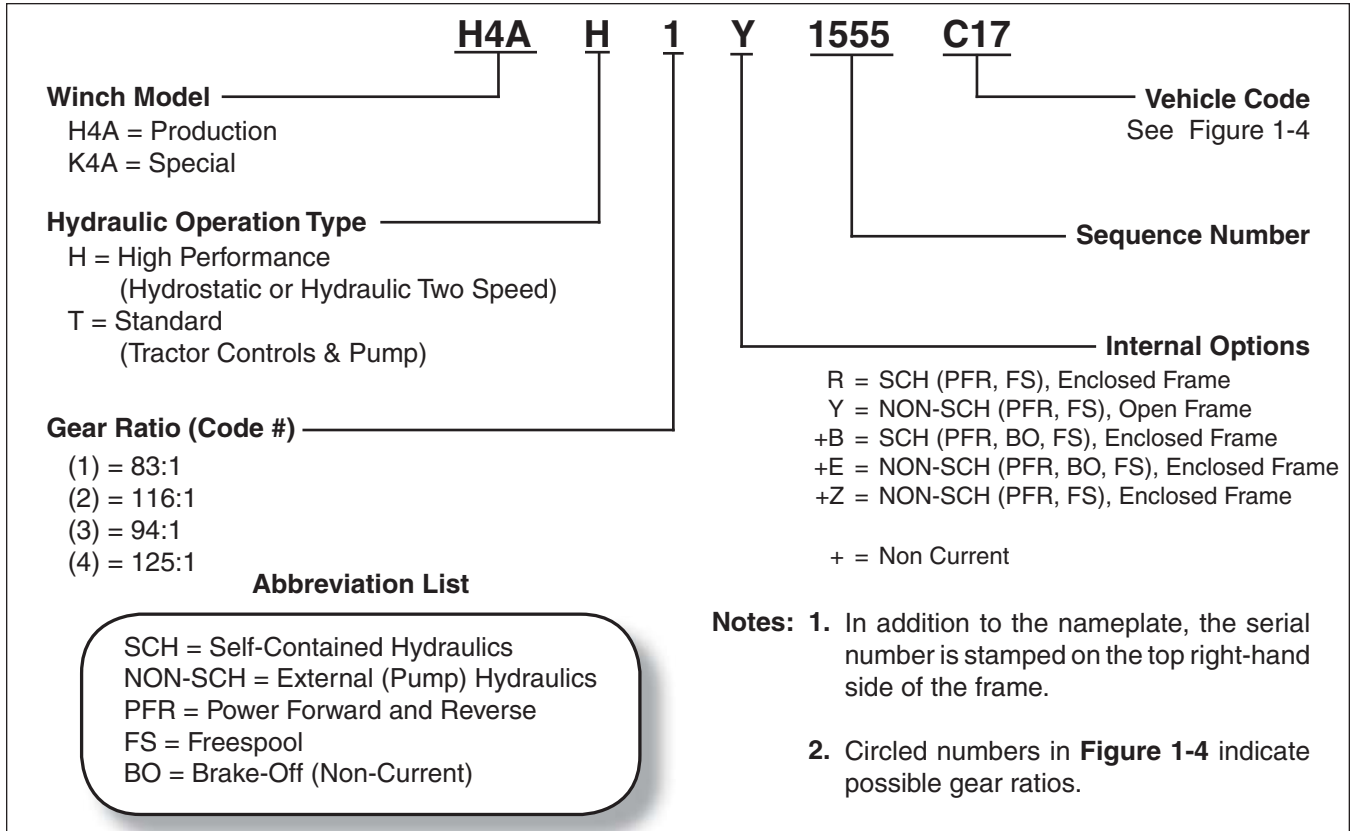


Figure 1 Serial Number Codes

Serial Number

The winch serial number is stamped into the nameplate, mounted on the winch case. It is also stamped into the winch frame.

The serial number is described in Figure 1. This serial number is important; always have the serial number of your winch ready when discussing the winch with your dealer or when ordering parts.

Nameplate

Each winch is shipped from the factory with a nameplate as shown in Figure 2. The nameplate is stamped with:

- winch model
- winch serial number
- maximum bare drum line pull
- maximum wire rope diameter

DO NOT operate the winch with larger diameter wire rope. If the nameplate is missing, DO NOT operate the winch until its capacity is known.

If the winch is equipped with an arch, the maximum cable size will be reduced. Refer to the nameplate for details.



Figure 2 Nameplate Detail

Tractor Codes

C O D E	A New Holland & Fiat	C Caterpillar	E John Deere	H Dressta	K Komatsu	R Case	U Shantui
12					KOMSTAT D31/37/39X-21 & D31/37/39X-21A ② ③		
13					KOMSTAT D31/37/39X-22 ① ② ③		SD10 ④
14					KOMSTAT D37/39X-23 D39X-24 ②		
15			450-650J ① ② ③	TD7S, TD8S ④		650/750/850K, 750/850L ① ② ③	
16		HYSTAT D3/4/5C ① ② ③	550-650K ① ② ③	TD9S ④		650L ① ② ③	
17		D3/4/5G *a ① ② ③				750/850M ① ② ③	
18		D4/5G *b ① ② ③					
19		D3/4/5K D3/4K2 T4i ① ② ③ ④					
191		D3/4/5K2 T4f *c ① ② ③ ④					
20		D5K & D5K2 T4i ① ② ③ ④					
201		D5K2 With Fireplow ① ② ③ ④					
39			700H/J ① ② ③				
391			700K ① ② ③				
*a D3/4/5G with tractor s/n prefix CFC, CKA, CFF, CLB, CFN, FDC, FDH, CLF, FDW, CLW, JMH, ZDN, BYR, CXT *b D4/5G with tractor s/n prefix HYD, TLX, WGB, DKT, RKG, RSC *c With tractor s/n prefix D3K2: FT3, JPJ, KF2, KL2, LT3 D4K2: KM2, KR2, MT3, RT3 D5K2: KW2, KY2, RRE, WT3, YT3							

Figure 3 Tractor Identification and Winch Gear Ratios

Tractor Make Model and Starting Tractor Serial Number Where Applicable

How to use the Illustrated Parts manual

G 03

Index-Numerical

Part No	Page	Ref No	Part No	Page	Ref No	Part No	Page	Ref No
130W	1007	22	1008	22	15162W	1504	12	164
	1008	31	1008	15		1505	24	169
	1009	27	1010	19	15164W	1A07	2	171
	1010	32	1011	9	15166W	1A07	2	171
	1011	28	1012	10				
	1012	31	15056W	1010	24	1A08	7	
2816W	1504	2	1011	18	15165W	1A08	8	
2818W	1504	4	15108W	1007	10	1A08	9	
2821W	1504	3	15110W	1A08	9	15166W	1A08	9
						1A08	6	
6346W	1C03	15	15134W	1011	15	15178W	1D04	33
7043W	1E04	5	15135W	1007	5	15212W	1C03	33
9555W	1B08	31	15135W	1008	10	1007	1008	2
	1B08	22		1010	5	1008	1008	2
				1011	12	1010	1010	1
1808	15		15139W	1D12	7	1011	1011	1
1809	24		15137W	1A08	4	1012	1012	1
1805	20		1A11	11	11	1013	1013	1
1807	21		15154W	1A07	11	15225W	1D10	1

A 02

Index-Master

Description	Page No
Arch-Four Roller	1E04
Brake	1C01
Clutch	1B14
Covers	1A05
	1A06
	1B02
	1C06
	1A05
	1B14
	1007-1012
	1E06

1 D 12

Gear-Handling

Caterpillar D4H D5H and D6H with Esco Grapple S/N HY-0450

Key

A - D4H And D5H
B - D6H With Esco Grapple

Item No	Part No	Description	Qty	Ref No
1	232822W	Cover	1	24
2	381193W	Bracket	2	24
3	18425W	Lockwasher	2	24
4	13044W	Nut	2	24
5	198128W	Pin	2	24
6	192302W	Ring-Snap	2	24
7	15135W	Washer-Flat	4	24
8	198130W	Spacer	4	24
9	15155W	Lockwasher	4	24
10	15055W	Nut	2	24
11	198129W	U-Bolt	2	24
12	15155W	Lockwasher	1	24
13	278037W	Lever	2	24
14	198144W	Bushing	1	24
15	278043W	Bushing	1	24
16	243189W	Knob	1	24
17	278036W	Lever	2	24
18	198144W	Bushing	1	24
19	278043W	Bushing	1	24
20	15030W	Nut-Jam	1	24
21	186486W	Knob	2	24
22	383879W	Handlever	1	24
23	271731W	Decal	1	24

A 01

Index-Illustrated

Ref	Item	Page
1	Frame-Covers/Decals/Parts-Mounting	1B02
2	Train-Gear/Shaft	1C02
3	Hydraulic	1D02
4	Optional	1F02
5	Index-Numerical	G02

Awf001.PCX

How to use the Illustrated Parts manual

When both the part number and the next higher assembly are not known:

1. Determine the function and application of the part required. Turn to the index page immediately behind the front cover, and select the most appropriate area.
2. Use the index at the front of each section 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:

3. Determine the assembly the required part is used on. Turn to the master index immediately following the index, Page 0-2.
4. 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:

5. Use the numerical index (Section 5) to find the part number. Turn to the page(s) 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 0-3 for serial number information.

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 USA

Phone: 503-625-2560
Fax: 503-625-5132

E-Mail: parts@alliedsystems.com

Also see our website, www.alliedsystems.com, where the most current copy of this manual is always available.

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.

Oil Capacity

The oil capacities for the H4A winch are as follows:

H4A (SCH model, S/N Code "R")	20 Gal. (75L)
H4A (External Pump, Closed Frame, S/N Code "B", "E", "R", "Z")	20 Gal. (75L)
H4A (Non-SCH, Open Frame Model, S/N Code "Y")	4 Gal. (15L)

Recommended Oils

Winch Type	Winch Type	
H4A (with internal option R) PTO Driven (SCH), Hydrostatic	H4A (with Internal option code Y) Non SCH (tractor sump), Hydraulic/Hydrostatic	
Winch housing is oil reservoir for pump.	Motor circuit (Tractor Hydraulic tank is reservoir)	Winch gear cavity (not used as reservoir for pump/motor)
Recommended Oils	Recommended Oils	
Use Recommended Oils in Figure 5	Use Recommended Tractor Oil Only	Use Recommended Oils in Figure 5

Figure 4 - Recommended Oils - 1

Recommended Oils* - General Conditions			
Manufacturer	Oil Type	Ambient Temperature Range	
		°F	°C
ExxonMobil	Mobil Fluid 424 (Factory fill)	-13 to 104	-25 to 40
John Deere	Hy-Gard™	-13 to 122	-25 to 50
Chevron	1000 THF	-13 to 104	-25 to 40
Caterpillar	Multipurpose Tractor Oil (MTO)	-13 to 104	-25 to 40
Case	Hy-Tran Ultra	-20 to 122	-29 to 50
Recommended Oils* - Low Temperature Conditions			
Manufacturer	Oil Type	Ambient Temperature Range	
		°F	°C
ExxonMobil	Mobil Fluid LT	-40 to 86	-40 to 30
John Deere	Low Viscosity Hy-Gard	-40 to 86	-40 to 30
Chevron	THF W	-40 to 86	-40 to 30

* Note: Use of a non-recommended oil may void warranty.

** For winches using tractor-supplied hydraulics for winch operation, recommended oil is used only in the winch gear case.

Figure 5 - Recommended Oils - 2



Frame/Covers/Mounting Parts/Nameplate & Decals

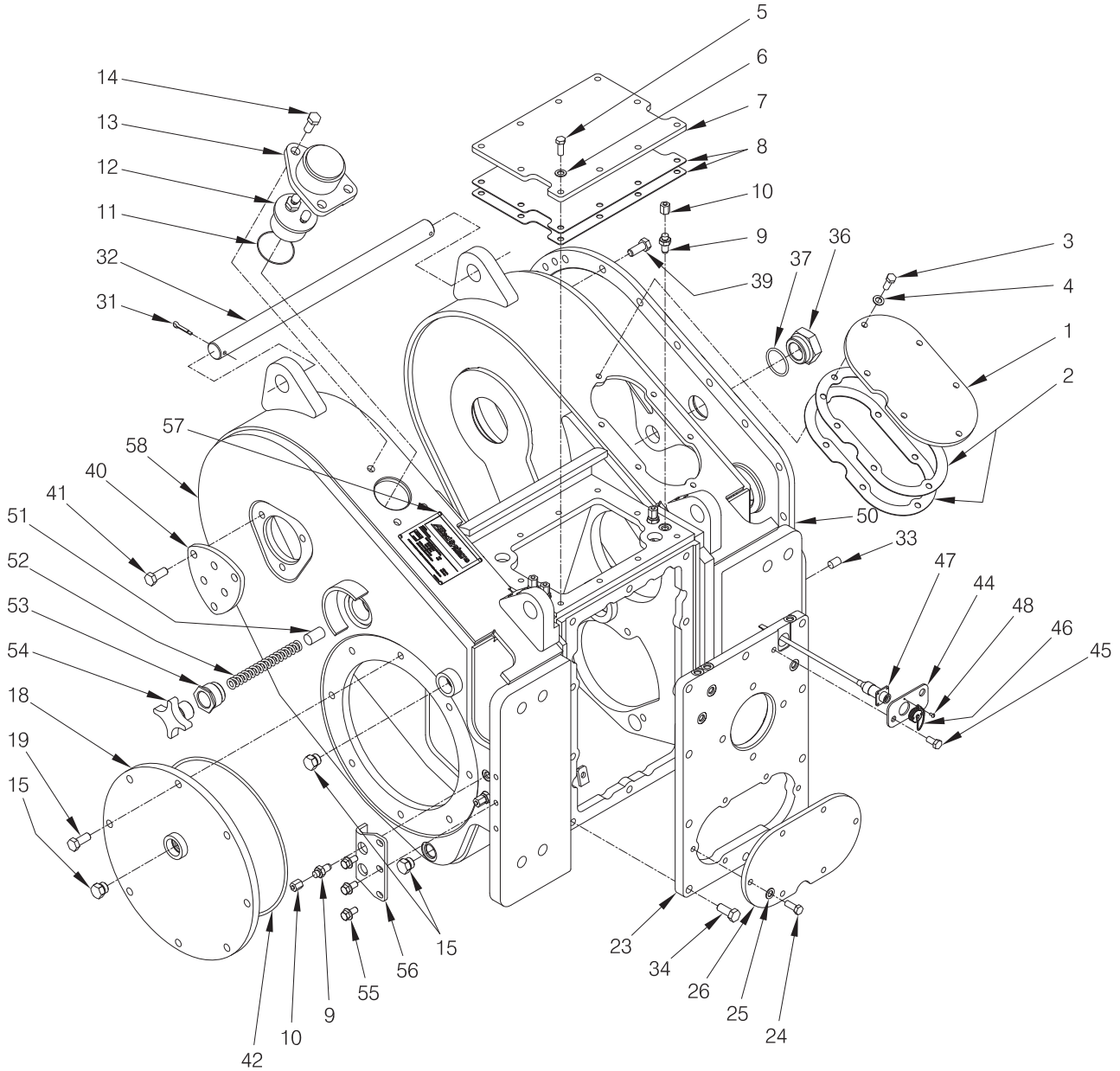
Frame/Covers	1-2 thru 1-7
Mounting Parts	1-8 thru 1-30
Nameplate & Decals	1-31 & 1-32

Frame/Covers

John Deere 450-650J (H4AH_R_E15), 550-650K (H4AH_R_E16)

John Deere 700H/J (H4AH_R_E39), 700K (H4AH_R_E391)

Case 650/750/850K, 750/850L (H4AH_R_R15), 650L (H4AH_R_R16), 750/850M (H4AH_R_R17)



Frame/Covers

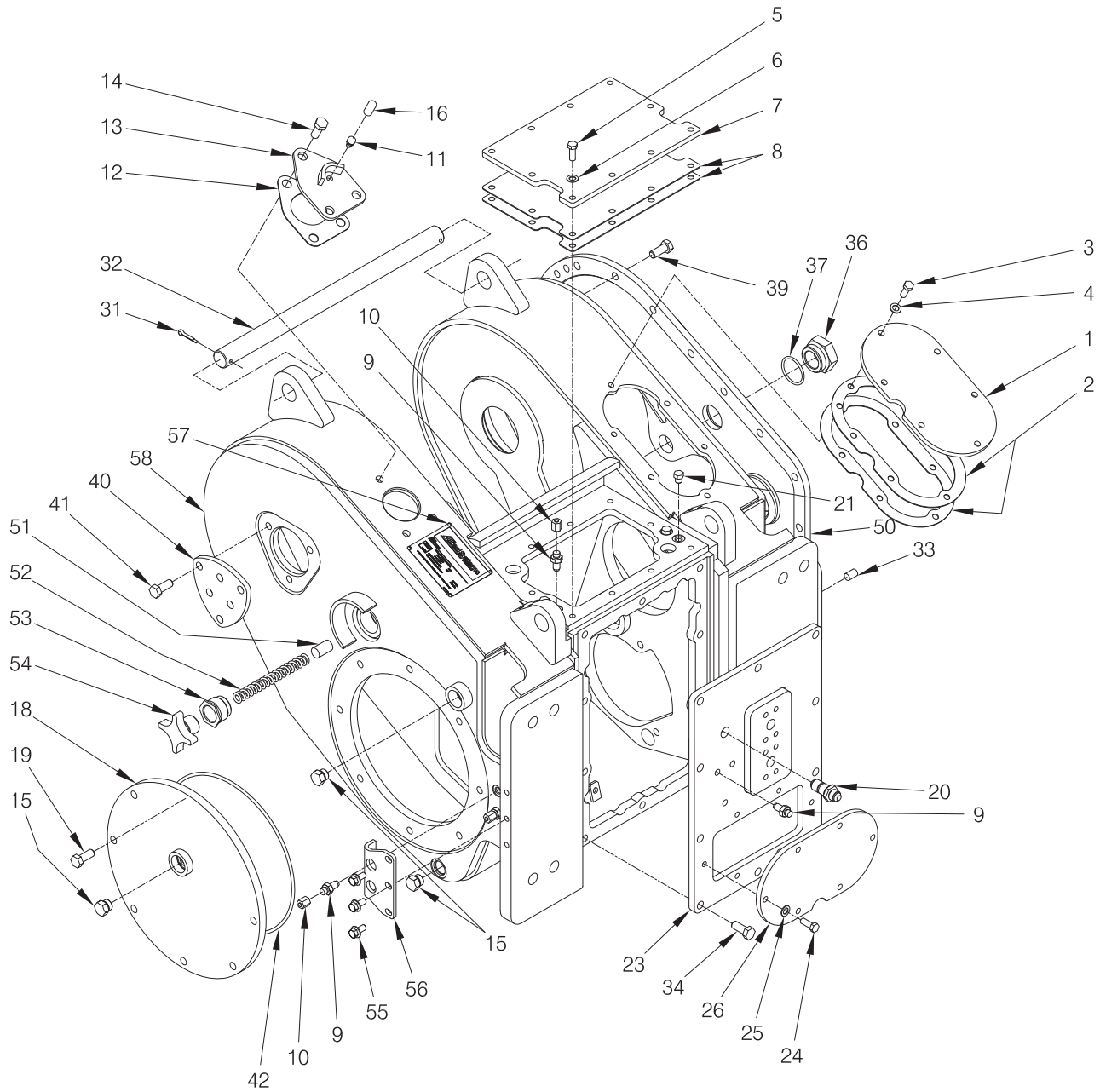
John Deere 450-650J (H4AH_R_E15), 550-650K (H4AH_R_E16)

John Deere 700H/J (H4AH_R_E39), 700K (H4AH_R_E391)

Case 650/750/850K, 750/850L (H4AH_R__R15), 650L (H4AH_R__R16), 750/850M (H4AH_R__R17)

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2304099W	Cover	1	36	2304174W	Plug	1
2	*d 2315377	Gasket	2	37	*d 16984W	O-Ring	1
3	179443W	Capscrew	6	39	2303848W	Capscrew	20
4	15156W	Washer	6	40	2304070W	Cover, Drum Shaft	1
5	179443W	Capscrew	10	41	2303848W	Capscrew	6
6	15156W	Washer	10	42	*d 232873	O-Ring	1
7	2304100W	Cover, Top	1	44	2305124W	Retainer, Filter Connector	1
8	*d 2314794	Gasket	2	45	162572W	Capscrew	1
9	16445W	Fitting	6	46	245959W	Cap, Dust	1
10	16923W	Fitting	6	47	*a 2305278W	Harness, Filter Wiring	1
11	*d 39365W	O-Ring	1	48	16602W	Screw	1
12	2305104W	Assembly, Breather	1	50	*a 2304092W	Cover, LH	1
13	2305103W	Cover, Breather	1	51	2300277W	Pad, Freespool Drag	1
14	2303848W	Capscrew	3	52	2304192W	Spring	1
15	*b 14603W	Fitting	3	53	2300174W	Insert	1
15	*c 14595W	Fitting	3	54	1314547W	Knob, Freespool Drag	1
18	2304098W	Cover, RH	1	55	134803W	Capscrew	3
19	2303848W	Capscrew	8	56	2305734W	Guard	1
23	*a 2304019W	Plate, Pump Mounting	1	57	16602W	Screw	4
24	179443W	Capscrew	6	58	2304281W	Frame	1
25	15156W	Washer	6				
26	*a 2304099W	Cover	1		*a Use 313022W Adhesive		
31	15256W	Pin, Cotter	2		*b Last used on S/N H4A-2545		
32	2305020W	Bar, Tie	1		*c First used on S/N H4A-2546		
33	176208W	Pin, Dowel	2		*d Included in Gasket Kit 2306544W		
34	2303848W	Capscrew	10				

Frame/Covers
Caterpillar D3/4/5G, D4/5G
(H4AH_E & H4AH_Z)

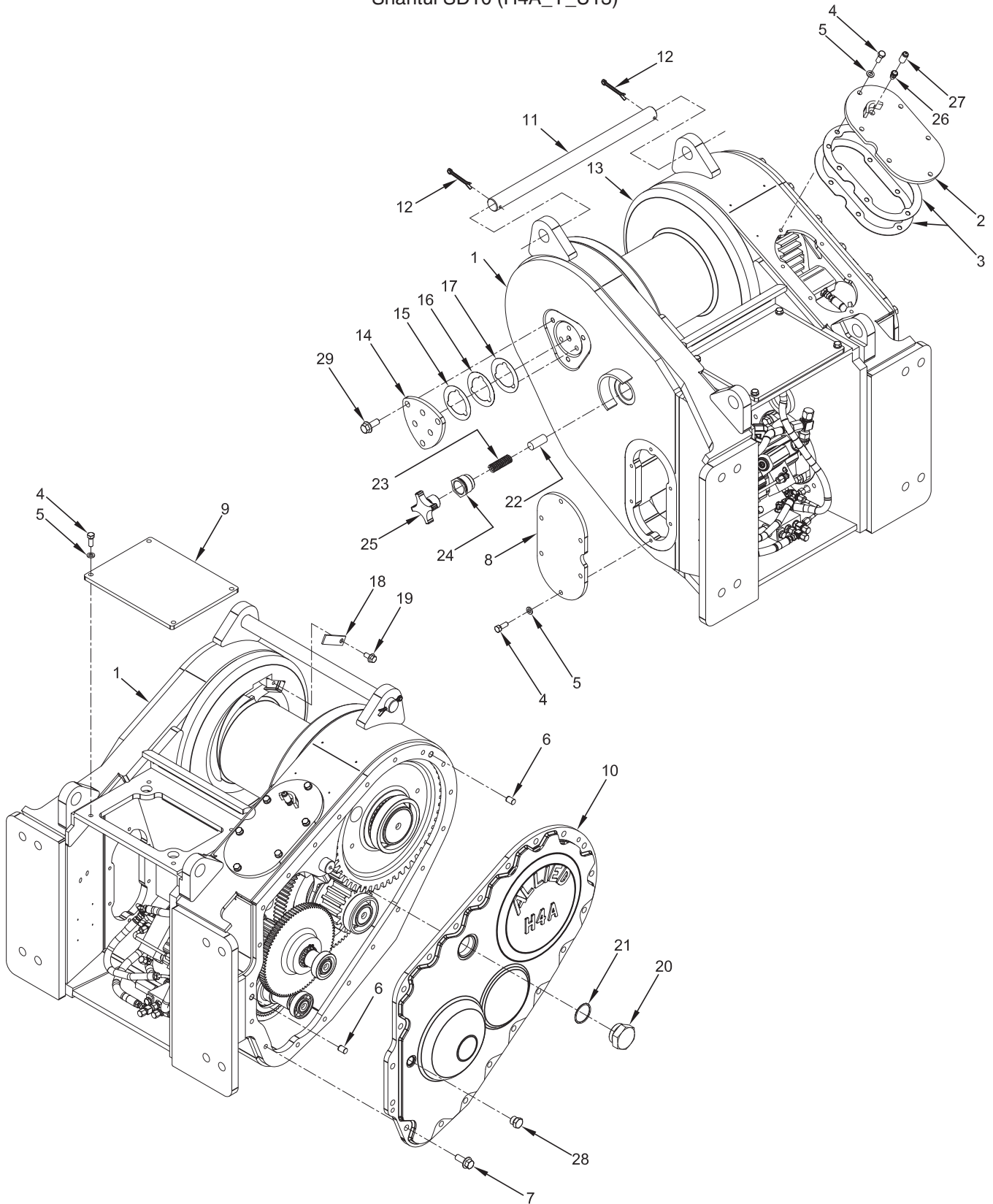


Frame/Covers
Caterpillar D3/4/5G, D4/5G
(H4AH_E & H4AH_Z)

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2304099W	Cover	1	32	2305020W	Bar, Tie	1
2	*d 2315377	Gasket	2	33	176208W	Pin, Dowel	2
3	179443W	Capscrew	6	34	2303848W	Capscrew	10
4	15156W	Washer	6	35	16925W	Fitting	1
5	179443W	Capscrew	10	36	2304174W	Plug	1
6	15156W	Washer	10	37	*d 16984W	O-Ring	1
7	2304100W	Cover, Top	1	39	2303848W	Capscrew	20
8	*d 2314794	Gasket	2	40	2304070W	Cover, Drum Shaft	1
9	*e 16445W	Fitting	6	41	2303848W	Capscrew	6
10	16923W	Fitting	6	42	*d 232873	O-Ring	1
11	21420W	Plug, Breather	1	50	*a 2304092W	Cover, LH	1
12	*d 2305600W	Gasket	1	51	2300277W	Pad, Freespool Drag	1
13	2305598W	Cover, Breather	1	52	2304192W	Spring	1
14	2303848W	Capscrew	3	53	2300174W	Insert	1
15	*b 14603W	Fitting	3	54	1314547W	Knob, Freespool Drag	1
15	*c 14595W	Fitting	3	55	134803W	Capscrew	3
16	2300962W	Cap, Breather	1	56	2305734W	Cover	1
18	2304098W	Cover, RH	1	57	16602W	Screw	4
19	2303848W	Capscrew	8	58	2304281W	Frame	1
20	*e 16448W	Fitting	1				
21	14591W	Fitting	3		*a Use 313022W Adhesive		
23	*a, *e 2304218W	Plate, Front Cover	1		*b Last used on S/N H4A-2545		
24	179443W	Capscrew	6		*c First used on S/N H4A-2546		
25	15156W	Washer	6		*d Included in Gasket Kit 2306544W		
26	*a 2304099W	Cover	1		*e Used on S/N H4A-1000 thru H4A-1015 Only		
31	15256W	Pin, Cotter	2				

Frame/Covers

Caterpillar D3/4/5G (H4A_Y_C17), D4/5G (H4A_Y_C18), D3/4K (H4A_Y_C19),
 Caterpillar D3/4/5K2 T4f (H4A_Y_C191), D5K/K2 (H4A_Y_C20), D5K2 with fireplow (H4A_Y_C201)
 Dressta TD7/8S (H4A_Y_H15), TD9S (H4A_Y_H16)
 Komatsu D31/37/39X-22 (H4A_Y_K13), D37/39X-23, D39X-24 (H4A_Y_K14)
 Shantui SD10 (H4A_Y_U13)



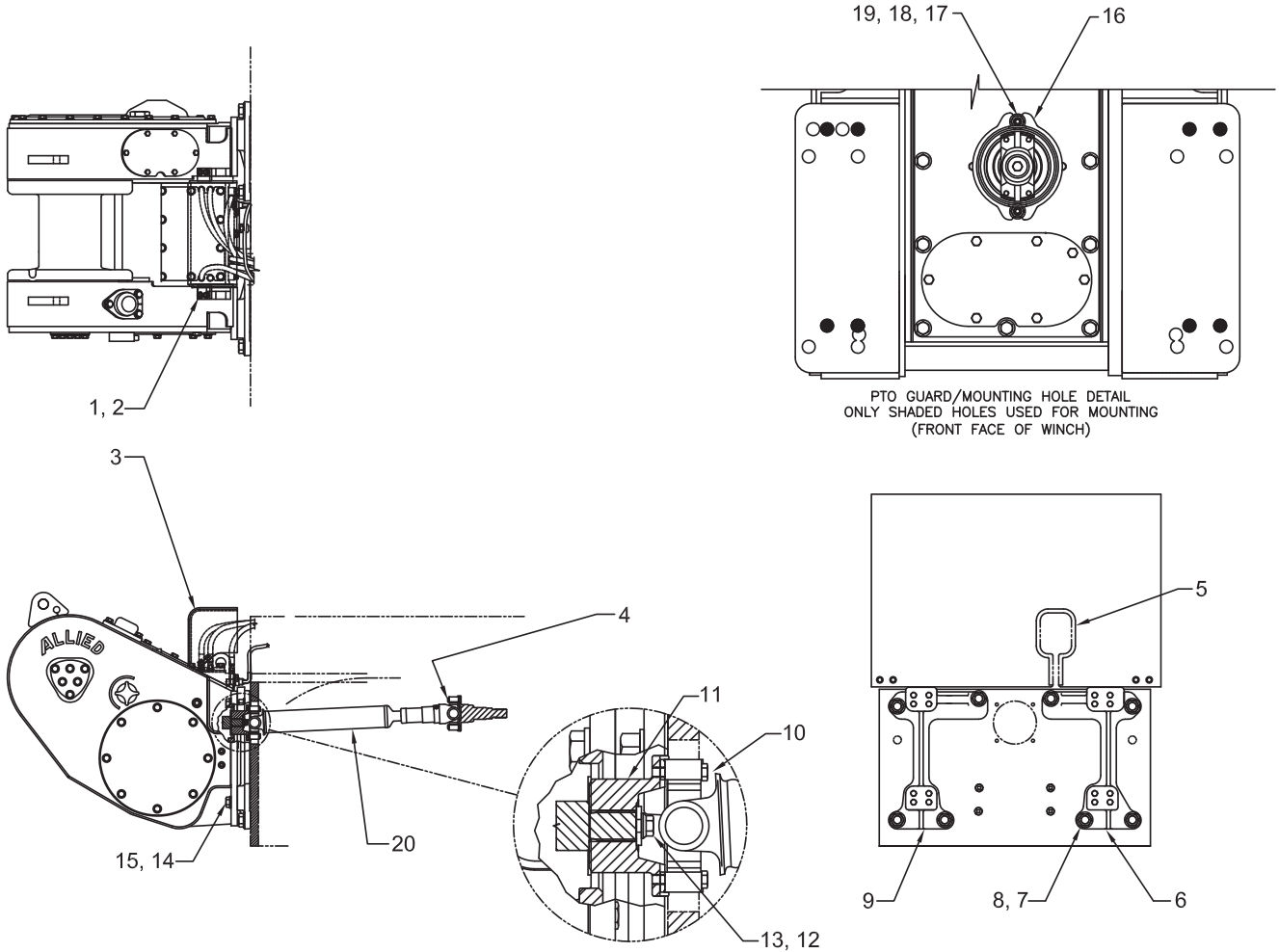
Frame/Covers

Caterpillar D3/4/5G (H4A_Y_C17), D4/5G (H4A_Y_C18), D3/4K (H4A_Y_C19),
 Caterpillar D3/4/5K2 T4f (H4A_Y_C191), D5K/K2 (H4A_Y_C20), D5K2 with fireplow (H4A_Y_C201)
 Dressta TD7/8S (H4A_Y_H15), TD9S (H4A_Y_H16)
 Komatsu D31/37/39X-22 (H4A_Y_K13), D37/39X-23, D39X-24 (H4A_Y_K14)
 Shantui SD10 (H4A_Y_U13)

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

Mounting Parts

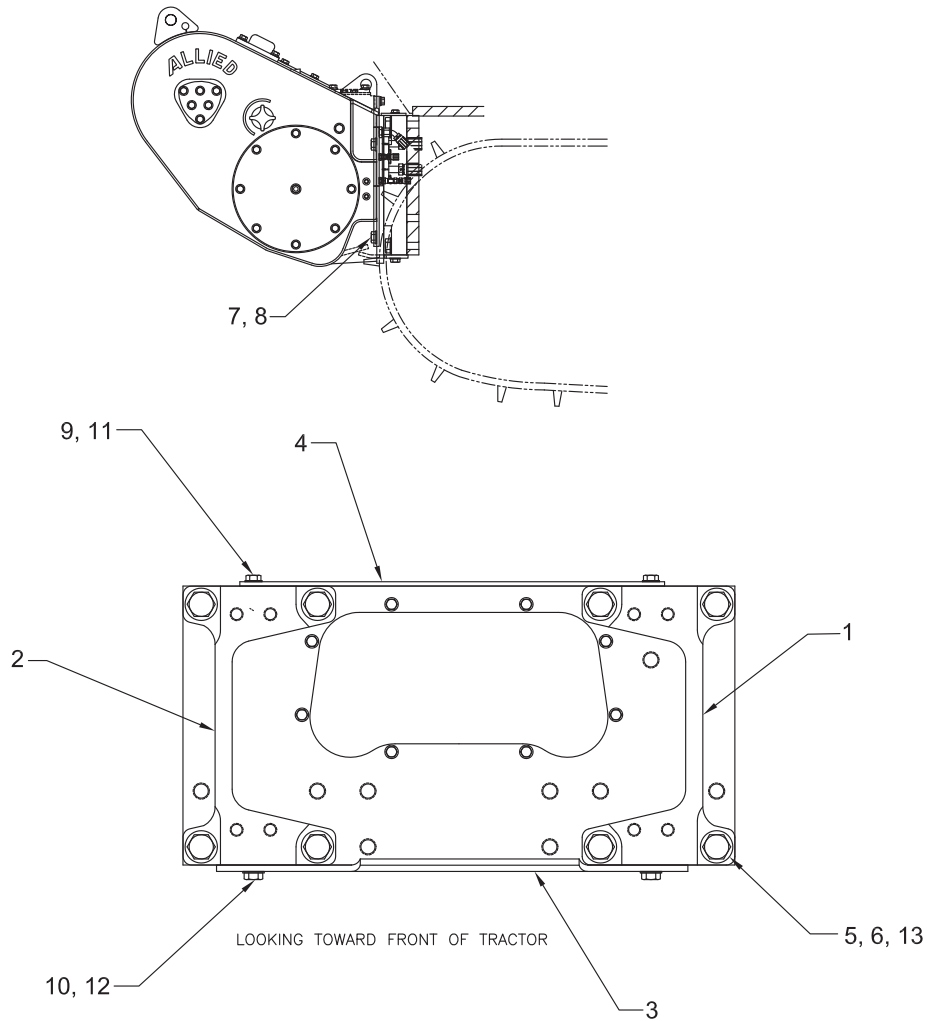
Caterpillar D3/4/5C (H4AH_R_C16)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	16828W	Capscrew	4	12	2304119W	Washer	1
2	15134W	Washer	4	13	*a 174413W	Capscrew	1
3	2304948W	Cover	1	14	221777W	Washer	8
4	293617W	Capscrew	4	15	*a 168054W	Capscrew	8
5	225871W	Trim	3'	16	2304116W	Guard, PTO	1
6	2303006W	Mounting Pad, RH	1	17	*a 16210W	Screw	2
7	221780W	Washer	8	18	15135W	Washer	2
8	*a 221686W	Capscrew	8	19	221711W	Nut	2
9	2303007W	Mounting Pad, LH	1	20	2304203W	Driveshaft	1
10	221466W	Capscrew	4		2300041W	. Assembly, Cross & Bearing	1
11	2304120W	Yoke	1				
	2304129W	. Yoke	1				
				*a	Use 318702W Thread Lock		

Mounting Parts

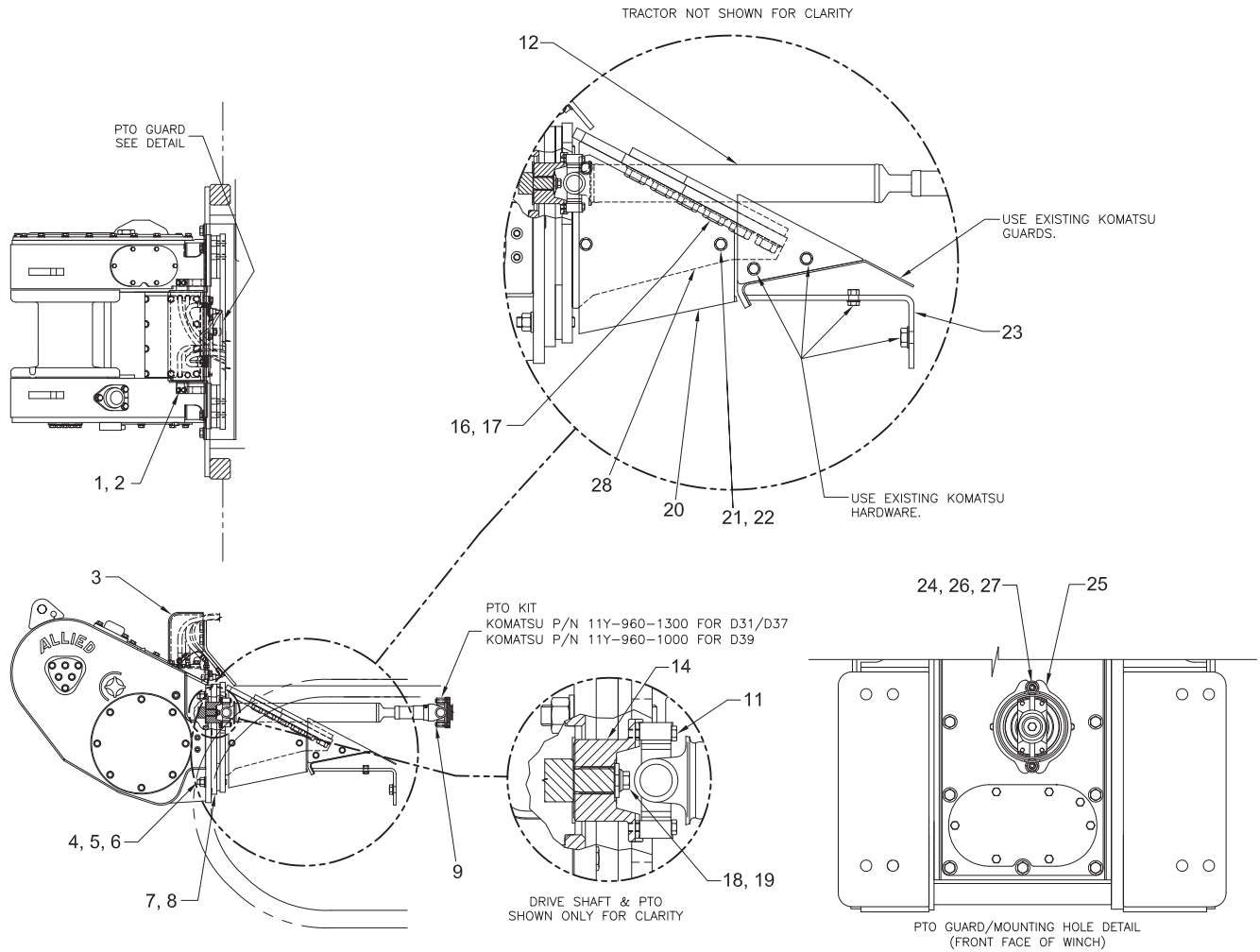
Caterpillar D3/4/5G (H4AH_R_C17)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2304208W	Mounting Bracket, RH	1	8	221777W	Washer	8
2	2304209W	Mounting Bracket, LH	1	9	221560W	Capscrew	2
3	2306422W	Guard, Bottom	1	10	221616W	Capscrew	2
4	2306575W	Guard, Top	1	11	221771W	Washer	2
5	*a 293729W	Capscrew	8	12	221775W	Washer	2
6	296434W	Washer	8				
7	*a 221657W	Capscrew	8		*a	Use 318702W Thread Lock	

Mounting Parts

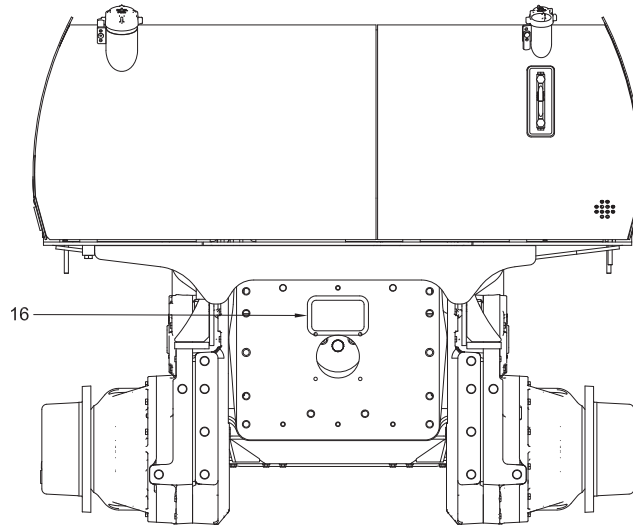
Komatsu D31/37/39 E-21 and E21-A (H4AH_R_K12)



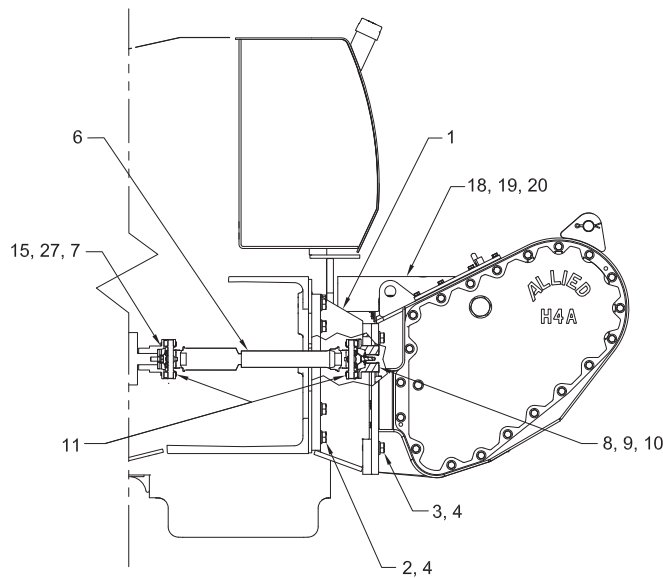
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	16828W	Capscrew	4	17	296434W	Washer	12
2	15134W	Washer	4	18	*a 174413W	Capscrew	1
3	2304948W	Cover	1	19	2304119W	Washer	1
4	221777W	Washer	8	20	2304937W	Guard, Skid Plate	1
5	221716W	Nut	8	21	293646W	Capscrew	6
6	*a 2304261W	Stud	8	22	296422W	Washer	6
7	2304263W	Spacer, LH	1	23	2304939W	Guard, Piping	1
8	2304264W	Spacer, RH	1	24	*a 16210W	Screw	2
9	*a 293617W	Capscrew	4	25	2304116W	Guard, PTO	1
11	221466W	Capscrew	4	26	15135W	Washer	2
12	2304260W	Driveshaft	1	27	221711W	Nut	2
	2300041W	. Assembly, Cross & Bearing	1	28	2304814W	Bracket, Mounting	1
14	2304120W	Yoke	1				
16	*a 1308451W	Capscrew	12		*a	Use 318702W Thread Lock	

Mounting Parts

Case 650/750/850K, 750/850L (H4AH_R_R15)



TRACTOR REAR FACE PREPARATION



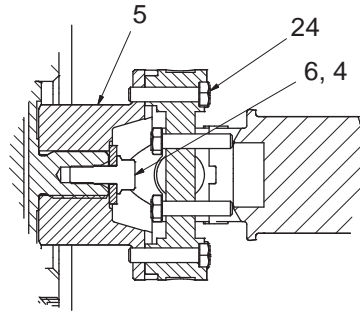
MOUNTING BRACKET, DRIVE SHAFT,
WINCH, & GUARD INSTALLATION
(LEFT-HAND SIDE VIEW)

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2311322	Bracket, Mounting	1	11	*a 221466W	Capscrew	8
2	*a 293710W	Capscrew	10	15	296422W	Washer	1
3	*a Y17C-1232	Capscrew	8	16	24257	Trim, Edge	1.5 FT
4	221777W	Washer	18	18	2311239	Guard	1
6	2313947	Driveshaft	1	19	252928W	Capscrew	3
	2300041W	. Assembly, Cross & Bearing	1	20	15134W	Washer	3
7	2312720	Yoke	1	27	*a 293645W	Capscrew	1
8	2304120W	Yoke	1				
9	*a 174413W	Screw	1		*a	Use 318702W Thread Lock	
10	2304119W	Washer	1				

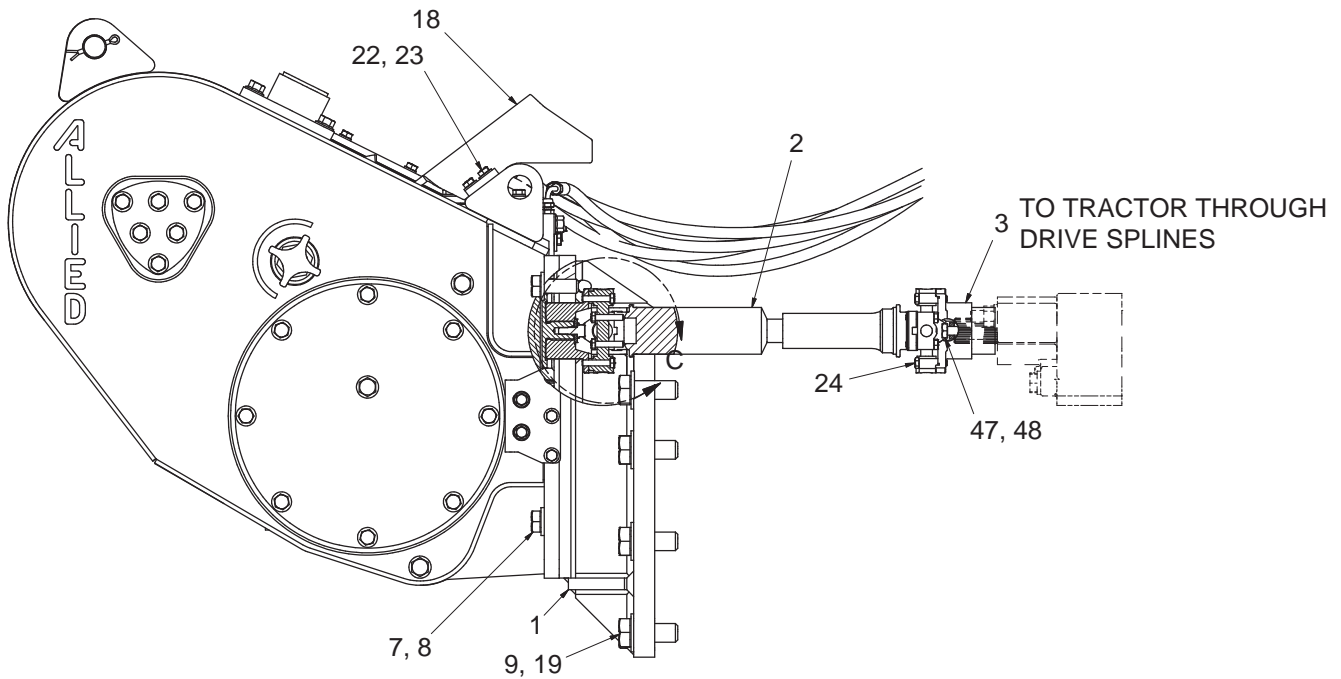
Mounting Parts

Case 650L (H4AH_R_R16)

Page 1 of 2



DETAIL C
WINCH YOKE & DRIVESHAFT



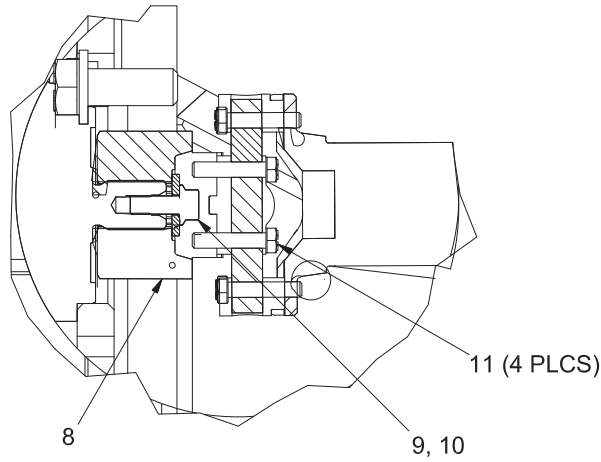
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2315652	Bracket, Mounting	1	9	221780W	Washer	12
2	2313863	Driveshaft	1	18	2312877	Guard, Hose	1
	2300041W	. Assembly, Cross & Bearing	1	19	*a 221690W	Capscrew	12
3	2312720	Yoke	1	22	221767W	Washer	4
4	2304119W	Washer	1	23	16828W	Capscrew	4
5	2304120W	Yoke	1	24	*a 221466W	Capscrew	8
6	*a 174413W	Screw	1	47	*a 293645W	Capscrew	1
7	Y27E-12	Washer	8	48	296422W	Washer	1
8	*a Y17C-1232	Capscrew	8				
				*a	Use 318702W Thread Lock		

Intentionally Blank

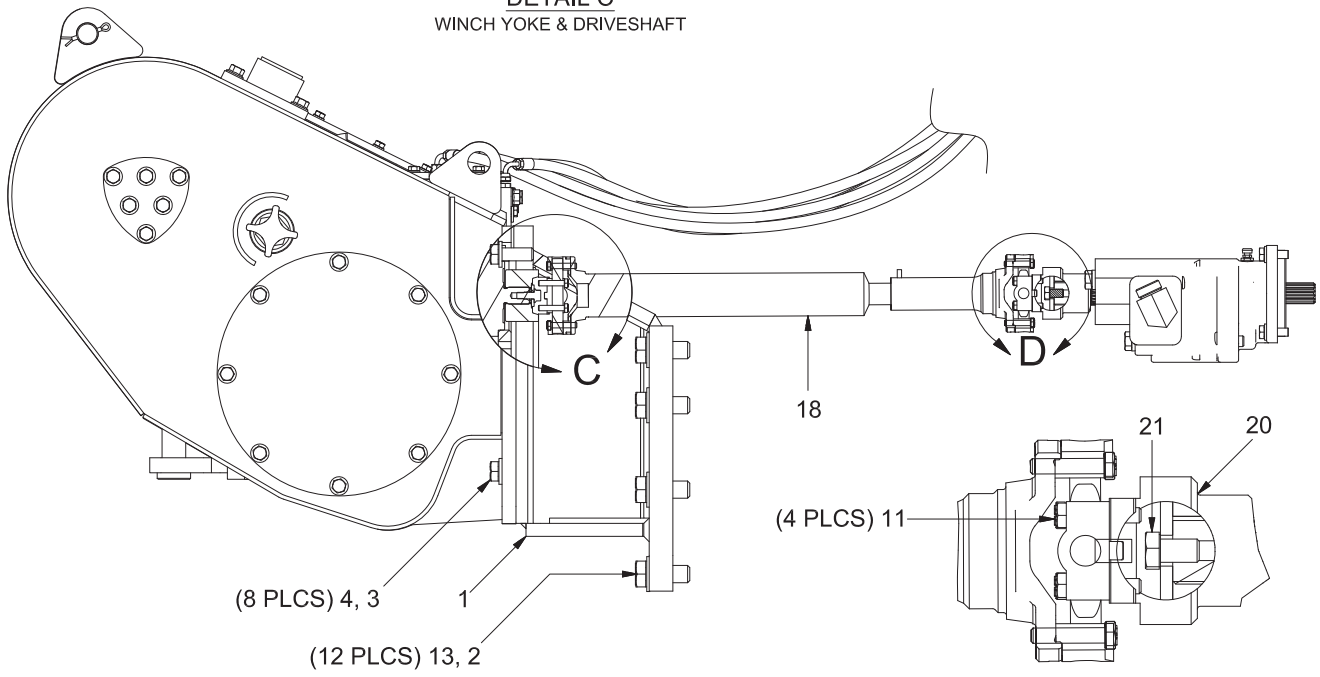
Mounting Parts

Case 750/850M (H4AH_R__R17)

Page 1 of 2



DETAIL C
WINCH YOKE & DRIVESHAFT



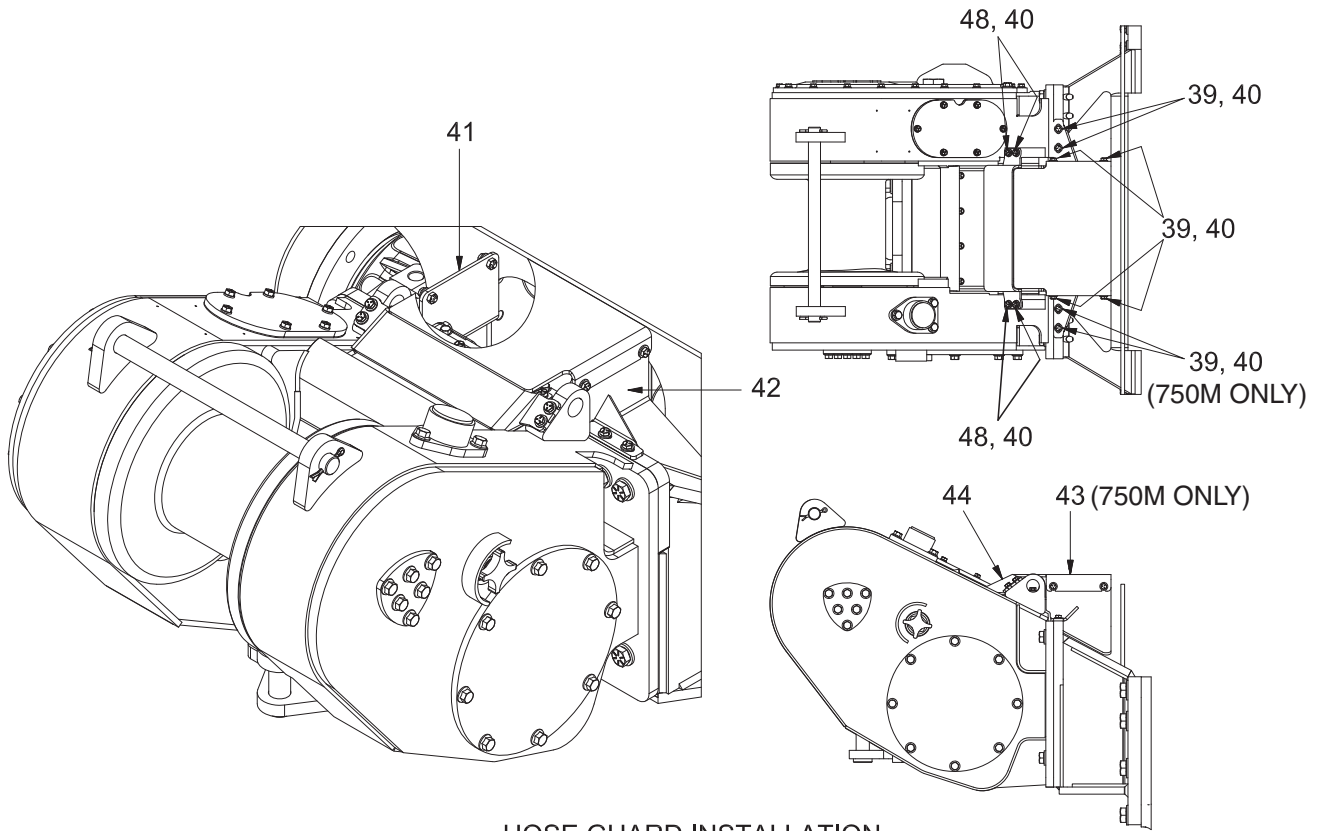
RIGHT-HAND SIDE VIEW

DETAIL D

Mounting Parts

Case 750/850M (H4AH_R__R17)

Page 2 of 2



HOSE GUARD INSTALLATION

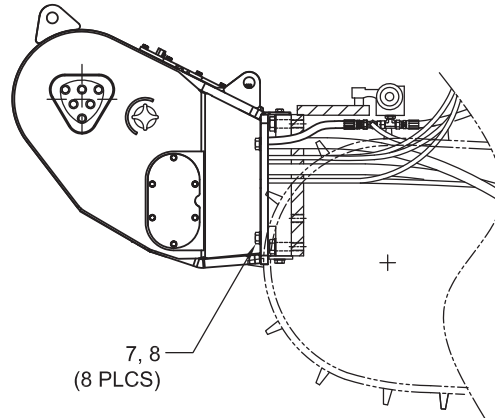
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2314762	Bracket, Mounting	1	20	2312360	Yoke	1
2	*a 221690W	Capscrew	12	21	*a 292526W	Capscrew	1
3	*a Y17C-1232	Capscrew	8	39	16805W	Capscrew	6
4	Y27E-12	Washer	8	40	Y27E-06	Washer	10
8	2304120W	Yoke	1	41	2314934	Guard, Hose - Left Side	1
9	*a 174413W	Screw	1	42	2314914	Guard, Hose - Right Side	1
10	2304119W	Washer	1	43	2314913	Guard, Hose - Top	1
11	*a 221466W	Capscrew	8	44	2314910	Guard, Hose - Center	1
13	221780W	Washer	12	48	16598W	Capscrew	4
18	2314416	Driveshaft	1				
	2300041W	. Assembly, Cross & Bearing	1	*a	Use 318702W Thread Lock		

Mounting Parts

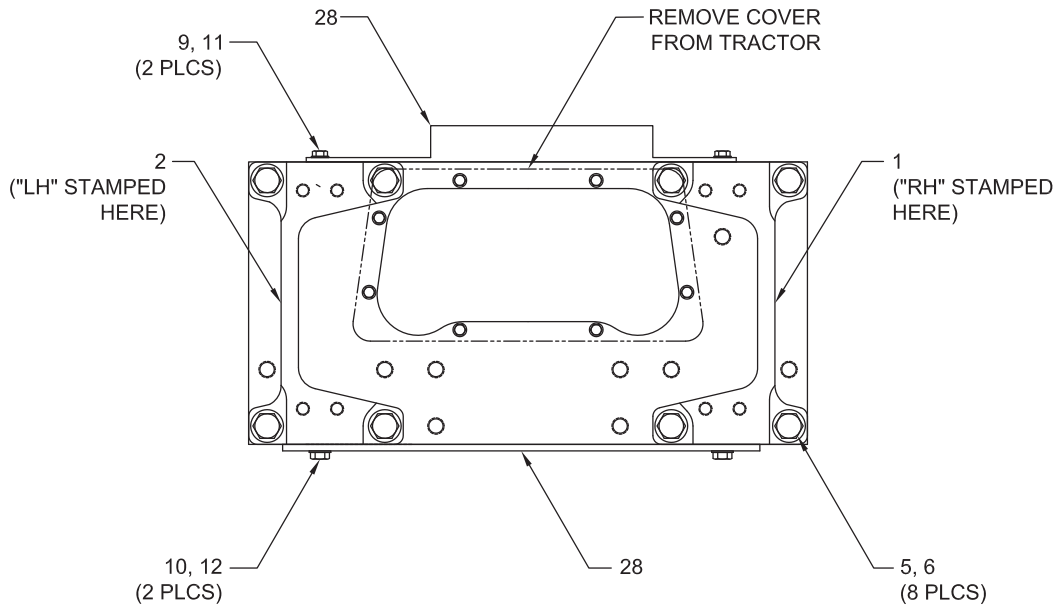
Caterpillar D3/4/5G (H4AH_Y_C17)

Caterpillar D4/5G (H4AH_Y_C18)

Last Used on S/N H4A-1161



RIGHT-HAND SIDE VIEW OF TRACTOR



LOOKING TOWARD FRONT OF TRACTOR

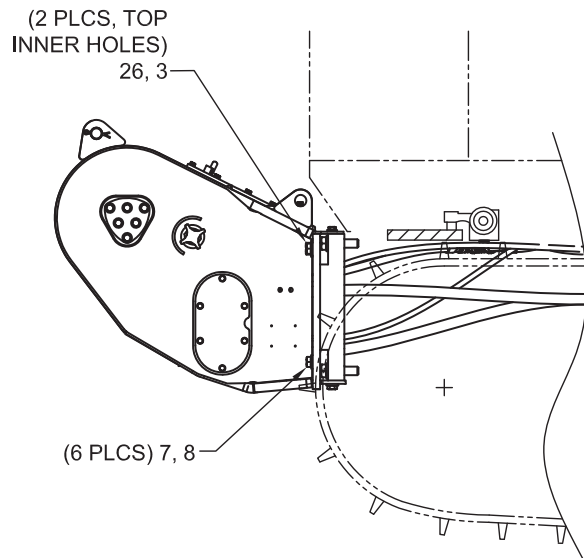
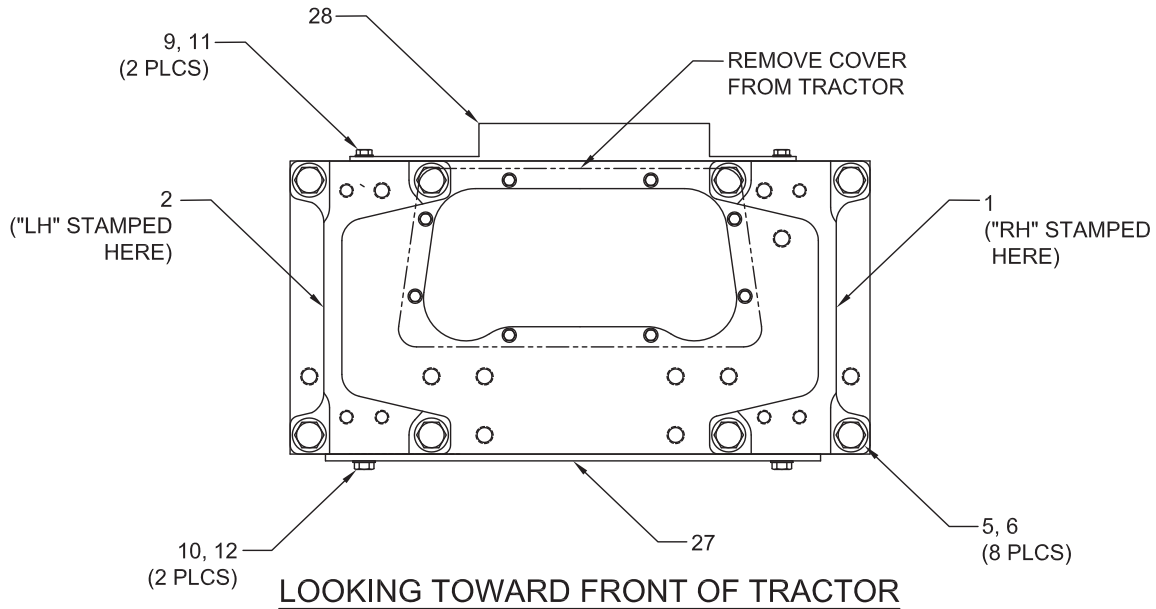
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2304208W	Bracket, Mounting - RH	1	10	221616W	Capscrew	2
2	2304209W	Bracket, Mounting - LH	1	11	221771W	Washer	2
5	*a 293729W	Capscrew	8	12	221775W	Washer	2
6	296434W	Washer	8	27	2306422W	Guard, Bottom	1
7	*a 221657W	Capscrew	8	28	2306575W	Guard, Top	1
8	221777W	Washer	8				
9	221560W	Capscrew	2		*a	Use 318702W Thread Lock	

Mounting Parts

Caterpillar D3/4/5G (H4AH_Y_C17)

Caterpillar D4/5G (H4AH_Y_C18)

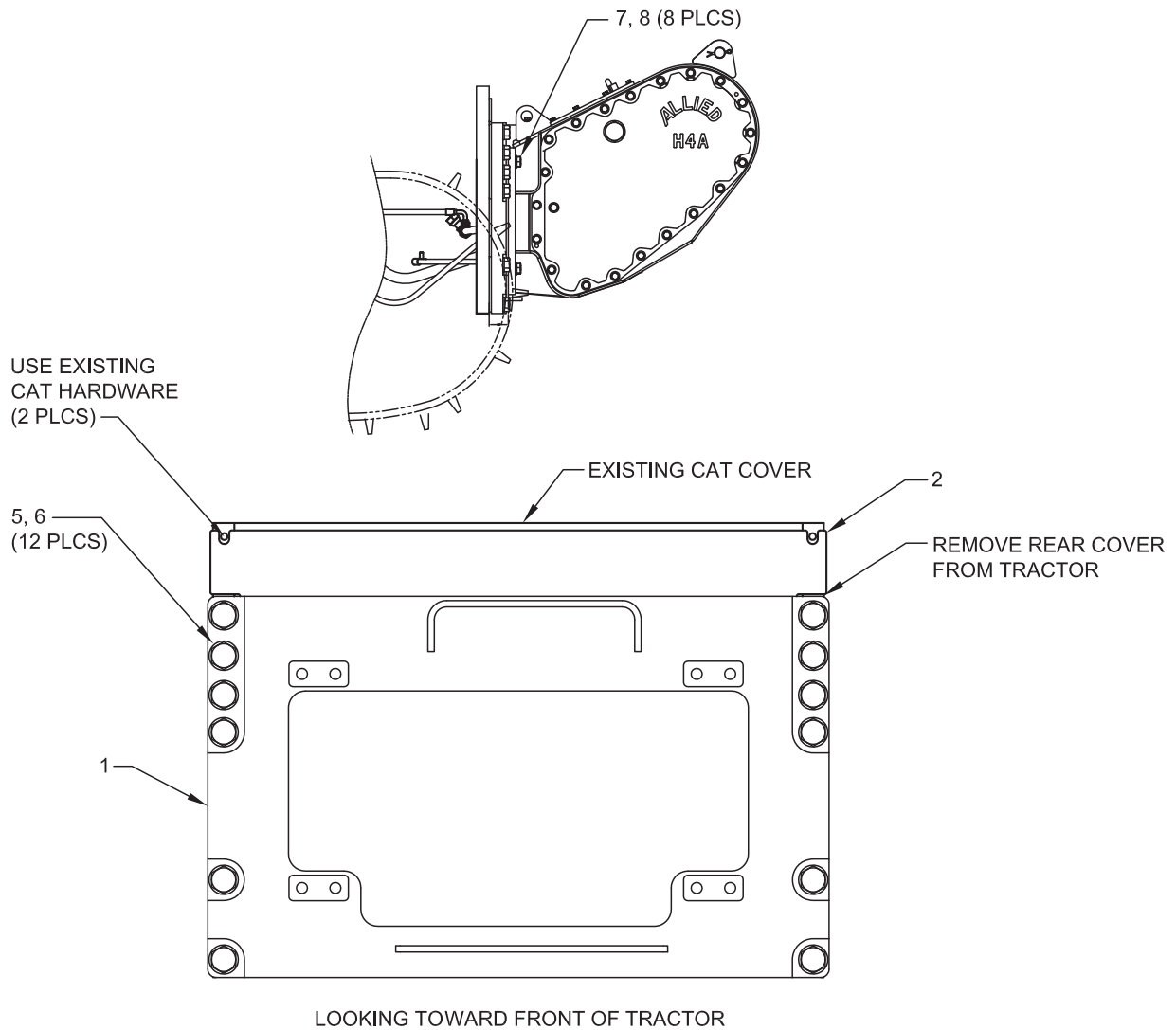
First Used on S/N H4A-1162



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2311837	Bracket, Mounting - RH	1	10	221616W	Capscrew	2
2	2311838	Bracket, Mounting - LH	1	11	221771W	Washer	2
3	*a 218760	Capscrew	2	12	221775W	Washer	2
5	*a 293729W	Capscrew	8	26	Y27E-14	Washer	2
6	296434W	Washer	8	27	2306422W	Guard, Bottom	1
7	*a 221657W	Capscrew	6	28	2306575W	Guard, Top	1
8	221777W	Washer	6				
9	221560W	Capscrew	2		*a	Use 318702W Thread Lock	

Mounting Parts

Caterpillar D3/4K (H4AH_Y__C19), Caterpillar D3/4K (H4AT_Y__C19),
 Caterpillar D5K (H4AT_Y__C20)
 Last Used on S/N H4A-1161

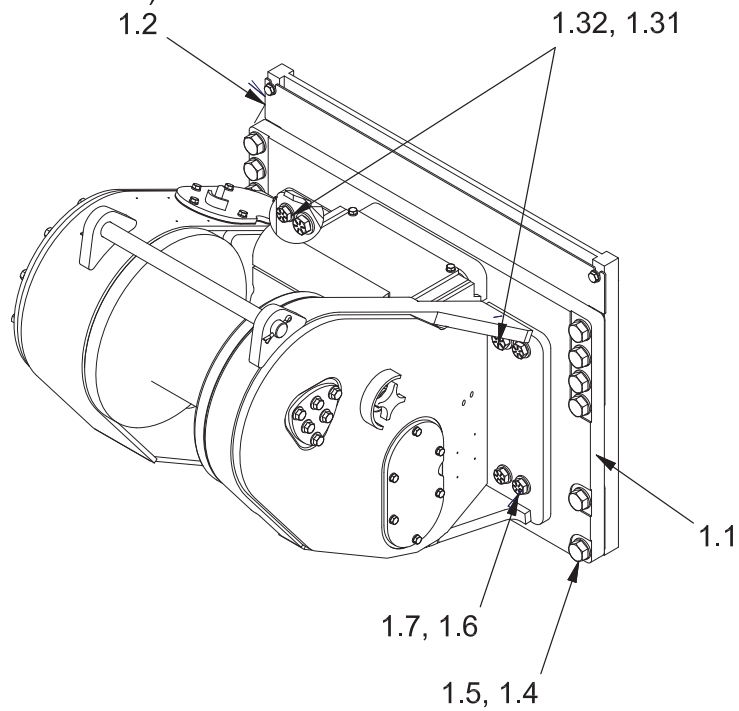


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2310868	Plate, Mounting	1	7	*a Y17C-1236W	Capscrew	8
2	2310888	Guard, Cover	1	8	221777W	Washer	8
5	*a 1308451W	Capscrew	12				
6	296434W	Washer	12		*a Use 318702W Thread Lock		

Mounting Parts

Caterpillar D3/4K/K2 (H4AH_Y__C19), Caterpillar D3/4K/K2 (H4AT_Y__C19),
 Caterpillar D5K/K2 (H4AH_Y__C20); Caterpillar D5K/K2 (H4AT_Y__C20);
 Caterpillar D5K2 with fireplow (H4AH_Y__C201)
 First Used on S/N H4A-1162

(INSTALL WITH EXISTING
 TRACTOR HARDWARE)



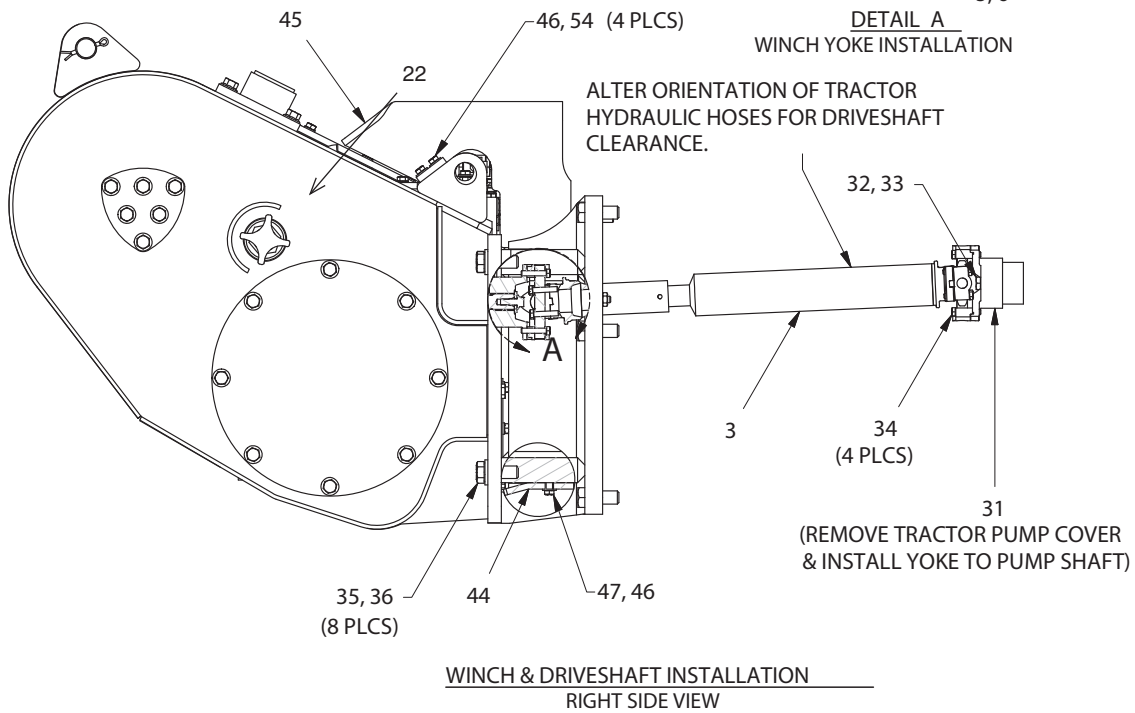
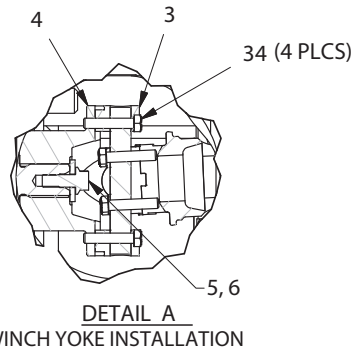
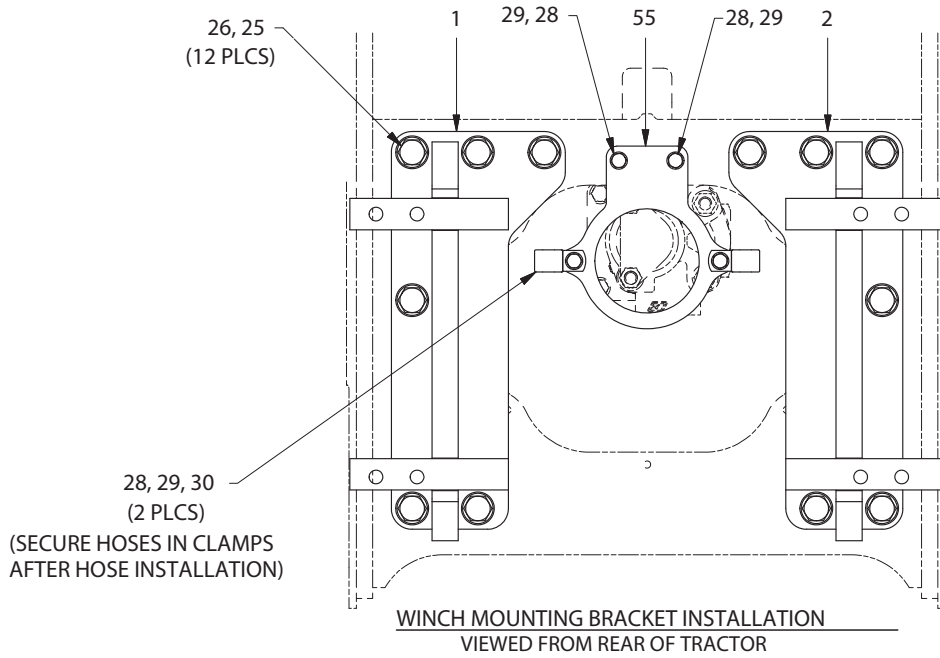
MOUNTING BRACKET & GUARDING

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1.1	2311756	Bracket, Mounting	1	1.7	221777W	Washer	6
1.2	2310888	Guard, Cover	1	1.31	R13813326	Washer	2
1.4	*a 1308451W	Capscrew	12	1.32	221672W	Capscrew	2
1.5	296434W	Washer	12				
1.6	*a Y17C-1236W	Capscrew	6		*a	Use 318702W Thread Lock	

Mounting Parts

John Deere 450-650J (H4AH_R_E15) & 550-650K (H4AH_R_E16)

Page 1 of 2



Mounting Parts

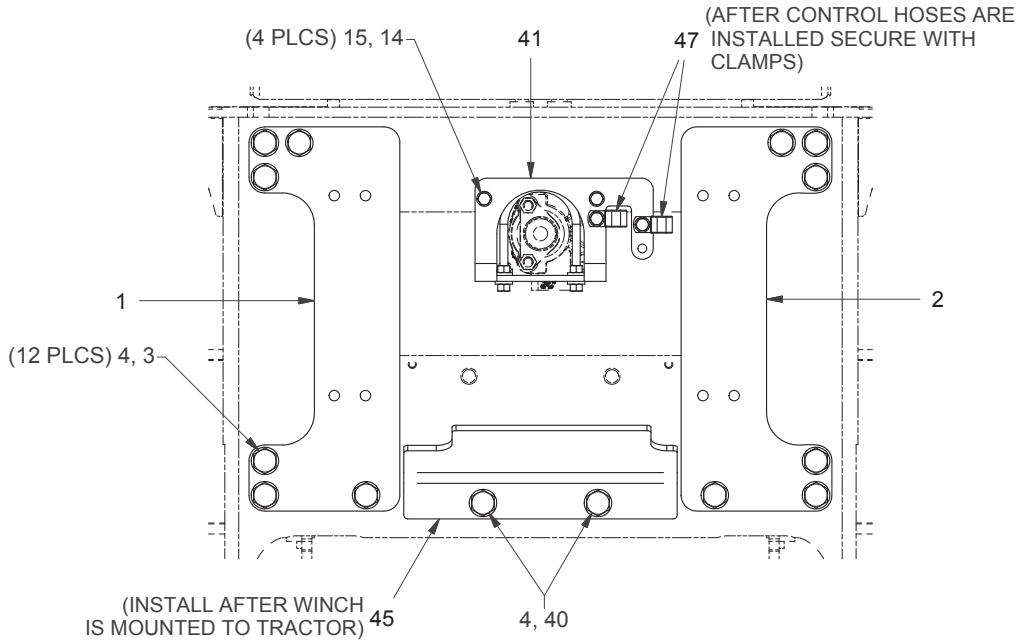
John Deere 450-650J (H4AH_R_E15) & 550-650K (H4AH_R_E16)

Page 2 of 2

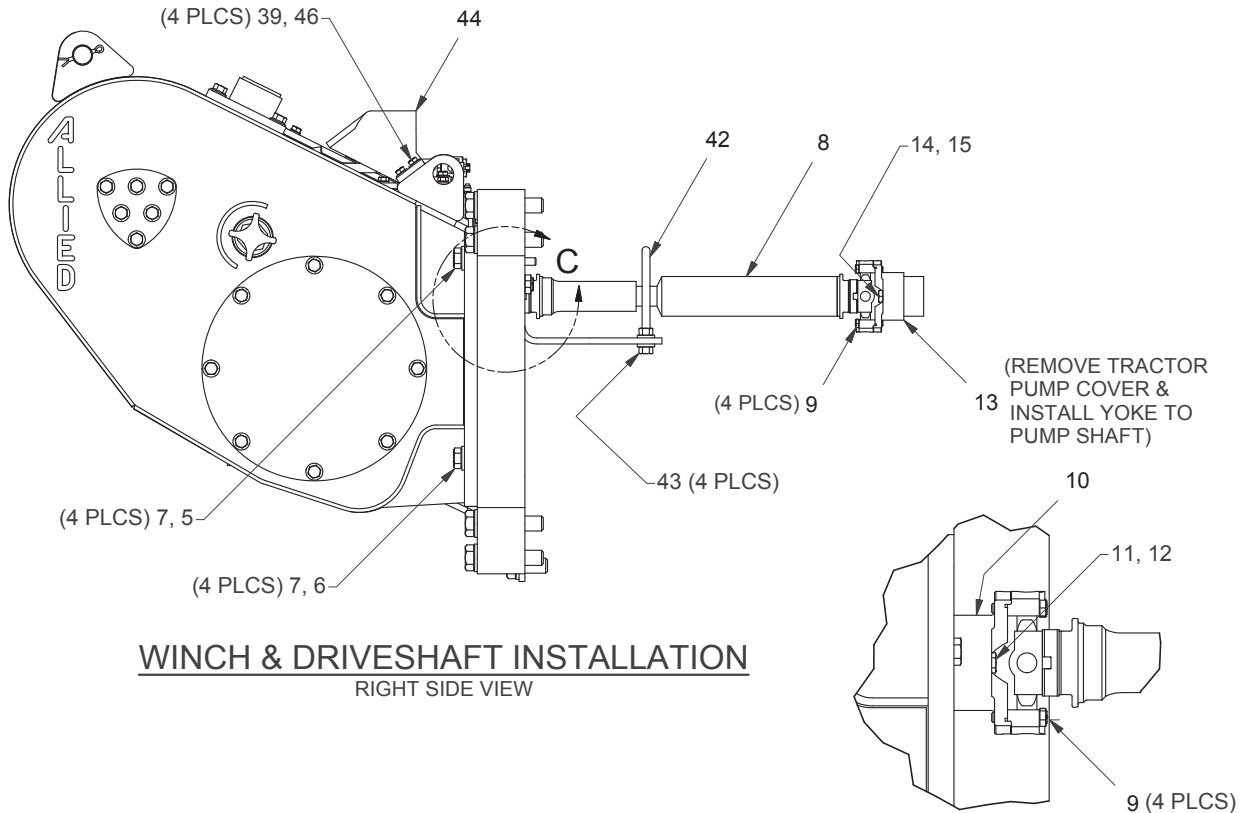
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2314146	Bracket, Mounting - LH	1	32	296422W	Washer	1
2	2314147	Bracket, Mounting - RH	1	33	*a 293645W	Capscrew	1
3	2314148	Driveshaft	1	34	*a 221466W	Capscrew	8
	2300041W	. Assembly, Cross & Bearing	1	35	221777W	Washer	8
4	2304120W	Yoke	1	36	*a Y17C-1232	Capscrew	8
5	2304119W	Washer	1	44	2314167	Guard, Bottom	1
6	*a 174413W	Screw	1	45	2314169	Guard, Upper Hose	1
22	2314454	Wrench, Torque Extension	1	46	221767W	Washer	8
25	*a 293708W	Capscrew	12	47	221499W	Capscrew	4
26	296430W	Washer	12	54	Y17C-0616	Capscrew	4
28	293628W	Capscrew	4	55	2314946	Guard, Driveshaft	1
29	296420W	Washer	4				
30	2312628	Clamp, Insulation	2		*a Use 318702W Thread Lock		
31	2312720	Yoke	1				

Mounting Parts

John Deere 700H/J
 H4AH_R_E39
 Page 1 of 2



WINCH MOUNTING BRACKET INSTALLATION
 VIEWED FROM REAR OF TRACTOR



WINCH & DRIVESHAFT INSTALLATION
 RIGHT SIDE VIEW

DETAIL C
 WINCH YOKE INSTALLATION

Mounting Parts

John Deere 700H/J

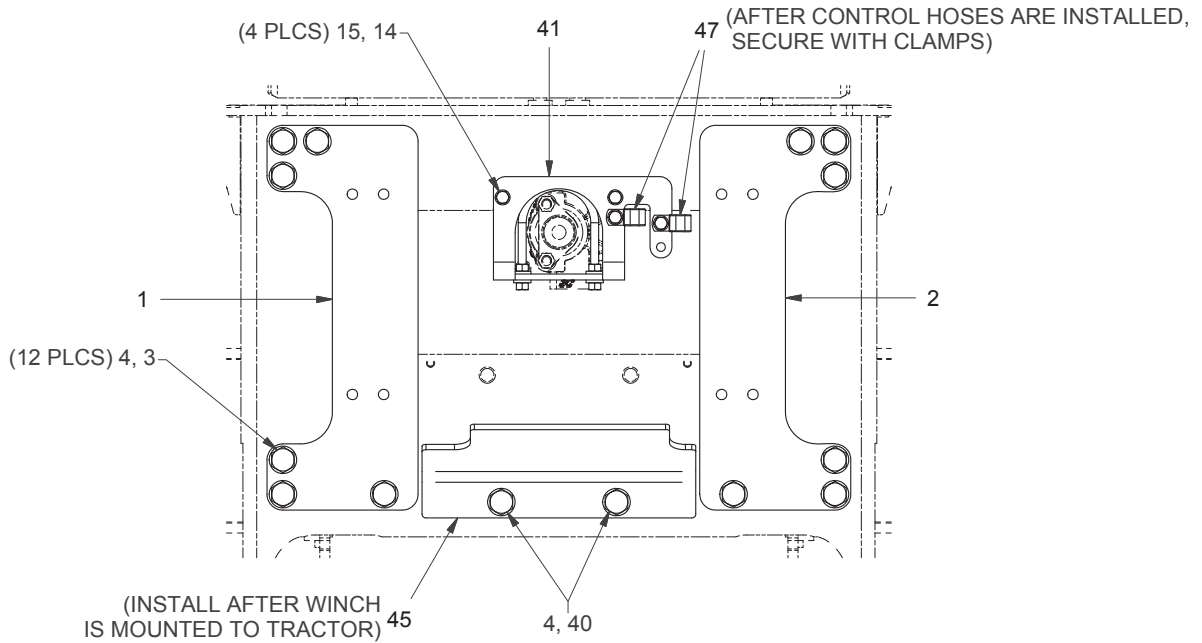
H4AH_R__E39

Page 2 of 2

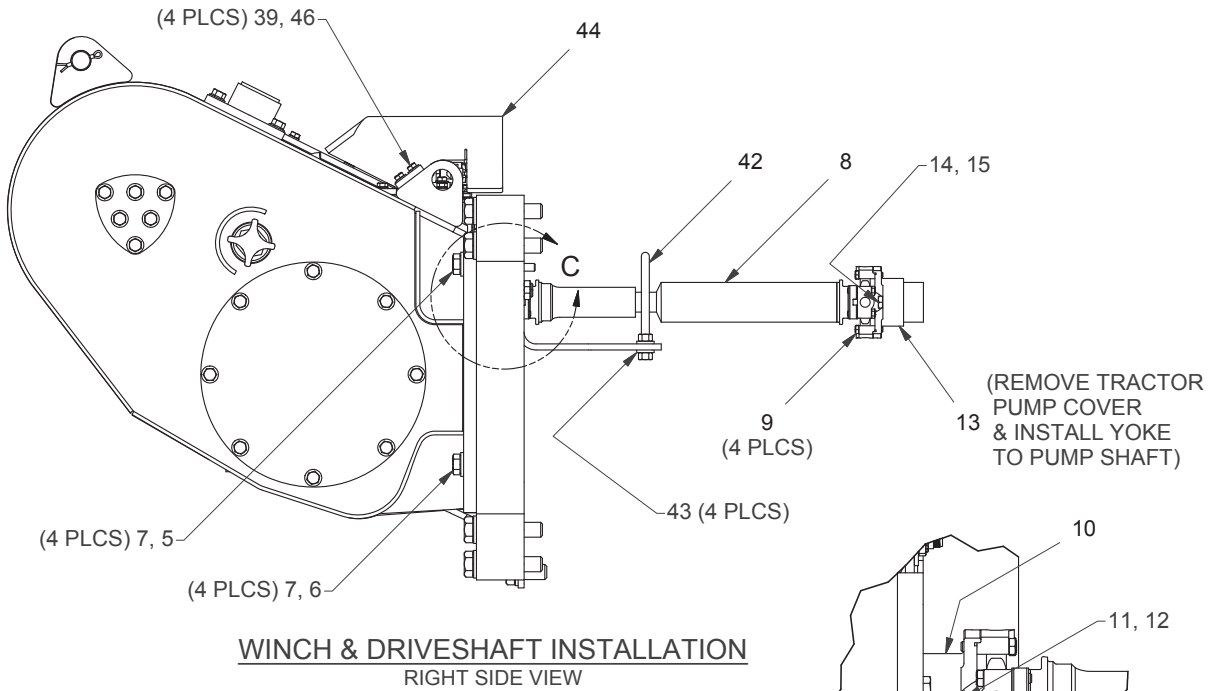
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2314392	Bracket, Mounting - LH	1	14	*a 293645W	Capscrew	5
2	2314393	Bracket, Mounting - RH	1	15	296422W	Washer	5
3	*a 293731W	Capscrew	12	39	221767W	Washer	4
4	296434W	Washer	14	40	Y19C-M2450	Capscrew	2
5	*a 2314437	Capscrew	4	41	2314433	Guard, Bracket	1
6	*a Y17C-1232	Capscrew	4	42	2304350W	Assembly, U-Bolt	1
7	221777W	Washer	8	43	221771W	Washer	4
8	2314416	Driveshaft	1	44	2315029	Guard, Hose	1
	2300041W	. Assembly, Cross & Bearing	1	45	2314407	Guard, Bottom	1
9	*a 221466W	Capscrew	8	46	Y17C-0616	Capscrew	4
10	2304120W	Yoke	1	47	2312628	Clamp, Insulation	2
11	*a 174413W	Screw	1				
12	2304119W	Washer	1		*a Use 318702W Thread Lock		
13	2312720	Yoke	1				

Mounting Parts

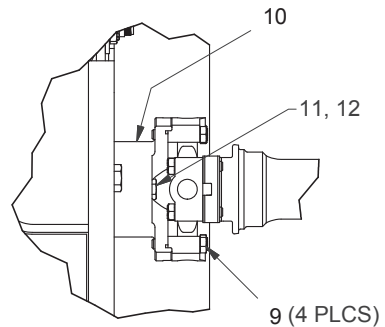
John Deere 700K
 H4AH_R_E391
 Page 1 of 2



WINCH MOUNTING BRACKET INSTALLATION
 VIEWED FROM REAR OF TRACTOR



WINCH & DRIVESHAFT INSTALLATION
 RIGHT SIDE VIEW



DETAIL C
 WINCH YOKE INSTALLATION

Mounting Parts

John Deere 700K

H4AH_R_E391

Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2314392	Bracket, Mounting - LH	1	14	*a 293645W	Capscrew	5
2	2314393	Bracket, Mounting - RH	1	15	296422W	Washer	5
3	*a 293731W	Capscrew	12	32	*d 2314454	Torque Wrench Extension	1
4	296434W	Washer	14	39	221767W	Washer	4
5	*a 2314437	Capscrew	4	40	Y19C-M2450	Capscrew	2
6	*a Y17C-1232	Capscrew	4	41	2314433	Guard, Bracket	1
7	221777W	Washer	8	42	2304350W	Assembly, U-Bolt	1
8	2315557	Driveshaft	1	43	221771W	Washer	4
	2300041W	. Assembly, Cross & Bearing	1	44	*b 2314435	Guard, Hose	1
9	*a 221466W	Capscrew	8	44	*c 2316495	Guard, Hose	1
10	2304120W	Yoke	1	45	2314407	Guard, Bottom	1
11	*a 174413W	Screw	1	46	Y17C-0616	Capscrew	4
12	2304119W	Washer	1	47	2312628	Clamp, Insulation	2
13	2312720	Yoke	1				

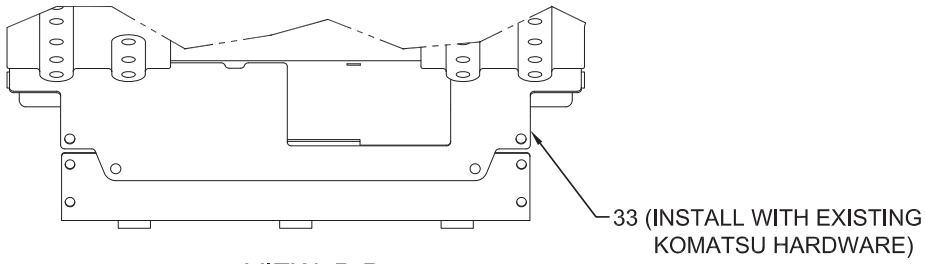
- *a Use 318702W Thread Lock
- *b Use on 700K T4i Machines
- *c Use on 700K T4f Machines
- *d Not Illustrated. See Installation Drawing.

Mounting Parts

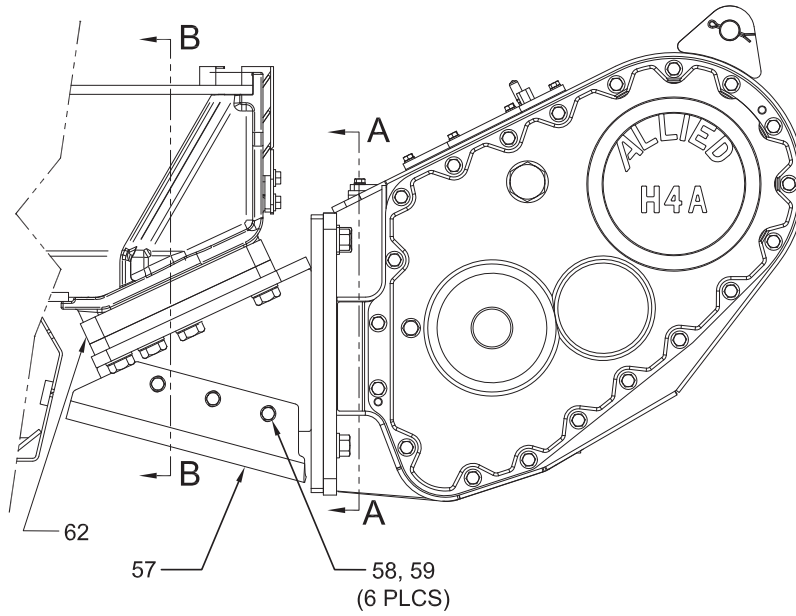
Komatsu D31/37/39X-22 (H4AH_Y_K13);

Komatsu D31/37/39X-22 (H4AT_Y_K13)

Page 1 of 2

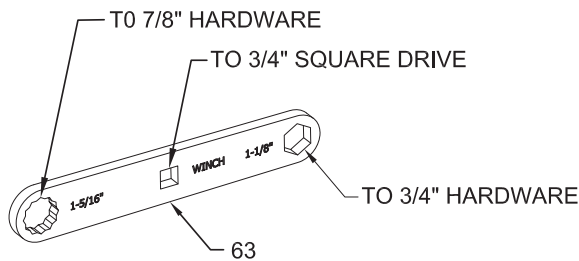


**VIEW B-B
REAR GUARD INSTALLATION**

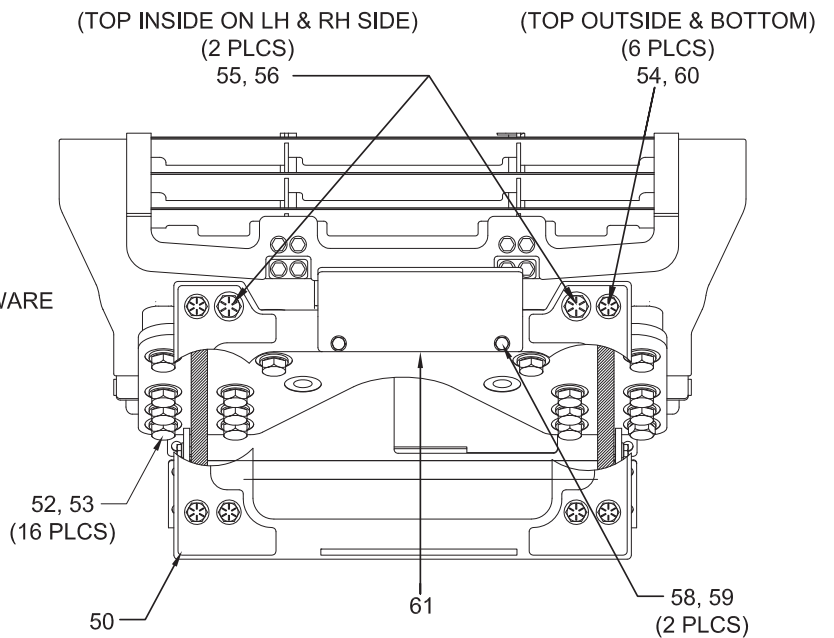


(TOP INSIDE ON LH & RH SIDE)
(2 PLCS)

(TOP OUTSIDE & BOTTOM)
(6 PLCS)



TORQUE WRENCH EXTENDER



**VIEW A-A
MOUNTING HARDWARE**

Mounting Parts

Komatsu D31/37/39X-22 (H4AH_Y__K13);

Komatsu D31/37/39X-22 (H4AT_Y__K13)

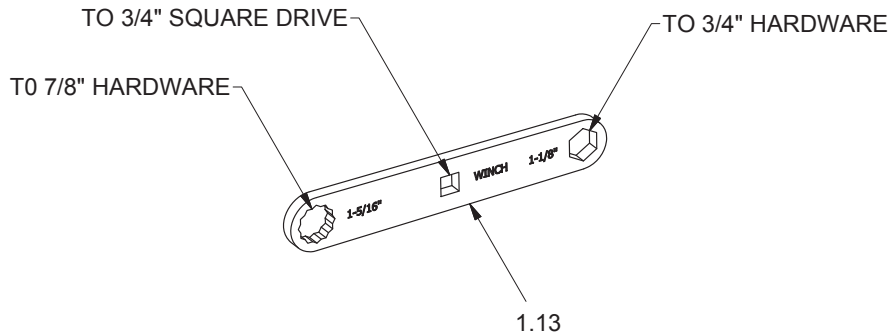
Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
33	2311288	Guard, Tractor	1	58	293646W	Capscrew	8
50	2314539	Bracket, Mounting	1	59	296422W	Washer	8
52	*a 293731W	Capscrew	16	60	221777W	Washer	6
53	296434W	Washer	16	61	2314526	Guard, Top	1
54	*a 221657W	Capscrew	6	62	2313037	Plate, Tractor Pad	2
55	R13813326	Washer	2	63	2314543	Wrench, Torque Extension	1
56	*a 221672W	Capscrew	2				
57	2311421	Guard, Bottom	1	*a	Use 318702W Thread Lock		

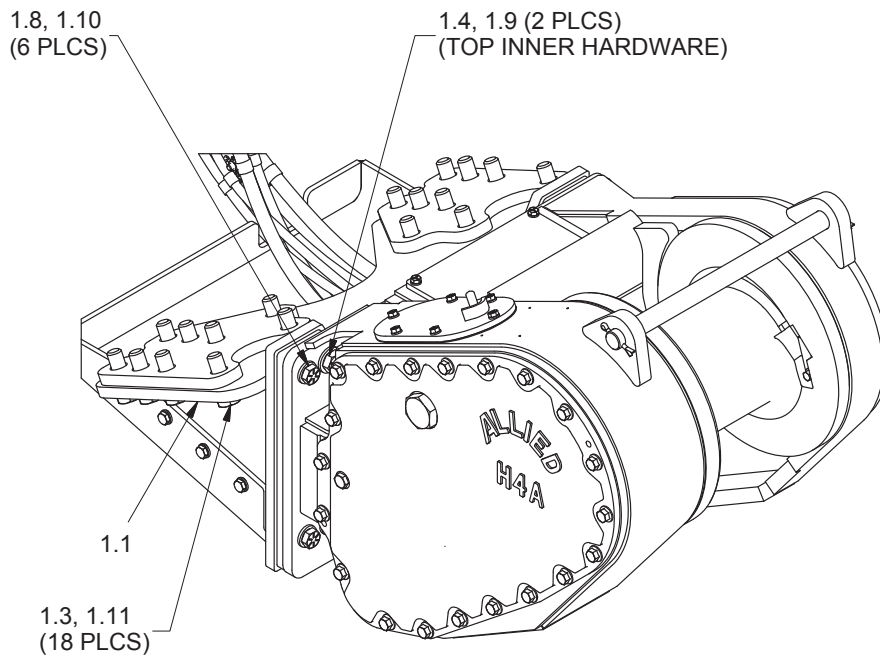
Mounting Parts

Komatsu D37/39X-23, D39X-24 (H4AT_Y__K14)

Page 1 of 2



TORQUE WRENCH EXTENDER

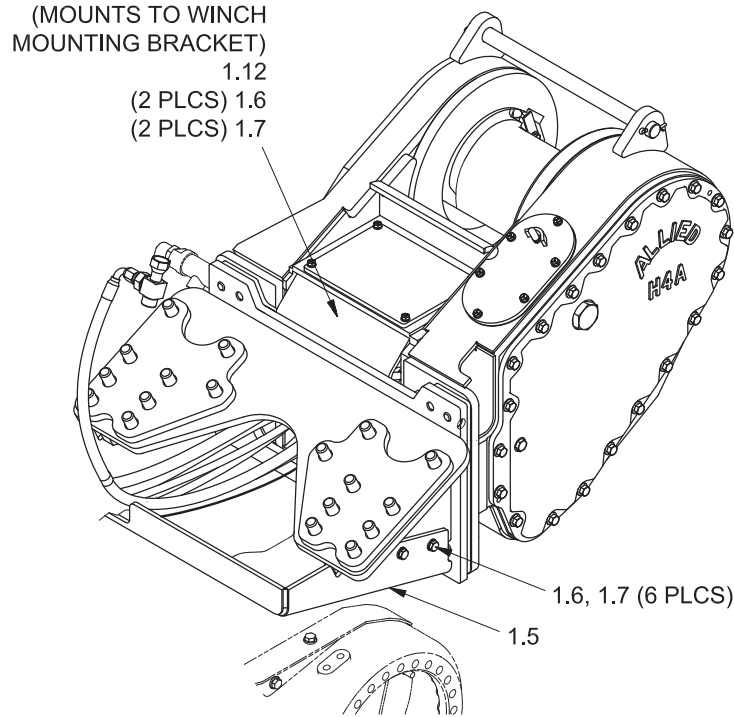


WINCH MOUNTING

Mounting Parts

Komatsu D37/39X-23, D39X-24 (H4AT_Y__K14)

Page 2 of 2



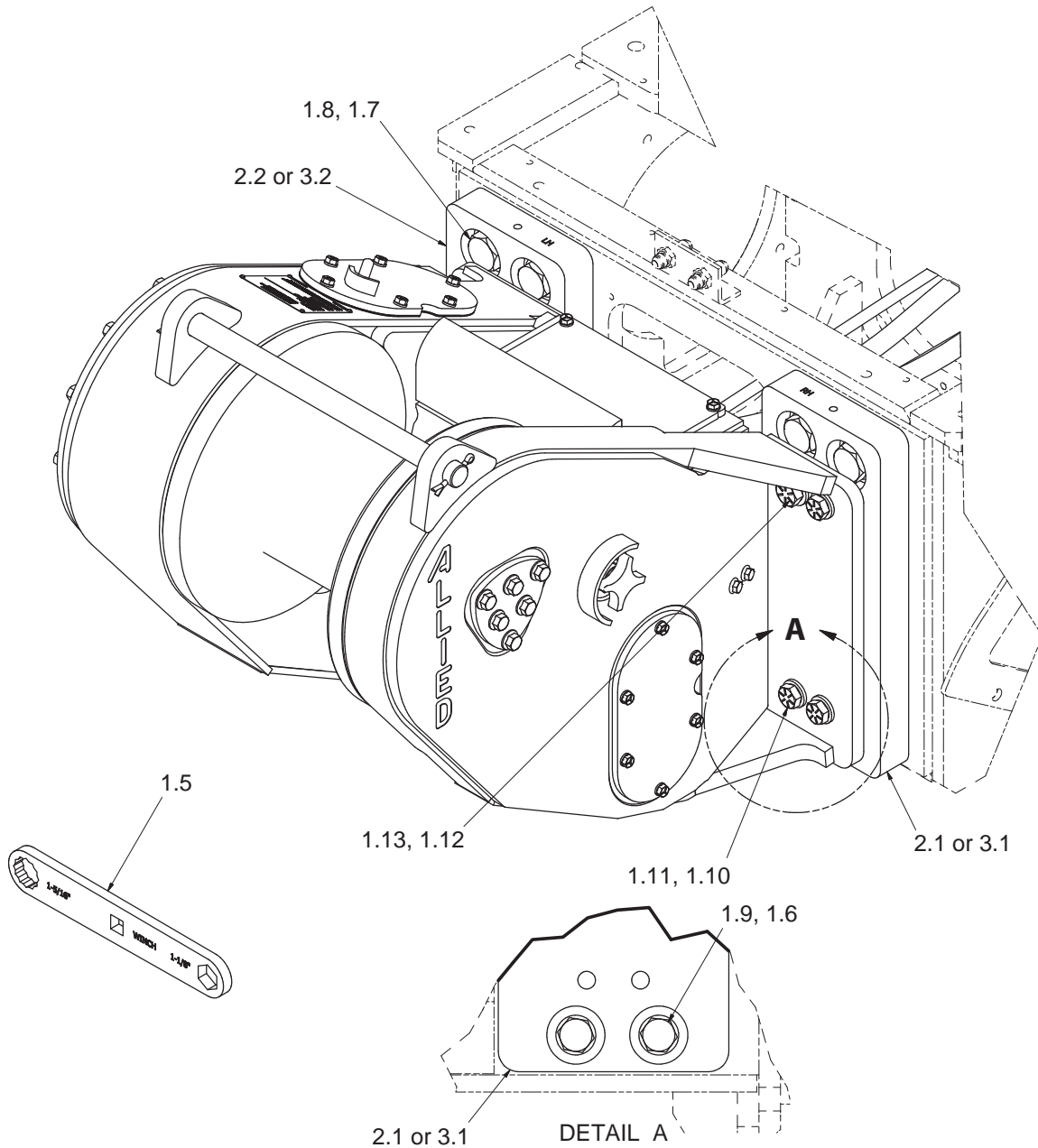
WINCH MOUNTING

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1.1	2314539	Bracket, Mounting	1	1.9	*a 221672W	Capscrew	2
1.3	296434W	Washer	18	1.10	*a 221657W	Capscrew	6
1.4	R13813326	Washer	2	1.11	*a 1308451W	Capscrew	18
1.5	2314524	Guard, Bottom	1	1.12	2314526	Guard, Top	1
1.6	293646W	Capscrew	8	1.13	2314543	Wrench, Extension Torque	1
1.7	296422W	Washer	8				
1.8	221777W	Washer	6		*a	Use 318702W Thread Lock	

Mounting Parts

Dressta TD7/8S (H4AT_Y_H15)

Dressta TD9S (H4AT_Y_H16)

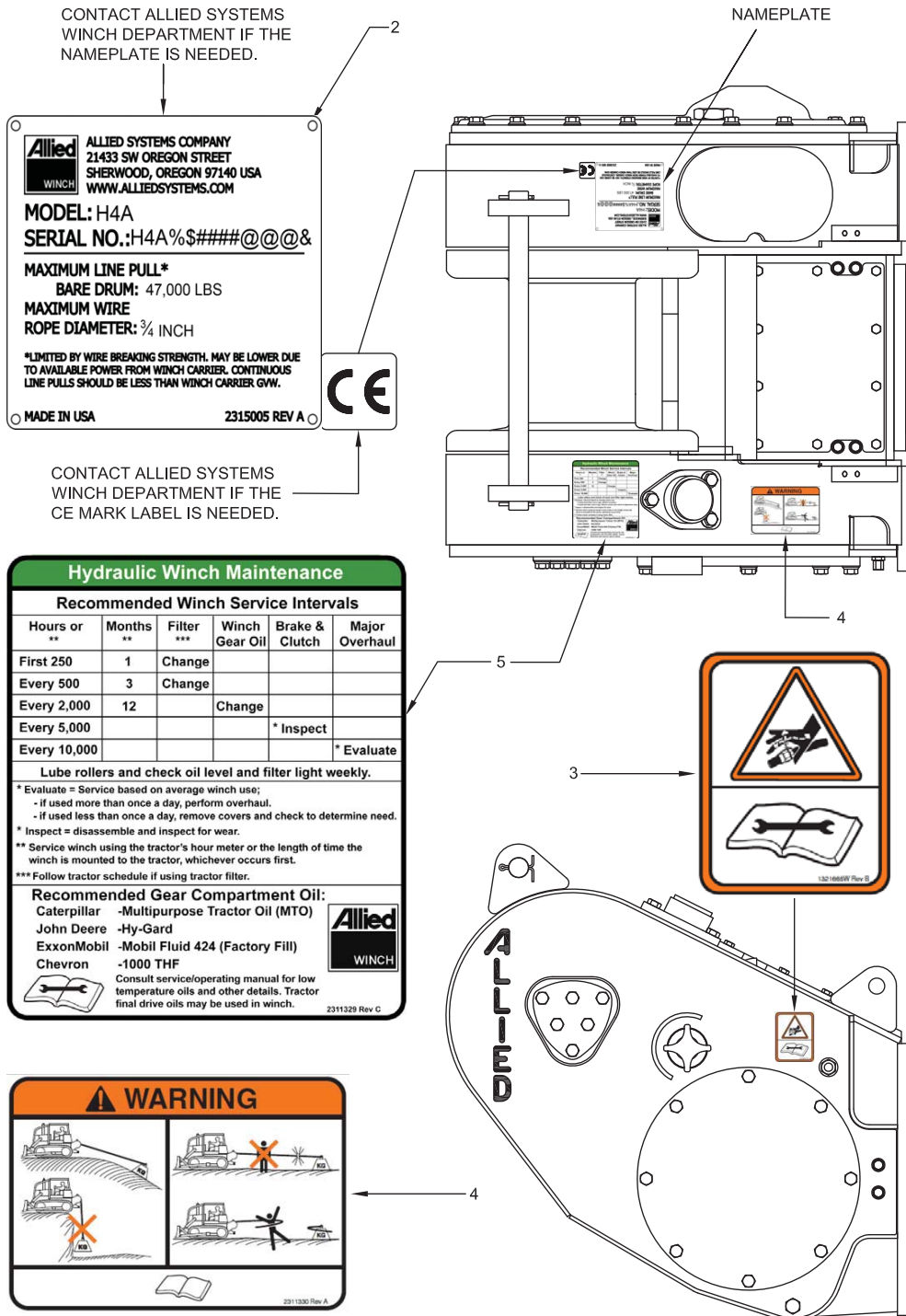


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1.5	2314543	Extension, Torque Wrench	1	2.1	*b 2316219	Mounting Bracket, RH	1
1.6	296430W	Hard Washer	4	2.2	*b 2316220	Mounting Bracket, LH	1
1.7	296438W	Hard Washer	4	3.1	*c 2316542	Mounting Bracket, RH	1
1.8	*a Y19C-M3080	Capscrew	4	3.2	*c 2316543	Mounting Bracket, LH	1
1.9	*a 293710W	Capscrew	4				
1.10	221777W	Hard Washer	6		*a	Use 318702W Thread Lock	
1.11	*a Y17C-1236	Capscrew	6		*b	Used on TD7/8S (H15)	
1.12	*a 221672W	Capscrew	2		*c	Used on TD9S (H16)	
1.13	R13813326	Hard Washer	2				

Nameplate & Decals

Winches with Enclosed Frames

H4A-B, H4A-E, H4A-R, H4A-Z



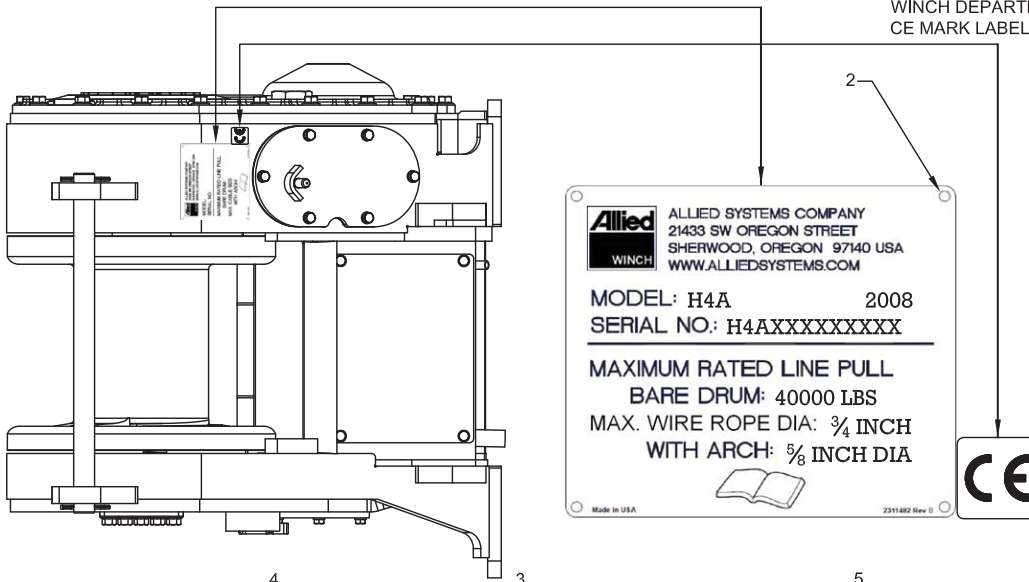
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
2	16602W	Screw	4	4	2311330	Decal, Load & Wire Rope Safety	1
3	1321665W	Decal, Warning	1	5	2311329	Decal, Hydraulic Winch Maintenance	1

Nameplate & Decals

Winches with Open Frames (with or without HI-TEMP Shut-Off)
H4A_Y

CONTACT ALLIED SYSTEMS
WINCH DEPARTMENT IF THE
NAMEPLATE IS NEEDED.

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



Allied WINCH
ALLIED SYSTEMS COMPANY
21433 SW OREGON STREET
SHERWOOD, OREGON 97140 USA
WWW.ALLIEDSYSTEMS.COM

MODEL: H4A 2008
SERIAL NO.: H4AXXXXXXXXXX

MAXIMUM RATED LINE PULL
BARE DRUM: 40000 LBS
MAX. WIRE ROPE DIA: 3/4 INCH
WITH ARCH: 5/8 INCH DIA

Made in USA 2311492 Rev 0 **CE**

WARNING

2311330 Rev A

1301065W Rev 0

Hydraulic Winch Maintenance

Recommended Winch Service Intervals

Hours or	Months	Filter	Winch	Brake &	Major
**	**	***	Gear Oil	Clutch	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 weekly.

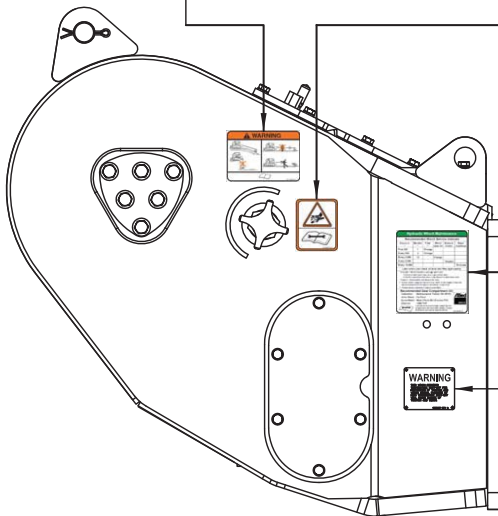
* Evaluate = Service based on average winch use;
- if winch is used more than once a day, follow chart.
- if winch is used less than once a day, inspect to determine need.
* Inspect = disassemble and inspect for wear.
** Service winch using the tractor's hour meter or the length of time the winch is mounted to the tractor, whichever occurs first.
*** Follow tractor schedule if using tractor filter.

Recommended Gear Compartment Oil:

Caterpillar	-Multipurpose Tractor Oil (MTO)	Allied WINCH
John Deere	-Hy-Gard	
ExxonMobil	-Mobil Fluid 424 (Factory Fill)	
Chevron	-1000 THF	

Consult service/operating manual for low temperature oils and other details. Tractor final drive oils may be used in winch.

2311329 Rev A



WARNING

THIS WINCH REQUIRES
TEMPERATURE SHUT-OFF FOR
PROTECTION OF TRACTOR AND
WINCH. MANUAL OVERRIDE OF
HIGH TEMPERATURE SHUT-OFF
WILL CAUSE DAMAGE OF
TRACTOR AND WINCH.

2307637 REV A

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

*Note: Only for winches with HI-TEMP Shut-Off

Gear Train/Shaft

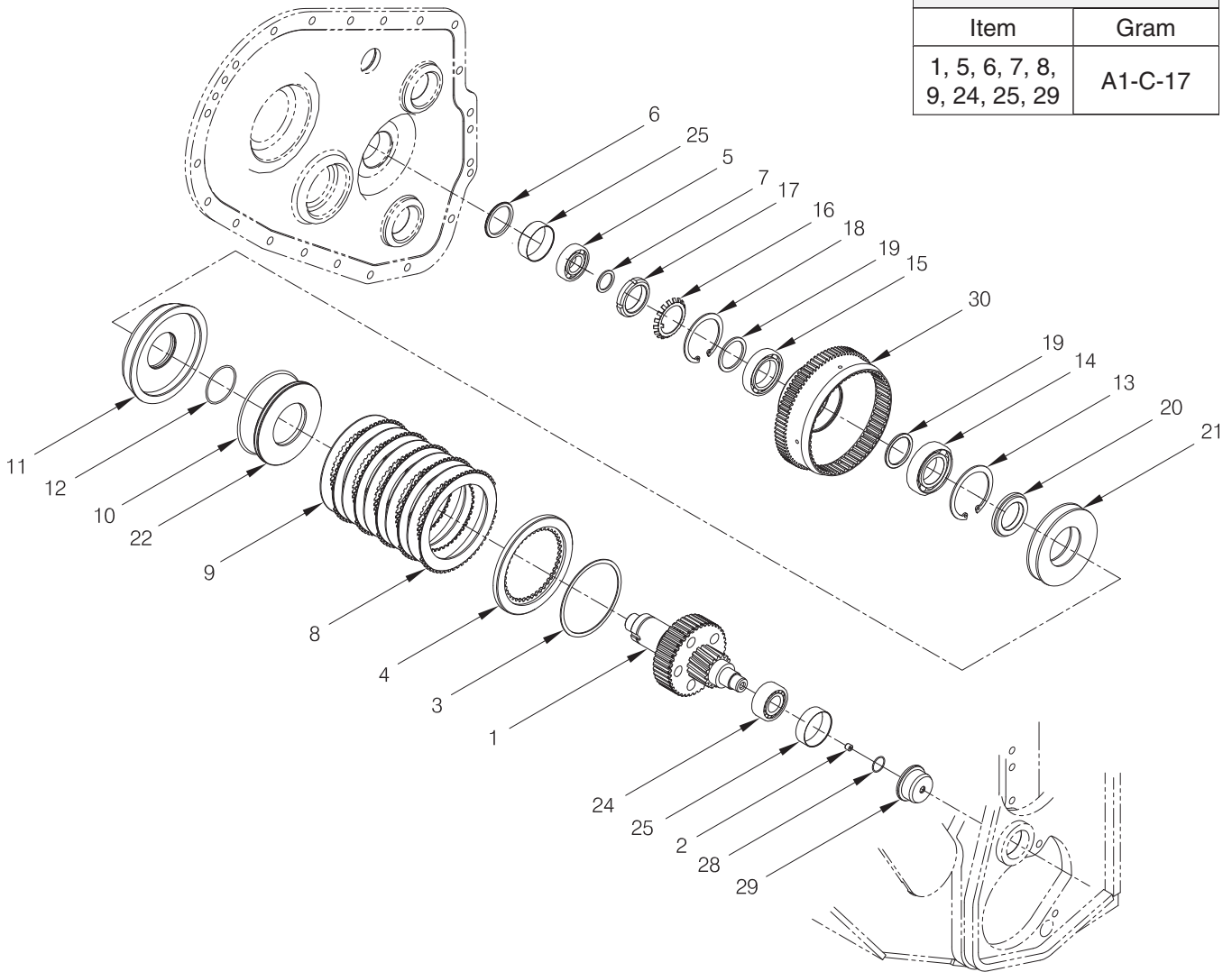
BRAKE-OFF Group	2-2
Drum Shaft Group	2-12
Idler Shaft Group	2-3
Intermediate Shaft & Freespool	2-4 thru 2-5
Motor & Brake Group	2-6 thru 2-11

BRAKE-OFF Group

Last Used on S/N H4A-1014

See Idler Shaft Group for S/N H4A-1015 and Up

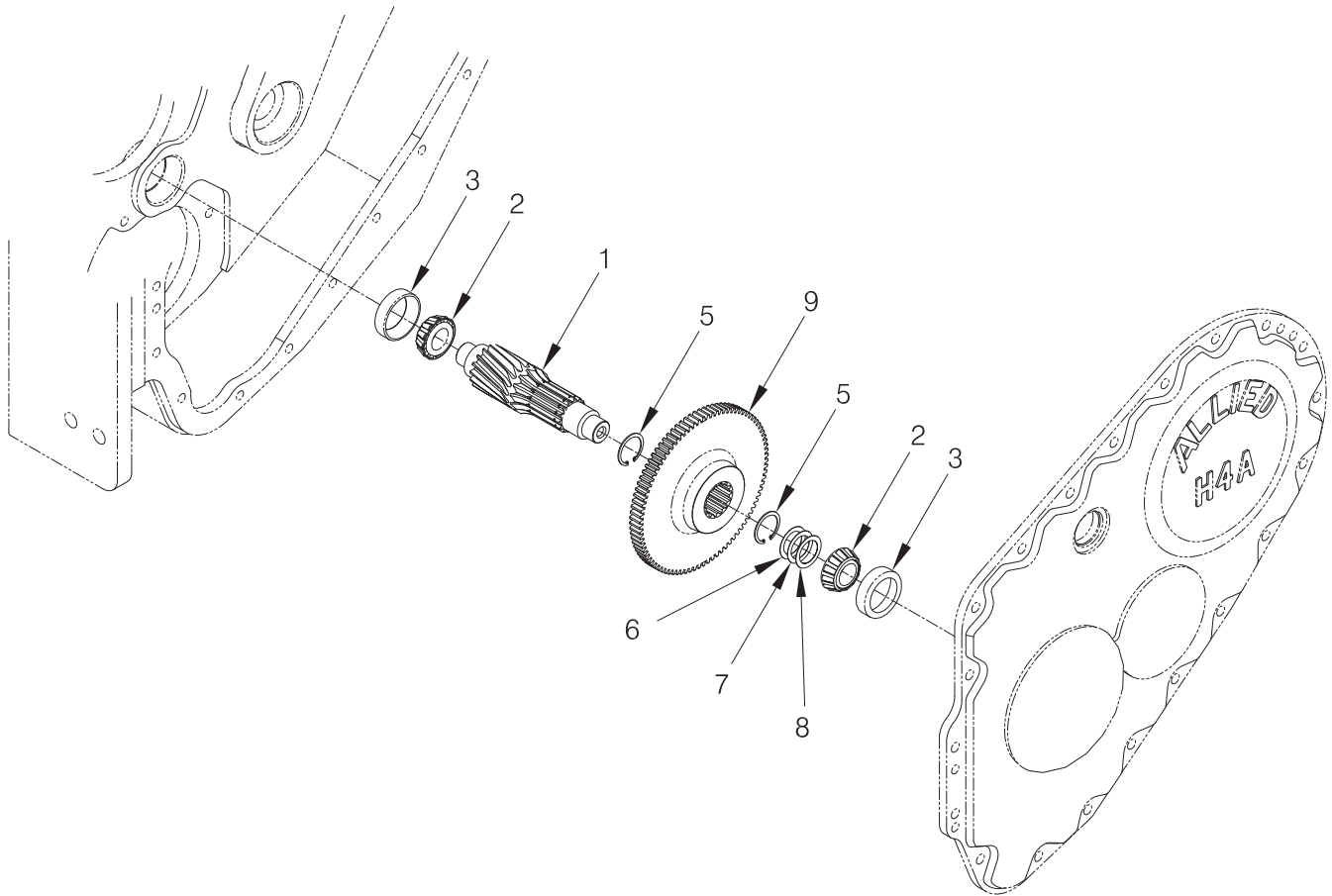
Parts Service Gram	
Item	Gram
1, 5, 6, 7, 8, 9, 24, 25, 29	A1-C-17



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305950W	Shaft	1	18	58911W	Ring, Snap - Inner	1
2	2305075W	Orifice, Plug	1	19	374805W	Spacer	2
3	219060W	Ring, Snap	1	20	2303877W	Retainer, Spring	1
4	282706W	Ring, Reaction	1	21	2303845W	Spring, Belleville	2
5	*d 41206W	Bearing, Ball	1	22	*a 2304176W	Hub, Piston	1
6	2305948W	Spacer, Cover	1	24	*d 2305946W	Bearing, Roller	1
7	2305947W	Spacer, Shaft	1	25	*d 2305945W	Sleeve	2
8	*d 328714W	Plate, Friction	5	28	*d 2304182W	O-Ring	1
9	*d 2305597W	Separator	5	29	*a 2305949W	Insert, Rotary Seal	1
10	*d 2303867W	O-Ring	1	30	*b 2303836W	Housing, Clutch	1
11	2304059W	Piston, Brake-Off	1	30	*c 2303837W	Housing, Clutch	1
12	*d 2303868W	O-Ring	1				
13	67551W	Ring, Snap - Inner	1		*a	Uses 318701W Adhesive	
14	*d 43210W	Bearing, Ball	1		*b	Used on 83:1 Ratio Only	
15	*d 44310W	Bearing, Ball	1		*c	Used on 116:1 Ratio Only	
16	*d 6036W	Lockwasher, Bearing	1		*d	Included in Brake-Off Kit 2306546W	
17	*d 6037W	Locknut, Bearing	1				

Idler Shaft Group

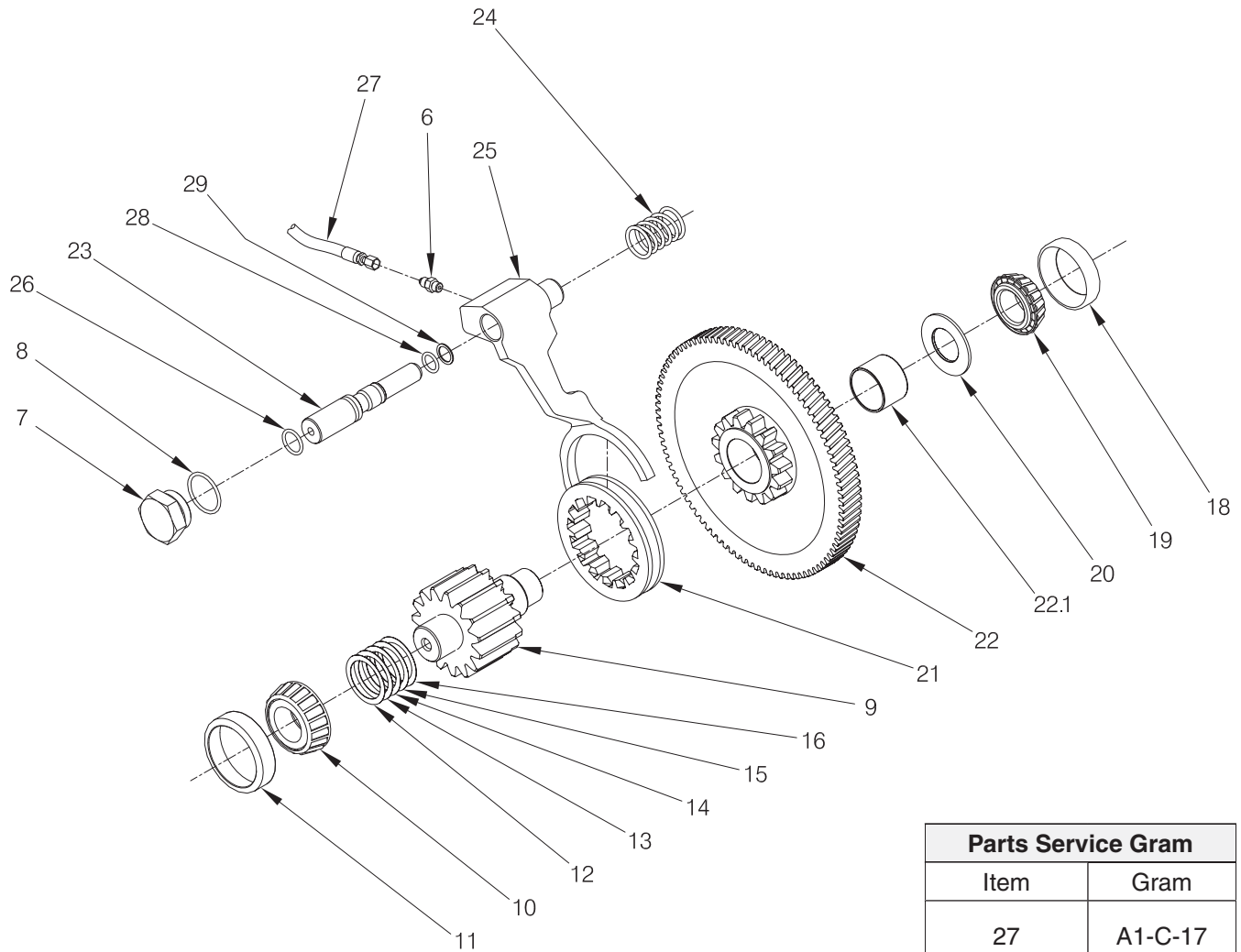
See Brake-Off Group for S/N H4A-1014 and below
 First used on S/N H4A-1015



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

Intermediate Shaft & Freespool

SCH Winch, S/N Code "E", "Y", "Z"

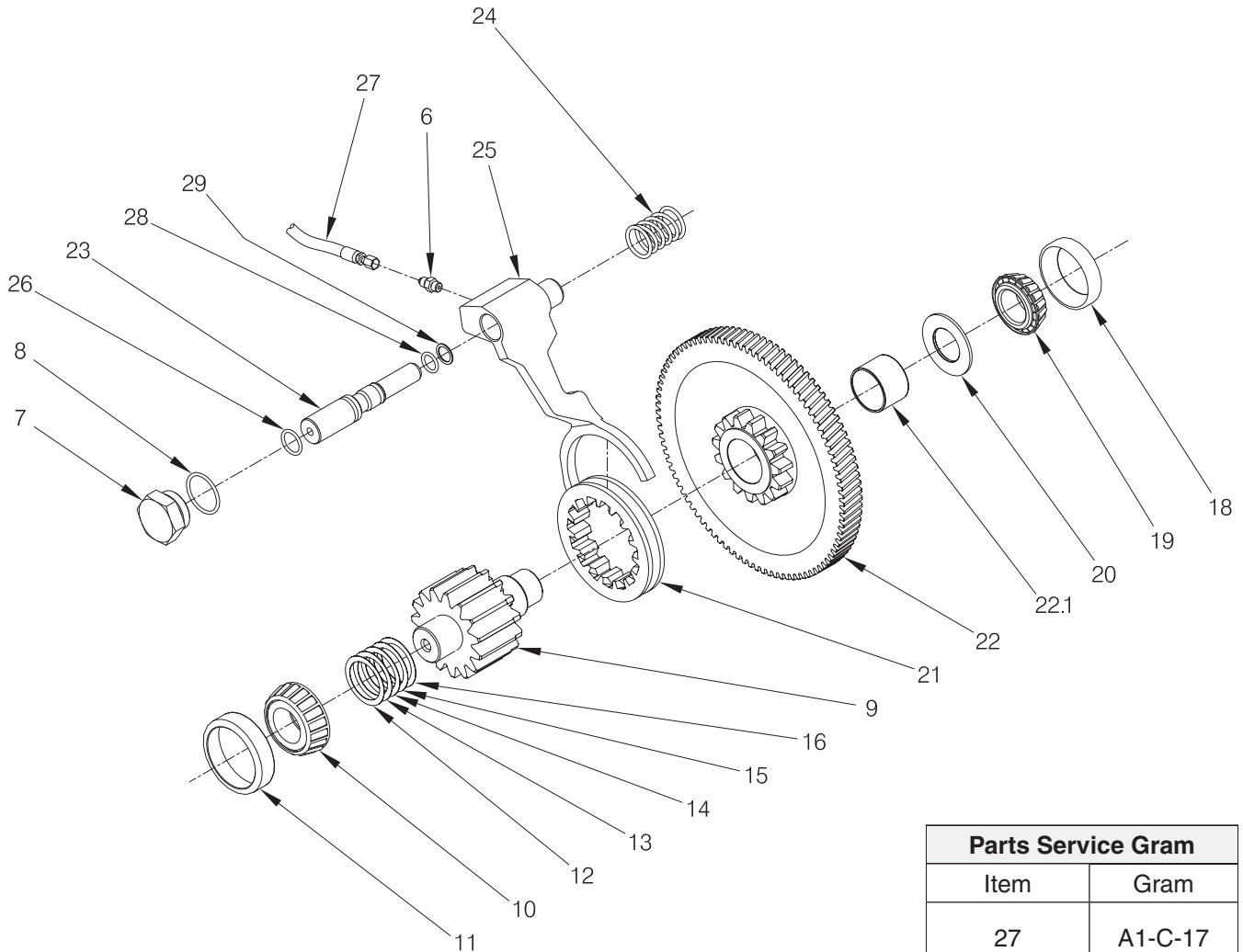


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
6	16538W	Fitting	1	21	2304171W	Collar, Freespool	1
7	-----	Plug (See Frame & Covers)	1	22	2316504	Assy, Gear, Intermediate - 92T	1
8	-----	O-Ring (See Frame & Covers)	1	22.1	2304181W	. Bushing	1
9	2303825W	Shaft	1	23	2305563W	Shaft, Freespool	1
10	225262W	Cone, Bearing	1	24	2303906W	Spring, Freespool	1
11	230351W	Cup, Bearing	1	25	2305562W	Fork, Freespool Shifter	1
12	*c 1314433W	Shim, .020	AR	26	61056W	O-Ring	1
13	*c 1314434W	Shim, .022	AR	27	*a 2305972W	Assembly, Hose - Freespool Shifter	1
14	*c 1314435W	Shim, .025	AR	27	*b 2305012W	Assembly, Hose - Freespool Shifter	1
15	*c 1314467W	Shim, .015	AR	28	100153W	O-Ring	1
16	*c 1314468W	Shim, .018	AR	29	238671	Ring, Backup	1
18	R1314774	Cup, Bearing	1				
19	R1314773	Cone, Bearing	1				
20	2304172W	Washer, Thrust	1				

*a Last used on S/N H4A-1014
 *b First used on S/N H4A-1015
 *c Consult Service Manual.

Intermediate Shaft & Freespool

NON-SCH Winch, S/N Code "B" or "R"



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
6	16538W	Fitting	1	21	2304171W	Collar, Freespool	1
7	-----	Plug (See Frame & Covers)	1	22	2316504	Assy, Gear, Intermediate - 92T	1
8	-----	O-Ring (See Frame & Covers)	1	22.1	2304181W	. Bushing	1
9	2303825W	Shaft	1	23	2305563W	Shaft, Freespool	1
10	225262W	Cone, Bearing	1	24	2303906W	Spring, Freespool	1
11	230351W	Cup, Bearing	1	25	2305562W	Fork, Freespool Shifter	1
12	*c 1314433W	Shim, .020	AR	26	61056W	O-Ring	1
13	*c 1314434W	Shim, .022	AR	27	*a 2305141W	Assembly, Hose - Freespool Shifter	1
14	*c 1314435W	Shim, .025	AR	27	*b 2305580W	Assembly, Hose - Freespool Shifter	1
15	*c 1314467W	Shim, .015	AR	28	100153W	O-Ring	1
16	*c 1314468W	Shim, .018	AR	29	238671	Ring, Backup	1
18	R1314774	Cup, Bearing	1				
19	R1314773	Cone, Bearing	1				
20	2304172W	Washer, Thrust	1				

*a Last used on S/N H4A-1014
 *b First used on S/N H4A-1015
 *c Shim as required to achieve 0.002" to 0.005" bearing endplay.

Motor & Brake Group

High Performance SCH Winch

John Deere 450-650J (H4AH_R_E15), 550-650K (H4AH_R_E16)

John Deere 700H/J (H4AH_R_E39), 700K (H4AH_R_E391)

Case 650/750/850K, 750/850L (H4AH_R__R15), 650L (H4AH_R__R16), 750/850M (H4AH_R__R17)

Page 2 of 2

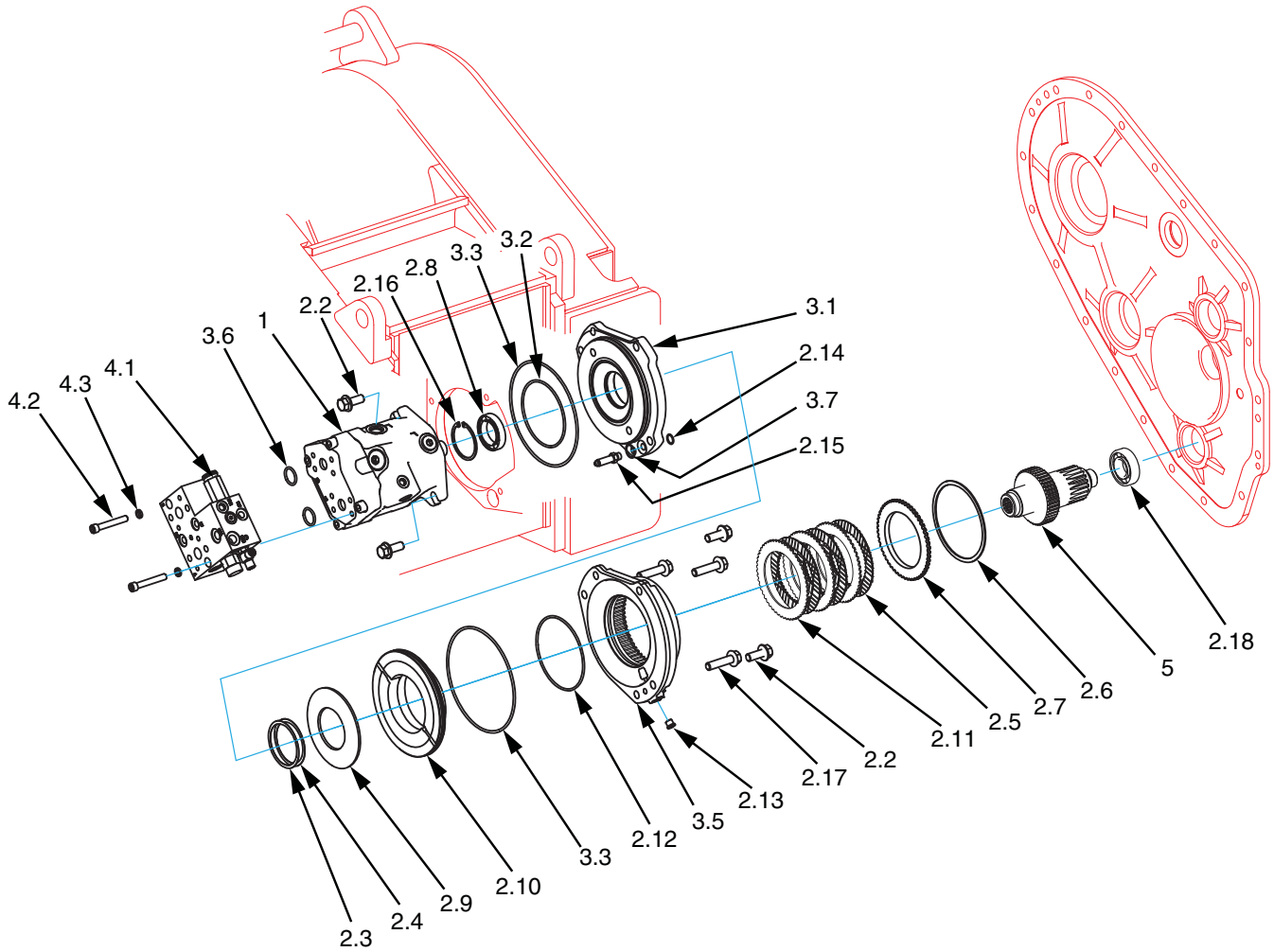
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303788W	Motor, Hydraulic	1	3	2306562w	List - Motor Shaft, H4A**R, SCH	
2	2306540W	List - Motor Shaft, H4A Cmpnts		3.1	177947W	. Washer	2
2.2	2303848W	. Screw, Flange	4	3.2	2304037W	. Plate - Mounting, Motor	1
2.3	*j 2304711W	. Shim, 0.005"	A/R	3.3	*a 2305679W	. Housing - Brake	1
2.4	*j 2304712W	. Shim, 0.007"	A/R	3.3	*b 2316526	. Housing - Brake	1
2.5	*j 2304873W	. Disc, Friction	3	3.4	*j*k 2316507	. O-Ring	1
2.6	334475W	. Ring - Snap, Int	1	3.5	*k 2304220W	. O-Ring	1
2.7	334442W	. Plate, Pressure	1	3.6	*g 2305236W	. Valve Assy - Motor (see 3-111)	1
2.8	*j 2300831W	. Bearing - Ball	1	3.6	*h 2306566W	. Valve Assy - Motor (see 3-110)	1
2.9	2303845W	. Spring, Belleville	1	3.7	*k 2304110W	. O-Ring	2
2.10	2316525	. Piston - Brake	1	3.8	Y73G-0632	. Capscrew	2
2.11	*j 2304874W	. Plate, Separator	3	4	*c 2303835W	Motor Shaft, 21T (83:1)	1
2.12	*j*k 2316517	. O-Ring	1	4	*d 2311303	Motor Shaft, 19T (94:1)	1
2.13	222442W	. Fitting	1	4	*e 2303829W	Motor Shaft, 16T (116:1)	1
2.14	*a 212456	. O-Ring	1	4	*f 2311305	Motor Shaft, 15T (125:1)	1
2.14	*b*k 26883	. O-Ring	1				
2.15	16547W	. Fitting	1				
2.16	12921W	. Snap Ring	1	*a	Last used on H4A-1046		
2.17	918906W	. Screw	3	*b	First used on H4A-1047		
2.18	*j 41206W	. Bearing - Ball	1	*c	Used on 83:1 Gear Ratio Only		
				*d	Used on 94:1 Gear Ratio Only		
				*e	Used on 116:1 Gear Ratio Only		
				*f	Used on 125:1 Gear Ratio Only		
				*g	Used on H4A-1001-1003 and H4A-1005-1037		
				*h	Used on H4A-1004, H4A-1038 and after		
				*j	Included in Brake Kit 2306545W		
				*k	Included in Motor Shaft Rebuild Kit 2315287		

Motor & Brake Group

High Performance non-SCH Winch

Caterpillar D3/4/5G (H4A_Y_C17), D4/5G (H4A_Y_C18), D3/4K (H4A_Y_C19),
Caterpillar D3/4/5K2 T4f (H4A_Y_C191), D5K/K2 (H4A_Y_C20), D5K2 with fireplow (H4A_Y_C201)

Page 1 of 2



Motor & Brake Group

High Performance non-SCH Winch

Caterpillar D3/4/5G (H4A_Y_C17), D4/5G (H4A_Y_C18), D3/4K (H4A_Y_C19),
Caterpillar D3/4/5K2 T4f (H4A_Y_C191), D5K/K2 (H4A_Y_C20), D5K2 with fireplow (H4A_Y_C201)

Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303788W	Motor, Hydraulic	1	3	2306563W	List - Motor Shaft- H4A Cmnpts	
1	*a 2314620	Motor, Hydraulic	1	3.1	2305651W	. Plate - Mounting, Motor	1
1	*b 2315765	Motor, Hydraulic	1	3.2	*n 15888W	. O-Ring	1
2	2306540W	List - Motor Shaft, H4A Cmpnts		3.3	*m*n 2316507	. O-Ring	2
2.2	2303848W	. Screw, Flange	4	3.5	*c 2305679W	. Housing - Brake	1
2.3	*m 2304711W	. Shim, 0.005"	A/R	3.5	*d 2316526	. Housing - Brake	1
2.4	*m 2304712W	. Shim, 0.007"	A/R	3.6	*n 2304110W	. O-Ring	2
2.5	*m 2304873W	. Disc, Friction	3	3.7	*n 17064	. O-Ring	1
2.6	334475W	. Ring - Snap, Int	1	4	2311747	List - Motor Shaft, H4AHY Hi-P	
2.7	334442W	. Plate, Pressure	1	4.1	*j 2306566W	. Valve Assy - Motor (see 3-110)	1
2.8	*m 2300831W	. Bearing - Ball	1	4.1	*k 2310966	. Valve Assy - Motor (see 3-112)	1
2.9	2303845W	. Spring, Belleville	1	4.2	Y73G-0640	. Capscrew	2
2.10	2316525	. Piston - Brake	1	4.3	177947W	. Washer	2
2.11	*m 2304874W	. Plate, Separator	3	5	*e 2303835W	Motor Shaft, 21T (83:1)	1
2.12	*m*n 2316517	. O-Ring	1	5	*f 2311303	Motor Shaft, 19T (94:1)	1
2.13	222442W	. Fitting	1	5	*g 2303829W	Motor Shaft, 16T (116:1)	1
2.14	*c 212456	. O-Ring	1	5	*h 2311305	Motor Shaft, 15T (125:1)	1
2.14	*d*n 26883	. O-Ring	1				
2.15	16547W	. Fitting	1				
2.16	12921W	. Snap Ring	1				
2.17	918906W	. Screw	3				
2.18	*m 41206W	. Bearing - Ball	1				
				*a	Used on Tractor Code K14 only		
				*b	Used on Tractor Code U13 only		
				*c	Last used on H4A-1046		
				*d	First used on H4A-1047		
				*e	Used on 83:1 Gear Ratio Only		
				*f	Used on 94:1 Gear Ratio Only		
				*g	Used on 116:1 Gear Ratio Only		
				*h	Used on 125:1 Gear Ratio Only		
				*j	Last used on H4A-1161		
				*k	First used on H4A-1162		
				*m	Included in Brake Kit 2306545W		
				*n	Included in Motor Shaft Rebuild Kit 2315351		

Motor & Brake Group

Standard non-SCH Winch

Caterpillar D3/4K (H4A_Y_C19), D3/4/5K2 T4f (H4A_Y_C191)

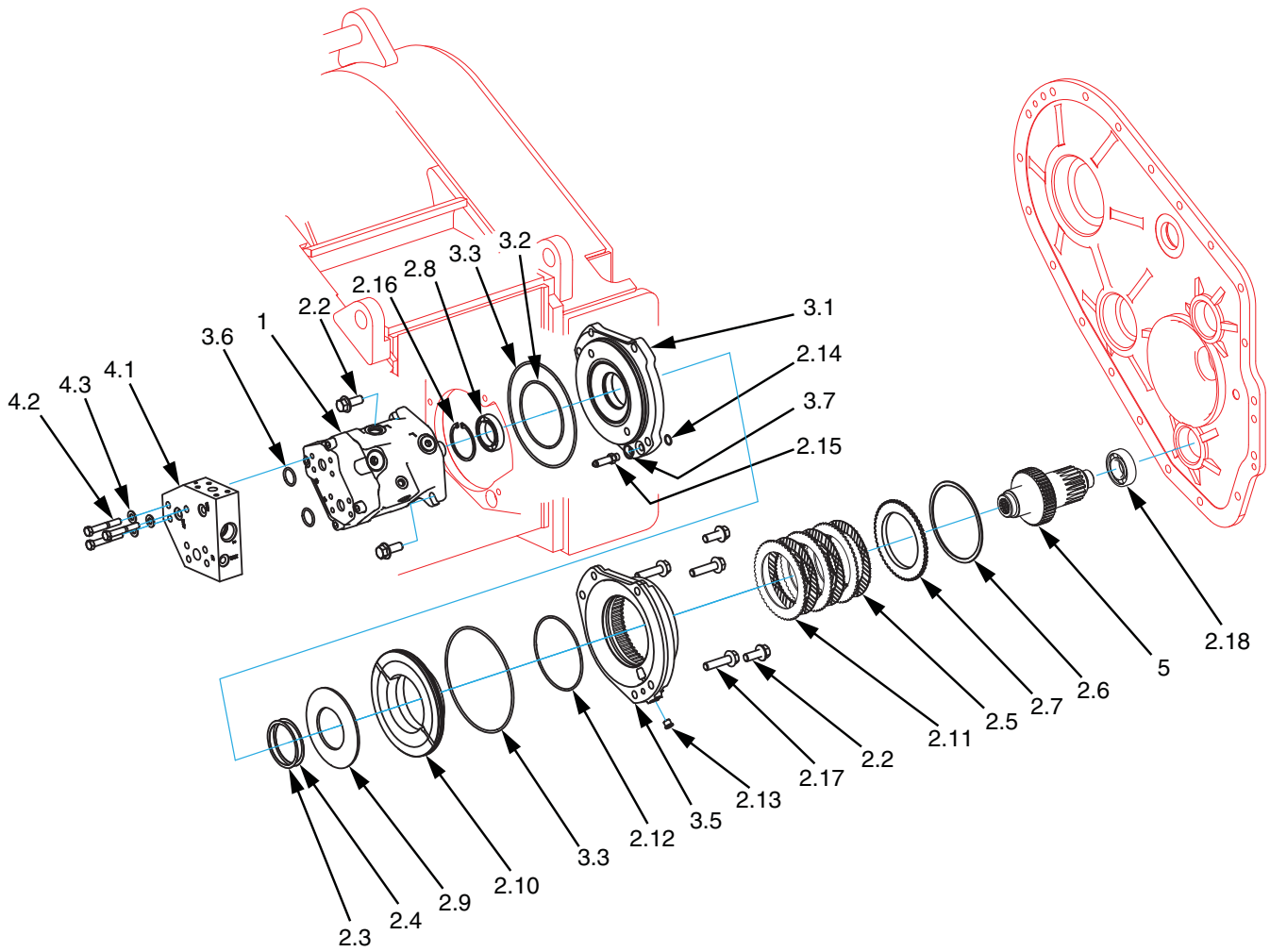
Caterpillar D5K/K2 (H4A_Y_C20), D5K2 with fireplow (H4A_Y_C201)

Dressta TD7/8S (H4A_Y_H15), TD9S (H4A_Y_H16)

Komatsu D31/37/39X-22 (H4A_Y_K13), D37/39X-23, D39X-24 (H4A_Y_K14)

Shantui SD10 (H4A_Y_U13)

Page 1 of 2



Motor & Brake Group

Standard non-SCH Winch

Caterpillar D3/4K (H4A_Y_C19), D3/4/5K2 T4f (H4A_Y_C191)

Caterpillar D5K/K2 (H4A_Y_C20), D5K2 with fireplow (H4A_Y_C201)

Dressta TD7/8S (H4A_Y_H15), TD9S (H4A_Y_H16)

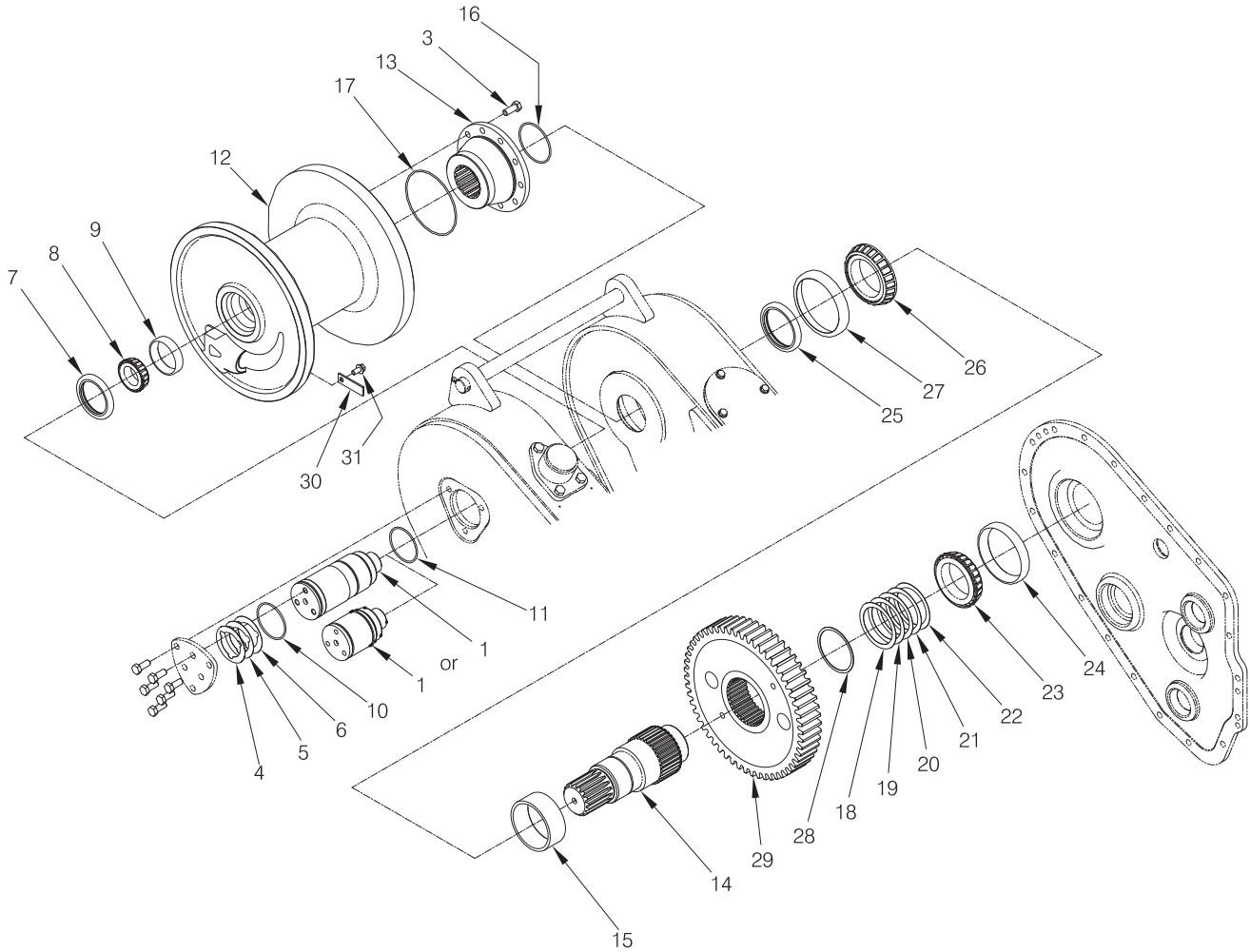
Komatsu D31/37/39X-22 (H4A_Y_K13), D37/39X-23, D39X-24 (H4A_Y_K14)

Shantui SD10 (H4A_Y_U13)

Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303788W	Motor, Hydraulic	1	3	2306563W	List - Motor Shaft- H4A Cmnpts	
1	*a 2314620	Motor, Hydraulic	1	3.1	2305651W	. Plate - Mounting, Motor	1
1	*b 2315765	Motor, Hydraulic	1	3.2	*k 15888W	. O-Ring	1
2	2306540W	List - Motor Shaft, H4A Cmpnts		3.3	*j*k 2316507	. O-Ring	2
2.2	2303848W	. Screw, Flange	4	3.5	*c 2305679W	. Housing - Brake	1
2.3	*j 2304711W	. Shim, 0.005"	A/R	3.5	*d 2316526	. Housing - Brake	1
2.4	*j 2304712W	. Shim, 0.007"	A/R	3.6	*k 2304110W	. O-Ring	2
2.5	*j 2304873W	. Disc, Friction	3	3.7	*k 17064	. O-Ring	1
2.6	334475W	. Ring - Snap, Int	1	4	2311127	List - Motor Shaft - H4AT*Y Std	
2.7	334442W	. Plate, Pressure	1	4.1	2307568W	. Assembly - Manifold (see 3-114)	1
2.8	*j 2300831W	. Bearing - Ball	1	4.2	180959W	. Capscrew	3
2.9	2303845W	. Spring, Belleville	1	4.3	221767W	. Hard Washer	3
2.10	2316525	. Piston - Brake	1	5	*e 2303835W	Motor Shaft, 21T (83:1)	1
2.11	*j 2304874W	. Plate, Separator	3	5	*f 2311303	Motor Shaft, 19T (94:1)	1
2.12	*j*k 2316517	. O-Ring	1	5	*g 2303829W	Motor Shaft, 16T (116:1)	1
2.13	222442W	. Fitting	1	5	*h 2311305	Motor Shaft, 15T (125:1)	1
2.14	*c 212456	. O-Ring	1				
2.14	*d*k 26883	. O-Ring	1	*a	Used on Tractor Code K14 only		
2.15	16547W	. Fitting	1	*b	Used on Tractor Code U13 only		
2.16	12921W	. Snap Ring	1	*c	Last used on H4A-1046		
2.17	918906W	. Screw	3	*d	First used on H4A-1047		
2.18	*j 41206W	. Bearing - Ball	1	*e	Used on 83:1 Gear Ratio Only		
				*f	Used on 94:1 Gear Ratio Only		
				*g	Used on 116:1 Gear Ratio Only		
				*h	Used on 125:1 Gear Ratio Only		
				*j	Included in Brake Kit 2306545W		
				*k	Included in Motor Shaft Rebuild Kit 2315351		

Drum Shaft Group



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*b	2303830W	1	18	1314470W	Shim, .025	AR
1	*a	2305653W	1	19	1314485W	Shim, .015	AR
3		2303848W	10	20	1314486W	Shim, .018	AR
4		2304122W	AR	21	1314487W	Shim, .020	AR
5		2304123W	AR	22	1314488W	Shim, .022	AR
6		2304124W	AR	23	1314483W	Cone, Bearing	1
7		87355W	1	24	30190W	Cup, Bearing	1
8		2303853W	1	25	R2109170	Seal	1
9		2303854W	1	26	2304126W	Cone, Bearing	1
10		15881W	1	27	2304127W	Cup, Bearing	1
11		203525	1	28	2304128W	Retaining Ring	1
12		2304069W	1	29	2303827W	Gear, 55T	1
13		2304060W	1	30	1314503W	Keeper, Ferrule	1
14		2304058W	1	31	134803W	Capscrew	1
15		2304125W	1				
16		46629W	1				
17		15895W	1				

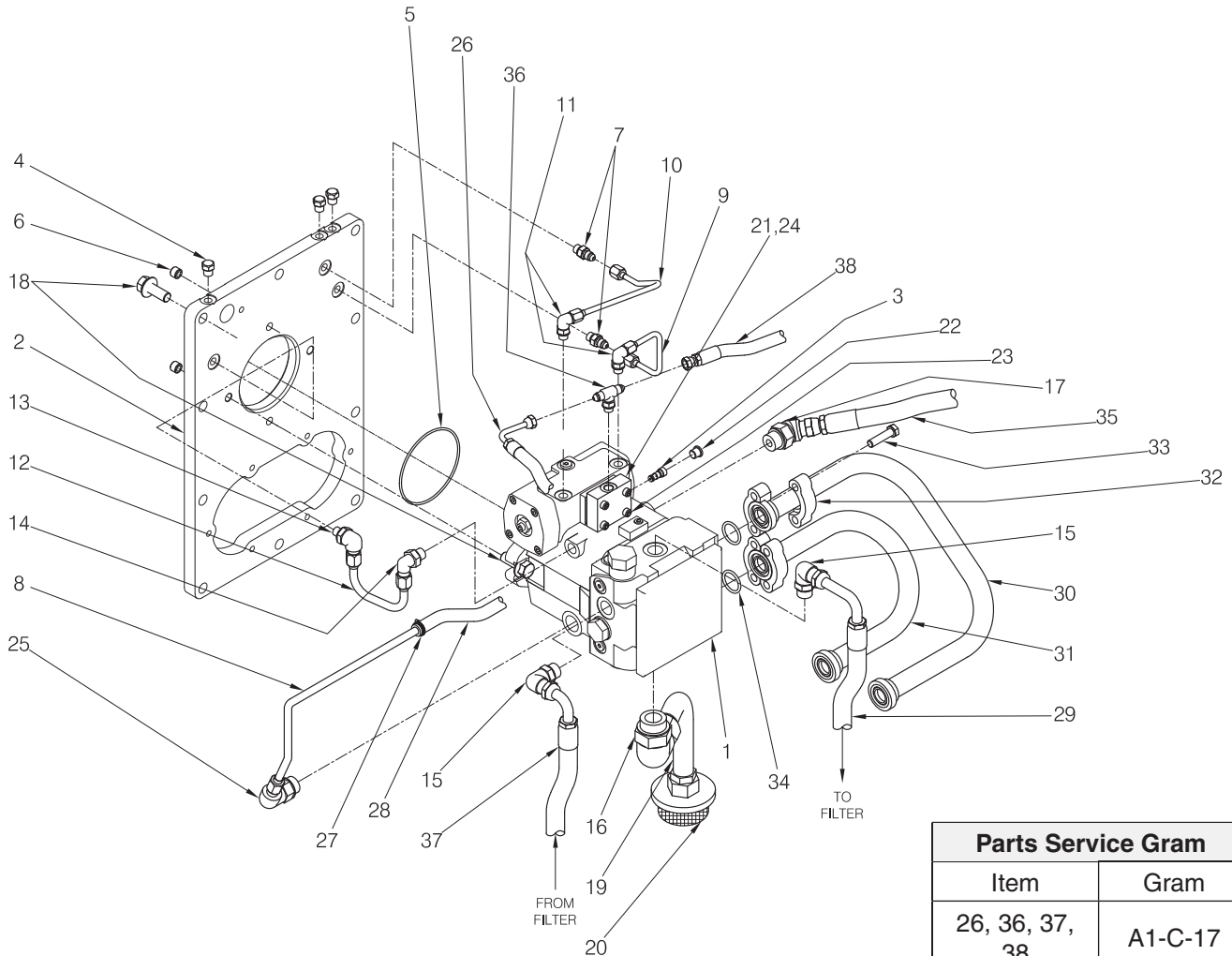
*a Used on Non SCH Winches (S/N H4A_Y)
 *b Used on SCH Winches (S/N H4A_R)

Hydraulics/Controls

4 to 5 Spool Valve Conversion	3-121
Controller	3-162
Control Lever Assembly	3-150 thru 3-156
Control Lever Mounting	3-122 thru 3-148
Control Manifold Assembly	3-117
Filter Assembly	3-104 thru 3-107
Manifold Assembly.	3-114
Manifold Assembly, Valve	3-115 thru 3-116
Motor and Related Hydraulics	3-18 thru 3-25
Motor, Hydraulic 45CC 2 Speed	3-26 thru 3-28
Motor Low Temperature Seal Kit	3-29
Pump and Related Hydraulics	3-2 thru 3-5
Pump, Hydrostatic 45CC	3-6 thru 3-15
Pump, Hydrostatic 56CC	3-16 & 3-17
Pump, Through Drive Charge	3-118 thru 3-120
Switch Assembly, 12V	3-158
Switch Assembly, 24V	3-157
Switch Assembly, Filter Light	3-159
Switch Panel Assembly	3-149
Valve Assembly, Freespool	3-108 thru 3-109
Valve Assembly, Motor.	3-110 thru 3-112
Valve Assembly, Shuttle.	3-113
Winch Internal Hydraulics	3-30 thru 3-51
Winch External Hydraulics.	3-52 thru 3-103
Wire Harness Installation	3-160 & 3-161

Pump and Related Hydraulics

Last Used on S/N H4AH_B1014

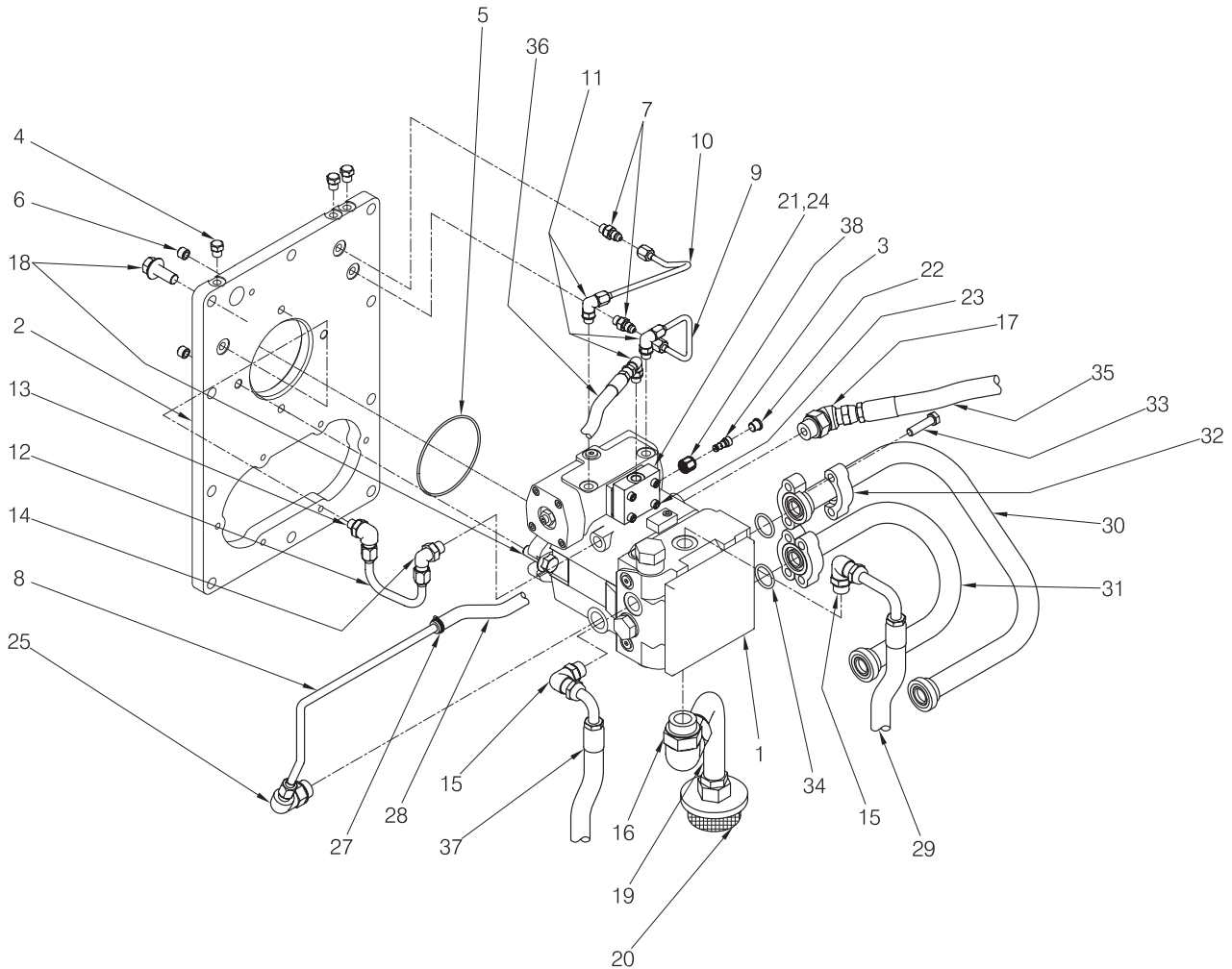


Parts Service Gram	
Item	Gram
26, 36, 37, 38	A1-C-17

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2304231W	Assembly, Pump (See 3-6)	1	21	2304014W	Manifold, Pump	1
2	-----	Plate, (See Frames & Covers)	1	22	222442W	Fitting	1
3	2304195W	Valve, Shuttle	1	23	293796W	Capscrew	4
	2305073W	. Kit, Seal	1	24	2304193W	Gasket	1
4	14591W	Fitting	3	25	222400W	Fitting	1
5	39742W	O-Ring	1	26	2305013W	Assembly, Hose	1
6	*a 2305987W	Setscrew	2	27	R6515575	Clamp, Hose	1
7	16538W	Fitting	2	28	209843	Hose, Push-On	10"
8	2305133W	Assembly, Tube	1	29	2305003W	Assembly, Hose	1
9	2304149W	Assembly, Tube	1	30	2304057W	Assembly, Tube	1
10	2304150W	Assembly, Tube	1	31	2304104W	Assembly, Tube	1
11	16556W	Fitting	2	32	222535W	Flange, Half	4
12	2304152W	Assembly, Tube	1	33	*a 177461W	Capscrew	8
13	239784W	Fitting	1	34	2304110W	O-Ring	2
14	16558W	Fitting	1	35	2305007W	Assembly, Hose	1
15	16559W	Fitting	2	36	16574W	Fitting	1
16	16562W	Fitting	1	37	R400128	Assembly, Hose	1
17	201752W	Fitting	1	38	2305141W	Assembly, Hose	1
18	2303848W	Capscrew	12				
19	2304115W	Assembly, Tube	1				
20	2304114W	Strainer	1				
				*a	Use 318702W Thread Lock		

Pump and Related Hydraulics

First Used on S/N H4AH_R1015



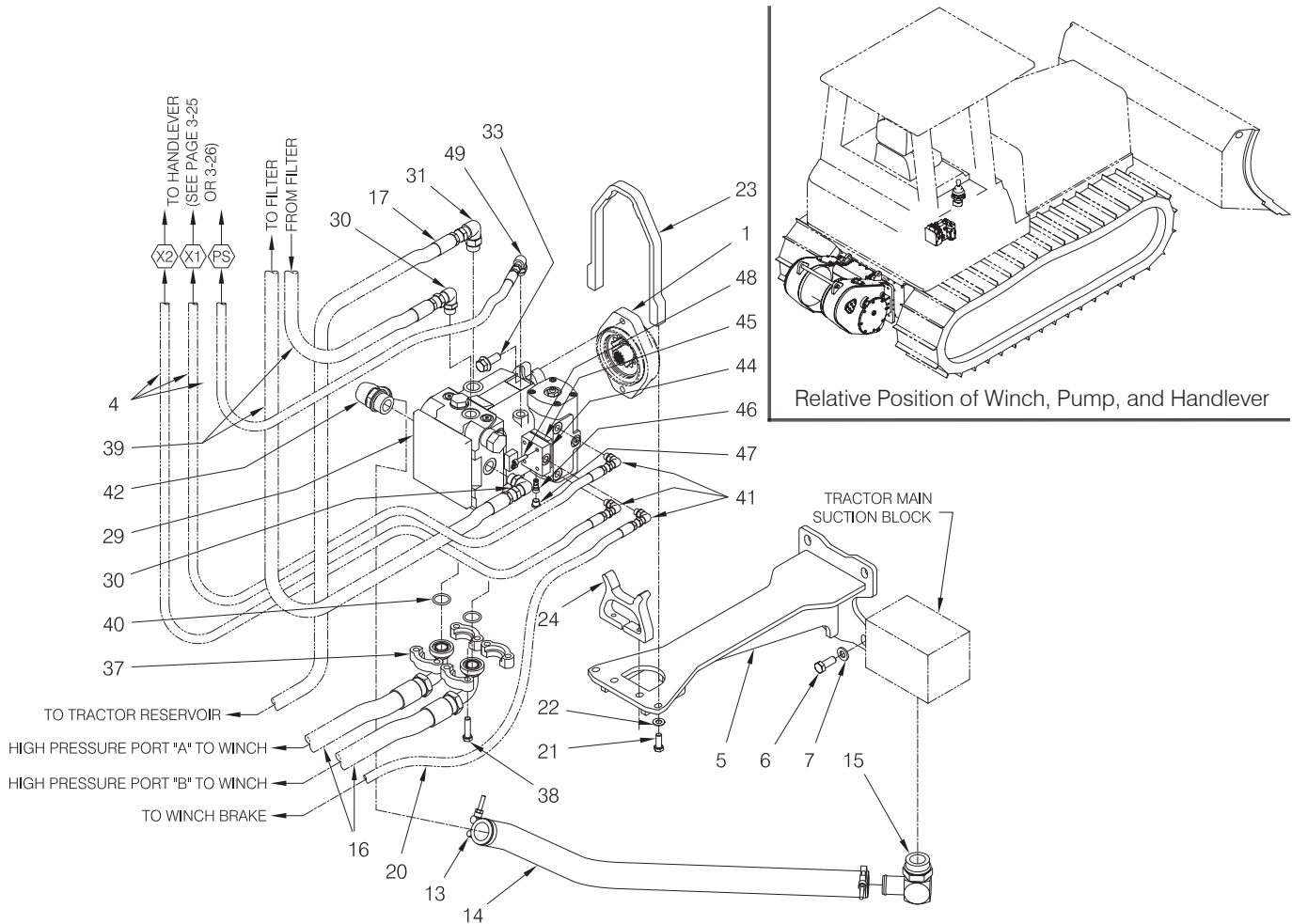
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2304231W	Assembly, Pump (See 3-6)	1	22	222442W	Fitting	1
2	-----	Plate, (See Frames & Covers)	1	23	293796W	Capscrew	4
3	2304195W	Valve, Shuttle	1	24	2304193W	Gasket	1
	2305073W	. Kit, Seal	1	25	222400W	Fitting	1
4	14591W	Fitting	3	27	R6515575	Clamp, Hose	1
5	39742W	O-Ring	1	28	209843	Hose, Push-On	10"
6	*a 2305987W	Setscrew	2	29	2305003W	Assembly, Hose	1
7	16538W	Fitting	2	30	2304057W	Assembly, Tube	1
8	2305133W	Assembly, Tube	1	31	2304104W	Assembly, Tube	1
9	2304149W	Assembly, Tube	1	32	222535W	Flange, Half	4
10	2304150W	Assembly, Tube	1	33	*a 177461W	Capscrew	8
11	16556W	Fitting	3	34	2304110W	O-Ring	2
12	2304152W	Assembly, Tube	1	35	2305007W	Assembly, Hose	1
13	239784W	Fitting	1	36	2305013W	Assembly, Hose	1
14	16558W	Fitting	1	37	R400128	Assembly, Hose	1
15	16559W	Fitting	2	38	*b, *c 2307522W	Cap, Orifice	1
16	16562W	Fitting	1	38	*d 2310417	Cap, Orifice	1
17	201752W	Fitting	1				
18	2303848W	Capscrew	12				
19	2304115W	Assembly, Tube	1	*a	Use 318702W Thread Lock		
20	2304114W	Strainer	1	*b	First Used on S/N H4A-1053		
21	2304014W	Manifold, Pump	1	*c	Last Used on S/N H4A-1093		
				*d	First Used on S/N H4A-1099		

Pump and Related Hydraulics

Caterpillar D3/4/5G

(H4AH_Y_C17; H4AH_Z_C17)

Last Used on S/N H4A-1161



A - Used on Caterpillar C17 D3/4/5G Hydrostatic (See Page 0-3 for serial number prefixes)

B - Used on Caterpillar C18 D4/5G Hydrostatic (See Page 0-3 for serial number prefixes)

Item	Part No.	Description	Qty		Item	Part No.	Description	Qty	
			A	B				A	B
1	2304212W	Kit, Thru Drive (See 3-118)	1	--	30	16559W	Fitting	2	2
	2306258W	Kit, Thru Drive (See 3-119)	--	1	31	17224W	Fitting	1	1
4	2304205W	Assembly, Hose	3	3	33	2303848W	Capscrew	2	2
5	2304225W	Support, Pump	1	--	37	222535W	Fitting	4	4
6	293645W	Capscrew	4	--	38	*a 177461W	Capscrew	8	8
7	296422W	Washer	4	--	39	2304237W	Assembly, Hose	2	2
13	R13805074	Clamp, T-Bolt	2	2	40	2304110W	O-Ring	2	2
14	2304259W	Hose, Suction	1	--	41	16556W	Fitting	3	3
	2306251W	Hose, Suction	--	1	42	2304233W	Fitting	1	1
15	213619W	Fitting	1	1	44	2304014W	Manifold, Pump	1	1
16	2304234W	Assembly, Hose	2	2	45	2304193W	Gasket	1	1
17	2304235W	Assembly, Hose	1	1	46	2304195W	Valve, Shuttle	1	1
20	2304205W	Assembly, Hose	1	1	47	2305073W	.Kit, Seal	1	1
21	179443W	Capscrew	4	--	48	222442W	Fitting	1	1
22	221767W	Washer	4	--	49	293796W	Capscrew	4	4
23	2304245W	Clamp, Upper Pump Support	1	--		201766W	Fitting	1	1
24	2304244W	Clamp, Lower Pump Support	1	--					
29	2304231W	Assembly, Pump (See 3-6)	1	1					

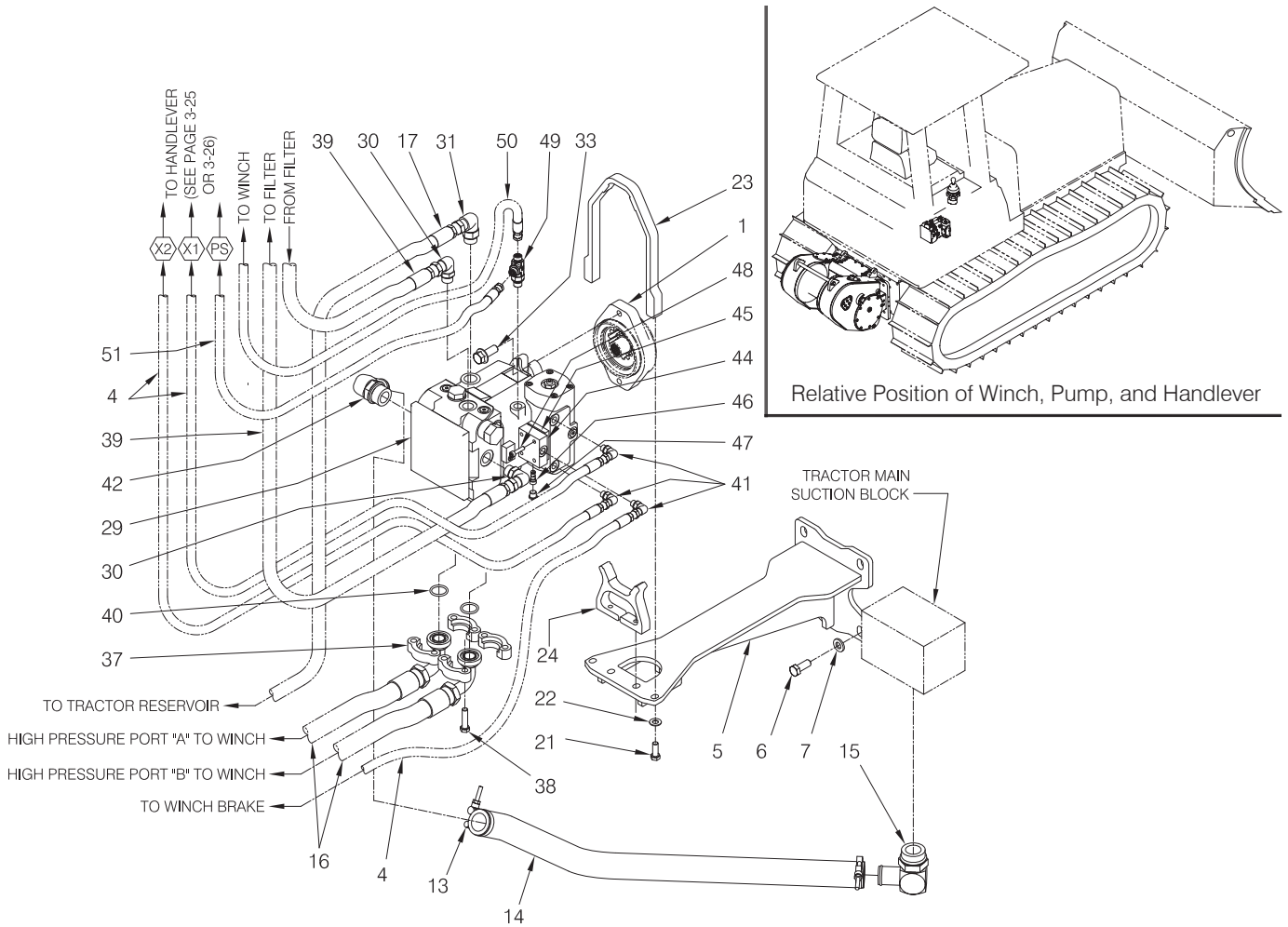
*a Use 318702W Thread Lock

Pump and Related Hydraulics

Caterpillar D3/4/5G

(H4AH_Y_C17; H4AH_Z_C17)

First Used on S/N H4A-1162



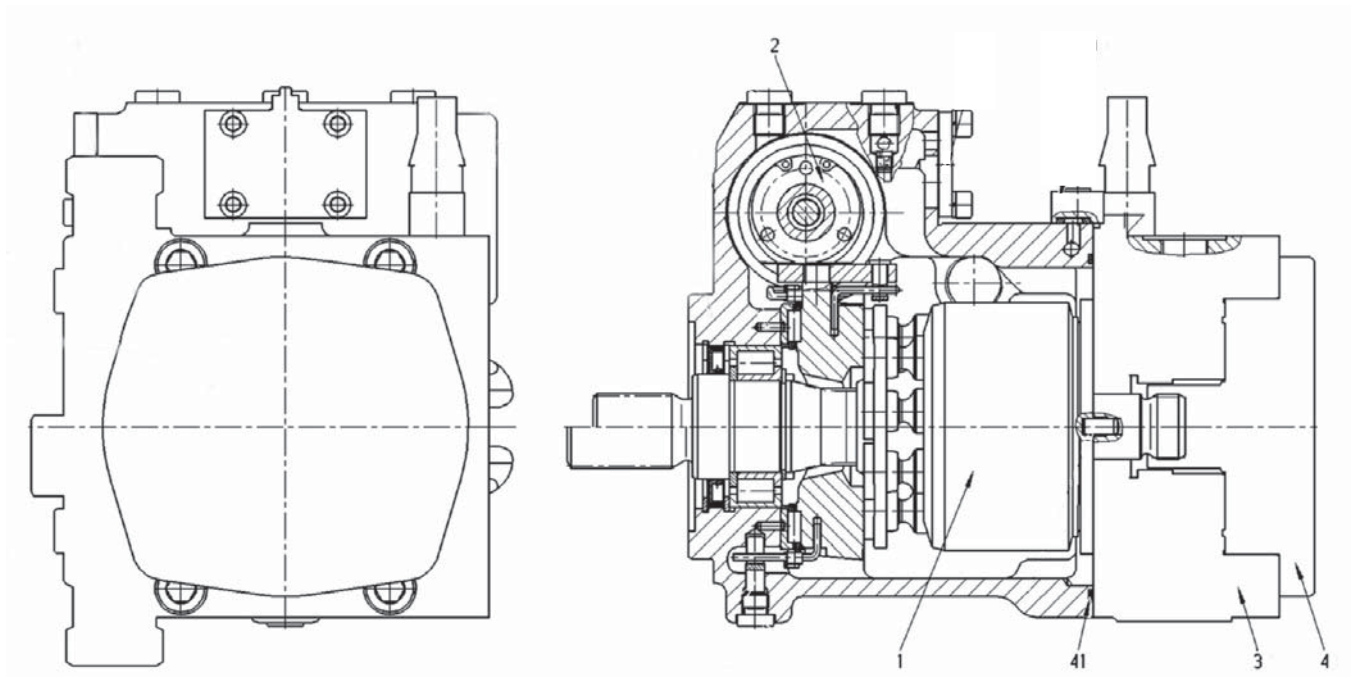
A - Used on Caterpillar C17 D3/4/5G Hydrostatic (See Page 0-3 for serial number prefixes)

B - Used on Caterpillar C18 D4/5G Hydrostatic (See Page 0-3 for serial number prefixes)

Item	Part No.	Description	Qty		Item	Part No.	Description	Qty	
			A	B				A	B
1	2304212W	Kit, Thru Drive (See 3-118)	1	--	33	2303848W	Capcrew	2	2
	2306258W	Kit, Thru Drive (See 3-119)	--	1	37	222535W	Fitting	4	4
4	2311492	Assembly, Hose	4	4	38	*a 177461W	Capcrew	8	8
5	2304225W	Support, Pump	1	--	39	2311019	Assembly, Hose	2	2
6	293645W	Capcrew	4	--	40	2304110W	O-Ring	2	2
7	296422W	Washer	4	--	41	16556W	Fitting	3	3
13	R13805074	Clamp, T-Bolt	2	2	42	2304233W	Fitting	1	1
14	2304259W	Hose, Suction	1	--	44	2304014W	Manifold, Pump	1	1
	2306251W	Hose, Suction	--	1	45	2304193W	Gasket	1	1
15	213619W	Fitting	1	1	46	2304195W	Valve, Shuttle	1	1
16	2311846	Assembly, Hose	2	2		2305073W	. Kit, Seal	1	1
17	2311845	Assembly, Hose	1	1	47	222442W	Fitting	1	1
21	179443W	Capcrew	4	--	48	293796W	Capcrew	4	4
22	221767W	Washer	4	--	49	2311842	Fitting	1	1
23	2304245W	Clamp, Upper Pump Support	1	--	50	2311847	Assembly, Hose	1	1
24	2304244W	Clamp, Lower Pump Support	1	--	51	2311198	Assembly, Hose	1	1
29	2311840	Assembly, Pump (See 3-13)	1	1					
30	231452	Fitting	2	2					
31	237983	Fitting	1	1					
					*a	Use 318702W Thread Lock			

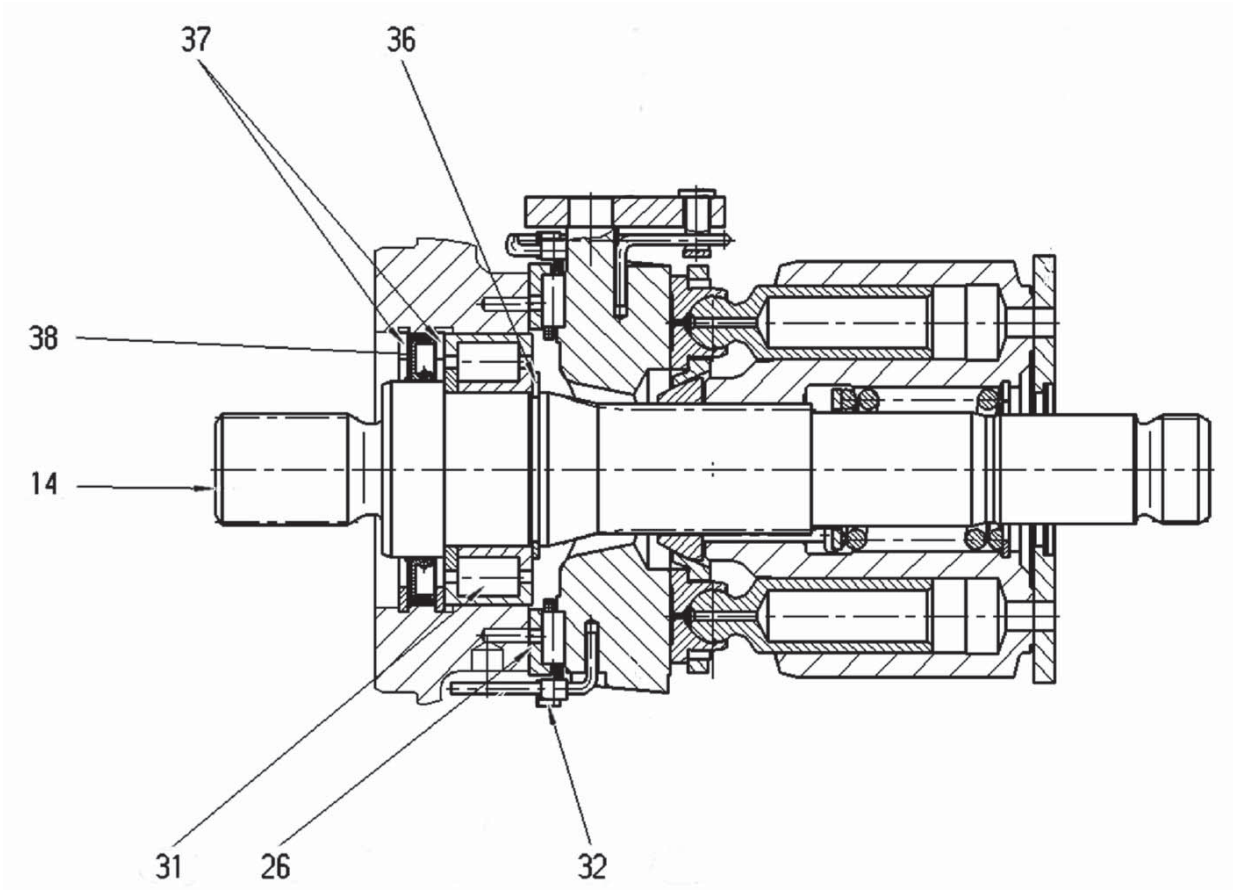
Pump - Hydrostatic 45CC

Caterpillar D3/4/5G (H4AH_Y__C17),
 Caterpillar D4/5G (H4AH_Y__C18),
 Caterpillar D3/4K (H4AH_Y__C19)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2304231W	Pump - Hydrostatic 45CC					
1	2305788W	. Rotary Group (See 3-7)	1	41	2305910W	. O-Ring	1
2	2305804W	. Hydraulic Control (See 3-8)	1				
3	2305833W	. Port Plate w/ Valves (See 3-9)	1				
4	2305876W	. Assembly, Internal Gear Pump (See 3-10)	1				

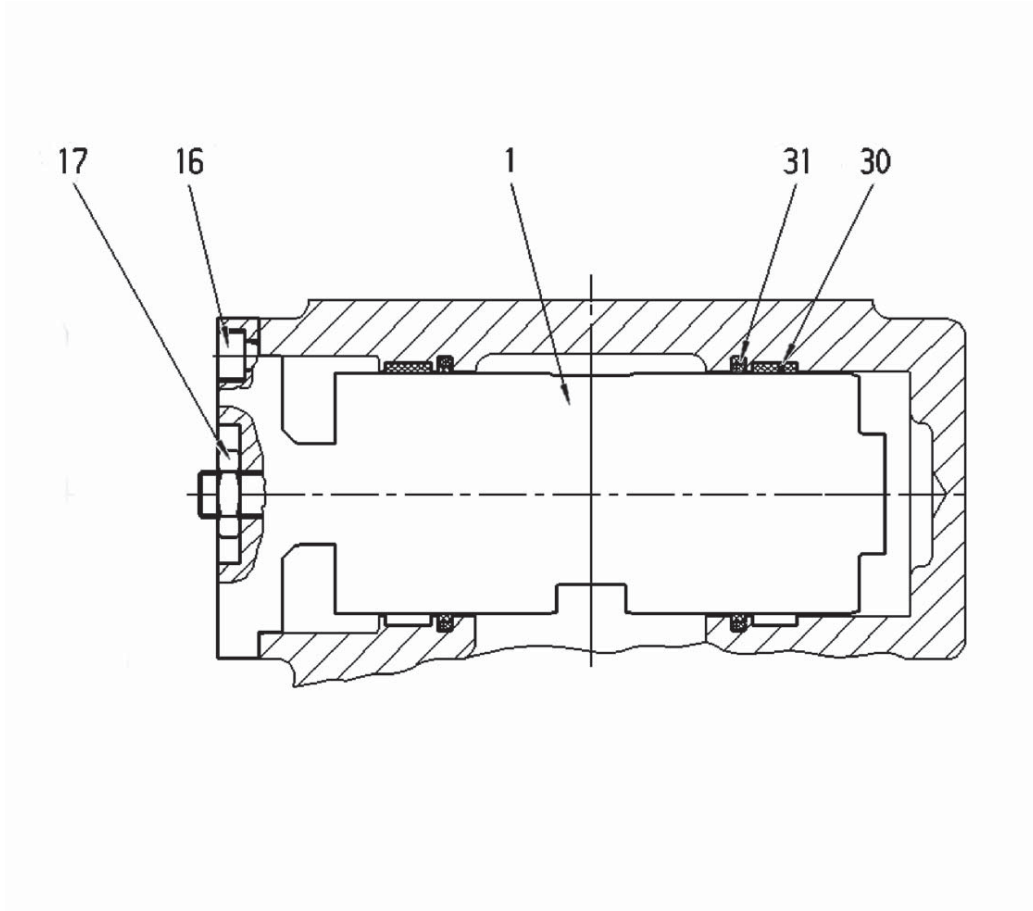
Pump - Hydrostatic 45CC
Rotary Group



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2305788W	Rotary Group					
14	2305794W	. Shaft, Drive	1	37	*a 2305802W	. Seeger, V-Ring	2
26	2305798W	. Liner, Bearing (Pair)	1	38	*a 2305803W	. Ring, Shaft Seal	1
31	2305799W	. Bearing, Plain Roller	1		*a	Contained in 2307356W Seal Kit	
32	2305800W	. Assembly, Cradle Bearing (Set)	1				
36	*a 2305801W	. Ring, Retaining	1				

Pump - Hydrostatic 45CC

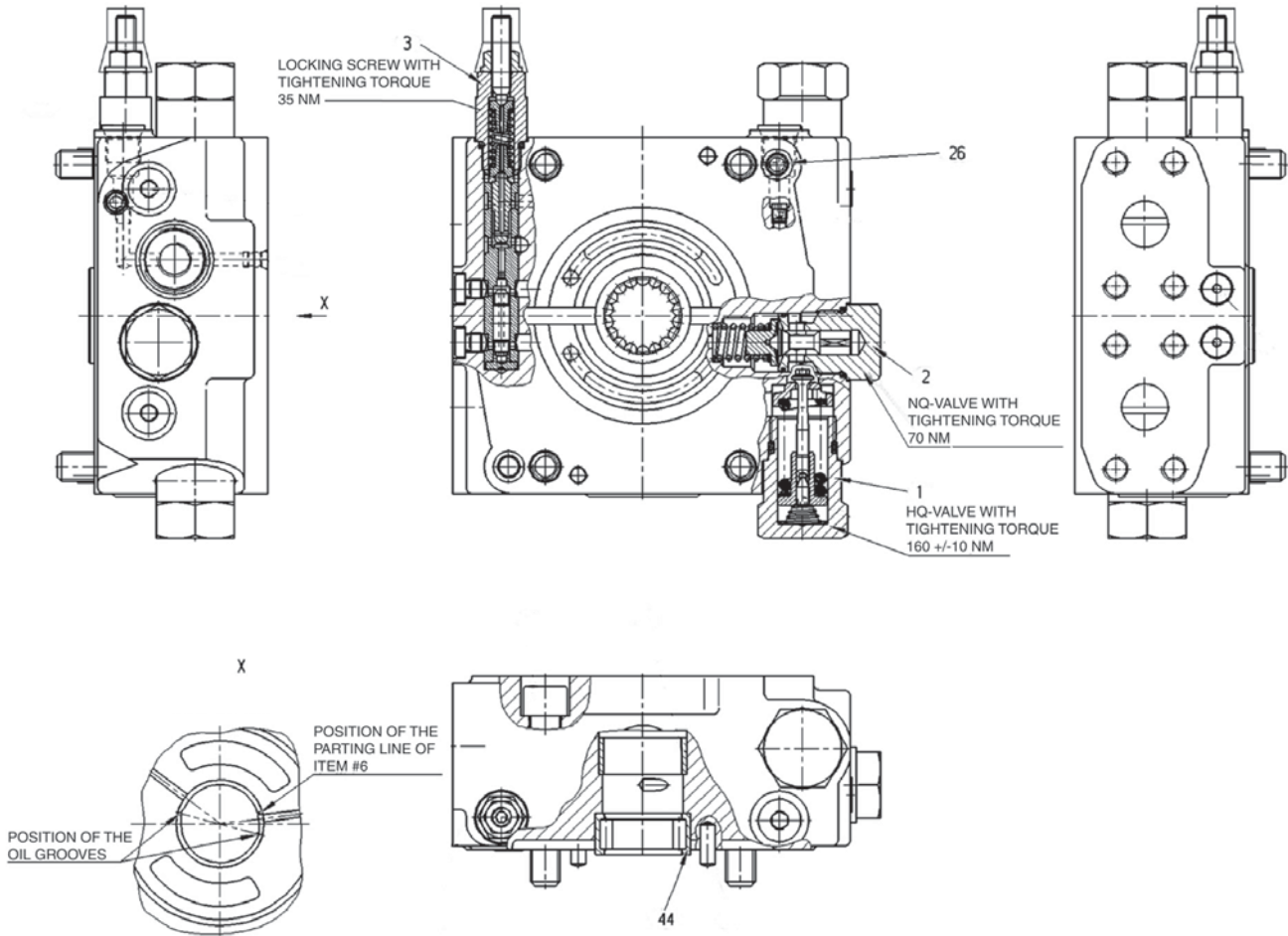
Hydraulic Control



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2305804W	Control, Hydraulic					
1	2305805W	. Piston, Complete Positioning	1	31	*a 2305832W	. Turcon, Glyd-Ring	2
16	2305829W	. Screw, Socket-Head	4		*a	Contained in 2307356W Seal Kit	
17	2305830W	. Nut, Hexagon	1				
30	*a 2305831W	. Ring, Guide	2				

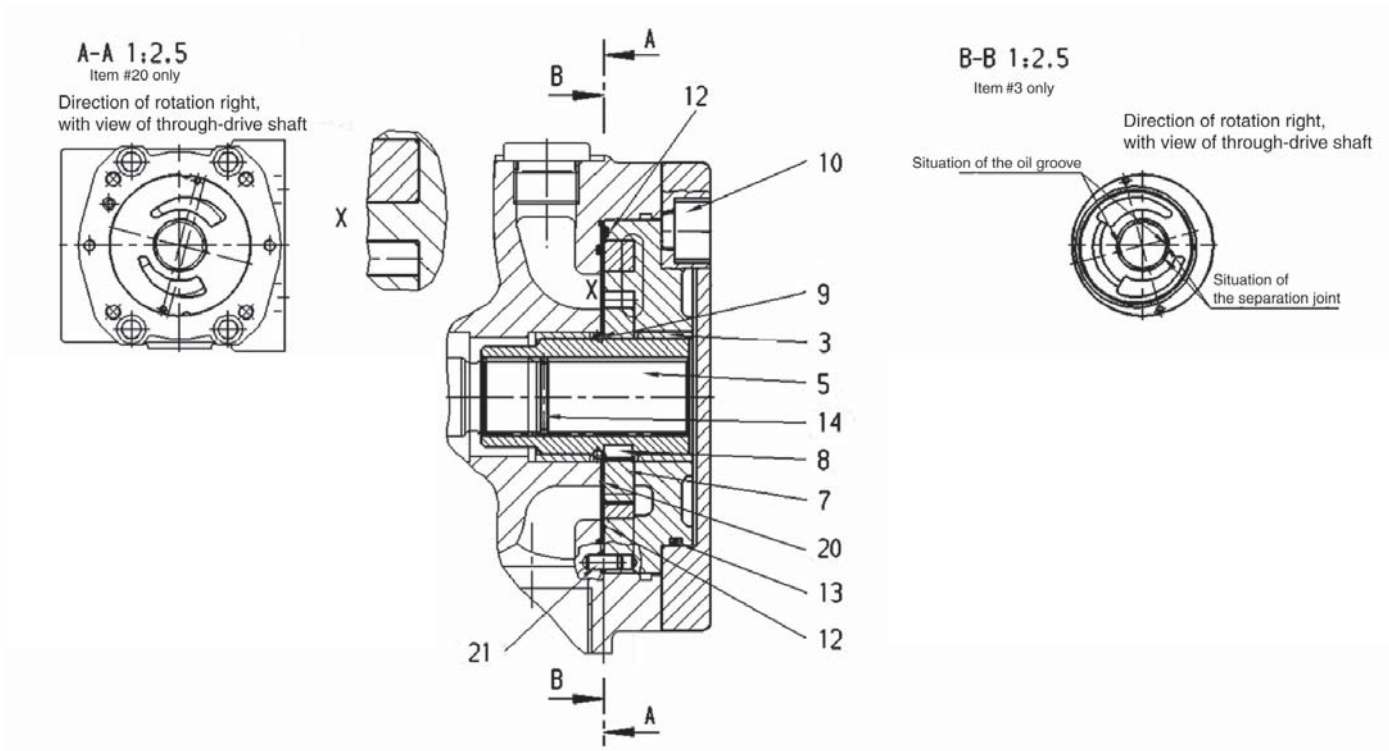
Pump - Hydrostatic 45CC

Port Plate with Valves



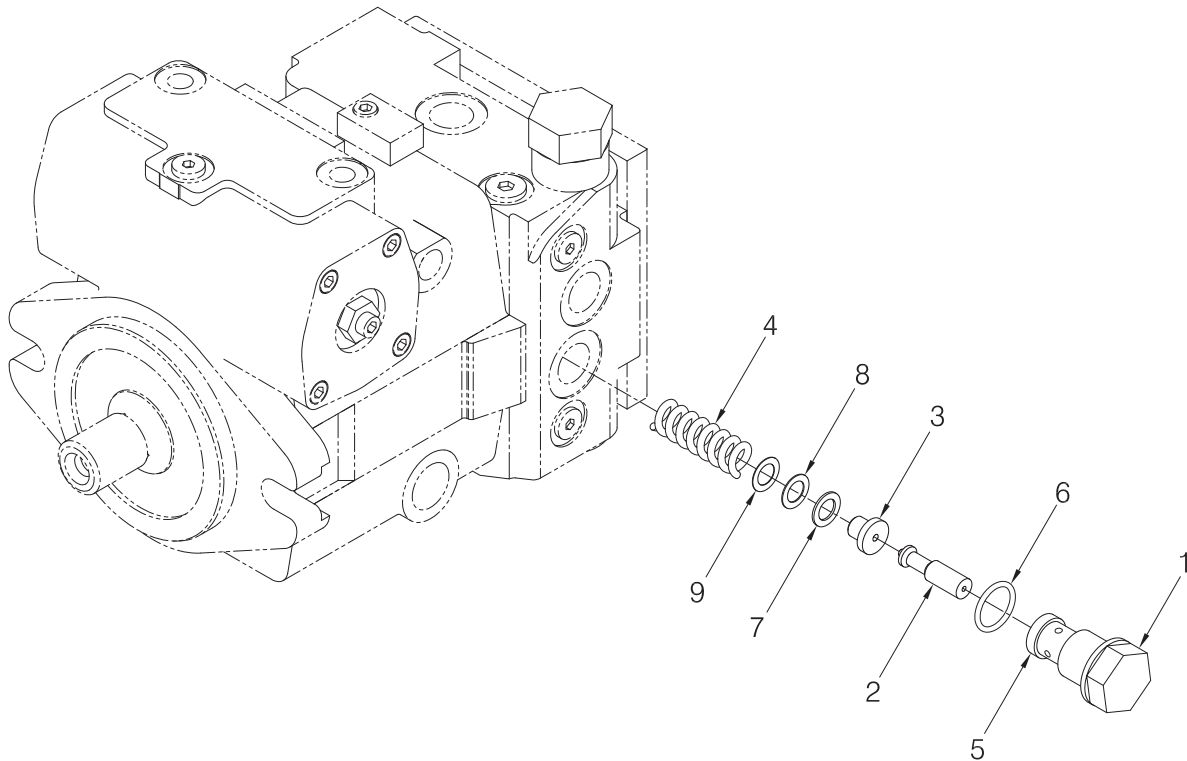
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2305833W	Plate, Port with Valves					
1	2305834W	. Valve, Pressure Relief	2	44	2305875W	. Bearing, Plain Roller	1
2	2305844W	. Valve, Pressure Relief (See 3-11)	1		*a	Contained in 2307356W Seal Kit	
3	2305854W	. Valve, Pressure Override	1				
26	*a 2305873W	. O-Ring	2				

Pump - Hydrostatic 45CC
Internal Gear Pump Assembly



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2305876W	Assembly, Internal Gear Pump					
3	2305867W	. Bushing, Bearing	1	12	*a 2305885W	. Kantseal, RG.	2
	2305879W	. Bushing, Bearing	1	13	*a 2305886W	. O-Ring	1
5	2305880W	. Shaft, Through-Drive	1	14	*a 2305887W	. Ring, Snap	1
7	2305881W	. Set, Wheel	1	20	2305888W	. Plate, Wear	1
8	*a 2305882W	. Key, Shaft	1	21	2305889W	. Pin, Cylinder	1
9	*a 2305883W	. Ring, Snap	1		*a	Contained in 2307356W Seal Kit	
10	2305884W	. Screw, Socket-Head	4				

Pump - Hydrostatic 45CC
Pressure Relief Valve



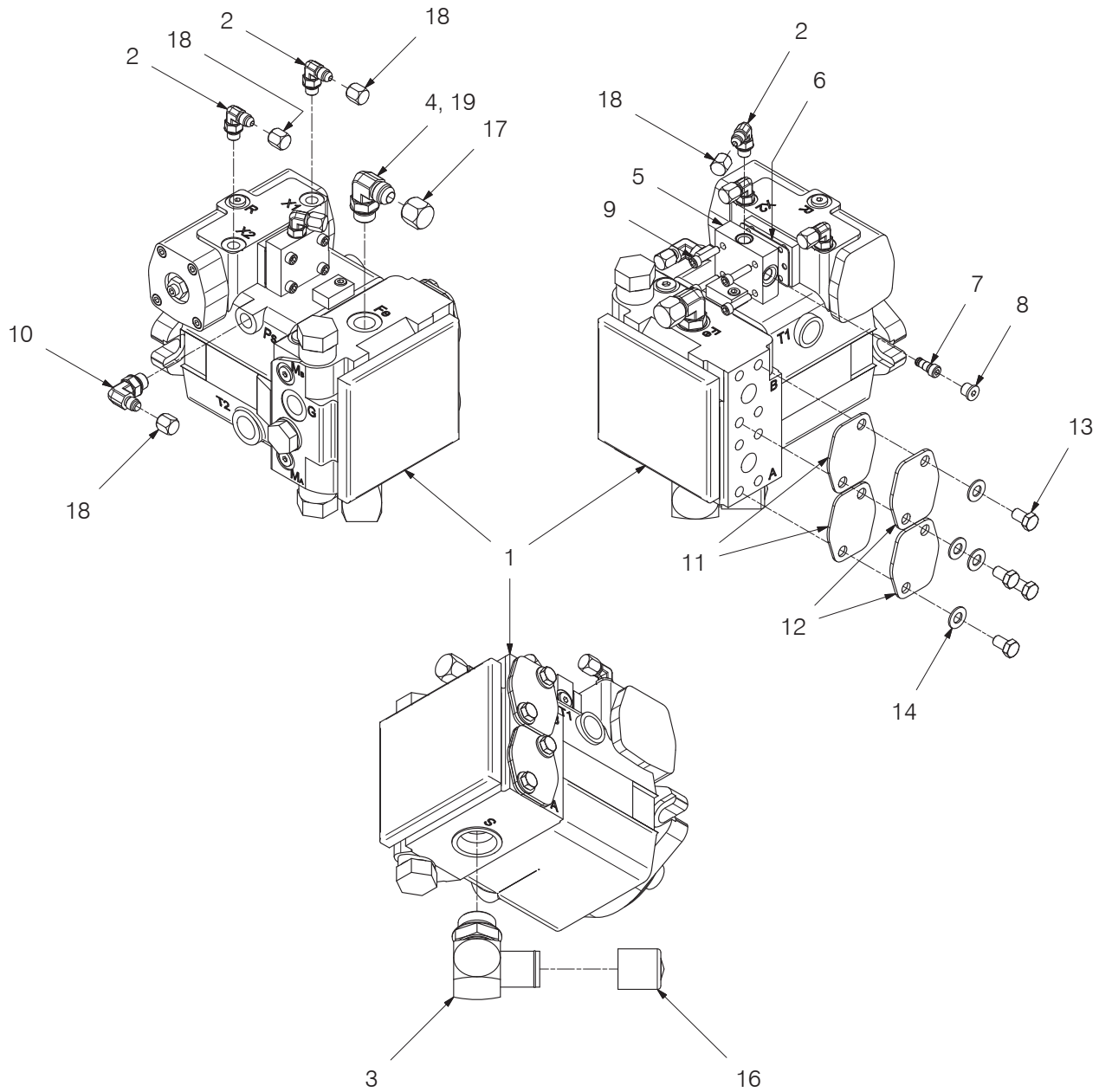
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2305844W	Valve, Pressure Relief					
1	*a 2305845W	. Screw, Locking	1	7	2305851W	. Shim, 1.0 mm	A/R
2	2305846W	. Piston, Valve	1	8	2304276W	. Shim, 0.5 mm	A/R
3	2305847W	. Collar, Spring	1	9	2304275W	. Shim, 0.3 mm	A/R
4	2305848W	. Spring	1				
5	*a 2305849W	. Ring, Steel Sealing	1		*a	Contained in Contained in 2307356W Seal Kit	
6	*a 2305850W	. O-Ring	1				

Pump - Hydrostatic 45CC

Caterpillar D3/4/5G (H4AH_Y_C17),

Caterpillar D4/5G (H4AH_Y_C18)

Last Used on S/N H4A-1161



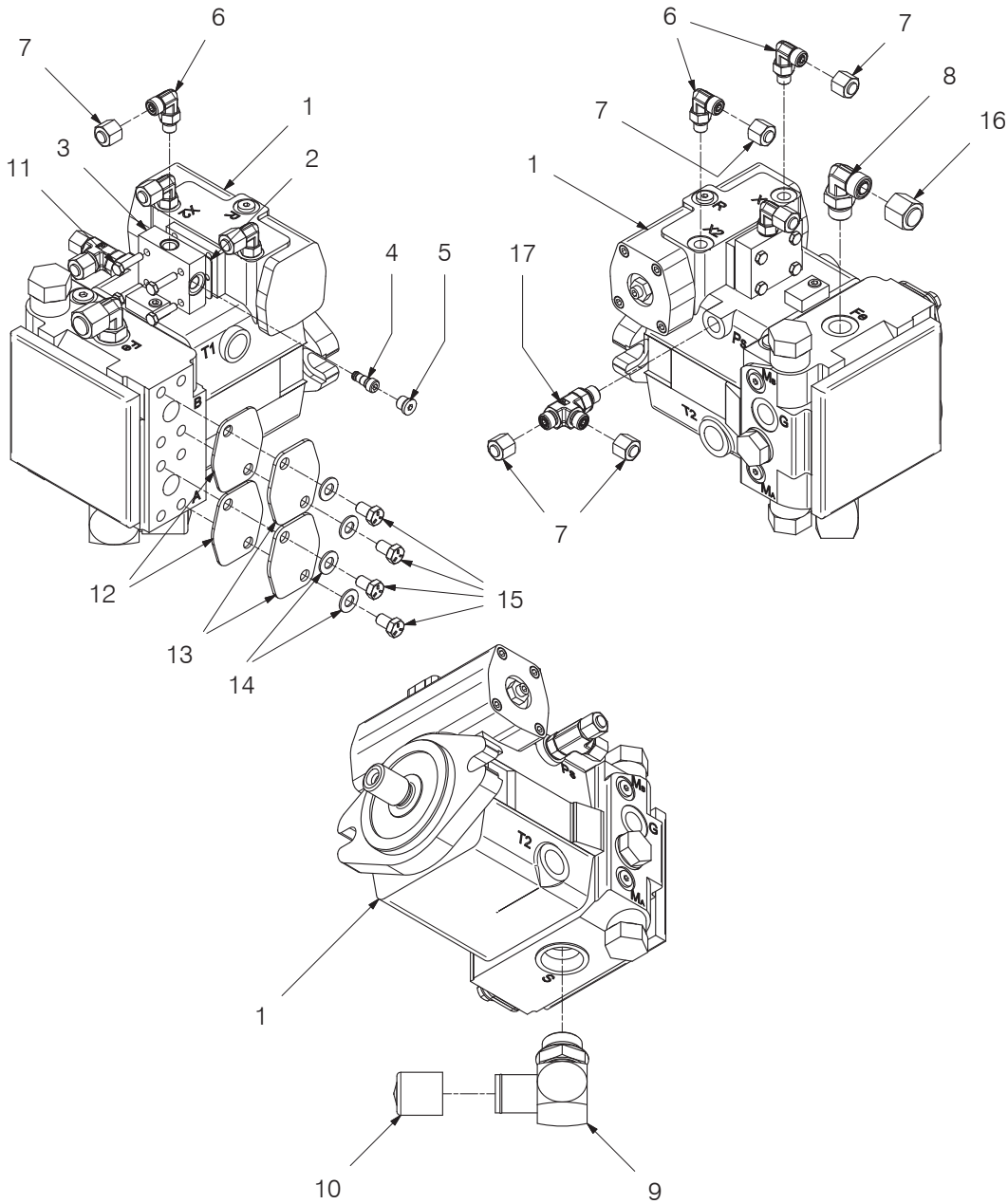
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2306024W	Assembly, Pump	1				
1	2303789W	. Pump, Hydrostatic 45CC	1	10	201766W	. Fitting with O-Ring	1
2	16556W	. Fitting with O-Ring	3	11	2304257W	. Gasket	2
3	2304233W	. Fitting	1	12	2304258W	. Plate	2
4	16559W	. Fitting with O-Ring	1	13	18535W	. Capscrew	4
5	2304014W	. Manifold, Pump	1	14	15134W	. Washer	4
6	2304193W	. Gasket	1	16	2306026W	. Cap	1
7	2304195W	. Valve, Shuttle	1	17	16925W	. Fitting	1
8	222442W	. Fitting with O-Ring	1	18	16923W	. Fitting	4
9	293796W	. Capscrew	4	19	2306157W	. Label, White, "Fe" (Not Shown)	1

Pump - Hydrostatic 45CC

Caterpillar D3/4/5G (H4AH_Y_C17),

Caterpillar D4/5G (H4AH_Y_C18)

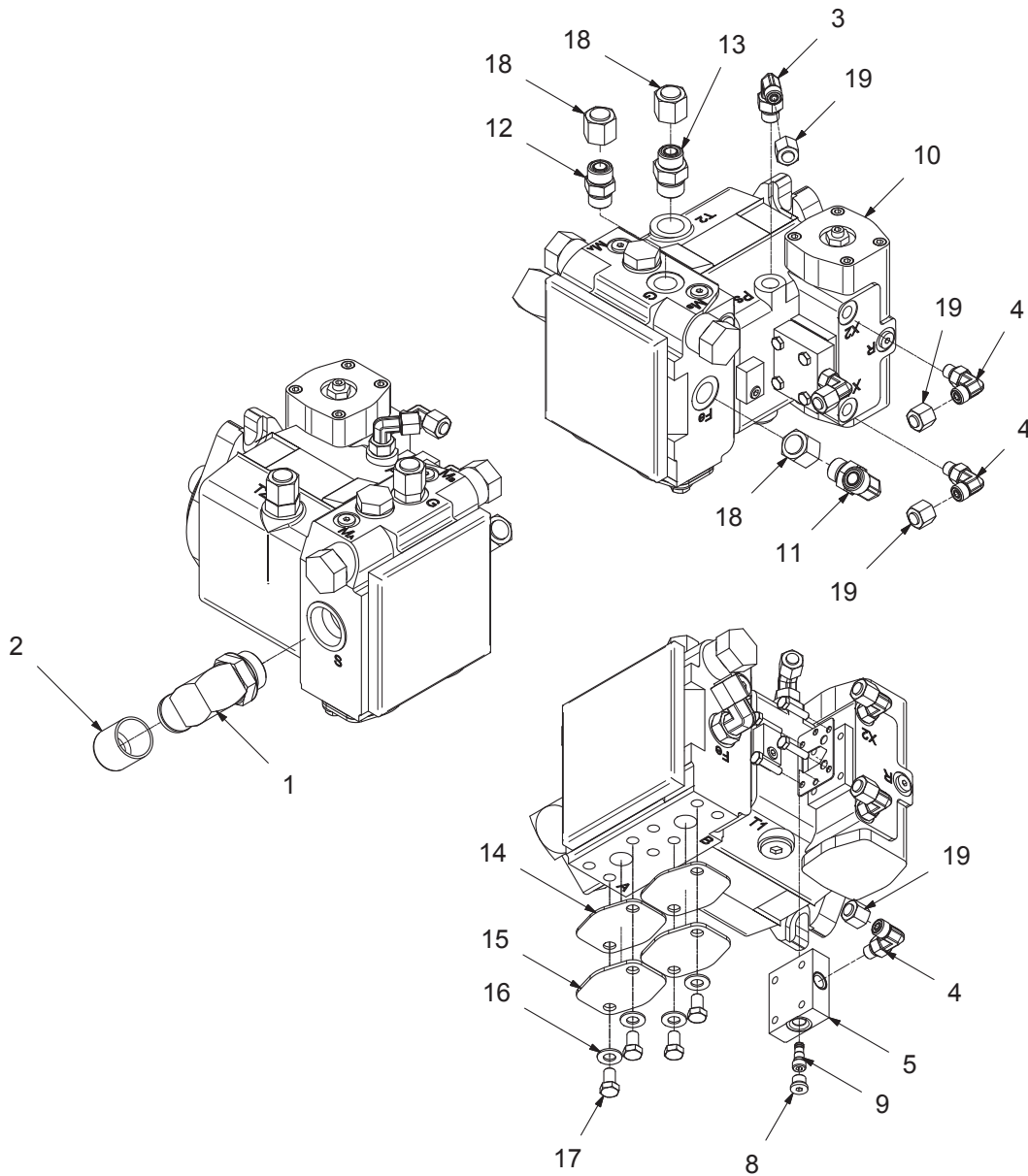
First Used on S/N H4A-1162



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2311840	Assembly, Pump	1				
1	2303789W	. Pump, Hydrostatic 45CC	1	10	2306026W	. Cap	1
2	2304193W	. Gasket	1	11	287816W	. Capscrew	4
3	2304014W	. Manifold, Pump	1	12	2304257W	. Gasket	2
4	2304195W	. Valve, Shuttle	1	13	2304258W	. Plate	2
5	235387	. Fitting	1	14	15134W	. Washer	4
6	R833251	. Fitting	3	15	18535W	. Capscrew	4
7	232984	. Fitting	5	16	R834253	. Fitting	1
8	231452	. Fitting	1	17	2311842	. Fitting	1
9	2304233W	. Fitting	1				

Pump - Hydrostatic 45CC

Caterpillar D3/4K (H4AH_Y_C19)
 Used on S/N H4A-1121 thru H4A-1161

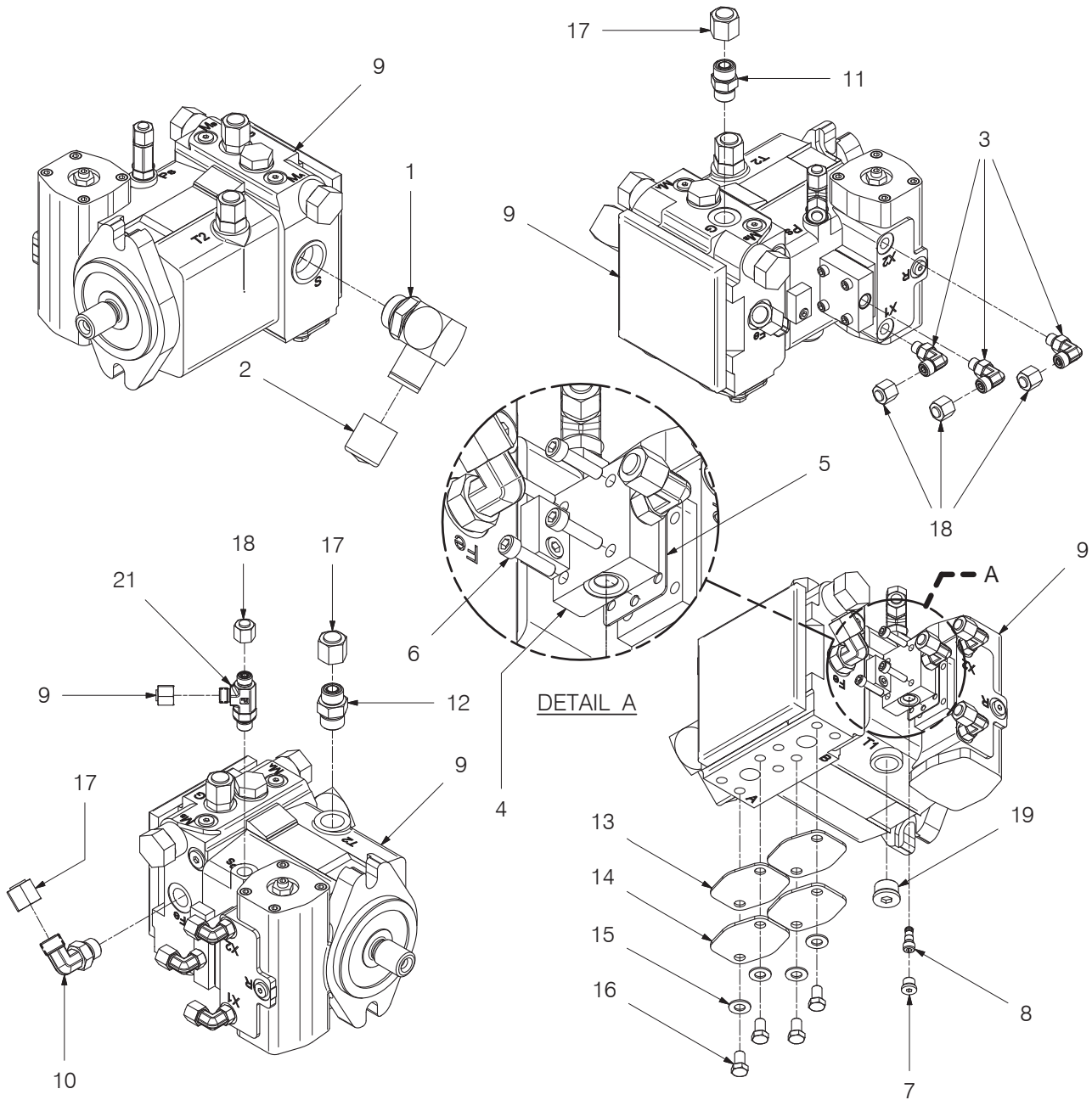


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2311470	Assembly, Pump					
1	2304233W	. Fitting	1	11	231452	. Fitting	1
2	2306026W	. Cap	1	12	231441	. Fitting	1
3	R833253	. Fitting	1	13	R833114	. Fitting	1
4	R833251	. Fitting	3	14	2304257W	. Gasket	2
5	2304014W	. Manifold, Pump	1	15	2304258W	. Plate	2
6	2304193W	. Gasket	1	16	15134W	. Washer	4
7	293796W	. Capscrew	4	17	18535W	. Capscrew	4
8	235387W	. Fitting	1	18	R834253	. Fitting	3
9	2304195W	. Valve, Shuttle	1	19	232984	. Fitting	4
10	2303789W	. Pump, Hydrostatic	1				

Pump - Hydrostatic 45CC

Caterpillar D3/4K (H4AH_Y_C19)

First Used on S/N H4A-1162

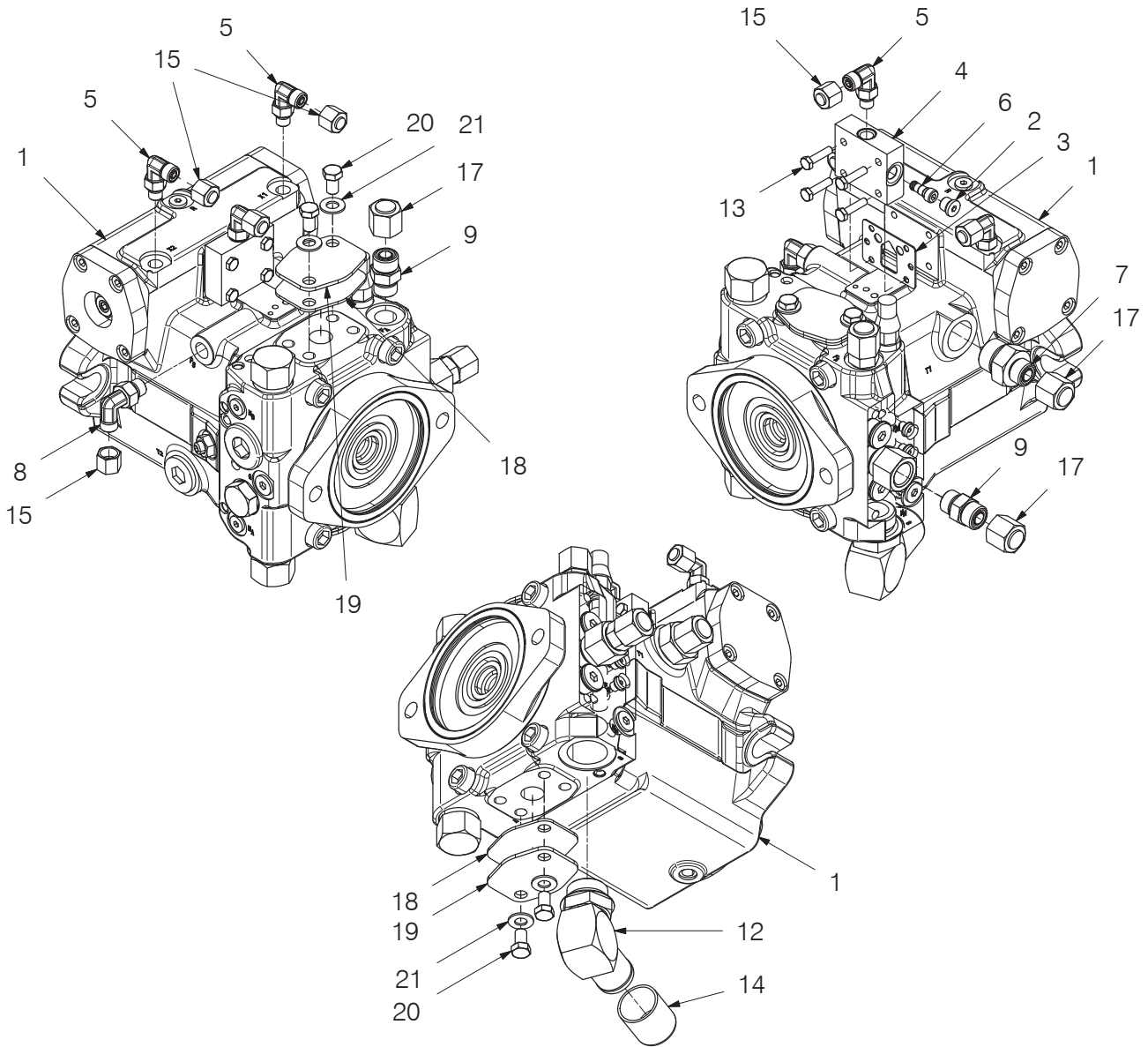


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2311773	Assembly, Pump					
1	2304233W	. Fitting	1	12	R833114	. Fitting	1
2	2306026W	. Cap	1	13	2304257W	. Gasket	2
3	R833251	. Fitting	3	14	2304258W	. Plate	2
4	2304014W	. Manifold, Pump	1	15	15134W	. Washer	4
5	2304193W	. Gasket	1	16	18535W	. Capscrew	4
6	293796W	. Capscrew	4	17	R834253	. Fitting	3
7	235387W	. Fitting	1	18	232984	. Fitting	5
8	2304195W	. Valve, Shuttle	1	19	228773	. Fitting	1
9	2303789W	. Pump, Hydrostatic	1	20	244400	. Inhibitor, Corrosion	1
10	231452	. Fitting	1	21	2311842	. Fitting	1
11	231441	. Fitting	1				

Pump - Hydrostatic 56CC

Caterpillar D5K (H4AH_Y__C20)

Last Used on S/N H4A-1161

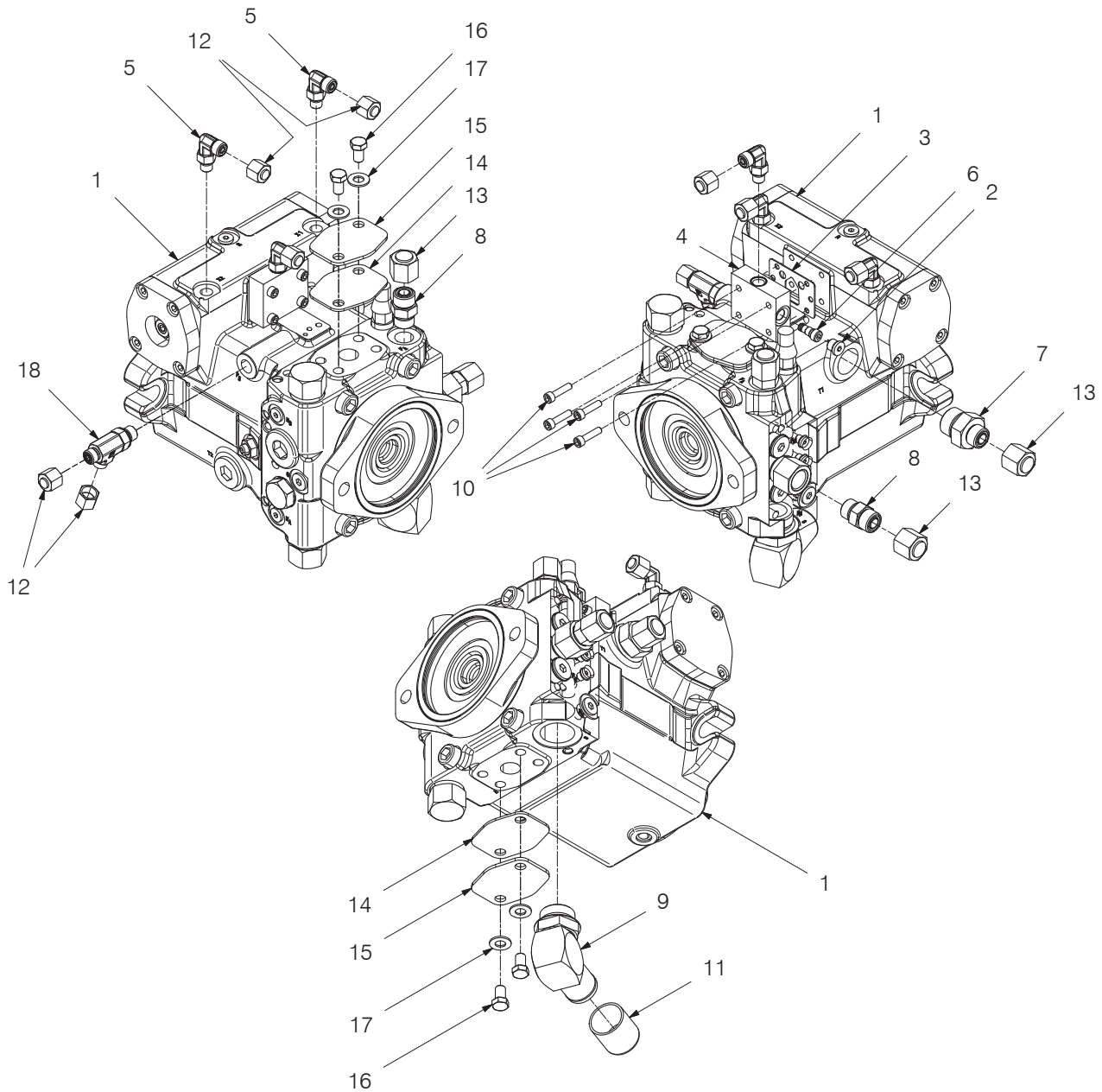


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2310961	Assembly, Pump					
1	2310890	. Pump, Hydrostatic 56CC	1	12	2304233W	. Fitting	1
2	235387	. Fitting	1	13	293796W	. Capscrew	4
3	2304193W	. Gasket	1	14	2306026W	. Cap	1
4	2304014W	. Manifold, Pump	1	15	232984	. Fitting	4
5	R833251	. Fitting	3	17	R834253	. Fitting	3
6	2304195W	. Valve, Shuttle	1	18	2304257W	. Gasket	2
7	R833115	. Fitting	1	19	2304258W	. Plate	2
8	R833253	. Fitting	1	20	18535W	. Capscrew	4
9	231441	. Fitting	2	21	15134W	. Washer	4

Pump - Hydrostatic 56CC

Caterpillar D5K (H4AH_Y_C20)

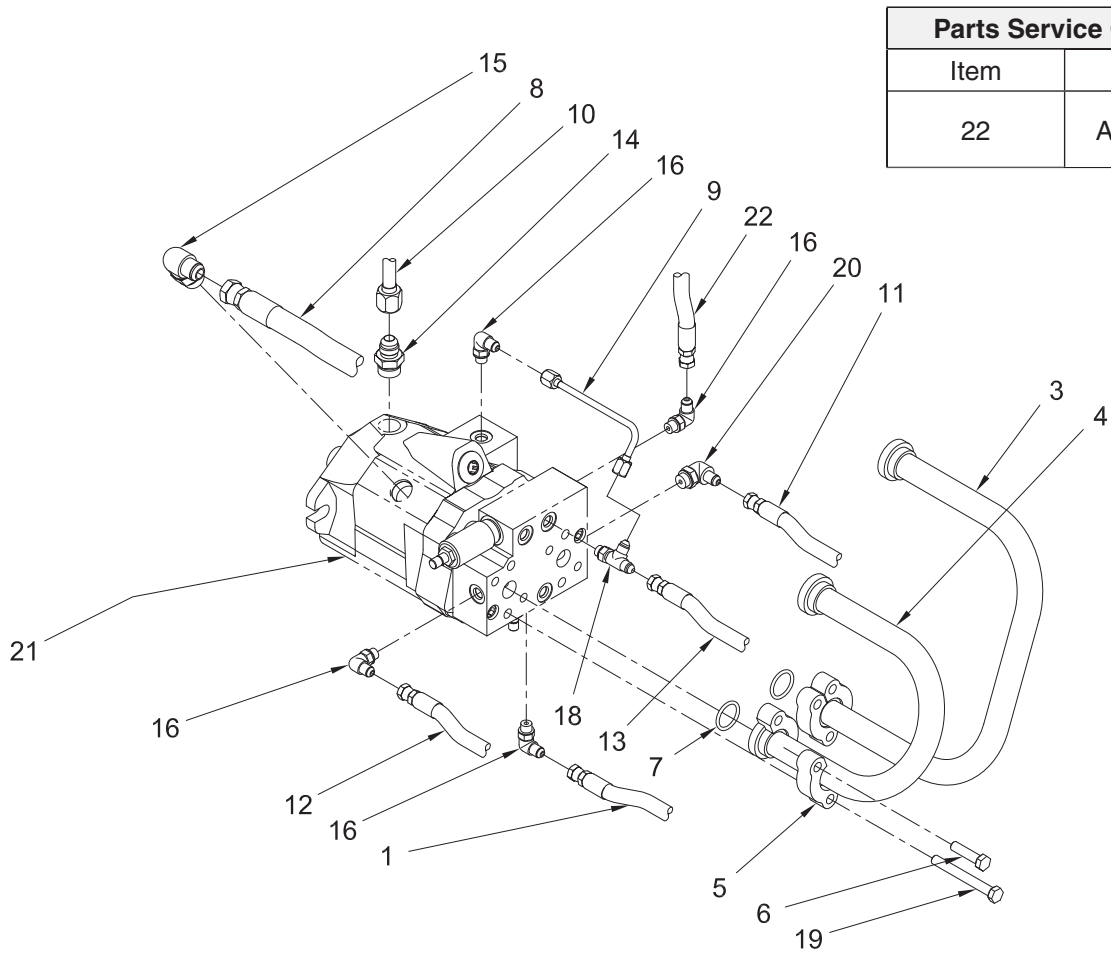
First Used on S/N H4A-1162



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2311753	Assembly, Pump					
1	2310890	. Pump, Hydrostatic 56CC	1	10	293796W	. Capscrew	4
2	235387	. Fitting	1	11	2306026W	. Cap	1
3	2304193W	. Gasket	1	12	232984	. Fitting	5
4	2304014W	. Manifold, Pump	1	13	R834253	. Fitting	3
5	R833251	. Fitting	3	14	2304257W	. Gasket	2
6	2304195W	. Valve, Shuttle	1	15	2304258W	. Plate	2
7	R833115	. Fitting	1	16	18535W	. Capscrew	4
8	231441	. Fitting	2	17	15134W	. Washer	4
9	2304233W	. Fitting	1	18	2311842	. Fitting	1

Motor and Related Hydraulics

Last Used on S/N H4AH_B1014

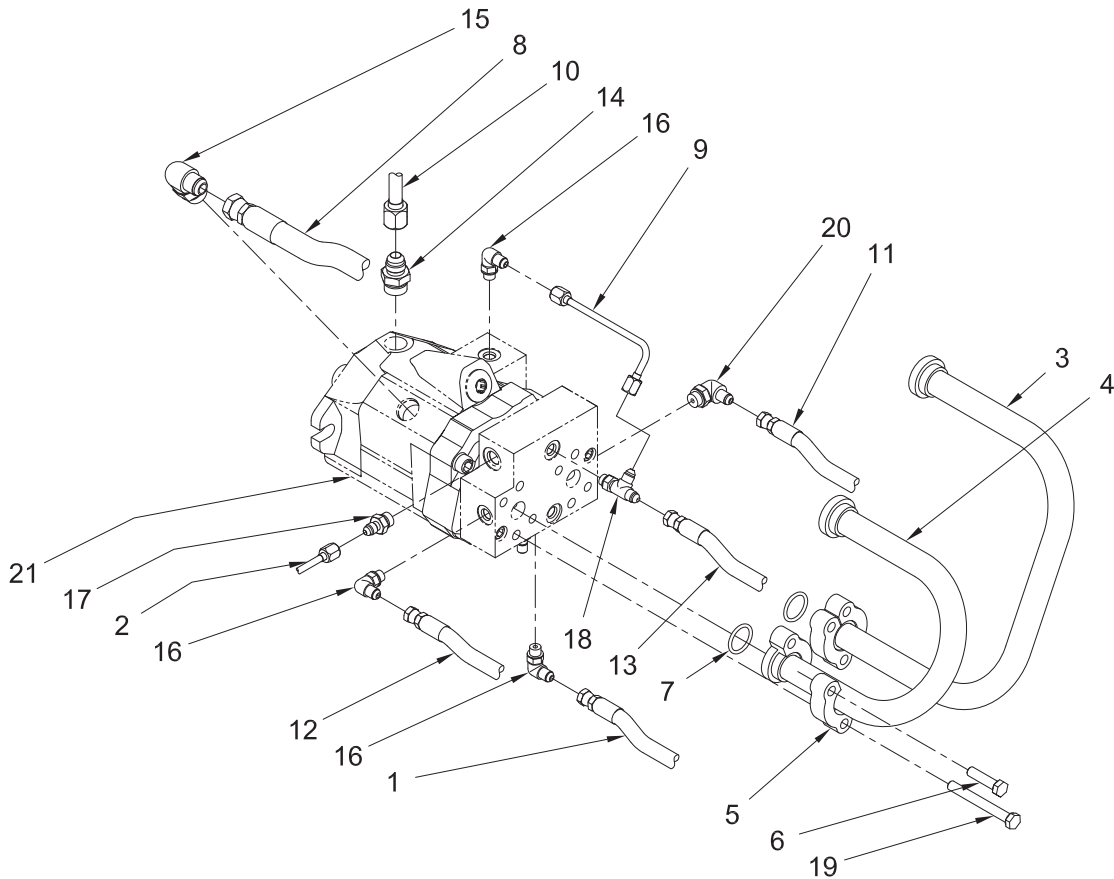


Parts Service Gram	
Item	Gram
22	A1-C-17

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2307009W	Assembly, Hose	1	13	2305141W	Assembly, Hose	1
3	2304057W	Assembly, Tube	1	14	16909W	Fitting	1
4	2304104W	Assembly, Tube	1	15	17224W	Fitting	1
5	222535W	Flange, Half	4	16	16556W	Fitting	4
6	*a 177461W	Capscrew	4	18	16967W	Fitting	1
7	2304110W	O-Ring	2	19	*a 221518W	Capscrew	4
8	2305007W	Assembly, Hose	1	20	201766W	Fitting	1
9	2304999W	Assembly, Tube	1	21	2303788W	Motor, Hydraulic (See 3-26)	1
10	2305014W	Assembly, Tube	1	22	2305141W	Assembly, Hose	1
11	2305139W	Assembly, Hose	1				
12	2305140W	Assembly, Hose	1				
				*a	Use 318702W Thread Lock		

Motor and Related Hydraulics

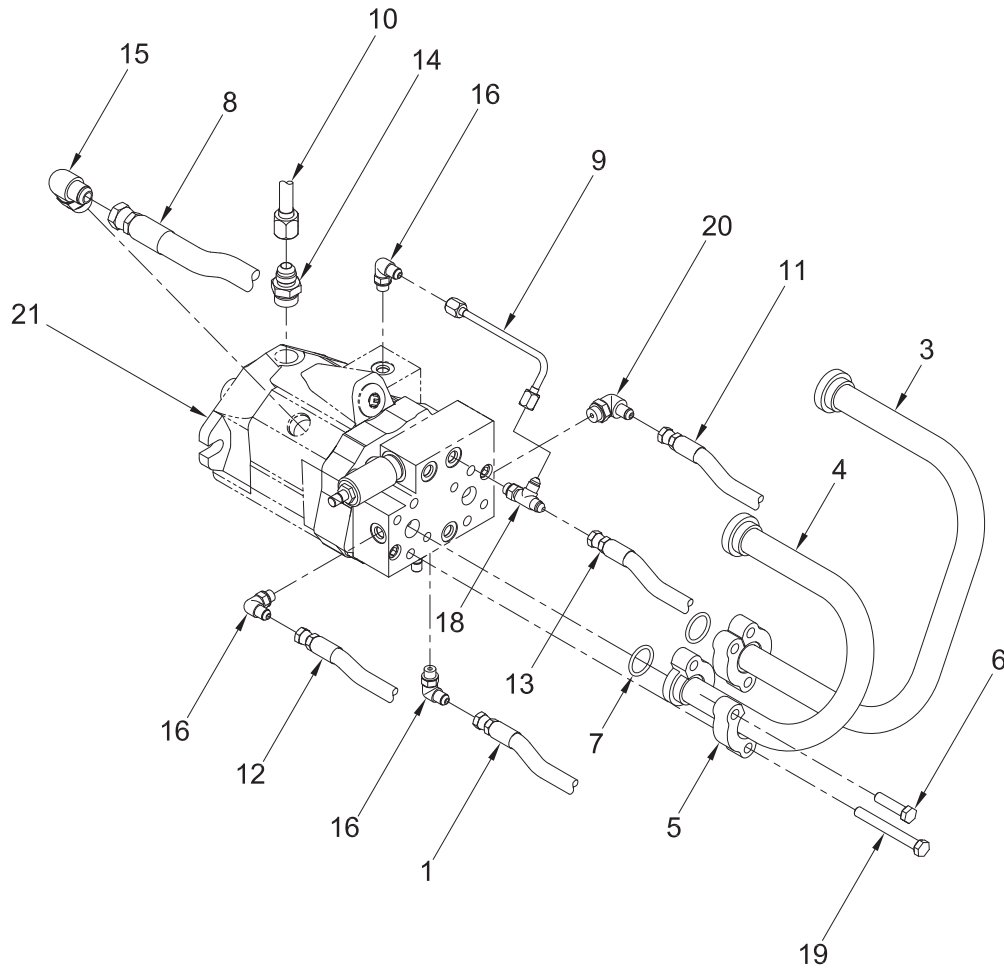
Used on S/N H4AH_R1015 thru H4AH_R1037



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2307009W	Assembly, Hose	1	13	2305141W	Assembly, Hose	1
2	2305017W	Assembly, Tube	1	14	16909W	Fitting	1
3	2304057W	Assembly, Tube	1	15	17224W	Fitting	1
4	2304104W	Assembly, Tube	1	16	16556W	Fitting	3
5	222535W	Flange, Half	4	17	17753W	Fitting	1
6	*a 177461W	Capscrew	4	18	16967W	Fitting	1
7	2304110W	O-Ring	2	19	*a 221518W	Capscrew	4
8	2305007W	Assembly, Hose	1	20	201766W	Fitting	1
9	2304999W	Assembly, Tube	1	21	2303788W	Motor, Hydraulic (See 3-26)	1
10	2305014W	Assembly, Tube	1				
11	2305139W	Assembly, Hose	1				
12	2305140W	Assembly, Hose	1				
				*a	Use 318702W Thread Lock		

Motor and Related Hydraulics

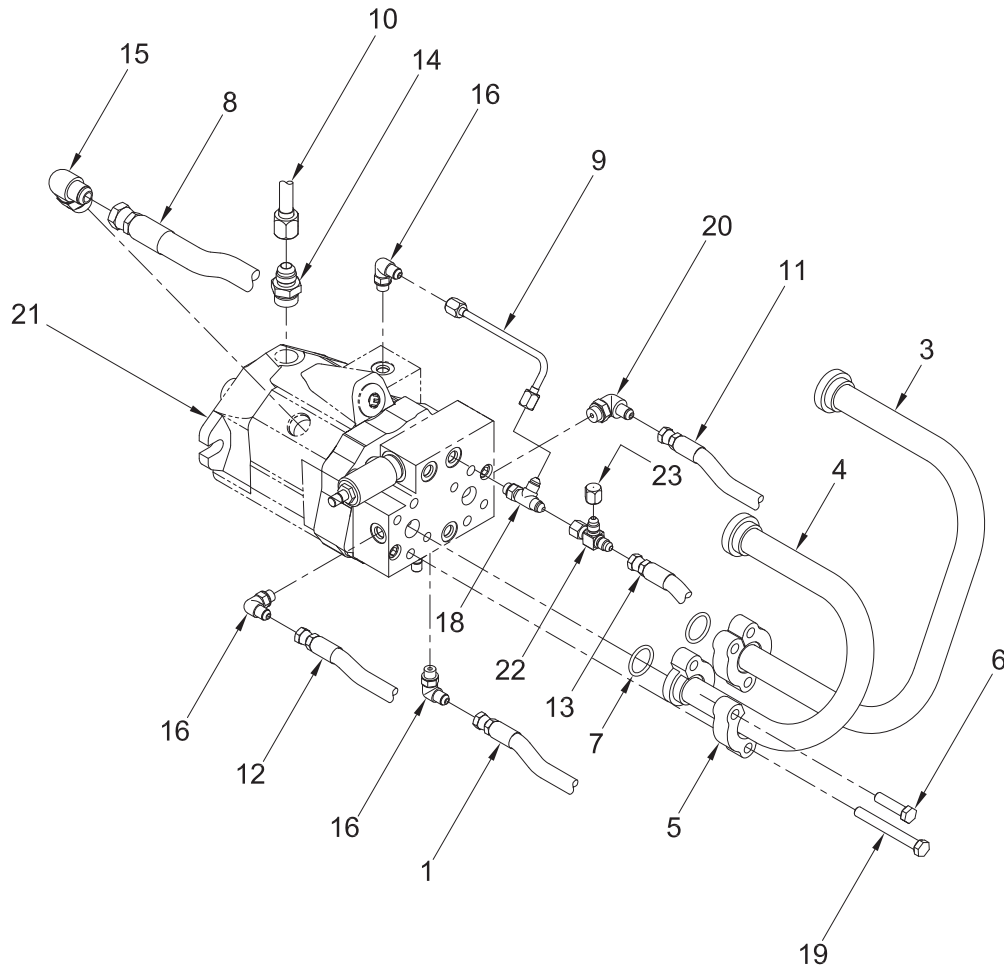
Used on S/N H4AH_R1038 thru H4AH_R1052



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2307009W	Assembly, Hose	1	13	2305141W	Assembly, Hose	1
3	2304057W	Assembly, Tube	1	14	16909W	Fitting	1
4	2304104W	Assembly, Tube	1	15	17224W	Fitting	1
5	222535W	Flange, Half	4	16	16556W	Fitting	3
6	*a 177461W	Capscrew	4	18	16967W	Fitting	1
7	2304110W	O-Ring	2	19	*a 221518W	Capscrew	4
8	2305007W	Assembly, Hose	1	20	201766W	Fitting	1
9	2304999W	Assembly, Tube	1	21	2303788W	Motor, Hydraulic (See 3-26)	1
10	2305014W	Assembly, Tube	1				
11	2305139W	Assembly, Hose	1				
12	2305140W	Assembly, Hose	1				
				*a	Use 318702W Thread Lock		

Motor and Related Hydraulics

First Used on S/N H4AH_R1053



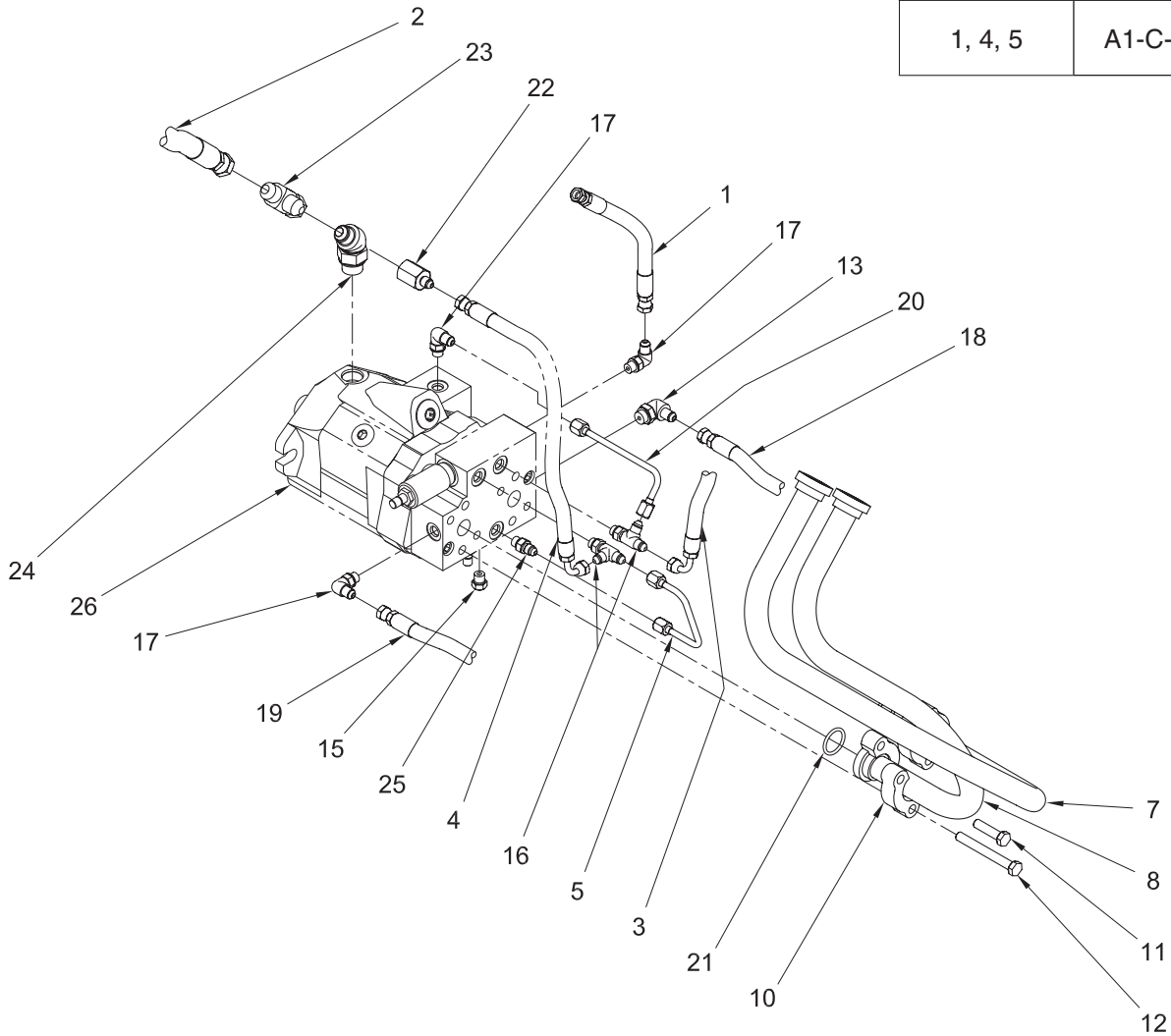
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2307009W	Assembly, Hose	1	14	16909W	Fitting	1
3	2304057W	Assembly, Tube	1	15	17224W	Fitting	1
4	2304104W	Assembly, Tube	1	16	16556W	Fitting	3
5	222535W	Flange, Half	4	18	16967W	Fitting	1
6	*a 177461W	Capscrew	4	19	*a 221518W	Capscrew	4
7	2304110W	O-Ring	2	20	201766W	Fitting	1
8	2305007W	Assembly, Hose	1	21	2303788W	Motor, Hydraulic (See 3-26)	1
9	2304999W	Assembly, Tube	1	22	17059W	Fitting	1
10	2305014W	Assembly, Tube	1	23	2307522W	Cap, Orifice	1
11	2305139W	Assembly, Hose	1				
12	2305140W	Assembly, Hose	1				
13	2305141W	Assembly, Hose	1				
				*a	Use 318702W Thread Lock		

Motor and Related Hydraulics

Caterpillar D3/4/5G (H4AH_Z_C17)

Last Used on S/N H4A-1014

Parts Service Gram	
Item	Gram
1, 4, 5	A1-C-17

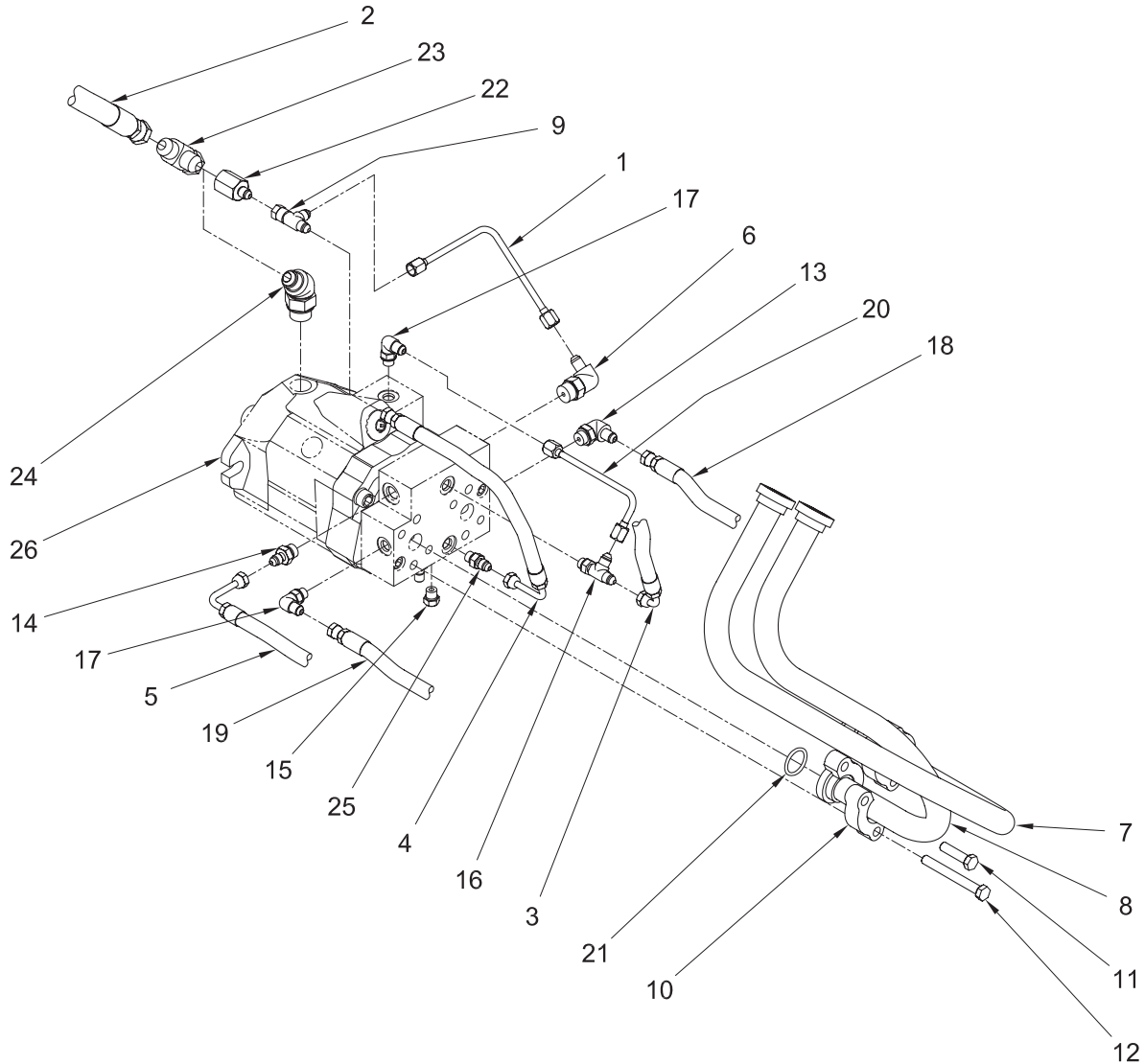


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	280256W	Assembly, Hose	1	16	16967W	Fitting	2
2	276087W	Assembly, Hose	1	17	16556W	Fitting	3
3	2305281W	Assembly, Hose	1	18	2305139W	Assembly, Hose	1
4	2305966W	Assembly, Hose	1	19	2305140W	Assembly, Hose	1
5	2305951W	Assembly, Tube	1	20	2304999W	Assembly, Tube	1
7	2304213W	Assembly, Tube	1	21	2304110W	O-Ring	2
8	2304214W	Assembly, Tube	1	22	17777W	Fitting	1
9	17059W	Fitting	1	23	17062W	Fitting	1
10	222535W	Fitting	4	24	201752W	Fitting	1
11	*a 177461W	Capscrew	4	25	16538W	Fitting	1
12	*a 221518W	Capscrew	4	26	2303788W	Motor, Hydraulic (See 3-26)	1
13	201766W	Fitting	1				
14	17753W	Fitting	1				
15	14591W	Fitting	1				

*a Use 318702W Thread Lock

Motor and Related Hydraulics

Caterpillar D3/4/5G (H4AH_Z_C17)
Used on S/N H4A-1015 thru H4A-1037

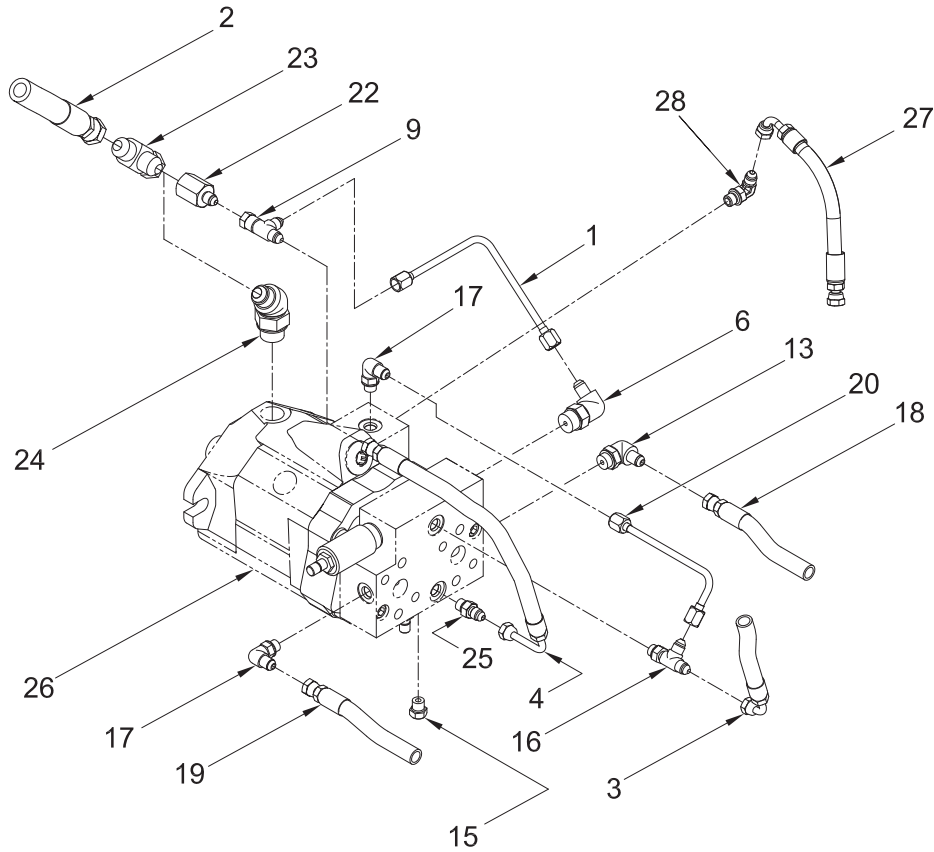


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305280W	Assembly, Tube	1	15	14591W	Fitting	1
2	276087W	Assembly, Hose	1	16	16967W	Fitting	1
3	2305281W	Assembly, Hose	1	17	16556W	Fitting	2
4	2305282W	Assembly, Hose	1	18	2305139W	Assembly, Hose	1
5	2305284W	Assembly, Hose	1	19	2305140W	Assembly, Hose	1
6	162155W	Fitting	1	20	2304999W	Assembly, Tube	1
7	2304213W	Assembly, Tube	1	21	2304110W	O-Ring	2
8	2304214W	Assembly, Tube	1	22	17777W	Fitting	1
9	17059W	Fitting	1	23	17062W	Fitting	1
10	222535W	Fitting	4	24	201752W	Fitting	1
11	*a 177461W	Capscrew	4	25	16538W	Fitting	1
12	*a 221518W	Capscrew	4	26	2303788W	Motor, Hydraulic (See 3-26)	1
13	201766W	Fitting	1				
14	17753W	Fitting	1				

*a Use 318702W Thread Lock

Motor and Related Hydraulics

Caterpillar D3/4/5G (H4AH_Z_C17)
Used on S/N H4A-1038 thru H4A-1053

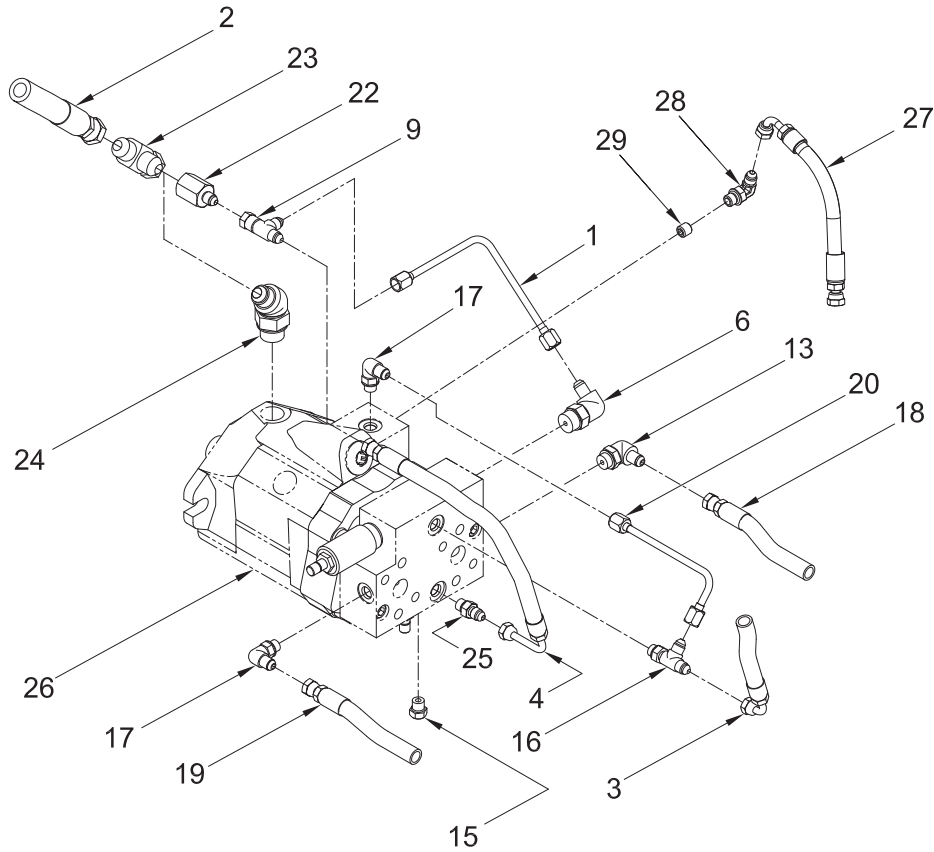


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305280W	Assembly, Tube	1	18	2305139W	Assembly, Hose	1
2	276087W	Assembly, Hose	1	19	2305140W	Assembly, Hose	1
3	2305281W	Assembly, Hose	1	20	2304999W	Assembly, Tube	1
4	2305282W	Assembly, Hose	1	22	17777W	Fitting	1
6	162155W	Fitting	1	23	17062W	Fitting	1
9	17059W	Fitting	4	24	201752W	Fitting	1
13	201766W	Fitting	1	25	16538W	Fitting	1
15	14591W	Fitting	1	26	2303788W	Motor, Hydraulic (See 3-26)	1
16	16967W	Fitting	1	27	2305966W	Assembly, Hose	1
17	16556W	Fitting	2	28	2307520W	Fitting	1

Motor and Related Hydraulics

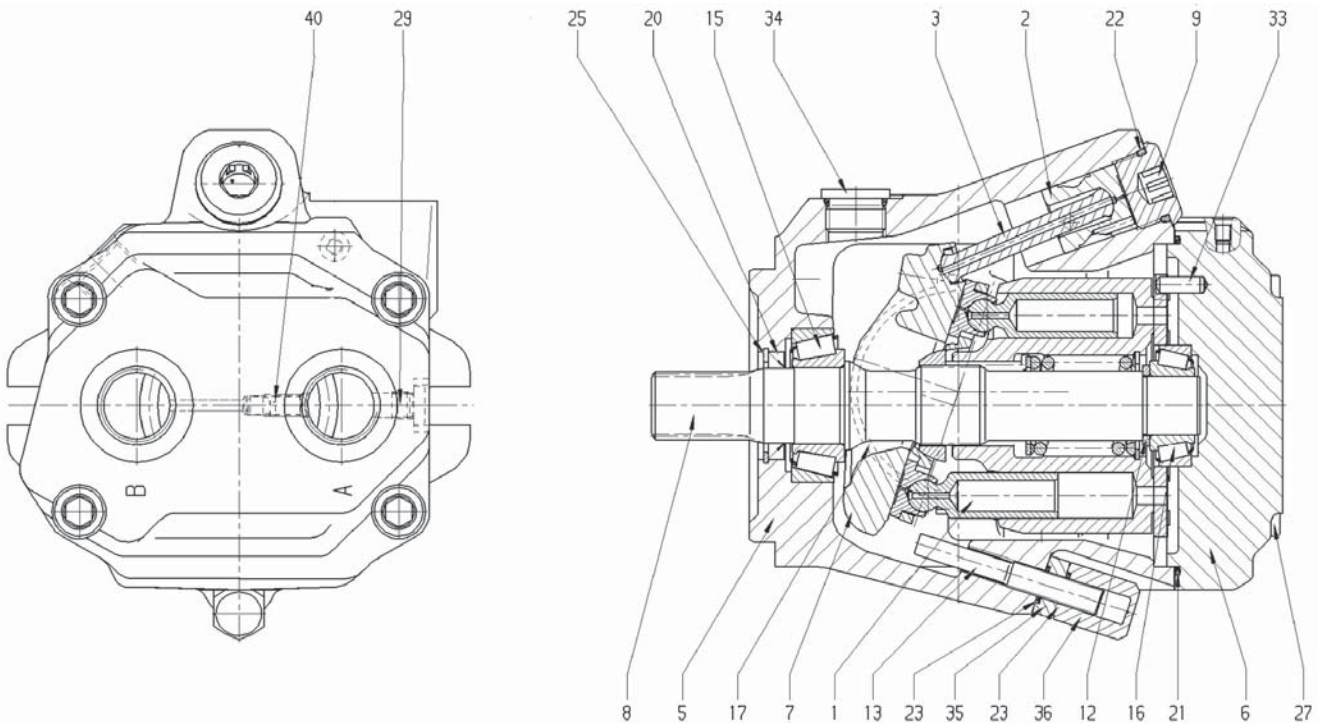
Caterpillar D3/4/5G (H4AH_Z_C17)

First Used on S/N H4A-1054



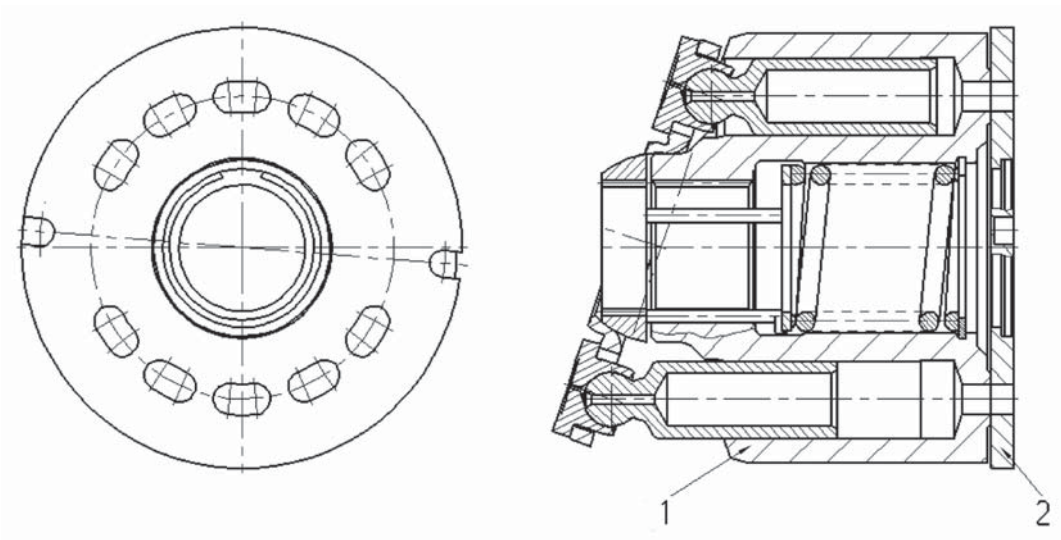
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305280W	Assembly, Tube	1	19	2305140W	Assembly, Hose	1
2	276087W	Assembly, Hose	1	20	2304999W	Assembly, Tube	1
3	2305281W	Assembly, Hose	1	22	17777W	Fitting	1
4	2305282W	Assembly, Hose	1	23	17062W	Fitting	1
6	162155W	Fitting	1	24	201752W	Fitting	1
9	17059W	Fitting	4	25	16538W	Fitting	1
13	201766W	Fitting	1	26	2303788W	Motor, Hydraulic (See 3-26)	1
15	14591W	Fitting	1	27	2305966W	Assembly, Hose	1
16	16967W	Fitting	1	28	2307520W	Fitting	1
17	16556W	Fitting	2	29	2310181	Plug, Orifice	1
18	2305139W	Assembly, Hose	1				

Hydraulic 45CC 2 Speed Motor



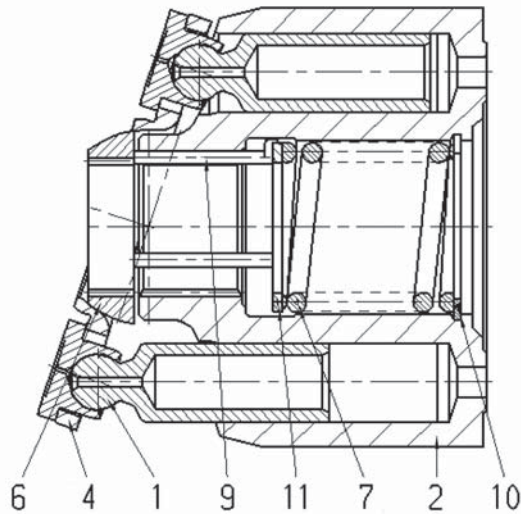
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2303788W	Motor, Hydraulic 45CC 2 Speed		17	2305759W	. Shell, Cradle	2
	*a 2314620	Motor, Hydraulic 45CC 2 Speed		20	2305760W	. Seal, Shaft	1
	*b 2315765	Motor, Hydraulic 45CC 2 Speed		21	2305761W	. O-Ring	1
1	2305737W	. Group, Rotary (See 3-27)	1	22	2305762W	. O-Ring	1
2	2305748W	. Piston, Control	1	23	2305763W	. O-Ring	2
3	2305749W	. Rod, Piston	1	25	2305764W	. Ring, Retaining	1
5	2305750W	. Housing, Motor	1	27	2305765W	. Screw, Socket	4
6	2305751W	. Plate, Part	1	29	2305770W	. Plug	1
7	2305752W	. Plate, Swash	1	33	2305766W	. Pin, Dowel	1
8	2305753W	. Shaft, Drive	1	34	2305767W	. Plug	1
9	2305754W	. Plug, Screw	1	35	2305768W	. Nut	1
12	2305755W	. Shim, Adjustment	1	36	2305769W	. Nut, Cap	1
13	2305756W	. Screw, Top	1	40	2305771W	. Orifice	1
15	2305757W	. Bearing, Tapered-Roller	1				
16	2305758W	. Bearing, Tapered-Roller	1				
				*a	Used on Tractor Code K14 only		
				*b	Used on Tractor Code U13 only		

Hydraulic 45CC 2 Speed Motor
Rotary Group



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305737W 2305738W	Group, Rotary . Group, Rotary (See 3-28)	1	2	2305747W	. Control Plate	1

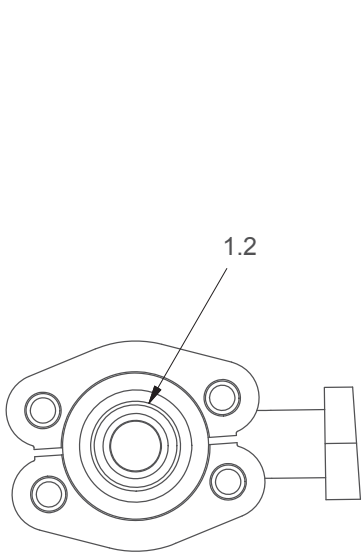
Hydraulic 45CC 2 Speed Motor
Rotary Group



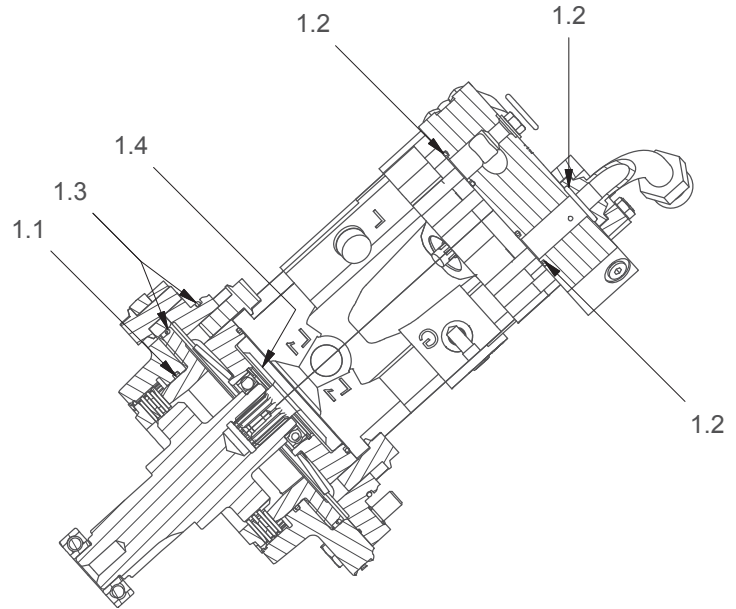
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2305738W	Group, Rotary					
1	2305739W	. Piston	9	7	2305743W	. Spring	1
2	2305740W	. Cylinder	1	9	2305744W	. Pin, Pressure	3
4	2305741W	. Plate, Retaining	1	10	2305745W	. Seeger, V-Ring	1
6	2305742W	. Ball, Retaining	1	11	2305746W	. Plate, Back-Up	1

Motor Low Temperature Seal Kit

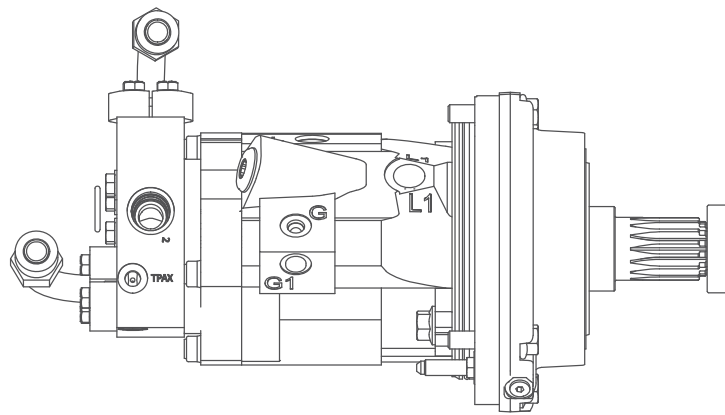
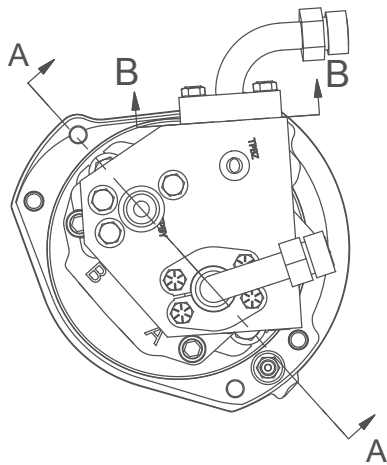
Standard Winch



SECTION B-B



SECTION A-A



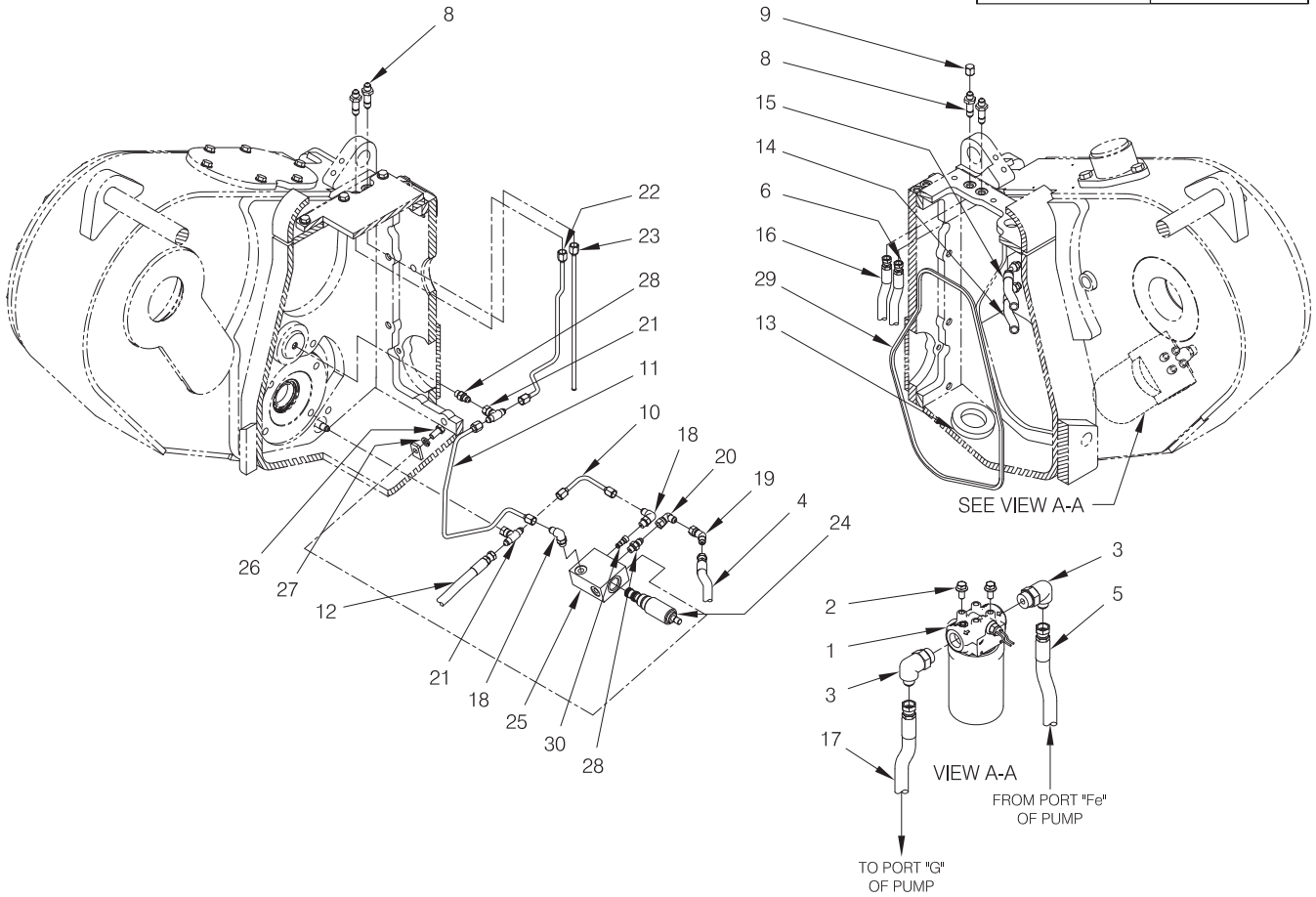
H4AT MOTOR ASSEMBLY
RESCUE WINCH

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2312969	Kit, H4A Low Temperature Seal	1				
1.1	203540	. O-Ring	1	1.3	15899W	. O-Ring	2
1.2	212380	. O-Ring	4	1.4	258729	. Seal, Shaft	1

Winch Internal Hydraulics

Last Used on S/N H4AH-B1014

Parts Service Gram	
Item	Gram
6, 11, 22	A1-C-17

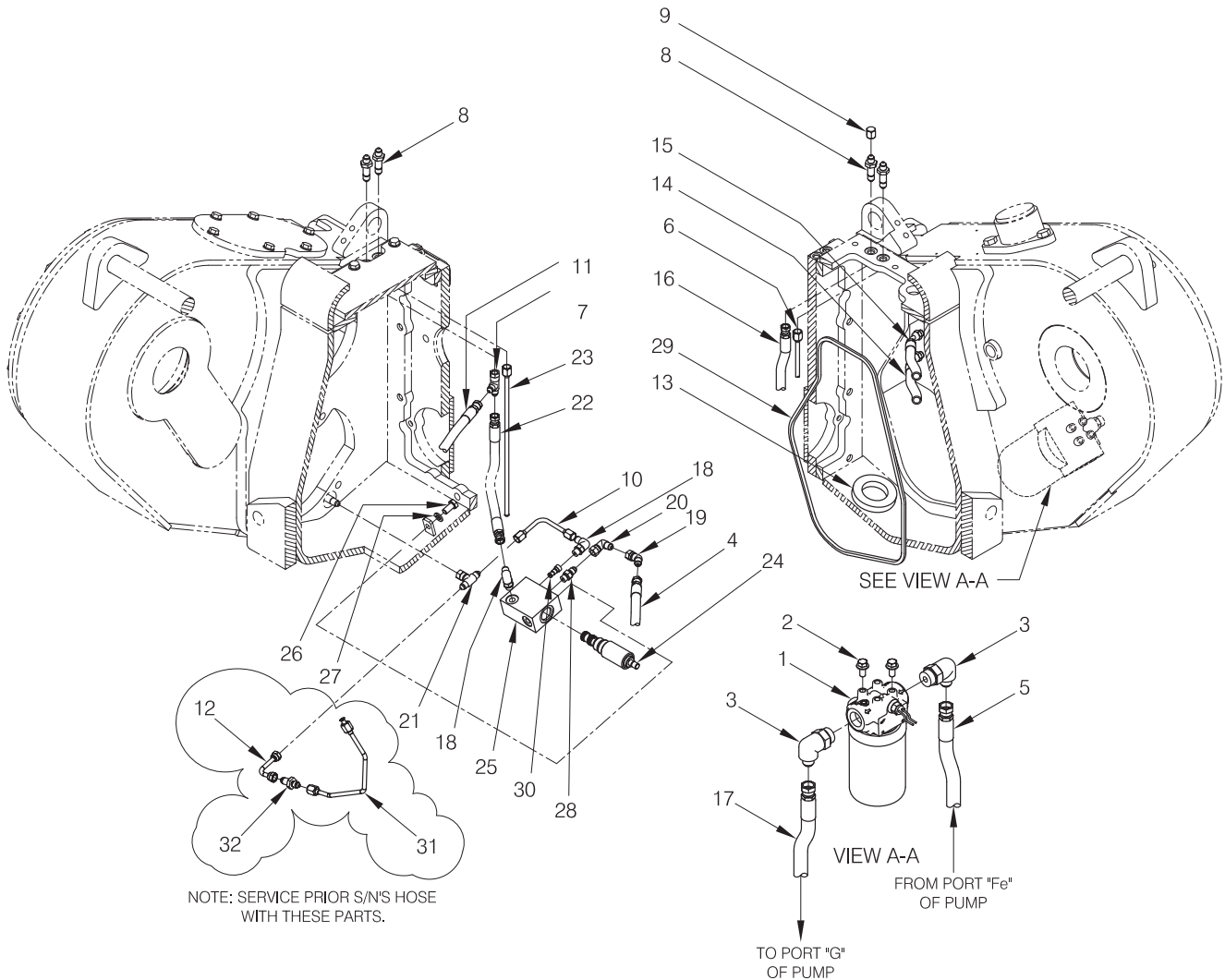


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2304111W	Assembly, Filter	1	16	*a 2305141W	Assembly, Hose	1
	2304112W	. Element, Filter	1	17	*a R400128	Assembly, Hose	1
	2304862W	. Switch, Pressure	1	18	16556W	Fitting	4
	2305132W	. Head, Filter	1	19	16997W	Fitting	1
2	134803W	Capscrew	2	20	16987W	Fitting	1
3	138811W	Fitting	2	21	17047W	Fitting	2
4	*a 2307009W	Assembly, Hose	1	22	2305971W	Assembly, Tube	1
5	*a 2305003W	Assembly, Hose	1	23	2304151W	Assembly, Tube	1
6	*a 2305972W	Assembly, Hose	1	24	2304194W	Valve, Sequence	1
8	-----	Fitting (See Frame & Covers)	4	25	2304196W	Manifold, Cooling	1
9	-----	Fitting (See Frame & Covers)	1	26	162572W	Capscrew	1
10	2305008W	Assembly, Tube	1	27	15156W	Washer	1
11	2305004W	Assembly, Tube	1	28	16538W	Fitting	2
12	*a 2305013W	Assembly, Hose	1	29	24257	Trim, Edge	4'
13	R525293	Magnet	1	30	2304195W	Valve, Shuttle	1
14	*a 2305139W	Assembly, Hose	1		2305073W	. Kit, Seal	1
15	*a 2305140W	Assembly, Hose	1				

*a Included in 2315305 Hose Kit

Winch Internal Hydraulics

First Used on S/N H4AH-R1048

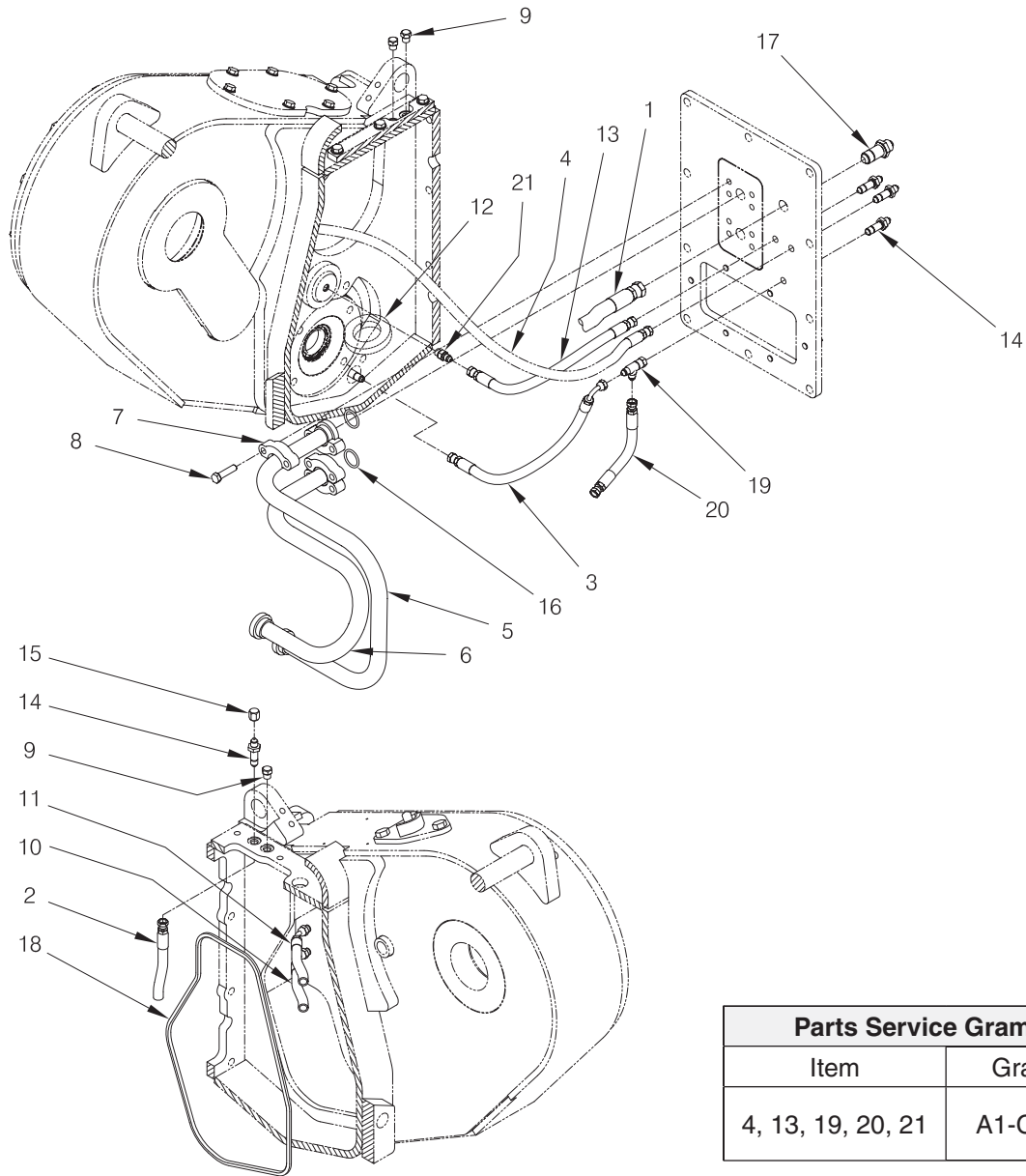


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2304111W	Assembly, Filter	1	17	*a R400128	Assembly, Hose	1
	2304112W	. Element, Filter	1	18	16556W	Fitting	4
	2304862W	. Switch, Pressure	1	19	16997W	Fitting	1
	2305132W	. Head, Filter	1	20	16987W	Fitting	1
2	1300780W	Capscrew	2	21	17047W	Fitting	2
3	138811W	Fitting	2	22	*a 2305580W	Assembly, Hose	1
4	*a 2307009W	Assembly, Hose	1	23	2304151W	Assembly, Tube	1
5	*a 2305003W	Assembly, Hose	1	24	2304194W	Valve, Sequence	1
6	2305017W	Assembly, Tube	1	25	2304196W	Manifold, Cooling	1
7	17059W	Fitting	1	26	162572W	Capscrew	1
8	-----	Fitting (See Frame & Covers)	4	27	15156W	Washer	1
9	-----	Fitting (See Frame & Covers)	1	28	16538W	Fitting	1
10	2305008W	Assembly, Tube	1	29	24257	Trim, Edge	4'
11	*a 2305012W	Assembly, Hose	4	30	2304195W	Valve, Shuttle	1
12	*a 2305284W	Assembly, Hose	1		2305073W	. Kit, Seal	1
13	R525293	Magnet	1	31	2310617	Assembly, Tube	1
14	*a 2305139W	Assembly, Hose	1	32	209436	Fitting	1
15	*a 2305140W	Assembly, Hose	1				
16	*a 2305281W	Assembly, Hose	1		*a	Included in 2315306 Hose Kit	

Winch Internal Hydraulics

Caterpillar D3/4/5G (H4AH_Z_C17)

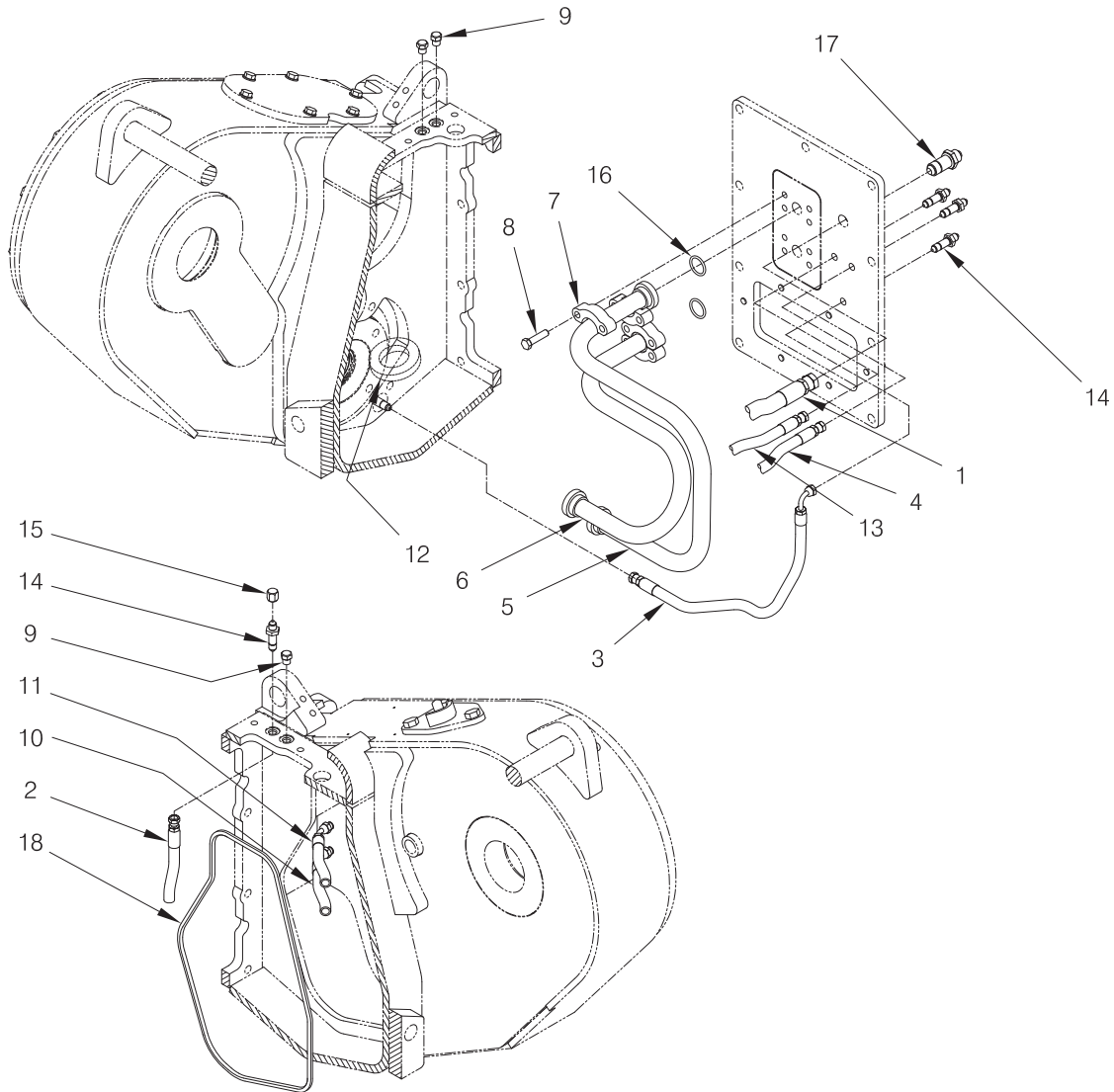
Last Used on S/N H4A-1014



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 276087W	Assembly, Hose	1	13	*a 2305285W	Assembly, Hose	1
2	*a 2305281W	Assembly, Hose	1	14	16445W	Fitting	6
3	*a 2305283W	Assembly, Hose	1	15	16923W	Fitting	1
4	*a 2305141W	Assembly, Hose	1	16	2304110W	O-Ring	2
5	2304213W	Assembly, Tube	1	17	16448W	Fitting	1
6	2304214W	Assembly, Tube	1	18	24257	Trim, Edge	4'
7	222535W	Fitting	4	19	17059W	Fitting	1
8	177461W	Capscrew	8	20	*a 280256W	Assembly, Hose	1
9	14591W	Fitting	3	21	16538W	Fitting	1
10	*a 2305139W	Assembly, Hose	1				
11	*a 2305140W	Assembly, Hose	1		*a	Included in 2315307 Hose Kit	
12	R525293	Magnet	1				

Winch Internal Hydraulics

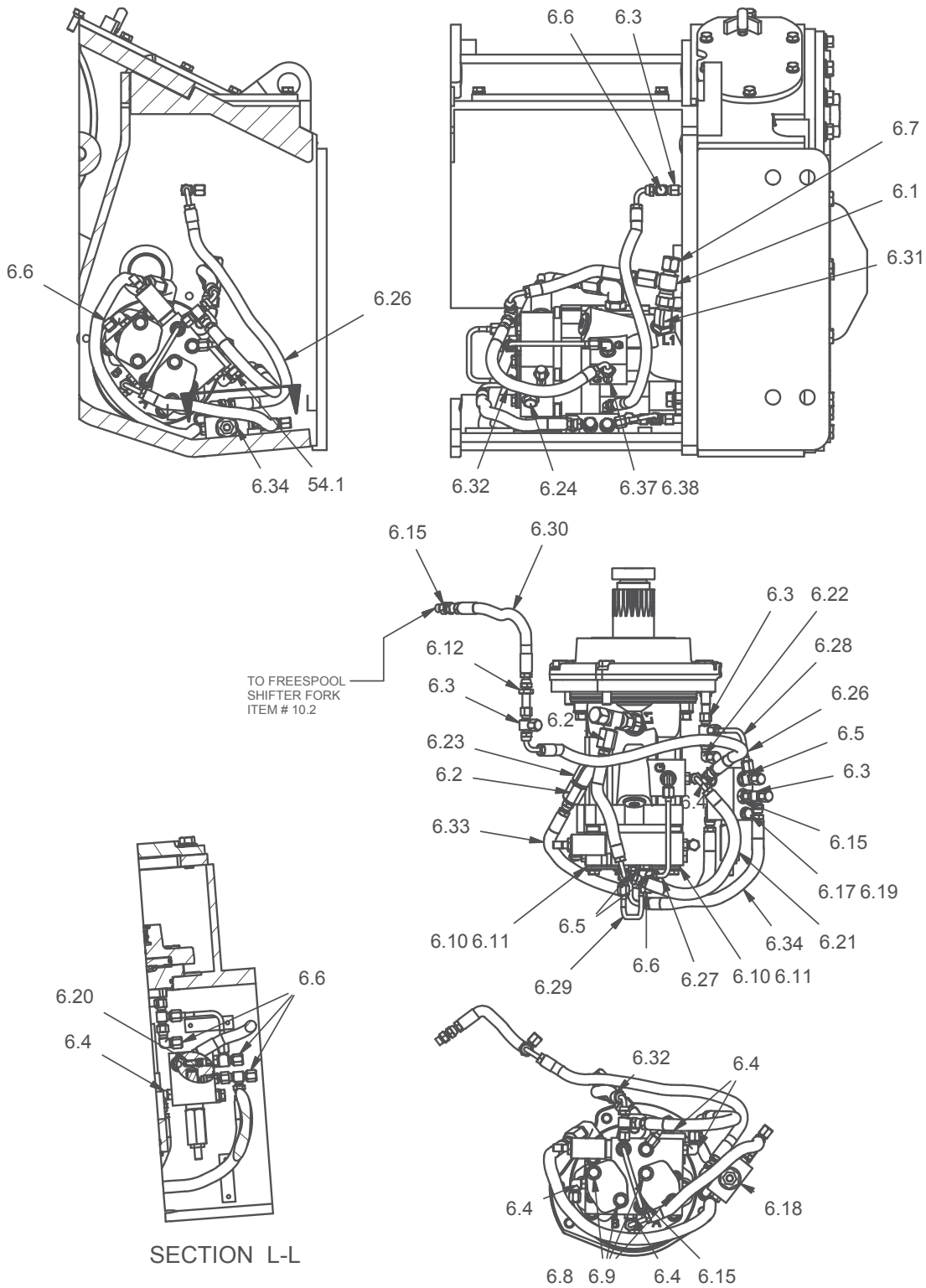
Caterpillar D3/4/5G (H4AH_Z_C17)
Used on S/N H4A-1015 thru H4A-1031



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 276087W	Assembly, Hose	1	11	*a 2305140W	Assembly, Hose	1
2	*a 2305281W	Assembly, Hose	1	12	R525293	Magnet	1
3	*a 2305283W	Assembly, Hose	1	13	*a 2305580W	Assembly, Hose	1
4	*a 2305284W	Assembly, Hose	1	14	16445W	Fitting	6
5	2304213W	Assembly, Tube	1	15	16923W	Fitting	1
6	2304214W	Assembly, Tube	1	16	2304110W	O-Ring	2
7	222535W	Fitting	4	17	16448W	Fitting	1
8	177461W	Capscrew	8	18	24257	Trim, Edge	4
9	14591W	Fitting	3				
10	*a 2305139W	Assembly, Hose	1		*a	Included in 2315308 Hose Kit	

Winch Internal Hydraulics

Caterpillar D3/4/5G (H4AH_Y_C17), Caterpillar D4/5G (H4AH_Y_C18),
 Caterpillar D3/4K (H4AH_Y_C19), Caterpillar D5K (H4AH_Y_C20)
 Last Used on S/N H4AH-1161
 Page 1 of 2



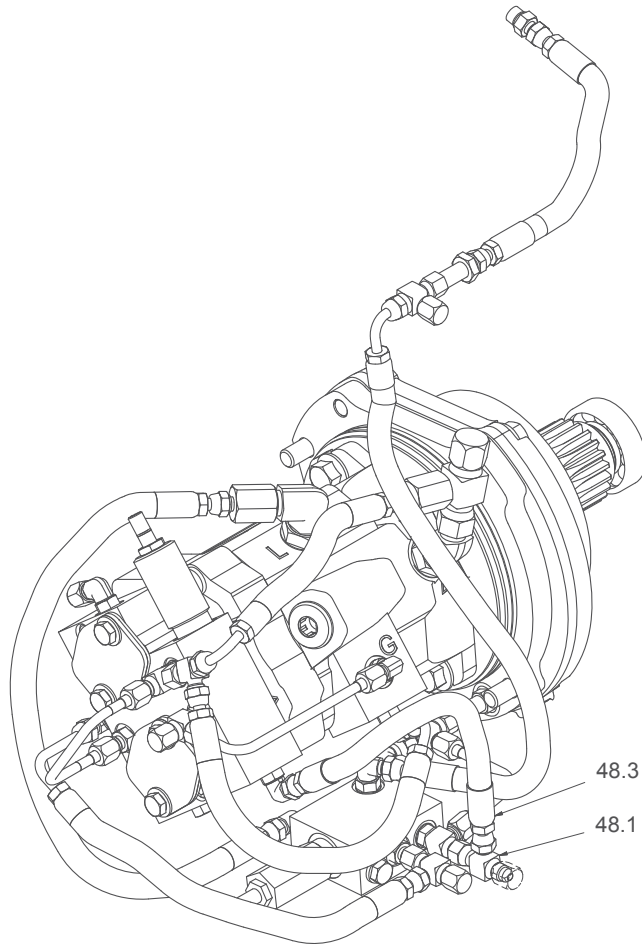
HYDRAULIC ARRANGEMENT - H4AH*Y
 HI-P NON-SCH

Winch Internal Hydraulics

Caterpillar D3/4/5G (H4AH_Y_C17), Caterpillar D4/5G (H4AH_Y_C18),
 Caterpillar D3/4K (H4AH_Y_C19), Caterpillar D5K (H4AH_Y_C20)

Last Used on S/N H4AH-1161

Page 2 of 2



HYDRAULIC ARRANGEMENT - H4AH*Y
 HI-P NON-SCH, CAT D3/4/5K (C19-20)

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
6.1	17062W	Fitting	1	6.22	19687W	Fitting	1
6.2	17777W	Fitting	2	6.23	17224W	Fitting	1
6.3	17059W	Fitting	4	6.24	14594W	Fitting, O-Ring	1
6.4	16556W	Fitting, O-Ring	6	6.26	*a 2305283W	Assembly, Hose	1
6.5	16967W	Fitting, O-Ring	3	6.27	2304999W	Assembly, Tube	1
6.6	16923W	Fitting	6	6.28	2305008W	Assembly, Tube	1
6.7	16925W	Fitting	1	6.29	2305951W	Assembly, Tube	1
6.8	18535W	Capscrew	4	6.30	*a 2305962W	Assembly, Hose	1
6.9	15134W	Washer	4	6.31	201752W	Fitting	1
6.10	2304257W	Gasket	2	6.32	*a 2305966W	Assembly, Hose	2
6.11	2304258W	Plate	2	6.33	*a 2305012W	Assembly, Hose	1
6.12	16445W	Fitting	1	6.34	*a 2307009W	Assembly, Hose	1
6.15	16538W	Fitting, O-Ring	3	6.37	2307520W	Fitting with Orifice	1
6.17	15156W	Washer	1	6.38	2310181	Plug with Orifice	1
6.18	2304196W	Manifold, Cooling	1	48.1	213883	Fitting	1
6.19	162572W	Capscrew	1	48.3	*a 2311049	Assembly, Hose - 2 Speed	1
6.20	2304195W	Valve, Shuttle	1	54.1	16923W	Fitting	1
6.21	2304194W	Valve, Sequence	1				
				*a	Included in 2315309 Hose Kit		

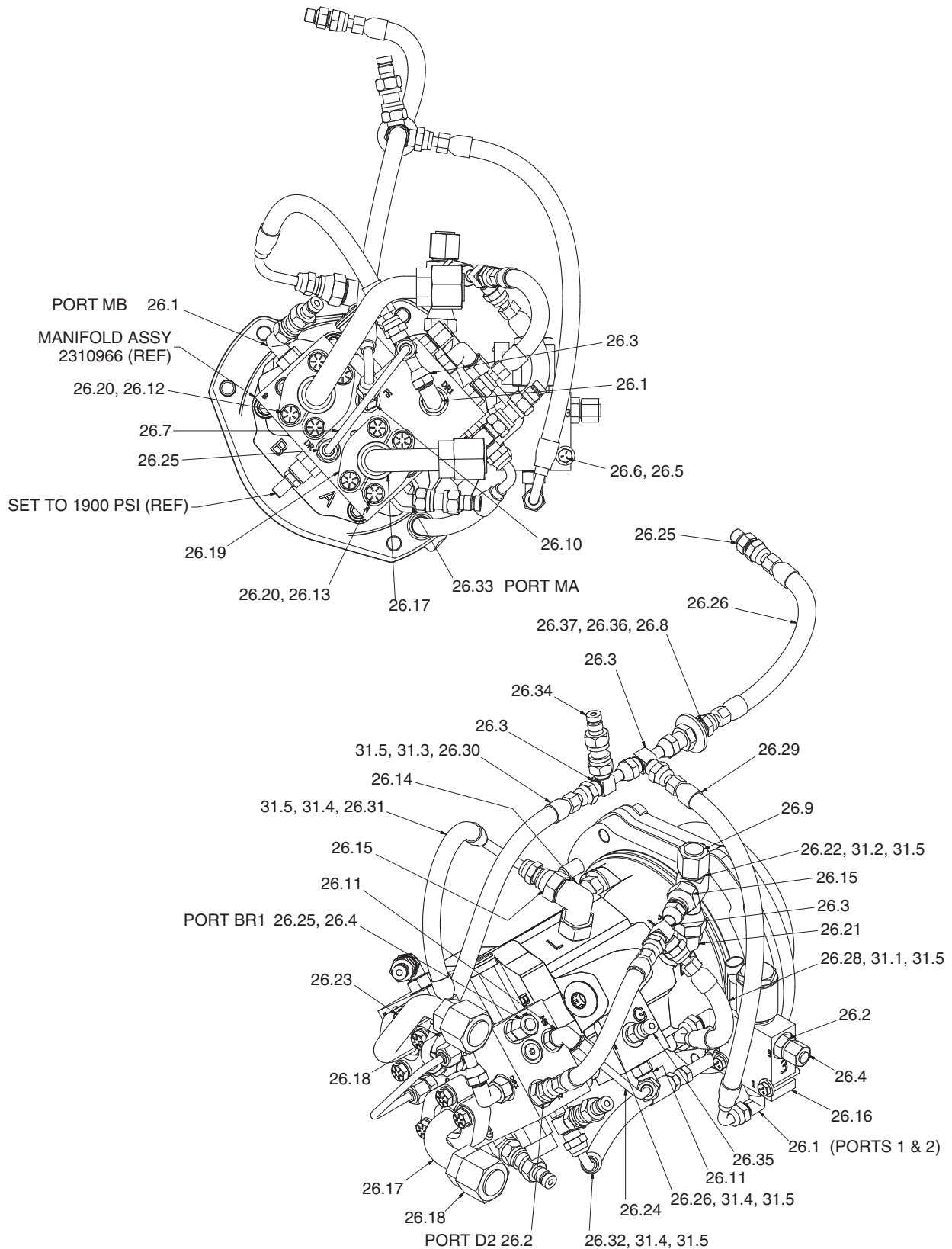
Winch Internal Hydraulics

Caterpillar D3/4/5G (H4AH_Y_C17), Caterpillar D4/5G (H4AH_Y_C18),
 Caterpillar D3/4K (H4AH_Y_C19), Caterpillar D5K/D5K2 (H4AH_Y_C20)

First Used on S/N H4AH-1162

Caterpillar D5K2 With Fireplow (H4AH_Y_C201)

Page 1 of 2



Winch Internal Hydraulics

Caterpillar D3/4/5G (H4AH_Y_C17), Caterpillar D4/5G (H4AH_Y_C18),
Caterpillar D3/4K (H4AH_Y_C19), Caterpillar D5K/D5K2 (H4AH_Y_C20)

First Used on S/N H4AH-1162

Caterpillar D5K2 With Fireplow (H4AH_Y_C201)

Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
26.1	R833253	Fitting	4	26.22	R834052	Fitting	1
26.2	R833103	Fitting	2	26.23	2311899	Assembly, Tube with O-Rings	1
26.3	236855	Fitting	4	26.24	2311737	Assembly, Tube	1
26.4	232984	Fitting	2	26.25	231439	Fitting	3
26.5	221763W	Washer	2	26.26	*c 2311356	Assembly, Hose	2
26.6	18468W	Capscrew	2	26.28	*c 2311234	Assembly, Hose	1
26.7	2310854	Assembly, Tube	1	26.29	*c 249537	Assembly, Hose	1
26.8	*a R834100	Fitting	1	26.30	*c 2311744	Assembly, Hose	1
26.9	R834253	Fitting	1	26.31	*c 2311235	Assembly, Hose	1
26.10	2311739	Assembly, Fitting with Orifice	1	26.32	*c 2311748	Assembly, Hose	1
26.11	R833251	Fitting	2	26.33	R833201	Fitting	1
26.12	R13811046	Capscrew	4	26.34	2307625W	Fitting	4
26.13	Y17C-0624	Capscrew	4	26.35	R14040	Coupler, Male	1
26.14	237983	Fitting	1	26.36	*a 15178W	Washer	1
26.15	R833700	Fitting	2	26.37	*a 211564	O-Ring	1
26.16	2310011	Assembly, Valve Manifold (3-115)	1	31.1	*b 2314880	Firesleeve	1
26.17	2311360	Assembly, Fitting with O-Rings	1	31.2	*b 2314881	Firesleeve	1
26.18	231821	Fitting	2	31.3	*b 2314882	Firesleeve	1
26.19	222535W	Fitting	4	31.4	*b 2314883	Firesleeve	3
26.20	15156W	Washer	8	31.5	*b 589423	Clamp, Firesleeve	12
26.21	R833208	Fitting	1				

*a Place washer (26.36) and O-ring (26.37) on fitting (26.8). Apply anaerobic thread sealant (Allied P#: 273338W) to threads. Install from geartrain side.

*b Used on H4AH_Y_C201. Optional on H4AH_Y_C17.

*c Included in 2315310 Hose Kit

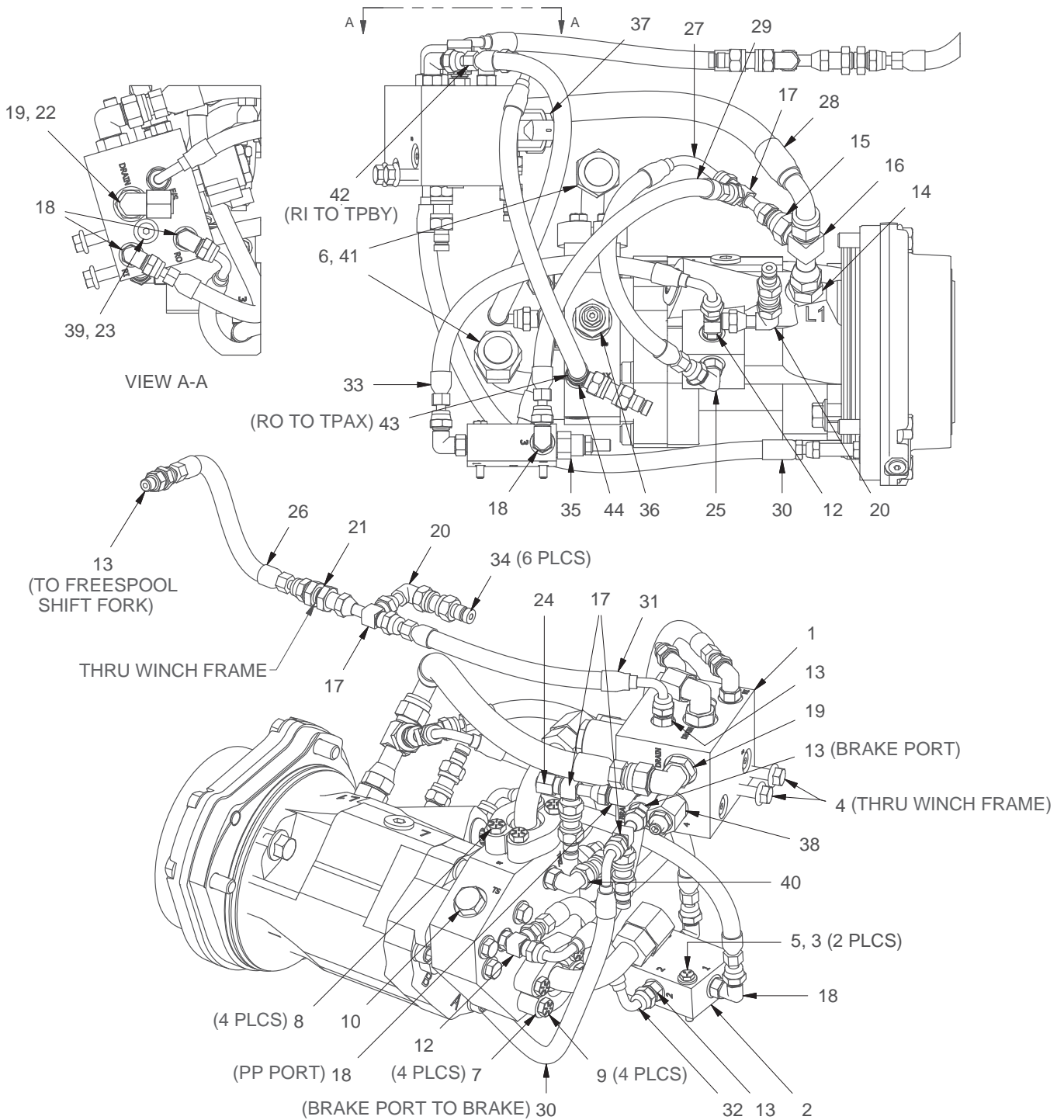
Winch Internal Hydraulics

Caterpillar D3/4K (H4AT_Y_C19),

Caterpillar D5K (H4AT_Y_C20)

Last Used on S/N H4A-1243

Page 1 of 2



Winch Internal Hydraulics

Caterpillar D3/4K (H4AT_Y__C19),

Caterpillar D5K (H4AT_Y__C20)

Last Used on S/N H4A-1243

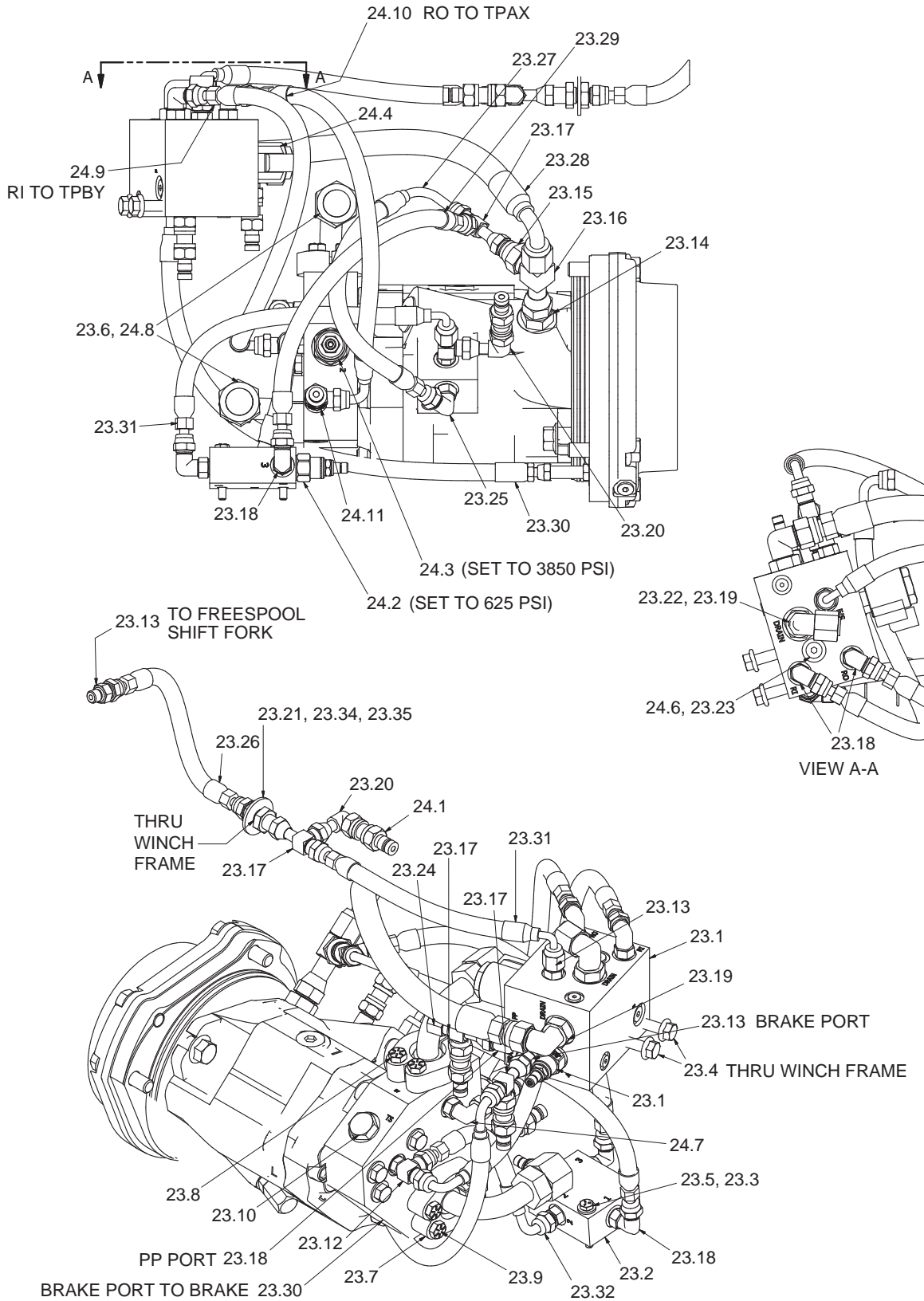
Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2307551W	Manifold, Control	1	28	*b 242111	Assembly, Hose	1
2	248918	Body, Valve	1	29	*b 2311353	Assembly, Hose	1
3	221763W	Washer	2	30	*b 2311233	Assembly, Hose	1
4	398599W	Capscrew, Flanged	2	31	*b 2311744	Assembly, Hose	1
5	Y01C-0428	Capscrew	2	32	*b 2311234	Assembly, Hose	1
6	2311360	Assembly, Fitting with O-Rings	2	33	*b 2311230	Assembly, Hose	1
7	222535W	Fitting	4	34	2307625W	Coupler, Quick	6
8	Y17C-0624	Capscrew	4	35	2311220	Cartridge, Pressure Reducing	1
9	221518W	Capscrew	4	36	2311221	Valve, Counterbalance Cartridge	1
10	210709	Fitting	1		2501643	. Kit, Seal	1
12	R833400	Fitting	2	37	2311212	Valve, Solenoid Spool	1
13	231439	Fitting	4		2310009	. Coil	1
14	R833114	Fitting	1		252134	. Valve	1
15	R833700	Fitting	1		R15668	. Kit, Seal	1
16	R834052	Fitting	1	38	2311608	Assembly, Directional Valve	1
17	236855	Fitting	4		2311607	. Valve, Directional Valve	1
18	R833251	Fitting	5		15027W	. Nut	1
19	231452	Fitting	2		2311604	. Setscrew, Drain	1
20	R833800	Fitting	2	39	2310181	Plug, Orifice	1
21	*a R834100	Fitting	1	40	R833251	Fitting	1
22	R834253	Fitting	1	41	231821	Fitting	2
23	222442W	Fitting, O-Ring	1	42	*b 2311228	Assembly, Hose	1
24	232984	Fitting	1	43	*b 2311229	Assembly, Hose	1
25	2311500	Assembly, Fitting with Orifice	1	44	R833400	Fitting	1
26	*b 2311356	Assembly, Hose	1				
27	*b 2311235	Assembly, Hose	1		*a	Apply 273338W Sealant to Threads	
					*b	Included in 2315311 Hose Kit	

Winch Internal Hydraulics

Caterpillar D3/4K (H4AT_Y_C19), Caterpillar D5K (H4AT_Y_C20)
 Dressta TD7/8S (H4AT_Y_H15), Dressta TD9S (H4AT_Y_H16)
 Shantui SD10 (H4AT_Y_U13)
 First Used on S/N H4A-1244

Page 1 of 2



Winch Internal Hydraulics

Caterpillar D3/4K (H4AT_Y__C19), Caterpillar D5K (H4AT_Y__C20)
 Dressta TD7/8S (H4AT_Y__H15), Dressta TD9S (H4AT_Y__H16)
 Shantui SD10 (H4AT_Y__U13)
 First Used on S/N H4A-1244

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
23.1	2311591	Manifold, Control (See 3-117)	1	23.26	*b 2311356	Assembly, Hose	1
23.2	248918	Body, Valve	1	23.27	*b 2311235	Assembly, Hose	1
23.3	221763W	Washer	2	23.28	*b 242111	Assembly, Hose	1
23.4	398599W	Flangescrew	2	23.29	*b 2311353	Assembly, Hose	1
23.5	Y01C-0428	Capscrew	2	23.30	*b 2311233	Assembly, Hose	1
23.6	2311360	Fitting with O-Rings	2	23.31	*b 2311744	Assembly, Hose	2
23.7	222535W	Fitting	4	23.32	*b 2311234	Assembly, Hose	1
23.8	Y17C-0624	Capscrew	4	23.34	*a 15178W	Washer	1
23.9	221518W	Capscrew	4	23.35	*a 211564	O-Ring	1
23.10	210709	Fitting	1	24.1	2307625W	Coupler, Quick	6
23.12	R833400	Fitting	2	24.2	2311220	Cartridge, Pressure Reducing	1
23.13	231439	Fitting	4		234655	. Kit, Seal	1
23.14	R833114	Fitting	1	24.3	2311221	Valve, Counterbalance Cartridge	1
23.15	R833700	Fitting	1		2501643	. Kit, Seal	1
23.16	R834052	Fitting	1	24.4	2311212	Valve, Solenoid	1
23.17	236855	Fitting	4		2310009	. Coil	1
23.18	R833251	Fitting	5		252134	. Valve	1
23.19	231452	Fitting	2		R15668	. Kit, Seal	1
23.20	R833800	Fitting	2	24.6	2310181	Plug, Orifice	1
23.21	*a R834100	Fitting	1	24.7	R833251	Fitting	1
23.22	R834253	Fitting	1	24.8	231821	Fitting	2
23.23	222442W	Fitting	1	24.9	*b 2311228	Assembly, Hose	1
23.24	232984	Fitting	1	24.10	*b 2311229	Assembly, Hose	1
23.25	2311500	Fitting with Orifice	1	24.11	R833400	Fitting	1

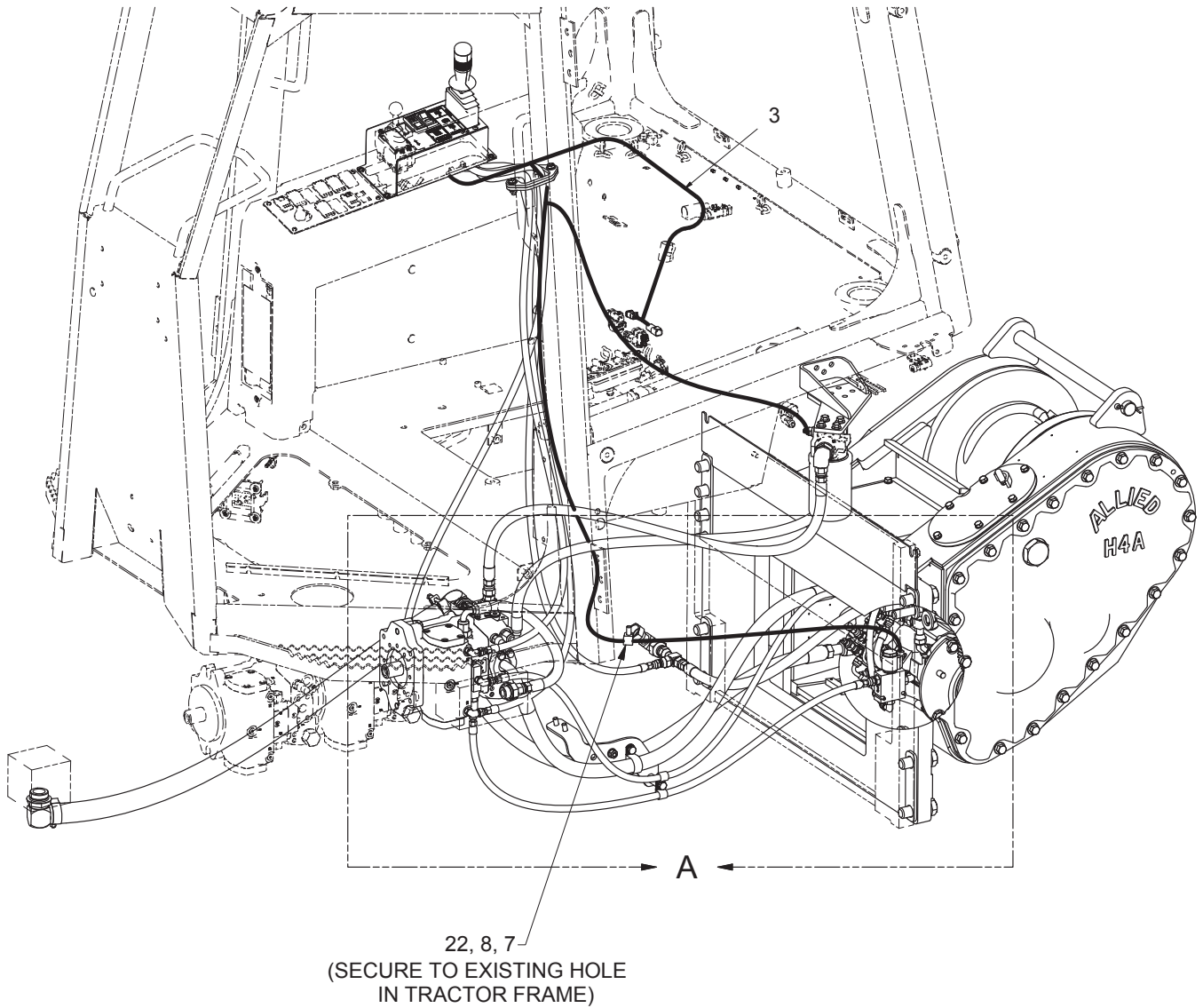
*a Place washer (23.34) and O-ring (23.35) on fitting (23.21). Apply anaerobic thread sealant (Allied P#: 273338W) to threads. Install from geartrain side.

*b Included in 2315311 Hose Kit

Winch Internal & External Hydraulics

Caterpillar D5K2 with Fireplow (H4AH_Y_C201)

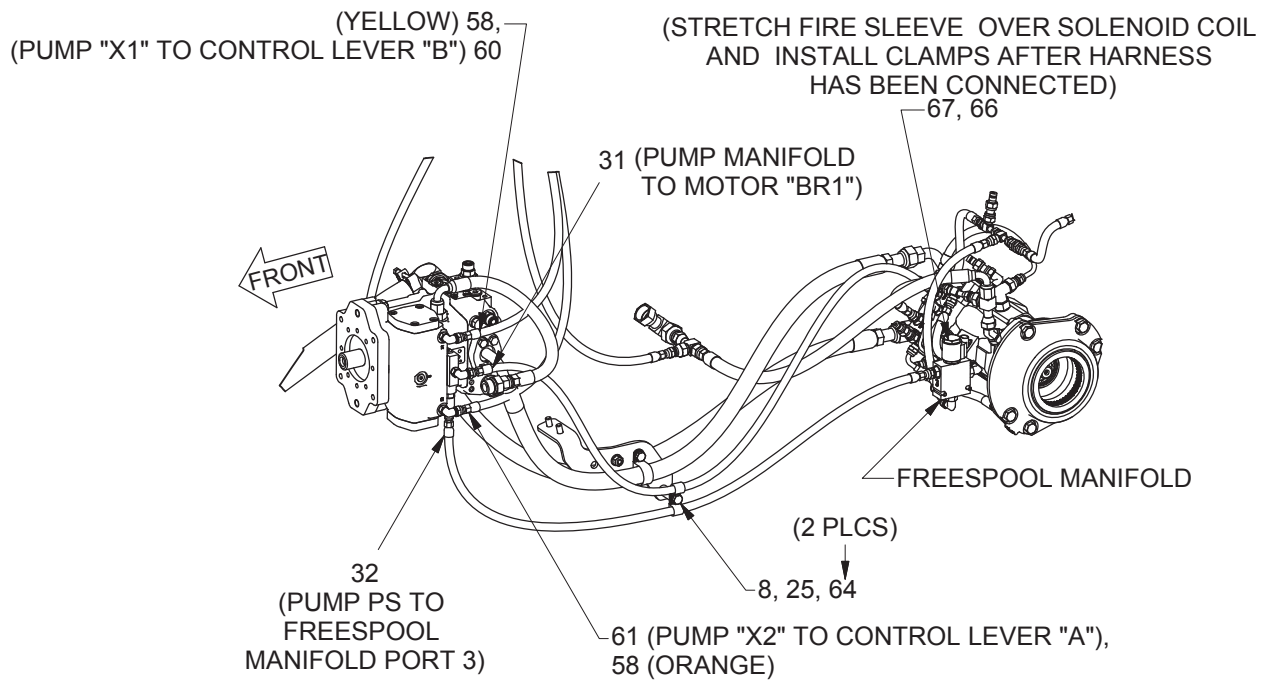
Page 1 of 4



Winch Internal & External Hydraulics

Caterpillar D5K2 with Fireplow (H4AH_Y__C201)

Page 2 of 4

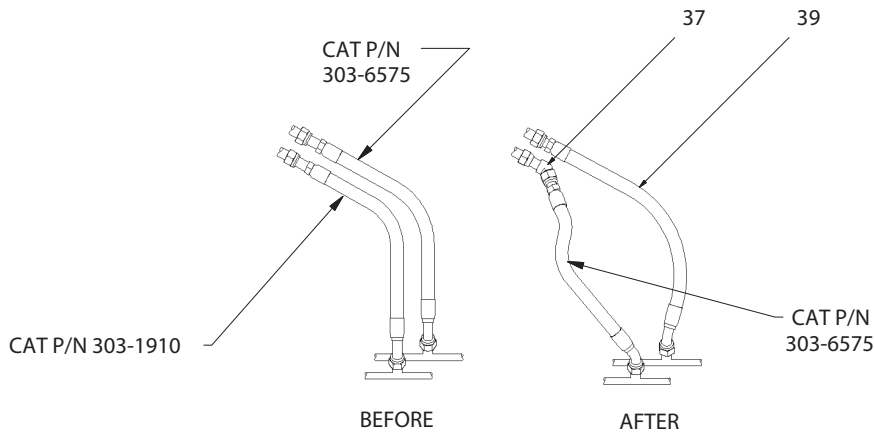


DETAIL A

Winch Internal & External Hydraulics

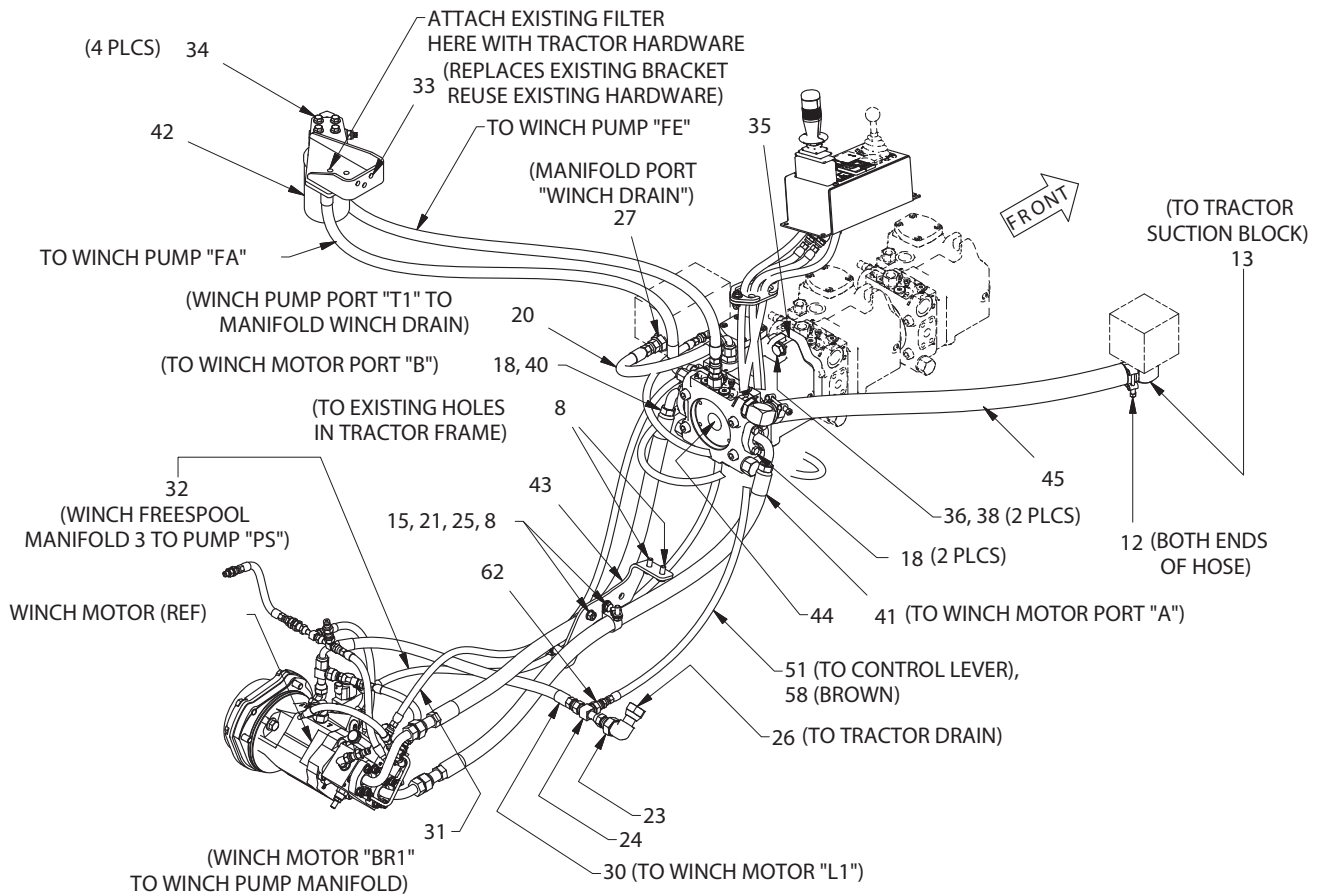
Caterpillar D5K2 with Fireplow (H4AH_Y__C201)

Page 3 of 4



BLADE HOSE INSTALLATION

VIEWED LOOKING TOWARD REAR OF TRACTOR
(LOCATED DIRECTLY IN FRONT OF THE FUEL TANK)



HYDRAULICS INSTALLATION

Winch Internal & External Hydraulics

Caterpillar D5K2 with Fireplow (H4AH_Y__C201)

Page 4 of 4

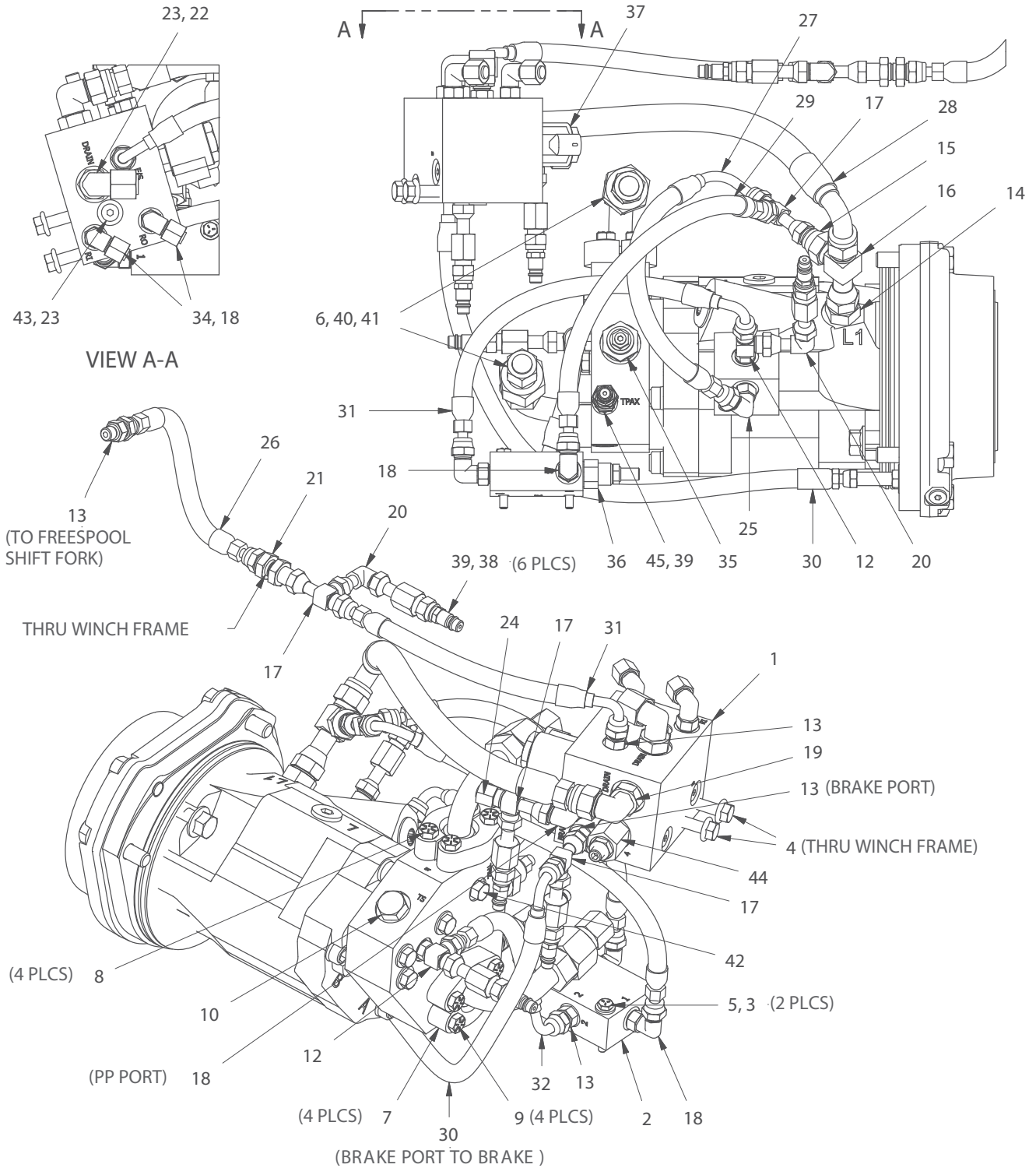
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
7	221777W	Washer	6	35	2310872	Kit, Through Drive (See 3-120)	1
8	293628W	Capscrew	6	36	*a Y19C-M1650	Capscrew	2
12	R13809935	Clamp, T-Bolt	2	37	2310943	Fitting	1
13	213619W	Fitting, Hose	1	38	296426W	Washer	2
15	292655W	Nut	2	39	*b 2314897	Assembly, Hose	1
18	229447	Kit, Split Flange	2	40	*b 2314887	Assembly, Hose	1
	236972	. Clamp, Half	2	41	*b 2314886	Assembly, Hose	1
	203438	. O-Ring	1	42	2314892	Assembly, Filter	1
	201634	. Capscrew	4	43	2310954	Bracket, Hose	1
	201567	. Washer	4	44	2311753	Assembly, Pump	1
20	*b 2314890	Assembly, Hose	1	45	*b 2314899	Assembly, Hose	1
21	R13805003	Clip, Insulation	2	51	Consult Factory	Assembly, Hose	1
22	R13803039	Clip, Insulation	1	58	2304988W	Kit, Various Color Tie Strap	1
23	231809	Fitting	1	59	Consult Factory	Assembly, Hose (Not Shown)	1
24	R834052	Fitting	1	60	Consult Factory	Assembly, Hose	1
25	296420W	Washer	8	61	Consult Factory	Assembly, Hose	1
26	R833804	Fitting	1	62	R833700	Fitting	1
27	R833115	Fitting	1	64	R13803044	Clip, Insulation	2
30	*b 2314895	Assembly, Hose	1	66	249538	Sleeve, Fire	0.5 ft
31	*b 2314889	Assembly, Hose	1	67	589423	Clamp, Firesleeve	2
32	*b 2314888	Assembly, Hose	1				
33	2314310	Bracket, Filter	1		*a	Apply 273338W Sealant to Threads	
34	134803W	Screw	4		*b	Included in 2315312 Hose Kit	

Winch Internal Hydraulics

Komatsu D31/37/39X-22 and 22-A (H4AT_Y_K13)

Last Used on S/N H4A-1243

Page 1 of 2



Winch Internal Hydraulics

Komatsu D31/37/39X-22 and 22-A (H4AT_Y__K13)

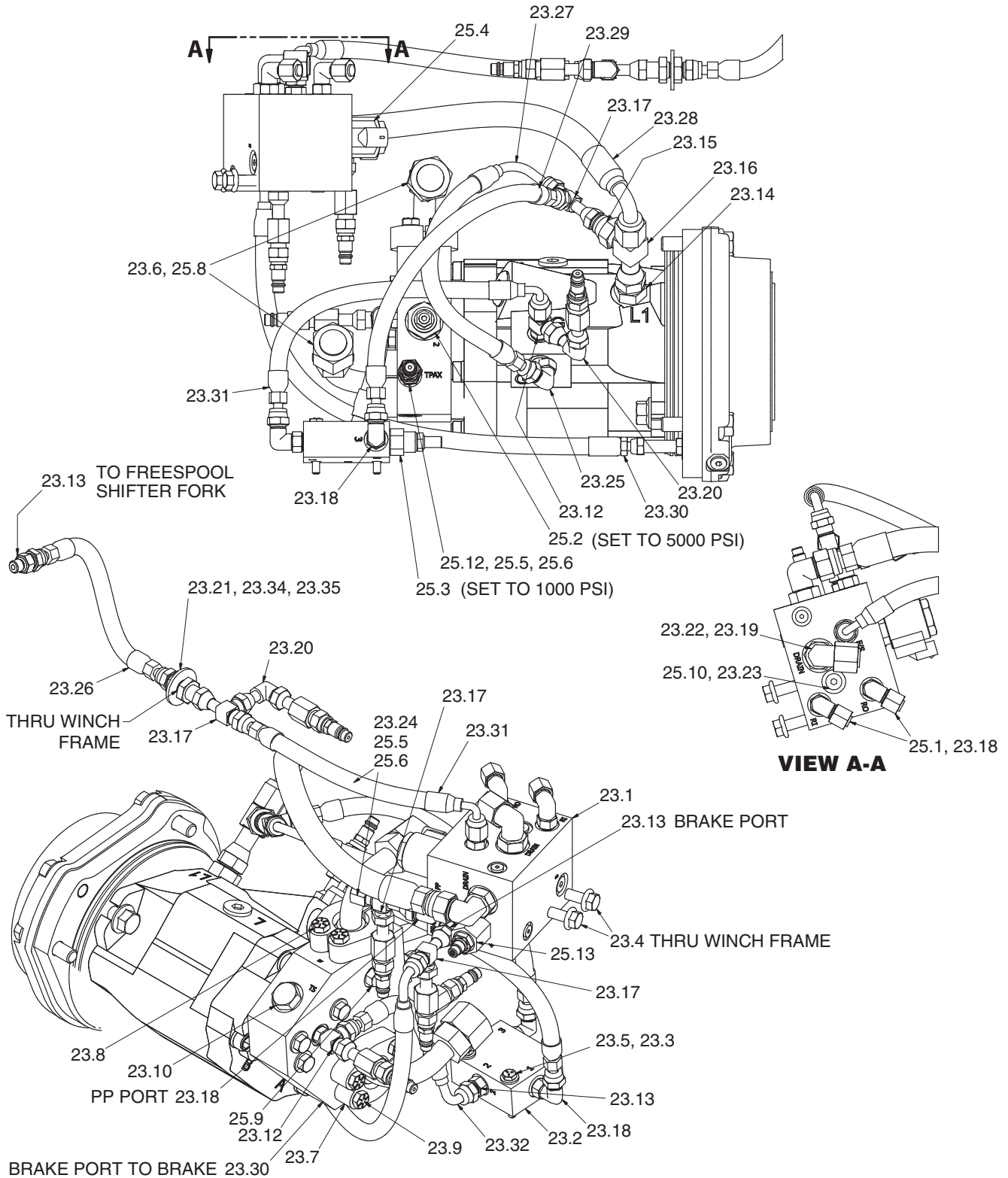
Last Used on S/N H4A-1243

Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2307551W	Manifold, Control	1	28	*b 242111	Assembly, Hose	1
2	248918	Body, Valve	1	29	*b 2311353	Assembly, Hose	1
3	221763W	Washer	2	30	*b 2311233	Assembly, Hose	1
4	398599W	Capscrew, Flanged	2	31	*b 2311744	Assembly, Hose	1
5	Y01C-0428	Capscrew	2	32	*b 2311234	Assembly, Hose	1
6	2311360	Assembly, Fitting with O-Rings	2	33	*b 2311230	Assembly, Hose	1
7	222535W	Fitting	4	34	232984	Fitting	2
8	Y17C-0624	Capscrew	4	35	2310976	Valve, Counterbalance Cartridge	1
9	221518W	Capscrew	4		2501643	. Seal Kit	1
10	210709	Fitting	1	36	2311130	Cartridge, Pressure Reducing	1
12	R833400	Fitting	2		234655	. Seal Kit	1
13	231439	Fitting	4	37	250365	Valve, Solenoid	1
14	R833114	Fitting	1	38	254002	Fitting	6
15	R833700	Fitting	1	39	2310634	Nipple	6
16	R834052	Fitting	1	40	2307958W	Fitting	2
17	236855	Fitting	4	41	R834253	Fitting	2
18	R833251	Fitting	5	42	209423	Fitting	1
19	231452	Fitting	2	43	15961W	Fitting	1
20	R833800	Fitting	2	44	2311594	Assembly, Directional Valve	1
21	*a R834100	Fitting	1		2311449	. Valve, Directional Cartridge	1
22	R834253	Fitting	1		15027W	. Nut	1
23	222442W	Fitting, O-Ring	1		2311604	. Setscrew, Drain	1
24	232984	Fitting	1	45	231439	Fitting	1
25	2311500	Assembly, Fitting with Orifice	1				
26	*b 2311356	Assembly, Hose	1		*a	Apply 273338W Sealant to Threads	
27	*b 2311235	Assembly, Hose	1		*b	Included in 2315313 Hose Kit	

Winch Internal Hydraulics

Komatsu D31/37/39X-22 (H4AT_Y_K13)
 Komatsu D37/39X-23, D39X-24 (H4AT_Y_K14)
 First Used on S/N H4A-1244
 Page 1 of 2



Winch Internal Hydraulics

Komatsu D31/37/39 E-22 (H4AT_Y__K13)
 Komatsu D37/39X-23, D39X-24 (H4AT_Y__K14)
 First Used on S/N H4A-1244
 Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
23.1	2311591	Manifold, Control (See 3-117)	1	23.25	*b 2311500	Assembly, Fitting with Orifice	1
23.2	248918	Body, Valve	1	23.26	*b 2311356	Assembly, Hose	1
23.3	221763W	Washer	2	23.27	*b 2311235	Assembly, Hose	1
23.4	398599W	Capscrew, Flanged	2	23.28	*b 242111	Assembly, Hose	1
23.5	Y01C-0428	Capscrew	2	23.29	*b 2311353	Assembly, Hose	1
23.6	2311360	Assembly, Fitting with O-Rings	2	23.30	*b 2311233	Assembly, Hose	1
23.7	222535W	Fitting	4	23.31	*b 2311744	Assembly, Hose	2
23.8	Y17C-0624	Capscrew	4	23.32	*b 2311234	Assembly, Hose	1
23.9	221518W	Capscrew	4	23.34	*a 15178W	Washer	1
23.10	210709	Fitting	1	23.35	*a 211564	O-Ring	1
23.12	R833400	Fitting	2	25.1	232984	Fitting	2
23.13	231439	Fitting	4	25.2	2310976	Valve, Counterbalance Cartridge	1
23.14	R833114	Fitting	1		2501643	. Kit, Seal	1
23.15	R833700	Fitting	1	25.3	2311130	Cartridge, Pressure Reducing	1
23.16	R834052	Fitting	1		234655	. Kit, Seal	1
23.17	236855	Fitting	4	25.4	250365	Valve, Solenoid	1
23.18	R833251	Fitting	5	25.5	254002	Fitting	6
23.19	231452	Fitting	2	25.6	2310634	Nipple	6
23.20	R833800	Fitting	2	25.8	231821	Fitting	2
23.21	*a R834100	Fitting	1	25.9	209423	Fitting	1
23.22	R834253	Fitting	1	25.10	15961W	Fitting	1
23.23	222442W	Fitting	1	25.12	231439	Fitting	1
23.24	232984	Fitting	1				

*a Place washer (23.34) and O-ring (23.35) on fitting (23.21). Apply anaerobic thread sealant (Allied P#: 273338W) to threads. Install from geartrain side.

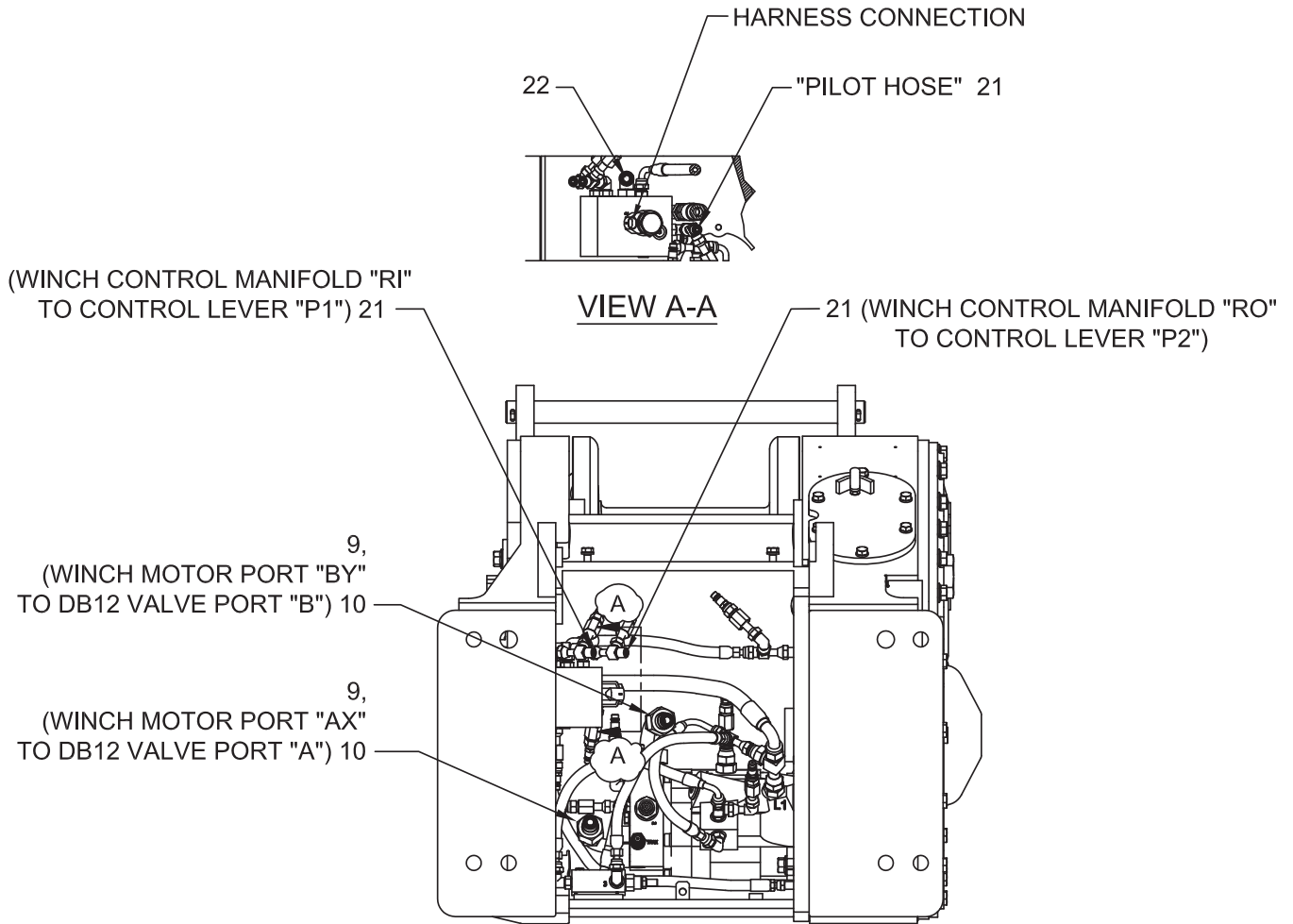
*b Included in 2315313 Hose Kit

Winch Internal Hydraulics

Hydraulics/Controller Installation

Komatsu D31/37/39X-22 and 22-A (H4AT_Y__K13)

Page 1 of 2



Winch Internal Hydraulics

Hydraulics/Controller Installation

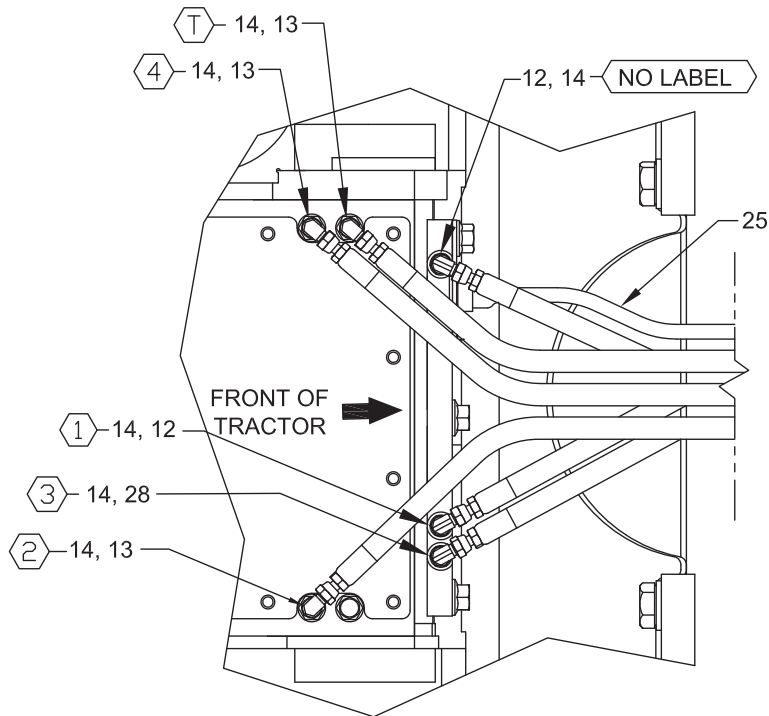
Komatsu D31/37/39X-22 and 22-A (H4AT_Y__K13)

Page 2 of 2

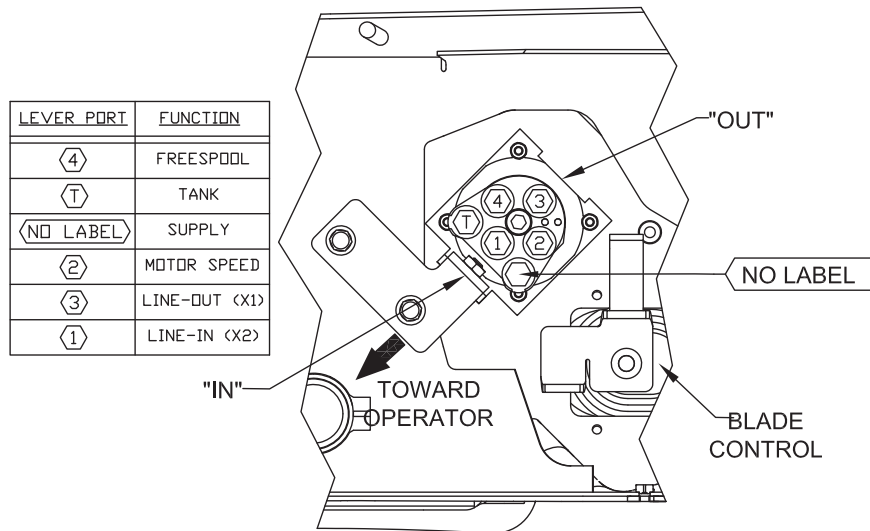
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
9	2307958W	Fitting	2	21	2311290	Assembly, Hose	3
10	*a 2311300	Assembly, Hose	2	22	*a 2311289	Assembly, Hose	1
					*a	Included in 2315314 Hose Kit	

Winch External Hydraulics

Case 650/750/850K, 750/850L
(H4AH_R_R15)



HOSE INSTALLATION
(VIEW FROM TOP OF WINCH)



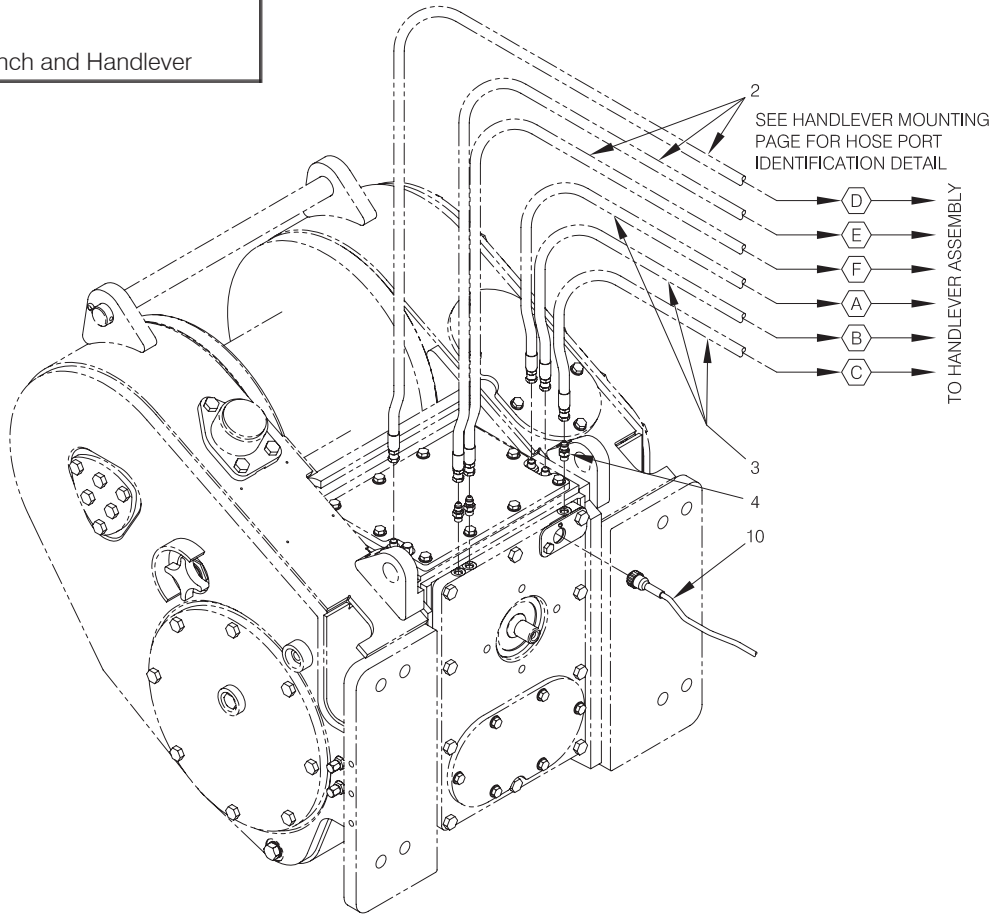
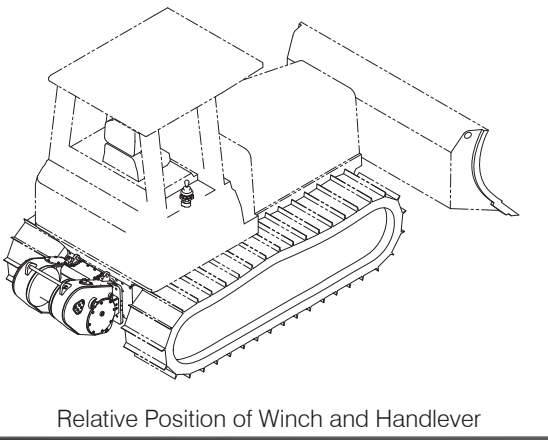
HOSE INSTALLATION AT HANDLEVER
(VIEW FROM UNDER CONSOLE LOOKING AT BOTTOM OF HANDLEVER ASSEMBLY)

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
12	209486	Fitting	2	25	2311315	Assembly, Wire	1
13	212718	Fitting	3	28	2314508	Fitting, Tall	1
14	*a 2314379	Assembly, Hose	6				
				*a	Included in 2315315 Hose Kit		

Winch External Hydraulics

Caterpillar D3/4/5C

(H4AH_B_C16 and H4AH_R_C16)

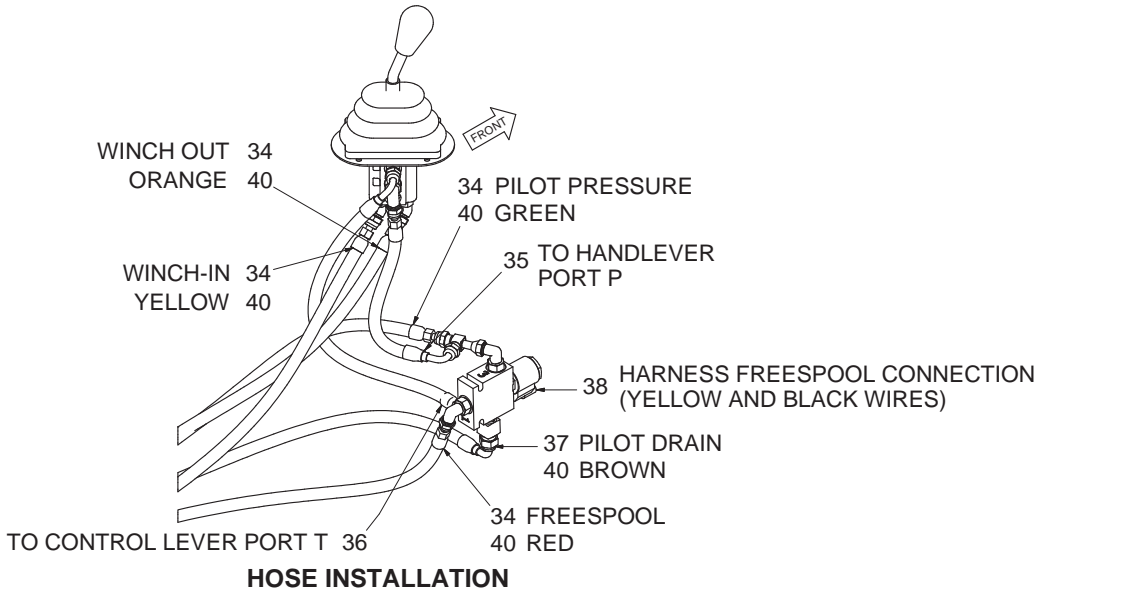


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
2	*a 2304205W	Assembly, Hose	3	5	2304988W	Kit, Various Color Tie Strap (Not Shown)	1
3	*a 2304989W	Assembly, Hose	3	10	2304204W	Harness, Wiring	1
4	16538W	Fitting	3		*a	Included in 2315316 Hose Kit	

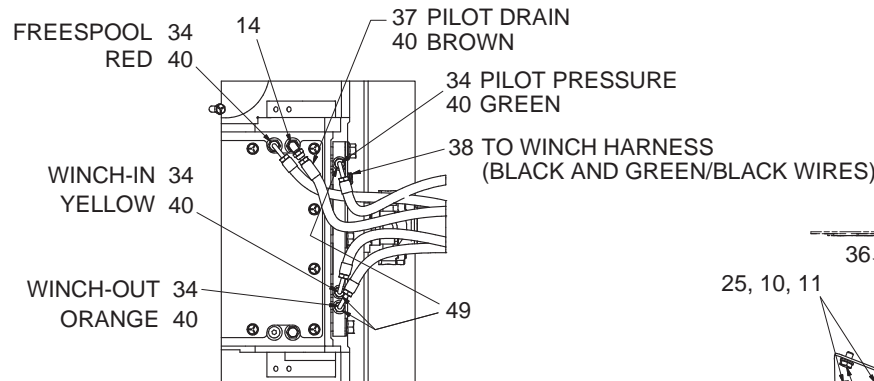
Winch External Hydraulics

Case 650L (H4AH_R__R16)

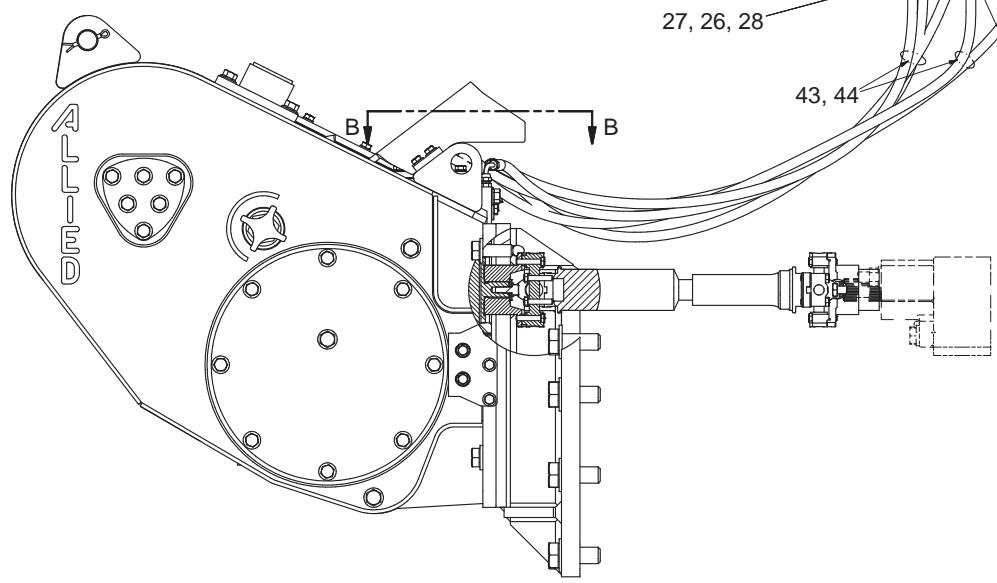
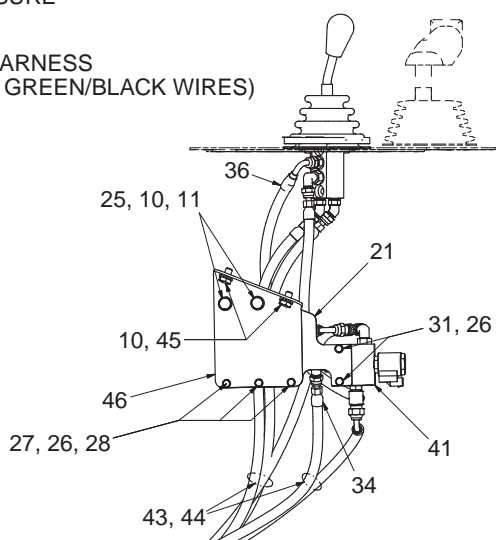
Page 1 of 2



HOSE INSTALLATION



**SECTION B-B
WINCH PORTS
(WITH HOSE GUARD REMOVED)**



Winch External Hydraulics

Case 650L (H4AH_R__R16)

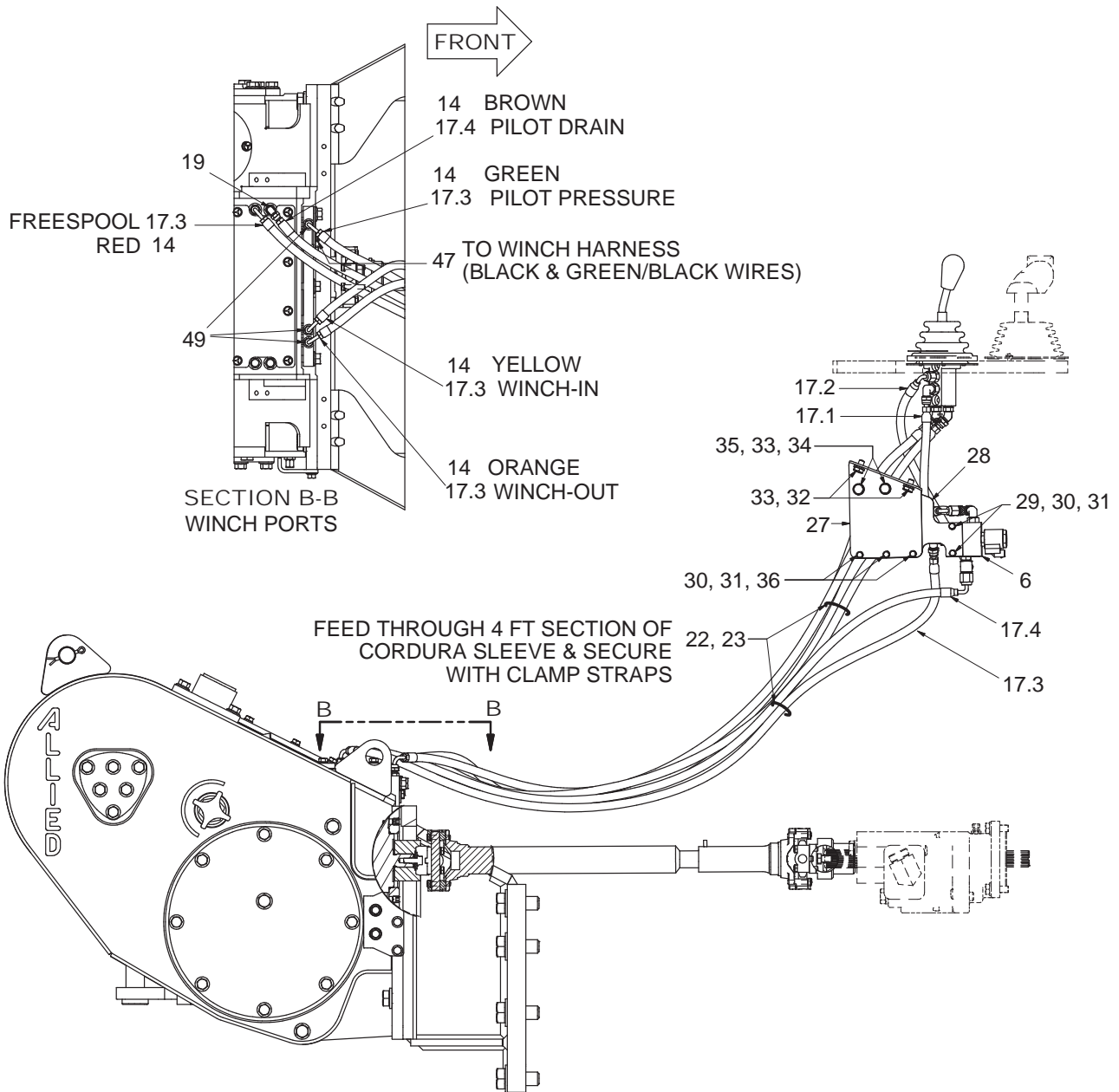
Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
10	296420W	Washer	6	37	*c 2314376	Assembly, Hose	1
11	293628W	Capscrew	2	38	2312888	Harness, Wire	1
14	212718	Fitting	1	40	2304988W	Kit, Various Color Tie Strap	1
21	*a 2312875	Bracket, Valve	1	41	2312889	Assembly, Freespool Valve (3-108)	1
	*b 2314326	Bracket, Valve	1	43	137852W	Clamp, Strap	10
25	292655W	Nut	2	44	R13846	Sleeve, Cordura	8 ft
26	296417W	Washer	14	45	Y19C-M1016	Capscrew	2
27	292653W	Nut	7	46	2313001	Plate, Formed	1
28	292501W	Capscrew	5	49	209083	Fitting	3
31	Y09C-M0650	Capscrew	2				
34	*c 2314375	Assembly, Hose	4	*a	Last Used on S/N H4A-1226		
35	*c 2312885	Assembly, Hose	1	*b	First Used on S/N H4A-1227		
36	*c 2312886	Assembly, Hose	1	*c	Included in 2315317 Hose Kit		

Winch External Hydraulics

Case 750/850M (H4AH_R__R17)

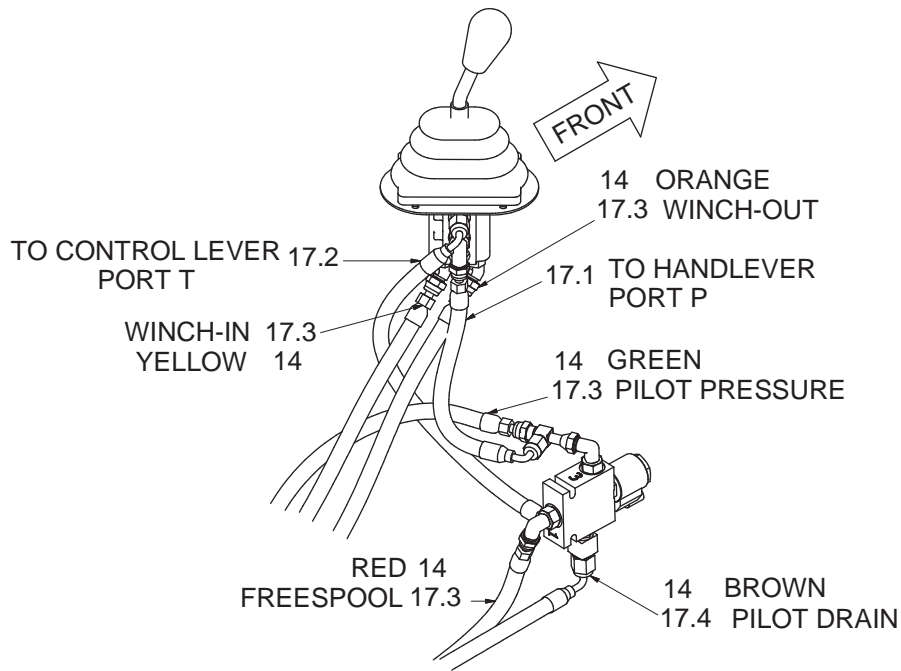
Page 1 of 2



Winch External Hydraulics

Case 750/850M (H4AH_R__R17)

Page 2 of 2

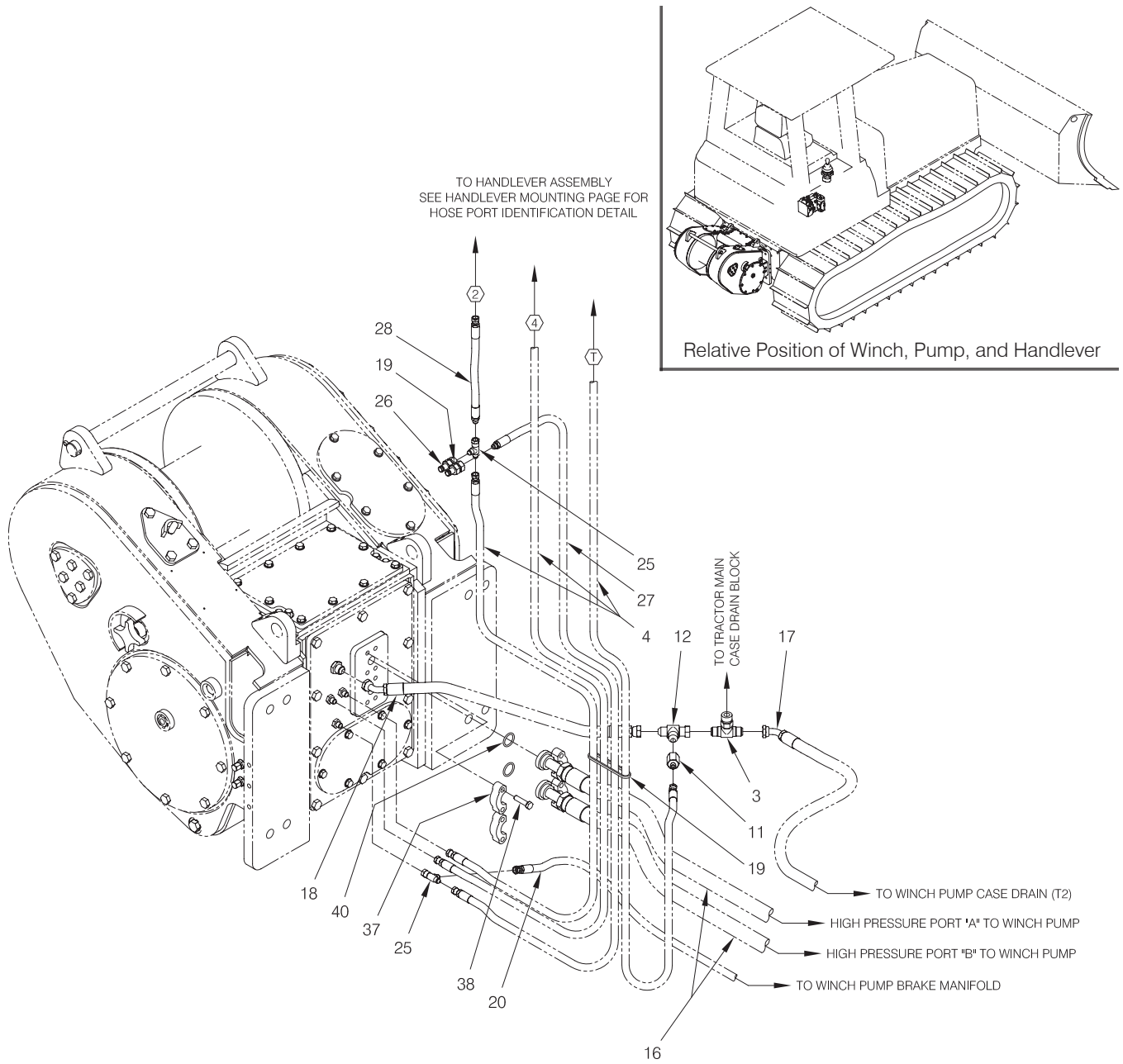


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
6	2315110	Assembly, Valve - 24V Freespool (3-109)	1	28	2314326	Bracket, Valve	1
14	2304988W	Kit, Various Color Tie Strap	1	29	Y09C-M0650	Capscrew	2
17	2314932	Kit, Hose	1	30	296417W	Washer	10
17.1	2312885	. Assembly, Hose	1	31	292653W	Nut	5
17.2	2312886	. Assembly, Hose	1	32	Y19C-M1016	Capscrew	2
17.3	2315195	. Assembly, Hose	4	33	296420W	Washer	6
17.4	2315196	. Assembly, Hose	1	34	293628W	Capscrew	2
19	212718	Fitting	1	35	292655W	Nut	2
22	R13846	Sleve, Cordura	8 ft	36	292501W	Capscrew	3
23	137852W	Clamp, Strap	10	47	2312122	Harness, Wire - 24V	1
27	2313001	Plate, Formed	1	49	209083	Fitting	3

Winch External Hydraulics

Caterpillar D3/4/5G (H4AH_Z_C17)

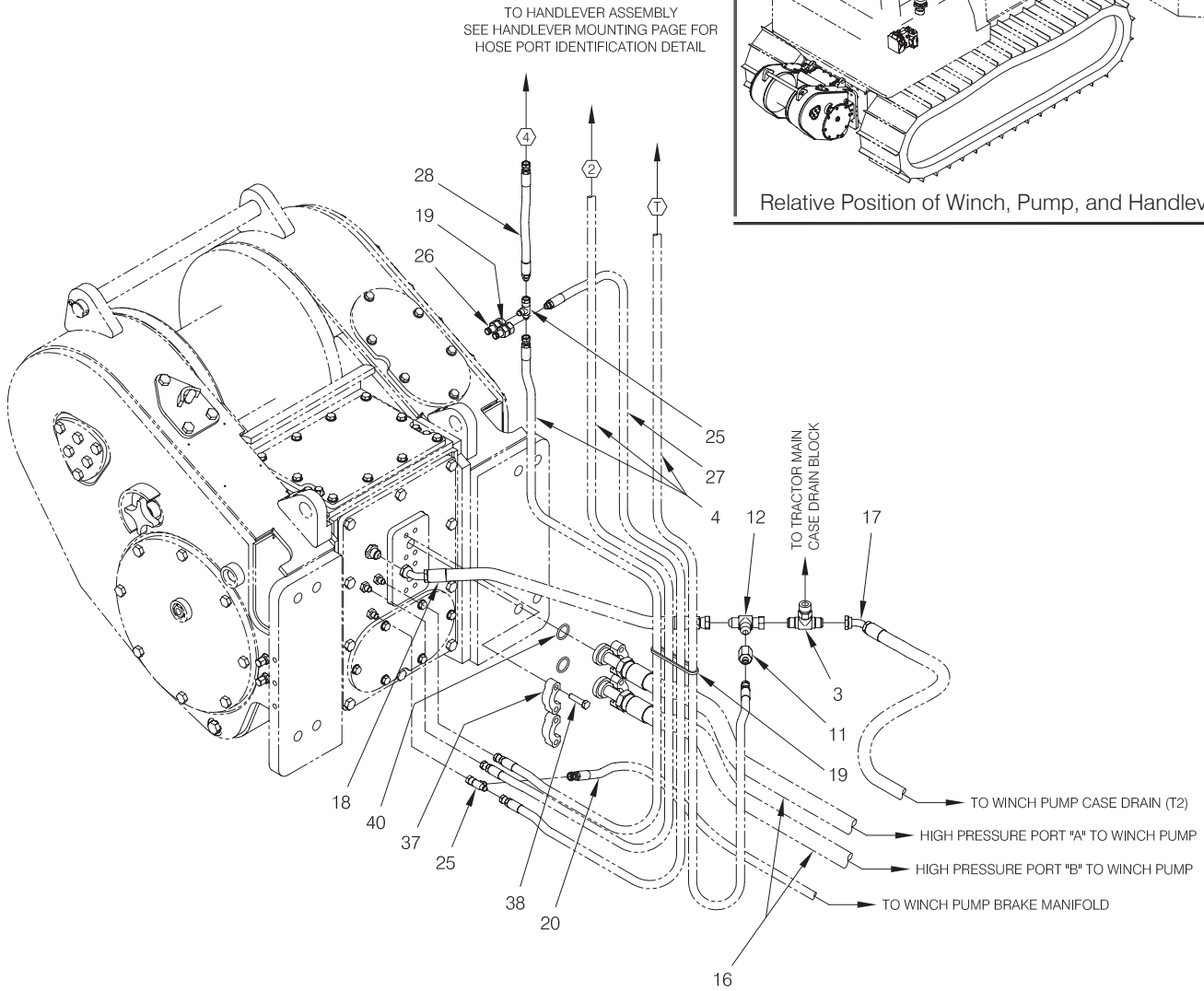
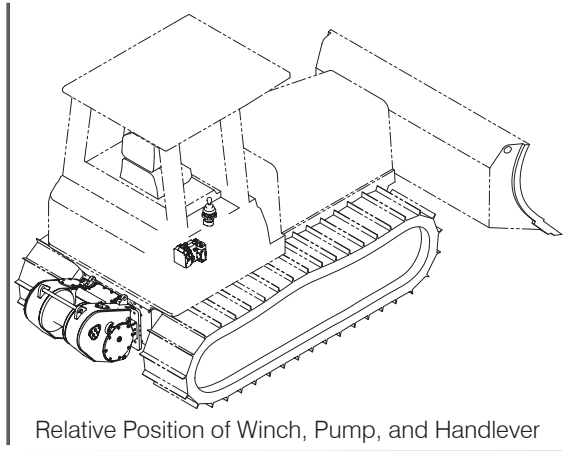
Last Used on S/N H4A-1014



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
3	2304232W	Fitting	1	26	R330325	Coupler, Male	2
4	*b 2304205W	Assembly, Hose	3	27	*b 2304246W	Assembly, Hose	1
11	17777W	Fitting	1	28	*b 2304247W	Assembly, Hose	1
12	17062W	Fitting	1	37	222535W	Fitting	4
16	*b 2304234W	Assembly, Hose	2	38	*a 177461W	Capscrew	8
17	*b 2304235W	Assembly, Hose	1	40	2304110W	O-Ring	2
18	*b 2304236W	Assembly, Hose	1				
19	137852W	Clamp, Strap	A/R				
20	*b 2304238W	Assembly, Hose	1				
25	17059W	Fitting	2				
					*a	Use 318702W Thread Lock	
					*b	Included in 2315319 Hose Kit	

Winch External Hydraulics

Caterpillar D3/4/5G (H4AH_Z_C17)
Used on S/N H4AH-1015 thru H4A-1031



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
3	2304232W	Fitting	1	26	R330325	Coupler, Male	2
4	*b 2304205W	Assembly, Hose	3	27	*b 2306492W	Assembly, Hose	1
11	17777W	Fitting	1	28	*b 2304247W	Assembly, Hose	1
12	17062W	Fitting	1	37	222535W	Fitting	4
16	*b 2306489W	Assembly, Hose	2	38	*a 177461W	Capscrew	8
17	*b 2304235W	Assembly, Hose	1	40	2304110W	O-Ring	2
18	*b 2306490W	Assembly, Hose	1				
19	137852W	Clamp, Strap	AR				
20	*b 2304238W	Assembly, Hose	1				
25	17059W	Fitting	2				
					*a	Use 318702W Thread Lock	
					*b	Included in 2315320 Hose Kit	

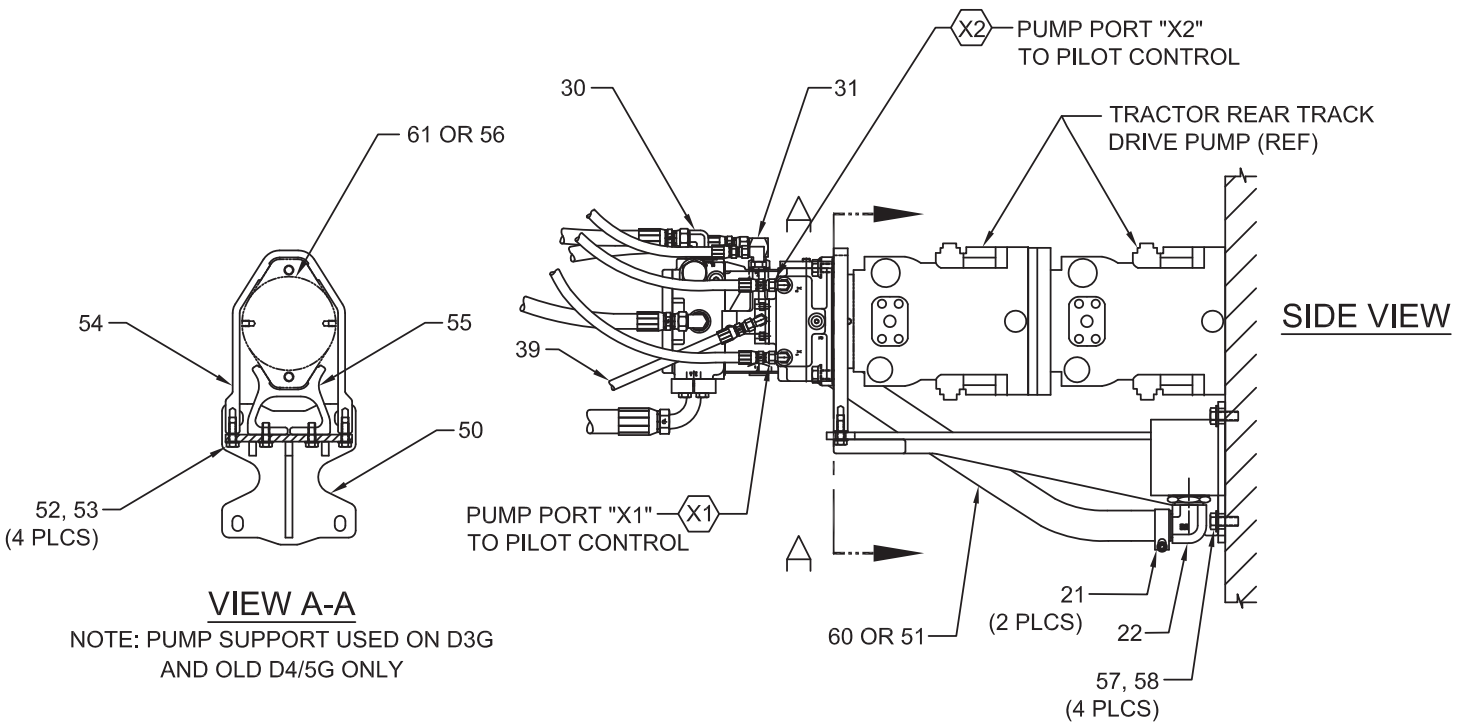
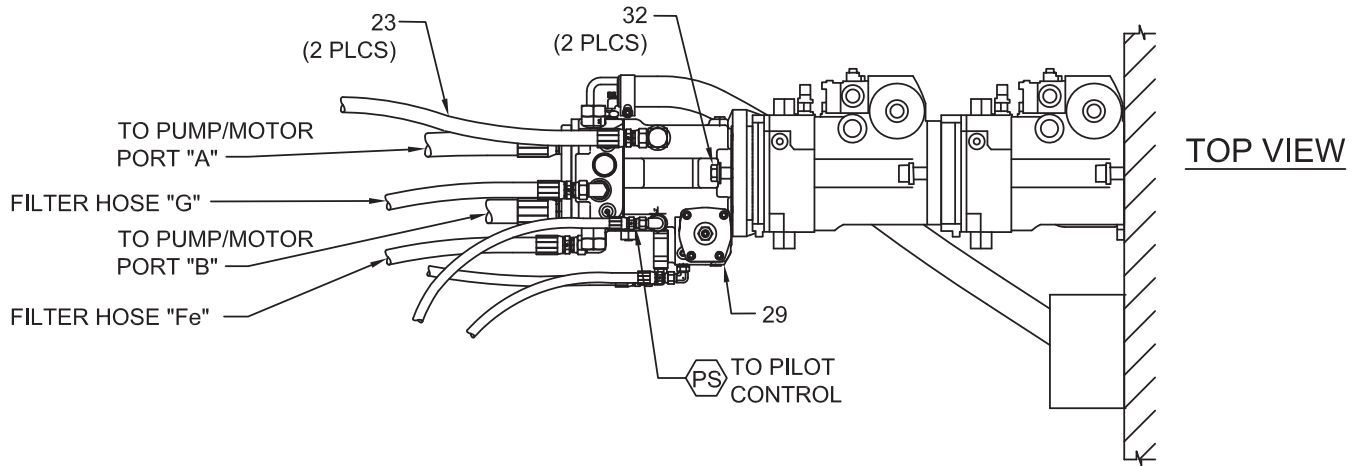
Winch External Hydraulics

Caterpillar D3/4/5G (H4AH_Y__C17)

Caterpillar D4/5G (H4AH_Y__C18)

Last Used on S/N H4A-1161

Page 1 of 4



VIEW A-A

NOTE: PUMP SUPPORT USED ON D3G AND OLD D4/5G ONLY

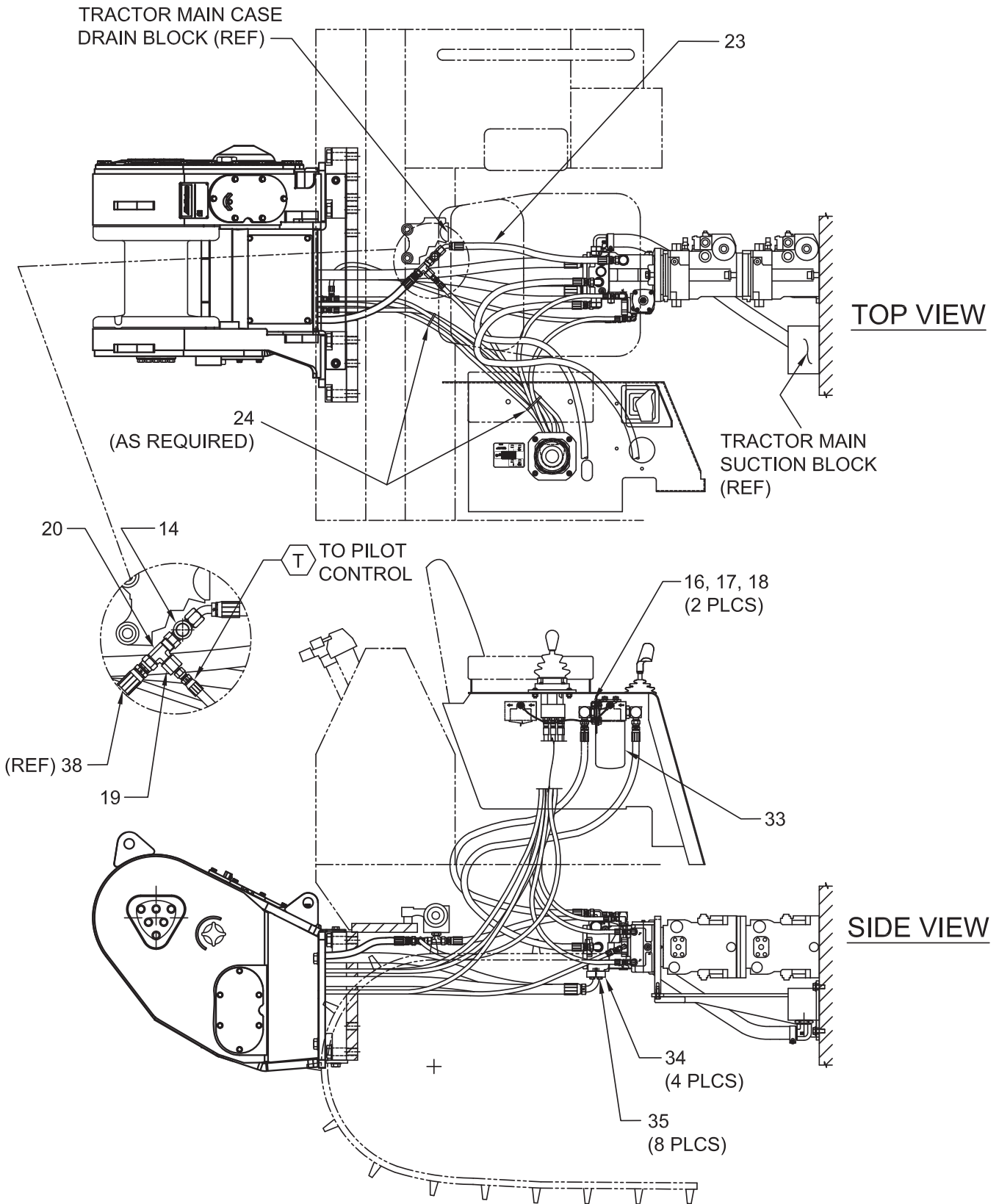
Winch External Hydraulics

Caterpillar D3/4/5G (H4AH_Y_C17)

Caterpillar D4/5G (H4AH_Y_C18)

Last Used on S/N H4A-1161

Page 2 of 4




Winch External Hydraulics

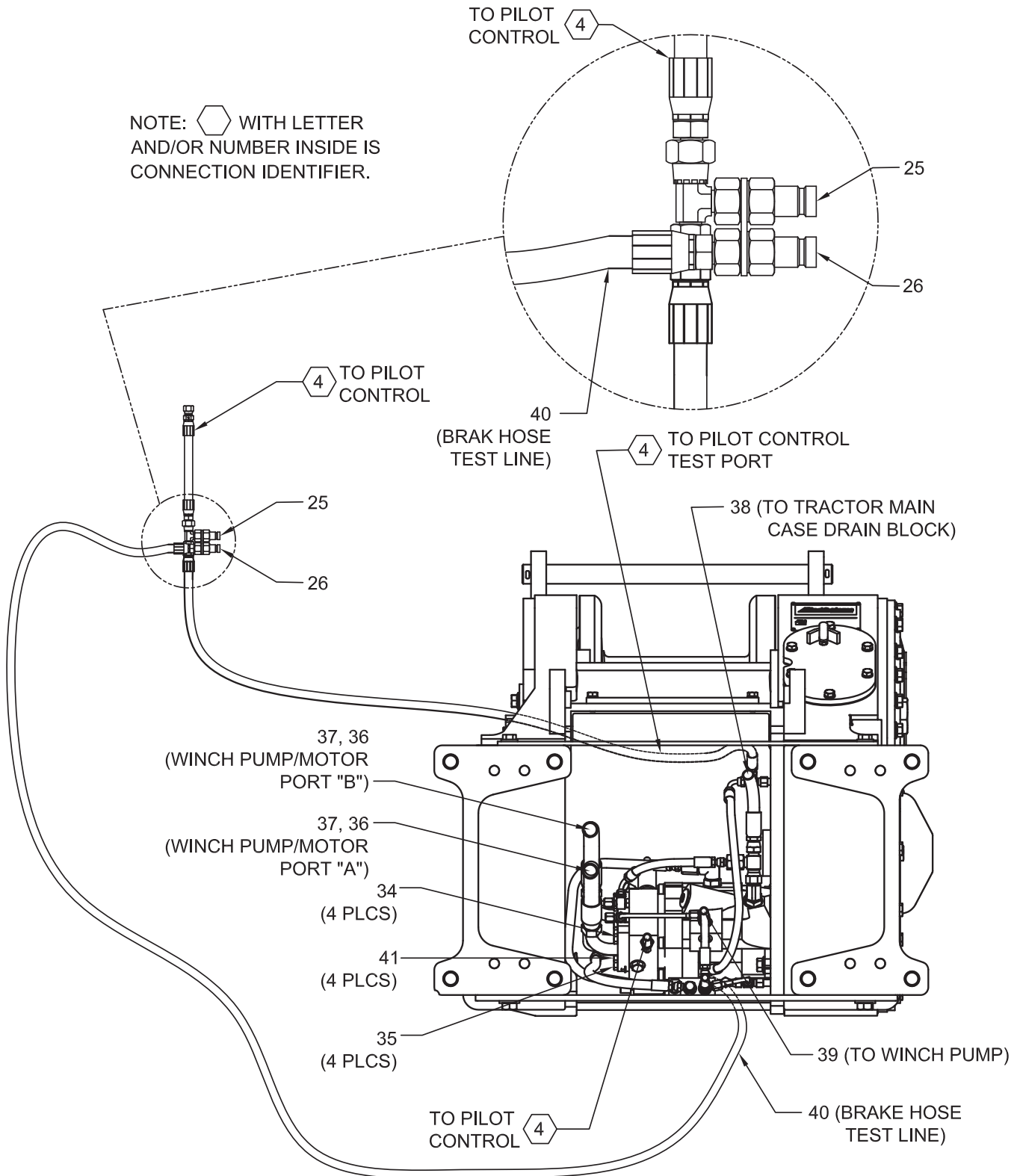
Caterpillar D3/4/5G (H4AH_Y__C17)

Caterpillar D4/5G (H4AH_Y__C18)

Last Used on S/N H4A-1161

Page 3 of 4

NOTE:  WITH LETTER AND/OR NUMBER INSIDE IS CONNECTION IDENTIFIER.



Winch External Hydraulics

Caterpillar D3/4/5G (H4AH_Y__C17)

Caterpillar D4/5G (H4AH_Y__C18)

Last Used on S/N H4A-1161

Page 4 of 4

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
14	2304232W	Fitting	1	38	*d 2306490W	Assembly, Hose	1
16	16829W	Capscrew	2	39	*d 2304205W	Assembly, Hose	1
17	15135W	Washer	2	40	*d 2306492W	Assembly, Hose	1
18	221711W	Nut	2	41	*a 221518W	Capscrew	4
19	17777W	Fitting	1	50	*b 2304225W	Support, Pump	1
20	17062W	Fitting	1	51	*b 2304259W	Suction, Hose	1
21	R13809935	Clamp, T-Bolt	2	52	*b 179443W	Capscrew	4
22	213619W	Fitting	1	53	*b 221767W	Washer	4
23	*d 2304235W	Assembly, Hose	1	54	*b 2304245W	Clamp, Upper Pump Support	1
24	137852W	Clamp, Strap	AR	55	*b 2304244W	Clamp, Lower Pump Support	1
25	17059W	Fitting	1	56	*b 2304212W	Kit, Through Drive (See 3-118)	1
26	R330325	Coupler, Male	1	57	*b 293645W	Capscrew	4
29	2306024W	Assembly, Pump	1	58	*b 296422W	Washer	4
30	16559W	Fitting	1	60	*c 2306251W	Hose, Suction	1
31	17224W	Fitting	1	61	*c 2306258W	Kit, Through Drive (See 3-119)	1
32	2303848W	Capscrew	2				
33	2306023W	Assembly, Filter (See 3-104)	1				
34	222535W	Fitting	8	*a	Use 318702W Thread Lock		
35	*a 177461W	Capscrew	16	*b	Used for C17 Only		
36	2304110W	O-Ring	4	*c	Used for C18 Only		
37	*d 2306489W	Assembly, Hose	2	*d	Included in 2315321 Hose Kit		

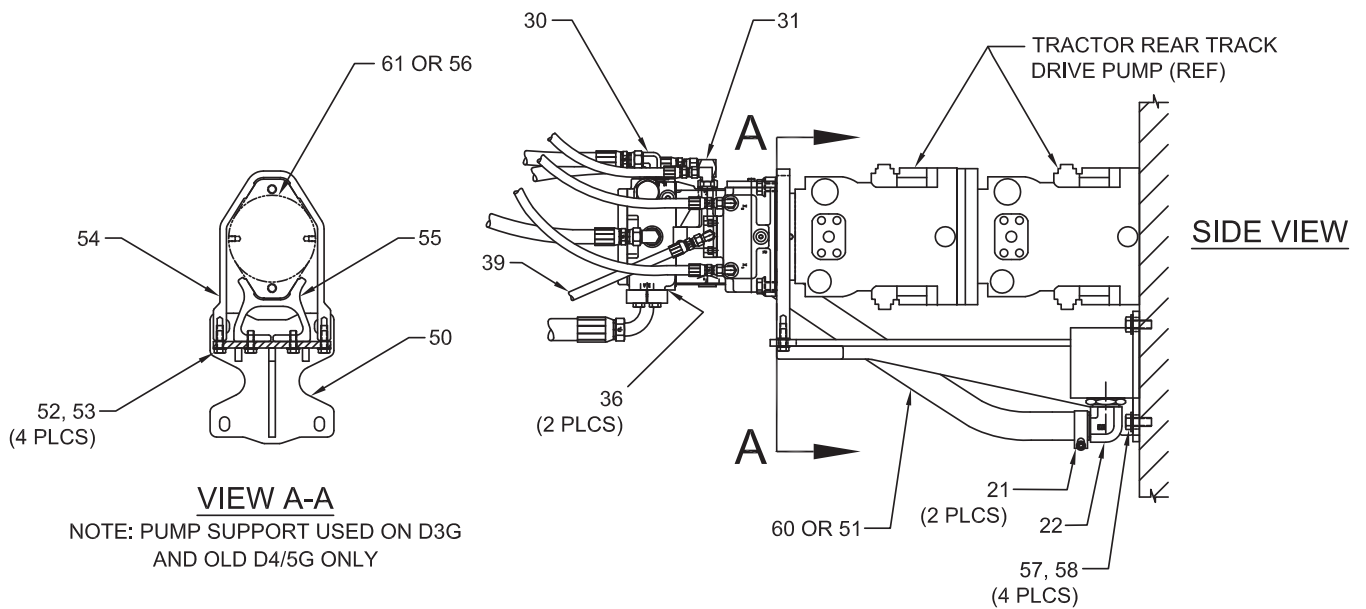
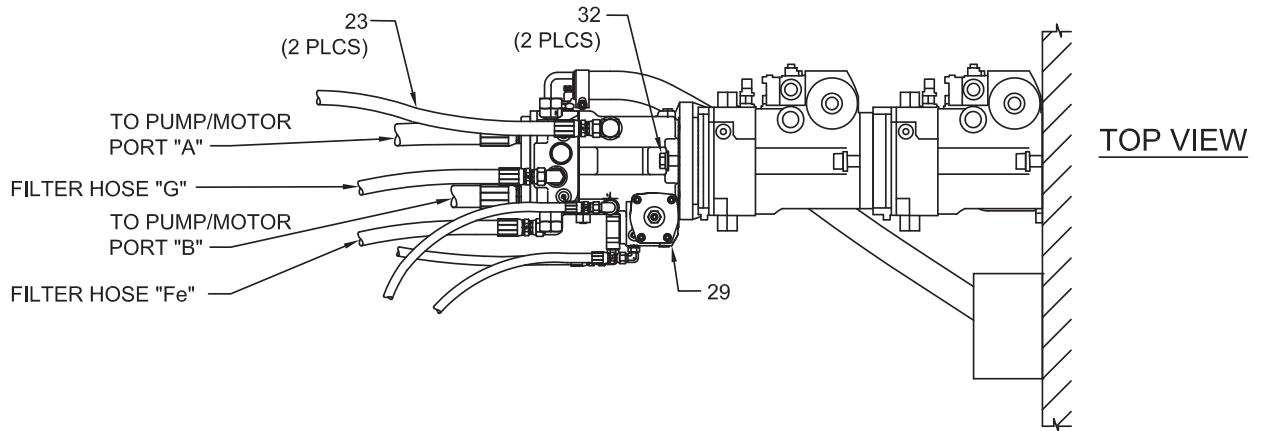
Winch External Hydraulics

Caterpillar D3/4/5G (H4AH_Y__C17)

Caterpillar D4/5G (H4AH_Y__C18)

First Used on S/N H4A-1162

Page 1 of 4



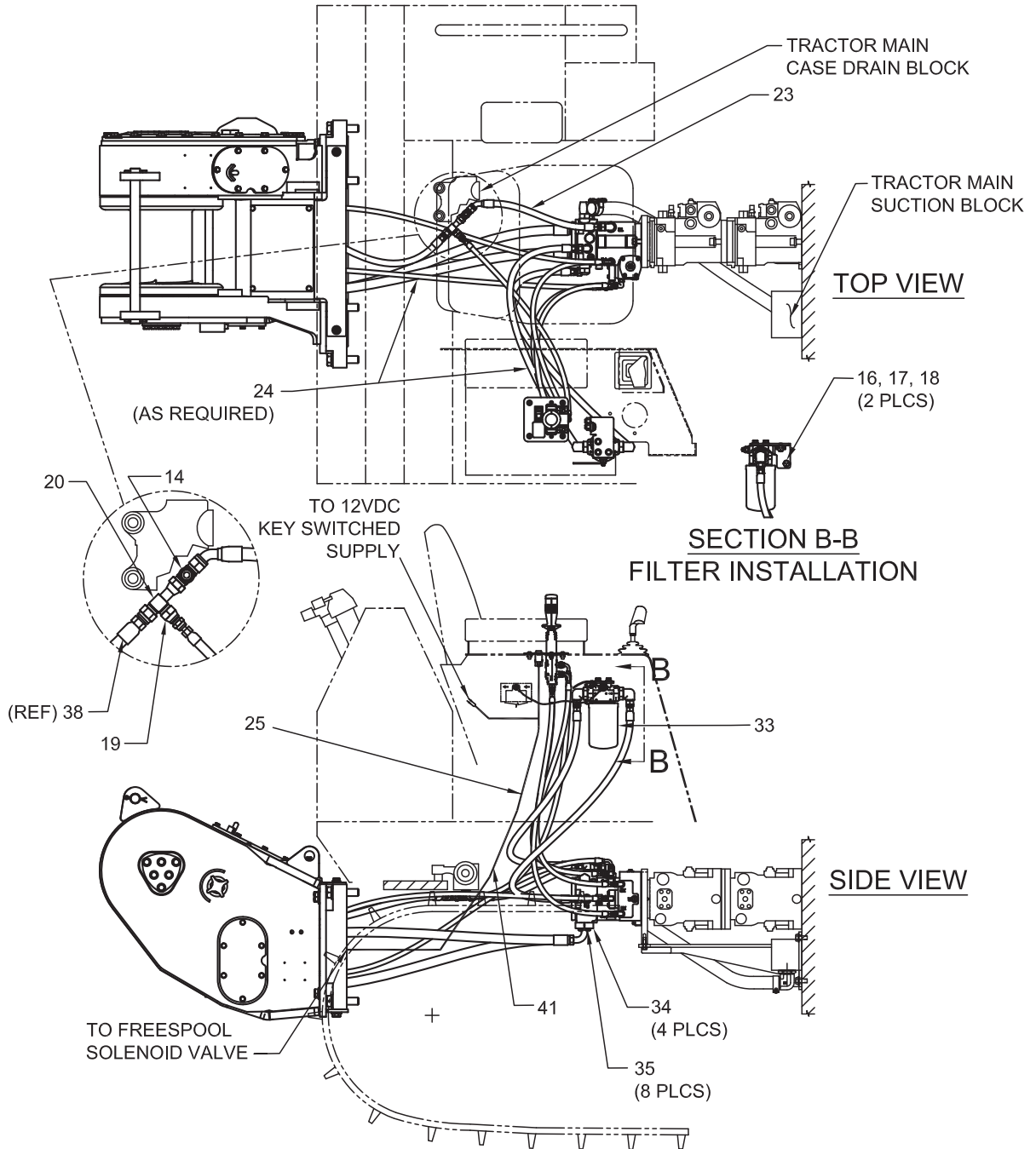
Winch External Hydraulics

Caterpillar D3/4/5G (H4AH_Y__C17)

Caterpillar D4/5G (H4AH_Y__C18)

First Used on S/N H4A-1162

Page 2 of 4



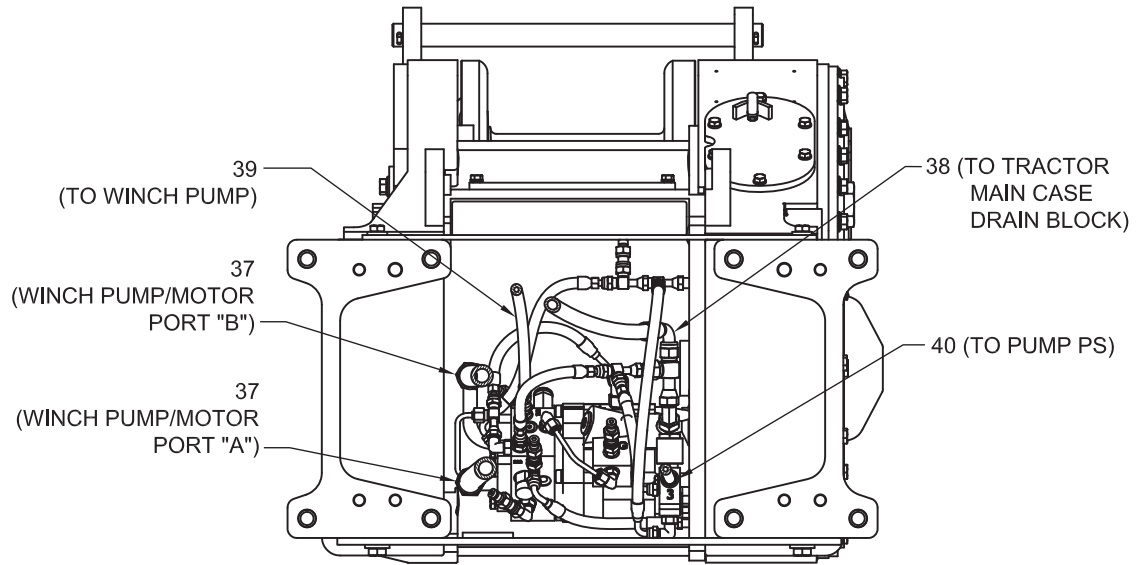
Winch External Hydraulics

Caterpillar D3/4/5G (H4AH_Y__C17)

Caterpillar D4/5G (H4AH_Y__C18)

First Used on S/N H4A-1162

Page 3 of 4



Winch External Hydraulics

Caterpillar D3/4/5G (H4AH_Y__C17)

Caterpillar D4/5G (H4AH_Y__C18)

First Used on S/N H4A-1162

Page 4 of 4

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
14	2311841	Fitting	1	38	*d 2311569	Assembly, Hose	1
16	16829W	Capscrew	2	39	*d 2311492	Assembly, Hose	1
17	15135W	Washer	2	40	*d 2311847	Assembly, Hose	1
18	221711W	Nut	2	41	2307927W	Harness	1
19	R833700	Fitting	1	50	*b 2304225W	Support, Pump	1
20	R834052	Fitting	1	51	*b 2304259W	Hose, Suction	1
21	R13809935	Clamp, T-Bolt	2	52	*b 179443W	Capscrew	4
22	R834052	Fitting	1	53	*b 221767W	Washer	4
23	*d 2311845	Assembly, Hose	1	54	*b 2304245W	Clamp, Upper Pump Support	1
24	137852W	Clamp, Strap	AR	55	*b 2304244W	Clamp, Lower Pump Support	1
25	2307927W	Harness	1	56	*b 2304212W	Kit, Through Drive (See 3-118)	1
29	2311840	Assembly, Pump (See 3-13)	1	57	*b 293645W	Capscrew	4
30	231452	Fitting	1	58	*b 296422W	Washer	4
31	237983	Fitting	1	60	*c 2306251W	Suction, Hose	1
32	2303848W	Capscrew	2	61	*c 2306258W	Kit, Through Drive (See 3-119)	1
33	2311843	Assembly, Filter (See 3-106)	1				
34	222535W	Fitting	4	*a	Use 318702W Thread Lock		
35	*a 177461W	Capscrew	8	*b	Used for C17 Only		
36	2304110W	O-Ring	2	*c	Used for C18 Only		
37	*d 2311846	Assembly, Hose	2	*d	Included in 2315322 Hose Kit		

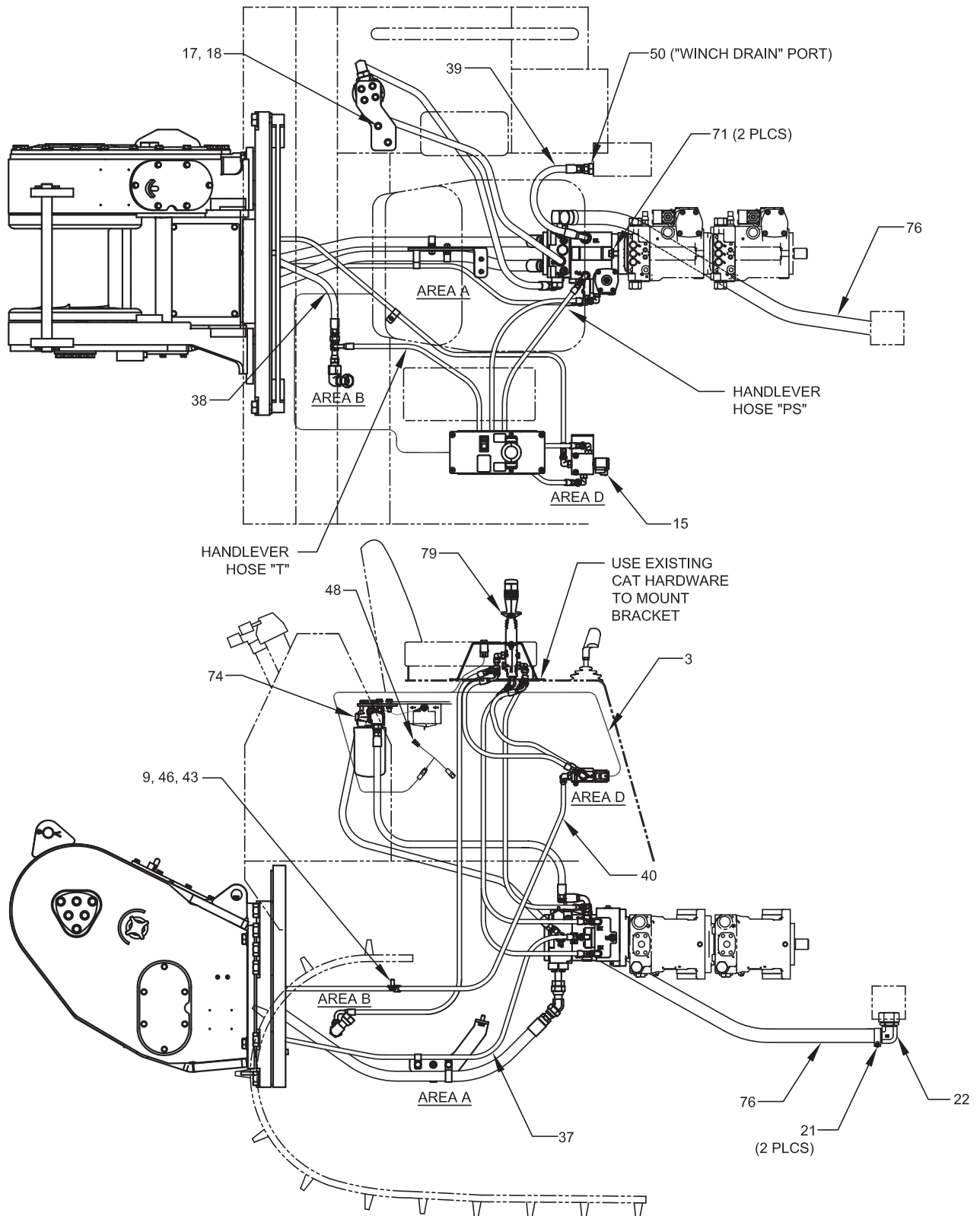
Intentionally Blank

Winch External Hydraulics

Caterpillar D3/4K (H4AH_Y_C19)

Last Used on S/N H4A-1161

Page 1 of 3

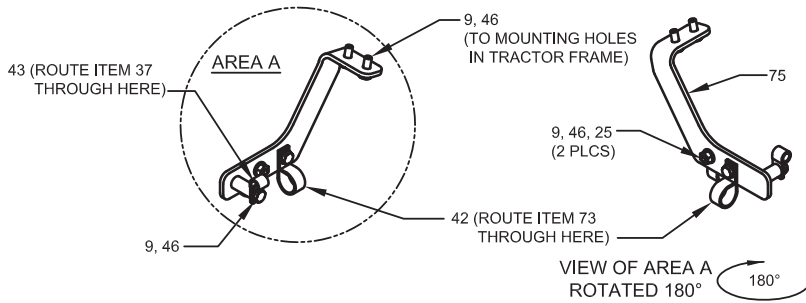
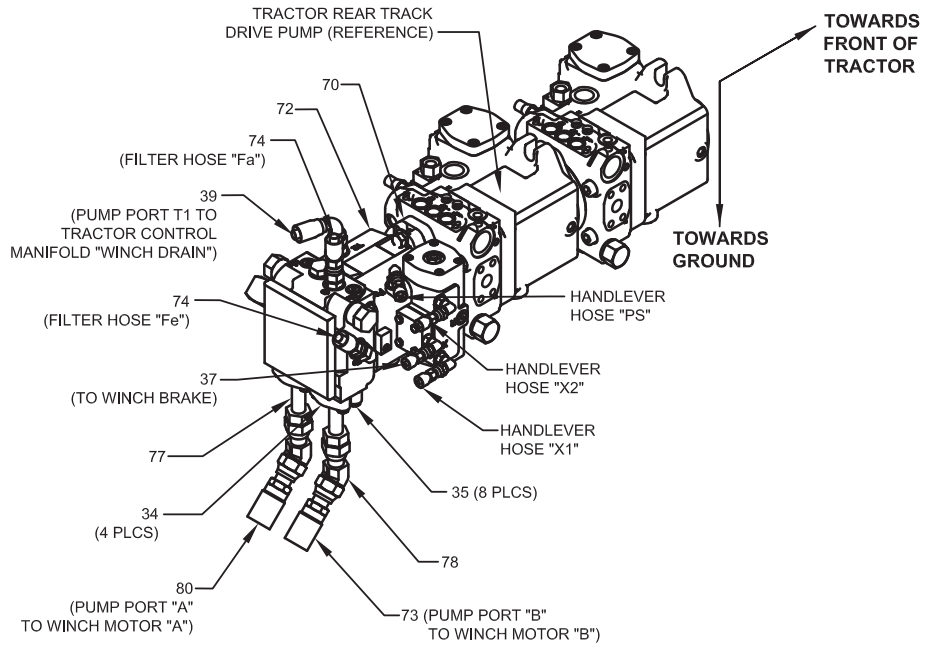


Winch External Hydraulics

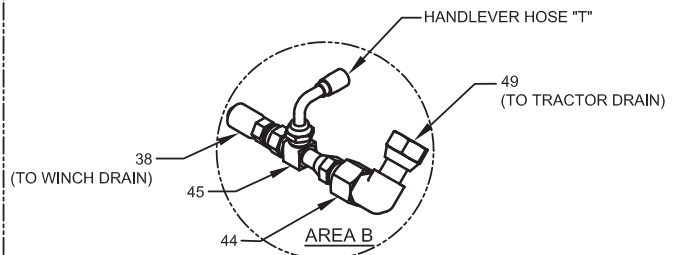
Caterpillar D3/4K (H4AH_Y__C19)

Last Used on S/N H4A-1161

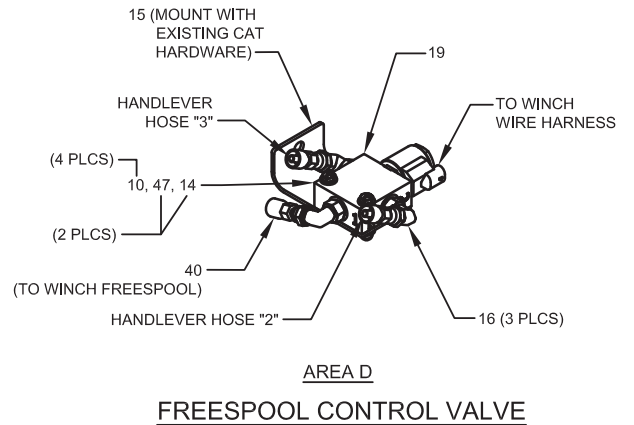
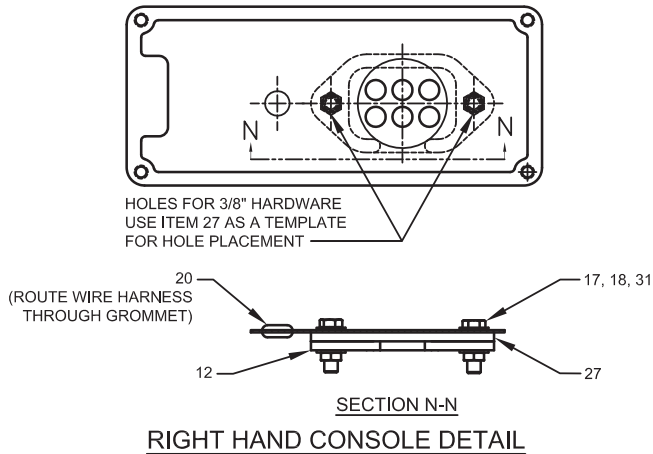
Page 2 of 3



HOSE SUPPORT



TRACTOR TANK CONNECTIONS



Winch External Hydraulics

Caterpillar D3/4K (H4AH_Y__C19)

Last Used on S/N H4A-1161

Page 3 of 3

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
3	2311053	Harness, Wire	1	42	R2528352	Clip	2
9	293628W	Capscrew	6	43	R13803039	Clip	2
10	15127W	Washer	4	44	2307958W	Fitting	1
12	2307226W	Cover	1	45	R834052	Fitting	1
14	Y01C-0428	Capscrew	2	46	296420W	Washer	8
15	2307897W	Plate, Mounting	1	47	15113W	Nut	2
16	R833253	Fitting	3	48	2310968	Harness	1
17	16828W	Capscrew	4	49	R833804	Fitting	1
18	15134W	Washer	6	50	R833115	Fitting	1
19	2310011	Assembly, Manifold Valve (3-115)	1	70	2310889	Kit, Through Drive	1
20	227025	Grommet	1	71	*a 2303848W	Flangescrew	2
21	R13809935	Clamp	2	72	2311470	Assembly, Pump, 45CC (See 3-14)	1
22	213619W	Fitting	1	73	*b 2311478	Assembly, Hose - Motor B	2
25	292655W	Nut	2	74	2311479	Assembly, Filter (See 3-107)	1
27	2311120	Gasket	1	75	2311483	Bracket, Hose	1
31	15086W	Nut	2	76	248165	Hose, Bulk	4.5 Ft.
34	222535W	Fitting	8	77	2311488	Assembly, Fitting w/ O-Ring	2
35	*a Y17C-0624	Capscrew	12	78	2311485	Fitting	2
37	*b 2311050	Assembly, Hose - Brake Release	1	79	2311490	Assembly, Control Lever (See 3-131)	1
38	*b 2311051	Assembly, Hose - Winch Drain	1	80	*b 2311495	Assembly, Hose - Motor A	1
39	*b 2311021	Assembly, Hose - Pump Drain	1				
40	*b 2311052	Assembly, Hose - Freespool	1				
				*a	Use 318702W Thread Lock		
				*b	Included in 2315323 Hose Kit		

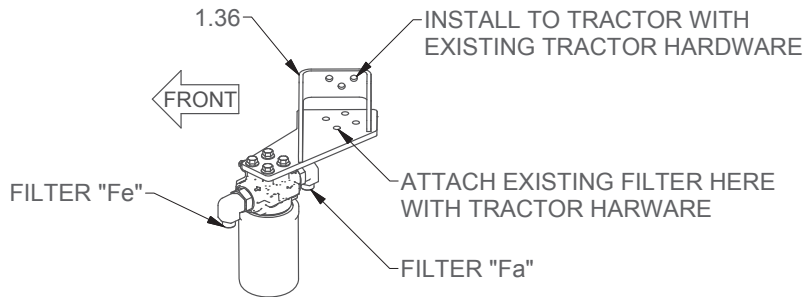
Intentionally Blank

Winch External Hydraulics

Caterpillar D3/4K/K2 (H4AH_Y__C19)

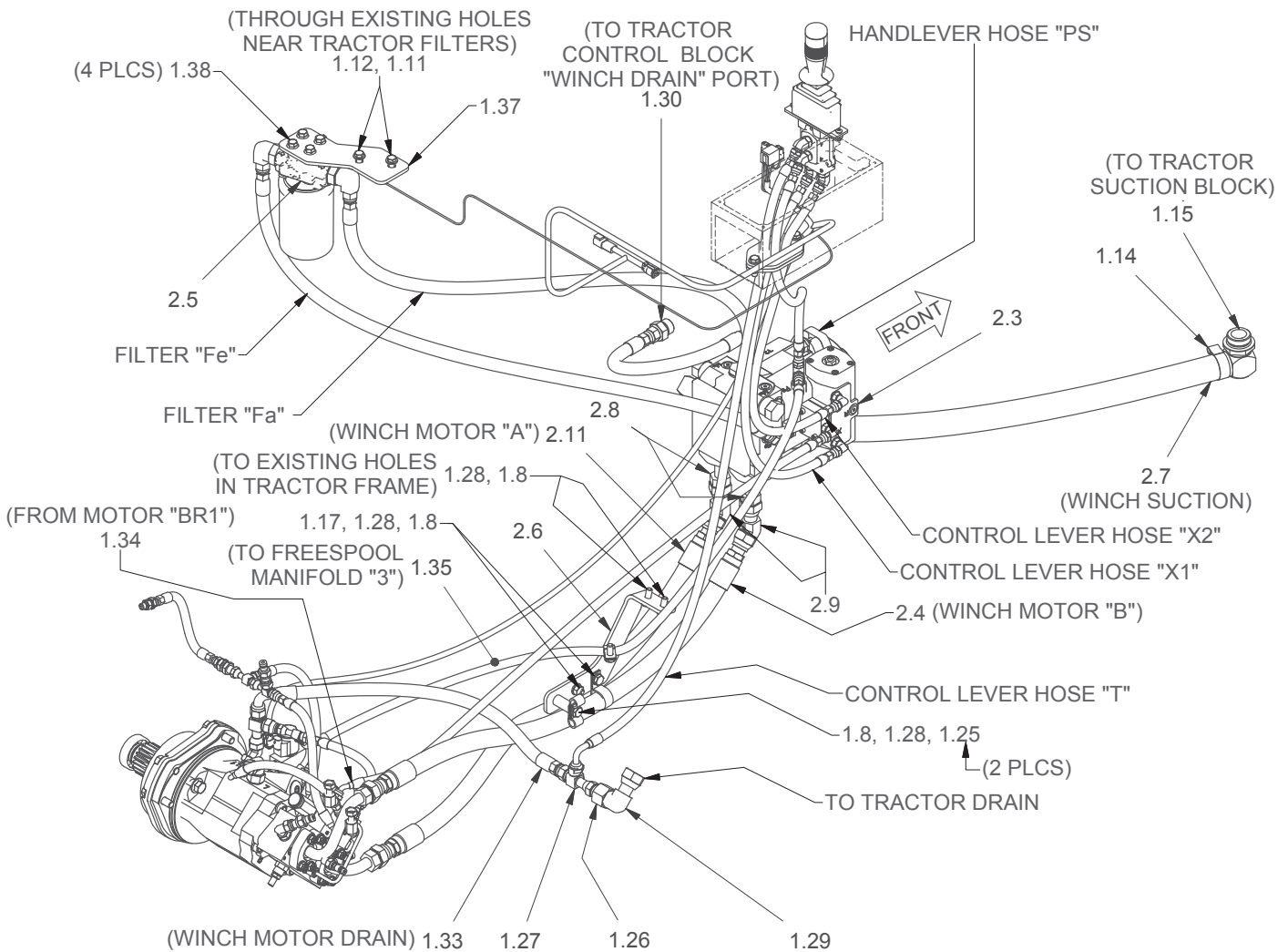
Used on S/N H4A-1162 - H4A-1435

Page 1 of 3



D3/4K2 ALTERNATE

FILTER BRACKET



HYDRAULIC INSTALLATION

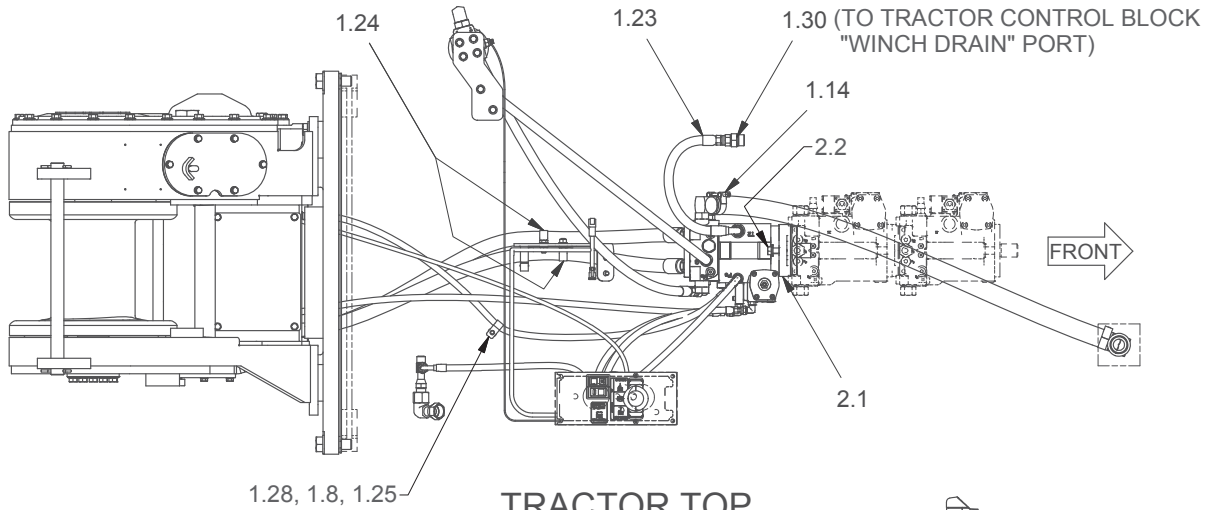
ISOMETRIC VIEW

Winch External Hydraulics

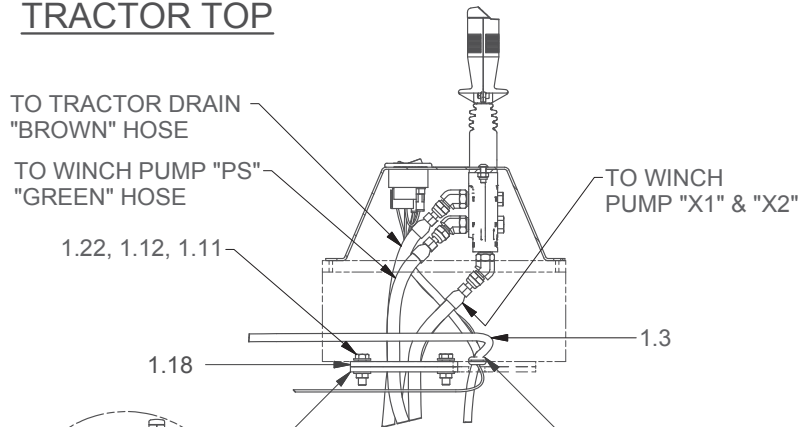
Caterpillar D3/4K/K2 (H4AH_Y_C19)

Used on S/N H4A-1162 - H4A-1435

Page 2 of 3

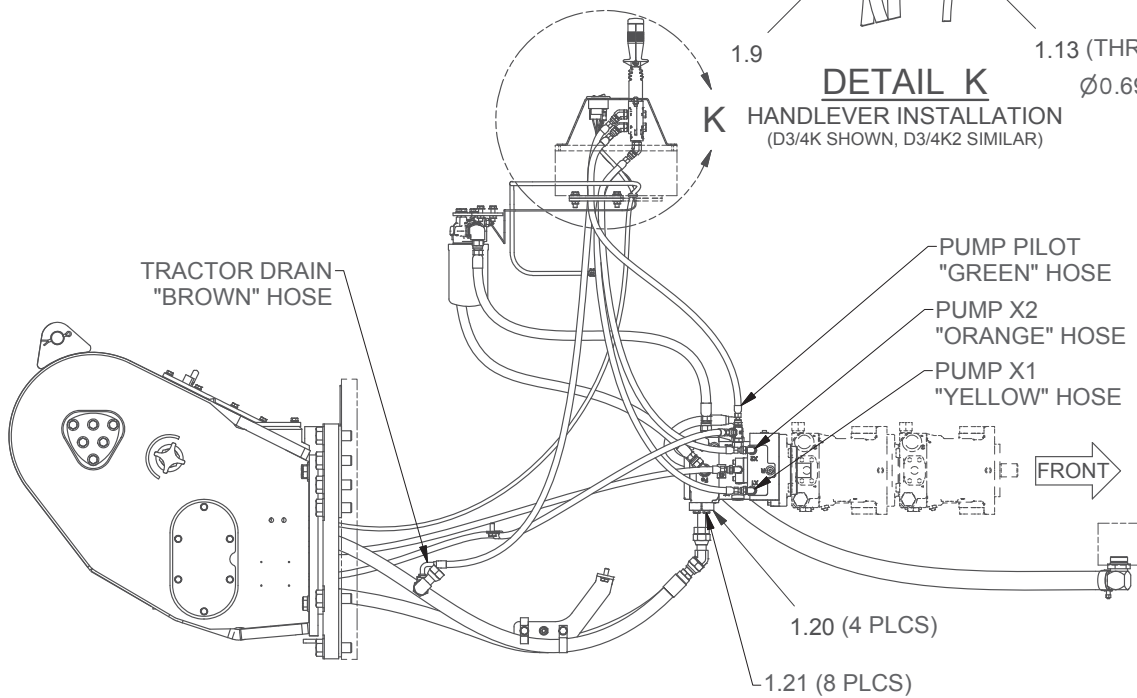


TRACTOR TOP



DETAIL K HANDLEVER INSTALLATION (D3/4K SHOWN, D3/4K2 SIMILAR)

1.13 (THROUGH
Ø0.69 HOLE)



TRACTOR RIGHT SIDE

Winch External Hydraulics

Caterpillar D3/4K/K2 (H4AH_Y__C19)

Used on S/N H4A-1162 - H4A-1435

Page 3 of 3

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1.3	2314312	Harness, Wire	1	1.29	R833804	Fitting	1
1.8	293628W	Capscrew	6	1.30	R833115	Fitting	1
1.9	2307226W	Cover	1	1.33	*b 242120	Assembly, Hose	1
1.11	16828W	Capscrew	4	1.34	*b 2311701	Assembly, Hose	1
1.12	15134W	Washer	6	1.35	*b 2311699	Assembly, Hose	1
1.13	227025	Grommet	1	1.36	2314310	Bracket, Filter - D3-D5K2	1
1.14	R13809935	Clamp	2	1.37	2310814	Bracket, Filter - D3-D5K	1
1.15	213619W	Fitting	1	1.38	134803W	Screw	4
1.16	137852W	Clamp, Strap (Not Shown)	25	2.1	2310889	Kit, Through Drive	1
1.17	292655W	Nut	2	2.2	*a 2303848W	Capscrew, Flanged	2
1.18	2311310	Gasket, Hose Seal	1	2.3	2311773	Assembly, Pump (3-15)	1
1.19	HSP0000006	Protector, Hose	1	2.4	*b 2311698	Assembly, Hose - Motor B	1
1.20	222535W	Fitting	4	2.5	2311479	Assembly, Filter (3-107)	1
1.21	*a Y17C-0624	Capscrew	8	2.6	2311483	Bracket, Hose	1
1.22	15086W	Nut	2	2.7	248165	Hose, Bulk	4.5 Ft.
1.23	*b 2311021	Assembly, Hose - Pump Drain	1	2.8	2311488	Assembly, Fitting w/ O-Ring	2
1.24	R2528352	Clip	2	2.9	2311485	Fitting	2
1.25	R13803039	Clip	3	2.11	*b 2311697	Assembly, Hose - Motor A	1
1.26	2307958W	Fitting	1				
1.27	R834052	Fitting	1		*a Use 318702W Thread Lock		
1.28	296420W	Washer	8		*b Included in 2315324 Hose Kit		

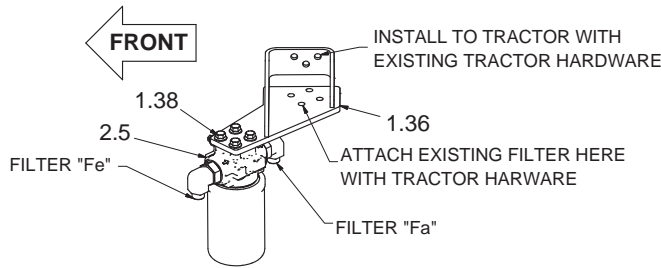
Intentionally Blank

Winch External Hydraulics

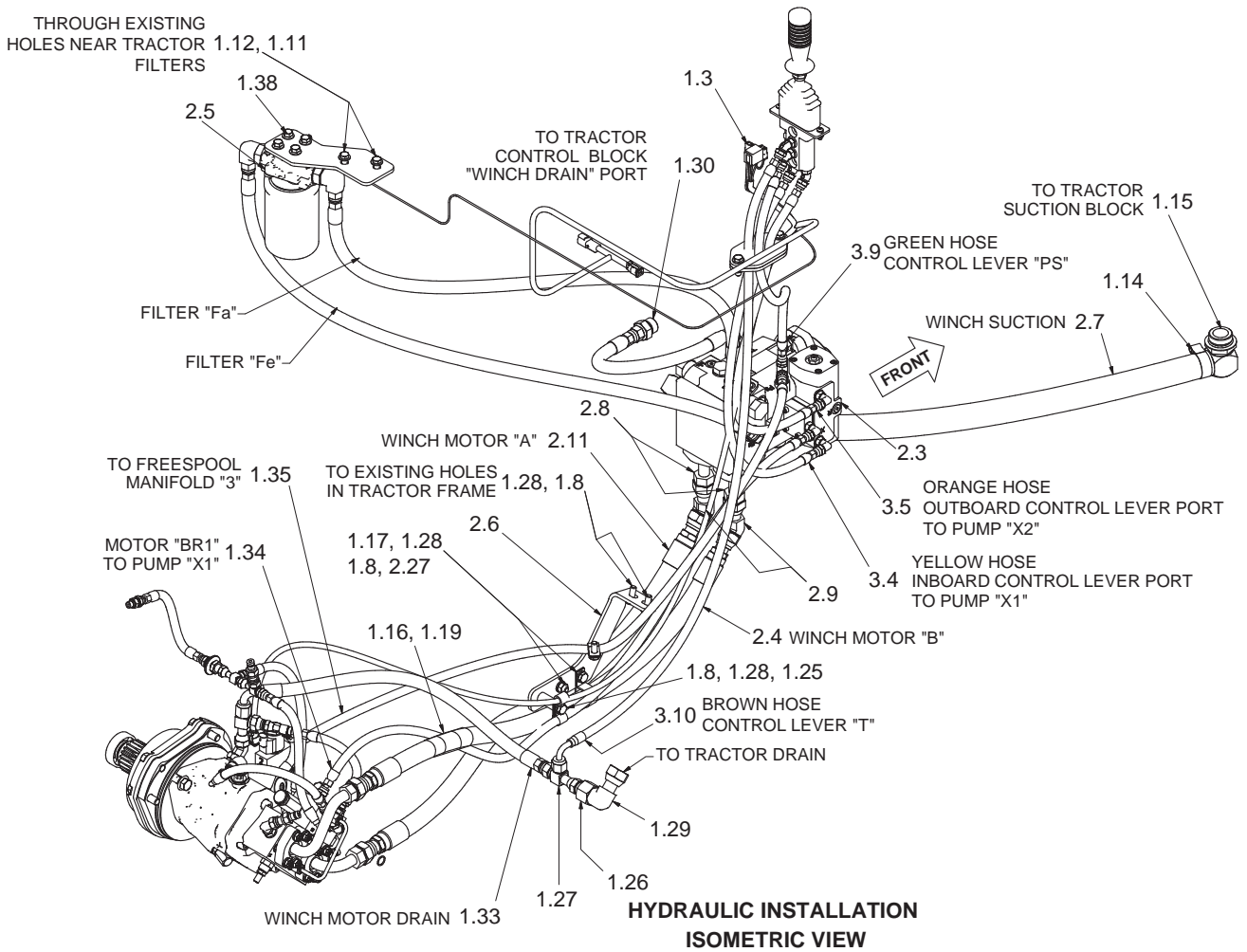
Caterpillar D3/4K/K2 (H4AH_Y__C19)

First Used on S/N H4A-1436

Page 1 of 3



D3/4K2 T4i ALTERNATE FILTER BRACKET

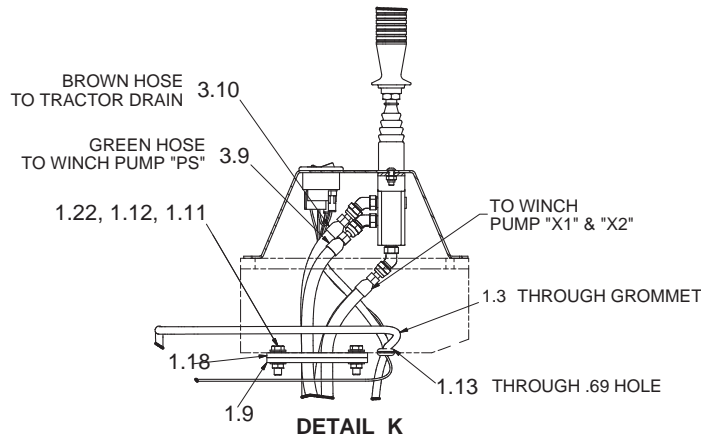


Winch External Hydraulics

Caterpillar D3/4K/K2 (H4AH_Y_C19)

First Used on S/N H4A-1436

Page 2 of 3



DETAIL K
CONTROL LEVER INSTALLATION
(D3/4K SHOWN, D3/4K2 T4i SIMILAR)

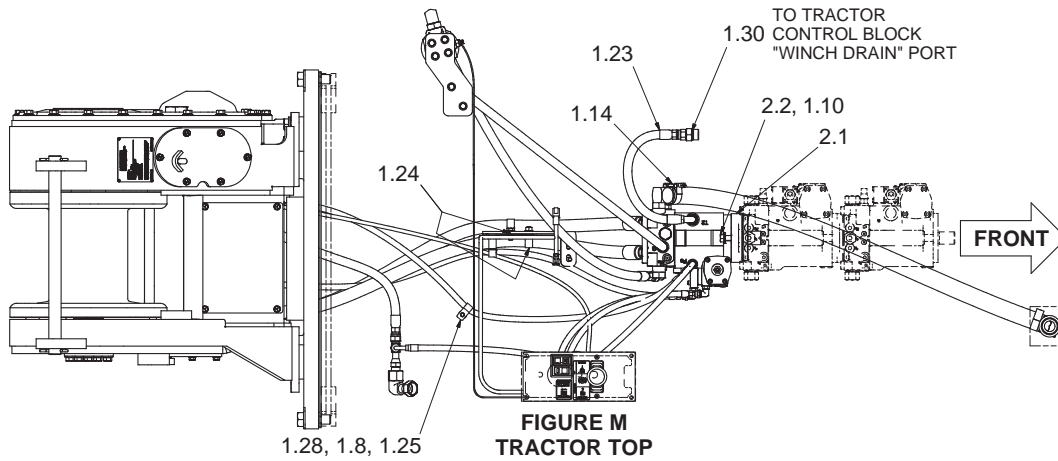


FIGURE M
TRACTOR TOP

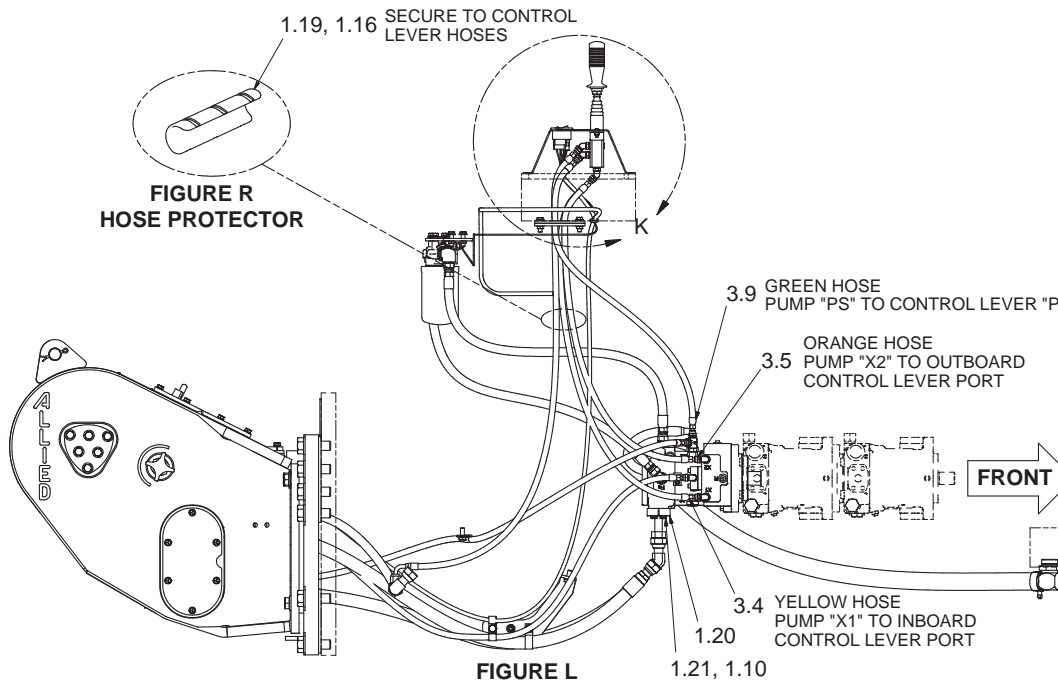


FIGURE L
TRACTOR RIGHT SIDE

FIGURE R
HOSE PROTECTOR

Winch External Hydraulics

Caterpillar D3/4K/K2 (H4AH_Y__C19)

First Used on S/N H4A-1436

Page 3 of 3

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1.3	2314312	Harness, Wire	1	1.29	R833804	Fitting	1
1.8	293628W	Capscrew	6	1.30	R833115	Fitting	1
1.9	2307226W	Cover	1	1.33	*d 242120	Assembly, Hose	1
1.11	16828W	Capscrew	4	1.34	*d 2311701	Assembly, Hose	1
1.12	15134W	Washer	6	1.35	*d 2311699	Assembly, Hose	1
1.13	227025	Grommet	1	1.36	*b 2314310	Bracket, Filter	1
1.14	R13809935	Clamp	2	1.37	*c 2310814	Bracket, Filter	1
1.15	213619W	Fitting	1	1.38	134803W	Screw	4
1.16	137852W	Clamp, Strap (Not Shown)	25	2.1	2310889	Kit, Through Drive	1
1.17	292655W	Nut	2	2.2	*a 2303848W	Capscrew, Flanged	2
1.18	2311310	Gasket, Hose Seal	1	2.3	2311773	Assembly, Pump (3-15)	1
1.19	HSP0000006	Protector, Hose	2	2.4	*d 2311698	Assembly, Hose - Motor B	1
1.20	222535W	Fitting	4	2.5	2311479	Assembly, Filter (3-107)	1
1.21	*a Y17C-0624	Capscrew	8	2.6	2311483	Bracket, Hose	1
1.22	15086W	Nut	2	2.7	248165	Hose, Bulk	4.5 Ft.
1.23	*d 2311021	Assembly, Hose - Pump Drain	1	2.8	2311488	Assembly, Fitting w/ O-Ring	2
1.24	R2528352	Clip	2	2.9	2311485	Fitting	2
1.25	R13803039	Clip	3	2.11	*d 2311697	Assembly, Hose - Motor A	1
1.26	2307958W	Fitting	1				
1.27	R834052	Fitting	1		*a	Use 318702W Thread Lock	
1.28	296420W	Washer	8		*b	Used on D3-D5K2	
					*c	Used on D3-D5K	
					*d	Included in 2315324 Hose Kit	

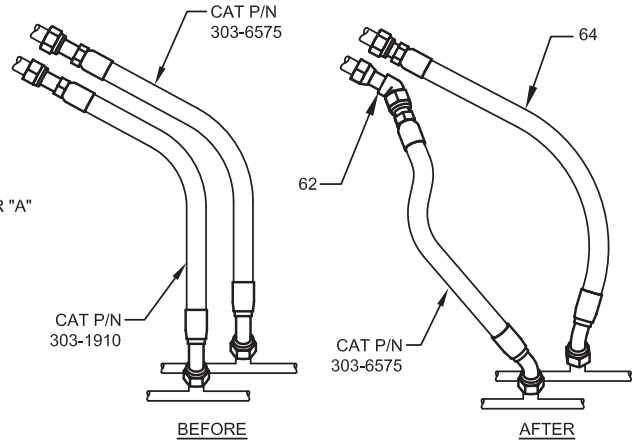
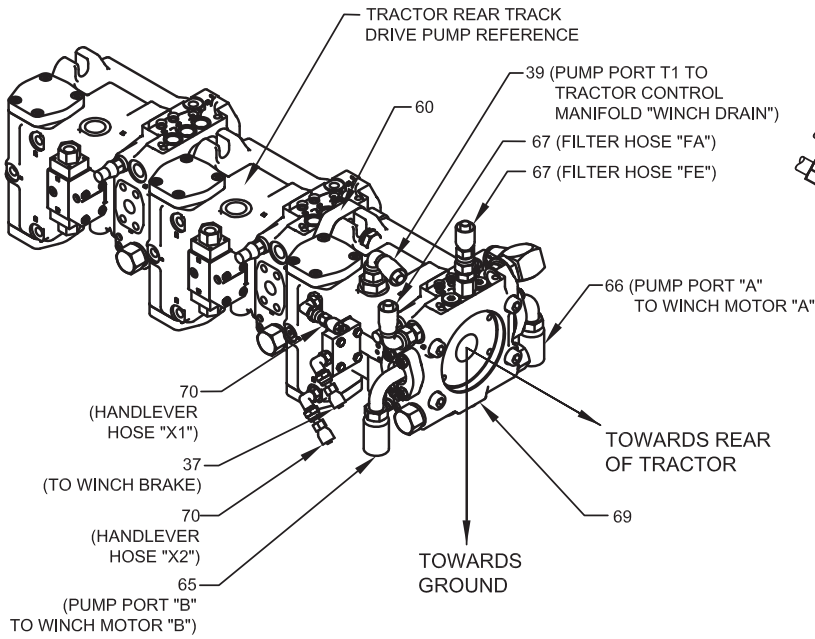
Intentionally Blank

Winch External Hydraulics

Caterpillar D5K (H4AH_Y__C20)

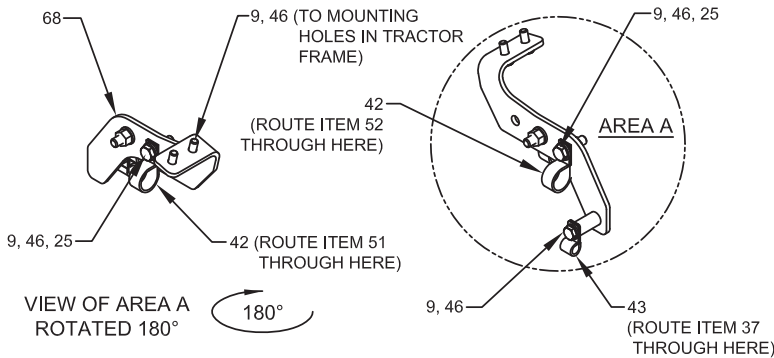
Last Used on S/N H4A-1161

Page 2 of 3

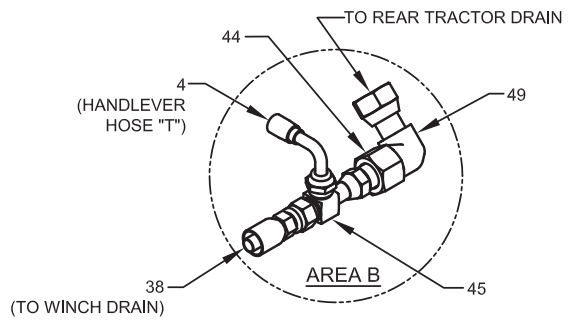


D5K HOSE REPLACEMENT

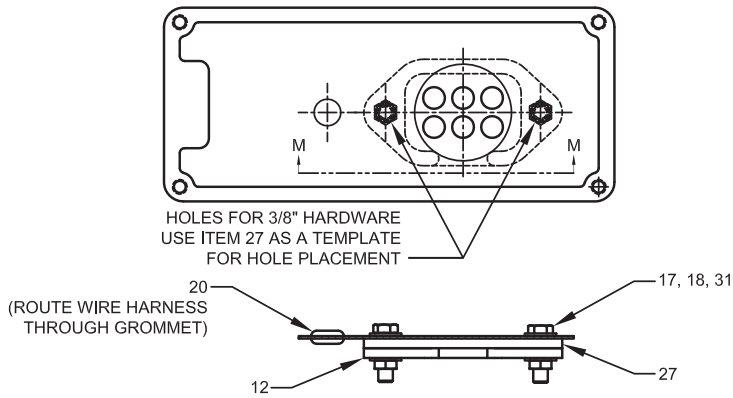
(LOCATED BEHIND TRACTOR TRANSMISSION PUMP)
VIEWED LOOKING TOWARD REAR OF TRACTOR



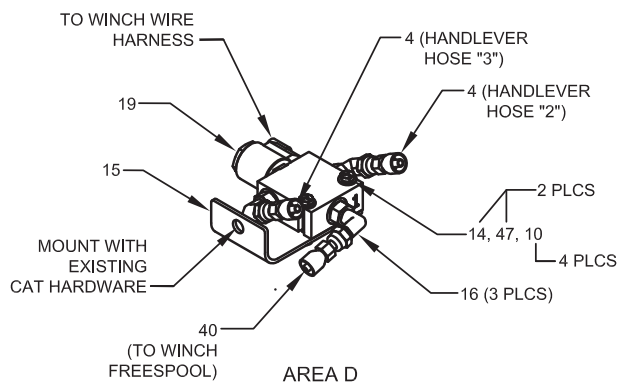
HOSE SUPPORT



TRACTOR DRAIN CONNECTIONS



RIGHT HAND CONSOLE DETAIL



FREESPOOL CONTROL MANIFOLD

Winch External Hydraulics

Caterpillar D5K (H4AH_Y__C20)

Last Used on S/N H4A-1161

Page 3 of 3

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
3	2311053	Harness, Wire	1	43	R13803039	Clip	2
9	293628W	Capscrew	6	44	2307958W	Fitting	1
10	15127W	Washer	4	45	R834052	Fitting	1
12	2307226W	Cover	1	46	296420W	Washer	8
14	Y01C-0428	Capscrew	2	47	15113W	Nut	2
15	2307897W	Plate, Mounting	1	48	2310968	Harness	1
16	R833253	Fitting	3	49	R833804	Fitting	1
17	16828W	Capscrew	4	50	R833115	Fitting	1
18	15134W	Washer	6	60	2310872	Kit, Through Drive (See 3-120)	1
19	2310011	Assembly, Manifold Valve (3-115)	1	61	*a Y19C-M1650	Capscrew	2
20	227025	Grommet	1	62	2310943	Fitting	1
21	R13809935	Clamp	2	63	296426W	Washer	2
22	213619W	Fitting	1	64	*b 2311028	Assembly, Hose	1
25	292655W	Nut	2	65	*b 2311032	Assembly, Hose	1
27	2311120	Gasket	1	66	*b 2311033	Assembly, Hose	1
31	15086W	Nut	2	67	2310844	Assembly, Filter (See 3-105)	1
34	222535W	Fitting	8	68	2310954	Bracket, Hose	1
35	*a Y17C-0624	Capscrew	12	69	2310961	Assembly, Pump (See 3-16)	1
37	*b 2311050	Assembly, Hose - Brake Release	1	70	2311396	Assembly, Control Lever (See 3-134)	1
38	*b 2311051	Assembly, Hose - Winch Drain	1	71	*a 248165	Hose, Bulk	2.83 Ft.
39	*b 2311021	Assembly, Hose - Pump Drain	1				
40	*b 2311052	Assembly, Hose - Freespool	1		*a	Use 318702W Thread Lock	
42	R2528352	Clip	2		*b	Included in 2315325 Hose Kit	

Intentionally Blank

Winch External Hydraulics

Caterpillar D5K/K2 (H4AH_Y_C20)

First Used on S/N H4A-1162

Page 2 of 3

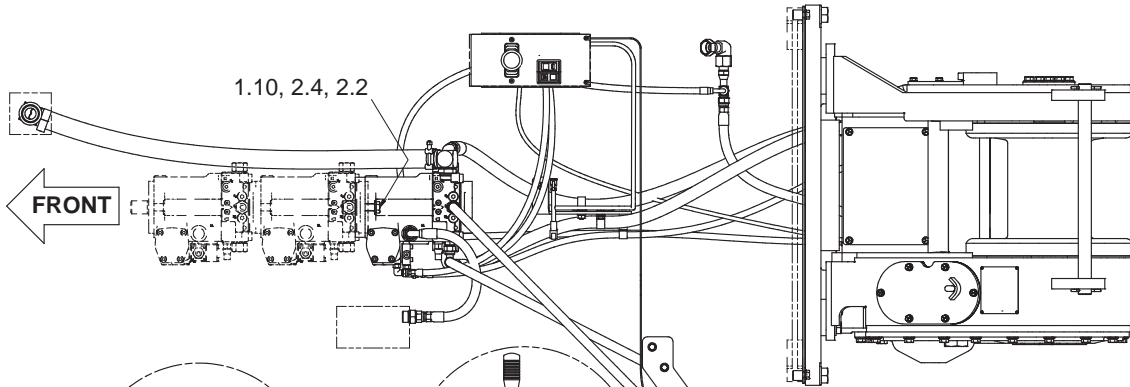


FIGURE N
TRACTOR TOP

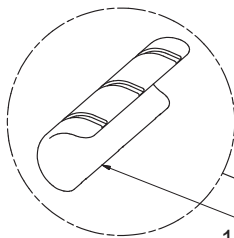


FIGURE R
HOSE PROTECTOR

1.19, 1.16
SECURE TO
CONTROL LEVER
HOSES

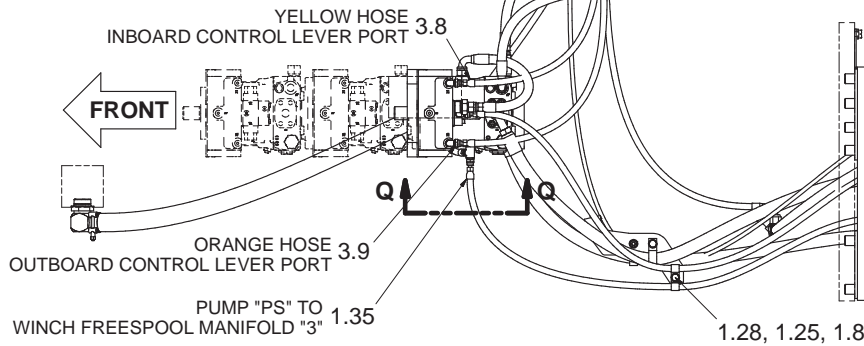
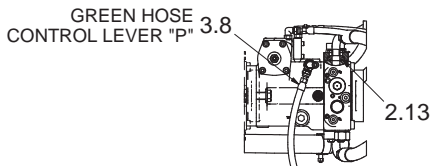
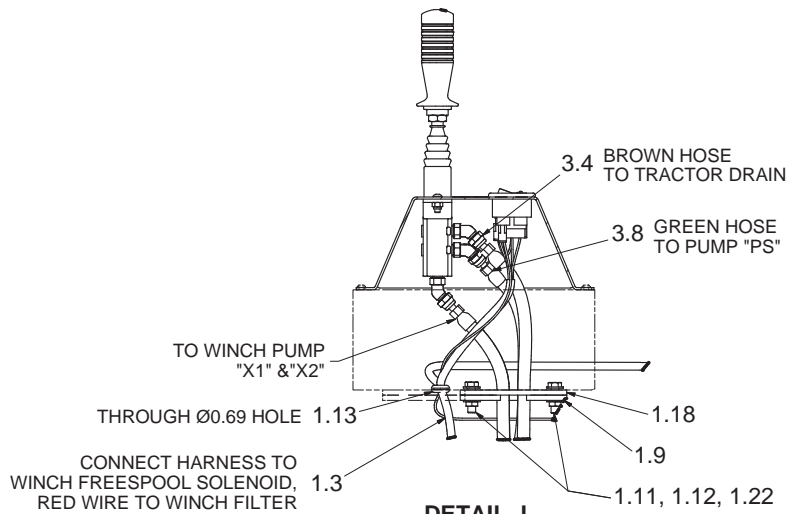


FIGURE M
TRACTOR LEFT SIDE



VIEW Q-Q
PUMP BOTTOM



DETAIL L
CONTROL LEVER INSTALLATION
(D5K SHOWN, D5K2 T4i SIMILAR)

Winch External Hydraulics

Caterpillar D5K/K2 (H4AH_Y__C20)

First Used on S/N H4A-1162

Page 3 of 3

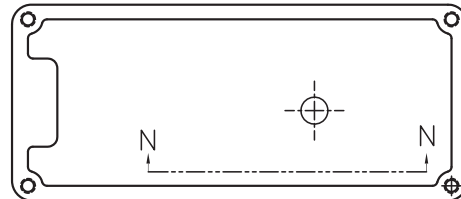
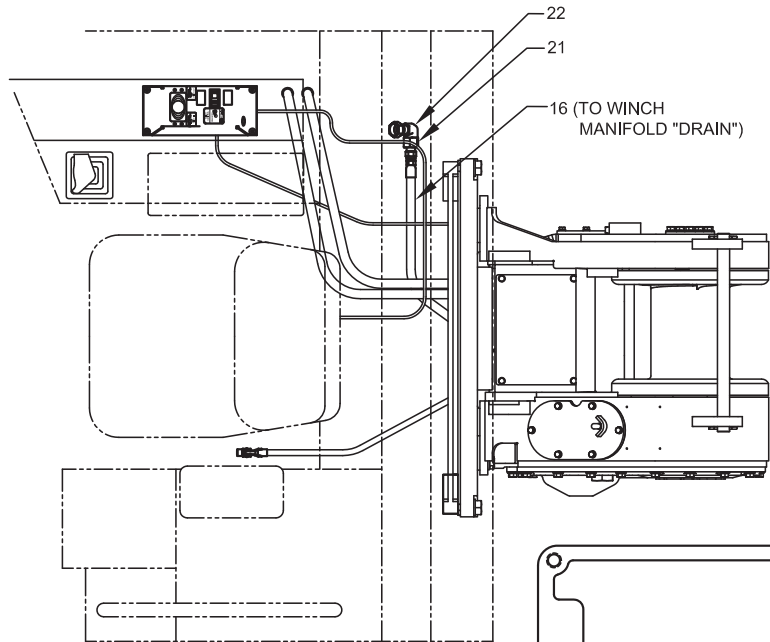
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1.3	2314312	Harness, Wire	1	1.30	R833115	Fitting	1
1.8	293628W	Capscrew	6	1.33	*d 242120	Assembly, Hose	1
1.9	2307226W	Cover	1	1.34	*d 2311701	Assembly, Hose - Brake	1
1.11	16828W	Capscrew	4	1.35	*d 2311699	Assembly, Hose - Freespool	1
1.12	15134W	Washer	6	1.36	*b 2314310	Bracket, Filter	1
1.13	227025	Grommet	1	1.37	*c 2310814	Bracket, Filter	1
1.14	R13809935	Clamp, T-Bolt	2	1.38	134803W	Screw	4
1.15	213619W	Fitting	1	2.1	2310872	Kit, Through Drive (See 3-120)	1
1.16	137852W	Clamp, Strap	25	2.2	*a 232387	Capscrew	2
1.17	292655W	Nut	2	2.3	2310943	Fitting	1
1.18	2311310	Gasket	1	2.4	296426W	Washer	2
1.19	HSP0000006	Protector, Hose	2	2.5	*d 2311028	Assembly, Hose - Blade	1
1.20	222535W	Fitting	4	2.6	*d 2311758	Assembly, Hose - Motor B	1
1.21	*a Y17C-0624	Capscrew	8	2.7	*d 2311759	Assembly, Hose - Motor A	1
1.22	15086W	Nut	2	2.8	2310844	Assembly, Filter (See 3-105)	1
1.23	*d 2311021	Assembly, Hose - Pump Drain	1	2.9	2310954	Bracket, Hose	1
1.24	R2528352	Clip	2	2.11	2311753	Assembly, Pump (See 3-17)	1
1.25	R13803039	Clip	3	2.12	248165	Hose, Bulk	2.8 Ft.
1.26	2307958W	Fitting	1	2.13	2304110W	O-Ring	2
1.27	R834052	Fitting	1				
1.28	296420W	Washer	8	*a	Use 318702W Thread Lock		
1.29	R833804	Fitting	1	*b	Used on D5K2		
				*c	Used on D5K		
				*d	Included in 2315326 Hose Kit		

Winch External Hydraulics

Caterpillar D3/4K (H4AT_Y_C19)

Caterpillar D5K (H4AT_Y_C20)

Page 1 of 2



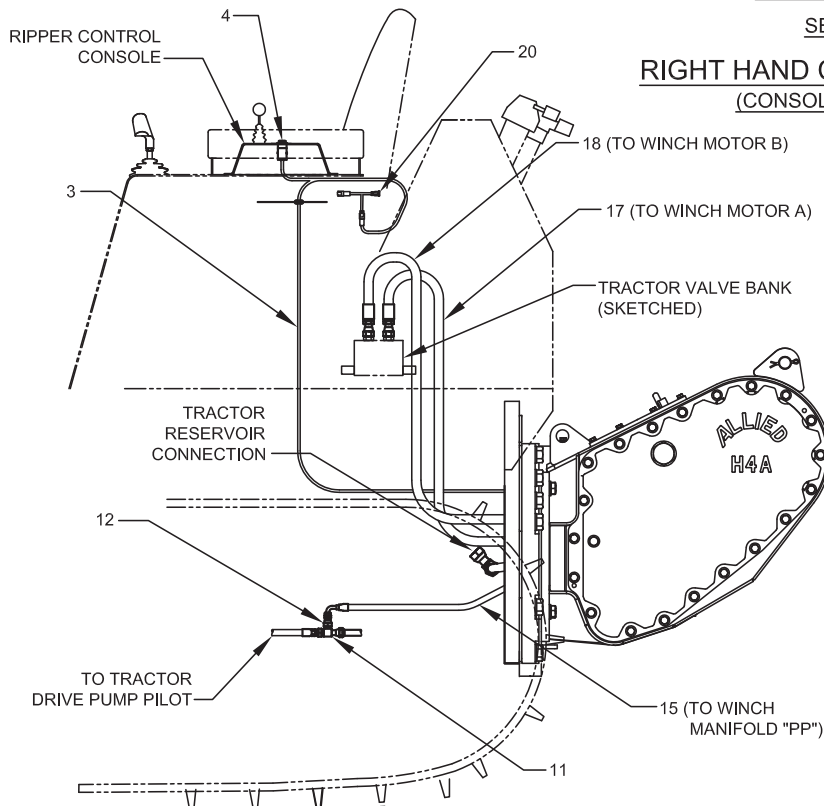
19 (ROUTE WIRE HARNESS THROUGH GROMMET)



SECTION N-N

RIGHT HAND CONSOLE DETAIL

(CONSOLE REMOVED)



Winch External Hydraulics

Caterpillar D3/4K (H4AT_Y__C19)

Caterpillar D5K (H4AT_Y__C20)

Page 2 of 2

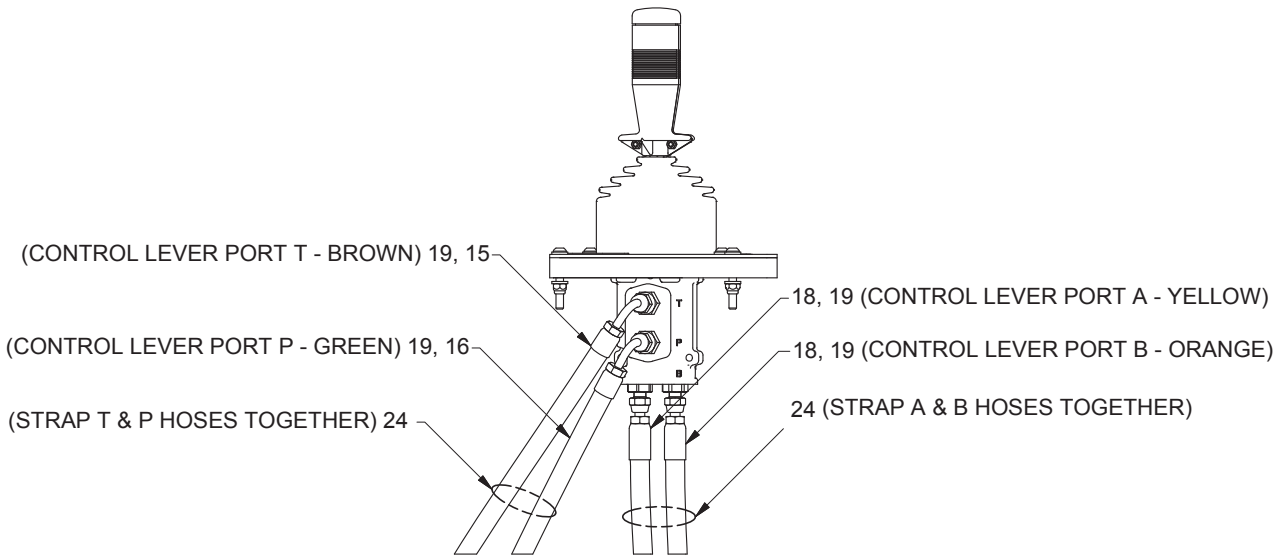
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
3	2311202	Harness, Wire	1	17	*a 2311200	Assembly, Hose - Motor A	1
4	2310017	Assembly, Switch - 12V (See 3-159)	1	18	*a 2311201	Assembly, Hose - Motor B	1
11	231955	Fitting	1	19	227025	Grommet	1
12	242629	Fitting	1	20	2310968	Harness	1
15	*a 2311198	Assembly, Hose - Pilot Supply	1	21	2307958W	Fitting	1
16	*a 2311199	Assembly, Hose - Drain	1	22	R833804	Fitting	1

*a Included in 2315327 Hose Kit

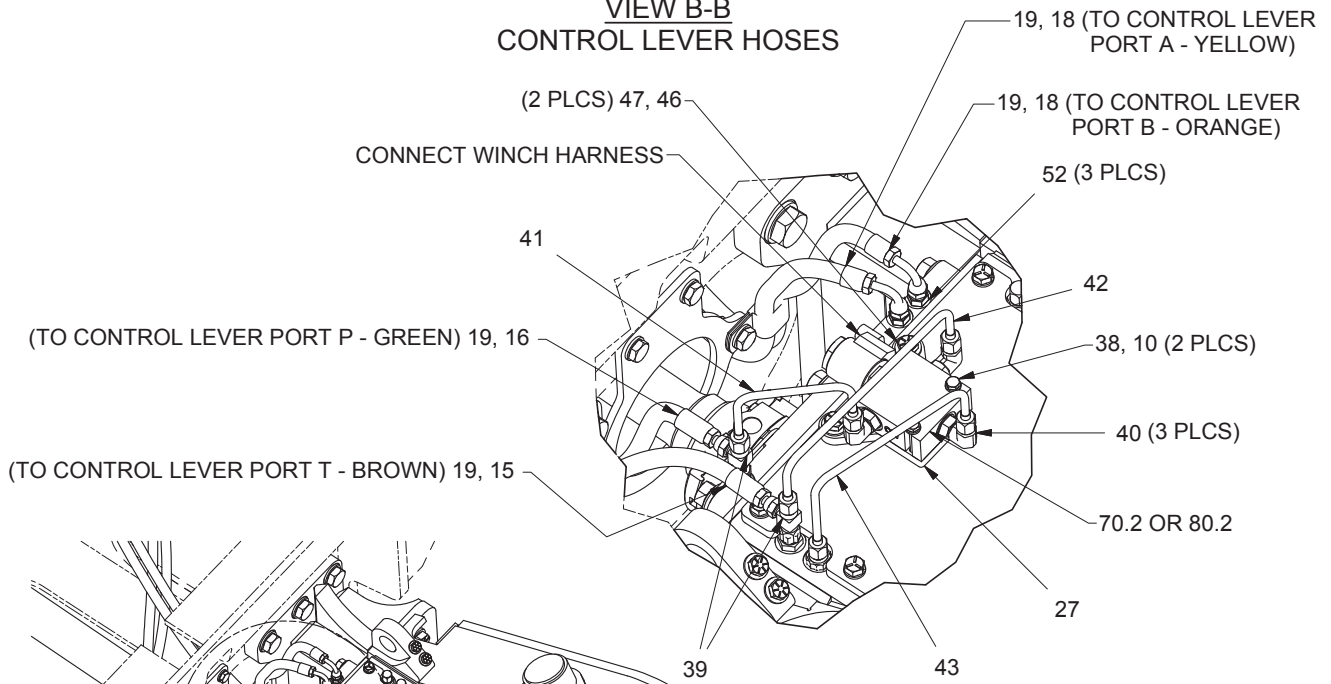
Winch External Hydraulics

John Deere 450-650J (E15) & 550-650K (H4AH_R__E16)

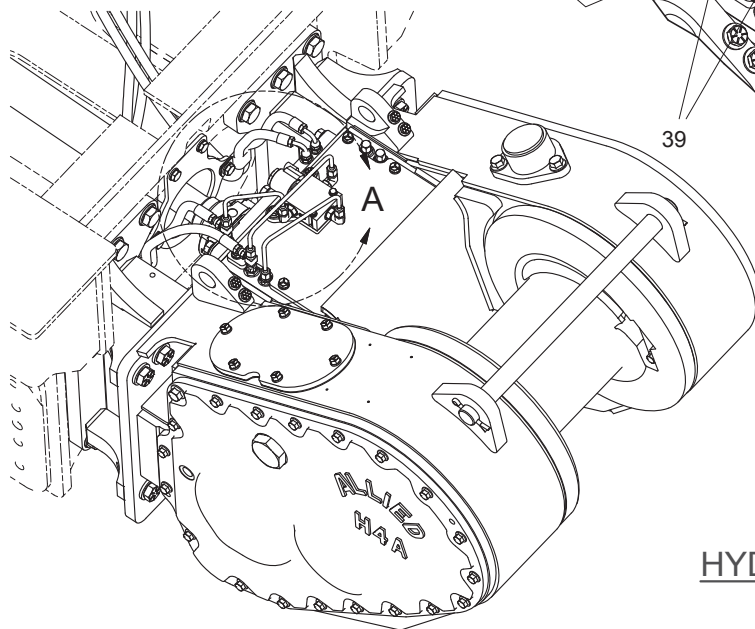
Page 1 of 2



**VIEW B-B
CONTROL LEVER HOSES**



**DETAIL A
WINCH HYDRAULICS**

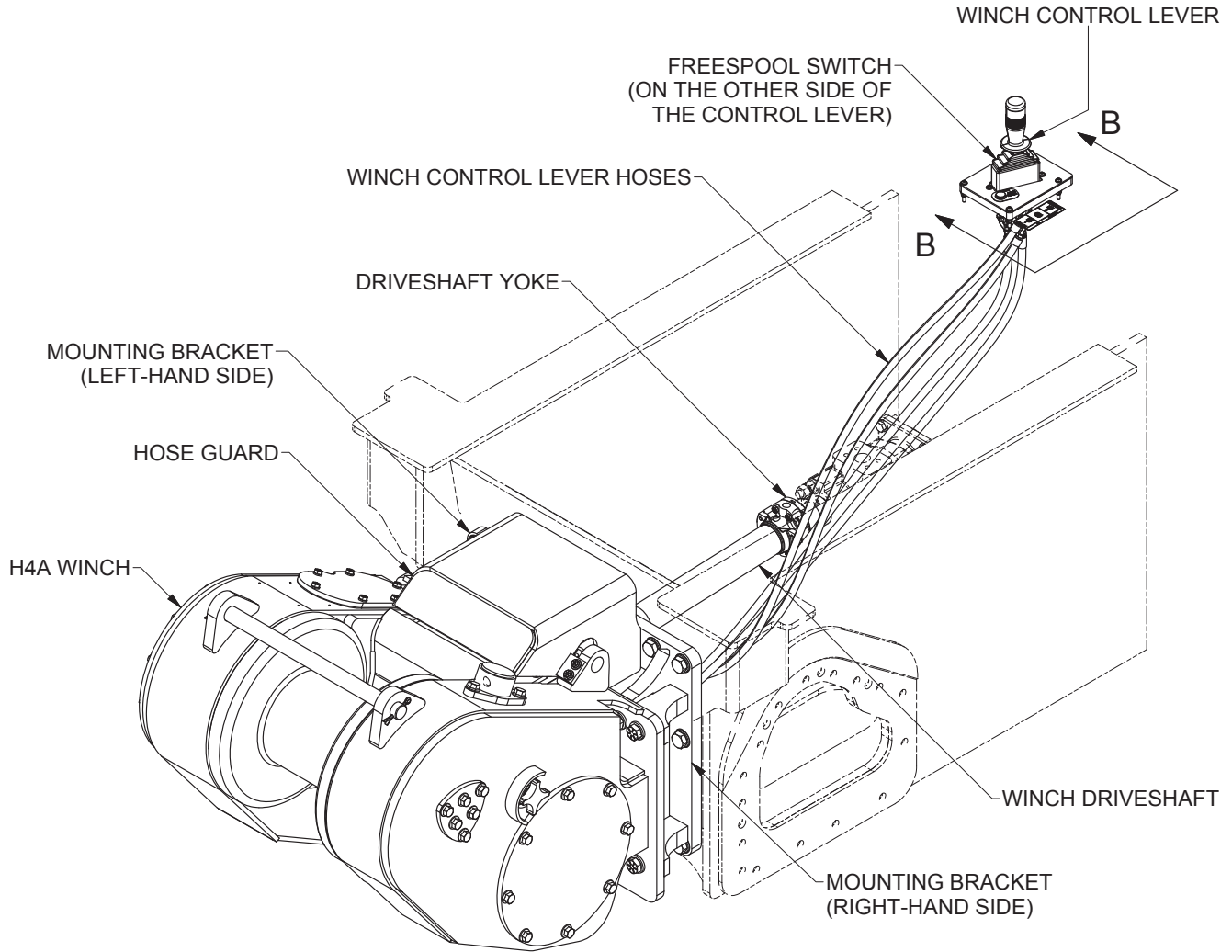


HYDRAULICS INSTALLATION

Winch External Hydraulics

John Deere 450-650J (E15) & 550-650K (H4AH_R__E16)

Page 2 of 2



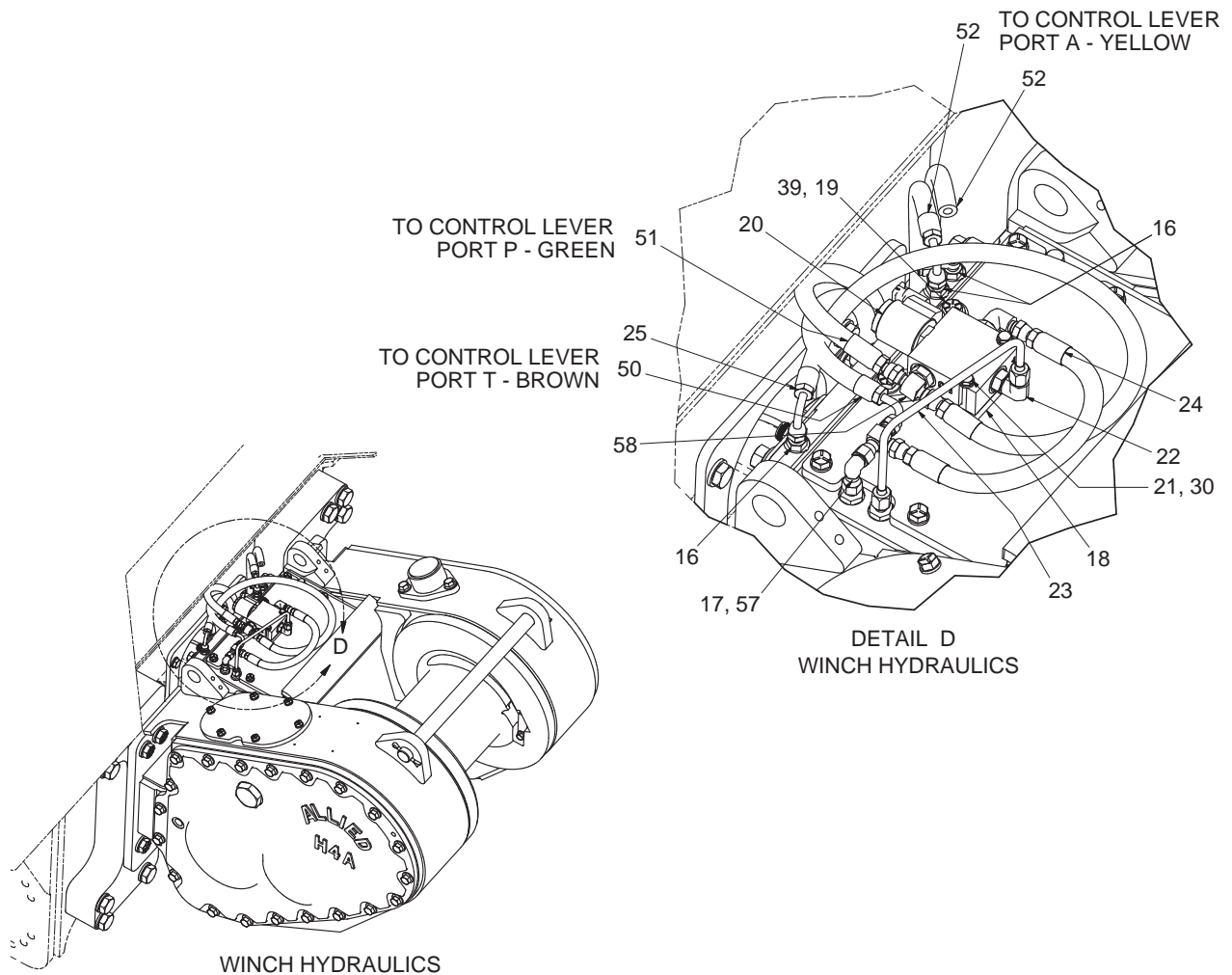
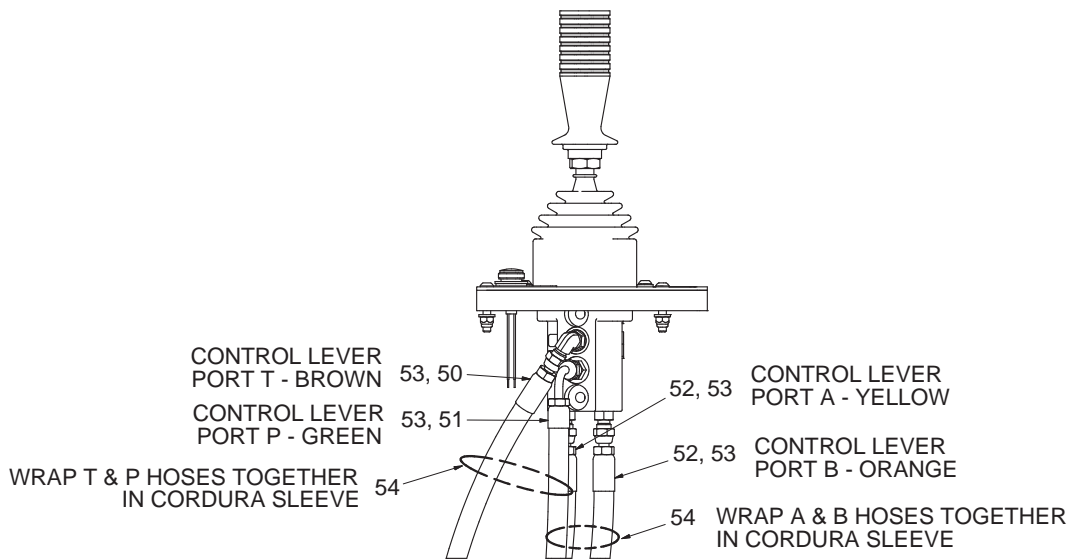
GENERAL INSTALLATION LAYOUT

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
10	296417W	Washer	2	42	2314409	Assembly, Tube - PD	1
15	*a 232687	Assembly, Hose	1	43	2314408	Assembly, Tube - FS	1
16	*a 049-2373	Assembly, Hose	1	46	221767W	Washer	2
18	*a 238173	Assembly, Hose	2	47	221499W	Capscrew	2
19	2304988W	Kit, Various Color Tie Strap	1	52	209083	Fitting	3
24	137852W	Tie, Cable	20	70.2	2310011	Assembly, Valve Manifold (For E15) (3-115)	1
27	2314396	Plate, Valve Mounting	1	80.2	2307833W	Assembly, Valve Manifold (For E16) (3-116)	1
38	Y09C-M0640	Capscrew	2				
39	17059W	Fitting	2				
40	223784	Fitting	3				
41	2314410	Assembly, Tube - PS	1				
				*a		Included in 2315328 Hose Kit	

Winch External Hydraulics

John Deere 700H/J (H4AH_R__E39)

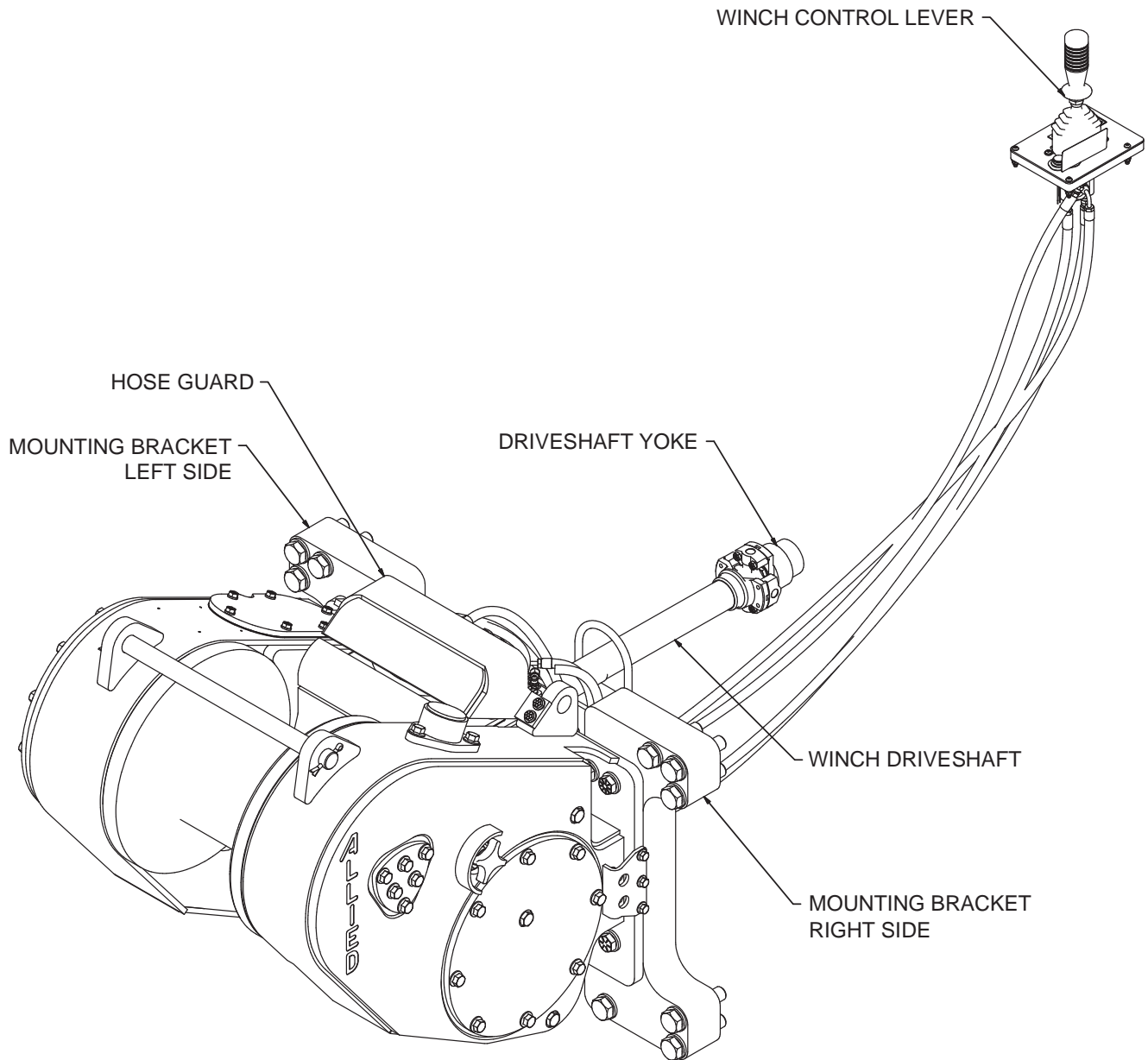
Page 1 of 2



Winch External Hydraulics

John Deere 700H/J (H4AH_R__E39)

Page 2 of 2

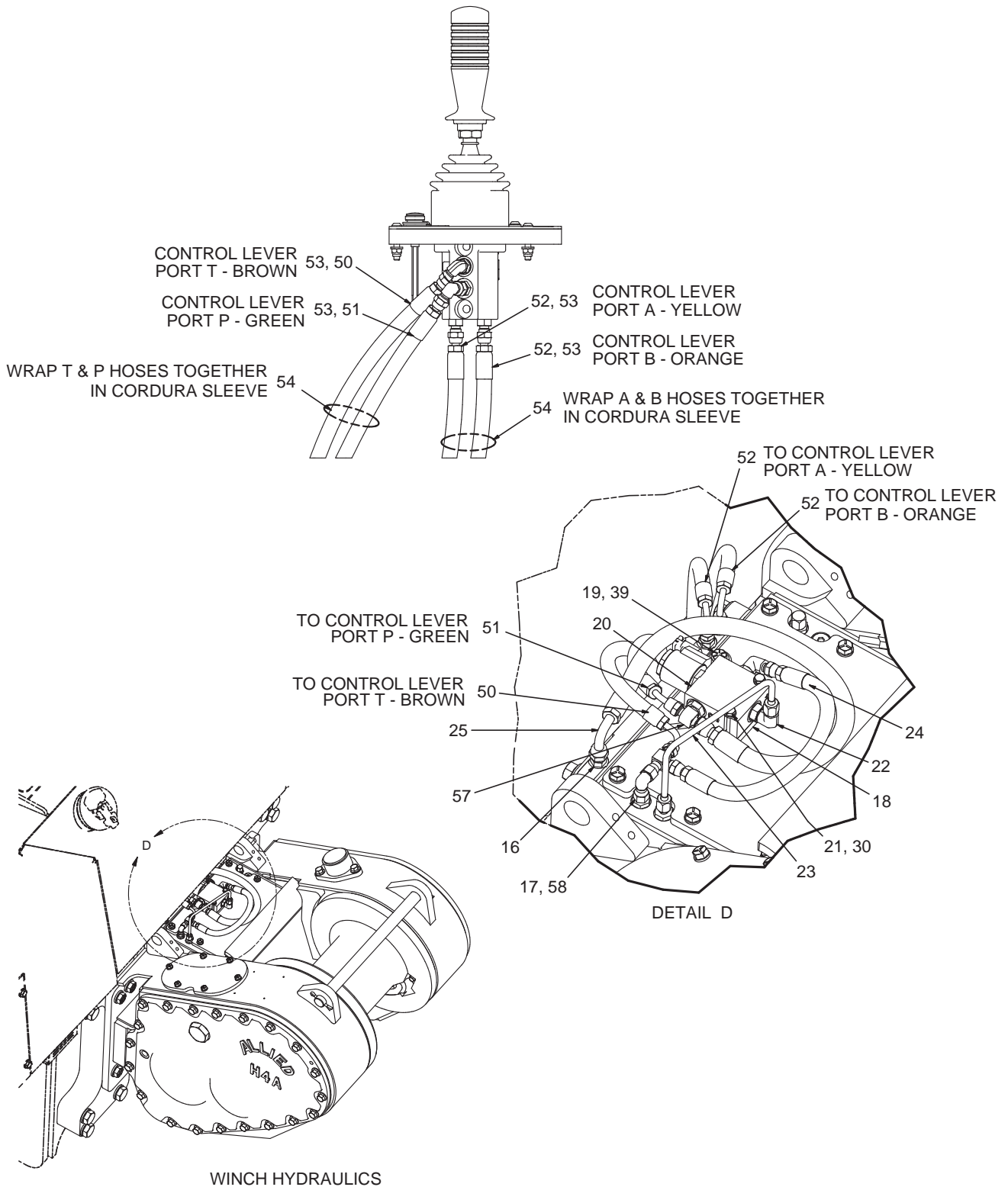


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
16	209083	Fitting	6	39	221767W	Washer	2
17	17059W	Fitting	1	50	*a 232687	Assembly, Hose	1
18	2314396	Plate, Valve Mounting	1	51	*a 049-2373	Assembly, Hose	1
19	Y17C-0624	Capscrew	2	52	*a 238173	Assembly, Hose	2
20	2307833W	Assembly, Valve Manifold (3-116)	1	53	2304988W	Kit, Various Color Tie Strap	1
21	Y09C-M0640	Capscrew	2	54	R13846	Sleeve, Cordura	15 ft
22	223784	Fitting	2	57	212718	Fitting	1
23	*a 2314408	Assembly, Hose	1	58	R11537	Fitting	1
24	228663	Assembly, Tube - PD	1				
25	*a 251487	Assembly, Hose	1		*a	Included in 2315329 Hose Kit	
30	296417W	Washer	2				

Winch External Hydraulics

John Deere 700K (H4AH_R_E391)

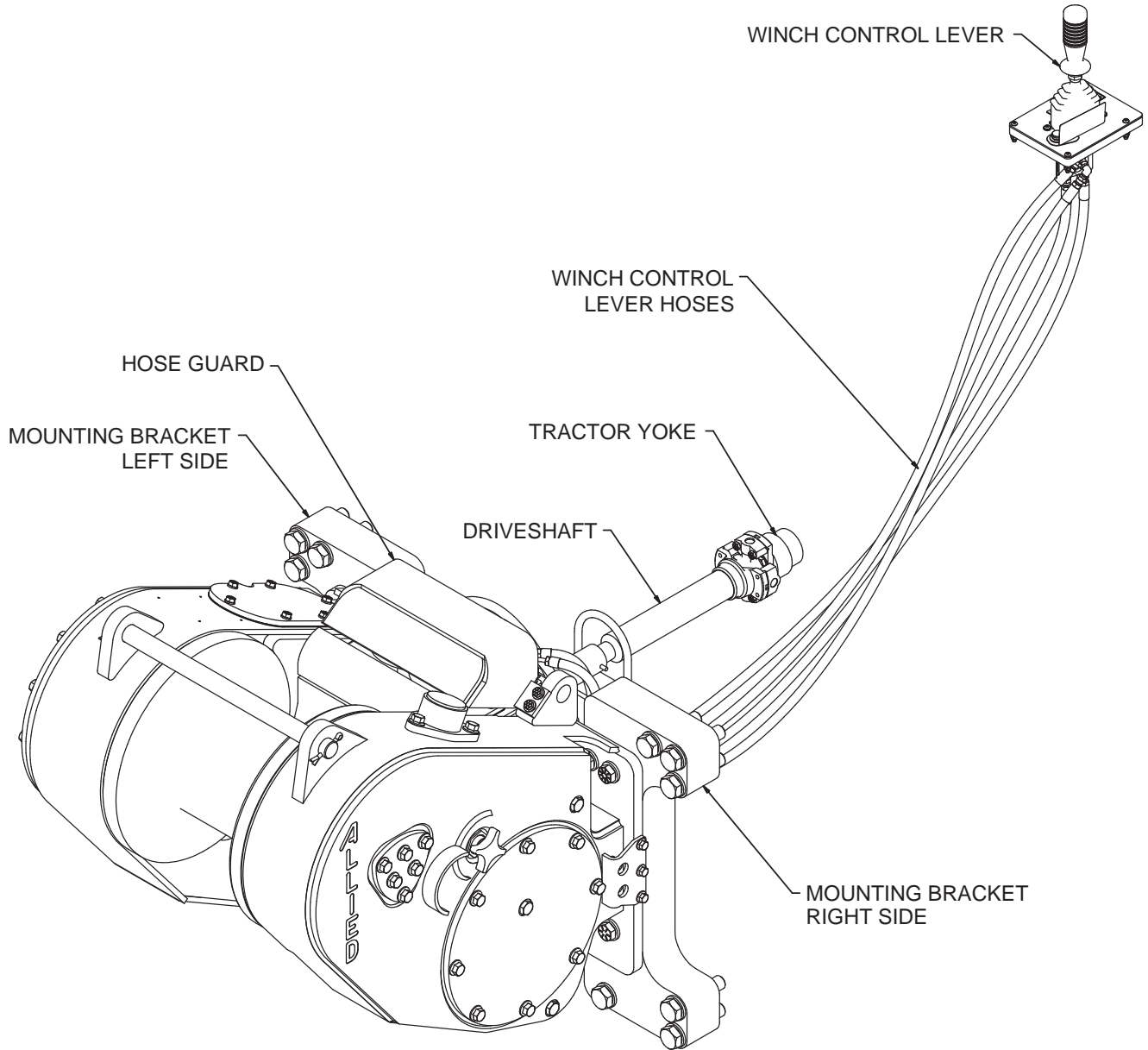
Page 1 of 2



Winch External Hydraulics

John Deere 700K (H4AH_R__E391)

Page 2 of 2

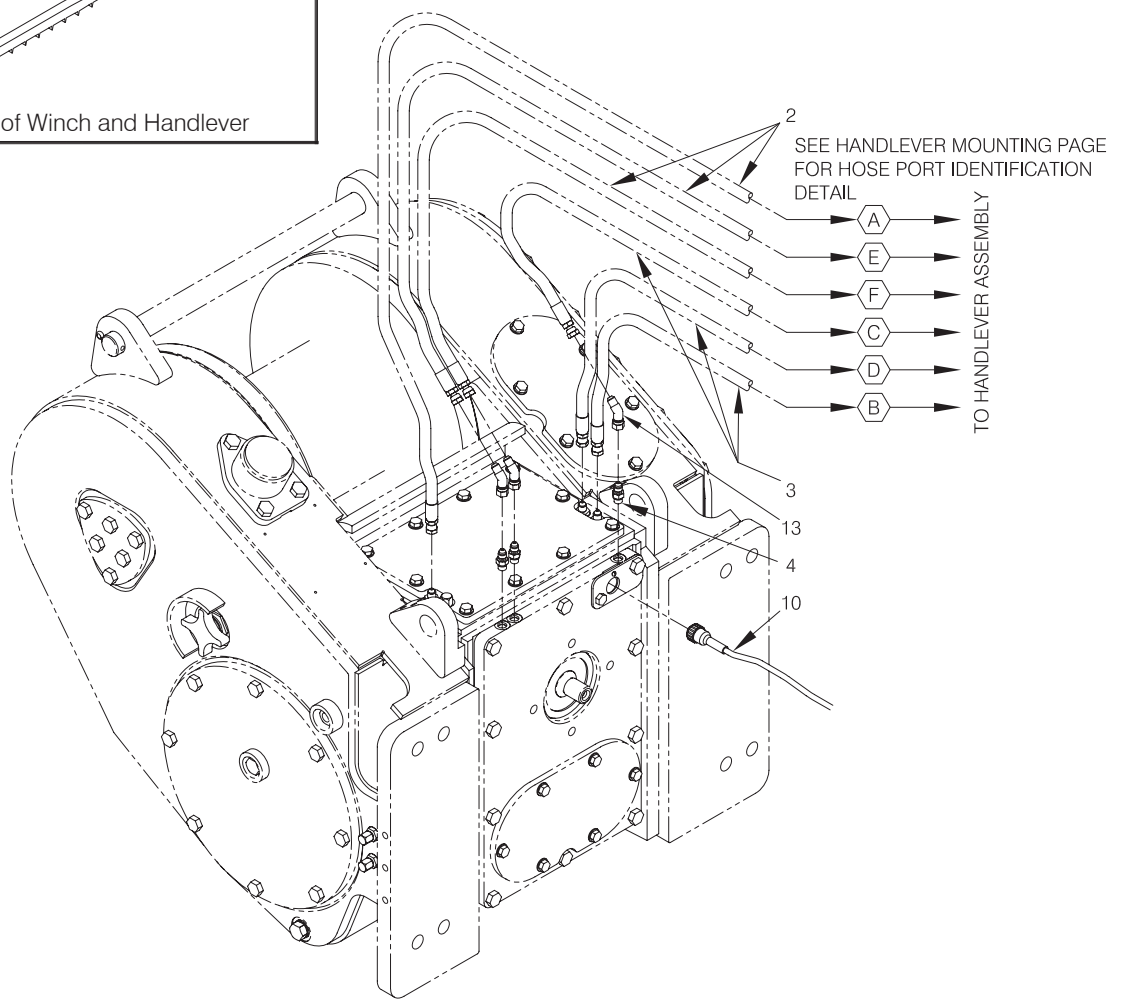
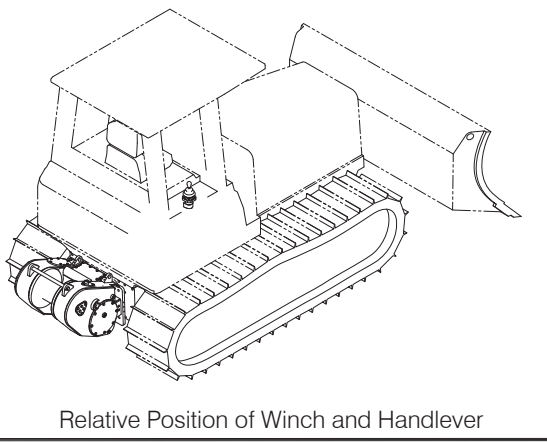


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
16	209083	Fitting	6	39	221767W	Washer	2
17	17059W	Fitting	1	50	*a 232687	Assembly, Hose	1
18	2314396	Plate, Valve Mounting	1	51	*a 239838	Assembly, Hose	1
19	Y17C-0624	Capscrew	2	52	*a 238173	Assembly, Hose	2
20	2307833W	Assembly, Valve Manifold (3-116)	1	53	2304988W	Kit, Various Color Tie Strap	1
21	Y09C-M0640	Capscrew	2	54	R13846	Sleeve, Cordura	15 ft
22	223784	Fitting	2	57	R11537	Fitting	1
23	2314408	Assembly, Tube - FS	1	58	212718	Fitting	2
24	*a 228663	Assembly, Hose	1				
25	*a 251487	Assembly, Hose	1		*a	Included in 2315330 Hose Kit	
30	296417W	Washer	2				

Winch External Hydraulics

Komatsu D31/37/39 E-21 & E21-A (H4AH_B__K12)

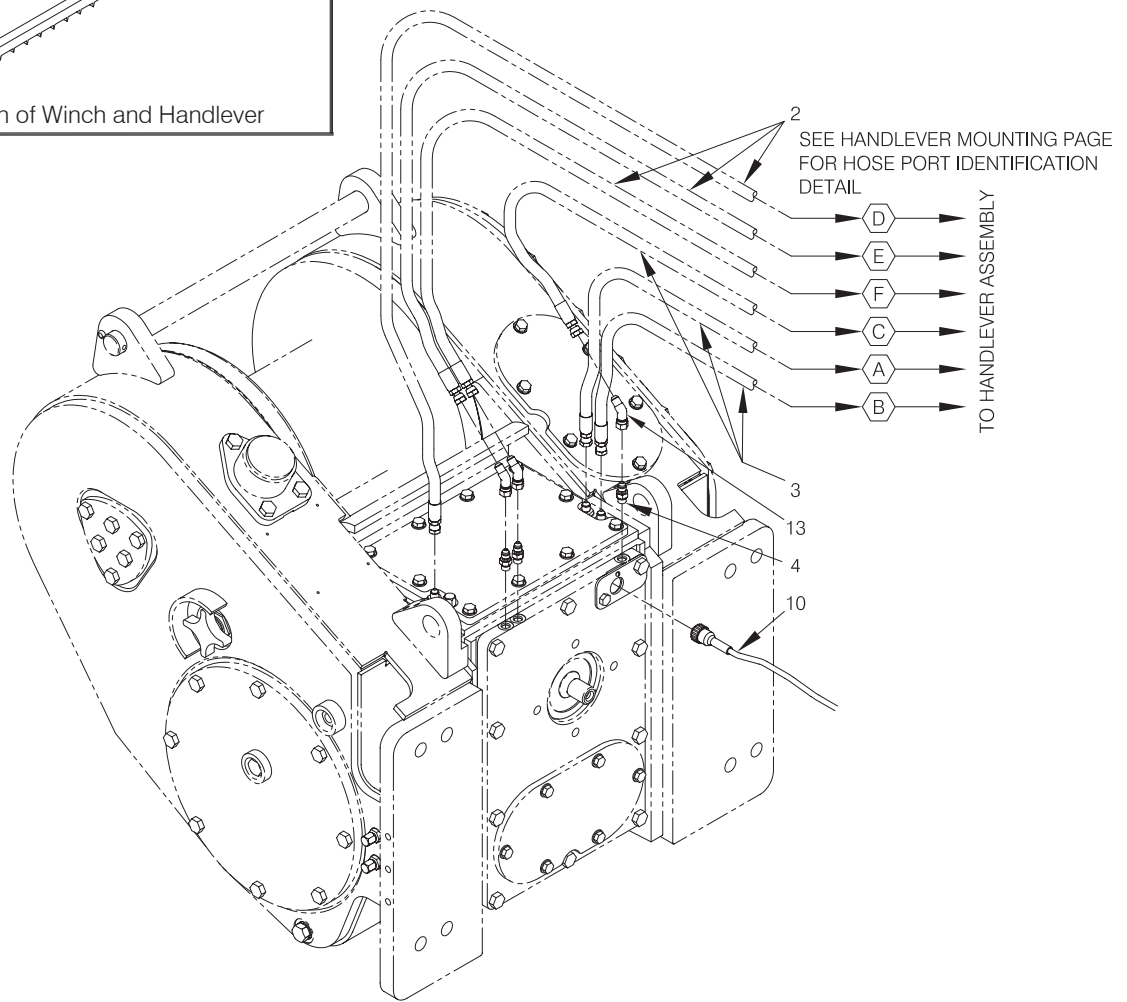
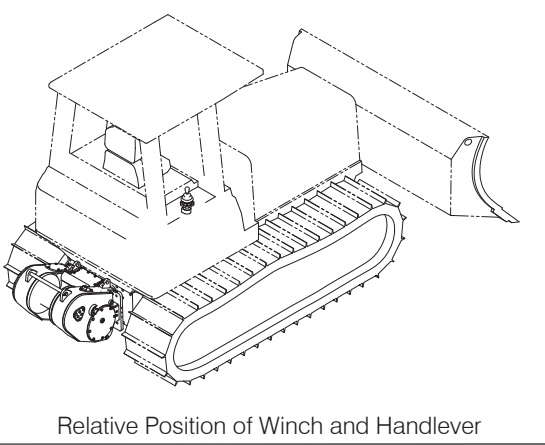
Last Used on S/N H4A-1014



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
2	*a 2304205W	Assembly, Hose	3	10	2304204W	Harness, Wiring	1
3	*a 2304989W	Assembly, Hose	3	13	16997W	Fitting	3
4	16538W	Fitting	3				
5	2304988W	Kit, Various Color Tie Strap (Not Shown)	1		*a	Included in 2315331 Hose Kit	

Winch External Hydraulics

Komatsu D31/37/39 E-21 & E21-A (H4AH_B__K12)
 First Used on S/N H4A-1015

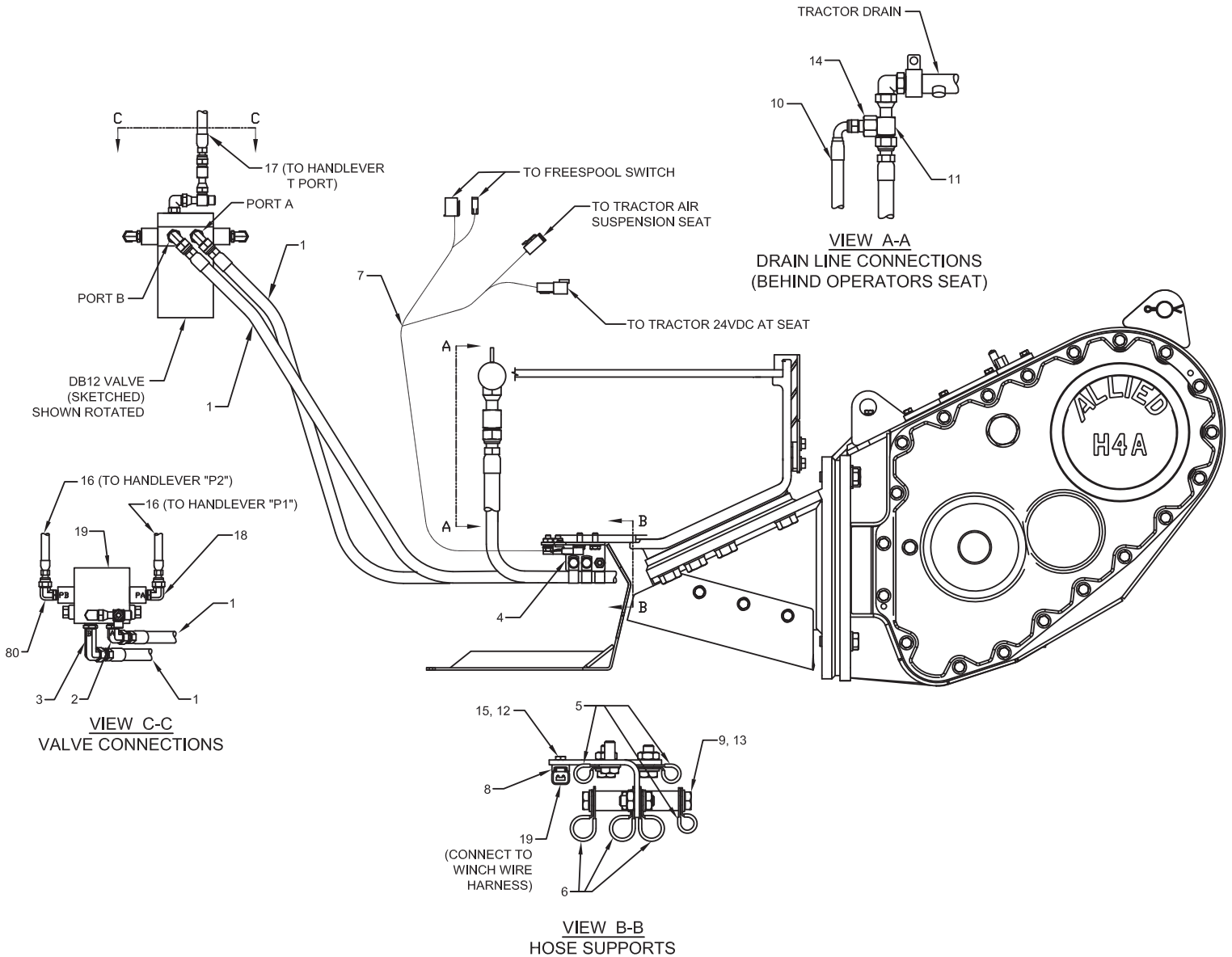


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
2	*a 2304205W	Assembly, Hose	3	10	2304204W	Harness, Wiring	1
3	*a 2304989W	Assembly, Hose	3	13	16997W	Fitting	3
4	16538W	Fitting	3				
5	2304988W	Kit, Various Color Tie Strap (Not Shown)	1		*a	Included in 2315331 Hose Kit	

Winch External Hydraulics

Komatsu D31/37/39X-22 and 22-A (H4AT_Y__K13)

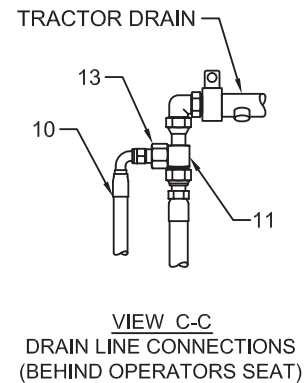
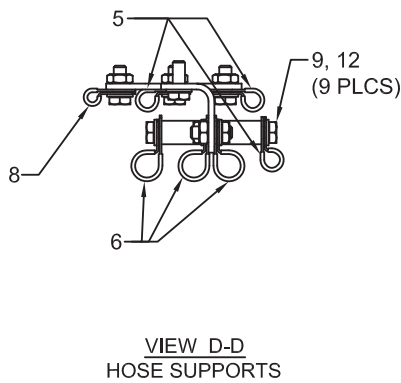
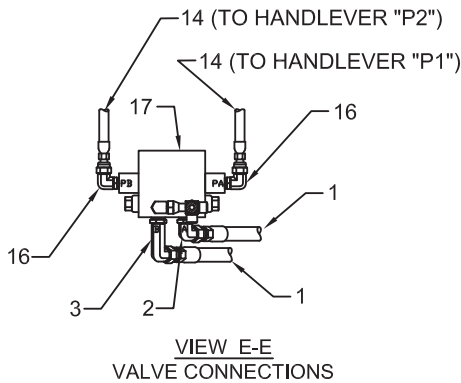
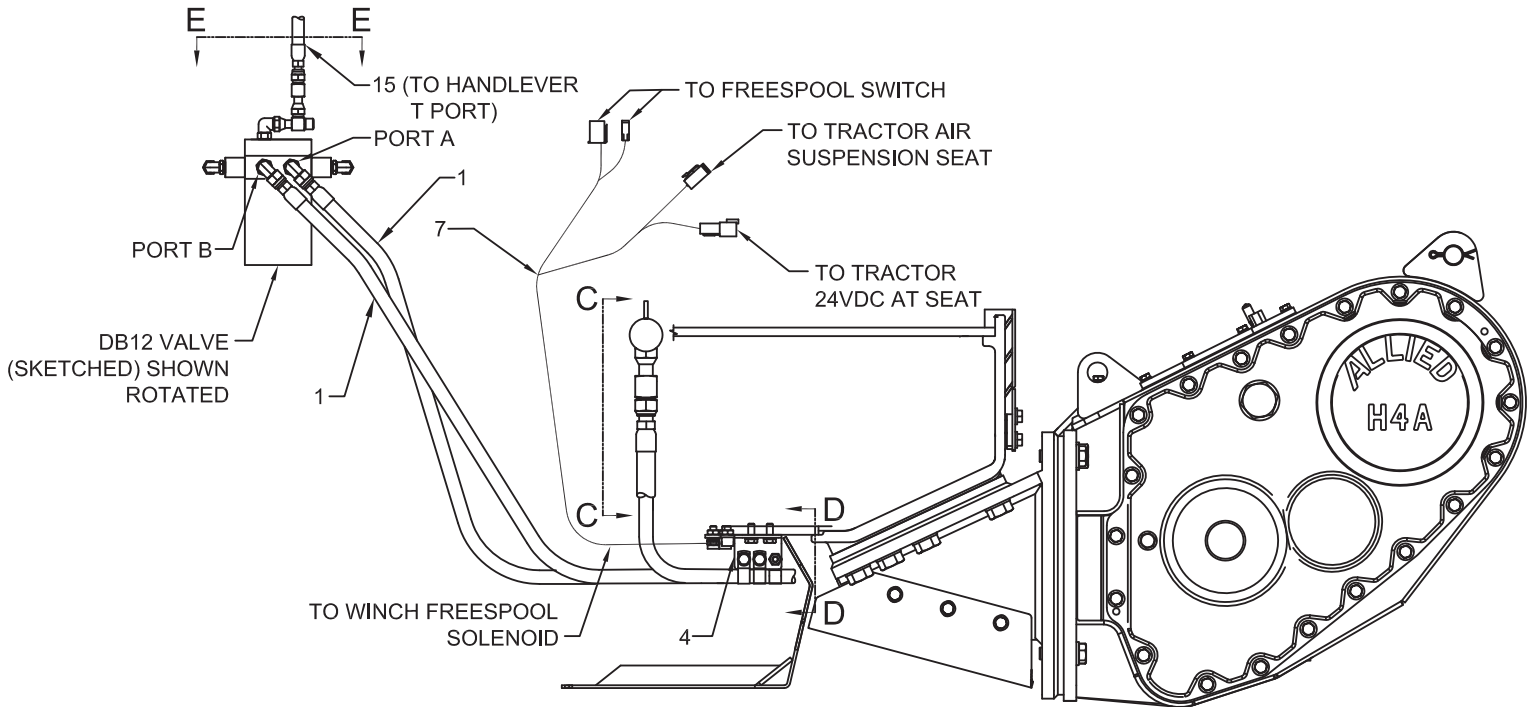
Last Used on S/N H4A-1148



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 2311300	Assembly, Hose	2	12	15052W	Nut	1
2	2311440	Fitting	1	13	296420W	Washer	8
3	2311441	Fitting	1	14	2307958W	Fitting	1
4	2311445	Bracket	1	15	Y25G-1024	Capscrew	1
5	R13803039	Clip	3	16	*a 2311295	Assembly, Hose	2
6	209695	Clamp	3	17	*a 2311298	Assembly, Hose	1
7	237965W	Hassnes, Wire	1	18	2311285	Fitting	2
8	249151	Clip, Strap	1	19	2311036	Assembly, Valve	1
9	293628W	Capscrew	8				
10	*a 2311289	Assembly, Hose	1		*a	Included in 2315332 Hose Kit	
11	R834055	Fitting	1				

Winch External Hydraulics

Komatsu D31/37/39X-22 and 22-A (H4AT_Y__K13)
 First Used on S/N H4A-1149

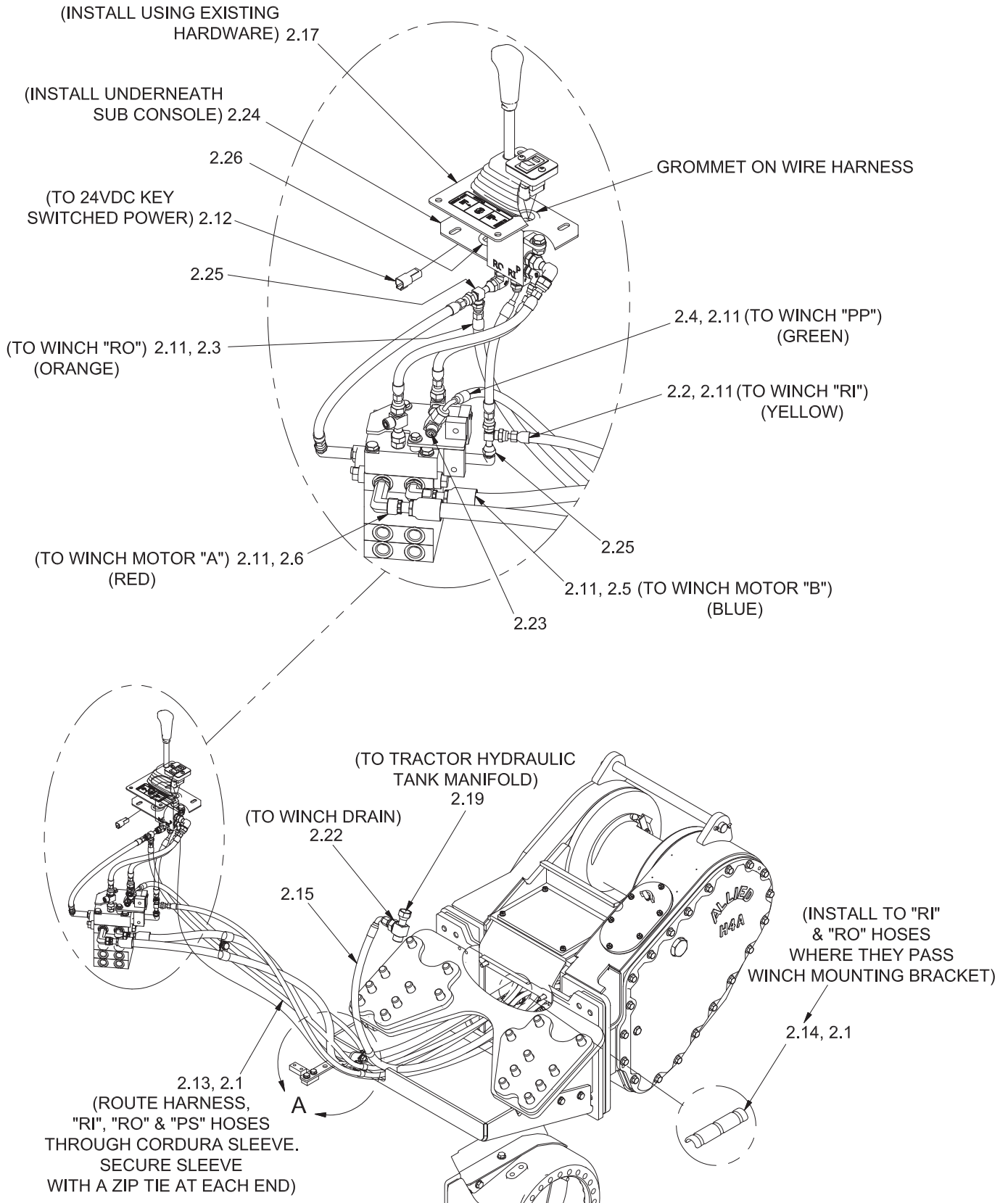


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 2311300	Hose Assembly	2	11	R834055	Fitting	1
2	2311440	Fitting	1	12	296420W	Hard Washer	9
3	2311441	Fitting	1	13	2307958W	Fitting	1
4	2312503	Bracket	1	14	*a 2311295	Hose Assembly	2
5	R13803039	Clip	3	15	*a 2311298	Hose Assembly	1
6	209695	Clamp	3	16	2311285	Fitting	2
7	2312501	Wire Harness	1	17	2311036	Assembly, Valve	1
8	R13801359	Clip, Insul	1				
9	293628W	Capscrew	9		*a	Included in 2315332 Hose Kit	
10	*a 2311289	Hose Assembly	1				

Winch External Hydraulics

Komatsu D37/39X-23 D39X-24 (H4AT_Y_K14)

Page 1 of 2

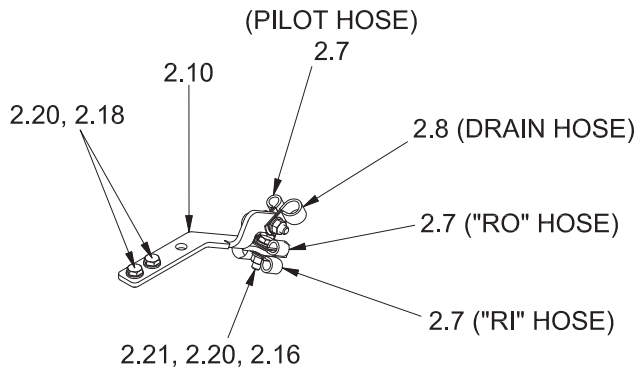


TRACTOR HYDRAULICS

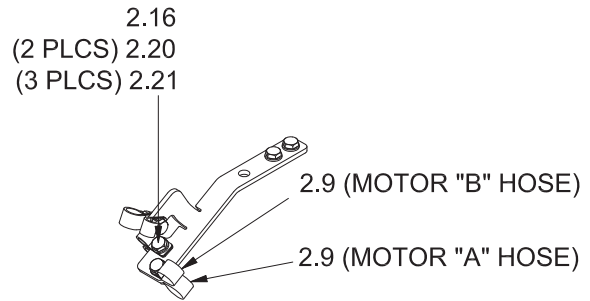
Winch External Hydraulics

Komatsu D37/39X-23 D39X-24 (H4AT_Y__K14)

Page 2 of 2



DETAIL A
HOSE SUPPORT VIEW



DETAIL A
HOSE SUPPORT VIEW (ROTATED 180°)

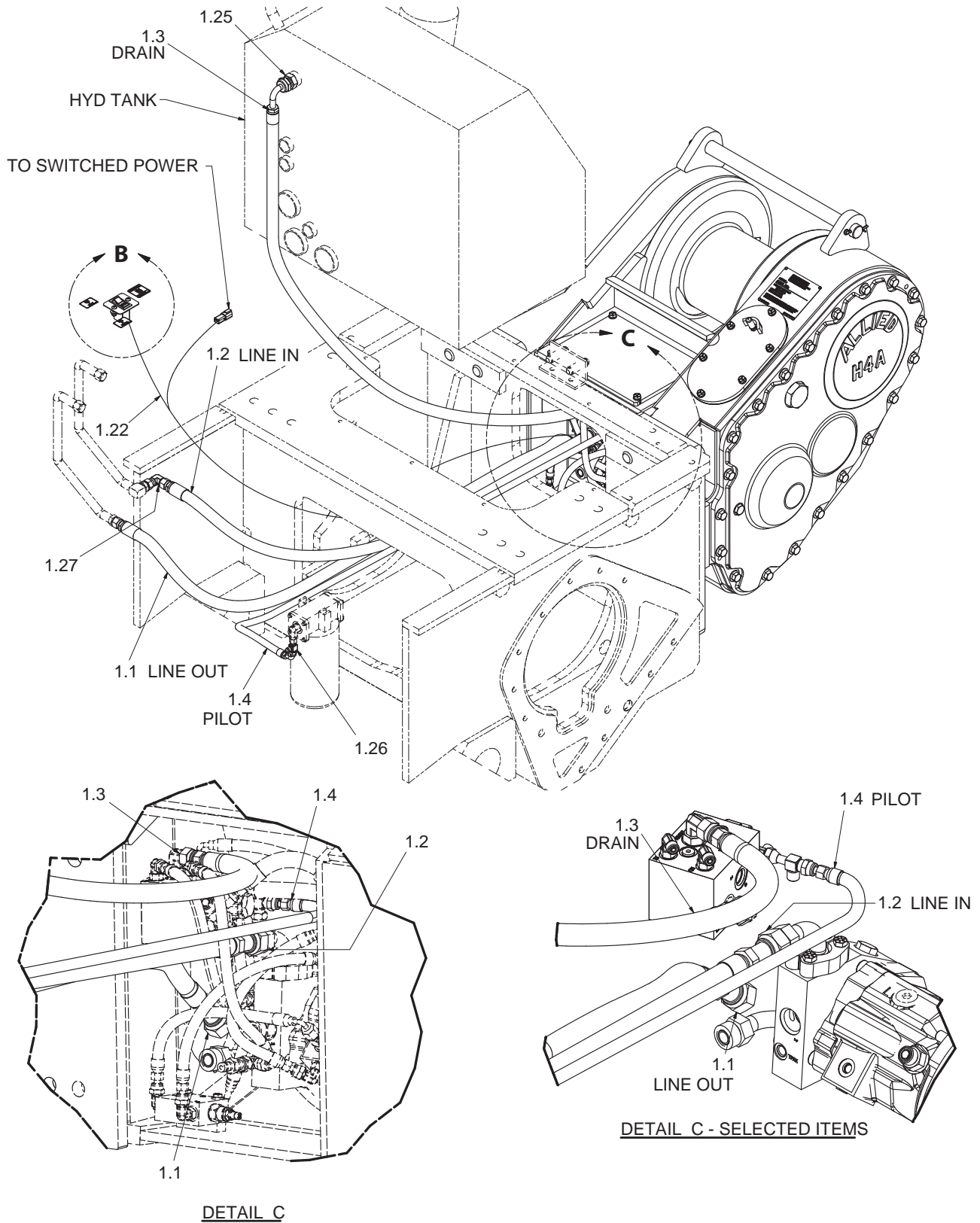
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
2.1	137852W	Clamp, Strap	10	2.14	HSP0000004	Protector, Hose	1
2.2	*a 2314545	Assembly, Hose	1	2.15	*a 2311289	Assembly, Hose	1
2.3	*a 2314546	Assembly, Hose	1	2.16	R13811210	Capscrew	3
2.4	*a 2314547	Assembly, Hose	1	2.17	2311409	Switch Panel Assembly (3-149)	1
2.5	*a 2314548	Assembly, Hose	1	2.18	236805	Capscrew	2
2.6	*a 2314549	Assembly, Hose	1	2.19	R834055	Fitting	1
2.7	R13803039	Clip, Insulation	3	2.20	296420W	Washer	8
2.8	209695	Clamp	1	2.21	292655W	Nut	3
2.9	209696	Clamp	2	2.22	231809	Fitting	1
2.10	2314527	Plate, Hose Support	1	2.23	231955	Fitting	1
2.11	2304988W	Kit, Various Color Tie Strap	1	2.24	2314583	Mounting, Control Lever	1
2.12	2314589	Harness, Wire	1	2.25	236855	Fitting	1
2.13	R13846	Sleeve, Cordura	2 ft.	2.26	R1933988	Plug, Button	1
				*a Included in 2315333 Hose Kit			

Winch External Hydraulics

Dressta TD7/8S (H4AT_Y_H15)

Dressta TD9S (H4AT_Y_H16)

Page 1 of 2

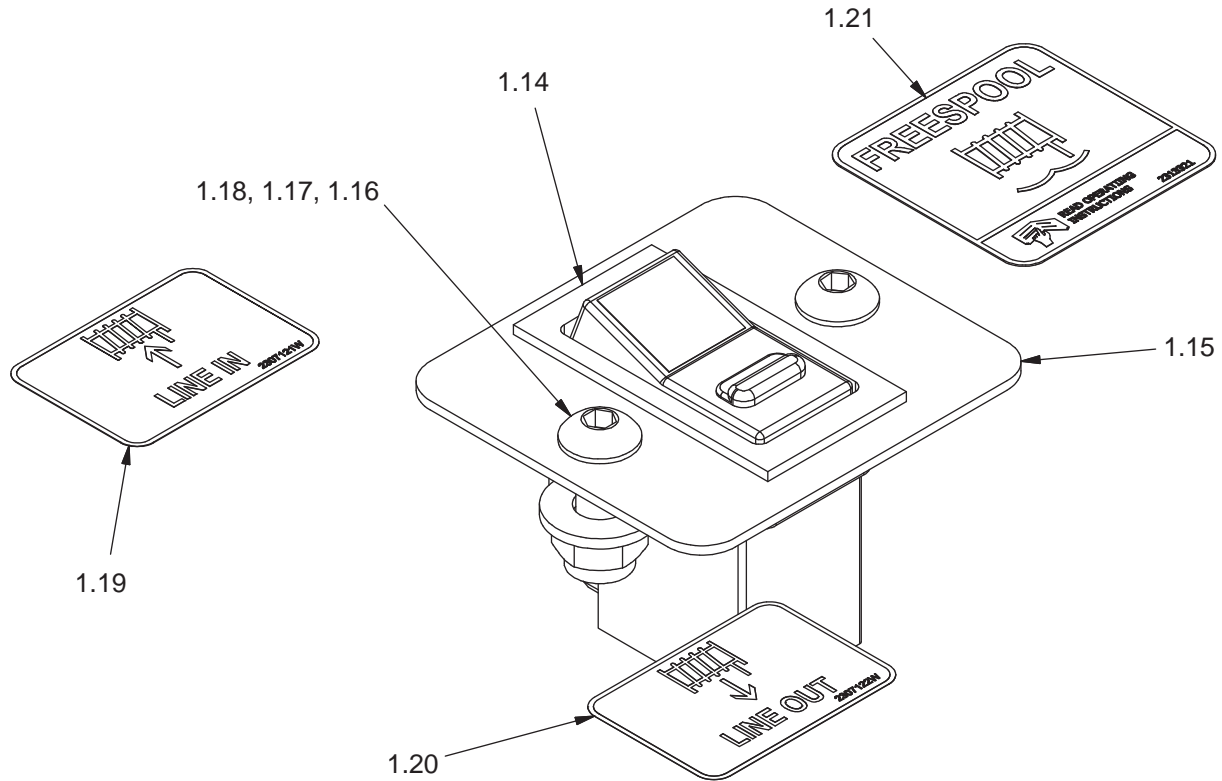


Winch External Hydraulics

Dressta TD7/8S (H4AT_Y__H15)

Dressta TD9S (H4AT_Y__H16)

Page 2 of 2



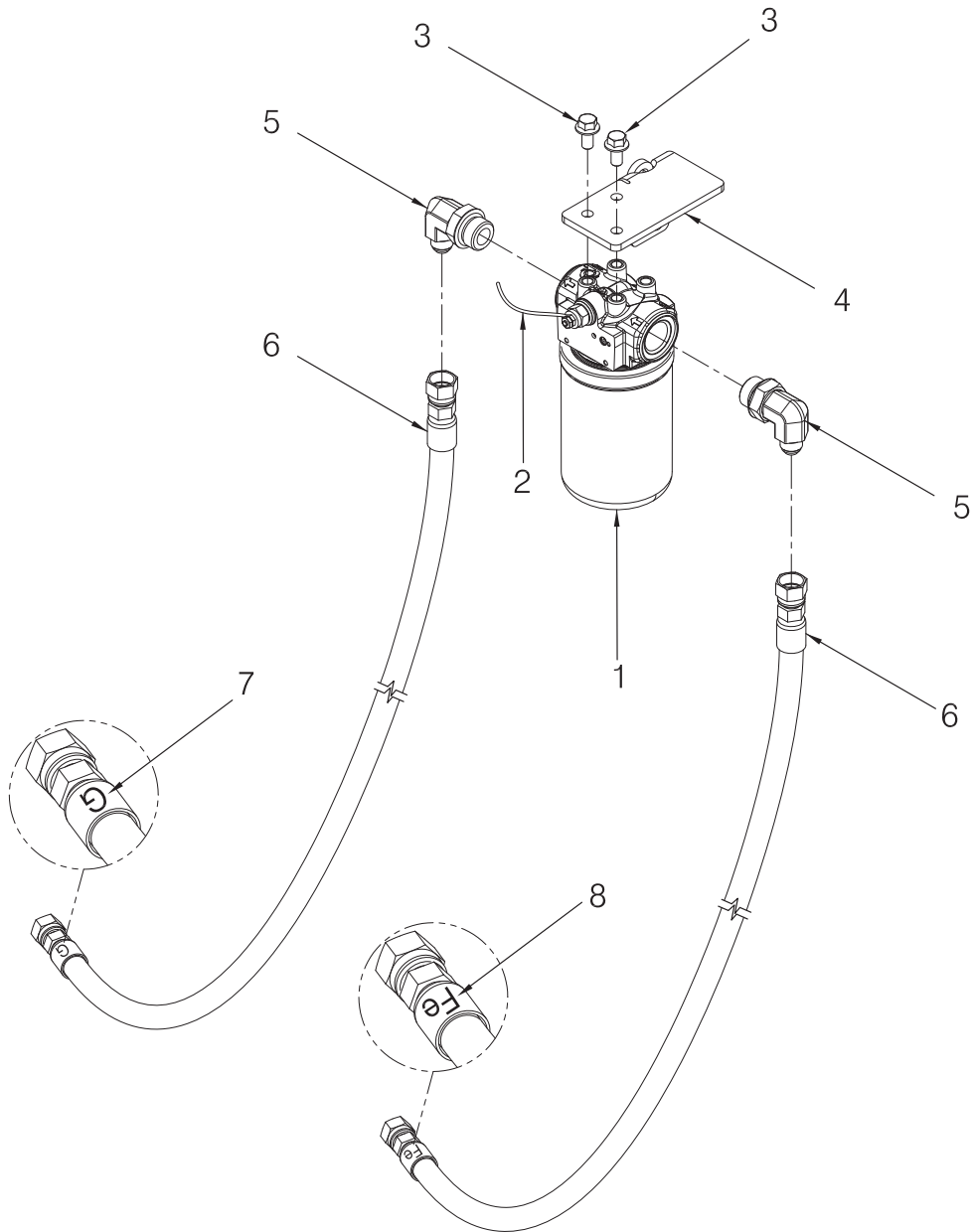
DETAIL B

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1.1	*b 2316544	. Hose Assembly	1	1.19	2307121W	. Decal, Line In	1
1.2	*b 2316545	. Hose Assembly	1	1.20	2307122W	. Decal, Line Out	1
1.3	*b 2316546	. Hose Assembly	1	1.21	2313992	. Decal, Freespool	1
1.4	*b 2316547	. Hose Assembly	1	1.22	2311202	. Harness - Wire	1
1.14	2310017	. Switch Assembly (3-159)	1	1.23	*a 137852W	. Cable Tie	12
1.15	2307643W	. Plate	1	1.25	209215	. Fitting	1
1.16	18720W	. Capscrew	2	1.26	17059W	. Fitting	1
1.17	15127W	. Washer	2	1.27	210769	. Fitting	1
1.18	15113W	. Locknut	2				

*a Not Illustrated

*b Included in 2315318 Hose Kit

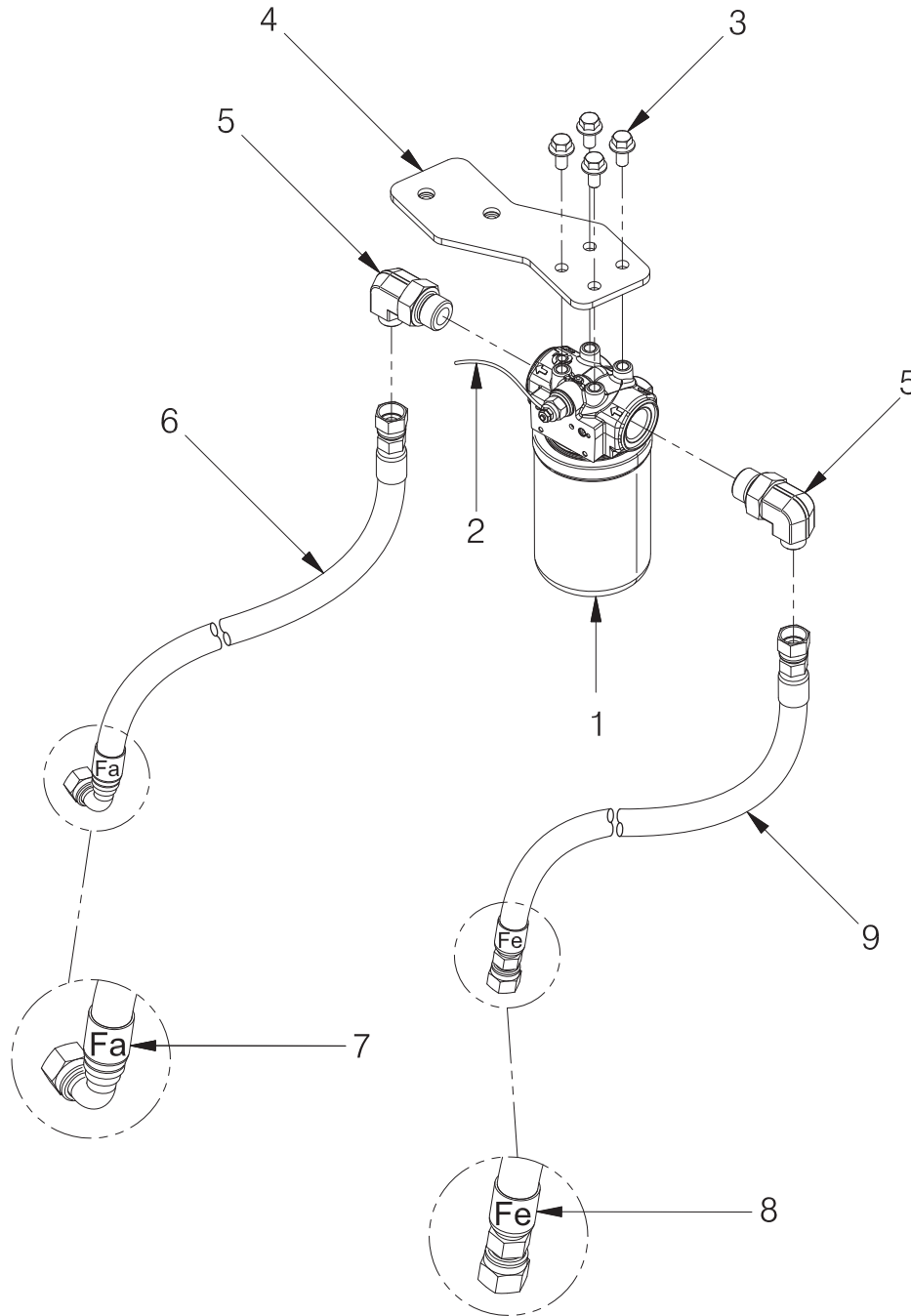
Filter Assembly



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2306023W	Assembly, Filter	1				
1	2305713W	. Assembly, Filter	1	4	2304223W	. Bracket, Filter	1
	2305132W	. . Filter Head	1	5	138811W	. Fitting	2
	2304112W	. . Filter Element	1	6	2304237W	. Assembly, Hose	2
	2305712W	. . Pressure Switch	1	7	2306156W	. Label, G	1
2	2305714W	. Wire, Filter	1	8	2306157W	. Label, Fe	1
3	134803W	. Capscrew, Flange	2				

Filter Assembly

Caterpillar D5K (H4AH_Y__C20)
 Caterpillar D5K/K2 (H4AH_Y__C20)

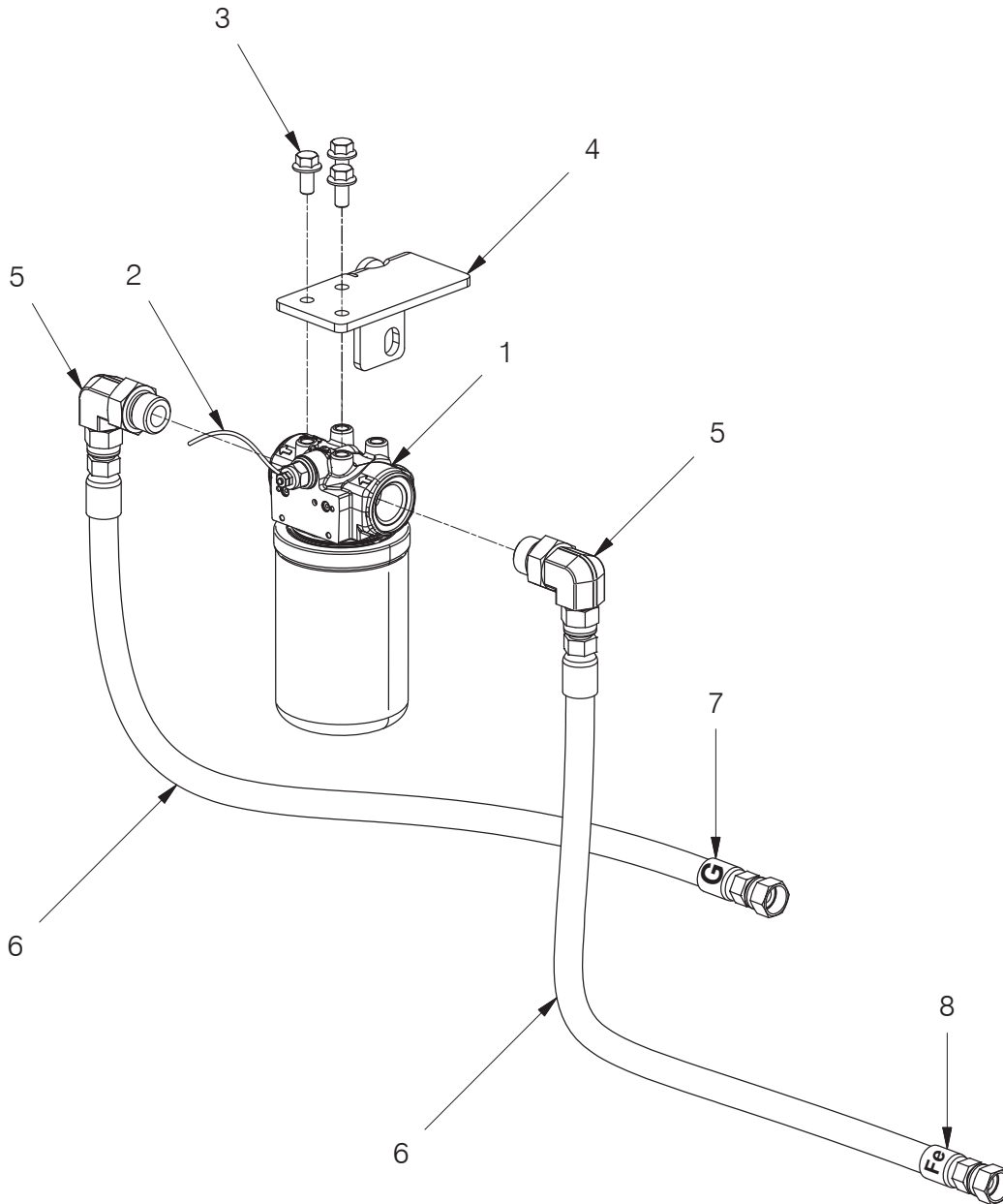


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2310844	Assembly, Filter	1				
1	2305713W	. Assembly, Filter	1	4	2310814	. Bracket, Filter	1
	2305132W	. . Filter Head	1	5	235314	. Fitting	2
	2304112W	. . Filter Element	1	6	2311020	. Assembly, Hose	1
	2305712W	. . Pressure Switch	1	7	2310918	. Label, Fa	1
2	2305714W	. Wire, Filter	1	8	2306157W	. Label, Fe	1
3	134803W	. Capscrew, Flange	4	9	2311019	. Assembly, Hose	1

Filter Assembly

Caterpillar D3/4/5G (H4AH_Y__C17)

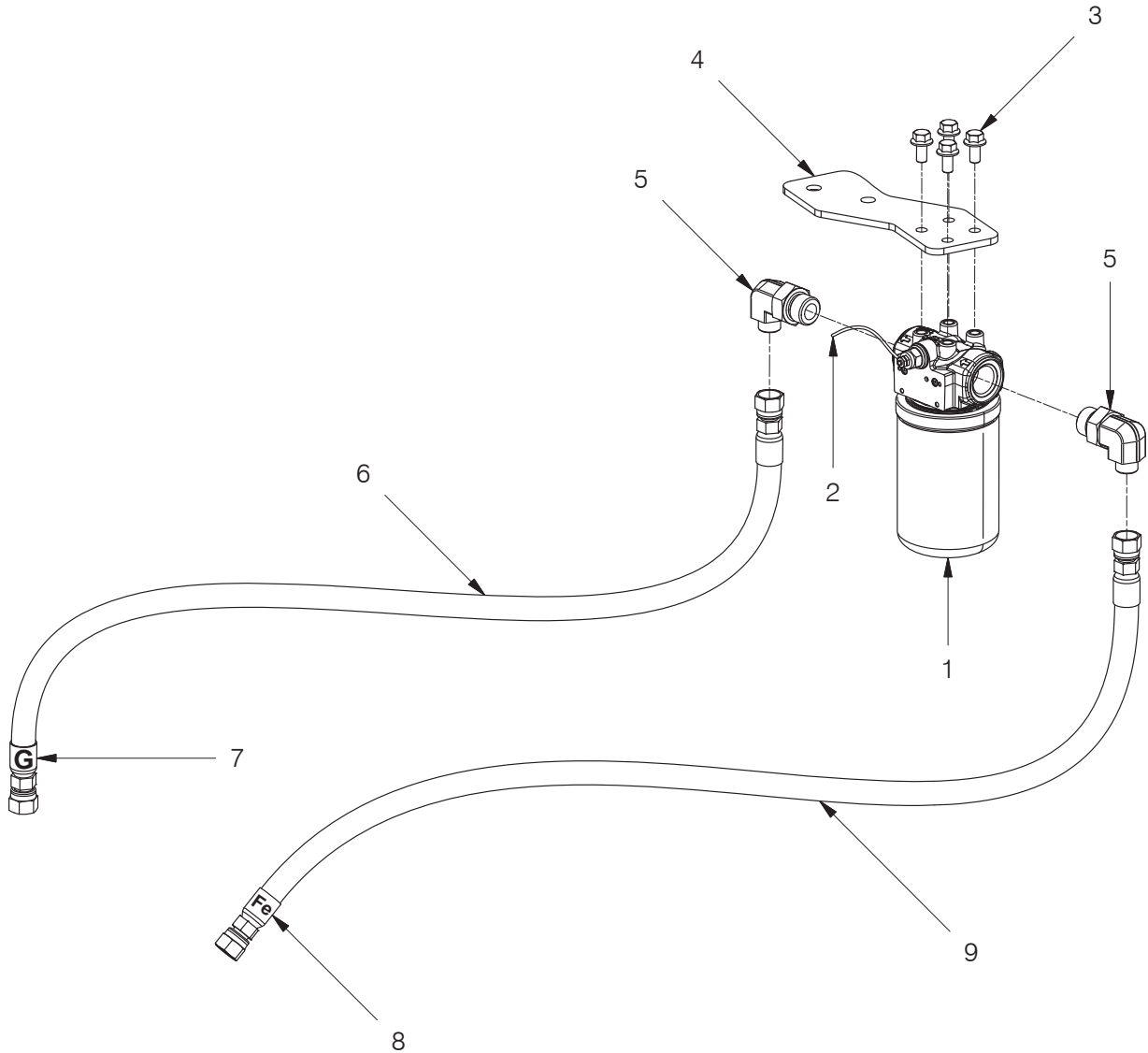
Caterpillar D4/5G (H4AH_Y__C18)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2311843	Assembly, Filter	1				
1	2305713W	. Assembly, Filter	1	4	2304223W	. Bracket, Filter	1
	2305132W	. . Filter Head	1	5	235314	. Fitting	2
	2304112W	. . Filter Element	1	6	2311019	. Assembly, Hose	1
	2305712W	. . Pressure Switch	1	7	2306156W	. Label, G	1
2	2305714W	. Wire, Filter	1	8	2306157W	. Label, Fe	1
3	134803W	. Capscrew, Flange	3				

Filter Assembly

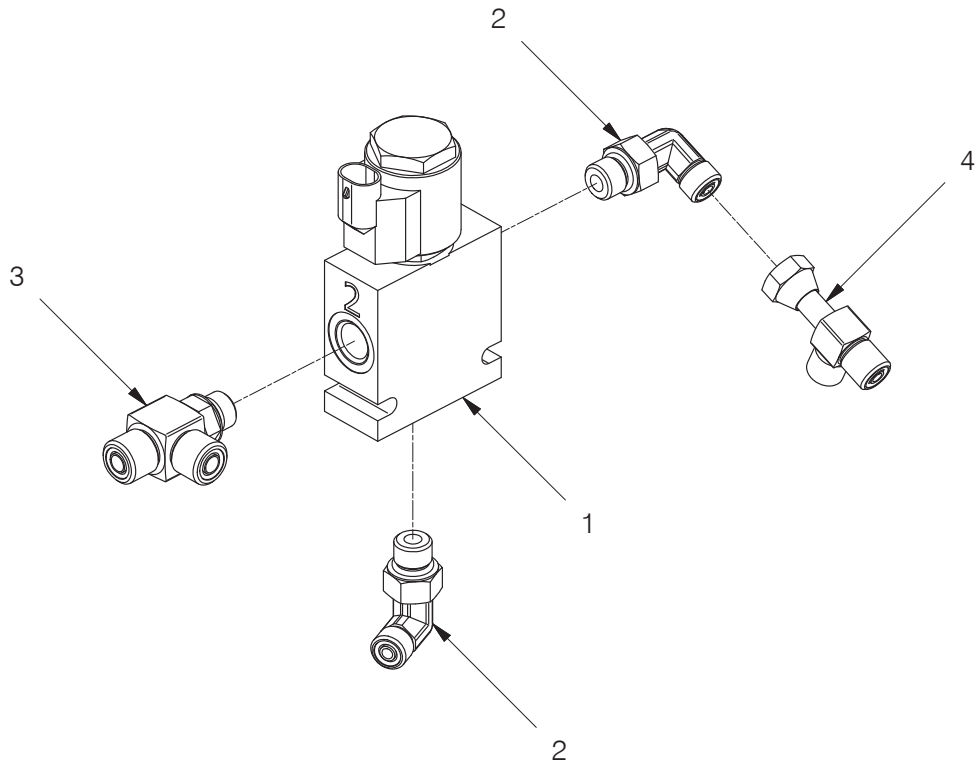
Caterpillar D3/4K (H4AH_Y_C19)
 Caterpillar D3/4K/K2 (H4AH_Y_C19)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2311479	Assembly, Filter	1				
1	2305713W	. Assembly, Filter	1	4	2310814	. Bracket, Filter	1
	2305132W	. Filter Head	1	5	235314	. Fitting	2
	2304112W	. Filter Element	1	6	2311019	. Assembly, Hose	1
	2305712W	. Pressure Switch	1	7	2306156W	. Label, G	1
2	2305714W	. Wire, Filter	1	8	2306157W	. Label, Fe	1
3	134803W	. Capscrew, Flange	4	9	2311489	. Assembly, Hose	1

FREESPOOL Valve Assembly

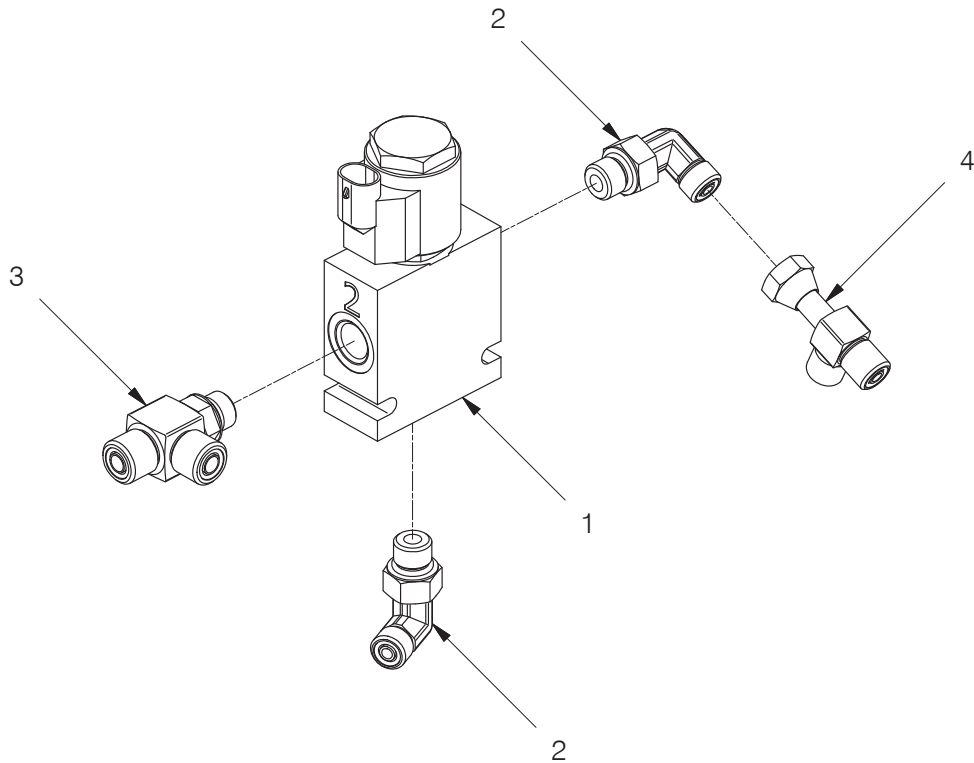
Case 650L (H4AH_R_R16)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2312889	Assembly, FREESPOOL Valve					
1	2310011	. Assembly, Valve Manifold (3-115)	1	3	231465	. Fitting	1
2	R833253	. Fitting	2	4	236855	. Fitting	1

FREESPOOL Valve Assembly

Case 750/850M (H4AH_R_R17)



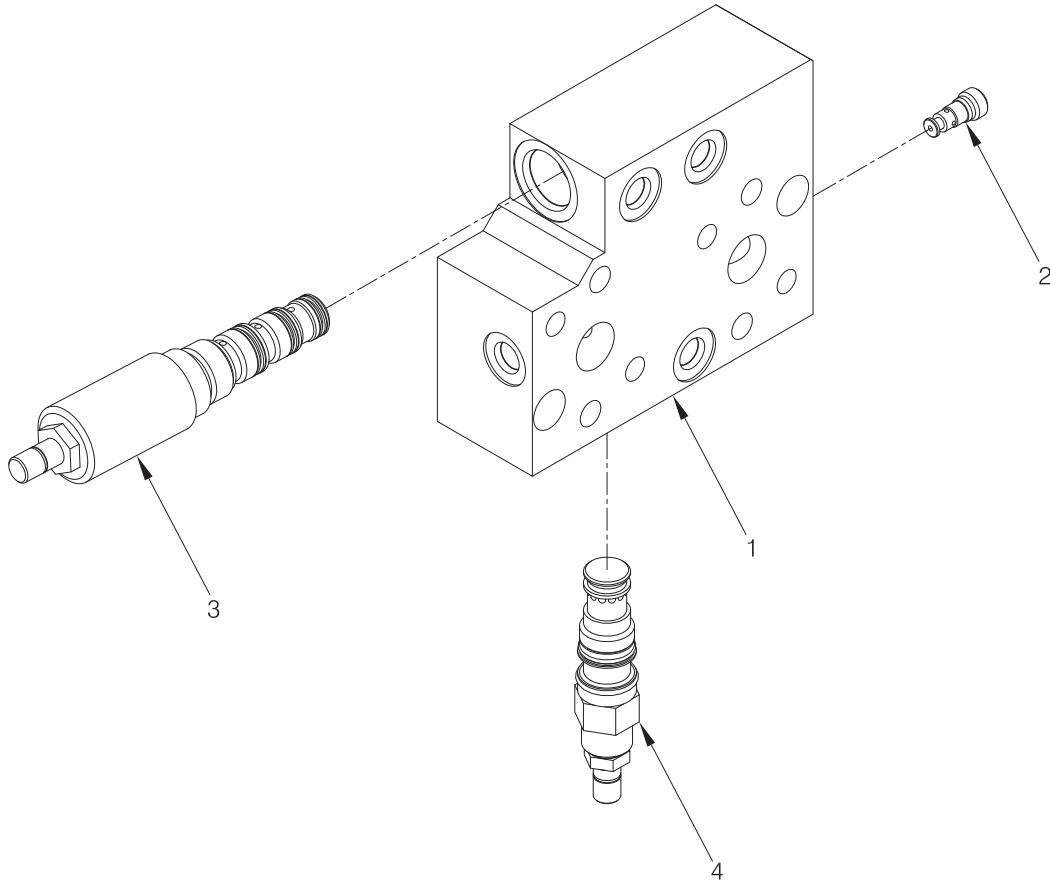
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2315110	Assembly, FREESPOOL Valve					
1	2307833W	. Assembly, Valve Manifold (3-116)	1	3	231465	. Fitting	1
2	R833253	. Fitting	2	4	236855	. Fitting	1

3-110

Motor Valve Assembly

H4AH*R/Y

Used on S/N H4A-1004 and on H4A-1038 thru H4A-1161

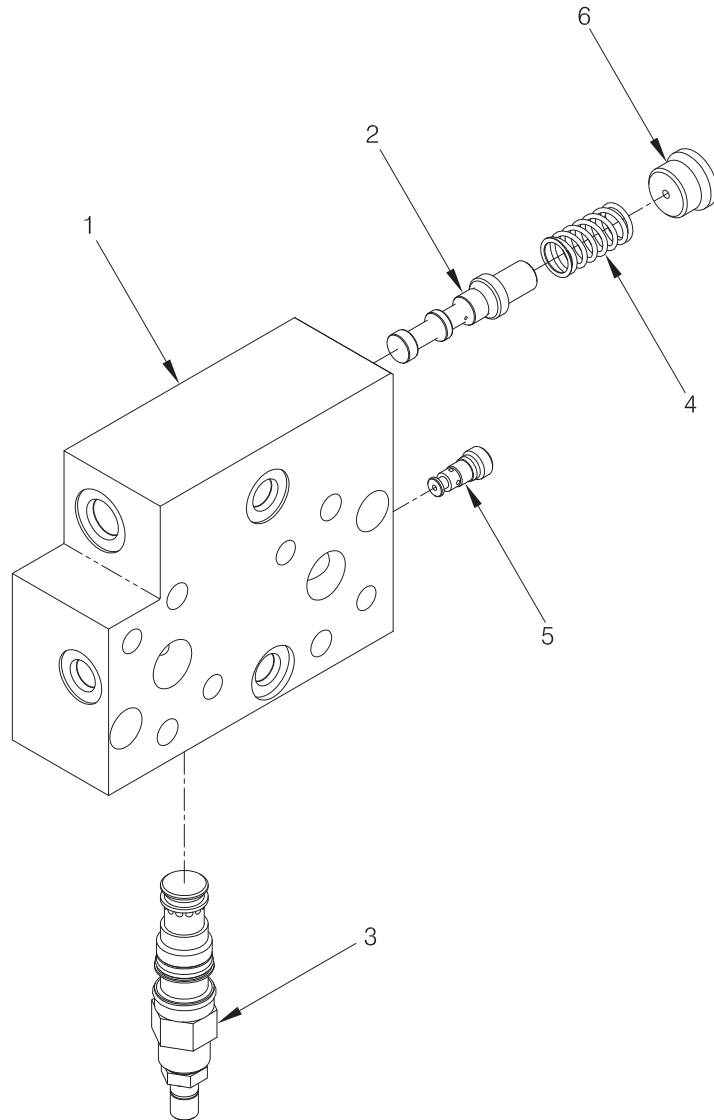


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2306566W	Assembly, Motor Valve	1				
1	2305676W	. Manifold, Motor Speed	1	4	2304004W	. Cartridge, Pressure Reducing	1
2	2304195W	. Valve, Shuttle	1		242101	. . Kit, Seal	1
	2305073W	. . Seal Kit	1				
3	2307162W	. Valve, Sequence	1				
	2305736W	. . Kit, Seal	1				

Motor Valve Assembly

H4AH

Used on S/N H4A-1000 thru H4A-1003 and on H4A-1005 thru H4A-1037

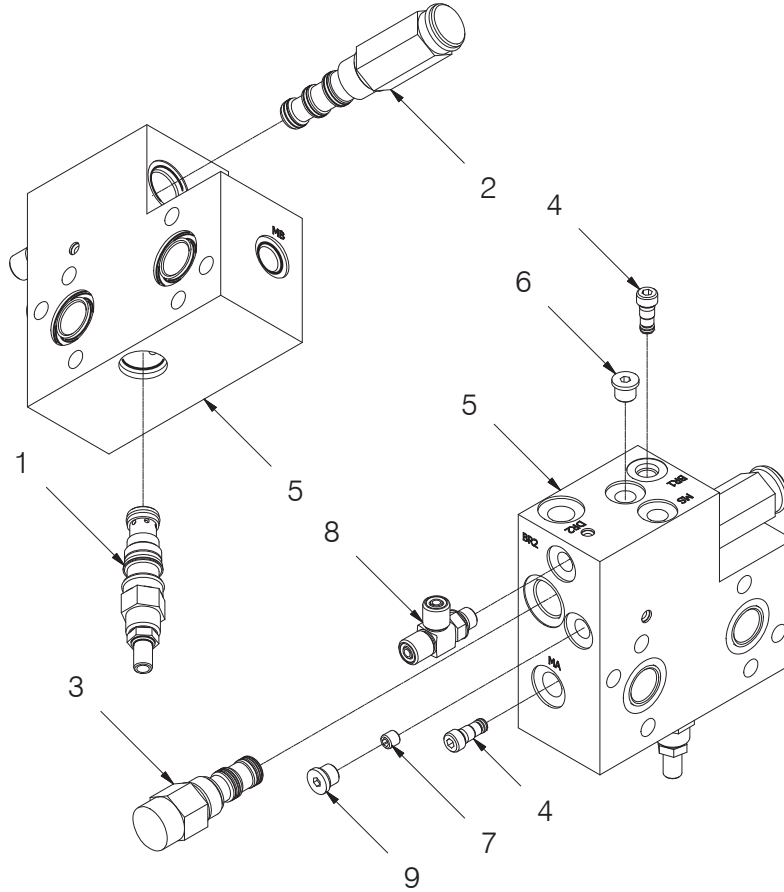


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2305236W	Assembly, Motor Valve					
1	2305126W	. Manifold, Motor Speed	1	4	2304006W	. Spring	1
2	2304003W	. Spool, Motor Valve	1	5	2304195W	. Valve, Shuttle	1
3	2304004W	. Cartridge, Pressure Reducing	1		2305073W	. . Kit, Seal	1
	242101	. . Seal Kit	1	6	2305135W	. Fitting	1

Motor Valve Assembly

H4AH*Y

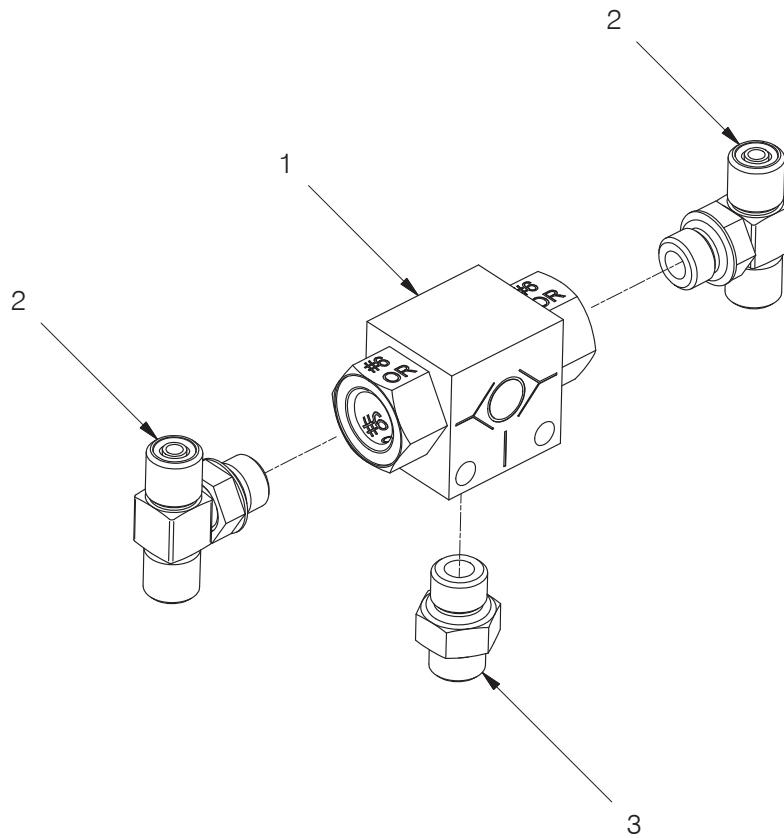
First Used on S/N H4A-1162



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2310966	Assembly, Manifold	1				
1	2311172	. Cartridge, Pressure Reducing	1	5	2310190	. Assembly, Valve	1
2	2310192	. Valve, Directional Cartridge	1	6	222442W	. Fitting	1
	252563	.. Kit, Seal	1	7	2312196	. Plug, Orifice	1
	2307221W	.. Seal, Vent Cap	1	8	R833400	. Fitting	1
3	2307170W	. Valve, Sequence	1	9	235387	. Fitting	1
	2307172W	.. Kit, Seal	1				
4	2307169W	. Valve, Shuttle	2				
	2307171W	.. Kit, Seal	1				

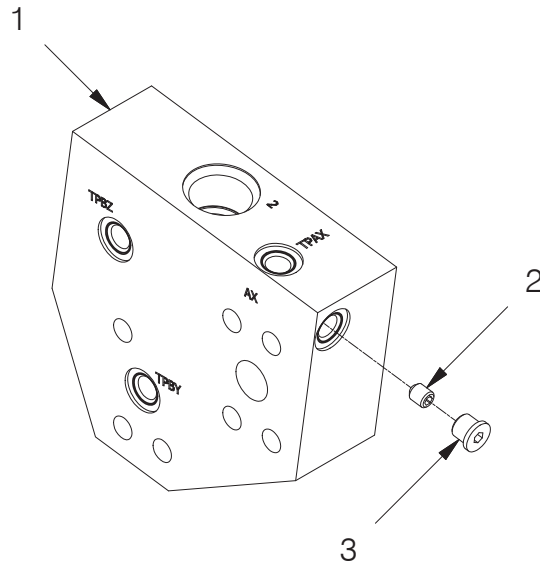
Shuttle Valve Assembly

Case 650L (H4AH_R_R16)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2312890	Assembly, Shuttle Valve	1				
1	247426	. Valve, Shuttle	1	3	R833103	. Fitting	1
2	2311707	. Fitting	2				

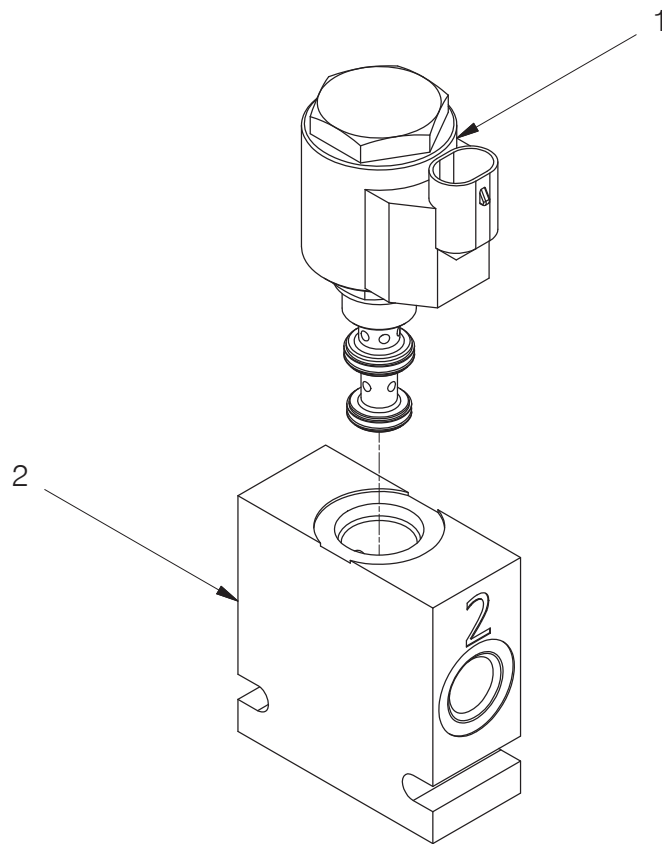
Manifold Assembly
Standard Winch, S/N Code "T"



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2307568W	Assembly, Manifold	1				
1	2307567W	. Manifold	1	3	222442W	. Fitting, O-Ring	1
2	2310978	. Orifice - 0.015	1				

Valve Manifold Assembly

Case 650L (H4AH_R_R16)
 Caterpillar D3/4/5G (H4AH_Y_C17), Caterpillar D4/5G (H4AH_Y_C18),
 Caterpillar D3/4K (H4AH_Y_C19), Caterpillar D5K/D5K2 (H4AH_Y_C20),
 Caterpillar D5K2 With Fireplow (H4AH_Y_C201),
 John Deere 450-650J (E15)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2310011	Assembly, Valve Manifold	1				
1	2310010	. Valve, Solenoid Cartridge	1	2	R12973129	. Body, Valve	1
	2307835W	.. Valve, Cartridge	1				
	2310009	.. Coil, Solenoid 12VDC	1				
	R15668	.. Kit, Seal	1				

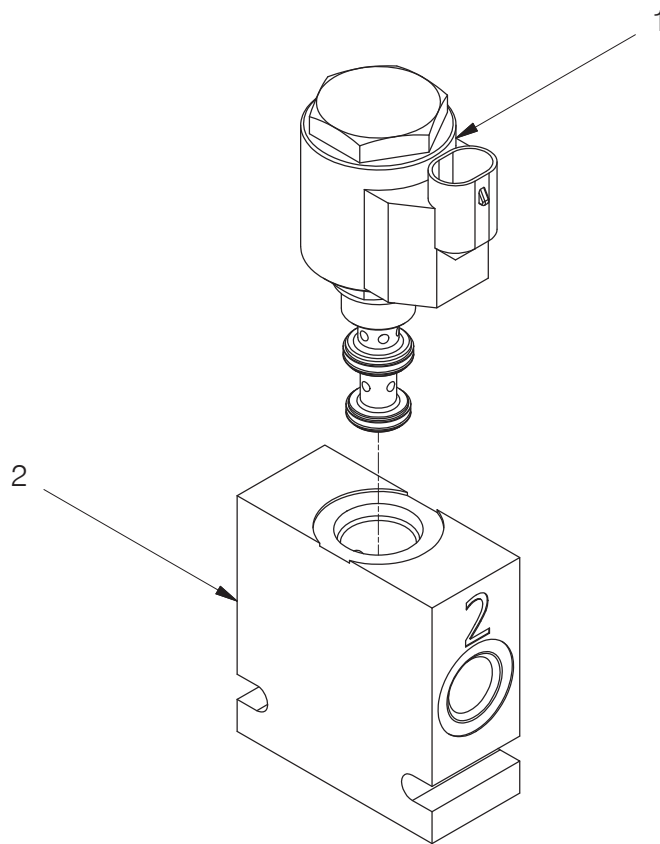
Valve Manifold Assembly

John Deere 550-650K (H4AH_R_E16)

John Deere 700H/J (H4AH_R_E39)

John Deere 700K (H4AH_R_E391)

Case 750/850M (H4AH_R_R17)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2307833W	Assembly, Valve Manifold	1	2	R12973129	. Valve Body	1
	2307834W	. Valve, Cartridge	1				
	2307835W	.. Valve - Cartridge	1				
	250589	.. Coil, Solenoid 24VDC	1				
	R15668	.. Kit, Seal	1				

Control Manifold Assembly

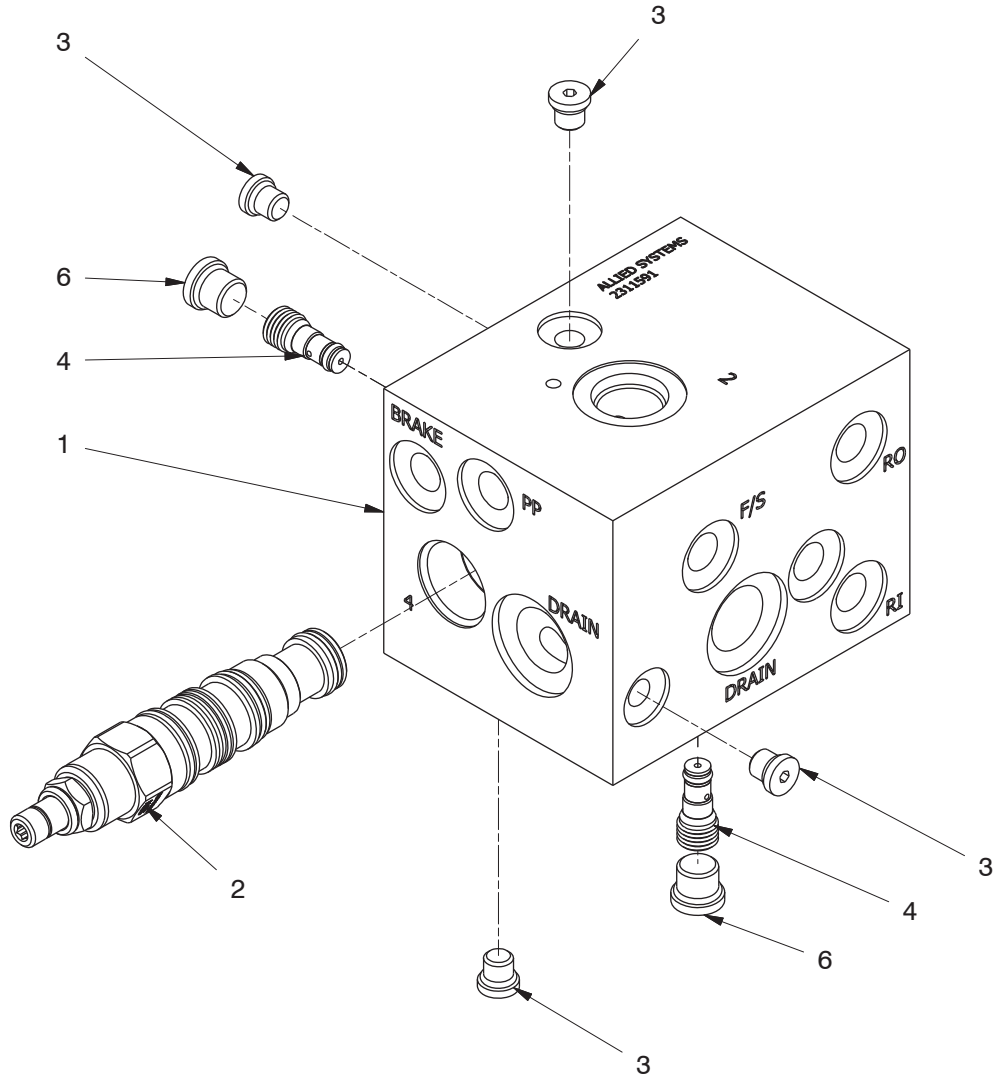
Caterpillar D3/4K (H4AT_Y__C19), Caterpillar D5K (H4AT_Y__C20)

Dressta TD7/8S (H4AT_Y__H15), Dressta TD9S (H4AT_Y__H16)

Shantui SD10 (H4AT_Y__U13)

Komatsu D31/37/39X-22 (H4AT_Y__K13) Komatsu D37/39X-23, D39X-24 (H4AT_Y__K14)

First Used on S/N H4A-1244



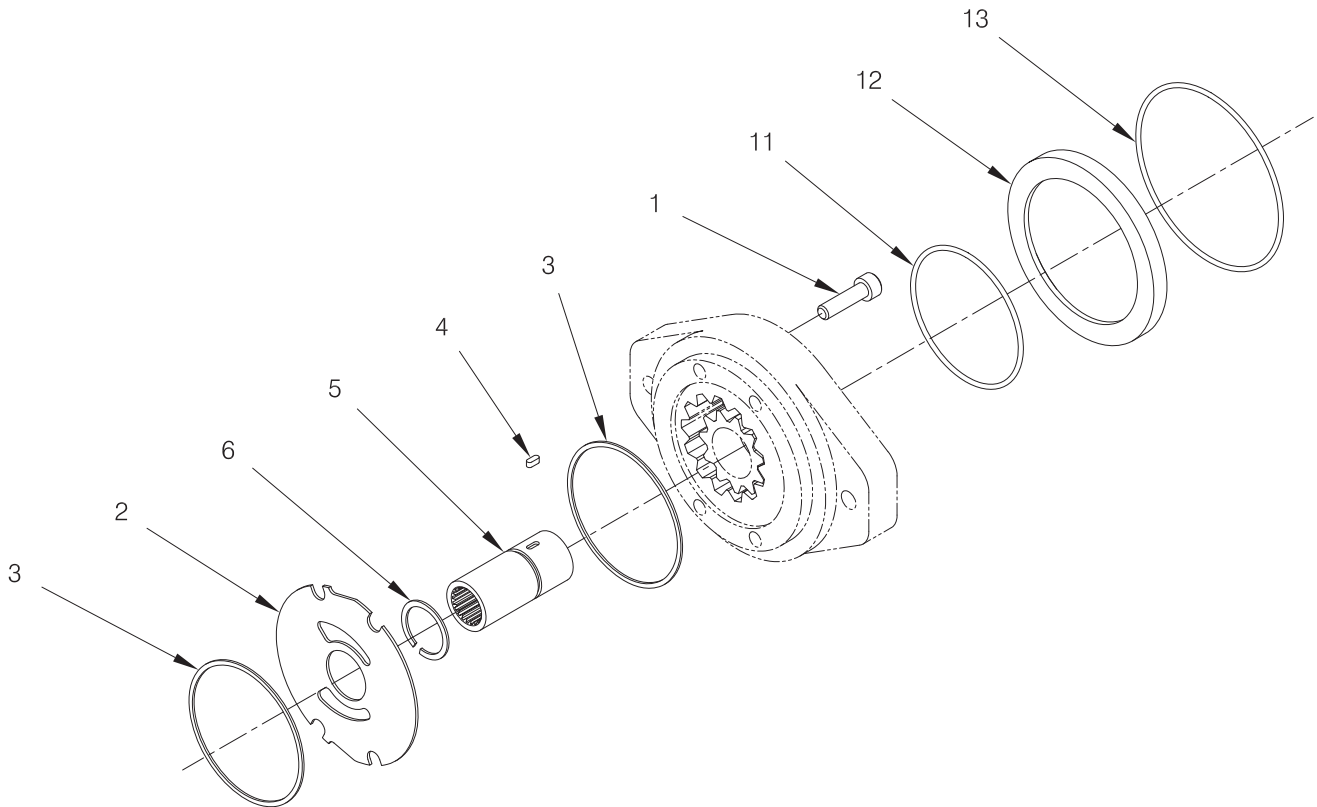
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2311591	Control Manifold Assembly	1				
1	2311590	. Manifold - Control	1	3	242230	. Fitting	4
2	2311592	. Valve, Brake	1	4	2307227W	. Valve, Shuttle	2
	252566	. . Seal Kit	1	6	235387	. Fitting	2

Through Drive Charge Pump

Caterpillar D3/4/5G (H4AH_Y_C17); H4AH_Z_C17)

(See Page 0-3 for serial number prefixes)

Caterpillar D4/5G (H4AH_Y_C18)

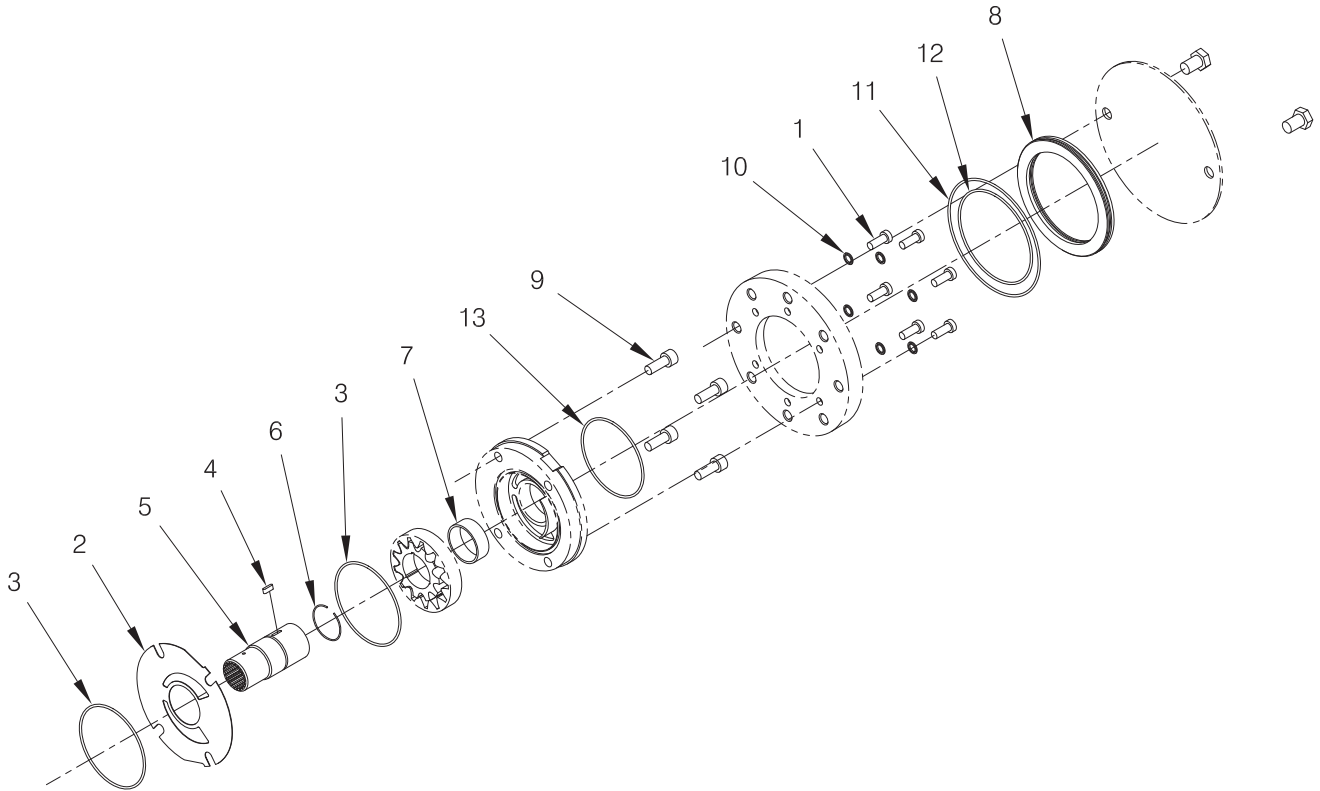


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2304212W	Pump, Through Drive Charge	1				
1	2304248W	. Capscrew	4	6	2304253W	. Ring, Retaining	1
2	2304249W	. Plate, Wear	1	11	118358W	. O-Ring	1
3	2304250W	. Ring, Quad	2	12	2304255W	. Ring, Centering	1
4	2304251W	. Key	1	13	39742W	. O-Ring	1
5	2304252W	. Coupling, Through Drive	1				

Through Drive Charge Pump

Caterpillar D4/5G (H4AH_Y_C18)

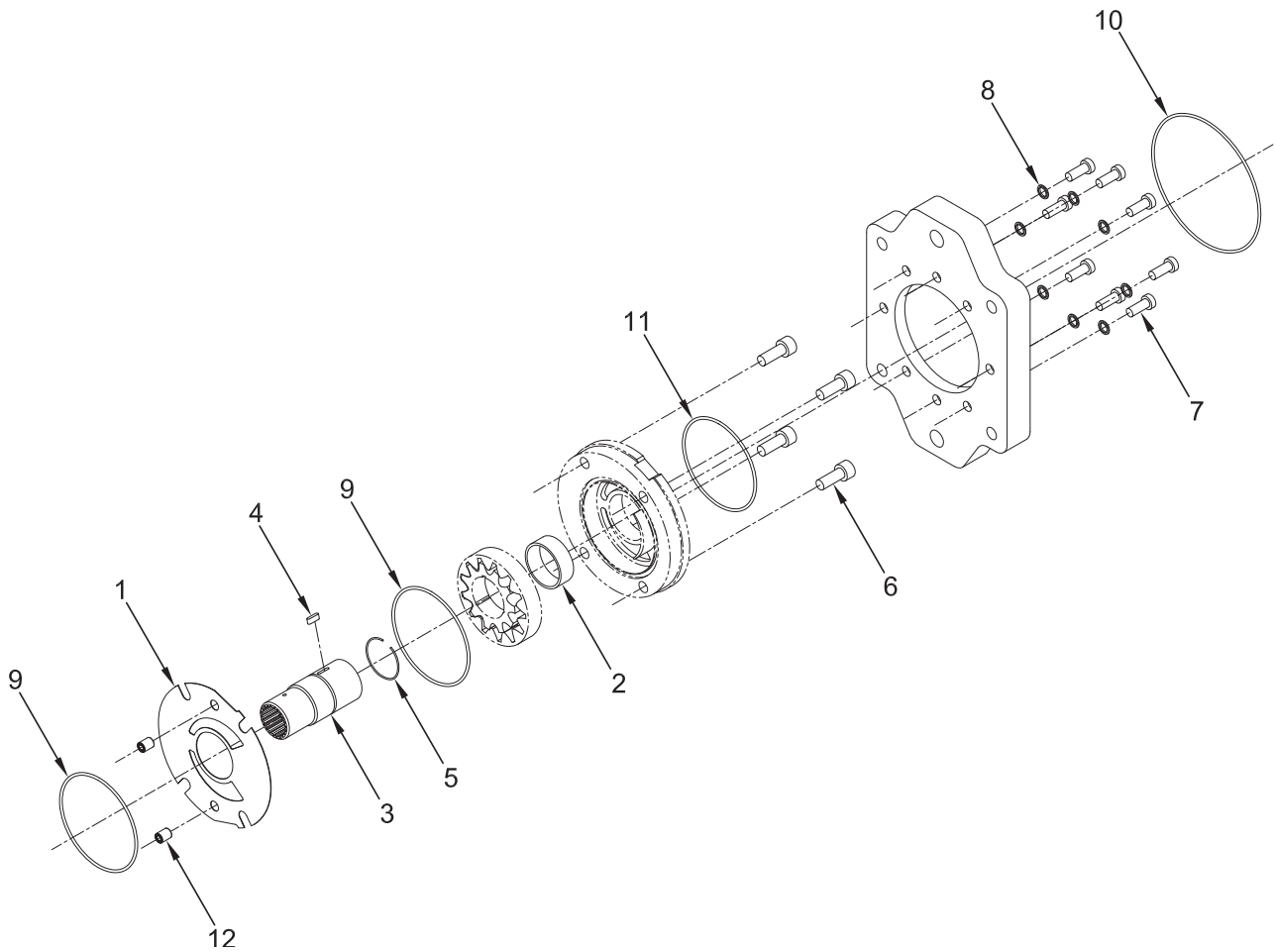
(See Page 0-3 for serial number prefixes)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2306258W	Pump, Through Drive Charge	1				
1	2306268W	. Capscrew	6	8	2306275W	. Ring, Centering	1
2	2306269W	. Plate, Wear	1	9	2306276W	. Capscrew	4
3	2306270W	. O-Ring	2	10	2306277W	. Ring, Seal	6
4	2306271W	. Key, Shaft	1	11	2306278W	. O-Ring	1
5	2306272W	. Shaft	1	12	2306279W	. O-Ring	1
6	2306273W	. Ring, Snap	1	13	2306280W	. O-Ring	1
7	2306274W	. Bushing, Bearing	1				

Through Drive Charge Pump

Caterpillar D5K (H4AH_Y_C20),
 Caterpillar D5K/K2 (H4AH_Y__C20),
 Caterpillar D5K2 with Fireplow (H4AH_Y__C201)

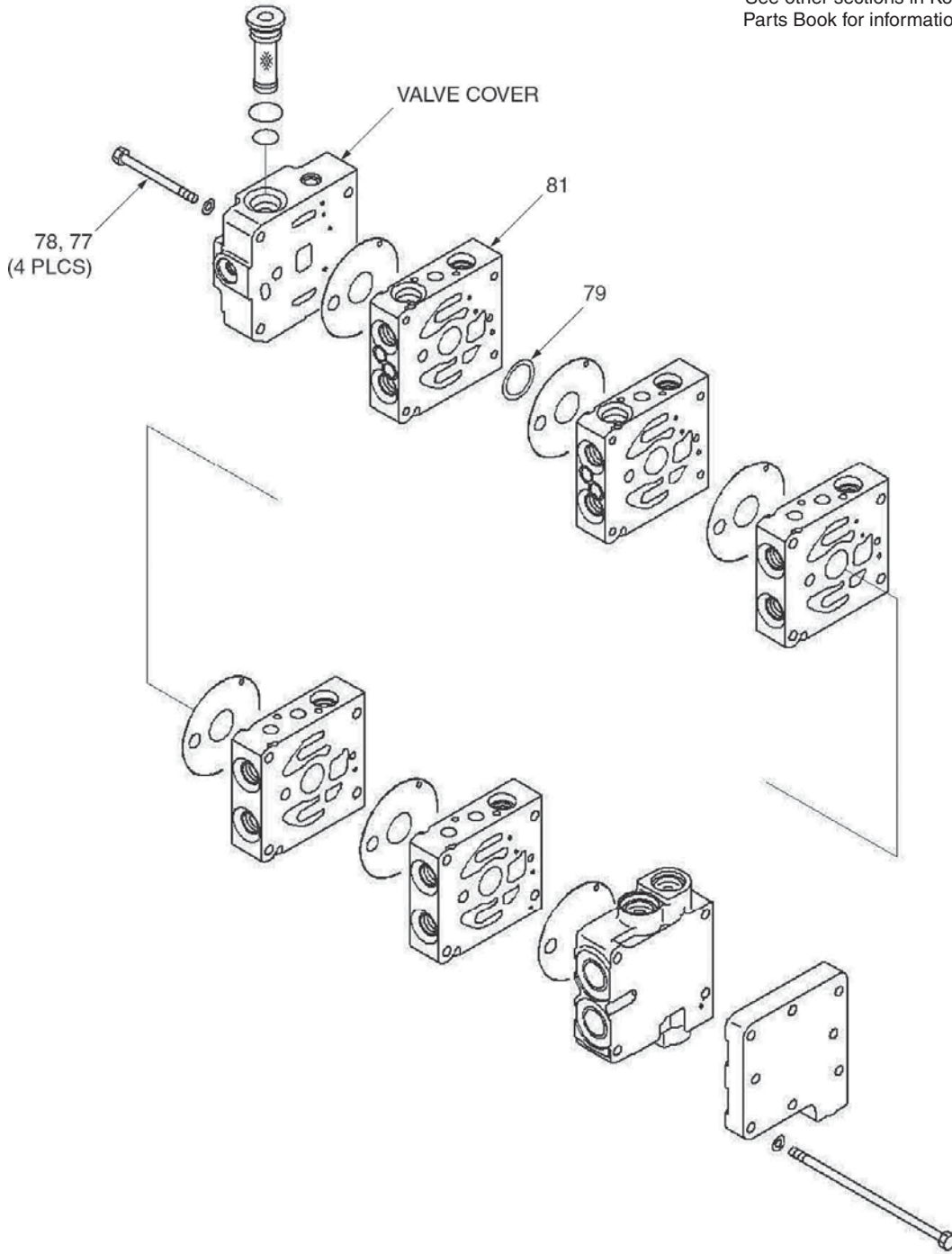


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2310872	Pump, Through Drive Charge	1				
1	2311186	. Plate, Wear	1	7	2311192	. Bolt, Socket Head	8
2	2311187	. Bushing, Coupling	1	8	2311193	. Seal, Bonded	8
3	2311188	. Coupling	1	9	2311194	. O-Ring	2
4	2311189	. Key, Shaft	1	10	2311195	. O-Ring	1
5	2311190	. Ring	1	11	2311196	. O-Ring	1
6	2311191	. Bolt, Socket Head	4	12	2311197	. Plug, Locating	2

4 to 5 Spool Valve Conversion

Non Ripper Equipped Models Only*
 Komatsu D31/37/39X-22 (H4AT_Y__K13)

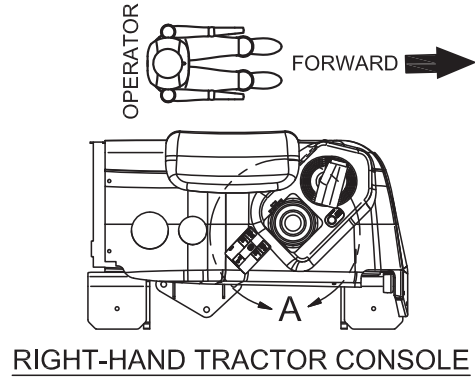
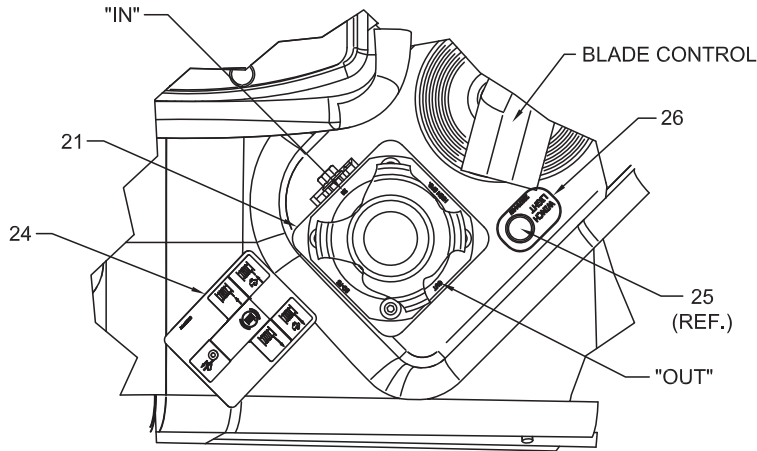
*See other sections in Komatsu
 Parts Book for information.



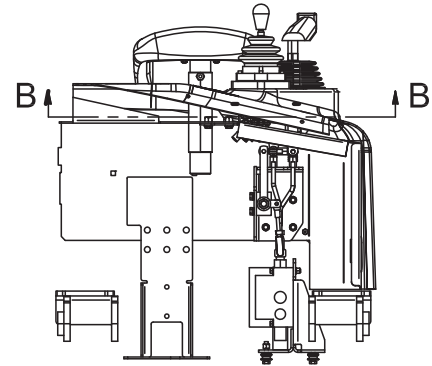
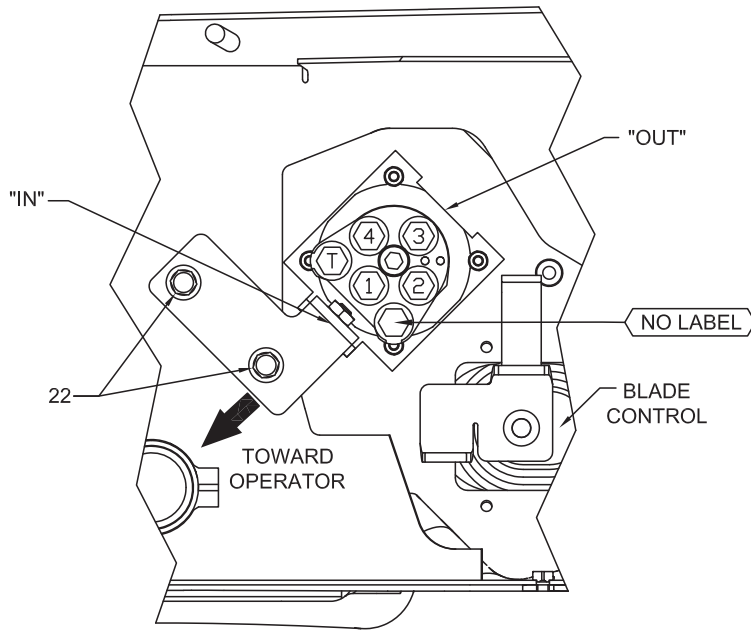
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
77	R13813295	Capscrew	4	79	2311041	Ring	4
78	296418W	Washer	4	81	2311036	Assembly, Valve	1

Control Lever Mounting

Case 650/750/850K, 750/850L (H4AH_R__R15)



DETAIL A
CONTROL LEVER INSTALLATION



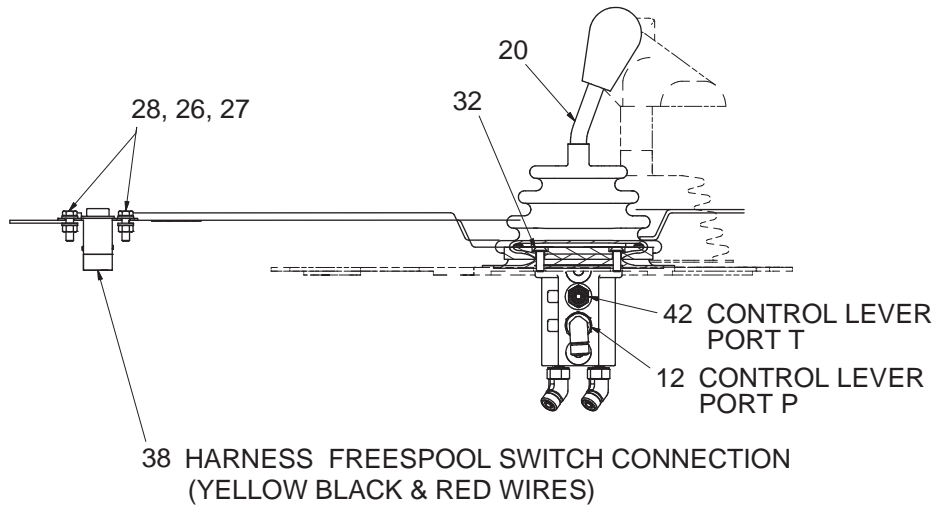
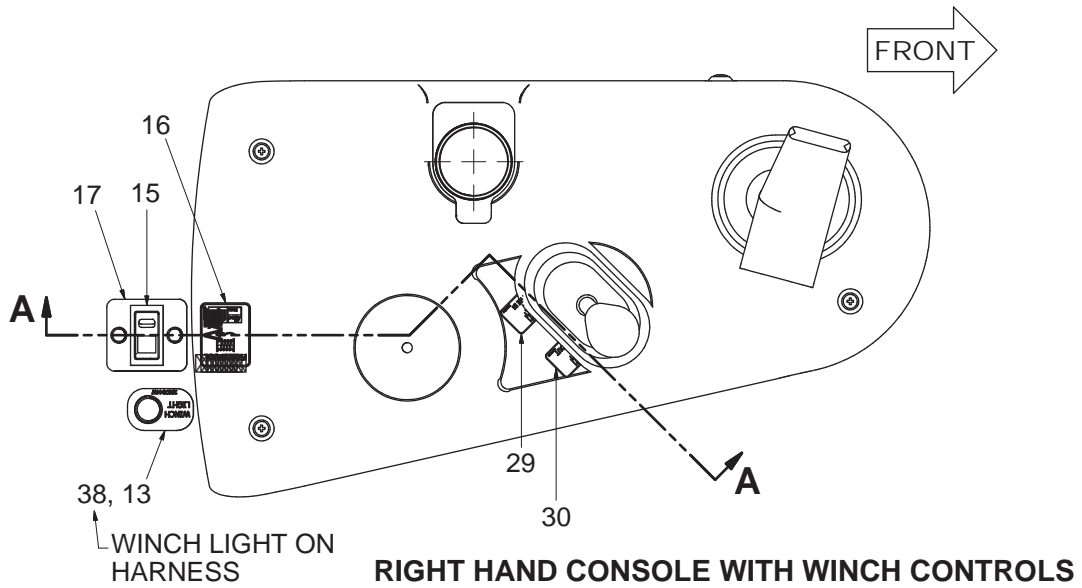
SECTION B-B
HOSE INSTALLATION AT HANDLEVER
VIEW FROM UNDER CONSOLE LOOKING
AT BOTTOM OF HANDLEVER ASSEMBLY

LEVER PORT	FUNCTION
④	FREESPOOL
Ⓣ	TANK
NO LABEL	SUPPLY
②	MOTOR SPEED
③	LINE-OUT (X1)
①	LINE-IN (X2)

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
21	2311203	Assembly, Control Lever (See 3-151)	1	25	2311315	Assembly, Wiring	1
22	2303609W	Screw	2	26	2307944W	Decal, Winch Light	1
24	2305579W	Decal, Winch Control	1				

Control Lever Mounting

Case 650L (H4AH_R__R16)

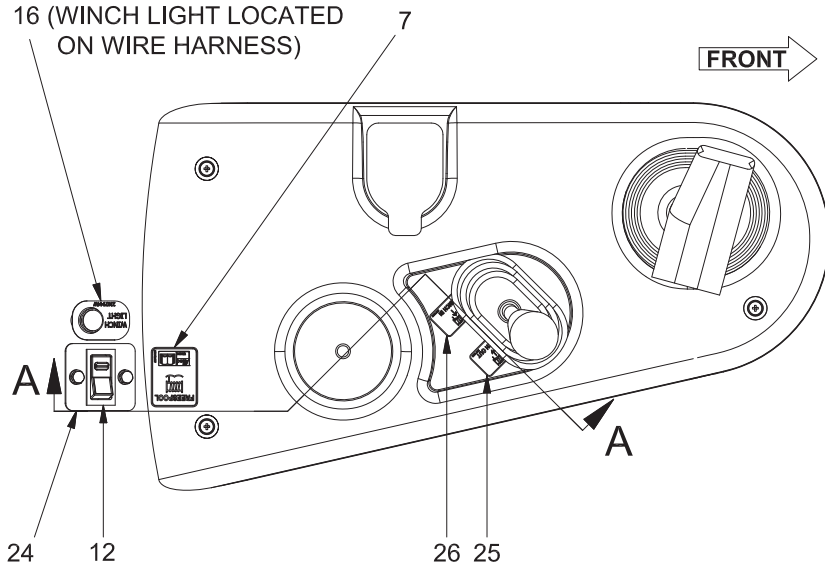


SECTION A-A CONTROL LEVER & SWITCH MOUNTING

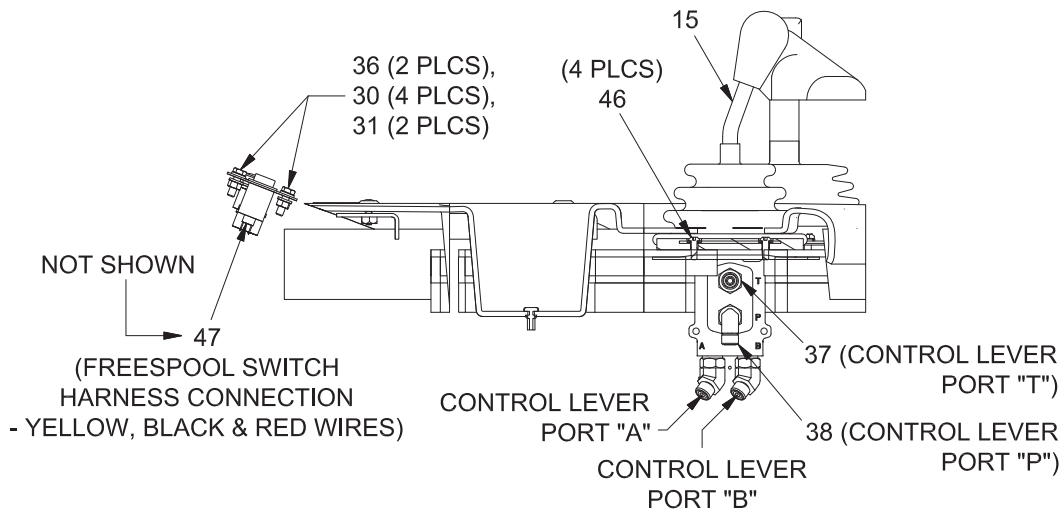
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
12	R833253	Fitting	1	28	292501W	Capscrew	2
13	2307944W	Decal, Winch Light	1	29	2307121W	Decal, Winch In	1
15	2310017	Assembly, 12V Switch (See 3-159)	1	30	2307122W	Decal, Winch Out	1
16	2307924W	Decal, Switch Panel	1	32	296159W	Capscrew	4
17	2307643W	Plate, Switch Mounting	1	38	2312888	Harness, Wire	1
20	*a 2312879	Control Lever Assembly (3-153)	1	42	*a R833103	Fitting	1
20	*b 2315738	Control Lever Assembly (3-156)	1	42	*b 231439	Fitting	1
26	296417W	Washer	2				
27	292653W	Nut	2				
				*a	Last used on H4A-1420		
				*b	First used on H4A-1421		

Control Lever Mounting

Case 750/850M (H4AH_R__R17)



RIGHT CONSOLE WITH WINCH CONTROLS



SECTION A-A
CONTROL LEVER & SWITCH MOUNTING

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
7	2307924W	Decal, Switch Panel	1	31	292653W	Nut	2
12	2310013	Assembly, Switch - 24V (3-158)	1	36	292501W	Capscrew	2
15	*a 2312879	Assembly, Control Lever (3-153)	1	37	*a R833103	Fitting	1
15	*b 2315738	Assembly, Control Lever (3-156)	1	37	*b 231439	Fitting	1
16	2307944W	Decal, Winch Light	1	38	R833253	Fitting	1
24	2307643W	Plate, Switch Mounting	1	46	296159W	Capscrew	4
25	2307122W	Decal, Winch Out	1	47	2315122	Harness, Wire	1
26	2307121W	Decal, Winch In	1				
30	296417W	Washer	4				
				*a	Last used on H4A-1420		
				*b	First used on H4A-1421		

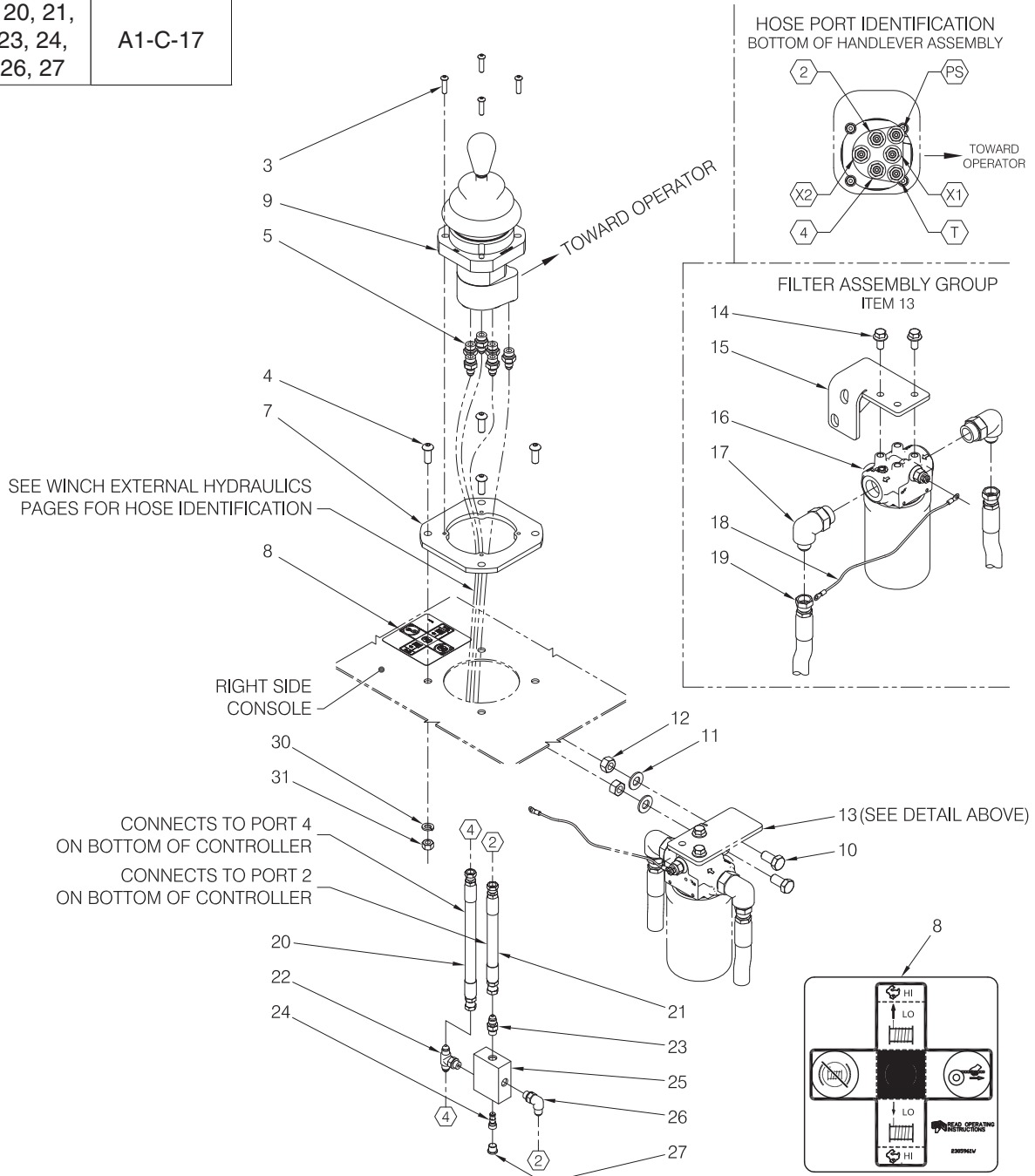
Control Lever Mounting

Caterpillar D3/4/5G (H4AH_Y_C17)

Last Used on S/N H4A-1014

Page 1 of 2

Parts Service Gram	
Item	Gram
8, 9, 20, 21, 22, 23, 24, 25, 26, 27	A1-C-17



Control Lever Mounting

Caterpillar D3/4/5G (H4AH_Y__C17)

Last Used on S/N H4A-1014

Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
3	18723W	Capscrew	4		2305132W	. . Head, Filter	1
4	18738W	Capscrew	4		2304112W	. . Element, Filter	1
5	17753W	Fitting	6		2304862W	. . Switch, Pressure	1
6a	*a 2306150W	Label	1	17	138811W	. Fitting	2
6b	*a 2306151W	Label	1	18	2305714W	. Wire, Filter	1
6c	*a 2306152W	Label	1	19	2304237W	. Assembly, Hose	2
6d	*a 2306153W	Label	1	20	2305962W	Assembly, Hose	1
6e	*a 2306154W	Label	1	21	280256W	Assembly, Hose	1
6f	*a 2306155W	Label	1	22	16574W	Fitting	1
7	2304207W	Plate, Control Adapter	1	23	16538W	Fitting	1
8	2305961W	Decal	1	24	2304195W	Valve, Shuttle	1
9	2305074W	Assembly, Control Lever	1		2305073W	. Kit, Seal	1
10	16829W	Capscrew	2	25	2305960W	Manifold	1
11	15135W	Washer	2	26	16556W	Fitting	1
12	221711W	Nut	2	27	222442W	Fitting	1
13	2306023W	Assembly, Filter Bracket	1	30	15156W	Washer	4
14	134803W	. Capscrew	2	31	221707W	Nut	4
15	2304223W	. Bracket	1				
16	2304111W	. Assembly, Filter	1				

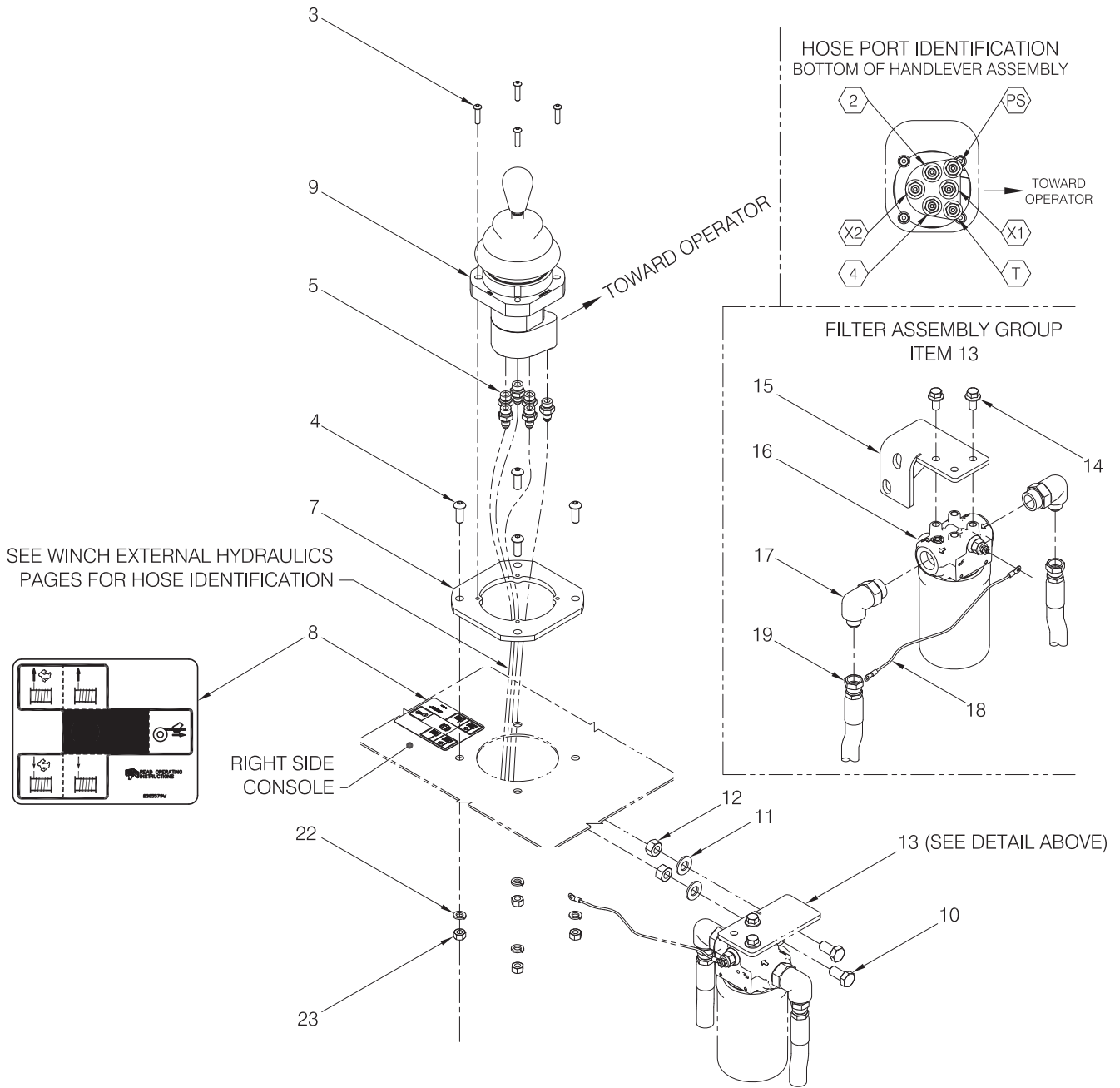
*a Used for hose end identification, not illustrated

Control Lever Mounting

Caterpillar D3/4/5G (H4AH_Y_C17), D4/5G (H4AH_Y_C18)

Used on S/N H4A-1015 through H4A-1161

Page 1 of 2



Control Lever Mounting

Caterpillar D3/4/5G (H4AH_Y_C17), D4/5G (H4AH_Y_C18)
Used on S/N H4A-1015 through H4A-1161

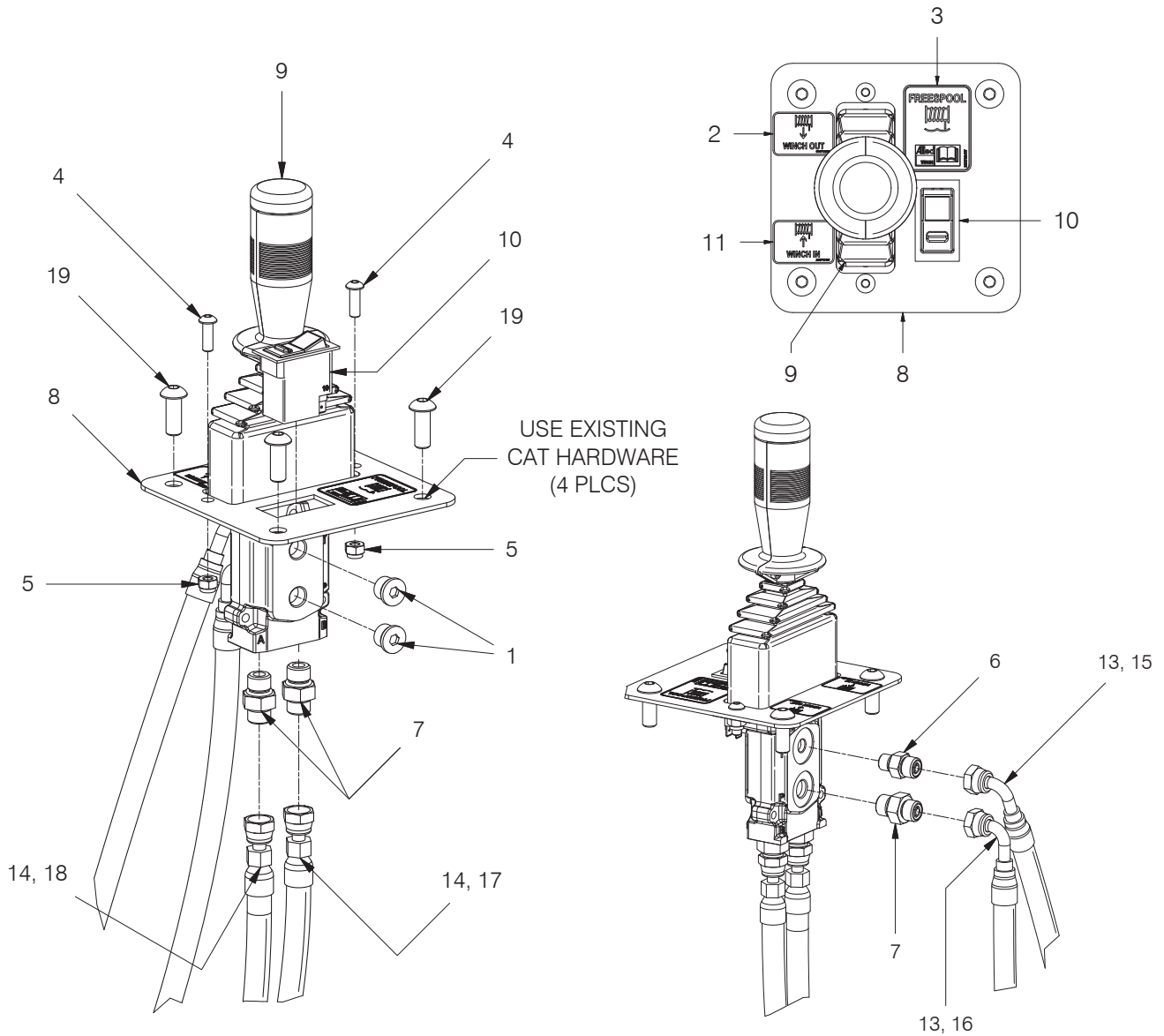
Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
3	18723W	Capscrew	4	13	2306023W	Assembly, Filter	1
4	18738W	Capscrew	4	14	134803W	. Capscrew	2
5	17753W	Fitting	6	15	2304223W	. Bracket	1
6a	*a 2306150W	Label	1	16	2305713W	. Assembly, Filter	1
6b	*a 2306151W	Label	1		2305132W	. . Head, Filter	1
6c	*a 2306152W	Label	1		2304112W	. . Element, Filter	1
6d	*a 2306153W	Label	1		2305712W	. . Switch, Pressure	1
6e	*a 2306154W	Label	1	17	138811W	. Fitting	2
6f	*a 2306155W	Label	1	18	2305714W	. Wire, Filter	1
7	2304207W	Plate, Control Adapter	1	19	2304237W	. Assembly, Hose	2
8	2305579W	Decal	1	22	15156W	Washer	4
9	2306025W	Assembly, Control Lever	1	23	221707W	Nut	4
10	16829W	Capscrew	2				
11	15135W	Washer	2				
12	221711W	Nut	2				

*a Used for hose end identification, not illustrated

Control Lever Mounting

Caterpillar D3/4/5G (H4AH_Y_C17), D4/5G (H4AH_Y_C18)
 First Used on S/N H4A-1162

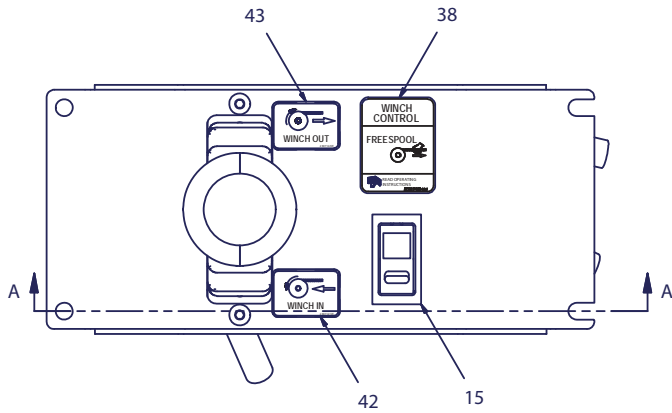


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2311752	Assembly, Handlever	1				
1	229383W	. Fitting	2	10	2310017	. Assembly, Switch (See 3-159)	1
2	2307122W	. Decal, Winch Out	2	11	2307121W	. Decal, Winch In	1
3	2307924W	. Decal, Switch Panel	1	13	2311198	. Assembly, Hose	2
4	18720W	. Capscrew	2	14	2311492	. Assembly, Hose	2
5	15113W	. Nut	2	15	2306151W	. Label - T	1
6	231439	. Fitting	1	16	2306152W	. Label - PS	1
7	R833103	. Fitting	3	17	2306154W	. Label - X2	1
8	2311751	. Plate, Handlever Mounting	1	18	2306155W	. Label - X1	1
9	2310929	. Control Lever (See 3-152)	1	19	18738W	Capscrew	4

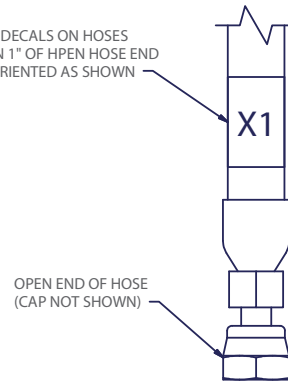
Control Lever Mounting

Caterpillar D3/4K (H4AH_Y_C19)

Last Used on S/N H4A-1161

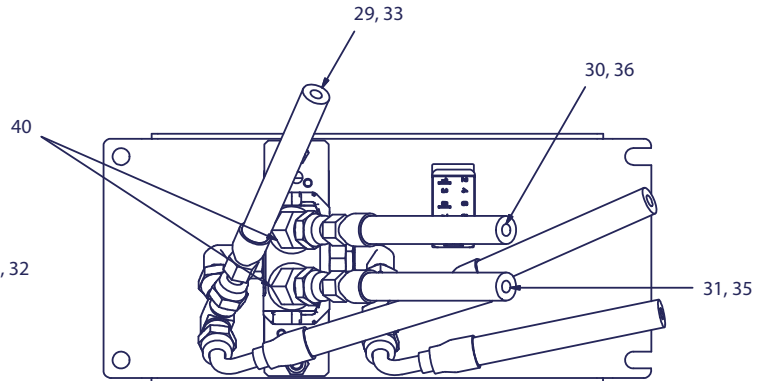
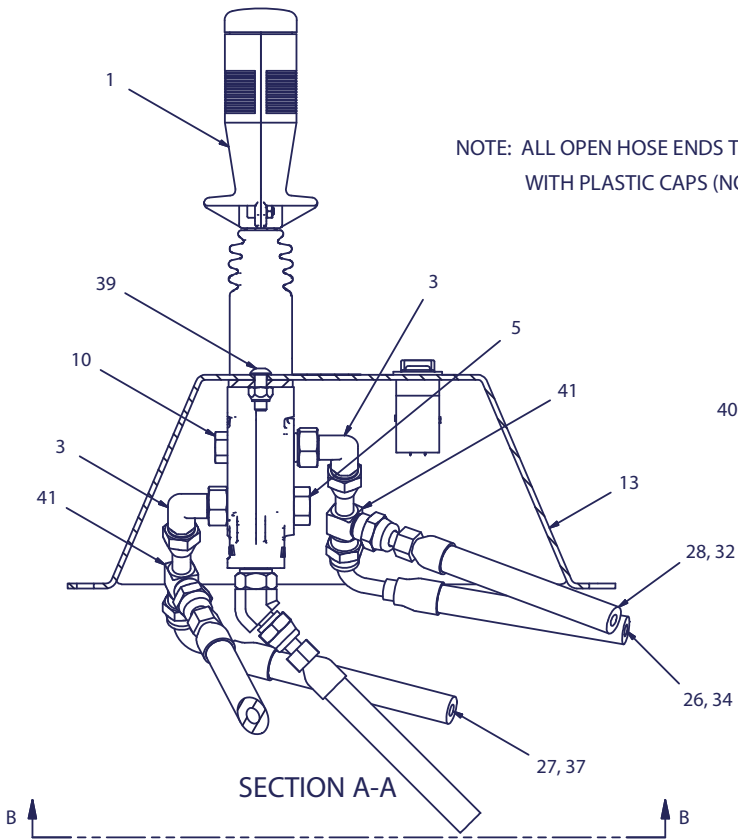


PLACE DECALS ON HOSES WITHIN 1" OF OPEN HOSE END AND ORIENTED AS SHOWN



HOSE DECAL PLACEMENT

NOTE: ALL OPEN HOSE ENDS TO BE PLUGGED WITH PLASTIC CAPS (NOT SHOWN)



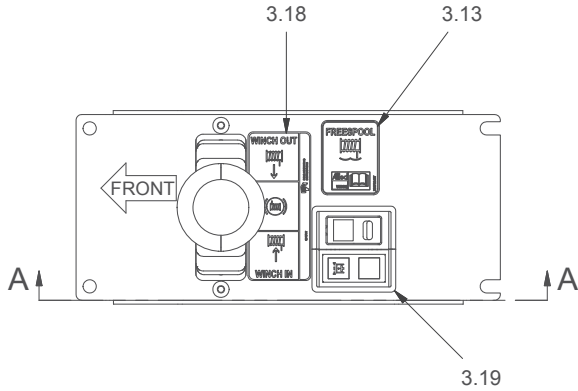
VIEW B-B

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2311490	Assembly, Handlever	1				
1	2310929	. Handlever, Pilot Controller (3-152)	1	32	2306151W	. Label - T	1
3	R833253	. Fitting	2	33	2306152W	. Label - PS	1
5	212762	. Fitting	1	34	2306153W	. Label - 2	1
10	209423	. Fitting	1	35	2306154W	. Label - X2	1
13	2310970	. Bracket, Handlever	1	36	2306155W	. Label - X1	1
15	2310017	. Assembly, Switch (See 3-159)	1	37	2311034	. Label - 3	1
16	15113W	. Nut	2	38	2307924W	. Decal, Switch Panel	1
26	2311022	. Assembly, Hose - Pilot Drain	1	39	18720W	. Capscrew	2
27	2311023	. Assembly, Hose - Freespool Pilot	1	40	R833201	. Fitting	2
28	2311024	. Assembly, Hose - Pilot Drain	1	41	236855	. Fitting	2
29	2311493	. Assembly, Hose - Pilot Supply	1	42	2307121W	. Decal, Winch In	1
30	2311492	. Assembly, Hose, X1	1	43	2307122W	. Decal, Winch Out	1
31	2311491	. Assembly, Hose, X2	1				

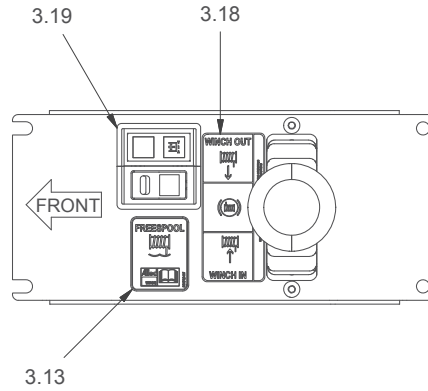
Control Lever Mounting

Caterpillar D3/4K/K2 (H4AH_Y_C19)

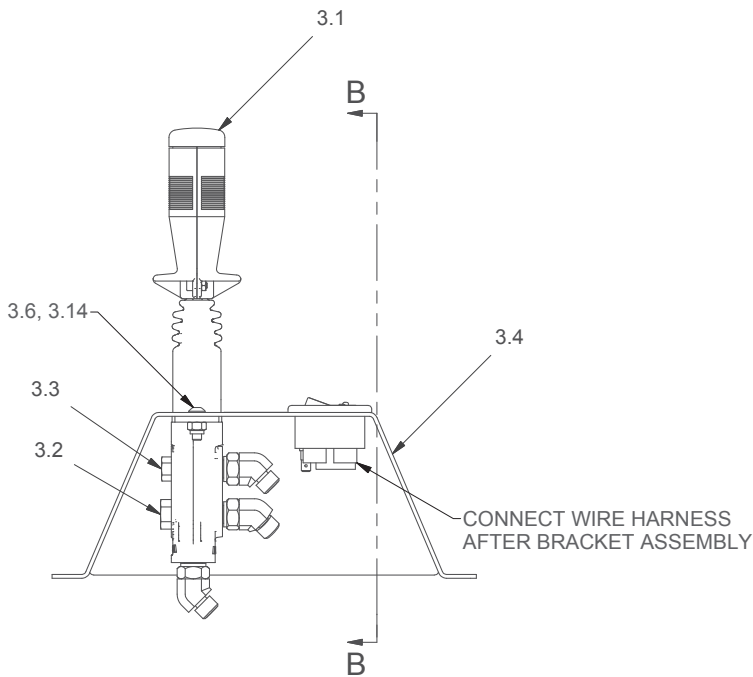
Used on S/N H4A-1162 - H4A-1435



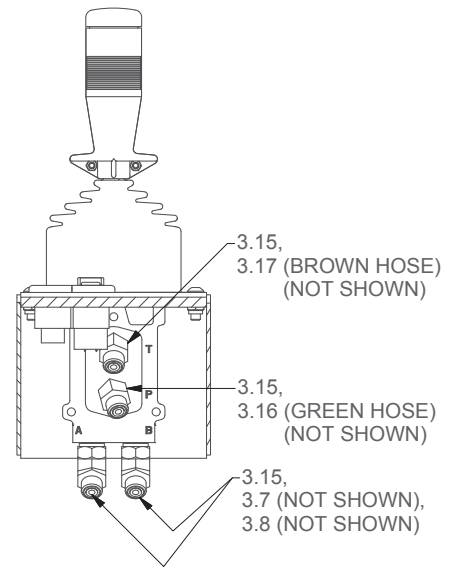
D3/4K CONTROL LEVER CONSOLE



D3/4K2 CONTROL LEVER CONSOLE



SECTION A-A
CONTROL LEVER COMPONENTS



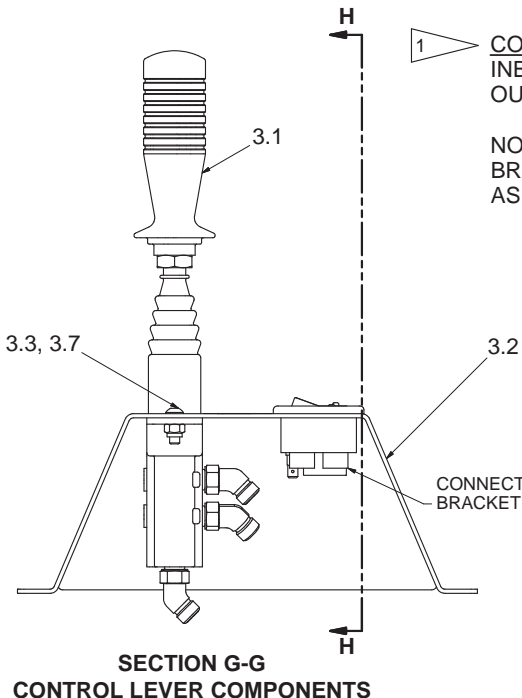
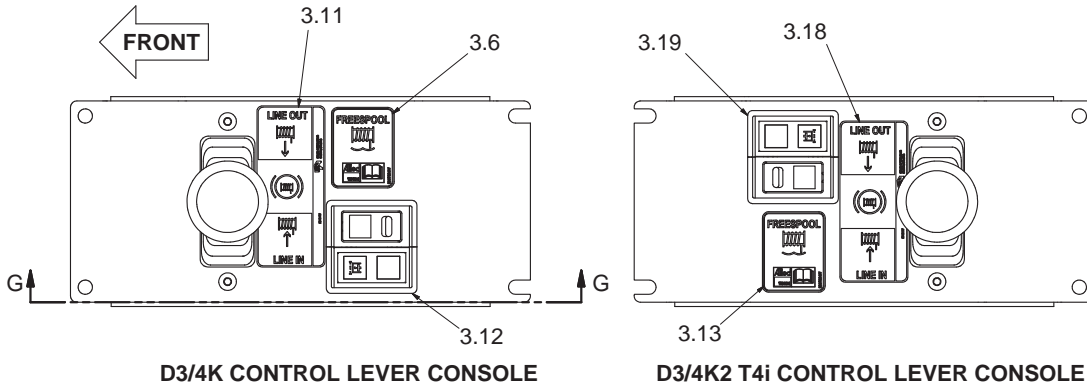
SECTION B-B
CONTROL LEVER HOSE CONNECTIONS

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
3.1	2310929	Control Lever (See 3-152)	1	3.14	18720W	Capscrew	2
3.2	212762	Fitting	1	3.15	R833201	Fitting	4
3.3	209423	Fitting	1	3.16	2311493	Hose Assembly - Pilot Supply	1
3.4	2310970	Bracket	1	3.17	2311024	Hose Assembly - Drain	1
3.6	15113W	Nut	2	3.18	2312177	Decal, Winch In, Winch Out	1
3.7	2311492	Hose Assembly - X1	1	3.19	2314321	Assembly, Filter Light Switch (3-160)	1
3.8	2311491	Hose Assembly - X2	1	3.20	2304988W	Kit, Various Color Tie Strap	1
3.13	2307924W	Decal, Switch Panel	1				

Control Lever Mounting

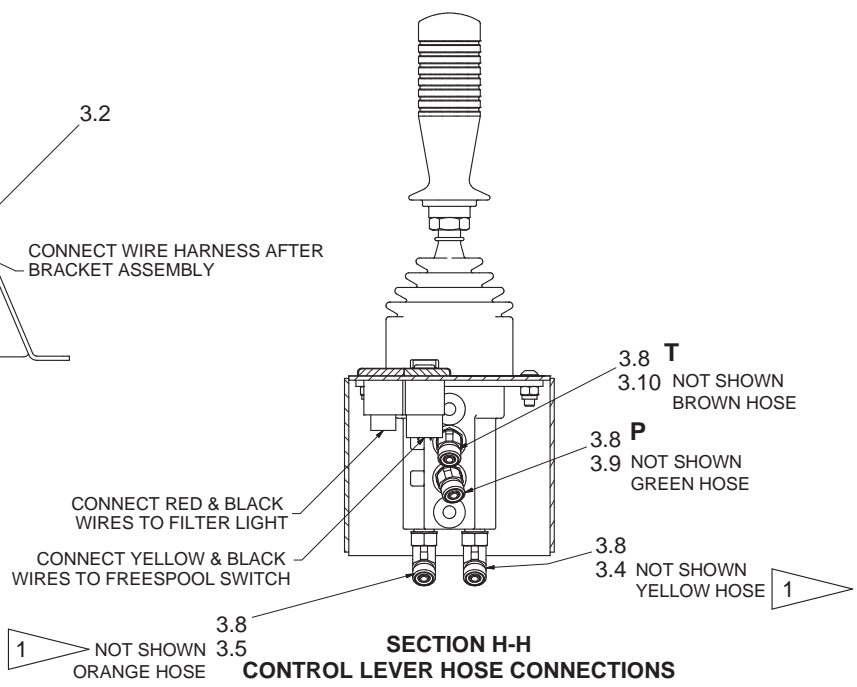
Caterpillar D3/4K/K2 (H4AH_Y_C19)

First Used on S/N H4A-1436



CONTROL LEVER HOSE CONNECTIONS
 INBOARD PORT = YELLOW HOSE TO PUMP X1
 OUTBOARD PORT = ORANGE HOSE TO PUMP X2

NOTE: D3/4K2 T4i TRACTORS REQUIRE CONTROL LEVER BRACKET TO BE ROTATED 180° FROM D3/4K ORIENTATION, AS SHOWN. CONTROL LEVER ASSEMBLY IS OTHERWISE IDENTICAL.

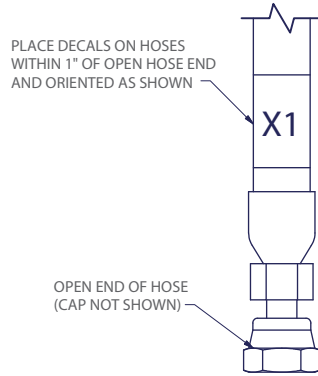
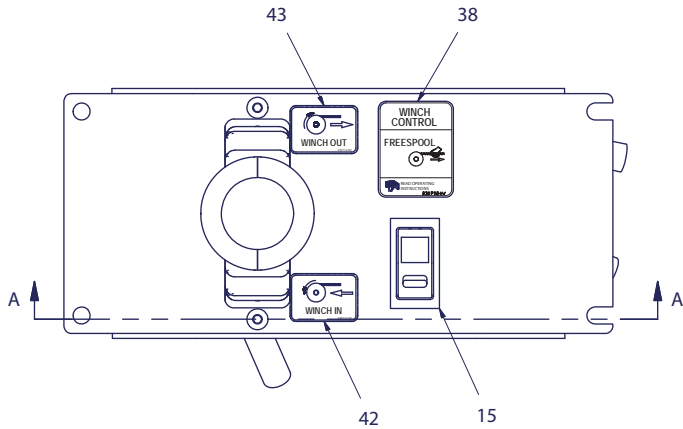


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
3.1	2315561	Control Lever	1	3.8	R833200	Fitting	4
3.2	2315755	Bracket	1	3.9	2311493	Hose Assembly - Pilot Supply	1
3.3	15113W	Locknut	2	3.10	2311024	Hose Assembly - Drain	1
3.4	2311492	Hose Assembly - X1	1	3.11	2312177	Decal, Winch In, Winch Out	1
3.5	2311491	Hose Assembly - X2	1	3.12	2314321	Assembly, Filter Light Switch (3-160)	1
3.6	2307924W	Decal, Switch Panel	1	3.13	2304988W	Kit, Various Color Tie Strap	1
3.7	18720W	Capscrew	2				

Control Lever Mounting

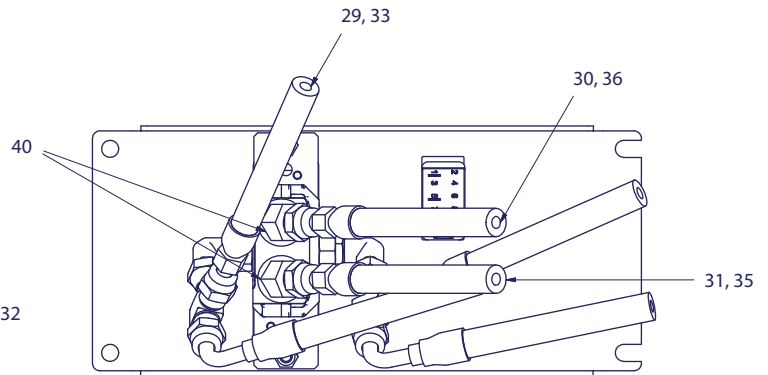
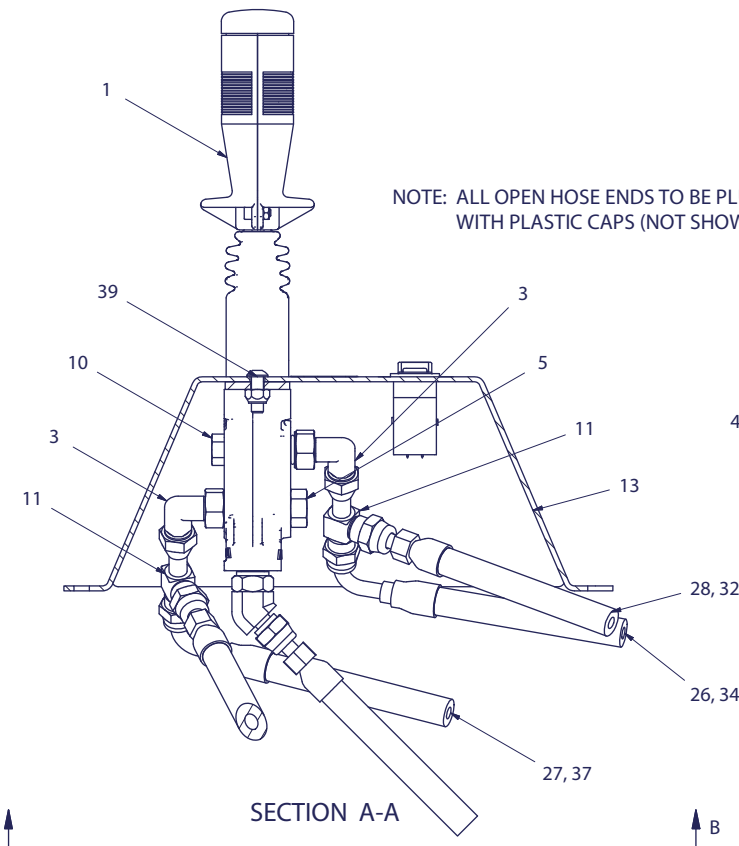
Caterpillar D5K (H4AH_Y__C20)

Last Used on S/N H4A-1161



HOSE DECAL PLACEMENT

NOTE: ALL OPEN HOSE ENDS TO BE PLUGGED WITH PLASTIC CAPS (NOT SHOWN)



VIEW B-B

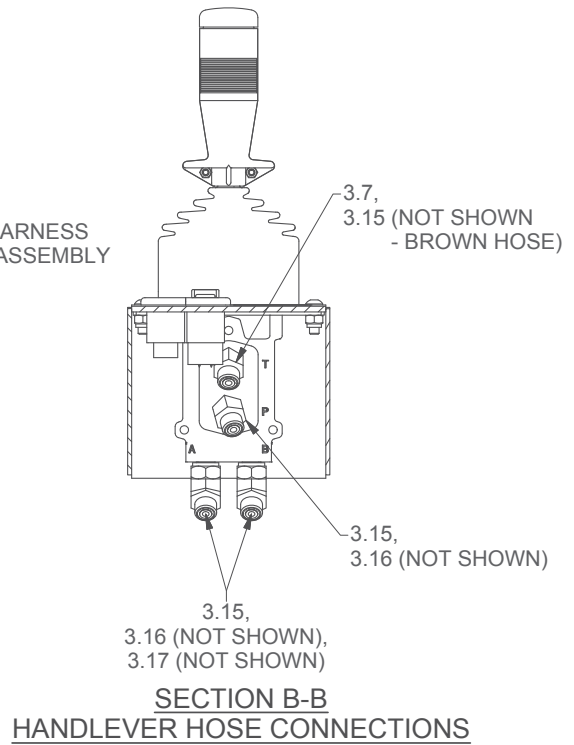
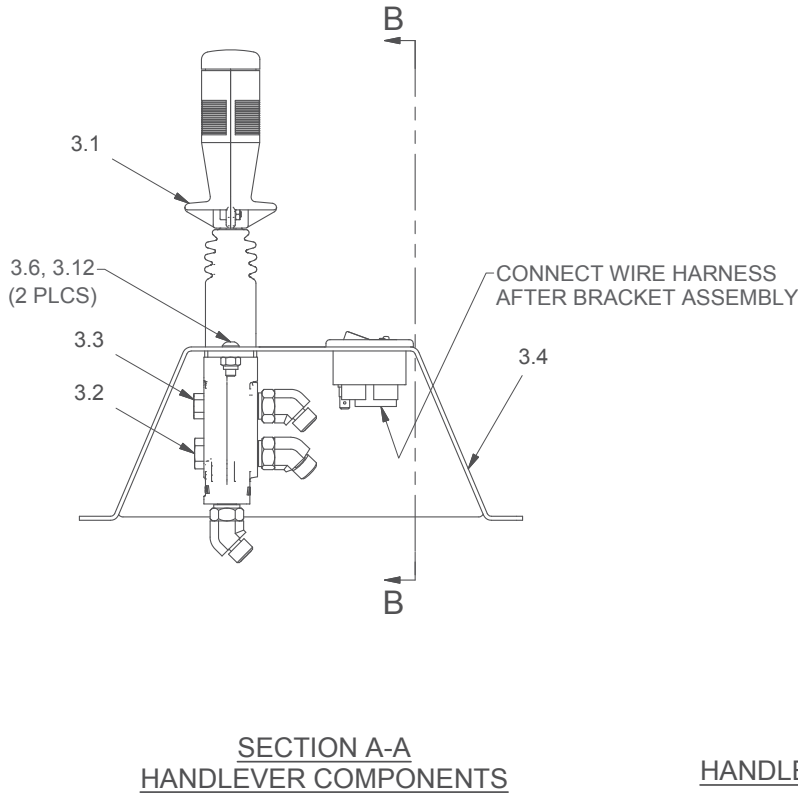
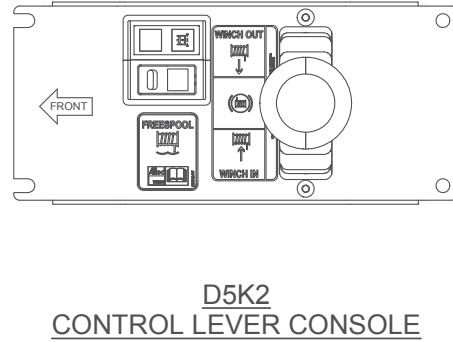
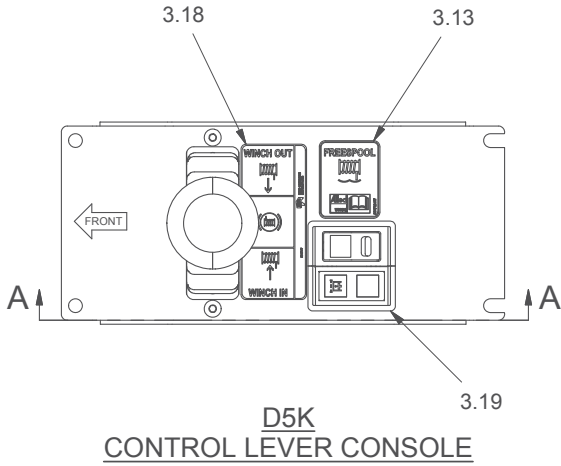
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2311396	Assembly, Control Lever	1				
1	2310929	. Control Lever (See 3-152)	1	32	2306151W	. Label - T	1
3	R833253	. Fitting	2	33	2306152W	. Label - PS	1
5	212762	. Fitting	1	34	2306153W	. Label - 2	1
10	209423	. Fitting	1	35	2306154W	. Label - X2	1
11	236855	. Fitting	2	36	2306155W	. Label - X1	1
13	2310970	. Bracket, Control Lever	1	37	2311034	. Label - 3	1
15	2310017	. Assembly, Switch (See 3-159)	1	38	2307924W	. Decal, Switch Panel	1
16	15113W	. Nut	2	39	18720W	. Capscrew	2
26	2311022	. Assembly, Hose - Pilot Drain	1	40	R833201	. Fitting	2
27	2311023	. Assembly, Hose - Freespool Pilot	1	42	2307121W	. Decal, Winch In	1
28	2311024	. Assembly, Hose - Pilot Drain	1	43	2307122W	. Decal, Winch Out	1
29	*a 2311395	. Assembly, Hose - Pilot Supply	1				
30	2311026	. Assembly, Hose, X1	1				
31	2311027	. Assembly, Hose, X2	1				

*a First Used on S/N H4A-1116

Control Lever Mounting

Caterpillar D5K/K2 (H4AH_Y__C20)

Used on S/N H4A-1162 - H4A-1483



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
3.1	2310929	Control Lever (See 3-152)	1	3.15	R833201	Fitting	4
3.2	212762	Fitting	1	3.16	2312328	Assembly, Hose	2
3.3	209423	Fitting	1	3.17	2311027	Assembly, Hose	1
3.4	2310970	Bracket, Control Lever	1	3.18	2312177	Decal, Winch In/Winch Out	1
3.6	15113W	Nut	2	3.19	2314321	Assembly, Filter Light Switch(3-160)	1
3.7	2311024	Assembly, Hose - Drain	1	3.20	*a 2304988W	Kit, Various Color Tie Strap	1
3.12	18720W	Capscrew	2				
3.13	2307924W	Decal, Switch Panel	1		*a	Not Illustrated	

Control Lever Mounting

Caterpillar D5K/K2 (H4AH_Y_C20)

First Used on S/N H4A-1484

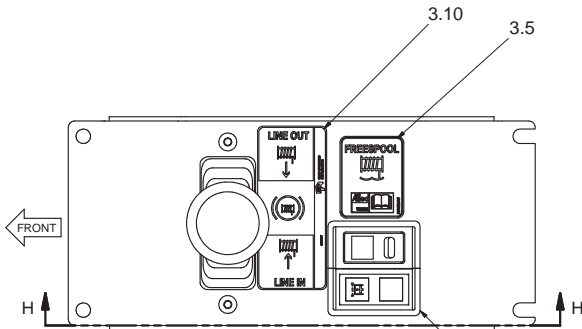


FIGURE G
D5K CONTROL LEVER CONSOLE

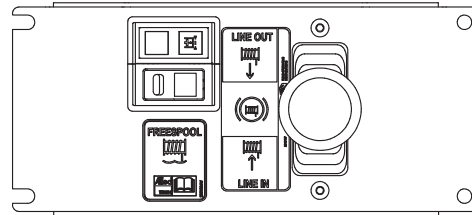
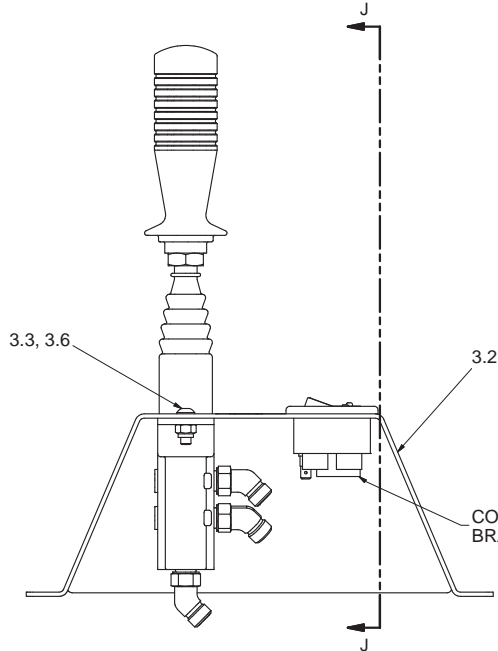
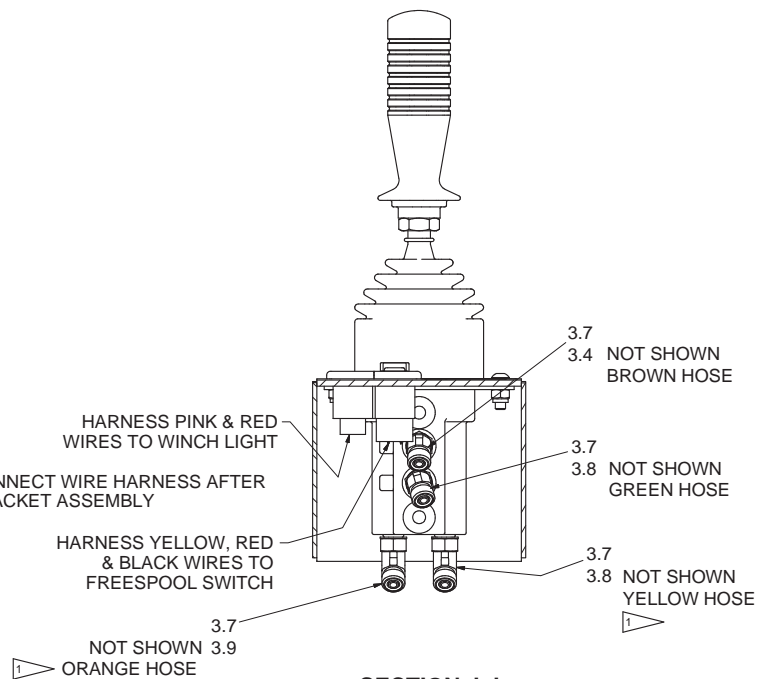


FIGURE K
D5K2 T4i CONTROL LEVER CONSOLE



SECTION H-H
CONTROL LEVER COMPONENTS



SECTION J-J
CONTROL LEVER HOSE CONNECTIONS

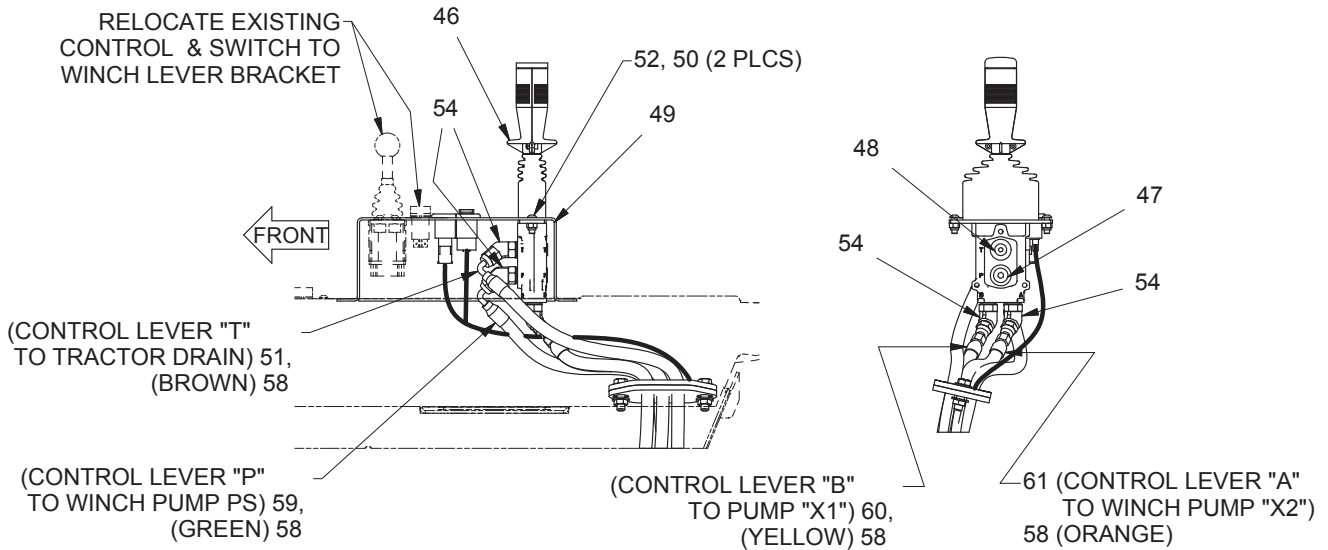
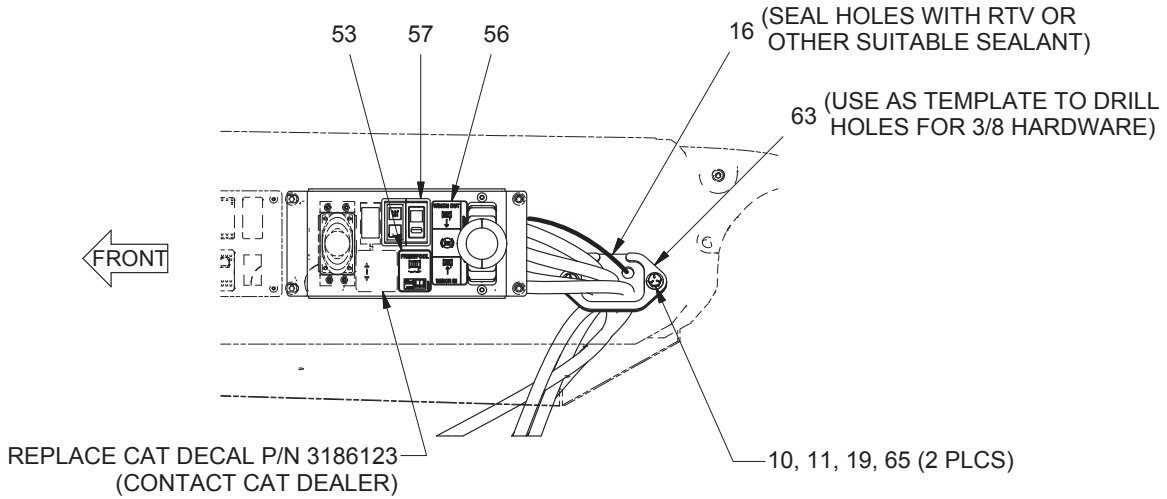
1 CONTROL LEVER HOSE CONNECTIONS
INBOARD PORT = YELLOW HOSE TO PUMP X1
OUTBOARD PORT = ORANGE HOSE TO PUMP X2

NOTE: D5K2 T4i TRACTORS REQUIRE CONTROL LEVER BRACKET TO BE ROTATED 180° FROM D5K ORIENTATION, AS SHOWN. CONTROL LEVER ASSEMBLY IS OTHERWISE IDENTICAL.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
3.1	2315561	Control Lever	1	3.9	2311027	Hose Assembly	1
3.2	2315755	Bracket	1	3.10	2312177	Decal, Winch In/Winch Out	1
3.3	15113W	Locknut	2	3.11	2314321	Assembly, Filter Light Switch (3-160)	1
3.4	2311024	Hose Assembly	1	3.12	*a 2304988W	Kit, Various Color Tie Strap	1
3.5	2307924W	Decal, Switch Panel	1				
3.6	18720W	Capscrew	2		*a	Not Illustrated	
3.7	R833200	Fitting	4				
3.8	2312328	Hose Assembly	2				

Control Lever Mounting

Caterpillar D5K2 With Fireplow (H4AH_Y__C201)



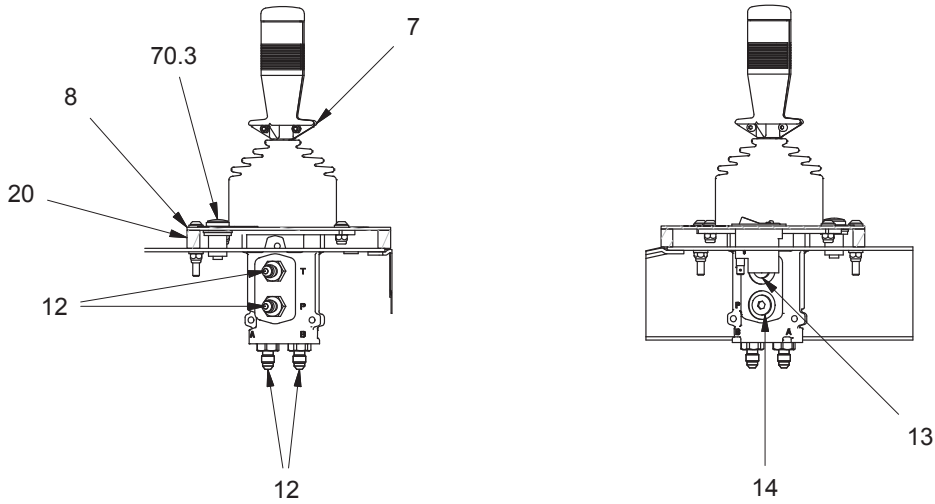
WINCH CONTROLS INSTALLATION

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
10	16828W	Capscrew	2	54	R833201	Fitting	4
11	15134W	Washer	4	56	2312177	Decal, Winch In/Winch Out	1
16	2314873	Seal, Top - Left Hand Side	1	57	2314321	Assembly, Filter Light Switch (3-160)	1
19	15086W	Nut	2	58	2304988W	Kit, Various Color Tie Strap (Not Shown)	1
46	2310929	Control Lever (See 3-152)	1	59	*a	Assembly, Hose	1
47	229383	Fitting	1	60	*a	Assembly, Hose	1
48	235387	Fitting	1	61	*a	Assembly, Hose	1
49	2314856	Bracket, Control Lever	1	63	2307226W	Cover	1
50	15113W	Nut	2	65	2312119	Spacer	2
51	2314904	Assembly, Hose	1				
52	18720W	Capscrew	2				
53	2307924W	Decal, Switch Panel	1				
				*a	Consult the Factory		

Control Lever Mounting

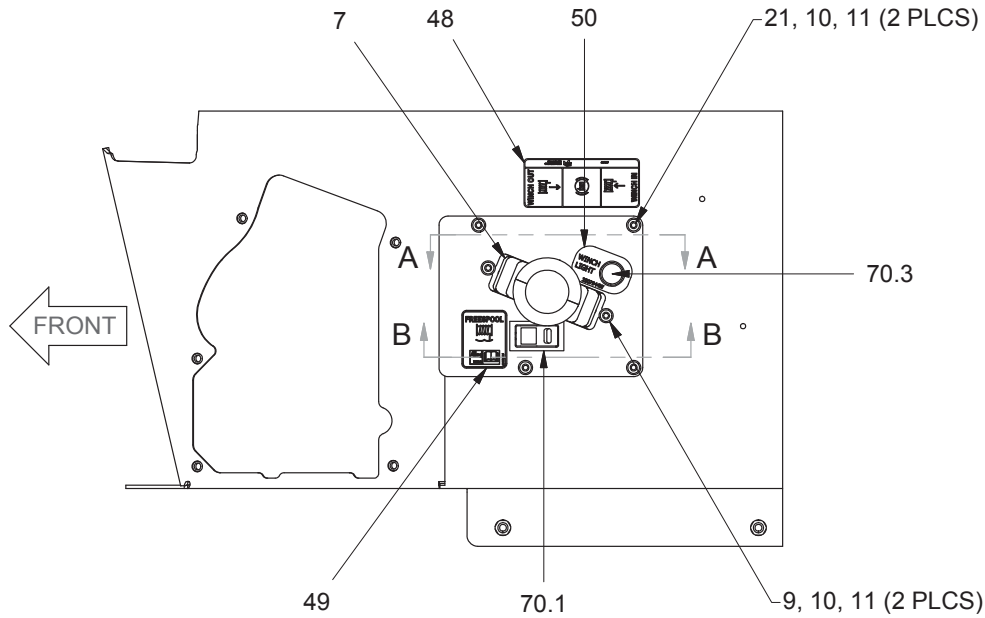
John Deere 450-650J (H4AH_R_E15)

Last Used on S/N H4A-1439



SECTION A-A
CONTROL LEVER AND SWITCH MOUNTING

SECTION B-B
CONTROL LEVER PORT PLUGS



WINCH CONTROLS MOUNTING
TOP VIEW

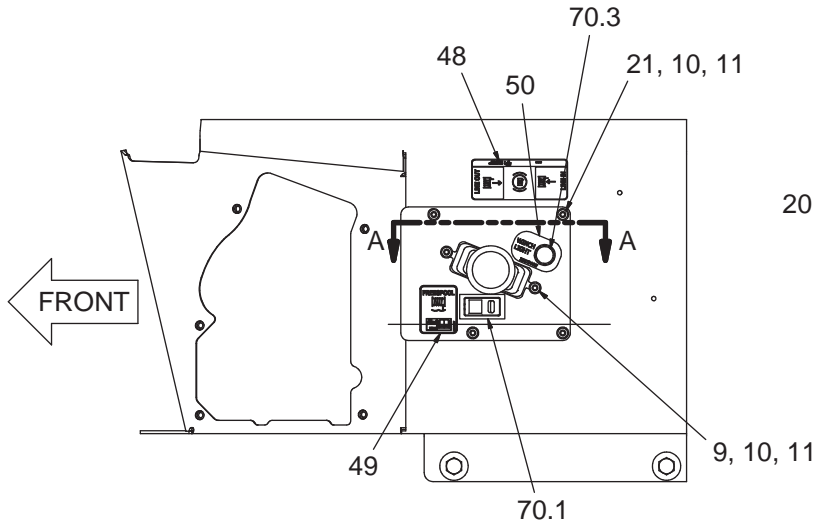
CONSOLE ALTERATION & CONTROL LEVER INSTALLATION 450-650J (E15)

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
7	2310929	Lever, Control (See 3-152)	1	20	2314426	Spacer, Control Mounting	1
8	2314424	Plate, Control Mounting	1	21	2305199W	Capscrew	4
9	296159W	Capscrew	2	48	2312177	Decal, Winch In, Winch Out	1
10	296417W	Washer	4	49	2307924W	Decal, Switch Panel	1
11	302399W	Nut	6	50	2307944W	Decal, Winch Light	1
12	223929	Fitting	4	70.1	2310017	Assembly, Switch (See 3-159)	1
13	235387	Fitting	1	70.3	2311314	Assembly, Bypass LED	1
14	229383	Fitting	1				

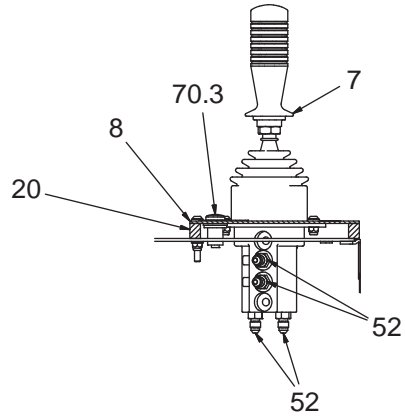
Control Lever Mounting

John Deere 450-650J (H4AH_R__E15)

First Used on S/N H4A-1440



WINCH CONTROLS MOUNTING
TOP VIEW

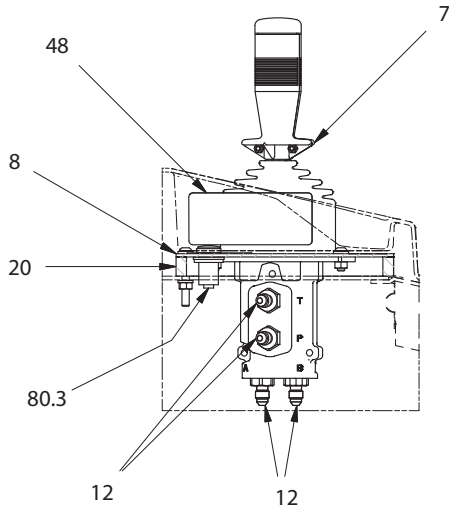


SECTION A-A
CONTROL LEVER AND SWITCH MOUNTING

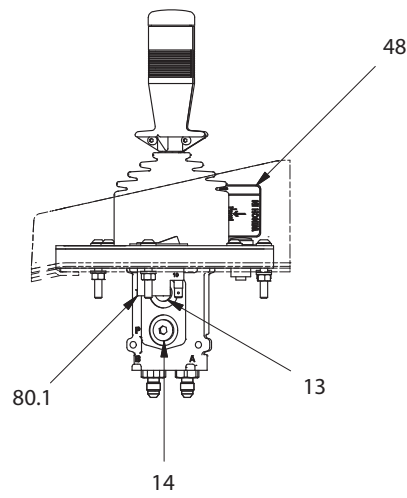
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
7	2315561	Lever, Control	1	48	2312177	Decal, Winch In, Winch Out	1
8	2515770	Plate, Control Mounting	1	49	2307924W	Decal, Switch Panel	1
9	296159W	Capscrew	2	50	2307944W	Decal, Winch Light	1
10	296417W	Washer	4	52	209083	Fitting	4
11	302399W	Nut	6	70.1	2310017	Assembly, Switch (See 3-159)	1
20	2314426	Spacer, Control Mounting	1	70.3	2311314	Assembly, Bypass LED	1
21	2305199W	Capscrew	4				

Control Lever Mounting

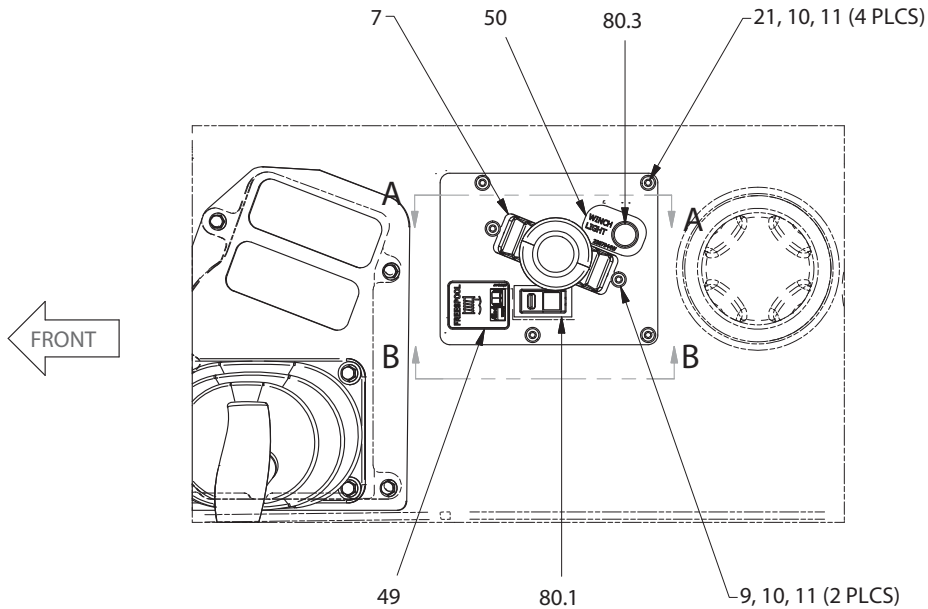
John Deere 550-650K (H4AH_R_E16)
Last Used on S/N H4A-1439



SECTION A-A
CONTROL LEVER AND SWITCH MOUNTING



SECTION B-B
CONTROL LEVER PORT PLUGS



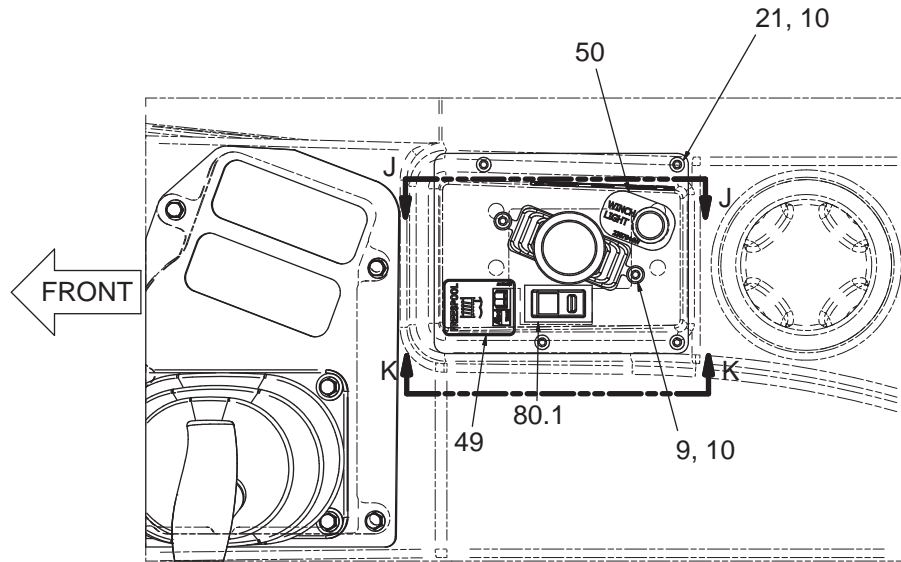
WINCH CONTROLS MOUNTING
TOP VIEW

CONSOLE ALTERATION & CONTROL LEVER INSTALLATION 550-650K (E16)

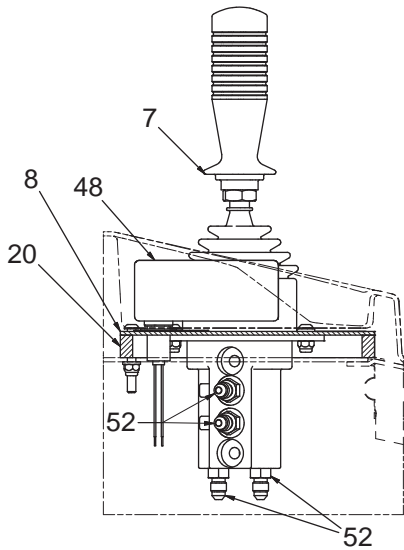
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
7	2310929	Lever, Control (See 3-152)	1	20	2314426	Spacer, Control Mounting	1
8	2314424	Plate, Control Mounting	1	21	2305199W	Capscrew	4
9	296159W	Capscrew	2	48	2312177	Decal, Winch In, Winch Out	1
10	296417W	Washer	6	49	2307924W	Decal, Switch Panel	1
11	302399W	Nut	6	50	2307944W	Decal, Winch Light	1
12	223929	Fitting	4	80.1	2310013	Assembly, Switch (See 3-158)	1
13	235387	Fitting	1	80.3	2303912W	Assembly, Bypass LED	1
14	229383	Fitting	1				

Control Lever Mounting

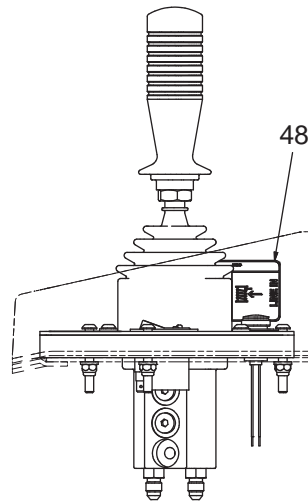
John Deere 550-650K (H4AH_R_E16)
 First Used on S/N H4A-1440



WINCH CONTROLS MOUNTING
 TOP VIEW



SECTION J-J
 CONTROL LEVER AND SWITCH MOUNTING



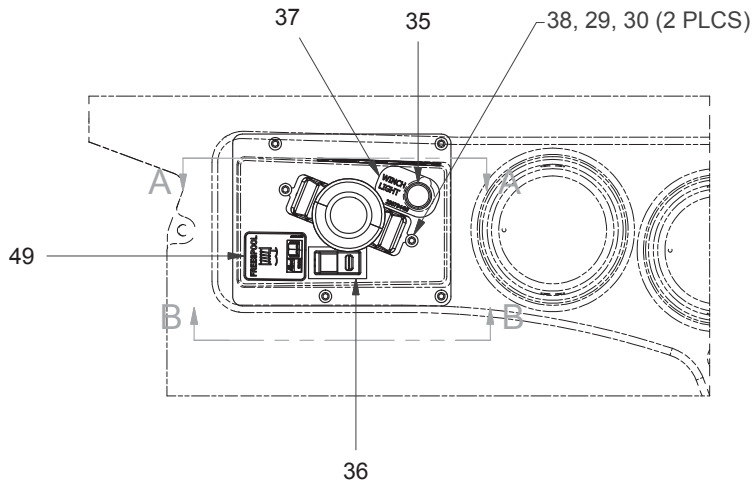
SECTION K-K
 CONTROL LEVER PORT PLUGS

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
7	2315561	Lever, Control	1	48	2312177	Decal, Winch In, Winch Out	1
8	2515770	Plate, Control Mounting	1	49	2307924W	Decal, Switch Panel	1
9	296159W	Capscrew	2	50	2307944W	Decal, Winch Light	1
10	296417W	Washer	4	52	209083	Fitting	4
11	302399W	Nut	6	80.1	2310013	Assembly, Switch (See 3-158)	1
20	2314426	Spacer, Control Mounting	1	80.3	2303912W	Assembly, Bypass LED	1
21	2305199W	Capscrew	4				

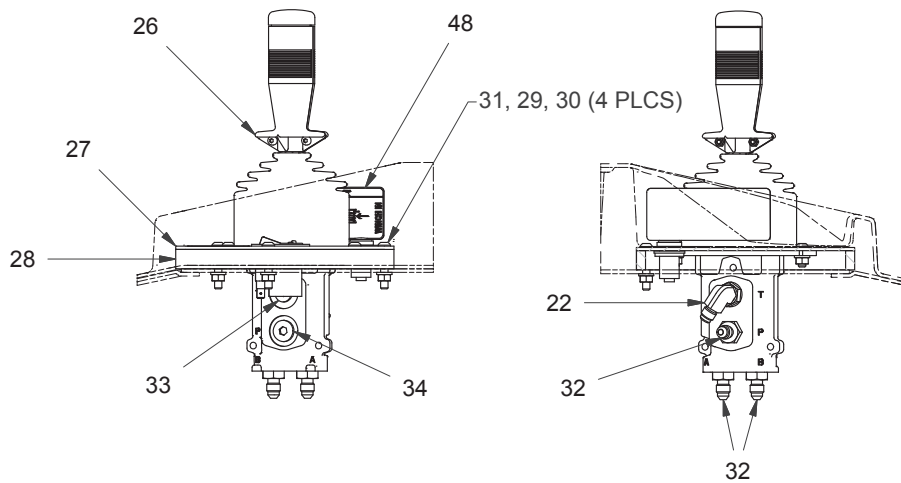
Control Lever Mounting

John Deere 700H/J (H4AH_R_E39)

Last Used on S/N H4A-1439



WINCH CONTROLS MOUNTING
TOP VIEW



SECTION B-B
CONTROL LEVER & SWITCH MOUNTING

SECTION A-A
CONTROL LEVER PORT FITTINGS

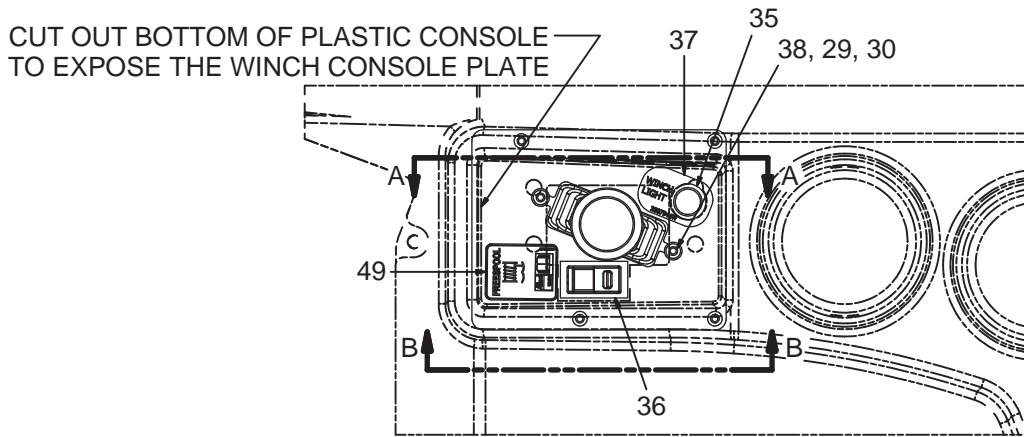
CONSOLE ALTERATION & CONTROL LEVER INSTALLATION

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
22	223784	Fitting	1	33	235387	Fitting	1
26	2310929	Control Lever (See 3-152)	1	34	229383	Fitting	1
27	2314424	Plate, Control Mounting	1	35	2303912W	Assembly, Bypass LED	1
28	2314426	Spacer, Control Mounting	1	36	2310013	Assembly, Switch (See 3-158)	1
29	292653W	Nut	6	37	2307944W	Decal, Winch Light	1
30	296417W	Washer	6	38	296159W	Capscrew	24
31	2315030	Capscrew	4	48	2312177	Decal, Winch In, Winch Out	1
32	223929	Fitting	3	49	2307924W	Decal, Switch Panel	1

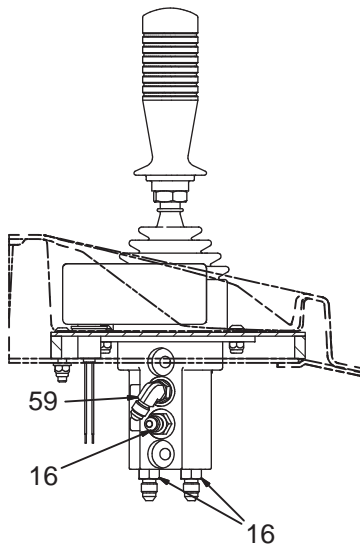
Control Lever Mounting

John Deere 700H/J (H4AH_R_E39)

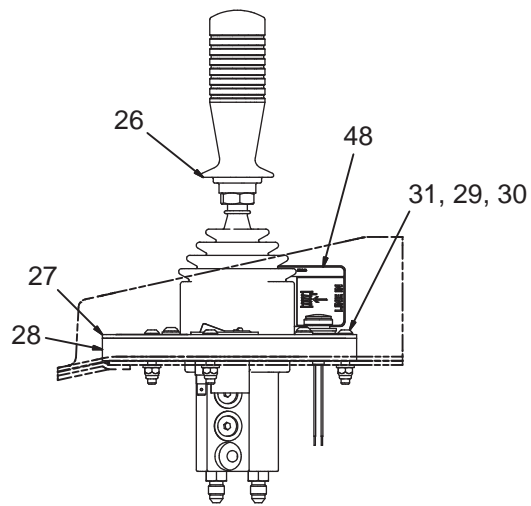
First Used on S/N H4A-1440



WINCH CONTROLS MOUNTING
TOP VIEW



SECTION A-A
CONTROL LEVER PORT FITTINGS



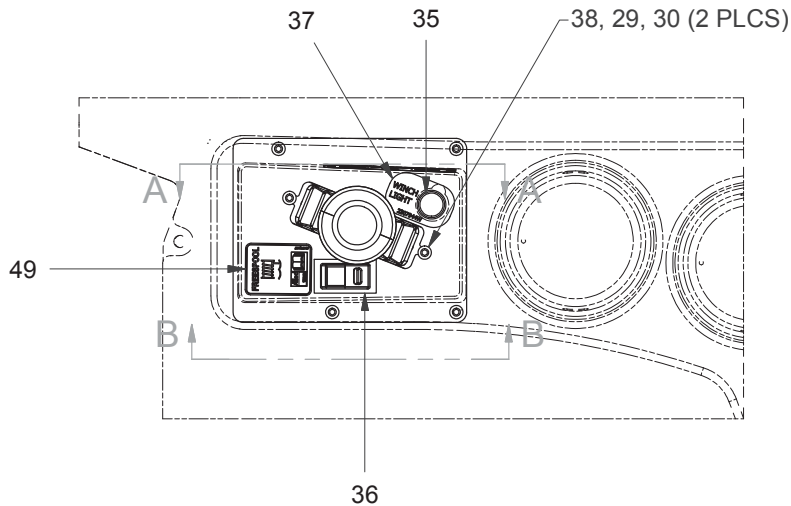
SECTION B-B
CONTROL LEVER & SWITCH MOUNTING

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
16	209083	Fitting	6	35	2303912W	Assembly, Bypass LED	1
26	2315561	Control Lever	1	36	2310013	Assembly, Switch (See 3-158)	1
27	2315770	Plate, Control Mounting	1	37	2307944W	Decal, Winch Light	1
28	2314426	Spacer, Control Mounting	1	38	296159W	Capscrew	24
29	302399W	Nut	6	48	2312177	Decal, Winch In, Winch Out	1
30	296417W	Washer	6	49	2307924W	Decal, Switch Panel	1
31	2315030	Capscrew	4	59	209486	Fitting	1

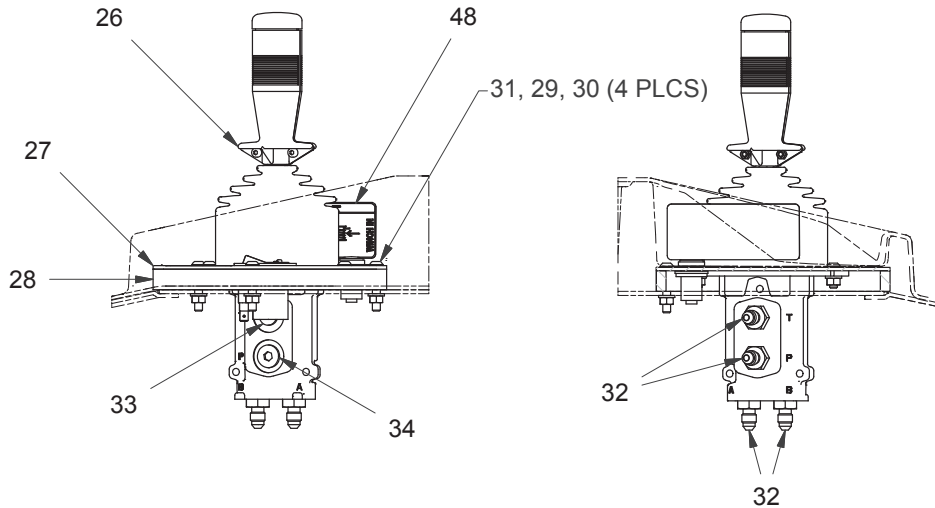
Control Lever Mounting

John Deere 700K (H4AH_R_E391)

Last Used on S/N H4A-1439



WINCH CONTROLS MOUNTING
TOP VIEW



SECTION B-B
CONTROL LEVER & SWITCH MOUNTING

SECTION A-A
CONTROL LEVER PORT FITTINGS

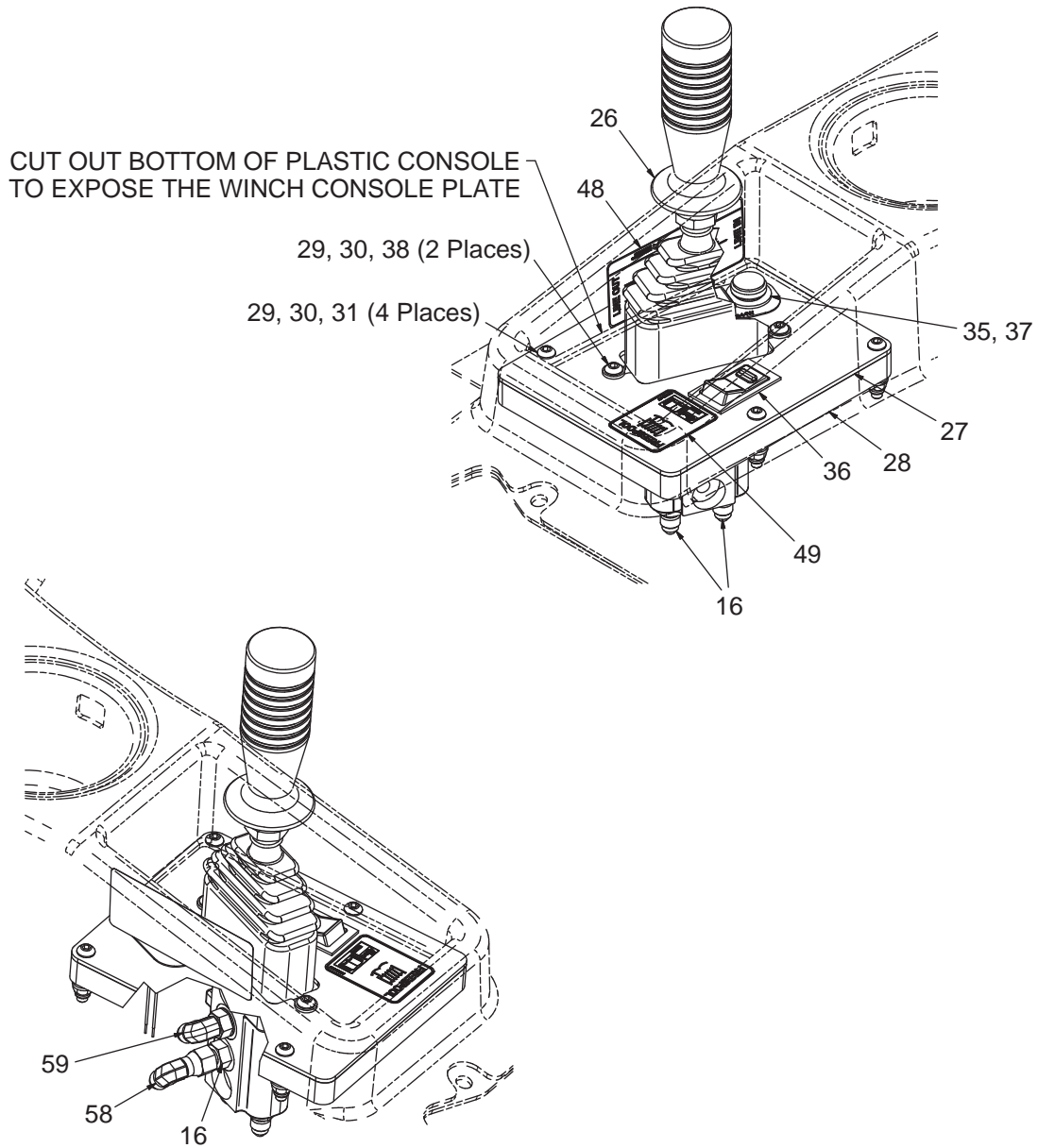
CONSOLE ALTERATION & CONTROL LEVER INSTALLATION

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
26	2310929	Control Lever (See 3-152)	1	34	229383	Fitting	1
27	2314424	Plate, Control Mounting	1	35	2311314	Assembly, Bypass LED	1
28	2314426	Spacer, Control Mounting	1	36	2310013	Assembly, Switch - 24V (3-158)	1
29	292653W	Nut	6	37	2307944W	Decal, Winch Light	1
30	296417W	Washer	6	38	296159W	Capscrew	24
31	2315030	Capscrew	4	48	2312177	Decal, Winch In, Winch Out	1
32	223929	Fitting	4	49	2307924W	Decal, Switch Panel	1
33	235387	Fitting	1				

Control Lever Mounting

John Deere 700K (H4AH_R_E391)

First Used on S/N H4A-1440

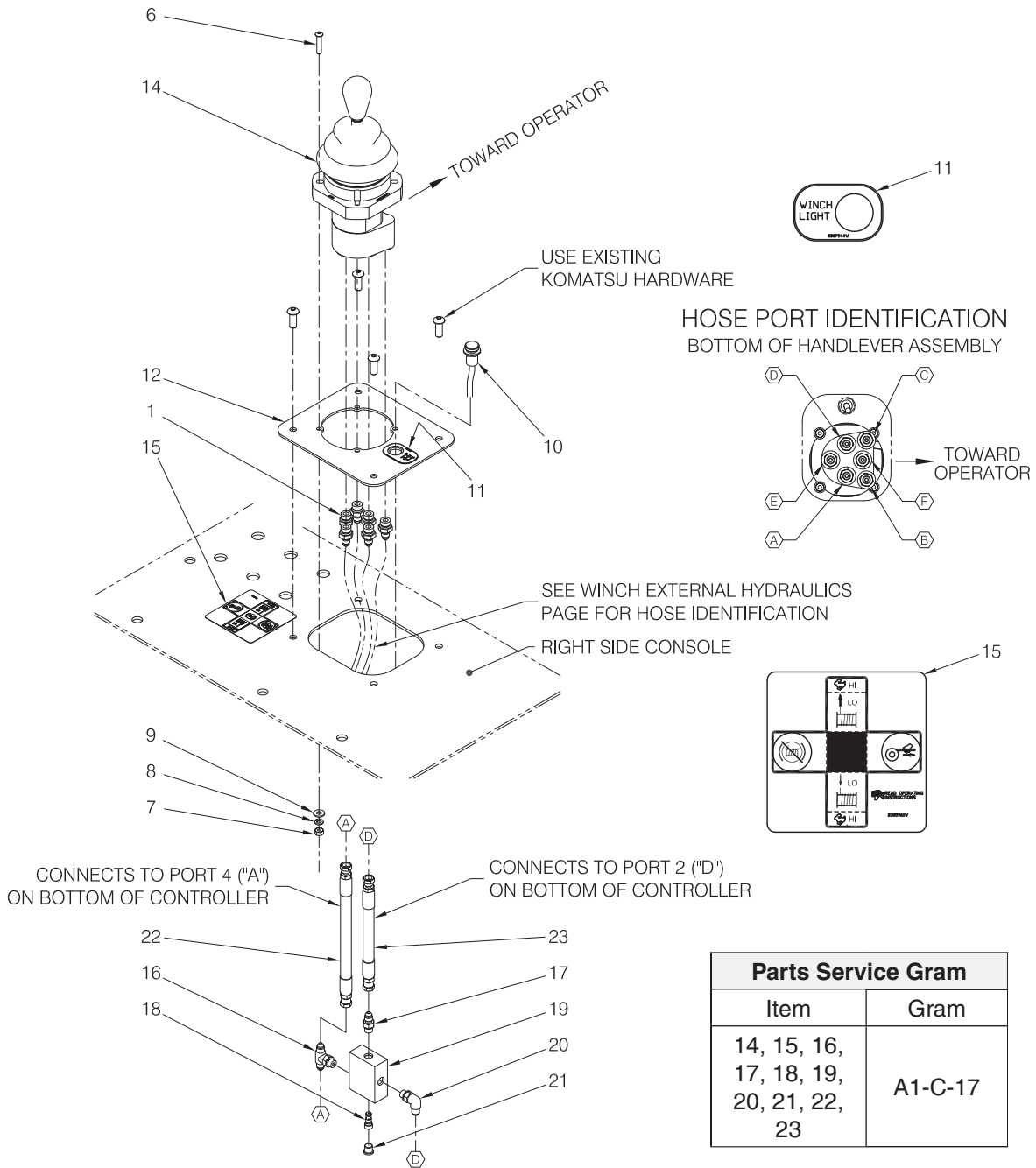


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
16	209083	Fitting	3	36	2310013	Assembly, Switch - 24V (3-158)	1
26	2315561	Control Lever	1	37	2307944W	Decal, Winch Light	1
27	2315770	Plate, Control Mounting	1	38	296159W	Capscrew	2
28	2314426	Spacer, Control Mounting	1	48	2312177	Decal, Winch In, Winch Out	1
29	302399W	Nut	6	49	2307924W	Decal, Switch Panel	1
30	296417W	Washer	6	58	212718	Fitting	2
31	2315030	Capscrew	4	59	209486	Fitting	1
35	2303912W	Assembly, Bypass LED	1				

Control Lever Mounting

Komatsu D31/37/39 E-21 & E21-A (H4AH_R_K12)

Last Used on S/N H4A-1014



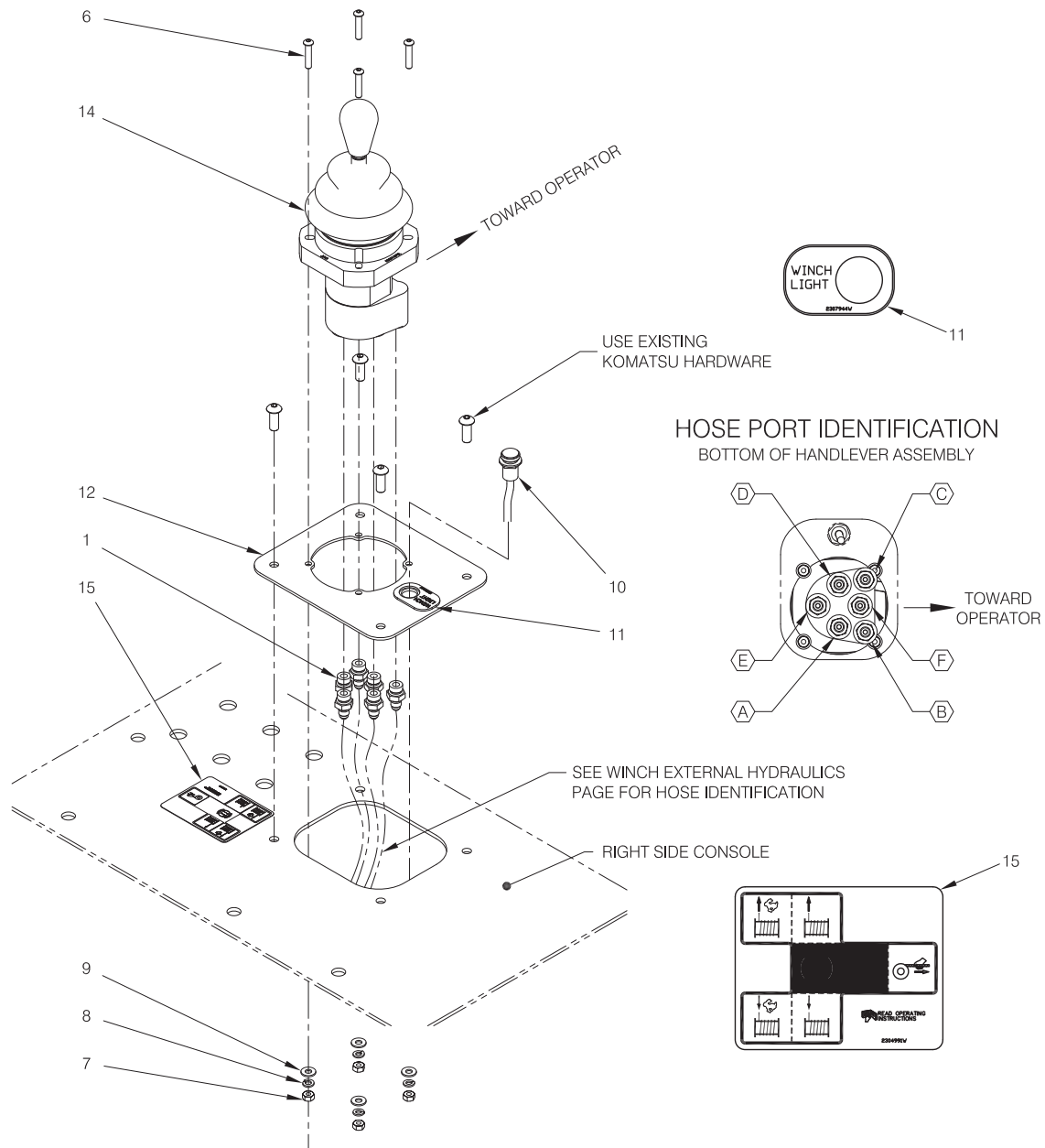
Parts Service Gram	
Item	Gram
14, 15, 16, 17, 18, 19, 20, 21, 22, 23	A1-C-17

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	17753W	Fitting	6	16	16574W	Fitting	1
5	*a 2304988W	Kit, Various Color Tie Strap	1	17	16538W	Fitting	1
6	2304267W	Capscrew	4	18	2304195W	Valve, Shuttle	1
7	15054W	Nut	4		2305073W	. Kit, Seal	1
8	15154W	Lockwasher	4	19	2305960W	Manifold	1
9	15127W	Washer	4	20	16556W	Fitting	1
10	2304204W	Harness, Wiring	1	21	222442W	Fitting	1
11	2307944W	Decal, Filter LED	1	22	2305962W	Assembly, Hose	1
12	2304262W	Plate, Adapter	1	23	280256W	Assembly, Hose	1
14	2306648W	Assy, Control Lever (See 3-150)	1				
15	2305961W	Decal, Control Lever	1				

*a Used for hose end identification, not illustrated

Control Lever Mounting

Komatsu D31/37/39 E-21 & E21-A (H4AH_R_K12)
 First Used on S/N H4A-1015

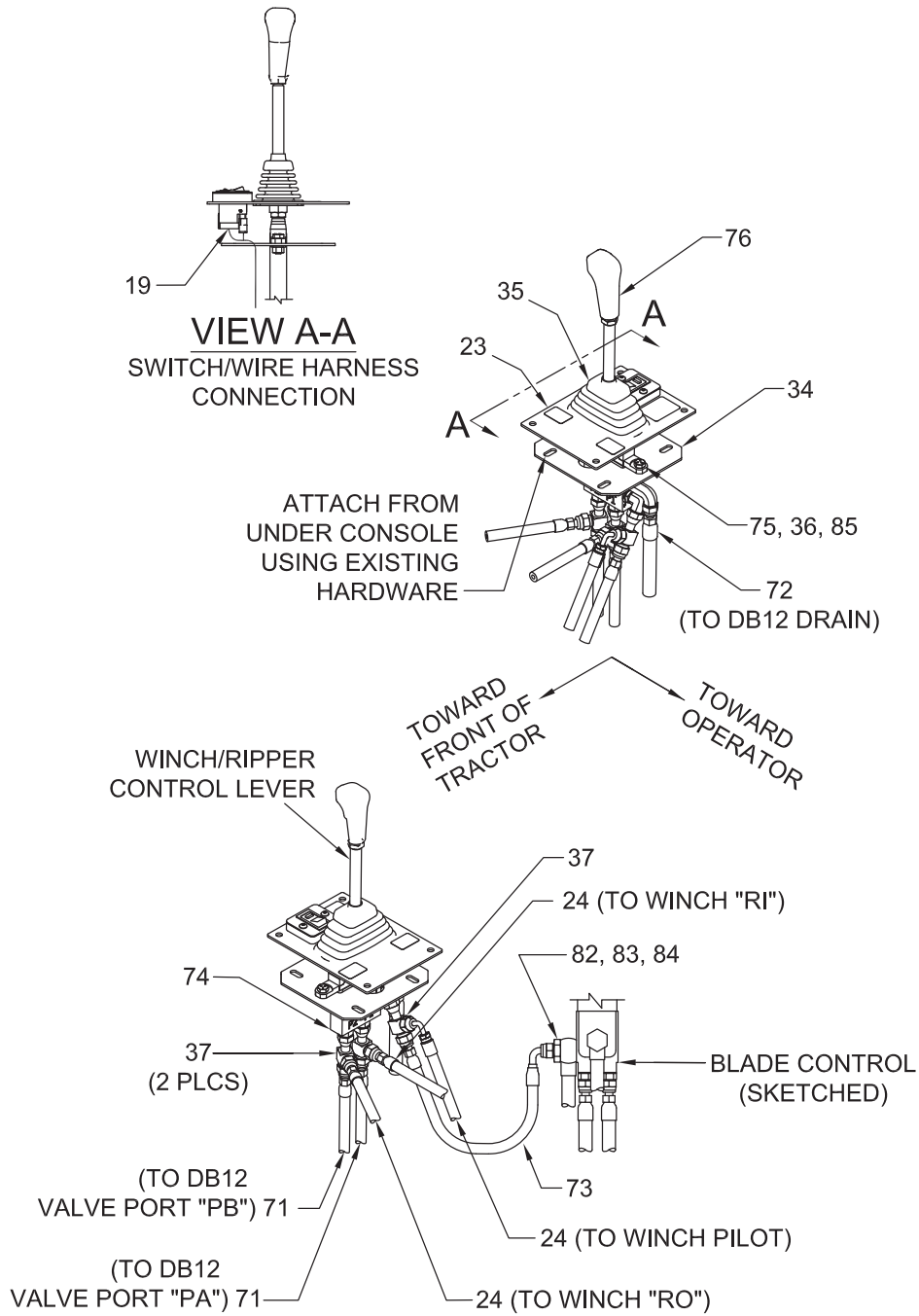


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	17753W	Fitting	6	11	2307944W	Decal, Filter LED	1
5	*a 2304988W	Kit, Various Color Tie Strap	1	12	2304262W	Plate, Adapter	1
6	2304267W	Capscrew	4	14	2305577W	Assy, Control Lever (See 3-150)	1
7	15054W	Nut	4	15	2305579W	Decal, Control Lever	1
8	15154W	Lockwasher	4				
9	15127W	Washer	4				
10	2304204W	Harness, Wiring	1				

*a Used for hose end identification, not illustrated

Control Lever Mounting

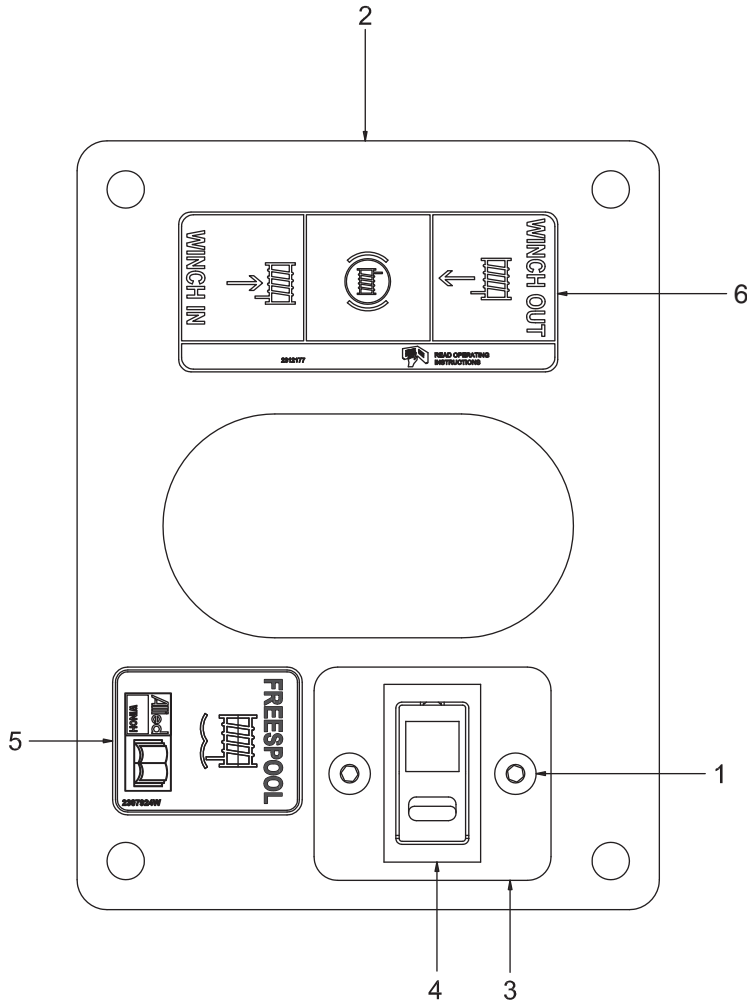
Komatsu D31/37/39-22 (H4AT_Y_K13)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
19	2312501	Harness, Wire	1	73	2313147	Assembly, Hose	1
23	2311409	Switch Panel Assembly (3-149)	1	74	2313146	Assembly, Control Lever (See 3-155)	1
24	2311290	Assembly, Hose	3	75	Y27E-06	Washer	2
34	2311281	Plate	1	76	2311043	Knob, Control Lever	1
35	2311042	Boot, Control Lever	1	82	2311047	Plug	1
36	221707W	Nut	2	83	2311045	O-Ring	2
37	236855	Fitting	3	84	Y098629-012	O-Ring	1
71	2311295	Assembly, Hose	2	85	16598W	Capscrew	2
72	2311298	Assembly, Hose	1				

Switch Panel Assembly

Komatsu D31/37/39X-22 (H4AT_Y__K13)
 Komatsu D37/39X-23, D39X-24 (H4AT_Y__K14)

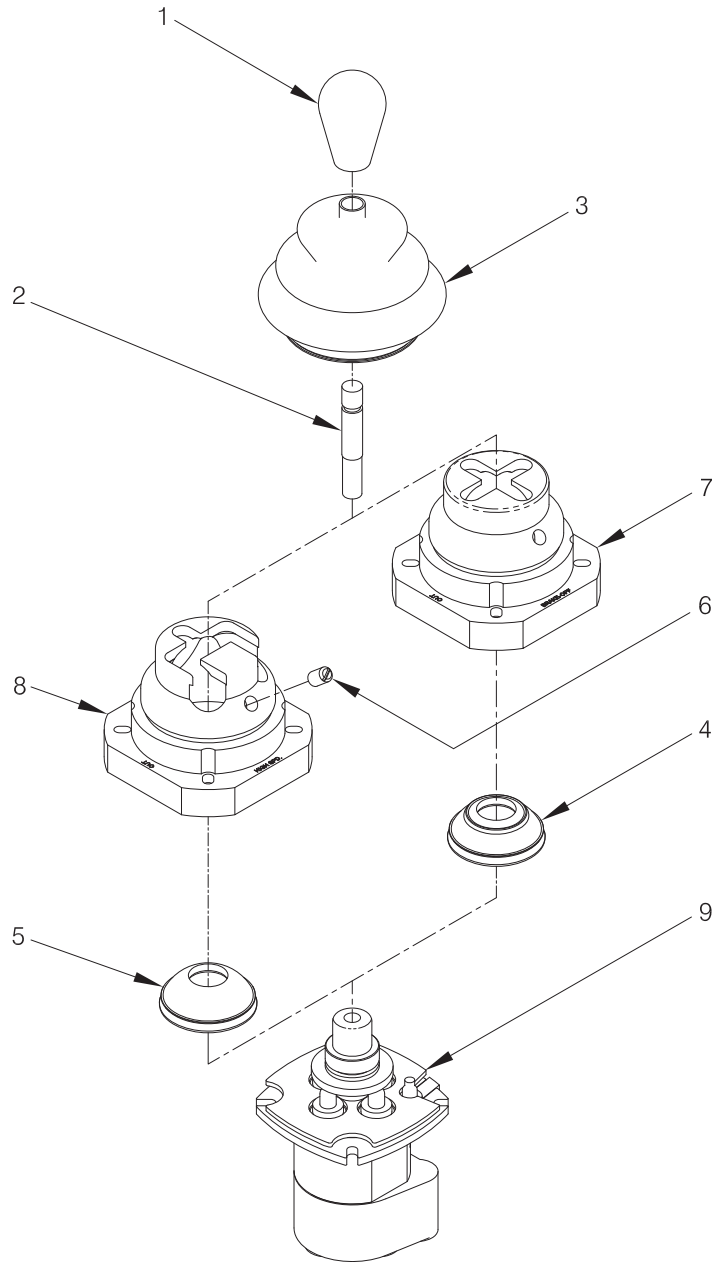


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2311409	Switch Panel Assembly					
1	Y25G-0408	. Capscrew	2	4	2310017	. Switch (See 3-159)	1
2	2311406	. Control Lever Mounting Plate	1	5	2307924W	. Decal, Freespool	1
3	2307643W	. Plate	1	6	2312177	. Decal, Winch In/Out	1

Control Lever Assembly

Dual Axis

Komatsu D31/37/39 E-21 & E21-A (H4AH_R_K12)



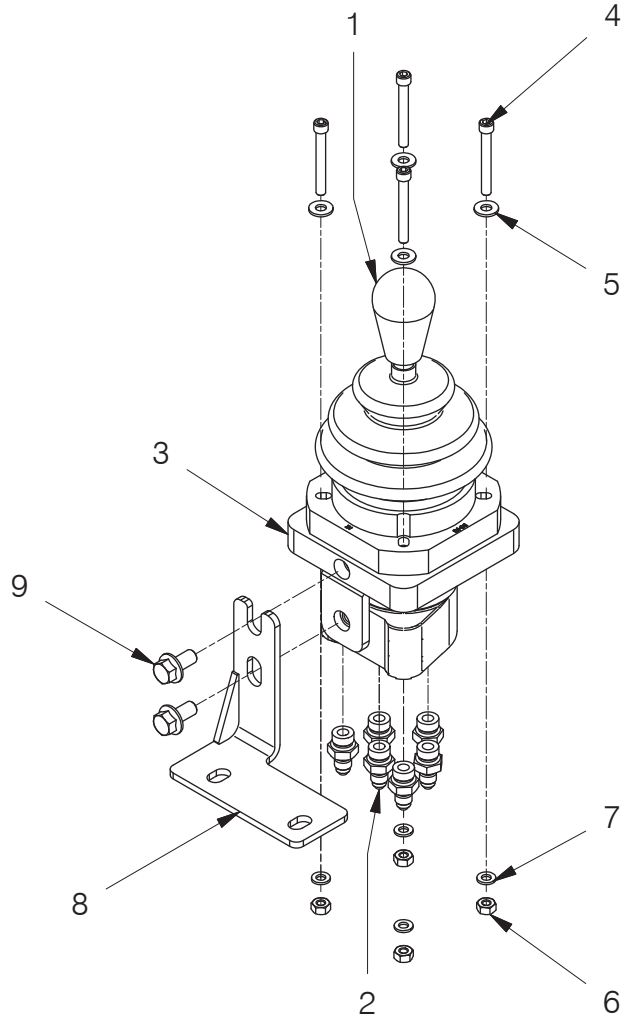
A - Last used on S/N H4A-1014 on Caterpillar winches with Brake-Off, C17 (D3/4/5G) & Komatsu K12 (D31/37/39) with Brake-Off
 B - First used on S/N H4A-1015 on Caterpillar winches without Brake-Off, C16 (D3/4/5C), C17 (D3/4/5G), C18 (D4/5G) & K12 (D31/37/39-21)

Item	Part No.	Description	Qty		Item	Part No.	Description	Qty	
			A	B				A	B
	2306648W	Assembly, Control Lever	1	--					
	2305577W	Assembly, Control Lever	--	1					
1	2304339W	. Knob	1	1	7	2305674W	. Housing, Gated	1	--
2	2305063W	. Shaft	1	1	8	2305062W	. Housing, Gated	--	1
3	228131	. Boot	1	1	9	2304990W	. Controller (See 3-163)	1	1
4	2305675W	. Ring, Detent	1	--					
5	2305578W	. Ring, Detent	--	1					
6	*a 2304050W	. Plunger, Ball	1	1					

*a Stake Threads

Control Lever Assembly

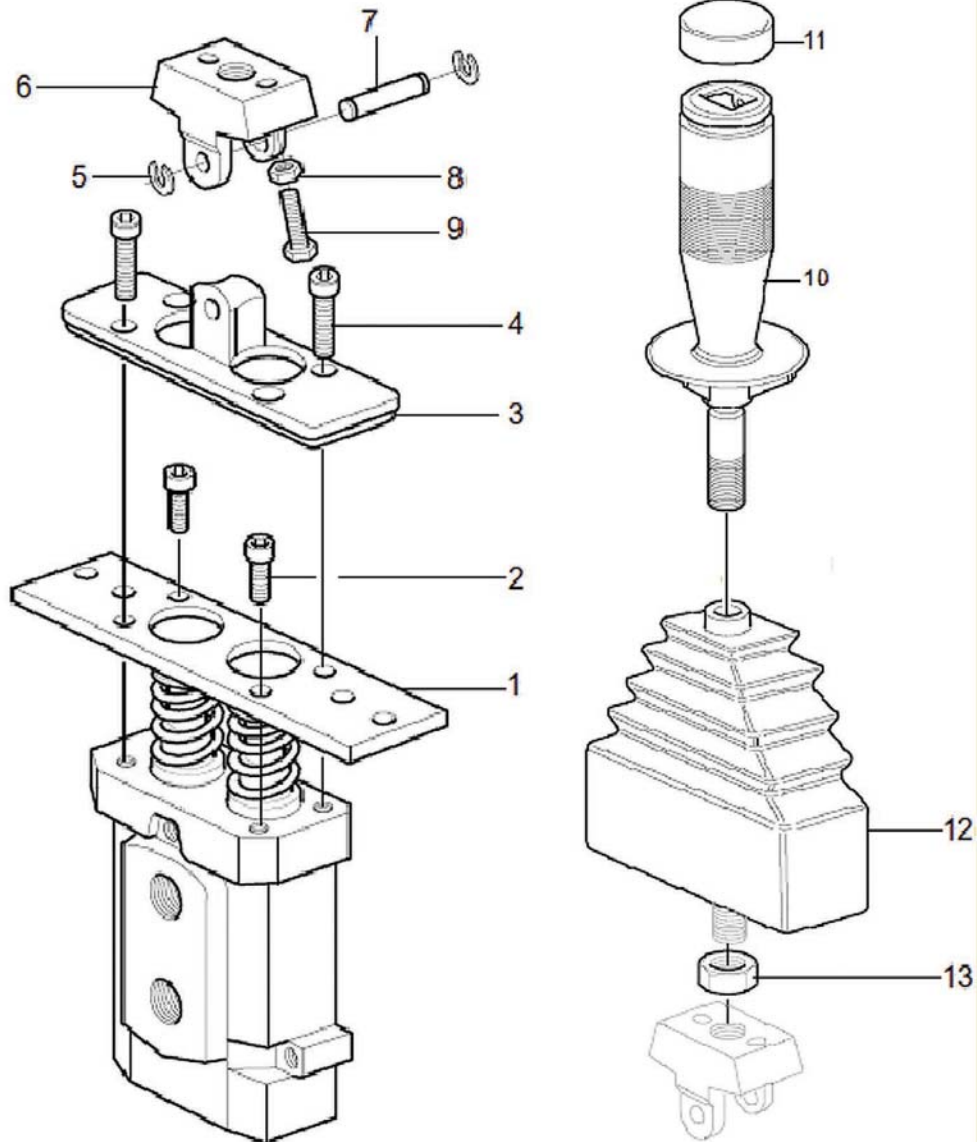
Dual Axis



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2311203	Assembly, Control Lever	1				
1	2305577W	. Assembly, Control Lever (3-150)	1	6	15054W	. Nut	4
2	223929	. Fitting	6	7	15154W	. Washer	4
3	2311183	. Bracket	1	8	2311179	. Bracket	1
4	18127W	. Capscrew	4	9	134803W	. Screw	2
5	15127W	. Washer	4				

Control Lever Assembly

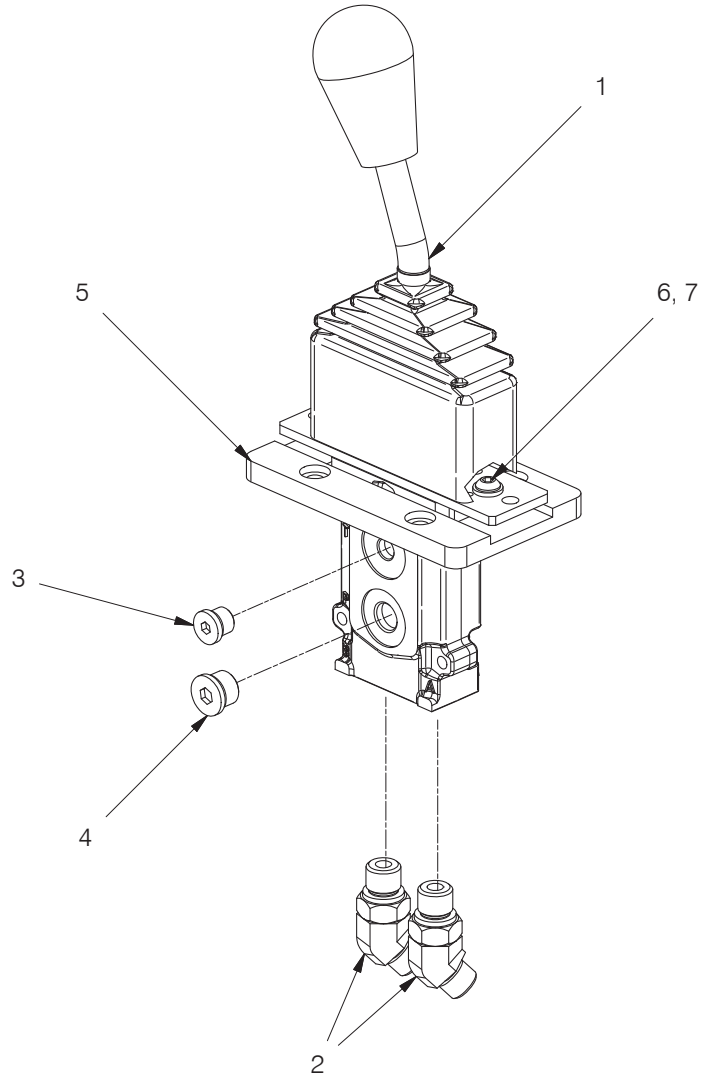
Caterpillar D3/4/5G (H4AH_Y__C17), D4/5G (H4AH_Y_C18),
 Caterpillar D3/4K/K2 (H4AH_Y_C19),
 Caterpillar D5K/K2 (H4AH_Y__C20),
 Caterpillar D5K2 With Fireplow (H4AH_Y__C201),
 John Deere 450-650J (H4AH_R__E15), John Deere 550-650K (H4AH_R__E16),
 John Deere 700H/J (H4AH_R__E39), John Deere 700K (H4AH_R__E391)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2310929	Assembly, Control Lever	1				
1	2312611	. Plate, Mounting	1	8	NSS	. Nut	2
2	2312612	. Screw	2	9	NSS	. Capscrew	2
3	2312613	. Link, Lever	1	10	2312609	. Lever, Hand	1
4	2312614	. Screw	1	11	2312610	. Cap	1
5	2312615	. Washer, Lock	2	12	2312608	. Bellows	1
6	NSS	. Level, Link	1	13	2312606	. Nut	1
7	NSS	. Pin, Shaft	1				

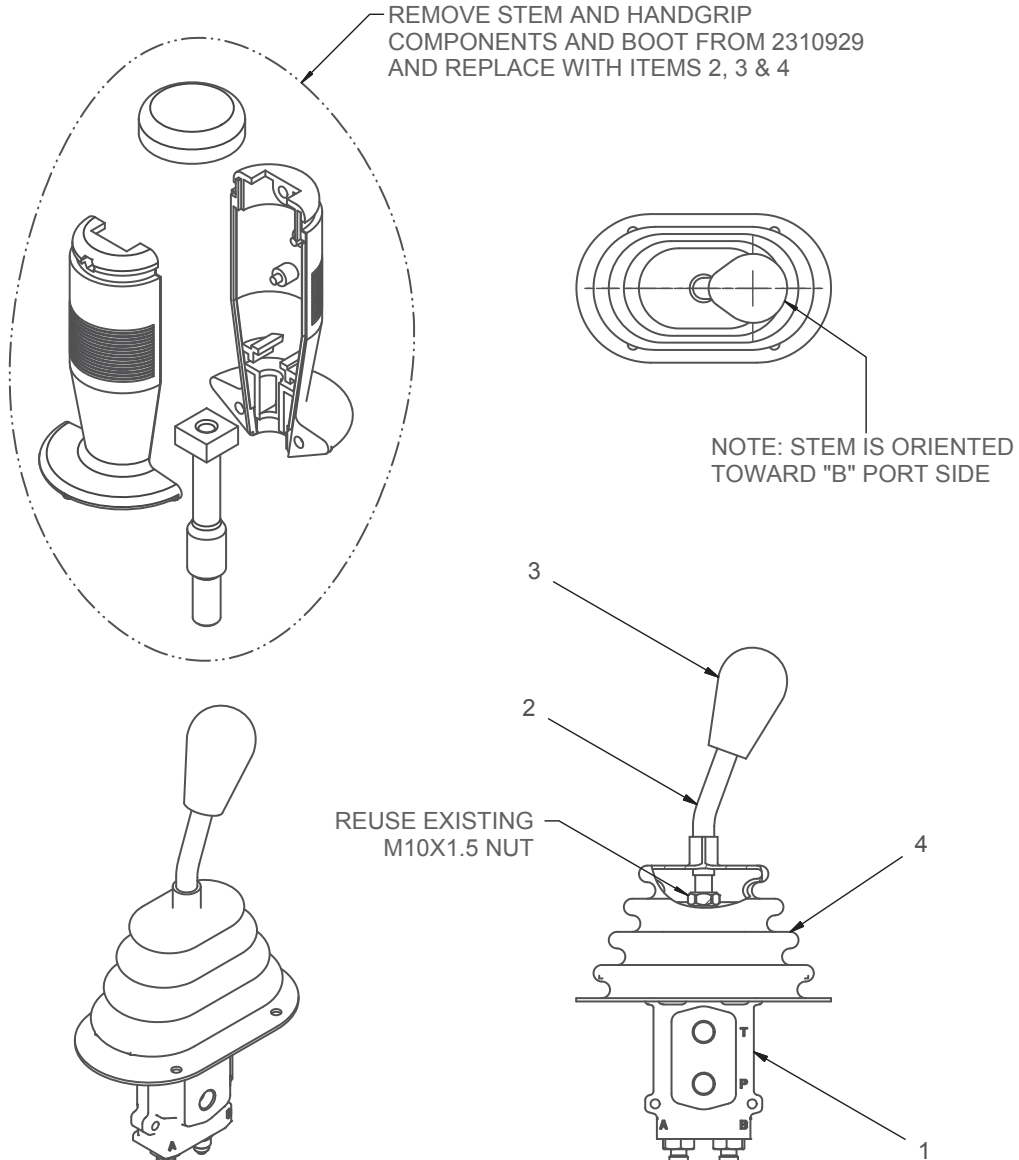
Control Lever Assembly

Case 650L (H4AH_R__R16)
 Case 750/850M (H4AH_R__R17)
 Last used on H4A-1420



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2312879	Assembly, Control Lever	1				
1	2313004	. Assembly, Control Lever (3-154)	1	5	2312883	. Plate, Adaptor	1
2	R833201	. Fitting	2	6	296160W	. Capscrew	2
3	235387	. Fitting	1	7	296417W	. Washer	2
4	229383	. Fitting	1				

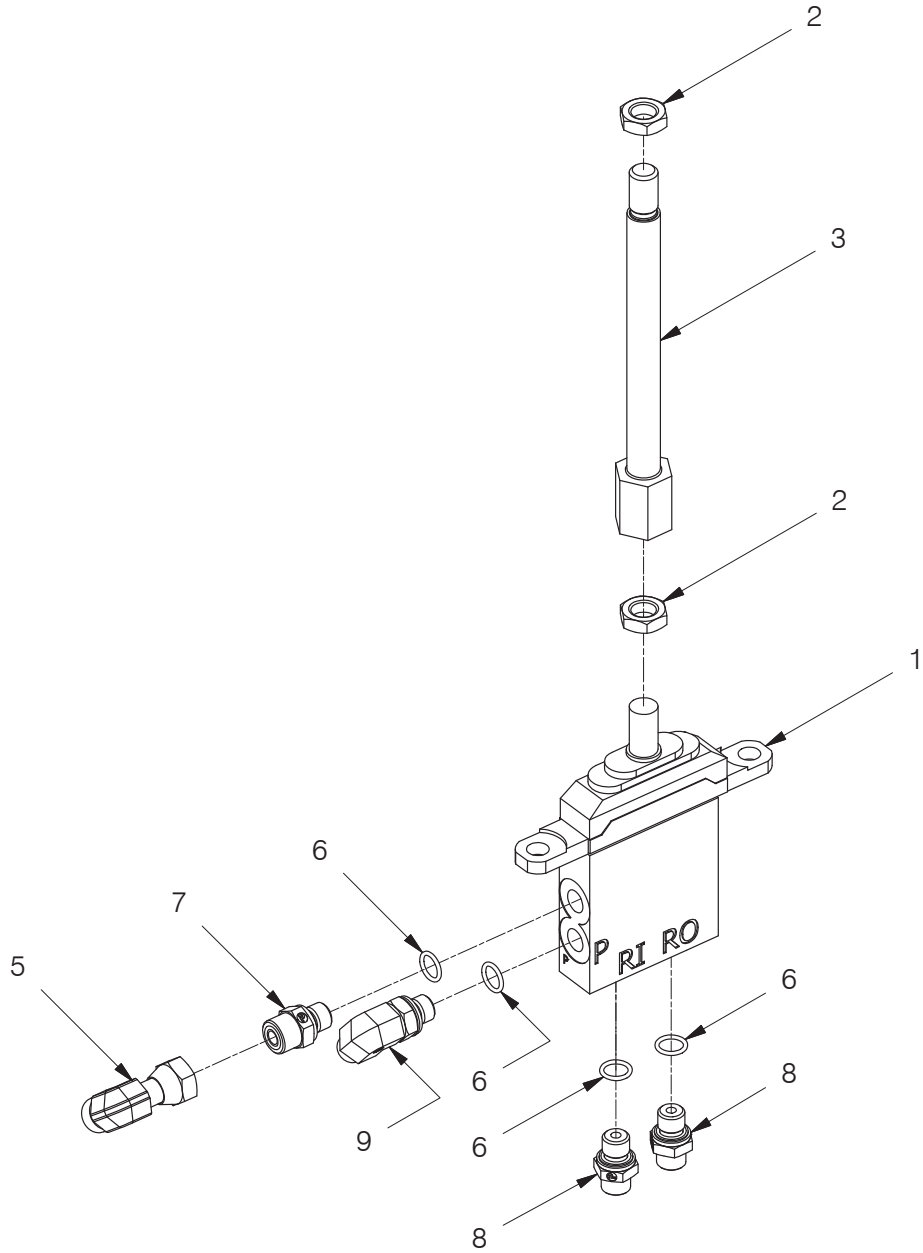
Control Lever Assembly



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2313004	Assembly, Control Lever	1				
1	2310929	. Control Lever, Pilot Controller (See 3-152)	1	3	2304339W	. Knob	1
2	2313005	. Lever, Handle	1	4	2305933W	. Boot	1

Control Lever Assembly

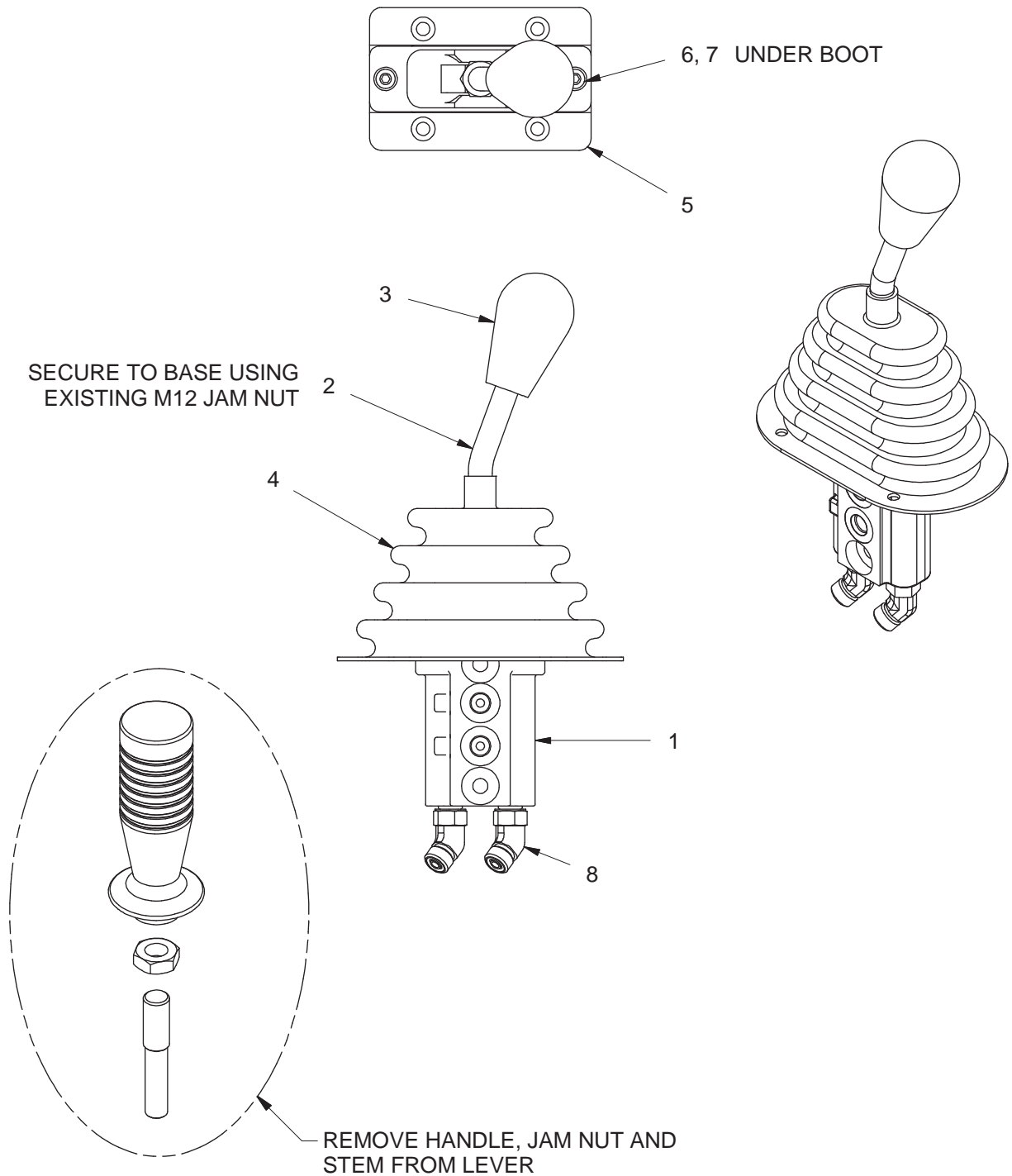
Komatsu D31/37/39-22 (H4AT_Y_K13)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2313146	Assembly, Control Lever	1				
1	2311044	. Valve, Pilot	1	7	*a 249005	. Fitting	1
2	296133W	. Nut, Jam	2	8	*a 248854	. Fitting	2
3	2311280	. Rod, Lever	1	9	*a 2313145	. Fitting	1
5	R833801	. Fitting	1				
6	211564	. O-Ring	4		*a	Use 383789W Adhesive Sealant	

Control Lever Assembly

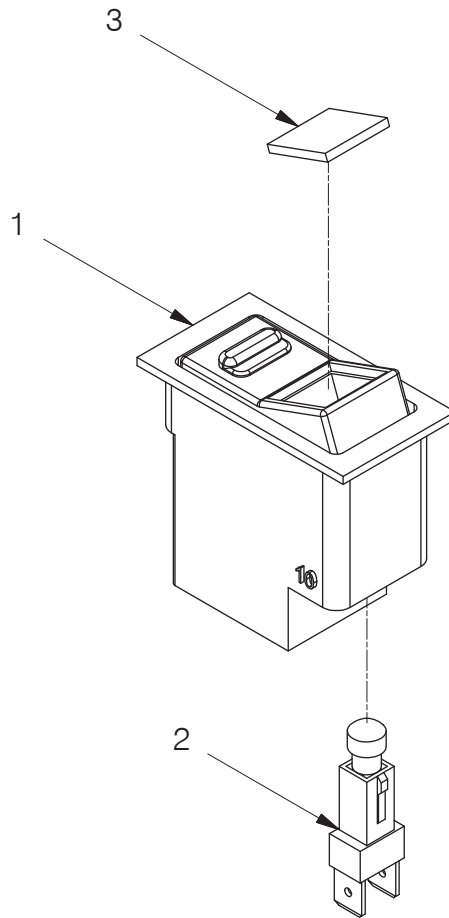
First used on H4A-1421



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2315738	Assembly, Control Lever	1				
1	2315561	. Lever, Control	1	5	2315740	. Plate, Adapter	1
2	2315739	. Lever, Handle	1	6	296157W	. Capscrew	2
3	2304339W	. Knob	1	7	296417W	. Hard Washer	2
4	2305933W	. Boot	1	8	R833200	. Fitting	2

24V Switch Assembly

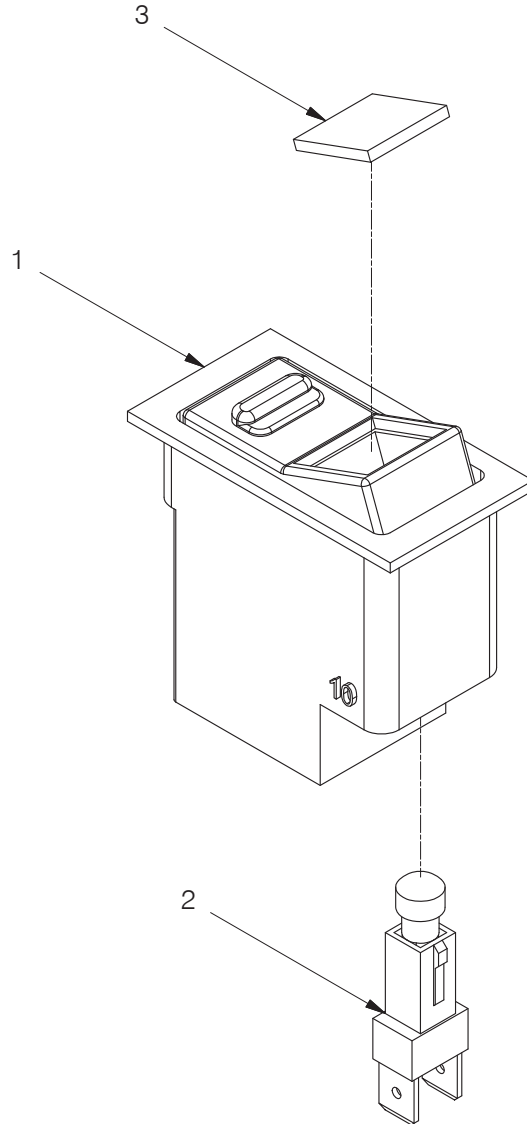
Case 750/850M (H4AH_R__R17),
 John Deere 550-650K (H4AH_R__E16),
 John Deere 700H/J (H4AH_R__E39),
 John Deere 700K (H4AH_R__E391)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2310013	Assembly, Switch - 24V	1				
1	2307582W	. Switch, Rocker - w/Lock	1	3	237346	. Lens, Yellow	1
2	251107	. Lamp, Yellow LED	1				

12V Switch Assembly

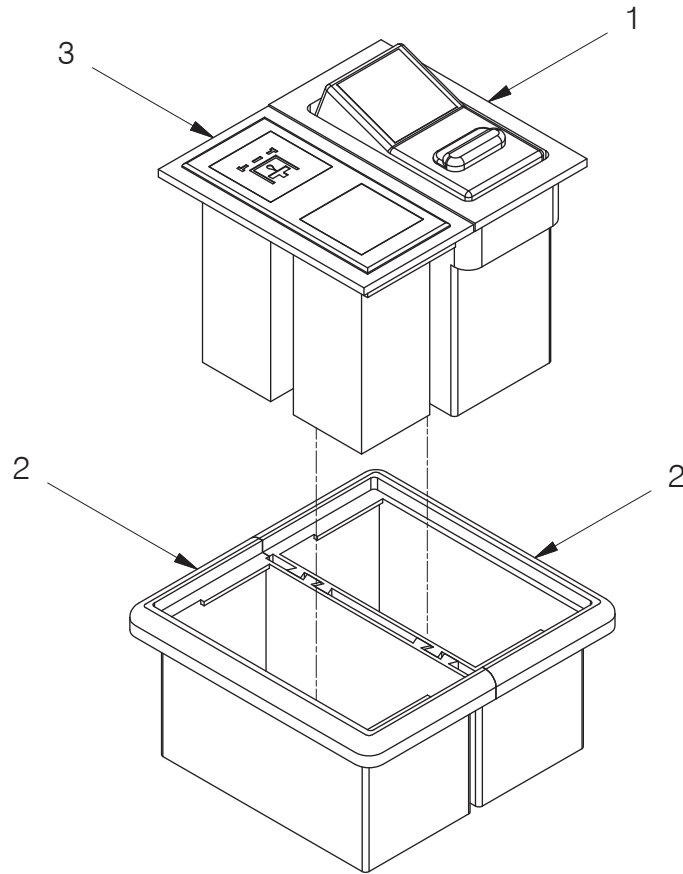
Case 650L (H4AH_R__R16);
 Caterpillar D3/4/5G (H4AH_Y__C17), D4/5G (H4AH_Y__C18),
 Caterpillar D3/4K (H4AH_Y__C19), Caterpillar D5K (H4AH_Y__C20),
 Caterpillar D3/4K (H4AT_Y__C19), Caterpillar D5K (H4AT_Y__C20);
 John Deere 450-650J (H4AH_R__E15)
 Dressta TD7/8S (H4AT_Y__H15), Dressta TD9S (H4AT_Y__H16)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2310017	Assembly, Switch - 12V	1				
1	2307582W	. Switch, Rocker - w/Lock	1	3	237346	. Lens, Yellow	1
2	2310018	. Lamp, Yellow LED	1				

Filter Light Switch Assembly

Caterpillar D3/4K/K2 (H4AH_Y_C19),
 Caterpillar D5K/K2 (H4AH_Y_C20),
 Caterpillar D5K2 With Fireplow (H4AH_Y_C201)

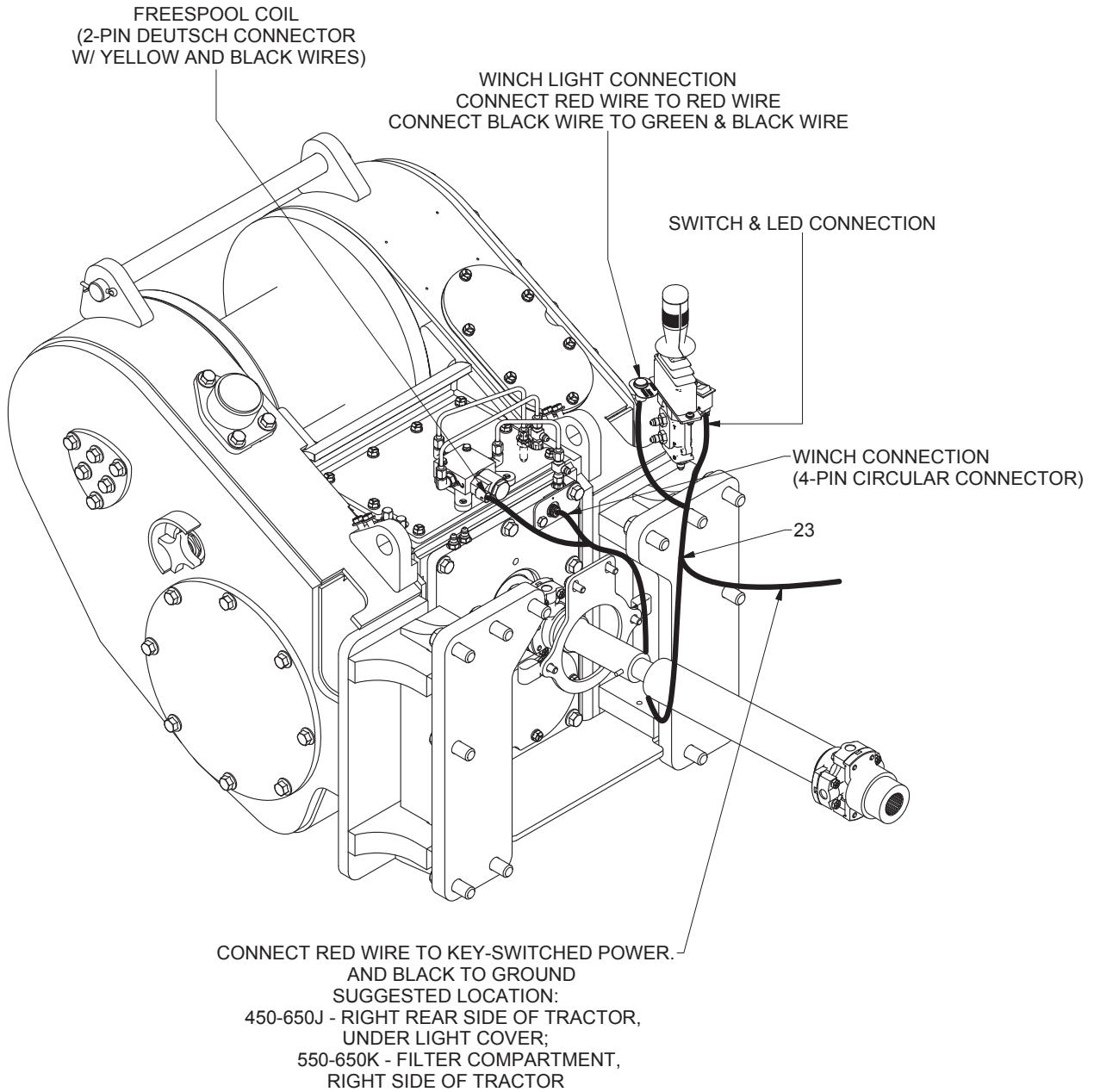


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2314321	Assembly, Switch - Filter Light	1	2	234505	. Frame, Mounting	2
	2310017	. Assembly, Switch - w/Yellow LED (See 3-159)	1	3	2311352	. Assembly, Oil Filter Indicator	1

Wire Harness Installation

John Deere 450-650J (H4AH_R__E15)

John Deere 550-650K (H4AH_R__E16)

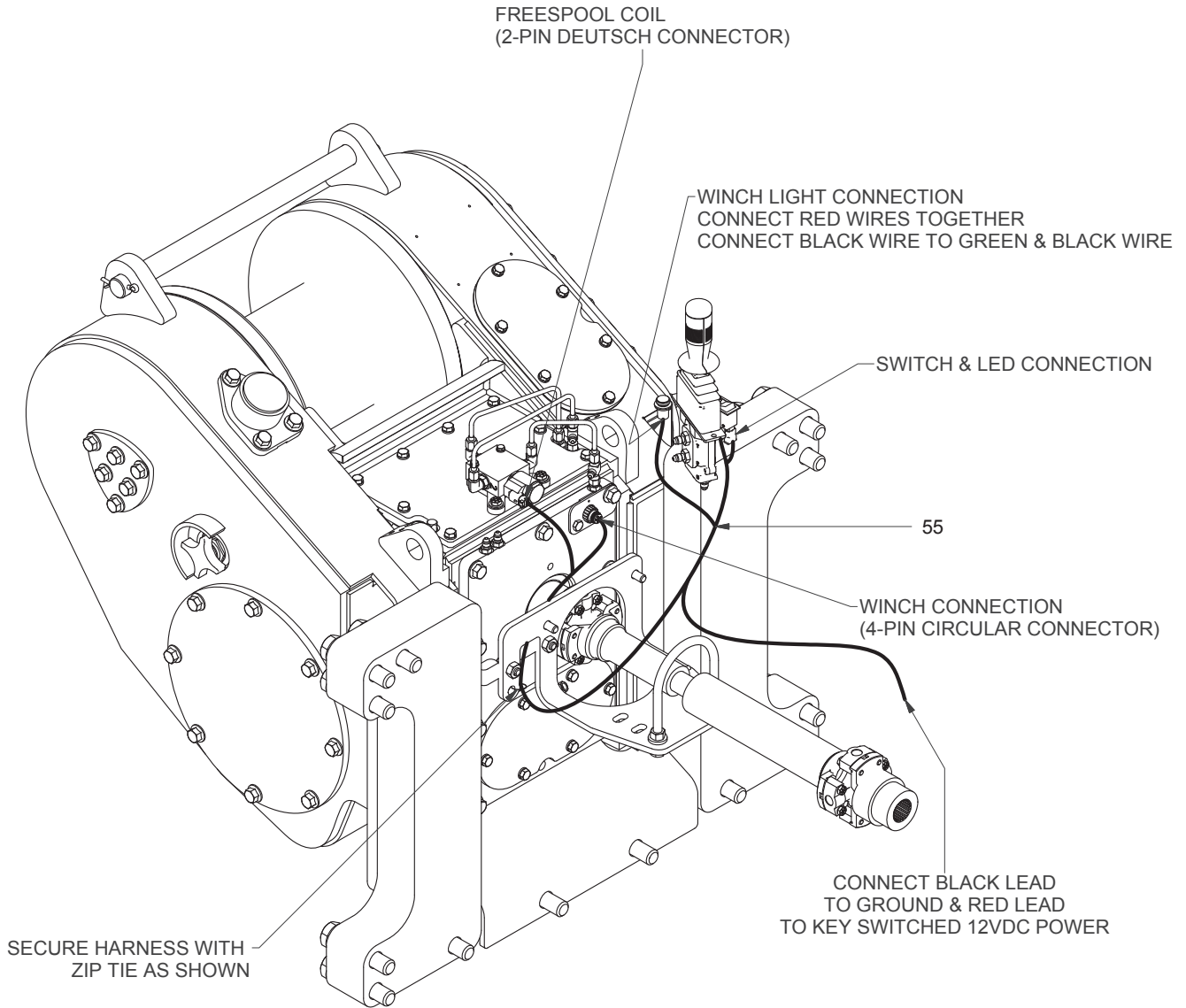


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
23	2314113	Wire, Harness	1				

Wire Harness Installation

John Deere 700H/J (H4AH_R__E39)

John Deere 700K (H4AH_R__E391)

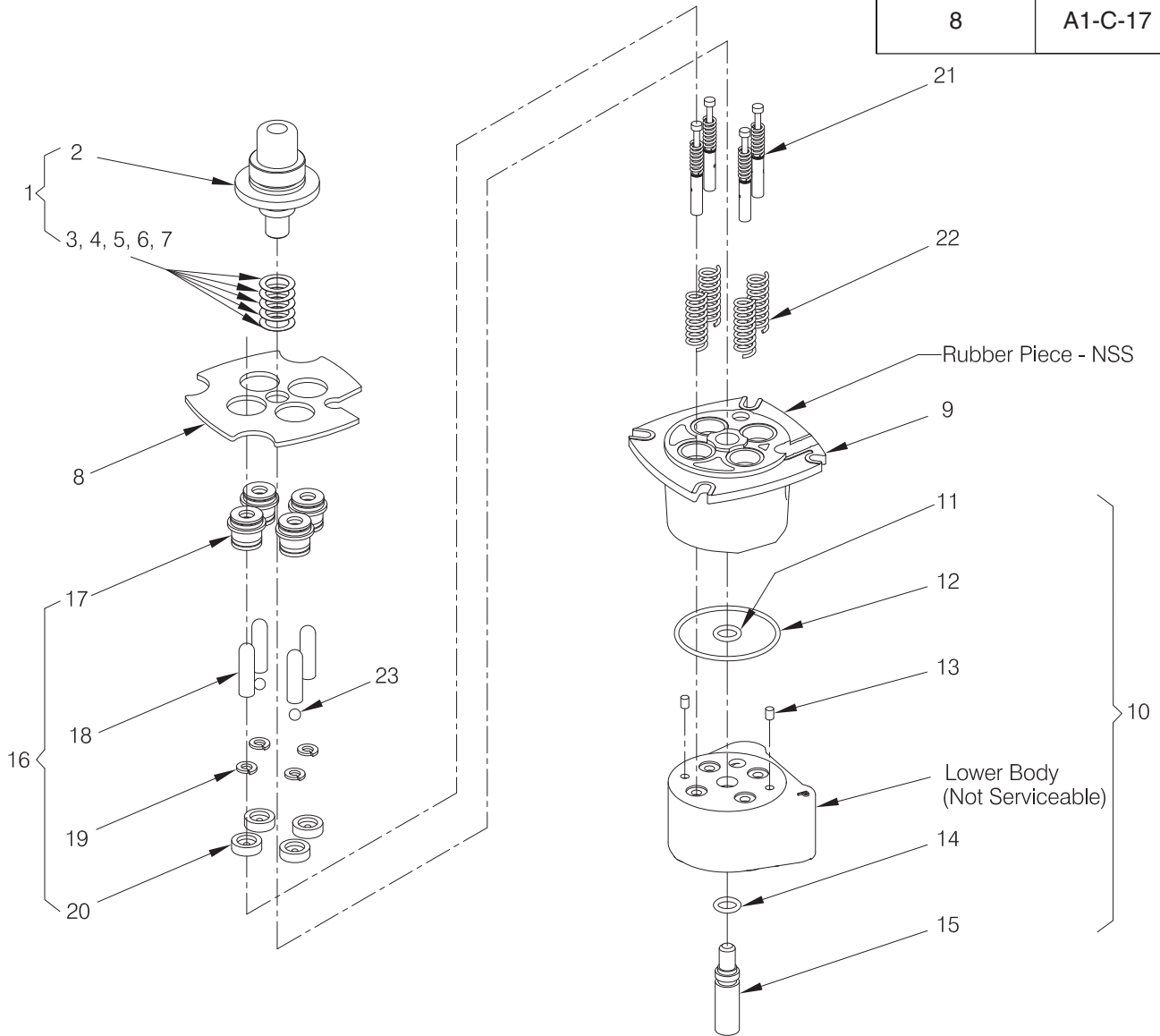


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
55	2314113	Wire, Harness	1				

Controller

Service Kits

Parts Service Gram	
Item	Gram
8	A1-C-17



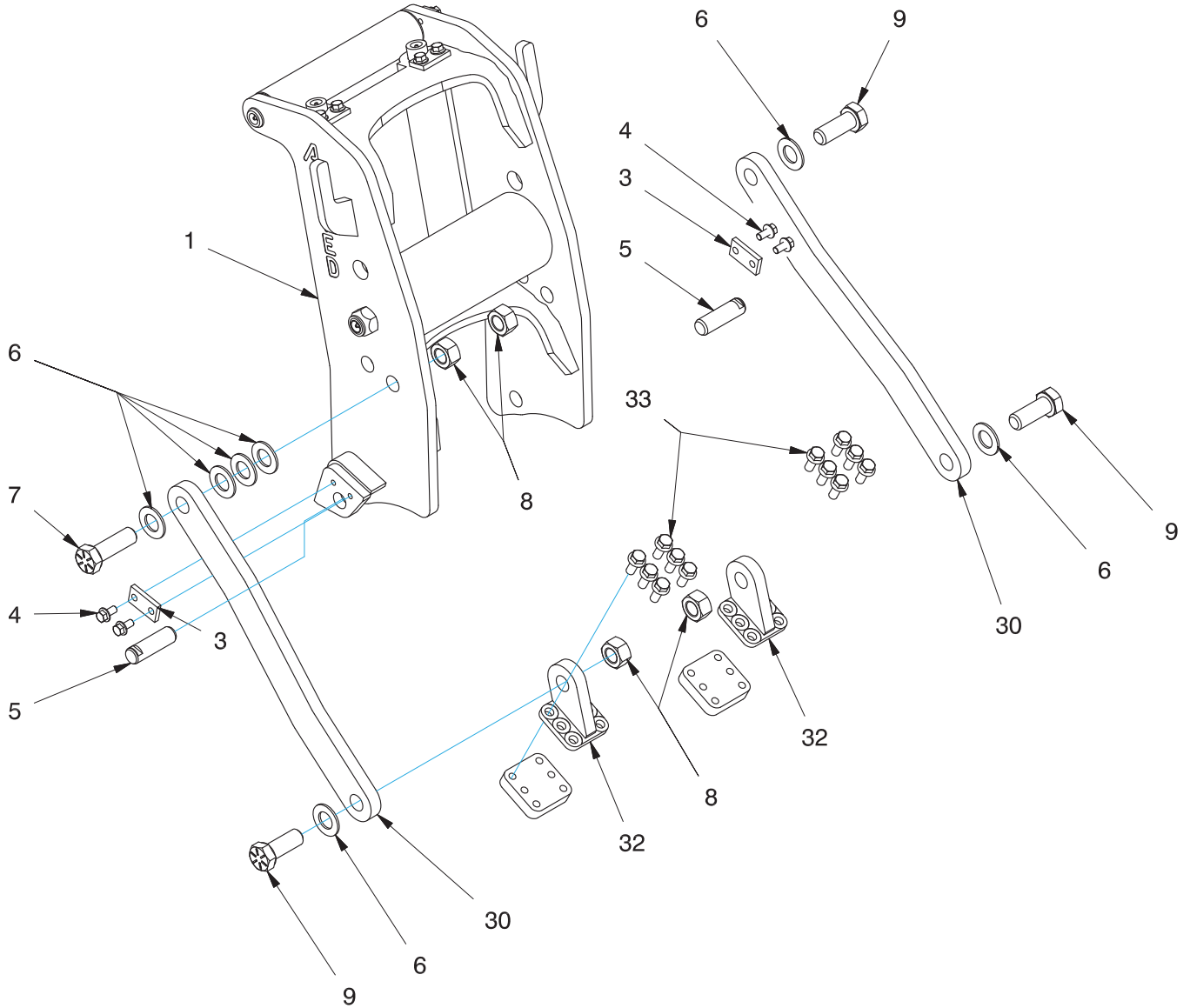
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2304990W	Controller					
1	2305578W	.. Kit, Cardan	1	14	-----	.. O-Ring	1
2	-----	.. Cardan	1	15	-----	.. Assembly, Screw	1
3	-----	.. Shim, 0.1 mm	1	16	2305782W	.. Kit, Plunger (Pack of two)	2
4	-----	.. Shim, 0.2 mm	1	17	-----	.. Guide, Plunger	2
5	-----	.. Shim, 0.5 mm	1	18	-----	.. Plunger, Solid	2
6	-----	.. Shim, 1.0 mm	1	19	-----	.. Washer	2
7	-----	.. Shim, 0.15 mm	1	20	-----	.. Platen	2
8	2305779W	.. Plate, Retaining	1	21	2305783W	.. Kit, Regulating Unit	4
9	2305780W	.. Body, Upper	1	22	2305784W	.. Spring, Heavy Return (Pack of four)	1
10	2305781W	.. Kit, Seal	1	23	*a 2305954W	.. Ball	2
11	-----	.. O-Ring	1				
12	-----	.. O-Ring	1				
13	-----	.. Pin, Dowel	2				
						*a Last Used on S/N H4A-1014	

Optional Equipment

Arch Assembly	4-5
Arch Installation	4-2 thru 4-4
Drawbar Installation (Heavy Duty Extended Drawbar).....	4-9
Fairlead Assembly.....	4-6
Fairlead/Drawbar Installation	4-7
Fairlead/Drawbar Installation (Heavy Duty Extended Drawbar).....	4-8
Firesleeve Kit	4-10 thru 4-11
Wire Rope Assemblies.....	4-12

Arch Installation

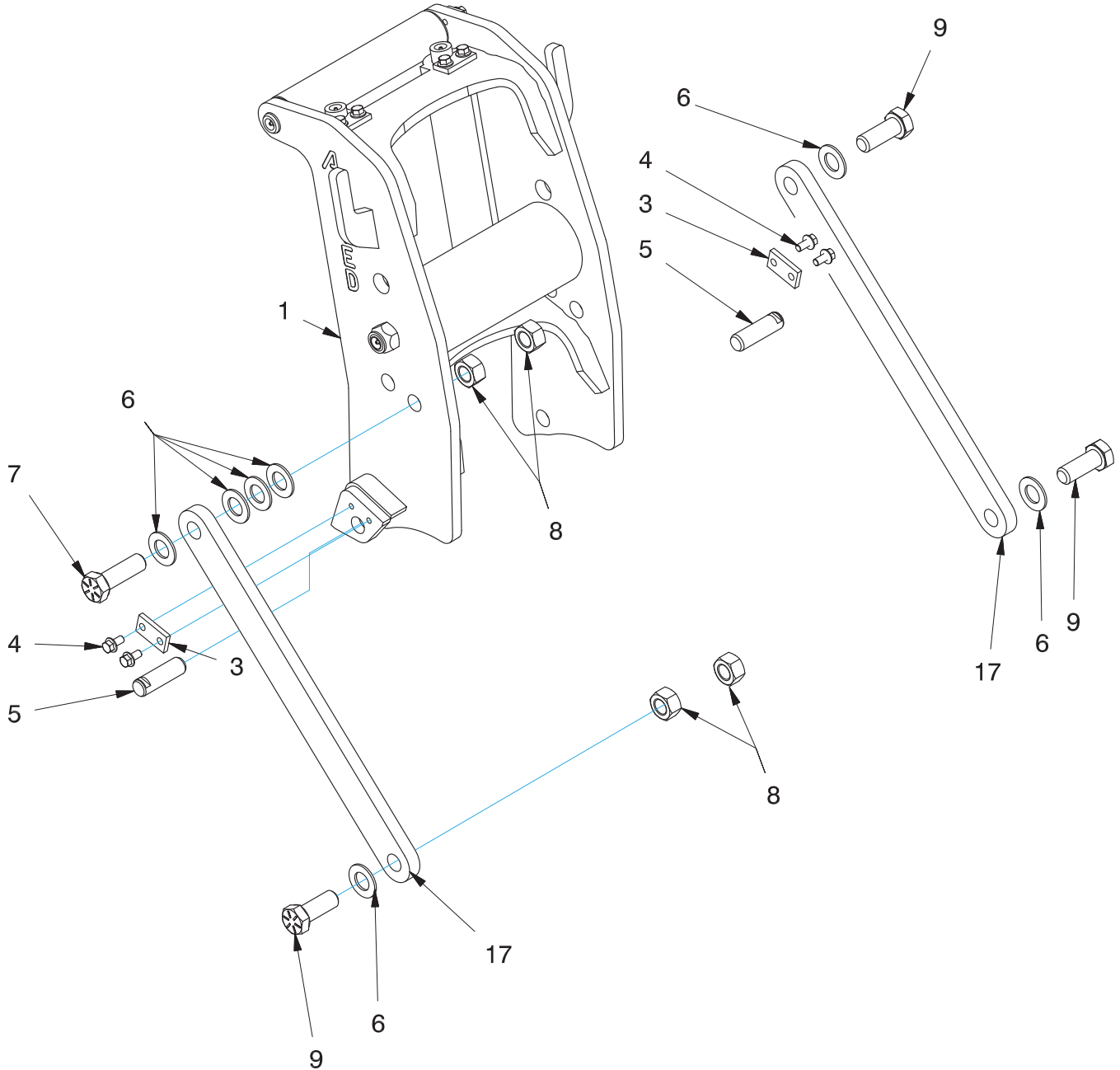
S/N Code "Y"
(Open Frame Winches)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305145W	Arch Assembly (See 4-5)	1	8	*a 221372W	Locknut	4
3	93166W	Keeper	2	9	2305268W	Capscrew	3
4	398817W	Screw, Flange	4	30	2312995	Bar - Support, Arch	2
5	1314629W	Pin	2	32	2312997	Ear, Arch	2
6	225851	Hard Washer	7	33	918085W	Screw, Flange	12
7	2300478W	Capscrew	1				
					*a	Use 318702W Thread Lock	

Arch Installation

S/N Code "B", "E", "Z", "R" Except R17
(Enclosed Frame Winches)

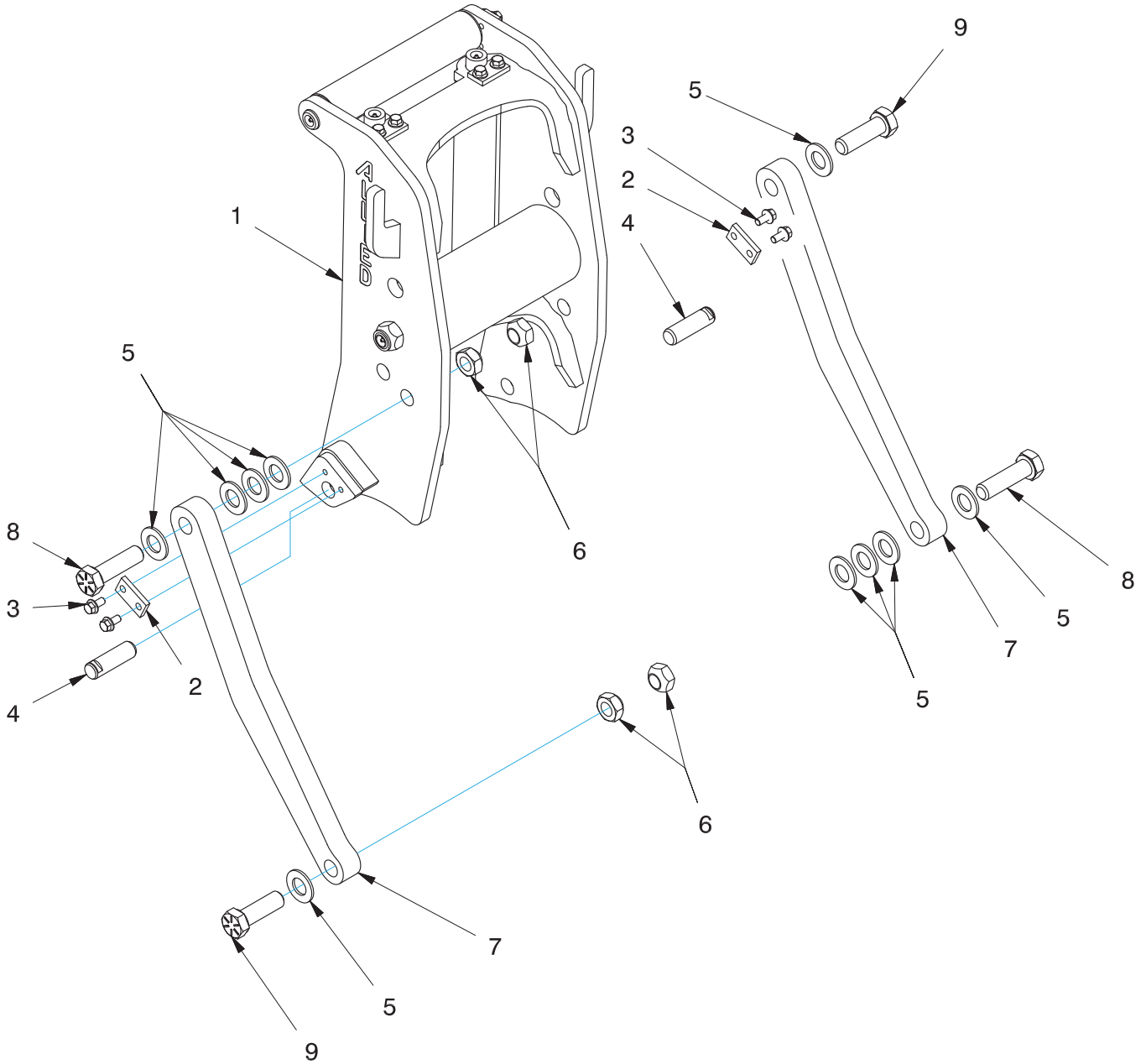


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305145W	Arch Assembly (See 4-5)	1	7	2300478W	Capscrew	1
3	93166W	Keeper	2	8	*a 221372W	Locknut	4
4	398817W	Screw, Flange	4	9	2305268W	Capscrew	3
5	1314629W	Pin	2	17	2305158W	Bar - Support, Arch	2
6	225851	Hard Washer	7				

*a Use 318702W Thread Lock

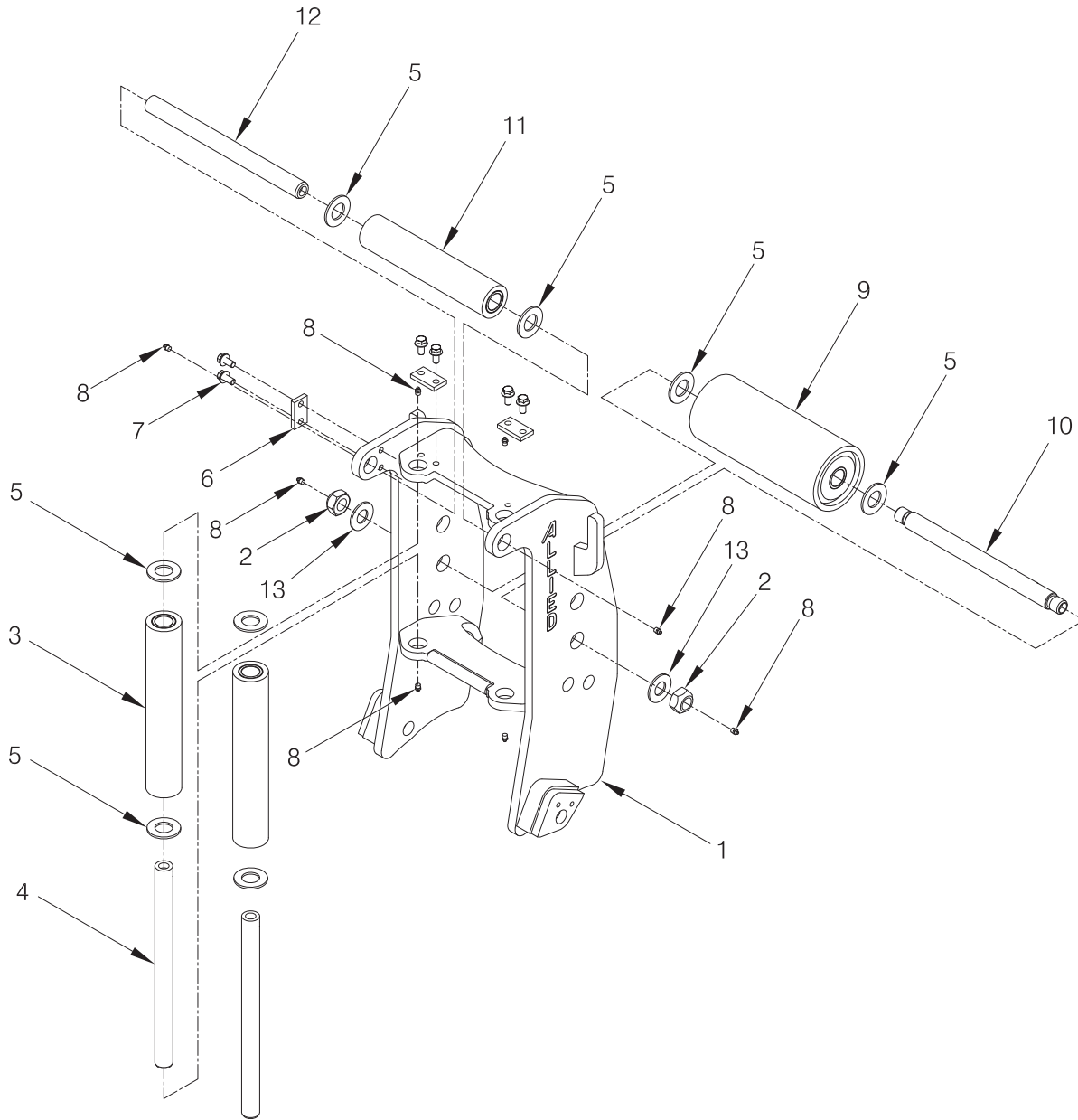
Arch Installation

Case 850M (R17)



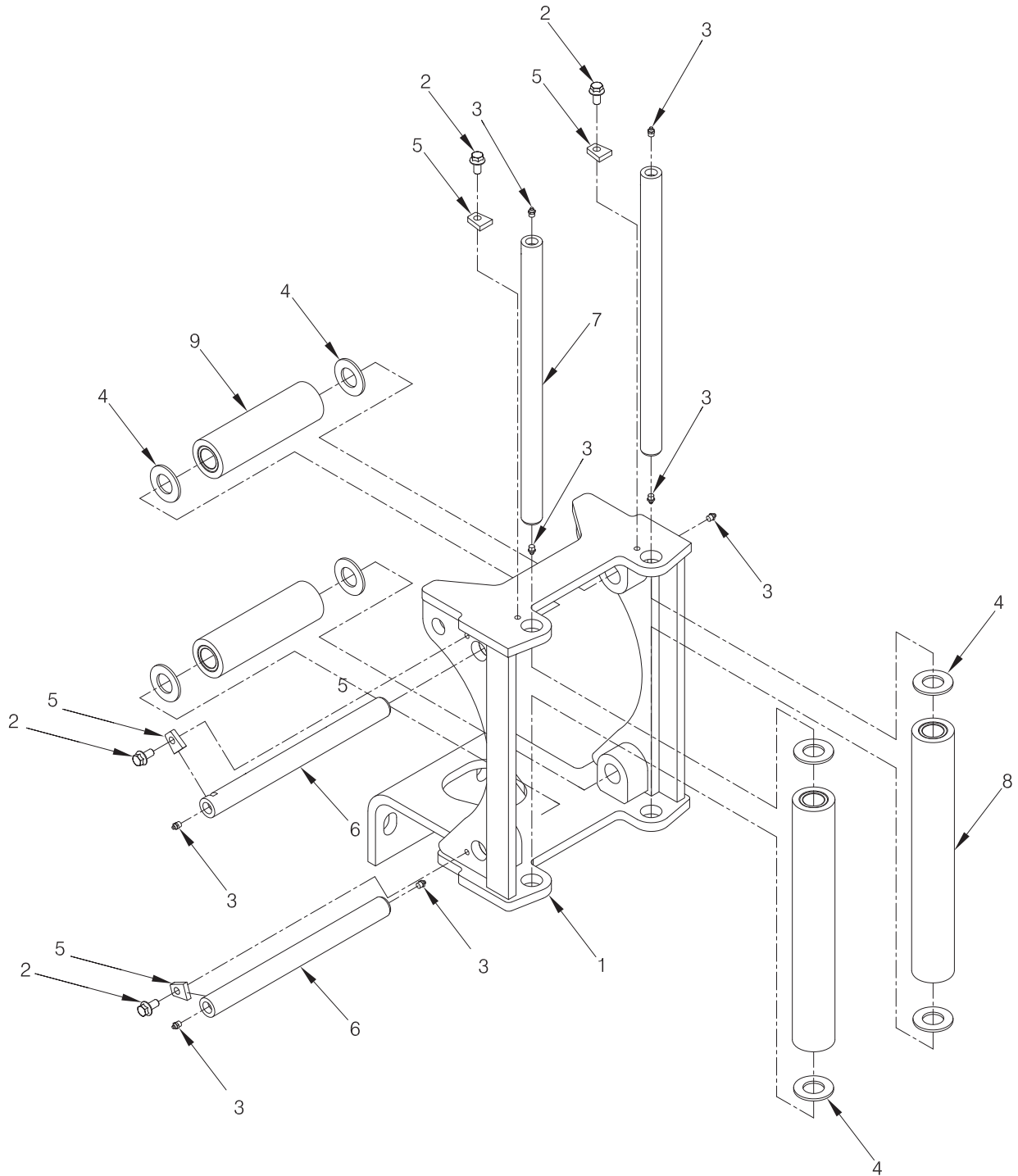
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305145W	Arch Assembly (See 4-5)	1	7	2315531	Support Bar - Arch	2
2	93166W	Keeper	2	8	1310819W	Capscrew	2
3	398817W	Screw, Flange	4	9	2300478W	Capscrew	2
4	1314629W	Pin	2				
5	225851	Hard Washer	10				
6	*a 221372W	Locknut	4				
					*a	Use 318702W Thread Lock	

Arch Assembly



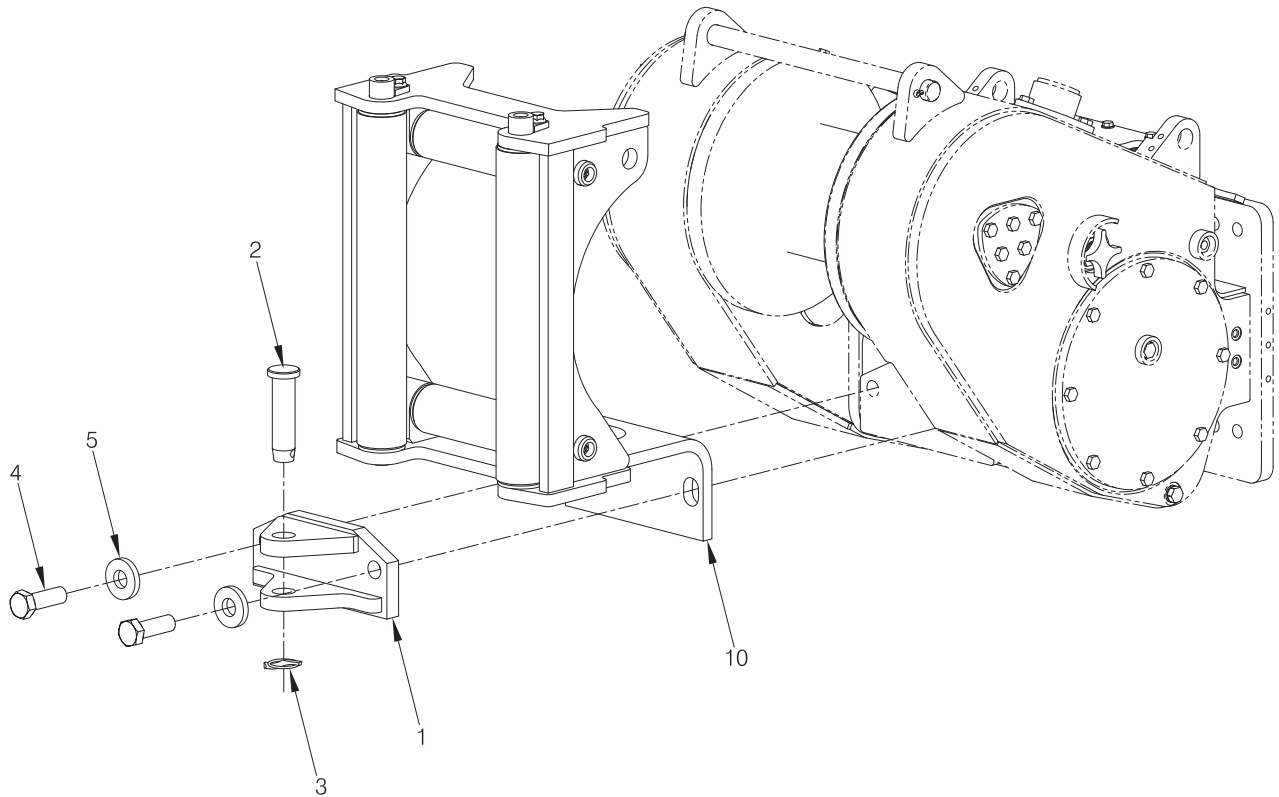
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2305145W	Arch Assembly					
1	2305142W	. Arch Weldment	1	9	2300125W	. Roller	1
2	*a 221724W	. Nut	2	10	2300948W	. Shaft	1
3	342448W	. Roller Assembly	2	11	344826W	. Roller Assembly	1
	59419W	. Bushing	2		59419W	. Bushing	2
4	342447W	. Shaft	2	12	344835W	. Shaft	1
5	344825W	. Washer	8	13	*b 225851	. Washer	A/R
6	93166W	. Keeper	3				
7	398817W	. Flangescrew	6				
8	16001W	. Fitting, Lube	8				
					*a	Use 318702W Thread Lock	
					*b	Use only if required to protect threads.	

Fairlead Assembly



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

Fairlead/Drawbar Installation

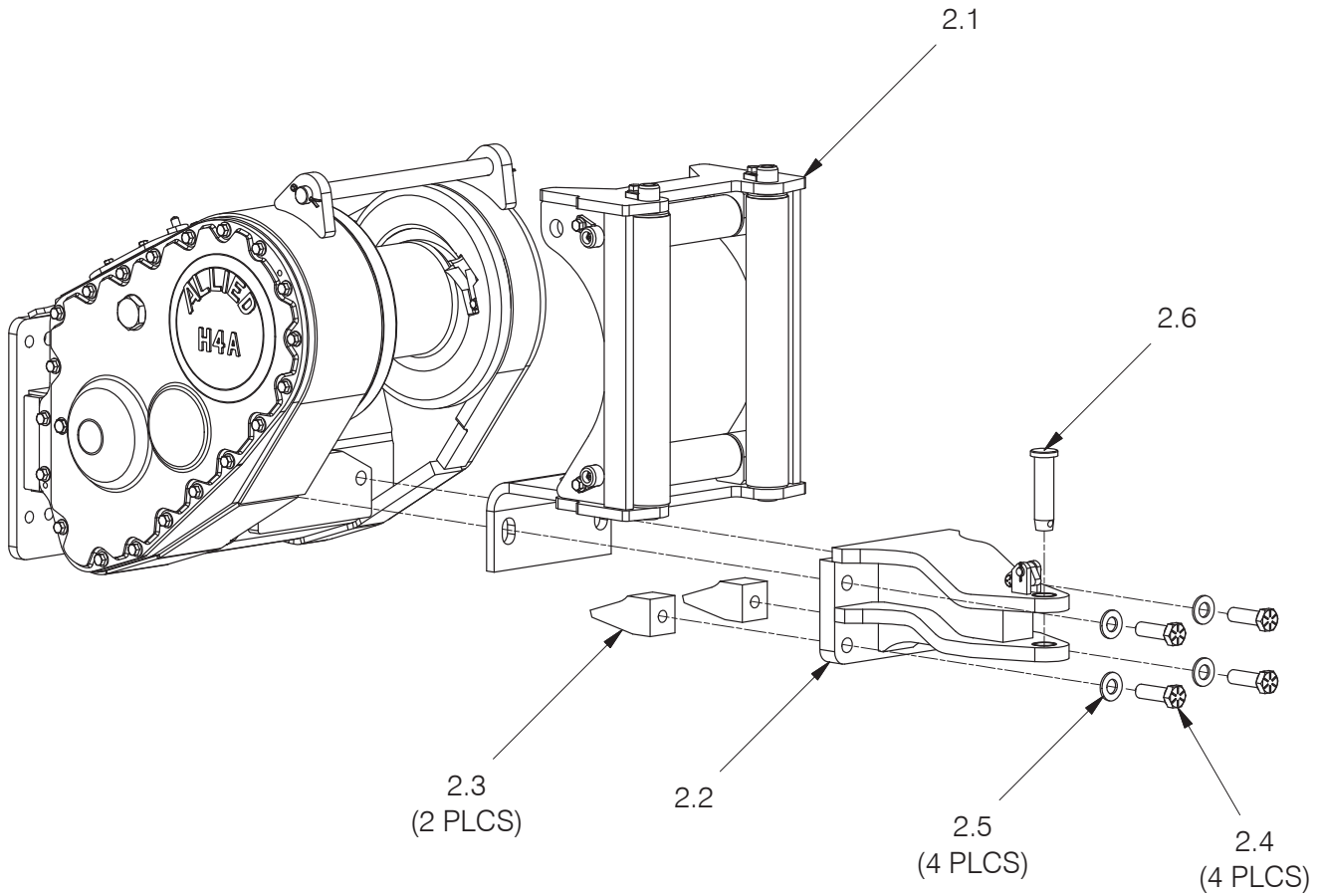


A - Fairlead Installation with Drawbar
 B - Fairlead Installation ONLY
 C - Drawbar Installation ONLY

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

Fairlead/Drawbar Installation

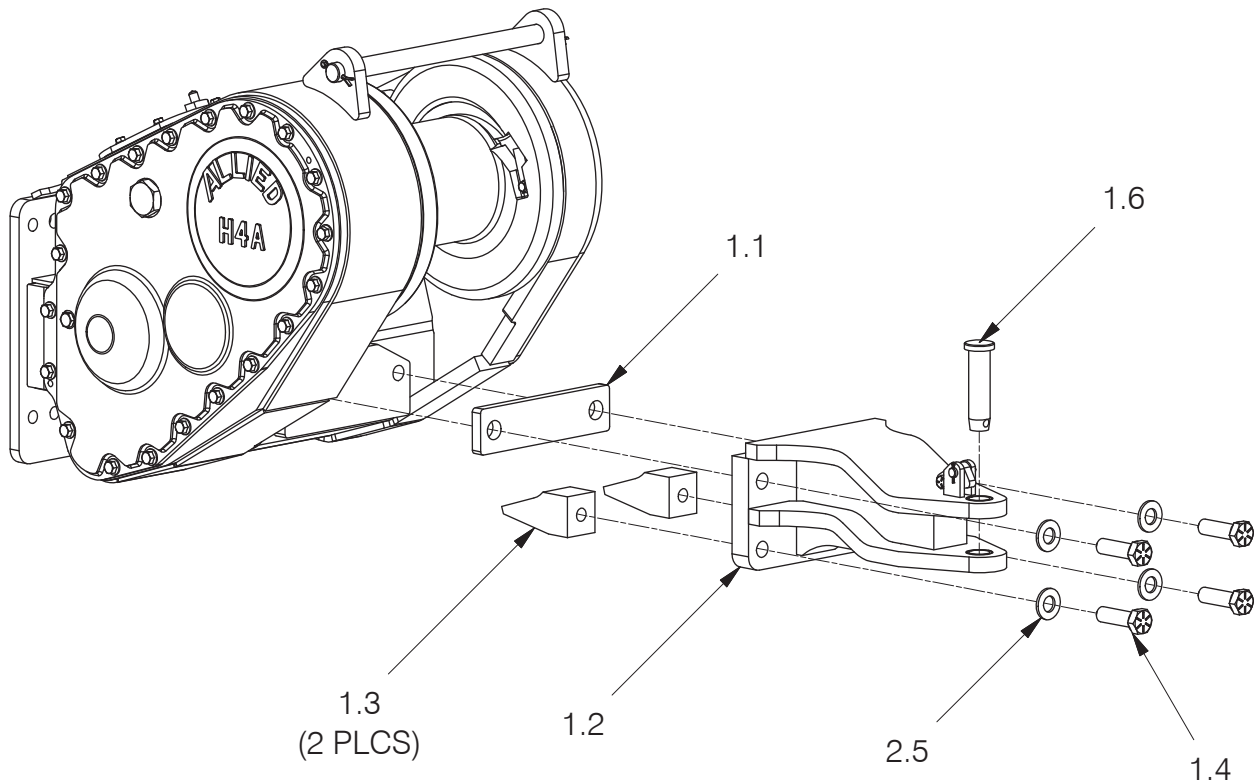
Heavy Duty Extended Drawbar



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
2.1	2305252W	Assembly, Fairlead (See 4-6)	1		16829W	. Capscrew	1
2.2	2314802	Assembly, Drawbar	1		15058W	. Nut	1
	2314800	. Drawbar, Heavy Duty Extended	1	2.3	2314807	Bracket	2
	2304692W	. Bushing	2	2.4	R13806324	Capscrew	4
	145499W	. Latch, Drawbar Pin	1	2.5	221780W	Washer	4
	159W	. Pin, Rod End	1	2.6	2304161W	Pin, Drawbar	1
	15223W	. Pin	1				

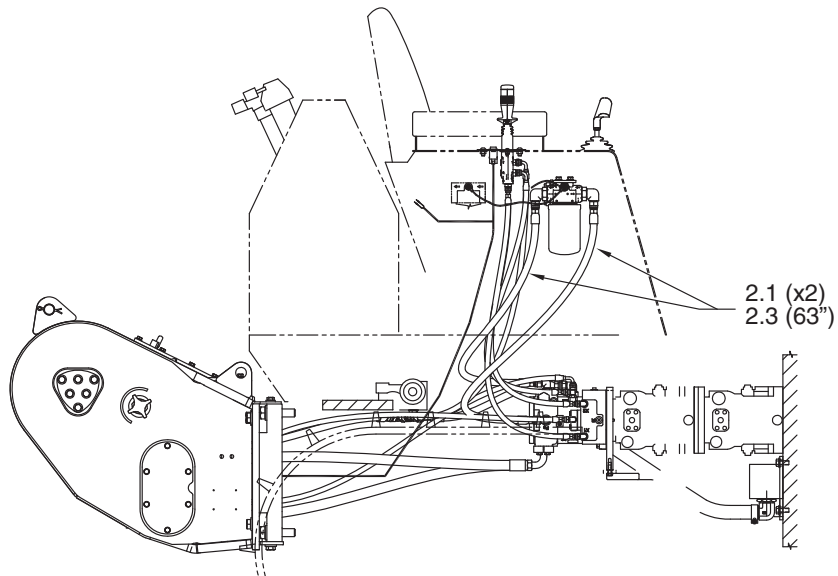
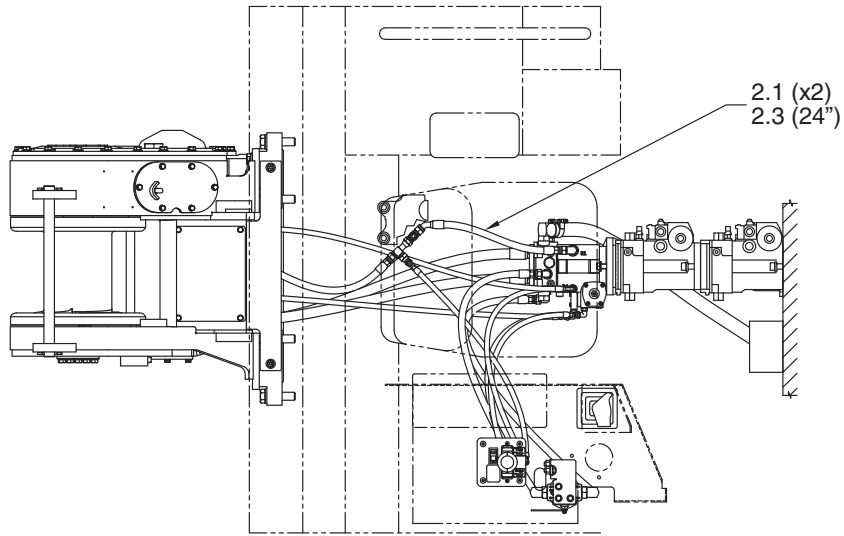
Drawbar Installation

Heavy Duty Extended Drawbar

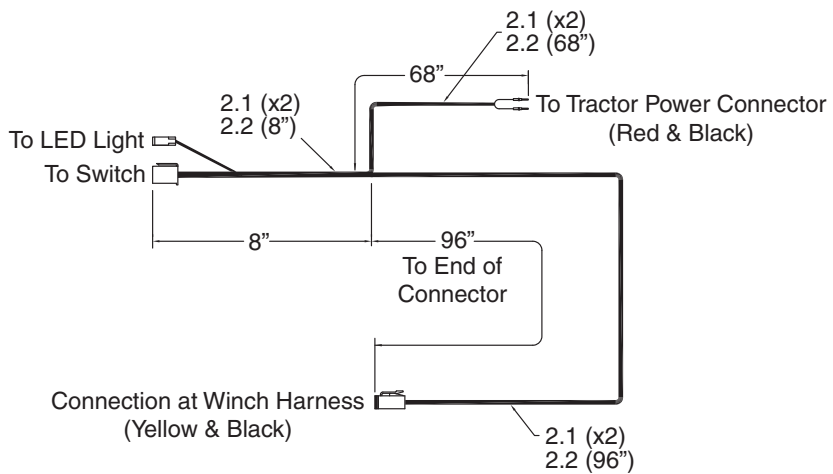


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1.1	2314796	Plate, Spacer	1		16829W	. Capscrew	1
1.2	2314802	Assembly, Drawbar	1		15058W	. Nut	1
	2314800	. Drawbar, Heavy Duty Extended	1	1.3	2314807	Bracket	2
	2304692W	. Bushing	2	1.4	R13806324	Capscrew	4
	145499W	. Latch, Drawbar Pin	1	1.5	221780W	Washer	4
	159W	. Pin, Rod End	1	1.6	2304161W	Pin, Drawbar	1
	15223W	. Pin	1				

Fire Sleeve Kit
Caterpillar D3/4/5G (C17)
Page 1 of 2



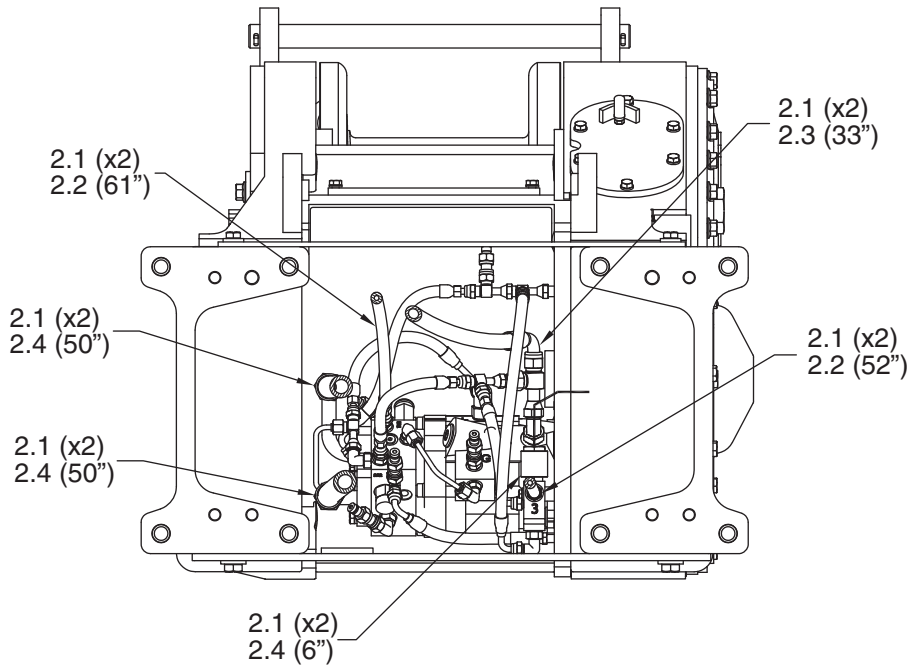
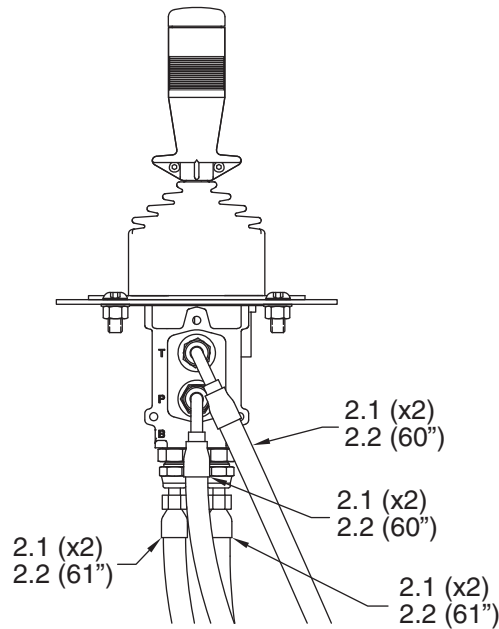
Console Wire Harness Detail



Fire Sleeve Kit

Caterpillar D3/4/5G (C17)

Page 2 of 2



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2315967	Kit - Fire Sleeve					
1	*a 2314877	. Fire Sleeve Components (Internal)	1	2	2315969	. Fire Sleeve Components (External)	1
1.1	*a 2314880	.. Fire Sleeve	1	2.1	589423	.. Clamp	32
1.2	*a 2314881	.. Fire Sleeve	1	2.2	245926	.. Sleeve, Fire	44'
1.3	*a 2314882	.. Fire Sleeve	1	2.3	254775	.. Sleeve, Fire	16'
1.4	*a 2314883	.. Fire Sleeve	3	2.4	249538	.. Sleeve, Fire	9'
1.5	*a 589423	.. Clamp	12				
				*a	Not Illustrated. See Page 3-37.		

Wire Rope Assemblies

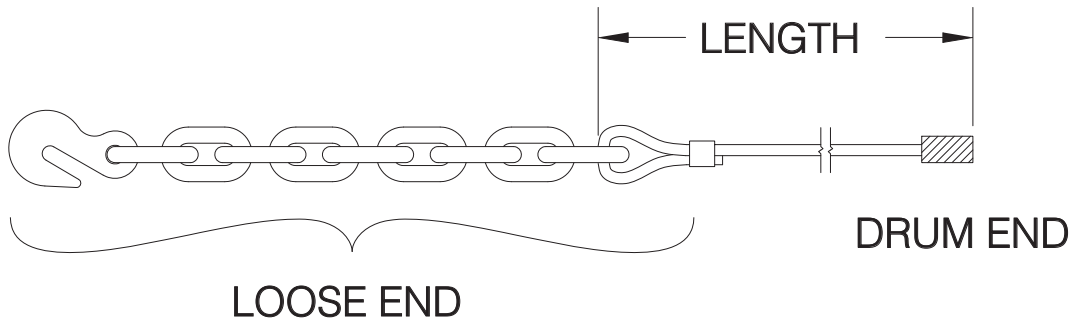


Figure A

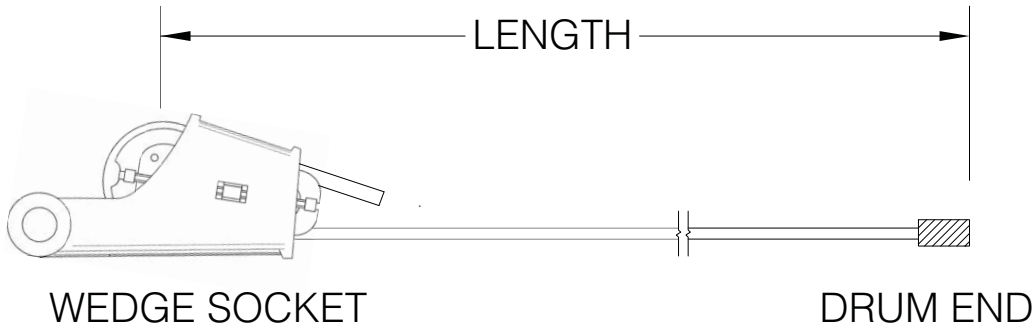


Figure B

Part No.	Wire Diameter	Length Ft (M)	Part No.	Wire Diameter	Length Ft (M)
WR4-279B	*b 1/2"	279 (85) *	* 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) Caution: Do not use larger than 5/8" diameter wire rope if winch is equipped with arch assembly.		
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) **			
YS6-195BWS	*c 3/4"	195 (59) **			

Recommended Service Kits

Recommended Winch Service Intervals 5-2

Recommended Service Kits 5-3

- Motor Shaft Rebuild Kit, P/N 2315287 5-4
- Motor Shaft Rebuild Kit, P/N 2315351 5-5
- Motor, Idler, Intermediate & Drum Shaft Rebuild Kit, P/N 2315288.....
..... 5-6 thru 5-8

Recommended Winch Service Intervals

Allied Systems Company is pleased to announce an additional tool to keep your winch serviced and functioning properly. Following this recommended service schedule will help keep tractor winch downtime to a minimum,

optimize winch operation, and extend the life of your investment. See Table 1 on this page for recommended service intervals, and Table 2 on the next page for recommended service kits.

Hydraulic Winch Maintenance

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 weekly.

* Evaluate = Service based on average winch use;
 - if used more than once a day, perform 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 tractor's hour meter or the length of time the winch is mounted to the tractor, whichever occurs first.

*** Follow tractor schedule if using tractor filter.

Recommended Gear Compartment Oil:

Caterpillar -TO-4

Chevron -Drive Train Fluids HD

ExxonMobil -Mobiltrans HD Series





Consult service/operating manual for low temperature oils and other details. Use of non-recommended oil may void warranty.

2310796 Rev D

Table 1 Recommended Winch Service Intervals

Recommended Service Kits

SERVICE KITS FOR H4A WINCHES				
Service Description	Kit Description	Winch Serial Number	Kit Part No. for Hi-Performance (H) Winches	Kit Part No. for Standard (T) Winches
Filter Change	Filter Kit	ALL	Refer to Dozer Operator & 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 Shaft Rebuild Kit	ALL	2315287*	2315351**
Major Overhaul (Every 10,000 hours)	Motor, Idler, Intermediate & Drum Shaft Rebuild Kit	ALL	2315288	

Note: * High Performance winches with Self-Contained Hydraulics (SCH).

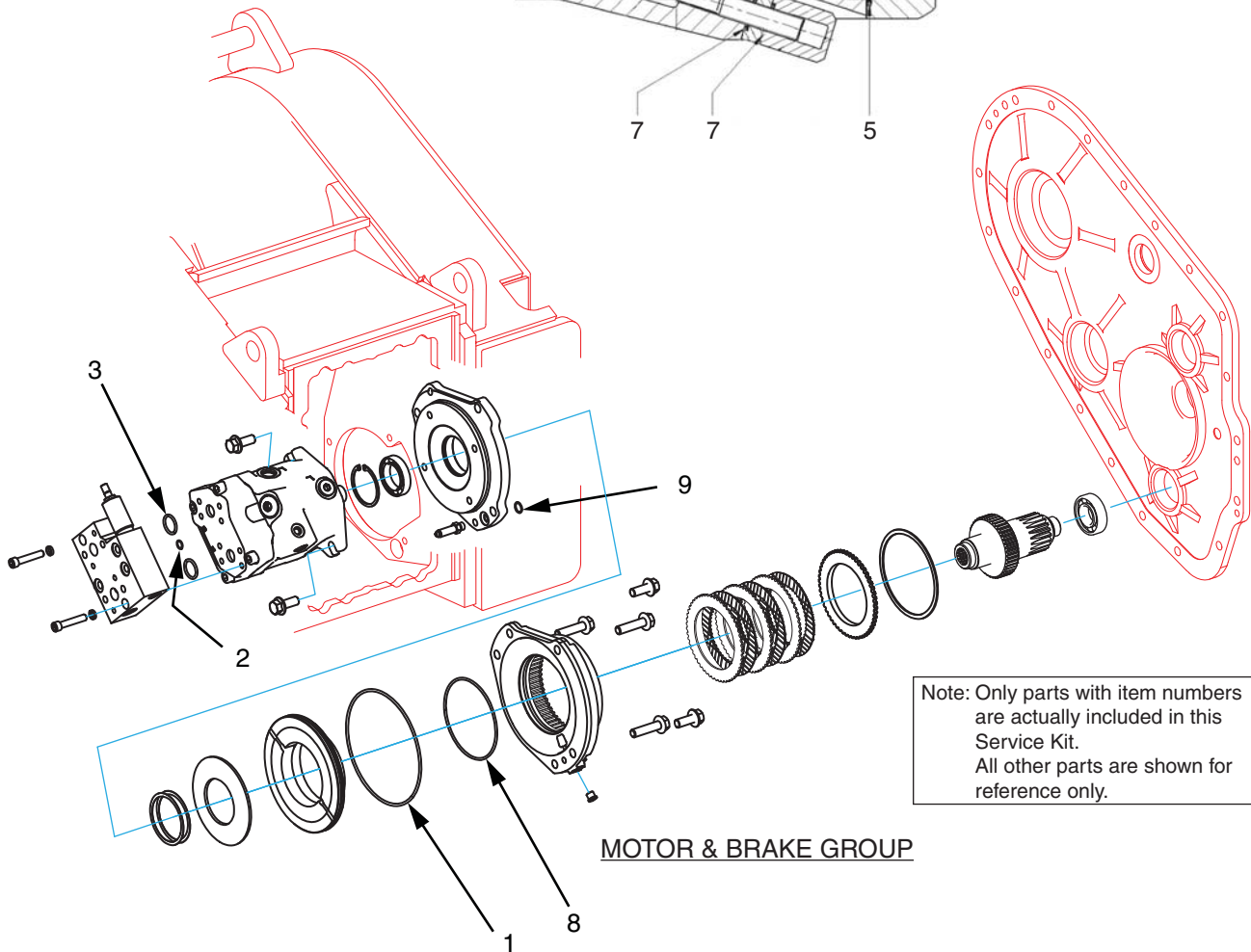
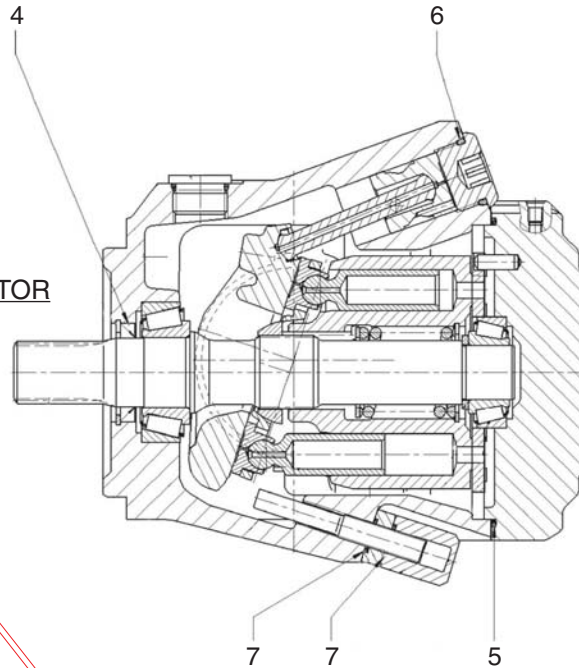
** Standard winches without Self-Contained Hydraulics (Non-SCH).

Table 2 Routine Maintenance Kits

Motor Shaft Rebuild Kit: 2315287

High Performance Winches with Self-Contained Hydraulics (SCH)

HYDRAULIC 45CC 2 SPEED MOTOR



Note: Only parts with item numbers are actually included in this Service Kit. All other parts are shown for reference only.

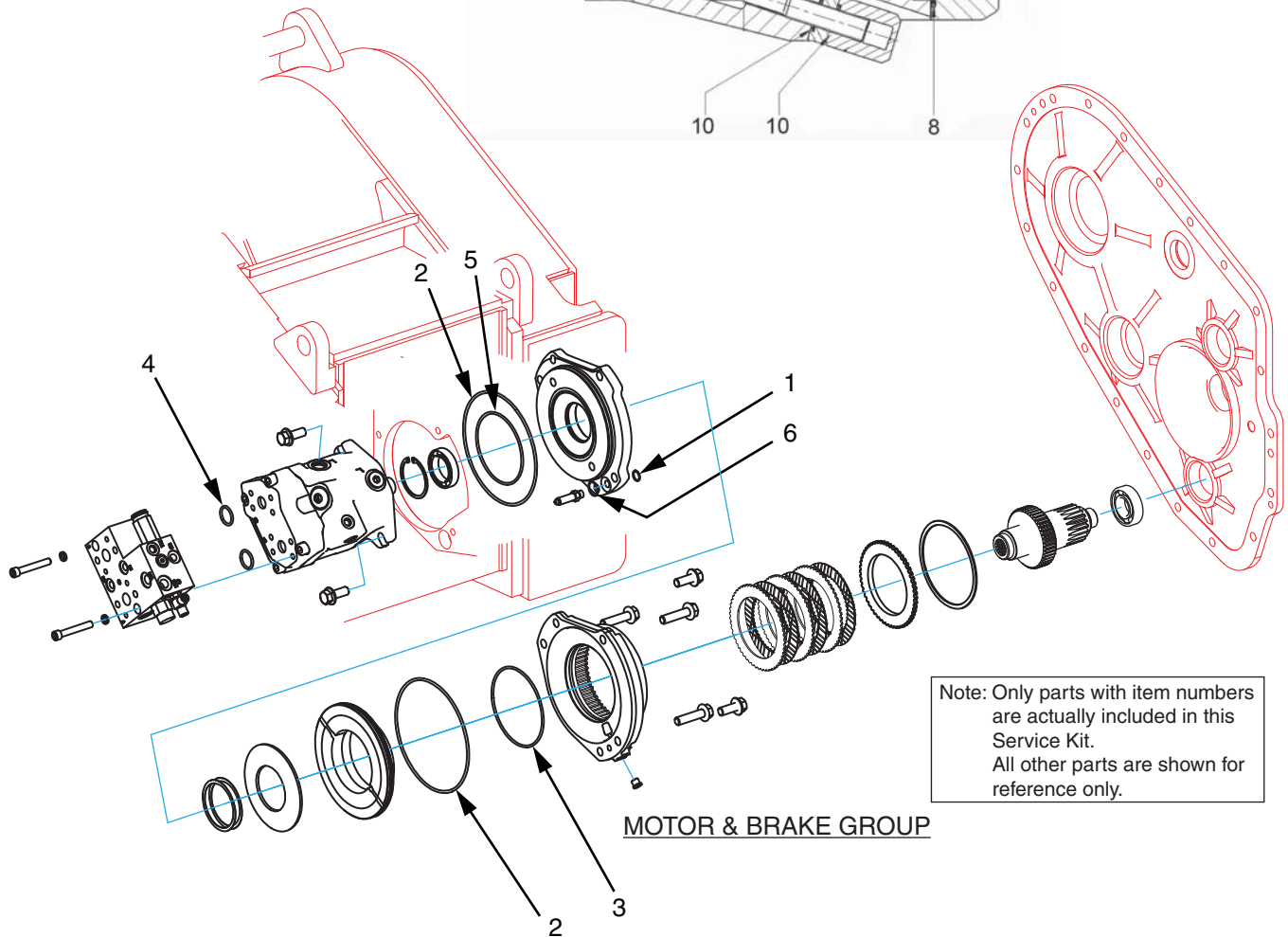
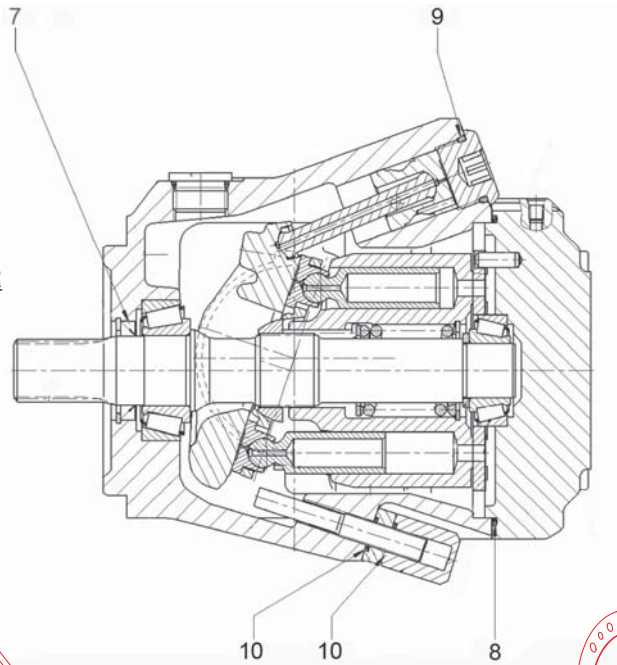
MOTOR & BRAKE GROUP

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2315287	Rebuild Kit, Motor Shaft	1				
1	2316507	. O-Ring	1	6	2305762W	. O-Ring	1
2	2304220W	. O-Ring	1	7	2305763W	. O-Ring	2
3	2304110W	. O-Ring	2	8	2316517	. O-Ring	1
4	2305760W	. Seal, Shaft	1	9	26883	. O-Ring	1
5	2305761W	. O-Ring	1				

Motor Shaft Rebuild Kit: 2315351

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

HYDRAULIC 45CC 2 SPEED MOTOR



Note: Only parts with item numbers are actually included in this Service Kit. All other parts are shown for reference only.

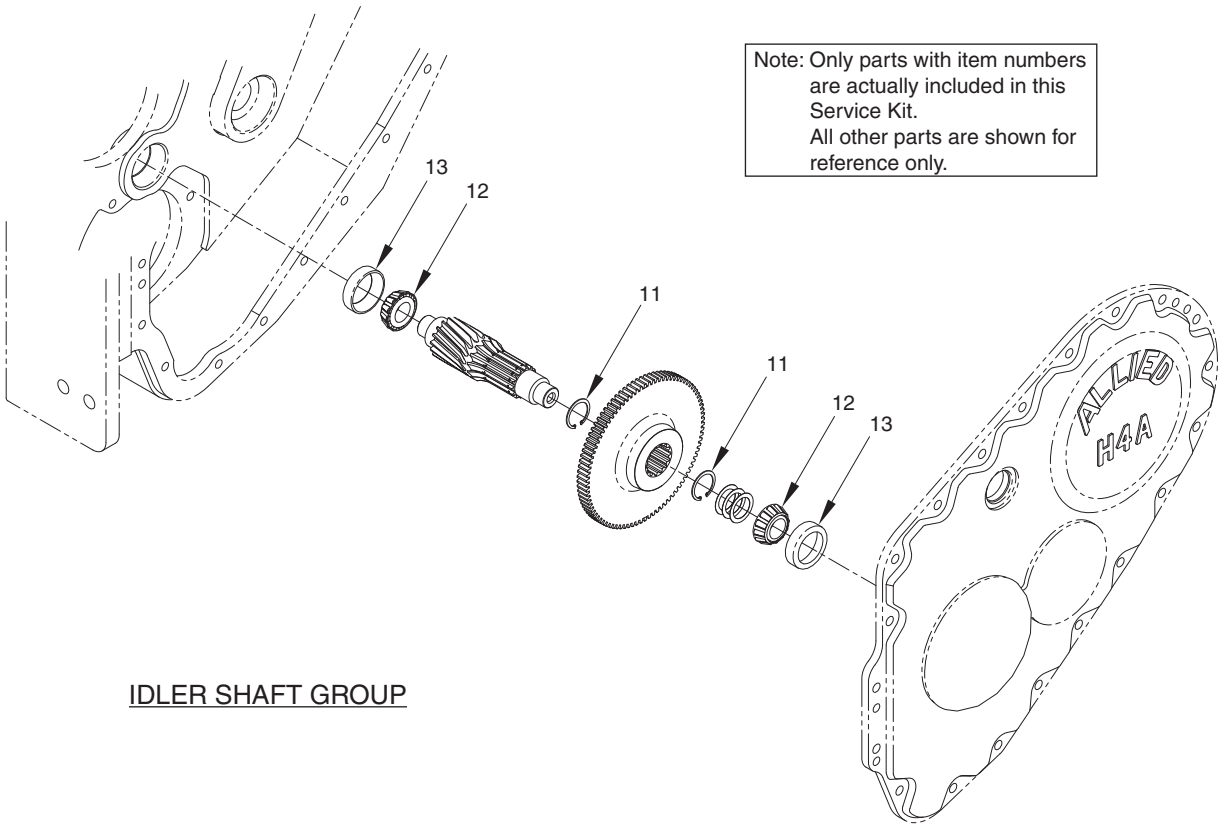
MOTOR & BRAKE GROUP

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

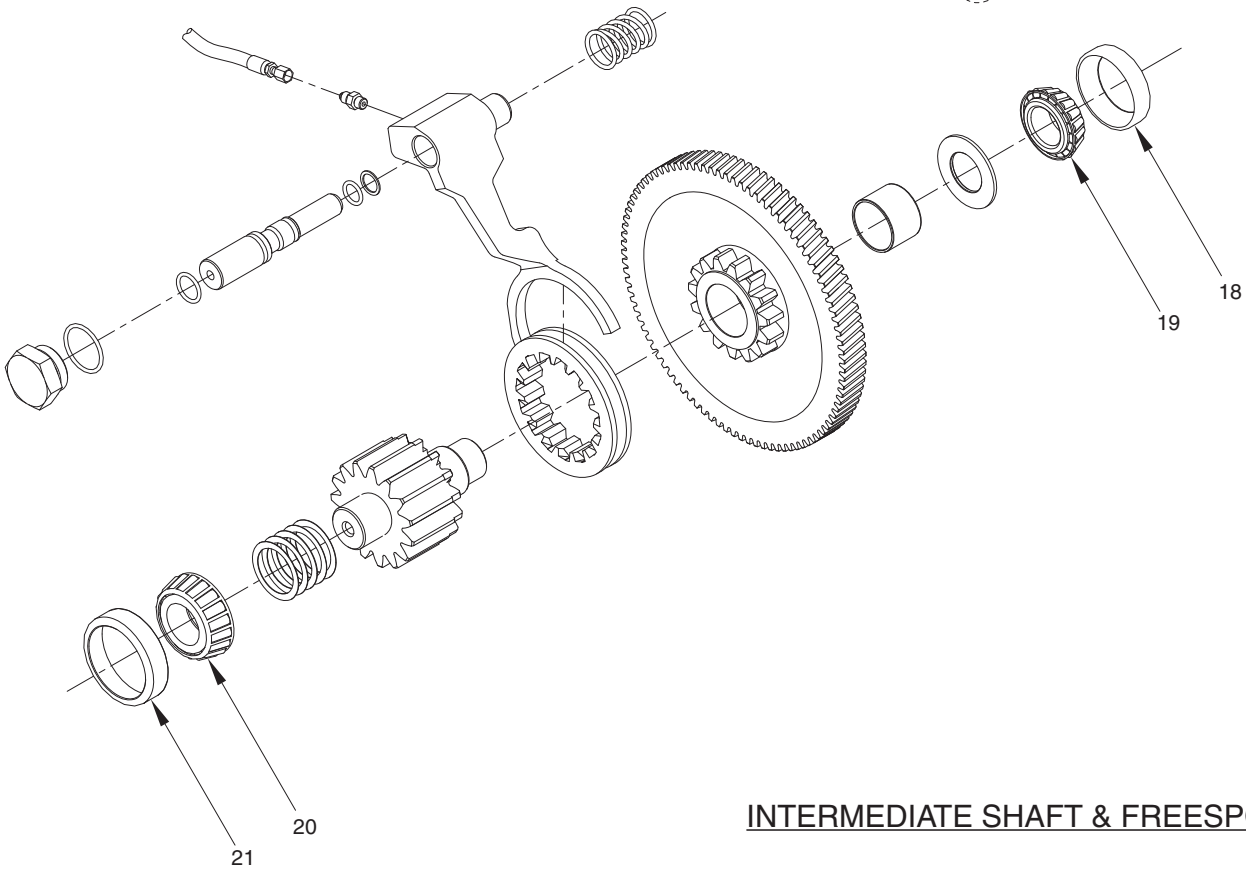
Motor, Idler, Intermediate & Drum Shaft Rebuild Kit: 2315288

Page 1 of 3

Note: Only parts with item numbers are actually included in this Service Kit.
All other parts are shown for reference only.



IDLER SHAFT GROUP

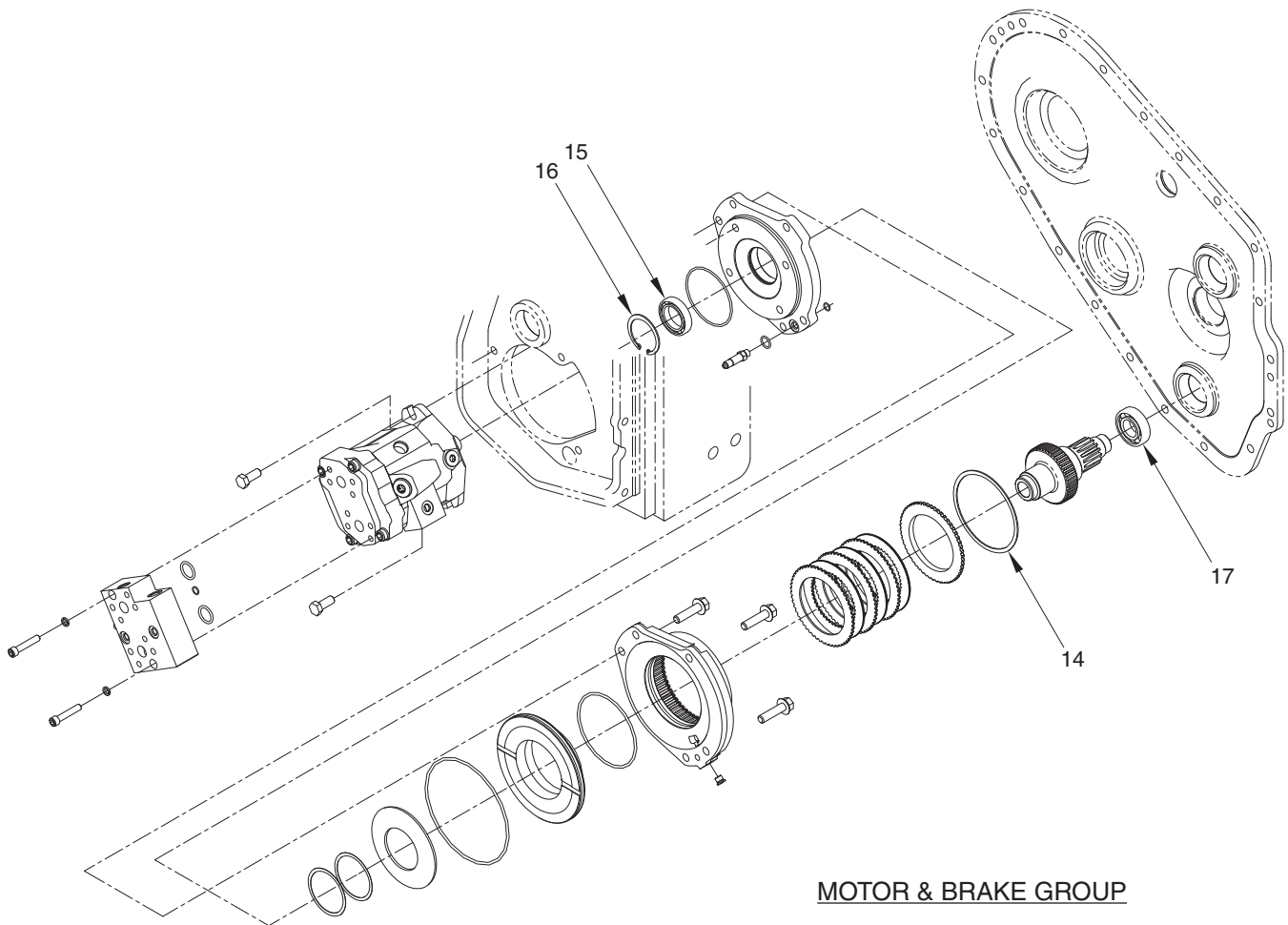


INTERMEDIATE SHAFT & FREESPOOL

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

Page 2 of 3

Note: Only parts with item numbers are actually included in this Service Kit. All other parts are shown for reference only.

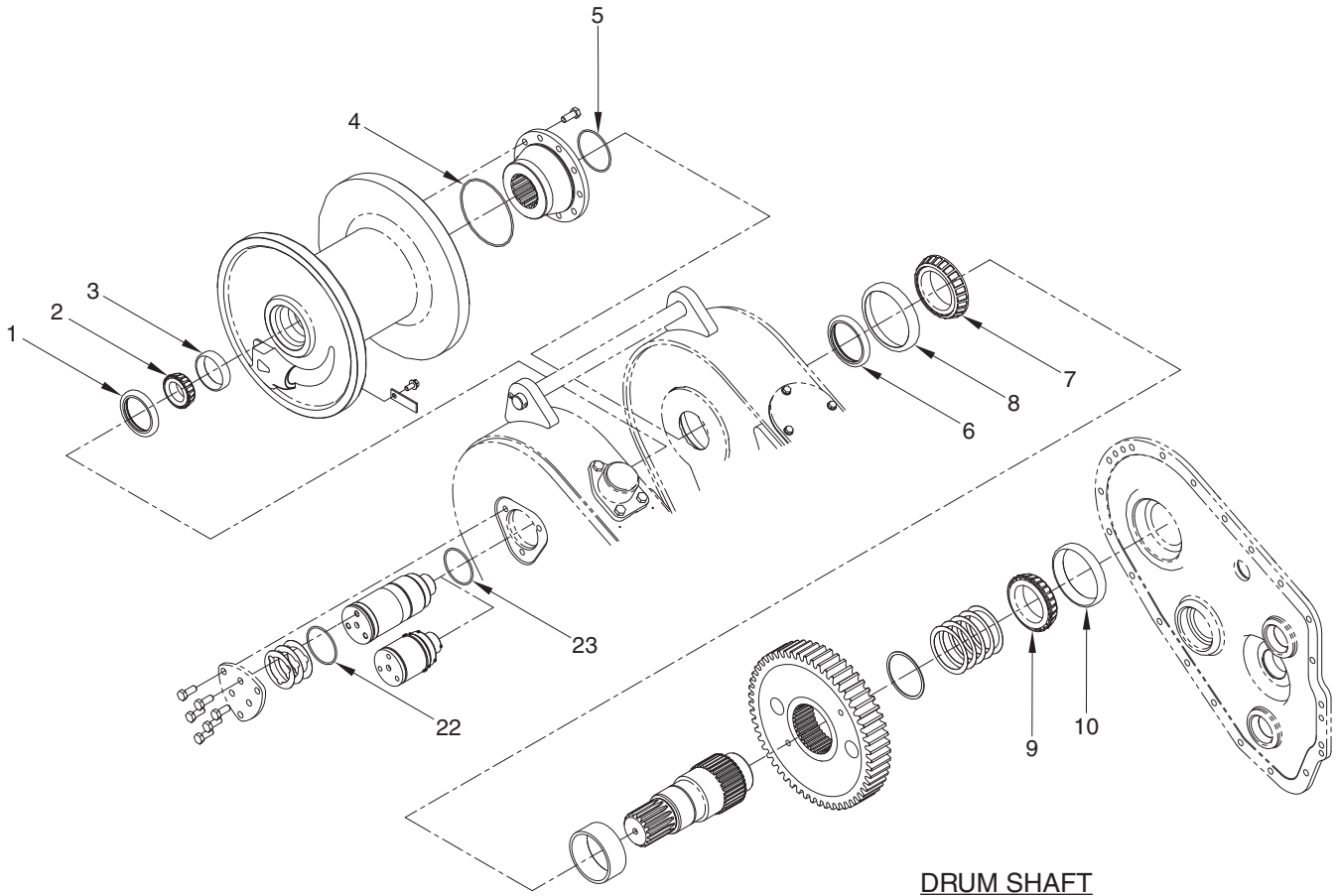


MOTOR & BRAKE GROUP

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

Page 3 of 3

Note: Only parts with item numbers are actually included in this Service Kit.
All other parts are shown for reference only.



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

Suggested Spares Guide

Recommended Service Kits	6-2
• Gaskets & Seals	6-2 thru 6-3
• Motor Shaft Rebuild Kit, P/N 2315287	6-4
• Motor Shaft Rebuild Kit, P/N 2315351	6-4
• Motor, Idler, Intermediate & Drum Shaft Rebuild Kit, P/N 2315288	6-5
• Spare Parts	6-6
• Wire Rope Assemblies	6-6
• Operator Controls Components	6-7
• Hose Kits	6-8 & 6-9
• Tool Kits	6-10
• Diagnostic Tools	6-10



Suggested Spares Guide

H4A Hydraulic Winch

Recommended Service Kits

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

Pages 6-2 through 6-3 include gaskets and seals. Keep these parts in stock at all times for regular maintenance. Order parts from the table based on your winch.

Pages 6-4 and 6-5 contain rebuild 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 6-6 contains lists of spare parts, wire rope assemblies, and operator controls components. Order parts as required and as relevant for your installation.

Page 6-7 contains operator controls components. Order parts as required and as relevant for your installation.

Pages 6-8 and 6-9 contain a list of hose kits. Order parts or kits as required and as relevant for your installation.

Page 6-10 contains a list of tool kits and a list of diagnostic tools. Order kits as required and as relevant for the installation, maintenance and service of your winch(es).

Note: Allied winch Parts Manuals are available for no charge at <http://www.alliedsystems.com/pubs/pubs.htm>.

Gaskets & Seals				Order as Required
Applies to: Frame Seals, Enclosed-Frame (SCH) Winches (H4AH_R, H4AH_E, H4AH_Z)				
Allied P/N	Description	Quantity on Winch	See Parts Manual Page	Order Quantity
2314794	Gasket, Top Cover	2	Frames/Covers	
39365W	O-Ring, Breather Cover (H4A_R)	1		
2305600W	Gasket, Breather Cover (H4A_E, H4A_Z)	1		
232873	O-Ring, RH Cover	1		
2315377	Gasket, LH Top Cover	2		
209744	O-Ring, Plug	4		
16984W	O-Ring, Plug	1		

Gaskets & Seals				Order as Required
Applies to: Frame Seals, Open-Frame (Non-SCH) Winches (H4AH_Y)				
Allied P/N	Description	Quantity on Winch	See Parts Manual Page	Order Quantity
2315377	Gasket, Breather Cover	1	Frames/Covers	
209744	O-Ring, Plug	1		
16984W	O-Ring, Plug	1		



Suggested Spares Guide

Gaskets & Seals				Order as Required
Applies to: Motor Valve Assemblies				
Allied P/N	Description	Quantity on Winch	See Parts Manual Page	Order Quantity
242101	Seal Kit, Pressure Reducing Cartridge	1	Motor Valve Assembly H4AH S/N H4A-1000 thru H4A-1003 and H4A-1005 thru H4A-1037	
2305073W	Seal Kit, Shuttle Valve	1		
2305073W	Seal Kit, Shuttle Valve	1	Motor Valve Assembly H4AH*R/Y S/N H4A-1004 and H4A-1038 thru H4A-1161	
2305736W	Seal Kit, Sequence Valve	1		
242101	Seal Kit, Pressure Reducing Cartridge	1	Motor Valve Assembly H4AH*Y First Used on S/N H4A-1162	
252563	Seal Kit, Directional Cartridge Valve	1		
2307221W	Vent Cap Seal, Directional Cartridge Valve	1		
2307172W	Seal Kit, Sequence Valve	1		
2307171W	Seal Kit, Shuttle Valve	2		

Gaskets & Seals				Order as Required
Applies to: Komatsu D31/37/39X-22 (K13), D37/39X-23, D39X-24 (K14) (Non Ripper Equipped Models Only)				
Allied P/N	Description	Quantity on Winch	See Parts Manual Page	Order Quantity
2311041	Ring	4	4 to 5 Spool Valve Conversion	

Gaskets & Seals				Order as Required
Applies to: Through Drive Charge Pumps Caterpillar D3G (C17), D4/5G (C18), D3/4/5K (C19), D5K/D5K2 (C20), D5K2 with Fireplow (C201)				
Allied P/N	Description	Quantity on Winch	See Parts Manual Page	Order Quantity
118358W	O-Ring (C17)	1	Through Drive Charge Pump (High Performance Winches Only)	
39742W	O-Ring (C17)	1		
2306270W	O-Ring (C18)	2		
2306277W	Seal Ring (C18)	6		
2306278W	O-Ring (C18)	1		
2306279W	O-Ring (C18)	1		
2306280W	O-Ring (C18)	1		
2311194	O-Ring (C20, C201)	2		
2311195	O-Ring (C20, C201)	1		
2311196	O-Ring (C20, C201)	1		



Suggested Spares Guide

Motor Shaft Rebuild Kit, P/N: 2315287

Applies to: High Performance Winches with Self-Contained Hydraulics (SCH)

Service Interval: Every 5,000 Hours

Allied P/N	Description	Quantity in Kit	See Parts Manual Page	Order Quantity
2315287	Rebuild Kit, Motor Shaft			
2316507	. O-Ring	1	Motor & Brake Group (SCH)	
2304220W	. O-Ring	1		
2304110W	. O-Ring	2		
2316517	. O-Ring	1		
26883	. 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 Shaft Rebuild Kit, P/N: 2315351

Applies to: Standard Winches without Self-Contained Hydraulics (Non-SCH)

Service Interval: Every 5,000 Hours

Allied P/N	Description	Quantity in Kit	See Parts Manual Page	Order Quantity
2315351	Rebuild Kit, Motor Shaft			
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	Hydraulic 45CC 2 Speed Motor	
2305760W	. Seal, Shaft	1		
2305761W	. O-Ring	1		
2305762W	. O-Ring	1		
2305763W	. O-Ring	2		



Suggested Spares Guide

Motor, Idler, Intermediate and Drum Shaft Rebuild Kit, P/N: 2315288

Applies to: All

Service Interval: Every 10,000 Hours

Allied P/N	Description	Quantity in Kit	See Parts Manual Page	Order Quantity
2315288	Rebuild Kit, Motor, Idler, Intermediate and Drum Shaft			
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		



Suggested Spares Guide

Spare Parts			Order as Required	
Applies to: All				
Allied P/N	Description	Quantity on Winch	See Parts Manual Page	Order Quantity
2303788W	Motor, Hydraulic	1	Motor & Brake Group	
2314620	Motor, Hydraulic (K14 Only)	1		
2315765	Motor, Hydraulic (U13 Only)	1		
2304873W	Plate, Friction	3	Frame/Covers	
2305104W	Assembly, Breather (H4AH_R)	1		
2305103W	Cover, Breather (H4AH_R)	1		
21420W	Plug, Breather (H4A_E, H4A_Z, H4A_Y)	1	Fairlead/Drawbar Installation	
2304161W	Pin, Drawbar	1		
2303221W	Pin, Retaining	1		
59419W	Bushing	8	Drum Shaft Group	
134803W	Capscrew	1		
1314503W	Keeper, Ferrule	1		

Wire Rope Assemblies			Order as Required	
Applies to: All				
Allied P/N	Description	Length	Will Fill Drum To:	Order Quantity
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)	
WR6-129BLP	Wire Rope Assembly w/Loop, 3/4"	129 (39)	2/3 Capacity (Recommended)	
WR6-195B	Wire Rope Assembly, 3/4"	195 (59)	Full Capacity	
WR6-195BLP	Wire Rope Assembly w/Loop, 3/4"	195 (59)	Full Capacity	
YS6-195BWS	Wire Rope Assembly, 3/4"	195 (59)	Full Capacity	



Suggested Spares Guide

Operator Controls Components			Order as Required	
Applies to: See Right-Hand Side Column				
Allied P/N	Description	Quantity on Winch	Relevant for Installation	Order Quantity
2310013	Assembly, 24V Switch	1	Case 750/850M (H4AH_R__R17), John Deere 550-650K (H4AH_R__E16), John Deere 700H/J (H4AH_R__E39) John Deere 700K (H4AH_R__E391)	
2310017	Assembly, 12V Switch	1	Case 650L (H4AH_R__R16) Caterpillar D3/4/5G (H4AH_Y_C17), D4/5G (H4AH_Y_C18), D3/4K (H4AH_Y_C19), D5K (H4AH_Y_C20), D3/4K (H4AT_Y__C19), D5K (H4AT_Y__C20); John Deere 450-650J (H4AH_R__E15) Dressta TD7/8S (H4AT_Y__H15), TD9S (H4AT_Y__H16)	
2311352	Assembly, Oil Filter Indicator	1	Caterpillar D3/4K/K2 (H4AH_Y_C19), D5K/K2 (H4AH_Y_C20), D5K2 With Fireplow (H4AH_Y__C201)	



Suggested Spares Guide

Hose Kits			Order as Required	
Applies to: See "Relevant for Installation" Column				
Allied P/N	Description	Quantity on Winch	Relevant for Installation	Order Quantity
2315305	Hose Kit, Winch Hydraulics	1	Last Used on S/N H4AH-B1014	
2315306	Hose Kit, Winch Hydraulics	1	First Used on S/N H4AH-R1048	
2315315	Hose Kit, Winch Hydraulics	1	Case 650/750/850K, 750/850L (H4AH_R__R15)	
2315317	Hose Kit, Winch Hydraulics	1	Case 650L (H4AH_R__R16)	
2314932	Hose Kit, Winch Hydraulics	1	Case 650L (H4AH_R__R16), Case 750/850M (H4AH_R__R17)	
2315316	Hose Kit, Winch Hydraulics	1	Caterpillar D3/4/5C (H4AH_B__C16 and H4AH_R__C16)	
2315322	Hose Kit, Winch Hydraulics	1	Caterpillar D3/4/5G (H4AH_Y__C17), Caterpillar D4/5G (H4AH_Y__C18), First Used on S/N H4A-1162	
2315321	Hose Kit, Winch Hydraulics	1	Caterpillar D3/4/5G (H4AH_Y__C17), Caterpillar D4/5G (H4AH_Y__C18), Last Used on S/N H4A-1161	
2315309	Hose Kit, Winch Hydraulics	1	Caterpillar D3/4/5G (H4AH_Y__C17), Caterpillar D4/5G (H4AH_Y__C18), Caterpillar D3/4K (H4AH_Y__C19), Caterpillar D5K (H4AH_Y__C20), Last Used on S/N H4AH-1161	
2315310	Hose Kit, Winch Hydraulics	1	Caterpillar D3/4/5G (H4AH_Y__C17), Caterpillar D4/5G (H4AH_Y__C18), Caterpillar D3/4K (H4AH_Y__C19), Caterpillar D5K/D5K2 (H4AH_Y__C20), Caterpillar D5K2 With Fireplow (H4AH_Y__C201), First Used on S/N H4AH-1162	
2315307	Hose Kit, Winch Hydraulics	1	Caterpillar D3/4/5G (H4AH_Z__C17), Last Used on S/N H4A-1014	
2315319	Hose Kit, Winch Hydraulics	1	Caterpillar D3/4/5G (H4AH_Z__C17), Last Used on S/N H4A-1014	
2315308	Hose Kit, Winch Hydraulics	1	Caterpillar D3/4/5G (H4AH_Z__C17), Used on S/N H4A-1015 thru H4A-1031	
2315320	Hose Kit, Winch Hydraulics	1	Caterpillar D3/4/5G (H4AH_Z__C17), Used on S/N H4A-1015 thru H4A-1031	



Suggested Spares Guide

Hose Kits		Order as Required		
Applies to: See "Relevant for Installation" Column				
Allied P/N	Description	Quantity on Winch	Relevant for Installation	Order Quantity
2315323	Hose Kit, Winch Hydraulics	1	Caterpillar D3/4K (H4AH_Y__C19), Last Used on S/N H4A-1161	
2315327	Hose Kit, Winch Hydraulics	1	Caterpillar D3/4K (H4AT_Y__C19), Caterpillar D5K (H4AT_Y__C20)	
2315311	Hose Kit, Winch Hydraulics	1	Caterpillar D3/4K (H4AT_Y__C19), Caterpillar D5K (H4AT_Y__C20) Dressta TD7/8S (H4AT_Y__H15), Dressta TD9S (H4AT_Y__H16) Shantui SD10 (H4AT_Y__U13)	
2315324	Hose Kit, Winch Hydraulics	1	Caterpillar D3/4K/K2 (H4AH_Y__C19), First Used on S/N H4A-1162	
2315325	Hose Kit, Winch Hydraulics	1	Caterpillar D5K (H4AH_Y__C20), Last Used on S/N H4A-1161	
2315326	Hose Kit, Winch Hydraulics	1	Caterpillar D5K/K2 (H4AH_Y__C20), First Used on S/N H4A-1162	
2315312	Hose Kit, Winch Hydraulics	1	Caterpillar D5K2 with Fireplow (H4AH_Y__C201)	
2315318	Hose Kit, Winch Hydraulics	1	Dressta TD7/8S (H4AT_Y__H15) Dressta TD9S (H4AT_Y__H16)	
2315328	Hose Kit, Winch Hydraulics	1	John Deere 450-650J (H4AH_R__E15), John Deere 550-650K (H4AH_R__E16)	
2315329	Hose Kit, Winch Hydraulics	1	John Deere 700H/J (H4AH_R__E39)	
2315330	Hose Kit, Winch Hydraulics	1	John Deere 700K (H4AH_R__E391)	
2315331	Hose Kit, Winch Hydraulics	1	Komatsu D31/37/39 E-21 & E21-A (H4AH_B__K12)	
2315313	Hose Kit, Winch Hydraulics	1	Komatsu D31/37/39 E-22 (H4AT_Y__K13) Komatsu D37/39 E-23 (H4AT_Y__K14)	
2315332	Hose Kit, Winch Hydraulics	1	Komatsu D31/37/39X-22 and 22-A (H4AT_Y__K13)	
2315314	Hose Kit, Winch Hydraulics	1	Komatsu D31/37/39X-22 and 22-A (H4AT_Y__K13)	
2315333	Hose Kit, Winch Hydraulics	1	Komatsu D37/39X-23, D39X-24 (H4AT_Y__K14)	



Suggested Spares Guide

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

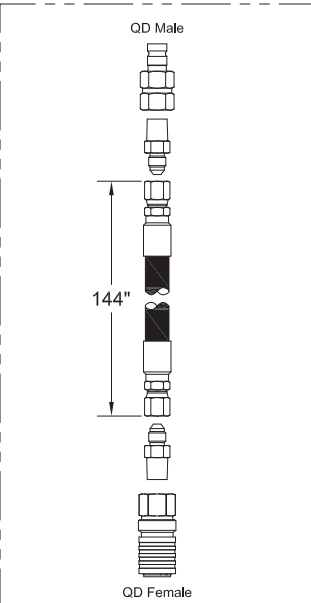
Order these Tools as required for maintenance and service of your winch(es).

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

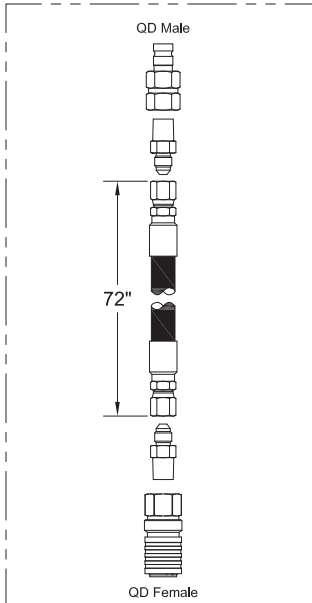


QD Male

144"

QD Female

70381
Kit, Hose Assembly, W/QD Both Ends

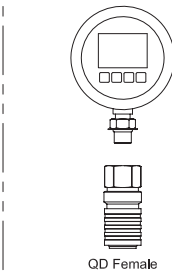


QD Male

72"

QD Female

69782
Kit, Hose Assembly, W/QD Both Ends



QD Female

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

Numerical Index

17064 - 2310013.....	7-2
2310013 - 2311491.....	7-3
2311491 - 2315287.....	7-4
2315288 - 15134W	7-5
15134W - 18535W.....	7-6
18720W - 2303848W.....	7-7
2303848W - 2304234W.....	7-8
2304235W - 2305645W.....	7-9
2305651W - 2307122W.....	7-10
2307122W - 39365W.....	7-11
39365W - Y17C-0624	7-12
Y17C-0624 - YS6-195BWS.....	7-13

7-2

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
17064	2-9	3.7	212718	3-93	57	231955	3-101	2.23	242111	3-47	28
17064	2-11	3.7	212718	3-95	58	231955	3-89	11	242120	3-75	1.33
17064	5-5	6	212718	3-145	58	232387	3-87	2.2	242120	3-79	1.33
17064	6-4		212762	3-132	3.2	232687	3-91	15	242120	3-87	1.33
24257	1-11	16	212762	3-135	3.2	232687	3-93	50	242230	3-117	3
24257	3-32	18	212762	3-131	5	232687	3-95	50	242629	3-89	12
24257	3-33	18	212762	3-134	5	232873	1-3	42	244400	3-15	20
24257	3-30	29	213883	3-35	48.1	232873	1-5	42	245926	4-11	2.2
24257	3-31	29	218760	1-17	3	232873	6-2		247426	3-113	1
26883	5-5	1	223784	3-93	22	232984	3-13	7	248165	3-87	2.12
26883	2-7	2.14	223784	3-95	22	232984	3-17	12	248165	3-75	2.7
26883	2-9	2.14	223784	3-142	22	232984	3-16	15	248165	3-79	2.7
26883	2-11	2.14	223784	3-91	40	232984	3-15	18	248165	3-83	71
26883	5-4	9	223929	3-151	2	232984	3-14	19	248165	3-71	76
26883	6-4		223929	3-138	12	232984	3-41	23.24	248854	3-155	8
26883	6-4		223929	3-140	12	232984	3-49	23.24	248918	3-39	2
69778	6-10		223929	3-142	32	232984	3-39	24	248918	3-47	2
69782	6-10		223929	3-144	32	232984	3-47	24	248918	3-41	23.2
70381	6-10		225851	4-4	5	232984	3-49	25.1	248918	3-49	23.2
201567	3-45		225851	4-2	6	232984	3-37	26.4	249005	3-155	7
201634	3-45		225851	4-3	6	232984	3-47	34	249151	3-98	8
203438	3-45		225851	4-5	13	234505	3-159	2	249537	3-37	26.29
203525	2-12	11	227025	3-75	1.13	234655	3-41		249538	4-11	2.4
203525	5-8	23	227025	3-79	1.13	234655	3-47		249538	3-45	66
203525	6-5		227025	3-87	1.13	234655	3-49		250365	3-49	25.4
203540	3-29	1.1	227025	3-89	19	235314	3-105	5	250365	3-47	37
209083	3-93	16	227025	3-71	20	235314	3-106	5	250589	3-116	
209083	3-95	16	227025	3-83	20	235314	3-107	5	251107	3-157	2
209083	3-143	16	228131	3-150	3	235387	3-16	2	251487	3-93	25
209083	3-145	16	228663	3-93	24	235387	3-17	2	251487	3-95	25
209083	3-55	49	228663	3-95	24	235387	3-153	3	252134	3-39	
209083	3-57	49	228773	3-15	19	235387	3-13	5	252134	3-41	
209083	3-91	52	229383	3-153	4	235387	3-117	6	252563	6-3	
209083	3-139	52	229383	3-138	14	235387	3-112	9	252563	3-112	
209083	3-141	52	229383	3-140	14	235387	3-138	13	252566	3-117	
209215	3-103	1.25	229383	3-142	34	235387	3-140	13	254002	3-49	25.5
209423	3-135	3.3	229383	3-144	34	235387	3-142	33	254002	3-47	38
209423	3-131	10	229383	3-137	47	235387	3-144	33	254775	4-11	2.3
209423	3-134	10	229447	3-45	18	235387	3-137	48	258729	3-29	1.4
209423	3-49	25.9	231439	3-130	6	236805	3-101	2.18	588466	6-10	
209423	3-47	42	231439	3-39	13	236855	3-101	2.25	588467	6-10	
209423	3-132	3.3	231439	3-47	13	236855	3-108	4	588468	6-10	
209436	3-31	32	231439	3-41	23.13	236855	3-109	4	588469	6-10	
209486	3-52	12	231439	3-49	23.13	236855	3-134	11	588526	6-10	
209486	3-143	59	231439	3-49	25.12	236855	3-39	17	588527	6-10	
209486	3-145	59	231439	3-37	26.25	236855	3-47	17	588528	6-10	
209695	3-101	2.8	231439	3-125	37	236855	3-41	23.17	588529	6-10	
209695	3-98	6	231439	3-124	42	236855	3-49	23.17	588530	6-10	
209695	3-99	6	231439	3-47	45	236855	3-37	26.3	589423	4-11	1.5
209696	3-101	2.9	231441	3-17	8	236855	3-148	37	589423	4-11	2.1
209744	6-2		231441	3-16	9	236855	3-131	41	589423	3-37	31.5
209744	6-2		231441	3-15	11	236972	3-45		589423	3-45	67
209843	3-2	28	231441	3-14	12	237346	3-157	3	906601	6-10	
209843	3-3	28	231452	3-13	8	237346	3-158	3	2310009	3-39	
210709	3-39	10	231452	3-15	10	237983	3-37	26.14	2310009	3-41	
210709	3-47	10	231452	3-14	11	237983	3-67	31	2310009	3-115	
210709	3-41	23.10	231452	3-39	19	237983	3-5	31	2310010	3-115	1
210709	3-49	23.10	231452	3-47	19	238173	3-91	18	2310011	3-108	1
210769	3-103	1.27	231452	3-41	23.19	238173	3-93	52	2310011	3-71	19
211564	3-155	6	231452	3-49	23.19	238173	3-95	52	2310011	3-83	19
211564	3-41	23.35	231452	3-67	30	238671	2-4	29	2310011	3-37	26.16
211564	3-49	23.35	231452	3-5	30	238671	2-5	29	2310011	3-91	70.2
211564	3-37	26.37	231465	3-108	3	239838	3-95	51	2310011	3-115	
212380	3-29	1.2	231465	3-109	3	242101	3-110		2310013	3-125	12
212456	2-7	2.14	231809	3-101	2.22	242101	3-111		2310013	3-142	36
212456	2-9	2.14	231809	3-45	23	242101	6-3		2310013	3-143	36
212456	2-11	2.14	231821	3-41	24.8	242101	6-3		2310013	3-144	36
212718	3-52	13	231821	3-49	25.8	242111	3-41	23.28	2310013	3-145	36
212718	3-55	14	231821	3-37	26.18	242111	3-49	23.28	2310013	3-140	80.1
212718	3-57	19	231821	3-39	41	242111	3-39	28	2310013	3-141	80.1

7-3

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
2310013	6-7		2310968	3-71	48	2311190	3-120	5	2311303	2-11	5
2310013	3-157		2310968	3-83	48	2311191	3-120	6	2311304	2-3	
2310017	3-159	1	2310970	3-135	3.4	2311192	3-120	7	2311305	2-7	4
2310017	3-103	1.14	2310970	3-131	13	2311193	3-120	8	2311305	2-9	5
2310017	3-89	4	2310970	3-134	13	2311194	3-120	9	2311305	2-11	5
2310017	3-149	4	2310970	3-132	3.4	2311194	6-3		2311306	2-3	
2310017	3-130	10	2310976	3-49	25.2	2311195	3-120	10	2311310	3-75	1.18
2310017	3-124	15	2310976	3-47	35	2311195	6-3		2311310	3-79	1.18
2310017	3-131	15	2310978	3-114	2	2311196	3-120	11	2311310	3-87	1.18
2310017	3-134	15	2311019	3-106	6	2311196	6-3		2311314	3-144	35
2310017	3-138	70.1	2311019	3-107	6	2311197	3-120	12	2311314	3-138	70.3
2310017	3-139	70.1	2311019	3-105	9	2311198	3-130	13	2311314	3-139	70.3
2310017	6-7		2311019	3-5	39	2311198	3-89	15	2311315	3-52	25
2310017	3-158		2311020	3-105	6	2311198	3-5	51	2311315	3-123	25
2310018	3-158	2	2311021	3-75	1.23	2311199	3-89	16	2311322	1-11	1
2310181	3-35	6.38	2311021	3-79	1.23	2311200	3-89	17	2311329	1-32	5
2310181	3-41	24.6	2311021	3-87	1.23	2311201	3-89	18	2311329	1-31	5
2310181	3-25	29	2311021	3-71	39	2311202	3-103	1.22	2311330	1-32	4
2310181	3-39	39	2311021	3-83	39	2311202	3-89	3	2311330	1-31	4
2310190	3-112	5	2311022	3-131	26	2311203	3-123	21	2311352	3-159	3
2310192	3-112	2	2311022	3-134	26	2311203	3-151		2311352	6-7	
2310417	3-3	38	2311023	3-131	27	2311212	3-41	24.4	2311353	3-41	23.29
2310617	3-31	31	2311023	3-134	27	2311212	3-39	37	2311353	3-49	23.29
2310634	3-49	25.6	2311024	3-133	3.10	2311220	3-41	24.2	2311353	3-39	29
2310634	3-47	39	2311024	3-136	3.4	2311220	3-39	35	2311353	3-47	29
2310814	3-75	1.37	2311024	3-135	3.7	2311221	3-41	24.3	2311356	3-41	23.26
2310814	3-79	1.37	2311024	3-131	28	2311221	3-39	36	2311356	3-49	23.26
2310814	3-87	1.37	2311024	3-134	28	2311228	3-41	24.9	2311356	3-39	26
2310814	3-105	4	2311024	3-132	3.17	2311228	3-39	42	2311356	3-47	26
2310814	3-107	4	2311026	3-134	30	2311229	3-41	24.10	2311356	3-37	26.26
2310844	3-87	2.8	2311027	3-135	3.17	2311229	3-39	43	2311360	3-39	6
2310844	3-83	67	2311027	3-136	3.9	2311230	3-39	33	2311360	3-47	6
2310844	3-105		2311027	3-134	31	2311230	3-47	33	2311360	3-41	23.6
2310854	3-37	26.7	2311028	3-87	2.5	2311233	3-41	23.30	2311360	3-49	23.6
2310868	1-18	1	2311028	3-83	64	2311233	3-49	23.30	2311360	3-37	26.17
2310872	3-87	2.1	2311032	3-83	65	2311233	3-39	30	2311395	3-134	29
2310872	3-45	35	2311033	3-83	66	2311233	3-47	30	2311396	3-83	70
2310872	3-83	60	2311034	3-131	37	2311234	3-41	23.32	2311396	3-134	
2310872	3-120		2311034	3-134	37	2311234	3-49	23.32	2311406	3-149	2
2310888	1-19	1.2	2311036	3-99	17	2311234	3-37	26.28	2311409	3-101	2.17
2310888	1-18	2	2311036	3-98	19	2311234	3-39	32	2311409	3-148	23
2310889	3-75	2.1	2311036	3-121	81	2311234	3-47	32	2311409	3-149	
2310889	3-79	2.1	2311041	3-121	79	2311235	3-41	23.27	2311421	1-27	57
2310889	3-71	70	2311041	6-3		2311235	3-49	23.27	2311440	3-98	2
2310890	3-16	1	2311042	3-148	35	2311235	3-37	26.31	2311440	3-99	2
2310890	3-17	1	2311043	3-148	76	2311235	3-39	27	2311441	3-98	3
2310918	3-105	7	2311044	3-155	1	2311235	3-47	27	2311441	3-99	3
2310929	3-131	1	2311045	3-148	83	2311239	1-11	18	2311445	3-98	4
2310929	3-134	1	2311047	3-148	82	2311280	3-155	3	2311449	3-47	
2310929	3-154	1	2311049	3-35	48.3	2311281	3-148	34	2311470	3-71	72
2310929	3-132	3.1	2311050	3-71	37	2311285	3-99	16	2311470	3-14	
2310929	3-135	3.1	2311050	3-83	37	2311285	3-98	18	2311478	3-71	73
2310929	3-138	7	2311051	3-71	38	2311288	1-27	33	2311479	3-75	2.5
2310929	3-140	7	2311051	3-83	38	2311289	3-101	2.15	2311479	3-79	2.5
2310929	3-130	9	2311052	3-71	40	2311289	3-98	10	2311479	3-71	74
2310929	3-142	26	2311052	3-83	40	2311289	3-99	10	2311479	3-107	
2310929	3-144	26	2311053	3-71	3	2311289	3-51	22	2311483	3-75	2.6
2310929	3-137	46	2311053	3-83	3	2311290	3-51	21	2311483	3-79	2.6
2310929	3-152		2311120	3-71	27	2311290	3-148	24	2311483	3-71	75
2310943	3-87	2.3	2311120	3-83	27	2311295	3-99	14	2311485	3-75	2.9
2310943	3-45	37	2311127	2-11	4	2311295	3-98	16	2311485	3-79	2.9
2310943	3-83	62	2311130	3-49	25.3	2311295	3-148	71	2311485	3-71	78
2310954	3-87	2.9	2311130	3-47	36	2311298	3-99	15	2311488	3-75	2.8
2310954	3-45	43	2311172	3-112	1	2311298	3-98	17	2311488	3-79	2.8
2310954	3-83	68	2311179	3-151	8	2311298	3-148	72	2311488	3-71	77
2310961	3-83	69	2311183	3-151	3	2311300	3-98	1	2311489	3-107	9
2310961	3-16		2311186	3-120	1	2311300	3-99	1	2311490	3-71	79
2310966	2-9	4.1	2311187	3-120	2	2311300	3-51	10	2311490	3-131	
2310966	3-112		2311188	3-120	3	2311303	2-7	4	2311491	3-133	3.5
2310968	3-89	20	2311189	3-120	4	2311303	2-9	5	2311491	3-131	31

7-4

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
2311491	3-132	3. 8	2311845	3-67	23	2313037	1-27	62	2314526	1-29	1.12
2311492	3-133	3.4	2311846	3-5	16	2313145	3-155	9	2314526	1-27	61
2311492	3-5	4	2311846	3-67	37	2313146	3-148	74	2314527	3-101	2.10
2311492	3-130	14	2311847	3-67	40	2313146	3-155		2314539	1-29	1.1
2311492	3-131	30	2311847	3-5	50	2313147	3-148	73	2314539	1-27	50
2311492	3-67	39	2311889	1-7	22	2313863	1-12	2	2314543	1-29	1.13
2311492	3-132	3. 7	2311899	3-37	26.23	2313947	1-11	6	2314543	1-30	1.5
2311493	3-133	3.9	2312119	3-137	65	2313992	3-103	1.21	2314543	1-27	63
2311493	3-131	29	2312122	3-57	47	2314113	3-160	23	2314545	3-101	2.2
2311493	3-132	3. 16	2312177	3-136	3.10	2314113	3-161	55	2314546	3-101	2.3
2311495	3-71	80	2312177	3-133	3.11	2314146	1-21	1	2314547	3-101	2.4
2311500	3-41	23.25	2312177	3-135	3.18	2314147	1-21	2	2314548	3-101	2.5
2311500	3-49	23.25	2312177	3-149	6	2314148	1-21	3	2314549	3-101	2.6
2311500	3-39	25	2312177	3-138	48	2314167	1-21	44	2314583	3-101	2.24
2311500	3-47	25	2312177	3-139	48	2314169	1-21	45	2314589	3-101	2.12
2311569	3-67	38	2312177	3-140	48	2314310	3-75	1.36	2314620	2-9	1
2311590	3-117	1	2312177	3-141	48	2314310	3-79	1.36	2314620	2-11	1
2311591	3-41	23.1	2312177	3-142	48	2314310	3-87	1.36	2314620	3-26	
2311591	3-49	23.1	2312177	3-143	48	2314310	3-45	33	2314620	6-6	
2311591	3-117		2312177	3-144	48	2314312	3-75	1.3	2314762	1-15	1
2311592	3-117	2	2312177	3-145	48	2314312	3-79	1.3	2314794	1-3	8
2311594	3-47	44	2312177	3-137	56	2314312	3-87	1.3	2314794	1-5	8
2311604	3-39		2312177	3-132	3. 18	2314321	3-136	3.11	2314794	6-2	
2311604	3-47		2312196	3-112	7	2314321	3-133	3.12	2314796	4-9	1.1
2311607	3-39		2312328	3-135	3.16	2314321	3-132	3.19	2314800	4-8	
2311608	3-39	38	2312328	3-136	3.8	2314321	3-135	3.19	2314800	4-9	
2311697	3-75	2.11	2312360	1-15	20	2314321	3-137	57	2314802	4-9	1.2
2311697	3-79	2.11	2312501	3-99	7	2314321	3-159		2314802	4-8	2.2
2311698	3-75	2.4	2312501	3-148	19	2314326	3-57	28	2314807	4-9	1.3
2311698	3-79	2.4	2312503	3-99	4	2314326	3-55		2314807	4-8	2.3
2311699	3-75	1.35	2312606	3-152	13	2314375	3-55	34	2314856	3-137	49
2311699	3-79	1.35	2312608	3-152	12	2314376	3-55	37	2314873	3-137	16
2311699	3-87	1.35	2312609	3-152	10	2314379	3-52	14	2314877	4-11	1
2311701	3-75	1.34	2312610	3-152	11	2314392	1-23	1	2314880	4-11	1.1
2311701	3-79	1.34	2312611	3-152	1	2314392	1-25	1	2314880	3-37	31.1
2311701	3-87	1.34	2312612	3-152	2	2314393	1-23	2	2314881	4-11	1.2
2311707	3-113	2	2312613	3-152	3	2314393	1-25	2	2314881	3-37	31.2
2311737	3-37	26.24	2312614	3-152	4	2314396	3-93	18	2314882	4-11	1.3
2311739	3-37	26.10	2312615	3-152	5	2314396	3-95	18	2314882	3-37	31.3
2311744	3-41	23.31	2312628	1-21	30	2314396	3-91	27	2314883	4-11	1.4
2311744	3-49	23.31	2312628	1-23	47	2314407	1-23	45	2314883	3-37	31.4
2311744	3-37	26.30	2312628	1-25	47	2314407	1-25	45	2314886	3-45	41
2311744	3-39	31	2312720	1-12	3	2314408	3-93	23	2314887	3-45	40
2311744	3-47	31	2312720	1-11	7	2314408	3-95	23	2314888	3-45	32
2311747	2-9	4	2312720	1-23	13	2314408	3-91	43	2314889	3-45	31
2311748	3-37	26.32	2312720	1-25	13	2314409	3-91	42	2314890	3-45	20
2311751	3-130	8	2312720	1-21	31	2314410	3-91	41	2314892	3-45	42
2311752	3-130		2312875	3-55	21	2314416	1-23	8	2314895	3-45	30
2311753	3-87	2.11	2312877	1-12	18	2314416	1-15	18	2314897	3-45	39
2311753	3-45	44	2312879	3-125	15	2314424	3-138	8	2314899	3-45	45
2311753	3-17		2312879	3-124	20	2314424	3-140	8	2314910	1-15	44
2311756	1-19	1.1	2312879	3-153		2314424	3-142	27	2314913	1-15	43
2311758	3-87	2.6	2312883	3-153	5	2314424	3-144	27	2314914	1-15	42
2311759	3-87	2.7	2312885	3-57	17.1	2314426	3-138	20	2314932	3-57	17
2311773	3-75	2.3	2312885	3-55	35	2314426	3-139	20	2314932	6-8	
2311773	3-79	2.3	2312886	3-57	17.2	2314426	3-140	20	2314934	1-15	41
2311773	3-15		2312886	3-55	36	2314426	3-141	20	2314946	1-21	55
2311837	1-17	1	2312888	3-55	38	2314426	3-142	28	2315029	1-23	44
2311838	1-17	2	2312888	3-124	38	2314426	3-143	28	2315030	3-142	31
2311840	3-67	29	2312889	3-55	41	2314426	3-144	28	2315030	3-143	31
2311840	3-5	29	2312889	3-108		2314426	3-145	28	2315030	3-144	31
2311840	3-13		2312890	3-113		2314433	1-23	41	2315030	3-145	31
2311841	3-67	14	2312969	3-29		2314433	1-25	41	2315110	3-57	6
2311842	3-13	17	2312995	4-2	30	2314435	1-25	44	2315110	3-109	
2311842	3-17	18	2312997	4-2	32	2314437	1-23	5	2315122	3-125	47
2311842	3-15	21	2313001	3-57	27	2314437	1-25	5	2315195	3-57	17.3
2311842	3-5	49	2313001	3-55	46	2314454	1-21	22	2315196	3-57	17.4
2311843	3-67	33	2313004	3-153	1	2314454	1-25	32	2315287	2-7	
2311843	3-106		2313004	3-154		2314508	3-52	28	2315287	5-4	
2311845	3-5	17	2313005	3-154	2	2314524	1-29	1.5	2315287	6-4	

7-5

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
2315288	5-8		2315377	1-7	3	100153W	2-5	28	137852W	3-59	19
2315305	3-30		2315377	6-2		118358W	3-118	11	137852W	3-57	23
2315305	6-8		2315377	6-2		118358W	6-3		137852W	3-63	24
2315306	3-31		2315531	4-4	7	12916W	2-3	5	137852W	3-67	24
2315306	6-8		2315557	1-25	8	12916W	5-8	11	137852W	3-91	24
2315307	3-32		2315561	3-156	1	12916W	6-5		137852W	3-55	43
2315307	6-8		2315561	3-133	3.1	12921W	2-7	2.16	138811W	3-30	3
2315308	3-33		2315561	3-136	3.1	12921W	2-9	2.16	138811W	3-31	3
2315308	6-8		2315561	3-139	7	12921W	2-11	2.16	138811W	3-104	5
2315309	3-35		2315561	3-141	7	12921W	5-8	16	138811W	3-127	17
2315309	6-8		2315561	3-143	26	12921W	6-5		138811W	3-129	17
2315310	3-37		2315561	3-145	26	1300780W	3-31	2	145499W	4-8	
2315310	6-8		2315652	1-12	1	1308451W	1-29	1.11	145499W	4-9	
2315311	3-39		2315738	3-125	15	1308451W	1-19	1.4	14591W	3-2	4
2315311	3-41		2315738	3-124	20	1308451W	1-18	5	14591W	3-3	4
2315311	6-9		2315738	3-156		1308451W	1-10	16	14591W	3-32	9
2315312	3-45		2315739	3-156	2	1310819W	4-4	8	14591W	3-33	9
2315312	6-9		2315740	3-156	5	1314433W	2-4	12	14591W	3-22	15
2315313	3-47		2315755	3-133	3.2	1314433W	2-5	12	14591W	3-23	15
2315313	3-49		2315755	3-136	3.2	1314434W	2-4	13	14591W	3-24	15
2315313	6-9		2315765	2-9	1	1314434W	2-5	13	14591W	3-25	15
2315314	3-51		2315765	2-11	1	1314435W	2-4	14	14591W	1-5	21
2315314	6-9		2315765	3-26		1314435W	2-5	14	14594W	3-35	6.24
2315315	3-52		2315765	6-6		1314467W	2-4	15	14595W	1-3	15
2315315	6-8		2315770	3-143	27	1314467W	2-5	15	14595W	1-5	15
2315316	3-53		2315770	3-145	27	1314468W	2-4	16	14595W	1-7	28
2315316	6-8		2315967	4-11		1314468W	2-5	16	14603W	1-3	15
2315317	3-55		2315969	4-11	2	1314470W	2-12	18	14603W	1-5	15
2315317	6-8		2316219	1-30	2.1	1314483W	5-8	9	15027W	3-39	
2315318	6-9		2316220	1-30	2.2	1314483W	2-12	23	15027W	3-47	
2315318	3-103		2316495	1-25	44	1314483W	6-5		15052W	3-98	12
2315319	3-58		2316504	2-4	22	1314485W	2-12	19	15054W	3-151	6
2315319	6-8		2316504	2-5	22	1314486W	2-12	20	15054W	3-122	7
2315320	3-59		2316507	5-4	1	1314487W	2-12	21	15054W	3-146	7
2315320	6-8		2316507	5-5	2	1314488W	2-12	22	15054W	3-147	7
2315321	3-63		2316507	2-9	3.3	1314502W	1-7	23	15058W	4-8	
2315321	6-8		2316507	2-11	3.3	1314503W	1-7	18	15058W	4-9	
2315322	3-67		2316507	2-7	3.4	1314503W	2-12	30	15086W	3-75	1.22
2315322	6-8		2316507	6-4		1314503W	6-6		15086W	3-79	1.22
2315323	3-71		2316507	6-4		1314547W	1-7	25	15086W	3-87	1.22
2315323	6-9		2316517	2-7	2.12	1314547W	1-3	54	15086W	3-137	19
2315324	3-75		2316517	2-9	2.12	1314547W	1-5	54	15086W	3-71	31
2315324	3-79		2316517	2-11	2.12	1314629W	4-4	4	15086W	3-83	31
2315324	6-9		2316517	5-5	3	1314629W	4-2	5	15113W	3-103	1.18
2315325	3-83		2316517	5-4	8	1314629W	4-3	5	15113W	3-133	3.3
2315325	6-9		2316517	6-4		1321665W	1-32	3	15113W	3-136	3.3
2315326	3-87		2316517	6-4		1321665W	1-31	3	15113W	3-135	3.6
2315326	6-9		2316525	2-7	2.10	1348034W	1-7	19	15113W	3-130	5
2315327	3-89		2316525	2-9	2.10	134803W	3-75	1.38	15113W	3-131	16
2315327	6-9		2316525	2-11	2.10	134803W	3-79	1.38	15113W	3-134	16
2315328	3-91		2316526	2-7	3.3	134803W	3-87	1.38	15113W	3-71	47
2315328	6-9		2316526	2-9	3.5	134803W	3-30	2	15113W	3-83	47
2315329	3-93		2316526	2-11	3.5	134803W	3-104	3	15113W	3-137	50
2315329	6-9		2316542	1-30	3.1	134803W	3-105	3	15113W	3-132	3.6
2315330	3-95		2316543	1-30	3.2	134803W	3-106	3	15127W	3-103	1.17
2315330	6-9		2316544	3-103	1.1	134803W	3-107	3	15127W	3-151	5
2315331	3-96		2316545	3-103	1.2	134803W	3-151	9	15127W	3-122	9
2315331	3-97		2316546	3-103	1.3	134803W	3-127	14	15127W	3-146	9
2315331	6-9		2316547	3-103	1.4	134803W	3-129	14	15127W	3-147	9
2315332	3-98		2501643	3-39		134803W	2-12	31	15127W	3-71	10
2315332	3-99		2501643	3-41		134803W	3-45	34	15127W	3-83	10
2315332	6-9		2501643	3-47		134803W	1-3	55	15134W	3-75	1.12
2315333	6-9		2501643	3-49		134803W	1-5	55	15134W	3-79	1.12
2315333	3-101		2515770	3-139	8	134803W	6-6		15134W	3-87	1.12
2315351	2-9		2515770	3-141	8	137852W	3-75	1.16	15134W	1-8	2
2315351	2-11		-----	3-30	8	137852W	3-79	1.16	15134W	1-10	2
2315351	5-5		-----	3-30	9	137852W	3-87	1.16	15134W	3-35	6.9
2315351	6-4		049-2373	3-91	16	137852W	3-103	1.23	15134W	3-137	11
2315377	1-3	2	049-2373	3-93	51	137852W	3-101	2.1	15134W	3-12	14
2315377	1-5	2	100153W	2-4	28	137852W	3-58	19	15134W	3-13	14

7-6

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
15134W	3-15	15	16448W	3-32	17	16828W	3-83	17	17224W	3-20	15
15134W	3-14	16	16448W	3-33	17	16828W	1-12	23	17224W	3-21	15
15134W	3-17	17	16448W	1-5	20	16829W	3-127	10	17224W	3-63	31
15134W	3-71	18	16538W	3-53	4	16829W	3-129	10	17224W	3-4	31
15134W	3-83	18	16538W	3-96	4	16829W	3-63	16	174413W	1-12	6
15134W	1-11	20	16538W	3-97	4	16829W	3-67	16	174413W	1-21	6
15134W	3-16	21	16538W	2-4	6	16829W	4-8		174413W	1-11	9
15135W	3-127	11	16538W	2-5	6	16829W	4-9		174413W	1-15	9
15135W	3-129	11	16538W	3-35	6.15	16909W	3-18	14	174413W	1-23	11
15135W	3-63	17	16538W	3-2	7	16909W	3-19	14	174413W	1-25	11
15135W	3-67	17	16538W	3-3	7	16909W	3-20	14	174413W	1-8	13
15135W	1-8	18	16538W	3-146	17	16909W	3-21	14	174413W	1-10	18
15135W	1-10	26	16538W	3-32	21	16923W	3-35	6.6	176208W	1-7	6
15154W	3-151	7	16538W	3-127	23	16923W	1-3	10	176208W	1-3	33
15154W	3-122	8	16538W	3-22	25	16923W	1-5	10	176208W	1-5	33
15154W	3-146	8	16538W	3-23	25	16923W	3-32	15	177461W	3-18	6
15154W	3-147	8	16538W	3-24	25	16923W	3-33	15	177461W	3-19	6
15156W	1-3	4	16538W	3-25	25	16923W	3-12	18	177461W	3-20	6
15156W	1-5	4	16538W	3-30	28	16923W	3-35	54.1	177461W	3-21	6
15156W	1-7	5	16538W	3-31	28	16925W	3-35	6.7	177461W	3-32	8
15156W	1-3	6	16547W	2-7	2.15	16925W	3-12	17	177461W	3-33	8
15156W	1-5	6	16547W	2-9	2.15	16925W	1-5	35	177461W	3-22	11
15156W	3-35	6.17	16547W	2-11	2.15	16967W	3-35	6.5	177461W	3-23	11
15156W	3-129	22	16556W	3-12	2	16967W	3-22	16	177461W	3-2	33
15156W	1-3	25	16556W	3-35	6.4	16967W	3-23	16	177461W	3-3	33
15156W	1-5	25	16556W	3-2	11	16967W	3-24	16	177461W	3-63	35
15156W	3-37	26.20	16556W	3-3	11	16967W	3-25	16	177461W	3-67	35
15156W	3-30	27	16556W	3-18	16	16967W	3-18	18	177461W	3-58	38
15156W	3-31	27	16556W	3-19	16	16967W	3-19	18	177461W	3-59	38
15156W	3-127	30	16556W	3-20	16	16967W	3-20	18	177461W	3-4	38
15178W	3-41	23.34	16556W	3-21	16	16967W	3-21	18	177461W	3-5	38
15178W	3-49	23.34	16556W	3-22	17	16984W	1-7	21	17753W	3-122	1
15178W	3-37	26.36	16556W	3-23	17	16984W	1-3	37	17753W	3-146	1
15223W	4-8		16556W	3-24	17	16984W	1-5	37	17753W	3-147	1
15223W	4-9		16556W	3-25	17	16984W	6-2		17753W	3-127	5
15256W	1-7	12	16556W	3-30	18	16984W	6-2		17753W	3-129	5
15256W	1-3	31	16556W	3-31	18	16987W	3-30	20	17753W	3-22	14
15256W	1-5	31	16556W	3-146	20	16987W	3-31	20	17753W	3-23	14
15881W	2-12	10	16556W	3-127	26	16997W	3-96	13	17753W	3-19	17
15881W	5-8	22	16556W	3-4	41	16997W	3-97	13	17777W	3-35	6.2
15881W	6-5		16556W	3-5	41	16997W	3-30	19	17777W	3-58	11
15888W	2-9	3.2	16558W	3-2	14	16997W	3-31	19	17777W	3-59	11
15888W	2-11	3.2	16558W	3-3	14	17047W	3-30	21	17777W	3-63	19
15888W	5-5	5	16559W	3-12	4	17047W	3-31	21	17777W	3-22	22
15888W	6-4		16559W	3-2	15	17059W	3-103	1.26	17777W	3-23	22
15895W	5-8	4	16559W	3-3	15	17059W	3-35	6.3	17777W	3-24	22
15895W	2-12	17	16559W	3-63	30	17059W	3-31	7	17777W	3-25	22
15895W	6-5		16559W	3-4	30	17059W	3-22	9	177947W	2-7	3.1
15899W	3-29	1.3	16562W	3-2	16	17059W	3-23	9	177947W	2-9	4.3
15961W	3-49	25.10	16562W	3-3	16	17059W	3-24	9	179443W	1-3	3
15961W	3-47	43	16574W	3-146	16	17059W	3-25	9	179443W	1-5	3
159W	4-8		16574W	3-127	22	17059W	3-93	17	179443W	1-7	4
159W	4-9		16574W	3-2	36	17059W	3-95	17	179443W	1-3	5
16001W	4-6	3	16598W	1-15	48	17059W	3-32	19	179443W	1-5	5
16001W	4-5	8	16598W	3-148	85	17059W	3-21	22	179443W	3-4	21
16210W	1-8	17	16602W	1-32	2	17059W	3-58	25	179443W	3-5	21
16210W	1-10	24	16602W	1-31	2	17059W	3-59	25	179443W	1-3	24
162155W	3-23	6	16602W	1-32	12	17059W	3-63	25	179443W	1-5	24
162155W	3-24	6	16602W	1-3	48	17059W	3-91	39	179443W	3-63	52
162155W	3-25	6	16602W	1-3	57	17062W	3-35	6.1	179443W	3-67	52
162572W	3-35	6.19	16602W	1-5	57	17062W	3-58	12	180959W	2-11	4.2
162572W	3-30	26	168054W	1-8	15	17062W	3-59	12	18127W	3-151	4
162572W	3-31	26	16805W	1-15	39	17062W	3-63	20	18468W	3-37	26.6
162572W	1-3	45	16828W	1-8	1	17062W	3-22	23	18535W	3-35	6.8
16338W	3-122	6	16828W	1-10	1	17062W	3-23	23	18535W	3-12	13
16445W	3-35	6.12	16828W	3-75	1.11	17062W	3-24	23	18535W	3-13	15
16445W	1-3	9	16828W	3-79	1.11	17062W	3-25	23	18535W	3-15	16
16445W	1-5	9	16828W	3-87	1.11	17224W	3-35	6.23	18535W	3-17	16
16445W	3-32	14	16828W	3-137	10	17224W	3-18	15	18535W	3-14	17
16445W	3-33	14	16828W	3-71	17	17224W	3-19	15	18535W	3-16	20

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
18720W	3-103	1.16	221560W	1-16	9	221780W	4-9	1.5	2300478W	4-2	7
18720W	3-135	3.12	221560W	1-17	9	221780W	4-8	2.5	2300478W	4-3	7
18720W	3-136	3.6	221616W	1-9	10	221780W	1-8	7	2300478W	4-4	9
18720W	3-133	3.7	221616W	1-16	10	221780W	1-12	9	2300831W	5-8	15
18720W	3-130	4	221616W	1-17	10	221780W	1-15	13	2300831W	2-7	2.8
18720W	3-131	39	221657W	1-29	1.10	221780W	4-7		2300831W	2-9	2.8
18720W	3-134	39	221657W	1-9	7	222400W	3-2	25	2300831W	2-11	2.8
18720W	3-137	52	221657W	1-16	7	222400W	3-3	25	2300831W	6-5	
18720W	3-132	3.14	221657W	1-17	7	222442W	2-7	2.13	2300948W	4-5	10
18723W	3-127	3	221657W	1-27	54	222442W	2-9	2.13	2300962W	1-5	16
18723W	3-129	3	221672W	1-30	1.12	222442W	2-11	2.13	2300962W	1-7	27
18738W	3-127	4	221672W	1-19	1.32	222442W	3-114	3	2301708W	4-6	9
18738W	3-129	4	221672W	1-29	1.9	222442W	3-112	6	2303006W	1-8	6
18738W	3-130	19	221672W	1-27	56	222442W	3-12	8	2303007W	1-8	9
19687W	3-35	6.22	221686W	4-7	4	222442W	3-146	21	2303221W	4-7	3
201752W	3-35	6.31	221686W	1-8	8	222442W	3-2	22	2303221W	6-6	
201752W	3-2	17	221690W	1-15	2	222442W	3-3	22	230351W	2-4	11
201752W	3-3	17	221690W	1-12	19	222442W	3-39	23	230351W	2-5	11
201752W	3-22	24	221694W	4-7		222442W	3-47	23	230351W	5-8	21
201752W	3-23	24	221707W	3-129	23	222442W	3-41	23.23	230351W	6-5	
201752W	3-24	24	221707W	3-127	31	222442W	3-49	23.23	2303609W	3-123	22
201752W	3-25	24	221707W	3-148	36	222442W	3-127	27	2303754W	4-6	7
201766W	3-12	10	221711W	3-127	12	222442W	3-4	47	2303755W	4-6	8
201766W	3-22	13	221711W	3-129	12	222442W	3-5	47	2303788W	2-7	1
201766W	3-23	13	221711W	3-63	18	222535W	3-75	1.20	2303788W	2-9	1
201766W	3-24	13	221711W	3-67	18	222535W	3-79	1.20	2303788W	2-11	1
201766W	3-25	13	221711W	1-8	19	222535W	3-87	1.20	2303788W	3-18	21
201766W	3-18	20	221711W	1-10	27	222535W	3-18	5	2303788W	3-19	21
201766W	3-19	20	221716W	1-10	5	222535W	3-19	5	2303788W	3-20	21
201766W	3-20	20	221724W	4-5	2	222535W	3-20	5	2303788W	3-21	21
201766W	3-21	20	221763W	3-39	3	222535W	3-21	5	2303788W	3-22	26
201766W	3-4	49	221763W	3-47	3	222535W	3-32	7	2303788W	3-23	26
213619W	3-75	1.15	221763W	3-41	23.3	222535W	3-33	7	2303788W	3-24	26
213619W	3-79	1.15	221763W	3-49	23.3	222535W	3-39	7	2303788W	3-25	26
213619W	3-87	1.15	221763W	3-37	26.5	222535W	3-47	7	2303788W	3-26	
213619W	3-45	13	221767W	2-11	4.3	222535W	3-22	10	2303788W	6-6	
213619W	3-4	15	221767W	1-12	22	222535W	3-23	10	2303789W	3-12	1
213619W	3-5	15	221767W	3-4	22	222535W	3-41	23.7	2303789W	3-13	1
213619W	3-63	22	221767W	3-5	22	222535W	3-49	23.7	2303789W	3-15	9
213619W	3-71	22	221767W	3-93	39	222535W	3-37	26.19	2303789W	3-14	10
213619W	3-83	22	221767W	3-95	39	222535W	3-2	32	2303815W	4-6	5
21420W	1-5	11	221767W	1-23	39	222535W	3-3	32	2303825W	2-4	9
21420W	1-7	26	221767W	1-25	39	222535W	3-63	34	2303825W	2-5	9
21420W	6-6		221767W	3-91	46	222535W	3-67	34	2303827W	2-12	29
219060W	2-2	3	221767W	1-21	46	222535W	3-71	34	2303829W	2-7	4
221372W	4-4	6	221767W	3-63	53	222535W	3-83	34	2303829W	2-9	5
221372W	4-2	8	221767W	3-67	53	222535W	3-58	37	2303829W	2-11	5
221372W	4-3	8	221771W	1-9	11	222535W	3-59	37	2303830W	2-12	1
221466W	1-23	9	221771W	1-16	11	222535W	3-4	37	2303835W	2-7	4
221466W	1-25	9	221771W	1-17	11	222535W	3-5	37	2303835W	2-9	5
221466W	1-8	10	221771W	1-23	43	225262W	2-4	10	2303835W	2-11	5
221466W	1-10	11	221771W	1-25	43	225262W	2-5	10	2303836W	2-2	30
221466W	1-11	11	221775W	1-9	12	225262W	5-8	20	2303837W	2-2	30
221466W	1-15	11	221775W	1-16	12	225262W	6-5		2303845W	2-2	21
221466W	1-12	24	221775W	1-17	12	225871W	1-8	5	2303845W	2-7	2.9
221466W	1-21	34	221777W	1-30	1.10	229383W	3-130	1	2303845W	2-9	2.9
221499W	3-91	47	221777W	1-19	1.7	2300041W	1-8		2303845W	2-11	2.9
221499W	1-21	47	221777W	1-29	1.8	2300041W	1-10		2303848W	3-75	2.2
221518W	3-39	9	221777W	1-10	4	2300041W	1-11		2303848W	3-79	2.2
221518W	3-47	9	221777W	1-11	4	2300041W	1-12		2303848W	2-12	3
221518W	3-22	12	221777W	3-45	7	2300041W	1-15		2303848W	1-7	7
221518W	3-23	12	221777W	1-23	7	2300041W	1-21		2303848W	1-3	14
221518W	3-18	19	221777W	1-25	7	2300041W	1-23		2303848W	1-5	14
221518W	3-19	19	221777W	1-9	8	2300041W	1-25		2303848W	3-2	18
221518W	3-20	19	221777W	1-16	8	2300125W	4-5	9	2303848W	3-3	18
221518W	3-21	19	221777W	1-17	8	2300174W	1-7	24	2303848W	1-3	19
221518W	3-41	23.9	221777W	1-18	8	2300174W	1-3	53	2303848W	1-5	19
221518W	3-49	23.9	221777W	1-8	14	2300174W	1-5	53	2303848W	1-7	29
221518W	3-63	41	221777W	1-21	35	2300277W	1-3	51	2303848W	3-63	32
221560W	1-9	9	221777W	1-27	60	2300277W	1-5	51	2303848W	3-67	32

7-8

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
2303848W	3-4	33	2304100W	1-5	7	2304125W	2-12	15	2304195W	3-5	46
2303848W	3-5	33	2304104W	3-18	4	2304126W	5-8	7	2304196W	3-35	6.18
2303848W	1-3	34	2304104W	3-19	4	2304126W	2-12	26	2304196W	3-30	25
2303848W	1-5	34	2304104W	3-20	4	2304126W	6-5		2304196W	3-31	25
2303848W	1-3	39	2304104W	3-21	4	2304127W	5-8	8	2304197W	2-3	6
2303848W	1-5	39	2304104W	3-2	31	2304127W	2-12	27	2304198W	2-3	7
2303848W	1-3	41	2304104W	3-3	31	2304127W	6-5		2304199W	2-3	8
2303848W	1-5	41	2304110W	3-87	2.13	2304128W	2-12	28	2304203W	1-8	20
2303848W	3-71	71	2304110W	5-4	3	2304129W	1-8		2304204W	3-53	10
2303848W	2-7	2.2	2304110W	2-9	3.6	2304149W	3-2	9	2304204W	3-96	10
2303848W	2-9	2.2	2304110W	2-11	3.6	2304149W	3-3	9	2304204W	3-97	10
2303848W	2-11	2.2	2304110W	2-7	3.7	2304150W	3-2	10	2304204W	3-122	10
2303853W	5-8	2	2304110W	5-5	4	2304150W	3-3	10	2304204W	3-146	10
2303853W	2-12	8	2304110W	3-18	7	2304151W	3-30	23	2304204W	3-147	10
2303853W	6-5		2304110W	3-19	7	2304151W	3-31	23	2304205W	3-53	2
2303854W	5-8	3	2304110W	3-20	7	2304152W	3-2	12	2304205W	3-96	2
2303854W	2-12	9	2304110W	3-21	7	2304152W	3-3	12	2304205W	3-97	2
2303854W	6-5		2304110W	3-32	16	2304155W	4-7	1	2304205W	3-58	4
2303867W	2-2	10	2304110W	3-33	16	2304161W	4-9	1.6	2304205W	3-59	4
2303868W	2-2	12	2304110W	3-22	21	2304161W	4-7	2	2304205W	3-4	4
2303877W	2-2	20	2304110W	3-23	21	2304161W	4-8	2.6	2304205W	3-4	20
2303906W	2-4	24	2304110W	3-2	34	2304161W	6-6		2304205W	3-63	39
2303906W	2-5	24	2304110W	3-3	34	2304171W	2-4	21	2304207W	3-127	7
2303912W	3-142	35	2304110W	3-63	36	2304171W	2-5	21	2304207W	3-129	7
2303912W	3-143	35	2304110W	3-67	36	2304172W	2-4	20	2304208W	1-9	1
2303912W	3-145	35	2304110W	3-58	40	2304172W	2-5	20	2304208W	1-16	1
2303912W	3-140	80.3	2304110W	3-59	40	2304174W	1-7	20	2304209W	1-9	2
2303912W	3-141	80.3	2304110W	3-4	40	2304174W	1-3	36	2304209W	1-16	2
2304003W	3-111	2	2304110W	3-5	40	2304174W	1-5	36	2304212W	3-4	1
2304004W	3-111	3	2304110W	6-4		2304176W	2-2	22	2304212W	3-5	1
2304004W	3-110	4	2304110W	6-4		2304179W	2-3	2	2304212W	3-63	56
2304006W	3-111	4	2304111W	3-30	1	2304179W	5-8	12	2304212W	3-67	56
2304014W	3-13	3	2304111W	3-31	1	2304179W	6-5		2304212W	3-118	
2304014W	3-15	4	2304111W	3-127	16	2304180W	2-3	3	2304213W	3-32	5
2304014W	3-16	4	2304112W	3-30		2304180W	5-8	13	2304213W	3-33	5
2304014W	3-17	4	2304112W	3-31		2304180W	6-5		2304213W	3-22	7
2304014W	3-12	5	2304112W	3-104		2304181W	2-4	22.1	2304213W	3-23	7
2304014W	3-14	5	2304112W	3-105		2304181W	2-5	22.1	2304214W	3-32	6
2304014W	3-2	21	2304112W	3-106		2304182W	2-2	28	2304214W	3-33	6
2304014W	3-3	21	2304112W	3-107		2304192W	1-3	52	2304214W	3-22	8
2304014W	3-4	44	2304112W	3-127		2304192W	1-5	52	2304214W	3-23	8
2304014W	3-5	44	2304112W	3-129		2304193W	3-13	2	2304218W	1-5	23
2304019W	1-3	23	2304114W	3-2	20	2304193W	3-16	3	2304220W	5-4	2
2304037W	2-7	3.2	2304114W	3-3	20	2304193W	3-17	3	2304220W	2-7	3.5
2304050W	3-150	6	2304115W	3-2	19	2304193W	3-15	5	2304220W	6-4	
2304057W	3-18	3	2304115W	3-3	19	2304193W	3-12	6	2304223W	3-104	4
2304057W	3-19	3	2304116W	1-8	16	2304193W	3-14	6	2304223W	3-106	4
2304057W	3-20	3	2304116W	1-10	25	2304193W	3-2	24	2304223W	3-127	15
2304057W	3-21	3	2304119W	1-12	4	2304193W	3-3	24	2304223W	3-129	15
2304057W	3-2	30	2304119W	1-21	5	2304193W	3-4	45	2304225W	3-4	5
2304057W	3-3	30	2304119W	1-11	10	2304193W	3-5	45	2304225W	3-5	5
2304058W	2-12	14	2304119W	1-15	10	2304194W	3-35	6.21	2304225W	3-63	50
2304059W	2-2	11	2304119W	1-8	12	2304194W	3-30	24	2304225W	3-67	50
2304060W	2-12	13	2304119W	1-23	12	2304194W	3-31	24	2304231W	3-2	1
2304069W	2-12	12	2304119W	1-25	12	2304195W	3-110	2	2304231W	3-3	1
2304069W	1-7	13	2304119W	1-10	19	2304195W	3-2	3	2304231W	3-4	29
2304070W	1-7	14	2304120W	1-21	4	2304195W	3-3	3	2304231W	3-6	
2304070W	1-3	40	2304120W	1-12	5	2304195W	3-13	4	2304232W	3-58	3
2304070W	1-5	40	2304120W	1-11	8	2304195W	3-111	5	2304232W	3-59	3
2304092W	1-7	10	2304120W	1-15	8	2304195W	3-16	6	2304232W	3-63	14
2304092W	1-3	50	2304120W	1-23	10	2304195W	3-17	6	2304233W	3-14	1
2304092W	1-5	50	2304120W	1-25	10	2304195W	3-35	6.20	2304233W	3-15	1
2304098W	1-3	18	2304120W	1-8	11	2304195W	3-12	7	2304233W	3-12	3
2304098W	1-5	18	2304120W	1-10	14	2304195W	3-15	8	2304233W	3-13	9
2304099W	1-3	1	2304122W	2-12	4	2304195W	3-14	9	2304233W	3-17	9
2304099W	1-5	1	2304122W	1-7	15	2304195W	3-146	18	2304233W	3-16	12
2304099W	1-7	8	2304123W	2-12	5	2304195W	3-127	24	2304233W	3-4	42
2304099W	1-3	26	2304123W	1-7	16	2304195W	3-30	30	2304233W	3-5	42
2304099W	1-5	26	2304124W	2-12	6	2304195W	3-31	30	2304234W	3-58	16
2304100W	1-3	7	2304124W	1-7	17	2304195W	3-4	46	2304234W	3-4	16

7-9

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
2304235W	3-58	17	2304712W	2-9	2.4	2305014W	3-19	10	2305141W	3-30	16
2304235W	3-59	17	2304712W	2-11	2.4	2305014W	3-20	10	2305141W	3-18	22
2304235W	3-4	17	2304814W	1-10	28	2305014W	3-21	10	2305141W	2-5	27
2304235W	3-63	23	2304862W	3-30		2305017W	3-19	2	2305141W	3-2	38
2304236W	3-58	18	2304862W	3-31		2305017W	3-31	6	2305142W	4-5	1
2304237W	3-104	6	2304862W	3-127		2305020W	1-7	11	2305145W	4-2	1
2304237W	3-127	19	2304873W	2-7	2.5	2305020W	1-3	32	2305145W	4-3	1
2304237W	3-129	19	2304873W	2-9	2.5	2305020W	1-5	32	2305145W	4-4	1
2304237W	3-4	39	2304873W	2-11	2.5	2305062W	3-150	8	2305145W	4-5	
2304238W	3-58	20	2304873W	6-6		2305063W	3-150	2	2305158W	4-3	17
2304238W	3-59	20	2304874W	2-7	2.11	2305073W	3-2		2305199W	3-138	21
2304244W	3-4	24	2304874W	2-9	2.11	2305073W	3-3		2305199W	3-139	21
2304244W	3-5	24	2304874W	2-11	2.11	2305073W	3-110		2305199W	3-140	21
2304244W	3-63	55	2304937W	1-10	20	2305073W	3-4		2305199W	3-141	21
2304244W	3-67	55	2304939W	1-10	23	2305073W	3-5		2305236W	2-7	3.6
2304245W	3-4	23	2304948W	1-8	3	2305073W	3-30		2305236W	3-111	
2304245W	3-5	23	2304948W	1-10	3	2305073W	3-31		2305249W	4-6	6
2304245W	3-63	54	2304988W	3-101	2.11	2305073W	6-3		2305251W	4-6	1
2304245W	3-67	54	2304988W	3-136	3.12	2305073W	6-3		2305252W	4-8	2.1
2304246W	3-58	27	2304988W	3-133	3.13	2305073W	3-111		2305252W	4-7	10
2304247W	3-58	28	2304988W	3-132	3.20	2305073W	3-127		2305252W	4-6	
2304247W	3-59	28	2304988W	3-135	3.20	2305073W	3-146		2305256W	4-7	5
2304248W	3-118	1	2304988W	3-53	5	2305074W	3-127	9	2305268W	4-2	9
2304249W	3-118	2	2304988W	3-96	5	2305075W	2-2	2	2305268W	4-3	9
2304250W	3-118	3	2304988W	3-97	5	2305103W	1-3	13	2305278W	1-3	47
2304251W	3-118	4	2304988W	3-122	5	2305103W	6-6		2305280W	3-23	1
2304252W	3-118	5	2304988W	3-146	5	2305104W	1-3	12	2305280W	3-24	1
2304253W	3-118	6	2304988W	3-147	5	2305104W	6-6		2305280W	3-25	1
2304255W	3-118	12	2304988W	3-57	14	2305124W	1-3	44	2305281W	3-32	2
2304257W	3-35	6.10	2304988W	3-91	19	2305126W	3-111	1	2305281W	3-33	2
2304257W	3-12	11	2304988W	3-55	40	2305132W	3-30		2305281W	3-22	3
2304257W	3-13	12	2304988W	3-93	53	2305132W	3-31		2305281W	3-23	3
2304257W	3-15	13	2304988W	3-95	53	2305132W	3-104		2305281W	3-24	3
2304257W	3-14	14	2304988W	3-45	58	2305132W	3-105		2305281W	3-25	3
2304257W	3-17	14	2304988W	3-137	58	2305132W	3-106		2305281W	3-31	16
2304257W	3-16	18	2304989W	3-53	3	2305132W	3-107		2305282W	3-23	4
2304258W	3-35	6.11	2304989W	3-96	3	2305132W	3-127		2305282W	3-24	4
2304258W	3-12	12	2304989W	3-97	3	2305132W	3-129		2305282W	3-25	4
2304258W	3-13	13	2304990W	3-150	9	2305133W	3-2	8	2305283W	3-32	3
2304258W	3-15	14	2304990W	3-162		2305133W	3-3	8	2305283W	3-33	3
2304258W	3-14	15	2304999W	3-35	6.27	2305135W	3-111	6	2305283W	3-35	6.26
2304258W	3-17	15	2304999W	3-18	9	2305139W	3-32	10	2305284W	3-33	4
2304258W	3-16	19	2304999W	3-19	9	2305139W	3-33	10	2305284W	3-23	5
2304259W	3-4	14	2304999W	3-20	9	2305139W	3-18	11	2305284W	3-31	12
2304259W	3-5	14	2304999W	3-21	9	2305139W	3-19	11	2305285W	3-32	13
2304259W	3-63	51	2304999W	3-22	20	2305139W	3-20	11	2305562W	2-4	25
2304259W	3-67	51	2304999W	3-23	20	2305139W	3-21	11	2305562W	2-5	25
2304260W	1-10	12	2304999W	3-24	20	2305139W	3-30	14	2305563W	2-4	23
2304261W	1-10	6	2304999W	3-25	20	2305139W	3-31	14	2305563W	2-5	23
2304262W	3-146	12	2305003W	3-30	5	2305139W	3-22	18	2305564W	2-3	1
2304262W	3-147	12	2305003W	3-31	5	2305139W	3-23	18	2305565W	2-3	
2304263W	1-10	7	2305003W	3-2	29	2305139W	3-24	18	2305566W	2-3	9
2304264W	1-10	8	2305003W	3-3	29	2305139W	3-25	18	2305577W	3-151	1
2304267W	3-146	6	2305004W	3-30	11	2305140W	3-32	11	2305577W	3-122	12
2304267W	3-147	6	2305007W	3-18	8	2305140W	3-33	11	2305577W	3-147	14
2304275W	3-11	9	2305007W	3-19	8	2305140W	3-18	12	2305577W	3-150	
2304276W	3-11	8	2305007W	3-20	8	2305140W	3-19	12	2305578W	3-162	1
2304281W	1-3	58	2305007W	3-21	8	2305140W	3-20	12	2305578W	3-150	5
2304281W	1-5	58	2305007W	3-2	35	2305140W	3-21	12	2305579W	3-129	8
2304339W	3-150	1	2305007W	3-3	35	2305140W	3-30	15	2305579W	3-122	13
2304339W	3-154	3	2305008W	3-35	6.28	2305140W	3-31	15	2305579W	3-147	15
2304339W	3-156	3	2305008W	3-30	10	2305140W	3-22	19	2305579W	3-123	24
2304350W	1-23	42	2305008W	3-31	10	2305140W	3-23	19	2305580W	3-33	13
2304350W	1-25	42	2305012W	3-35	6.33	2305140W	3-24	19	2305580W	3-31	22
2304692W	4-8		2305012W	3-31	11	2305140W	3-25	19	2305580W	2-5	27
2304692W	4-9		2305012W	2-4	27	2305141W	3-32	4	2305597W	2-2	9
2304711W	2-7	2.3	2305013W	3-30	12	2305141W	3-18	13	2305598W	1-5	13
2304711W	2-9	2.3	2305013W	3-2	26	2305141W	3-19	13	2305600W	1-5	12
2304711W	2-11	2.3	2305013W	3-3	36	2305141W	3-20	13	2305600W	6-2	
2304712W	2-7	2.4	2305014W	3-18	10	2305141W	3-21	13	2305645W	1-7	1

7-10

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
2305651W	2-9	3.1	2305762W	6-4		2305947W	2-2	7	2306251W	3-63	60
2305651W	2-11	3.1	2305763W	5-4	7	2305948W	2-2	6	2306251W	3-67	60
2305653W	2-12	1	2305763W	5-5	10	2305949W	2-2	29	2306251W	3-4	
2305662W	1-7	9	2305763W	3-26	23	2305950W	2-2	1	2306251W	3-5	
2305663W	1-7	2	2305763W	6-4		2305951W	3-22	5	2306258W	3-63	61
2305674W	3-150	7	2305763W	6-4		2305951W	3-35	6.29	2306258W	3-67	61
2305675W	3-150	4	2305764W	3-26	25	2305954W	3-162	23	2306258W	3-4	
2305676W	3-110	1	2305765W	3-26	27	2305960W	3-146	19	2306258W	3-5	
2305679W	2-7	3.3	2305766W	3-26	33	2305960W	3-127	25	2306258W	3-119	
2305679W	2-9	3.5	2305767W	3-26	34	2305961W	3-127	8	2306268W	3-119	1
2305679W	2-11	3.5	2305768W	3-26	35	2305961W	3-146	15	2306269W	3-119	2
2305712W	3-104		2305769W	3-26	36	2305962W	3-35	6.30	2306270W	3-119	3
2305712W	3-105		2305770W	3-26	29	2305962W	3-127	20	2306270W	6-3	
2305712W	3-106		2305771W	3-26	40	2305962W	3-146	22	2306271W	3-119	4
2305712W	3-107		2305779W	3-162	8	2305966W	3-22	4	2306272W	3-119	5
2305712W	3-129		2305780W	3-162	9	2305966W	3-35	6.32	2306273W	3-119	6
2305713W	3-104	1	2305781W	3-162	10	2305966W	3-24	27	2306274W	3-119	7
2305713W	3-105	1	2305782W	3-162	16	2305966W	3-25	27	2306275W	3-119	8
2305713W	3-106	1	2305783W	3-162	21	2305971W	3-30	22	2306276W	3-119	9
2305713W	3-107	1	2305784W	3-162	22	2305972W	3-30	6	2306277W	3-119	10
2305713W	3-129	16	2305788W	3-6	1	2305972W	2-4	27	2306277W	6-3	
2305714W	3-104	2	2305788W	3-7		2305987W	3-2	6	2306278W	3-119	11
2305714W	3-105	2	2305794W	3-7	14	2305987W	3-3	6	2306278W	6-3	
2305714W	3-106	2	2305798W	3-7	26	2306023W	3-127	13	2306279W	3-119	12
2305714W	3-107	2	2305799W	3-7	31	2306023W	3-129	13	2306279W	6-3	
2305714W	3-127	18	2305800W	3-7	32	2306023W	3-63	33	2306280W	3-119	13
2305714W	3-129	18	2305801W	3-7	36	2306023W	3-104		2306280W	6-3	
2305734W	1-3	56	2305802W	3-7	37	2306024W	3-63	29	2306422W	1-9	3
2305734W	1-5	56	2305803W	3-7	38	2306024W	3-12		2306422W	1-16	27
2305736W	3-110		2305804W	3-6	2	2306025W	3-129	9	2306422W	1-17	27
2305736W	6-3		2305804W	3-8		2306026W	3-14	2	2306489W	3-59	16
2305737W	3-26	1	2305805W	3-8	1	2306026W	3-15	2	2306489W	3-63	37
2305737W	3-27		2305829W	3-8	16	2306026W	3-13	10	2306490W	3-59	18
2305738W	3-27	1	2305830W	3-8	17	2306026W	3-17	11	2306490W	3-63	38
2305738W	3-28		2305831W	3-8	30	2306026W	3-16	14	2306492W	3-59	27
2305739W	3-28	1	2305832W	3-8	31	2306026W	3-12	16	2306492W	3-63	40
2305740W	3-28	2	2305833W	3-6	3	2306150W	3-127	6a	2306540W	2-7	2
2305741W	3-28	4	2305833W	3-9		2306150W	3-129	6a	2306540W	2-9	2
2305742W	3-28	6	2305834W	3-9	1	2306151W	3-130	15	2306540W	2-11	2
2305743W	3-28	7	2305844W	3-9	2	2306151W	3-131	32	2306544W	1-3	
2305744W	3-28	9	2305844W	3-11		2306151W	3-134	32	2306544W	1-5	
2305745W	3-28	10	2305845W	3-11	1	2306151W	3-127	6b	2306545W	2-7	
2305746W	3-28	11	2305846W	3-11	2	2306151W	3-129	6b	2306545W	2-9	
2305747W	3-27	2	2305847W	3-11	3	2306152W	3-130	16	2306545W	2-11	
2305748W	3-26	2	2305848W	3-11	4	2306152W	3-131	33	2306546W	2-2	
2305749W	3-26	3	2305849W	3-11	5	2306152W	3-134	33	2306562w	2-7	3
2305750W	3-26	5	2305850W	3-11	6	2306152W	3-127	6c	2306563W	2-9	3
2305751W	3-26	6	2305851W	3-11	7	2306152W	3-129	6c	2306563W	2-11	3
2305752W	3-26	7	2305854W	3-9	3	2306153W	3-131	34	2306566W	2-7	3.6
2305753W	3-26	8	2305867W	3-10	3	2306153W	3-134	34	2306566W	2-9	4.1
2305754W	3-26	9	2305873W	3-9	26	2306153W	3-127	6d	2306566W	3-110	
2305755W	3-26	12	2305875W	3-9	44	2306153W	3-129	6d	2306575W	1-9	4
2305756W	3-26	13	2305876W	3-6	4	2306154W	3-130	17	2306575W	1-16	28
2305757W	3-26	15	2305876W	3-10		2306154W	3-131	35	2306575W	1-17	28
2305758W	3-26	16	2305879W	3-10		2306154W	3-134	35	2306648W	3-146	14
2305759W	3-26	17	2305880W	3-10	5	2306154W	3-127	6e	2306648W	3-150	
2305760W	5-4	4	2305881W	3-10	7	2306154W	3-129	6e	2307009W	3-18	1
2305760W	5-5	7	2305882W	3-10	8	2306155W	3-130	18	2307009W	3-19	1
2305760W	3-26	20	2305883W	3-10	9	2306155W	3-131	36	2307009W	3-20	1
2305760W	6-4		2305884W	3-10	10	2306155W	3-134	36	2307009W	3-21	1
2305760W	6-4		2305885W	3-10	12	2306155W	3-127	6f	2307009W	3-30	4
2305761W	5-4	5	2305886W	3-10	13	2306155W	3-129	6f	2307009W	3-31	4
2305761W	5-5	8	2305887W	3-10	14	2306156W	3-104	7	2307009W	3-35	6.34
2305761W	3-26	21	2305888W	3-10	20	2306156W	3-106	7	2307121W	3-103	1.19
2305761W	6-4		2305889W	3-10	21	2306156W	3-107	7	2307121W	3-130	11
2305761W	6-4		2305910W	3-6	41	2306157W	3-104	8	2307121W	3-125	26
2305762W	5-4	6	2305933W	3-154	4	2306157W	3-105	8	2307121W	3-124	29
2305762W	5-5	9	2305933W	3-156	4	2306157W	3-106	8	2307121W	3-131	42
2305762W	3-26	22	2305945W	2-2	25	2306157W	3-107	8	2307121W	3-134	42
2305762W	6-4		2305946W	2-2	24	2306157W	3-12	19	2307122W	3-103	1.20

7-11

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
2307122W	3-130	2	2307924W	3-143	49	293617W	1-8	4	296417W	3-143	30
2307122W	3-125	25	2307924W	3-144	49	293617W	1-10	9	296417W	3-144	30
2307122W	3-124	30	2307924W	3-145	49	293628W	3-75	1.8	296417W	3-145	30
2307122W	3-131	43	2307924W	3-137	53	293628W	3-79	1.8	296418W	3-121	78
2307122W	3-134	43	2307924W	3-132	3. 13	293628W	3-87	1.8	296420W	3-75	1.28
2307162W	3-110	3	2307927W	3-67	25	293628W	3-45	8	296420W	3-79	1.28
2307169W	3-112	4	2307927W	3-67	41	293628W	3-71	9	296420W	3-87	1.28
2307170W	3-112	3	2307944W	3-122	11	293628W	3-83	9	296420W	3-101	2.20
2307171W	3-112		2307944W	3-146	11	293628W	3-98	9	296420W	3-55	10
2307171W	6-3		2307944W	3-147	11	293628W	3-99	9	296420W	3-99	12
2307172W	6-3		2307944W	3-124	13	293628W	3-55	11	296420W	3-98	13
2307172W	3-112		2307944W	3-125	16	293628W	1-21	28	296420W	3-45	25
2307221W	6-3		2307944W	3-123	26	293628W	3-57	34	296420W	1-21	29
2307221W	3-112		2307944W	3-142	37	293645W	3-4	6	296420W	3-57	33
2307226W	3-75	1.9	2307944W	3-143	37	293645W	3-5	6	296420W	3-71	46
2307226W	3-79	1.9	2307944W	3-144	37	293645W	1-23	14	296420W	3-83	46
2307226W	3-87	1.9	2307944W	3-145	37	293645W	1-25	14	296422W	1-29	1.7
2307226W	3-71	12	2307944W	3-138	50	293645W	1-11	27	296422W	3-4	7
2307226W	3-83	12	2307944W	3-139	50	293645W	1-21	33	296422W	3-5	7
2307226W	3-137	63	2307944W	3-140	50	293645W	1-12	47	296422W	1-11	15
2307227W	3-117	4	2307944W	3-141	50	293645W	3-63	57	296422W	1-23	15
2307356W	3-7		2307958W	3-75	1.26	293645W	3-67	57	296422W	1-25	15
2307356W	3-8		2307958W	3-79	1.26	293646W	1-29	1.6	296422W	1-10	22
2307356W	3-9		2307958W	3-87	1.26	293646W	1-10	21	296422W	1-21	32
2307356W	3-10		2307958W	3-51	9	293646W	1-27	58	296422W	1-12	48
2307356W	3-11		2307958W	3-99	13	293708W	1-21	25	296422W	3-63	58
2307520W	3-35	6.37	2307958W	3-98	14	293710W	1-30	1.9	296422W	3-67	58
2307520W	3-24	28	2307958W	3-89	21	293710W	1-11	2	296422W	1-27	59
2307520W	3-25	28	2307958W	3-47	40	293729W	1-9	5	296426W	3-87	2.4
2307522W	3-21	23	2307958W	3-71	44	293729W	1-16	5	296426W	3-45	38
2307522W	3-3	38	2307958W	3-83	44	293729W	1-17	5	296426W	3-83	63
2307551W	3-39	1	235387W	3-15	7	293731W	1-23	3	296430W	1-30	1.6
2307551W	3-47	1	235387W	3-14	8	293731W	1-25	3	296430W	1-21	26
2307567W	3-114	1	237965W	3-98	7	293731W	1-27	52	296434W	1-29	1.3
2307568W	2-11	4.1	239784W	3-2	13	293796W	3-15	6	296434W	1-19	1.5
2307568W	3-114		239784W	3-3	13	293796W	3-14	7	296434W	1-23	4
2307582W	3-157	1	245959W	1-3	46	293796W	3-12	9	296434W	1-25	4
2307582W	3-158	1	252928W	1-11	19	293796W	3-17	10	296434W	1-9	6
2307625W	3-41	24.1	276087W	3-32	1	293796W	3-16	13	296434W	1-16	6
2307625W	3-37	26.34	276087W	3-33	1	293796W	3-2	23	296434W	1-17	6
2307625W	3-39	34	276087W	3-22	2	293796W	3-3	23	296434W	1-18	6
2307637W	1-32	11	276087W	3-23	2	293796W	3-4	48	296434W	1-10	17
2307643W	3-103	1.15	276087W	3-24	2	293796W	3-5	48	296434W	1-27	53
2307643W	3-149	3	276087W	3-25	2	296133W	3-155	2	296438W	1-30	1.7
2307643W	3-124	17	280256W	3-22	1	296157W	3-156	6	30190W	5-8	10
2307643W	3-125	24	280256W	3-32	20	296159W	3-138	9	30190W	2-12	24
2307833W	3-109	1	280256W	3-127	21	296159W	3-139	9	30190W	6-5	
2307833W	3-93	20	280256W	3-146	23	296159W	3-140	9	302399W	3-138	11
2307833W	3-95	20	282706W	2-2	4	296159W	3-141	9	302399W	3-139	11
2307833W	3-91	80.2	287816W	3-13	11	296159W	3-124	32	302399W	3-140	11
2307833W	3-116		292501W	3-55	28	296159W	3-142	38	302399W	3-141	11
2307834W	3-116	1	292501W	3-124	28	296159W	3-143	38	302399W	3-143	29
2307835W	3-115		292501W	3-57	36	296159W	3-144	38	302399W	3-145	29
2307835W	3-116		292501W	3-125	36	296159W	3-145	38	328714W	2-2	8
2307897W	3-71	15	292526W	1-15	21	296159W	3-125	46	334442W	2-7	2.7
2307897W	3-83	15	292653W	3-55	27	296160W	3-153	6	334442W	2-9	2.7
2307924W	3-130	3	292653W	3-124	27	296417W	3-153	7	334442W	2-11	2.7
2307924W	3-135	3.13	292653W	3-142	29	296417W	3-156	7	334475W	5-8	14
2307924W	3-136	3.5	292653W	3-144	29	296417W	3-91	10	334475W	2-7	2.6
2307924W	3-133	3.6	292653W	3-57	31	296417W	3-138	10	334475W	2-9	2.6
2307924W	3-149	5	292653W	3-125	31	296417W	3-139	10	334475W	2-11	2.6
2307924W	3-125	7	292655W	3-75	1.17	296417W	3-140	10	334475W	6-5	
2307924W	3-124	16	292655W	3-79	1.17	296417W	3-141	10	342447W	4-5	4
2307924W	3-131	38	292655W	3-87	1.17	296417W	3-55	26	342448W	4-5	3
2307924W	3-134	38	292655W	3-101	2.21	296417W	3-124	26	344825W	4-6	4
2307924W	3-138	49	292655W	3-45	15	296417W	3-57	30	344825W	4-5	5
2307924W	3-139	49	292655W	3-55	25	296417W	3-93	30	344826W	4-5	11
2307924W	3-140	49	292655W	3-71	25	296417W	3-95	30	344835W	4-5	12
2307924W	3-141	49	292655W	3-83	25	296417W	3-125	30	374805W	2-2	19
2307924W	3-142	49	292655W	3-57	35	296417W	3-142	30	39365W	1-3	11

7-12

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
39365W	6-2		R13803039	3-87	1.25	R833114	3-49	23.14	R834052	3-79	1.27
39742W	3-2	5	R13803039	3-101	2.7	R833115	3-75	1.30	R834052	3-87	1.27
39742W	3-3	5	R13803039	3-98	5	R833115	3-79	1.30	R834052	3-39	16
39742W	3-118	13	R13803039	3-99	5	R833115	3-87	1.30	R834052	3-47	16
39742W	6-3		R13803039	3-45	22	R833115	3-16	7	R834052	3-67	20
398599W	3-39	4	R13803039	3-71	43	R833115	3-17	7	R834052	3-67	22
398599W	3-47	4	R13803039	3-83	43	R833115	3-45	27	R834052	3-41	23.16
398599W	3-41	23.4	R13803044	3-45	64	R833115	3-71	50	R834052	3-49	23.16
398599W	3-49	23.4	R13805003	3-45	21	R833115	3-83	50	R834052	3-45	24
398817W	4-6	2	R13805074	3-4	13	R833200	3-136	3.7	R834052	3-37	26.22
398817W	4-4	3	R13805074	3-5	13	R833200	3-133	3.8	R834052	3-71	45
398817W	4-2	4	R13806324	4-9	1.4	R833200	3-156	8	R834052	3-83	45
398817W	4-3	4	R13806324	4-8	2.4	R833201	3-153	2	R834055	3-101	2.19
398817W	4-5	7	R13809935	3-75	1.14	R833201	3-135	3.15	R834055	3-98	11
41206W	2-7	2.18	R13809935	3-79	1.14	R833201	3-37	26.33	R834055	3-99	11
41206W	2-9	2.18	R13809935	3-87	1.14	R833201	3-131	40	R834100	3-39	21
41206W	2-11	2.18	R13809935	3-45	12	R833201	3-134	40	R834100	3-47	21
41206W	2-2	5	R13809935	3-63	21	R833201	3-137	54	R834100	3-41	23.21
41206W	5-8	17	R13809935	3-67	21	R833201	3-132	3.15	R834100	3-49	23.21
41206W	6-5		R13809935	3-71	21	R833208	3-37	26.21	R834100	3-37	26.8
43210W	2-2	14	R13809935	3-83	21	R833251	3-15	3	R834253	3-17	13
44310W	2-2	15	R13811046	3-37	26.12	R833251	3-14	4	R834253	3-13	16
46629W	5-8	5	R13811210	3-101	2.16	R833251	3-16	5	R834253	3-15	17
46629W	2-12	16	R13813295	3-121	77	R833251	3-17	5	R834253	3-16	17
46629W	6-5		R13813326	1-30	1.13	R833251	3-13	6	R834253	3-14	18
58911W	2-2	18	R13813326	1-19	1.31	R833251	3-39	18	R834253	3-39	22
59419W	4-5		R13813326	1-29	1.4	R833251	3-47	18	R834253	3-47	22
59419W	4-6		R13813326	1-27	55	R833251	3-41	23.18	R834253	3-41	23.22
59419W	4-6		R13846	3-101	2.13	R833251	3-49	23.18	R834253	3-49	23.22
59419W	4-5		R13846	3-57	22	R833251	3-41	24.7	R834253	3-37	26.9
59419W	6-6		R13846	3-55	44	R833251	3-37	26.11	R834253	3-47	41
6036W	2-2	16	R13846	3-93	54	R833251	3-39	40	WR4-279B	4-12	
6037W	2-2	17	R13846	3-95	54	R833253	3-108	2	WR4-279B	6-6	
61056W	2-4	26	R14040	3-37	26.35	R833253	3-109	2	WR4-422B	4-12	
61056W	2-5	26	R15668	3-39		R833253	3-14	3	WR4-422B	6-6	
67551W	2-2	13	R15668	3-41		R833253	3-131	3	WR5-183B	4-12	
87355W	5-8	1	R15668	3-115		R833253	3-134	3	WR5-183B	6-6	
87355W	2-12	7	R15668	3-116		R833253	3-16	8	WR5-277B	4-12	
87355W	6-5		R1933988	3-101	2.26	R833253	3-124	12	WR5-277B	6-6	
918085W	4-2		R2109170	5-8	6	R833253	3-71	16	WR6-129B	4-12	
918906W	2-7	2.17	R2109170	2-12	25	R833253	3-83	16	WR6-129B	6-6	
918906W	2-9	2.17	R2109170	6-5		R833253	3-37	26.1	WR6-129BLP	4-12	
918906W	2-11	2.17	R2528352	3-75	1.24	R833253	3-125	38	WR6-129BLP	6-6	
93166W	4-4	2	R2528352	3-79	1.24	R833400	3-112	8	WR6-195B	4-12	
93166W	4-2	3	R2528352	3-87	1.24	R833400	3-39	12	WR6-195B	6-6	
93166W	4-3	3	R2528352	3-71	42	R833400	3-47	12	WR6-195BLP	4-12	
93166W	4-5	6	R2528352	3-83	42	R833400	3-41	23.12	WR6-195BLP	6-6	
HSP0000004	3-101	2.14	R330325	3-58	26	R833400	3-49	23.12	Y01C-0428	3-39	5
HSP0000006	3-75	1.19	R330325	3-59	26	R833400	3-41	24.11	Y01C-0428	3-47	5
HSP0000006	3-79	1.19	R330325	3-63	26	R833400	3-39	44	Y01C-0428	3-71	14
HSP0000006	3-87	1.19	R400128	3-30	17	R833700	3-39	15	Y01C-0428	3-83	14
NSS	3-152	6	R400128	3-31	17	R833700	3-47	15	Y01C-0428	3-41	23.5
NSS	3-152	7	R400128	3-2	37	R833700	3-67	19	Y01C-0428	3-49	23.5
NSS	3-152	8	R400128	3-3	37	R833700	3-41	23.15	Y098629-012	3-148	84
NSS	3-152	9	R525293	3-32	12	R833700	3-49	23.15	Y09C-M0640	3-93	21
R11537	3-95	57	R525293	3-33	12	R833700	3-37	26.15	Y09C-M0640	3-95	21
R11537	3-93	58	R525293	3-30	13	R833700	3-45	62	Y09C-M0640	3-91	38
R12973129	3-115	2	R525293	3-31	13	R833800	3-39	20	Y09C-M0650	3-57	29
R12973129	3-116	2	R6515575	3-2	27	R833800	3-47	20	Y09C-M0650	3-55	31
R1314773	2-4	19	R6515575	3-3	27	R833800	3-41	23.20	Y17C-0616	1-23	46
R1314773	2-5	19	R833103	3-113	3	R833800	3-49	23.20	Y17C-0616	1-25	46
R1314773	5-8	19	R833103	3-130	7	R833801	3-155	5	Y17C-0616	1-21	54
R1314773	6-5		R833103	3-37	26.2	R833804	3-75	1.29	Y17C-0624	3-75	1.21
R1314774	2-4	18	R833103	3-125	37	R833804	3-79	1.29	Y17C-0624	3-79	1.21
R1314774	2-5	18	R833103	3-124	42	R833804	3-87	1.29	Y17C-0624	3-87	1.21
R1314774	5-8	18	R833114	3-15	12	R833804	3-89	22	Y17C-0624	3-39	8
R1314774	6-5		R833114	3-14	13	R833804	3-45	26	Y17C-0624	3-47	8
R13801359	3-99	8	R833114	3-39	14	R833804	3-71	49	Y17C-0624	3-93	19
R13803039	3-75	1.25	R833114	3-47	14	R833804	3-83	49	Y17C-0624	3-95	19
R13803039	3-79	1.25	R833114	3-41	23.14	R834052	3-75	1.27	Y17C-0624	3-41	23.8

7-13

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
Y17C-0624	3-49	23.8									
Y17C-0624	3-37	26.13									
Y17C-0624	3-71	35									
Y17C-0624	3-83	35									
Y17C-1232	1-11	3									
Y17C-1232	1-15	3									
Y17C-1232	1-23	6									
Y17C-1232	1-25	6									
Y17C-1232	1-12	8									
Y17C-1232	1-21	36									
Y17C-1236	1-30	1.11									
Y17C-1236W	1-19	1.6									
Y17C-1236W	1-18	7									
Y19C-M1016	3-57	32									
Y19C-M1016	3-55	45									
Y19C-M1650	3-45	36									
Y19C-M1650	3-83	61									
Y19C-M2450	1-23	40									
Y19C-M2450	1-25	40									
Y19C-M3080	1-30	1.8									
Y25G-0408	3-149	1									
Y25G-1024	3-98	15									
Y27E-06	1-15	40									
Y27E-06	3-148	75									
Y27E-12	1-15	4									
Y27E-12	1-12	7									
Y27E-14	1-17	26									
Y73G-0632	2-7	3.8									
Y73G-0640	2-9	4.2									
YS6-195BWS	4-12										
YS6-195BWS	6-6										

Intentionally Blank



To find a dealer in your area,
Call: (503) 625-2560,
Fax: (503) 625-7269 , or
E-mail: marketing@alliedsystems.com, or
Visit our website: <http://www.alliedsystems.com>



599015W 07/28/2017 Printed in USA