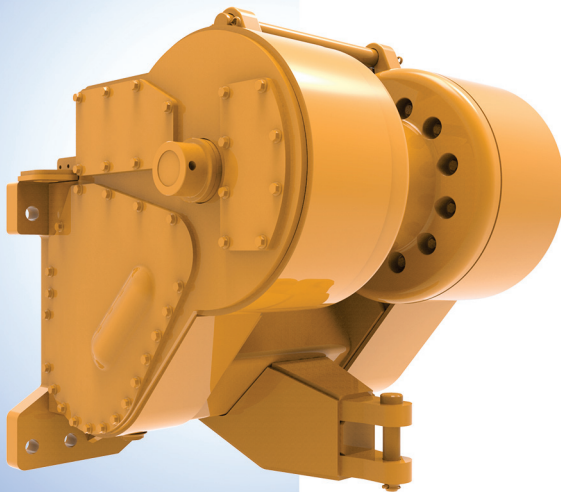




Parts Manual



Allied W12E

Power Controlled & Electronic Controlled 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

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12/09/2016

Safety Precautions

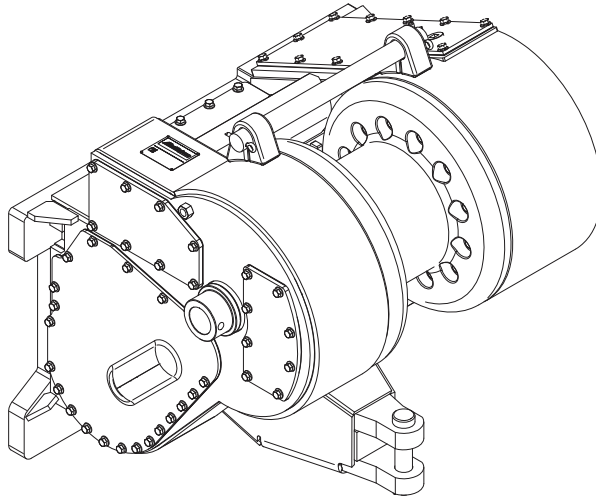
**Read, understand and observe the Safety Summary
on pages 0-3 through 0-5
to prevent injury to personnel and damage to equipment.**

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.**

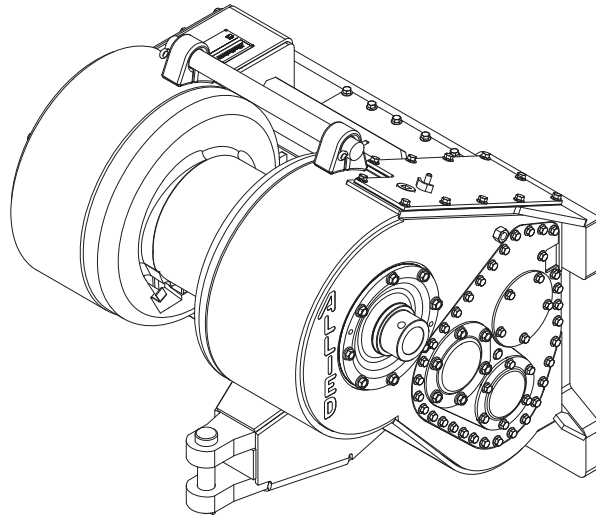
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Safety Summary

General Safety Notices

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

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

DANGER

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

WARNING

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

CAUTION

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

NOTICE

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

NOTE: ...

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

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.

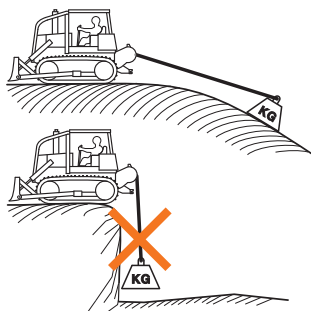
Operation, Inspection, and Maintenance Warnings

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.



Unit Identification

Allied Winch S/N Nameplate Data For Tractor Mountings

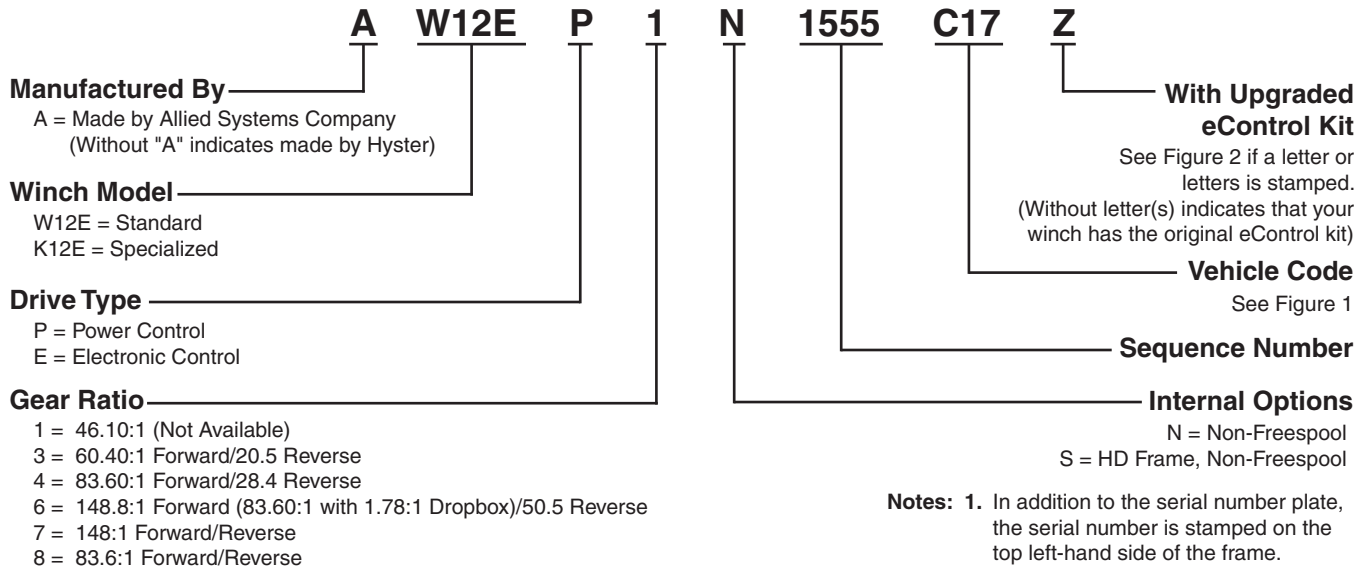


Figure 1 - Tractor or Skidder Identification and Gear Ratio (Continued on next page)

Tractor Make Model and Starting Tractor Serial Number Where Applicable					
C O D E	A Fiat-Hitachi/ New Holland	C Caterpillar	G Terex	H Dresser/ Dressta	K Komatsu
59		D8R Series II ⑥			
60					D275A-2 ④
61	21C ③ FD30 ③④	D8K PS ①③④	82-30, 82-30B, D750A ③	TD25C PS ③④	D155A-1 & 2 ③④
62	FD40B, FP120, 31 ③	D9 PS, D9H, 594H ①③④	D800 ③④		
63	41-B ④	583 Serial No. 78V 61A ①③④ 583H/K ④		TD25E PS Serial No. 1001 & Up ③④	
64	FD30B/C, D350 ①③④	594H Serial No. 96V 62H ①③④		TD25G/H/M ③④	D375A-1 ①
65	FD40 ④	D8L, D9N, D9R (Clutch Br. Steer) ④, ⑥*		TD40B/C ④	

Unit Identification
Allied Winch S/N Nameplate Data For Tractor Mountings

Figure 1 - Tractor or Skidder Identification and Gear Ratio

Tractor Make Model and Starting Tractor Serial Number Where Applicable					
C O D E	A Fiat-Hitachi/ New Holland	C Caterpillar	G Terex	H Dresser/ Dressta	K Komatsu
66		D10N, D10R ④, ⑥			
67		583R ③ ④ ⑥			
68		D9R (Diff. Steering) ④, ⑥			
74		583T, D8T, ⑥, ⑦			
75		D9T ⑥, ⑦			
76		D10T ⑥, ⑦			
79		587T, PL83, PL87 ⑥, ⑦			
* Available only for D9R Clutch Brake Steer with Dropbox.					

Figure 2 - Winch eControls Modification Status

A LETTER OR LETTERS AT THE END OF THE WINCH SERIAL NUMBER CODE INDICATES THAT THE WINCH HAS BEEN MODIFIED WITH AN UPGRADED eCONTROL KIT.	
LETTER	MODIFICATION
ZZ	WINCH HAS BEEN UPGRADED TO USE MANIFOLD P/N 2314998 (Blue Colored)
ZV	WINCH HAS BEEN UPGRADED TO USE MANIFOLD P/N 2311887 (Silver)
Z	WINCH HAS BEEN UPGRADED TO USE MANIFOLD P/N 2306547W (Silver Colored)
X	A KIT HAS BEEN INSTALLED THAT ADDS AN ACTIVATION SWITCH TO THE WINCH
NOTE: WINCHES THAT HAVE BEEN REBUILT AT ALLIED SYSTEMS ARE MODIFIED WITH "M" AND MAY CONTAIN UPGRADED E-CONTROLS COMPONENTS. CONTACT ALLIED SYSTEMS SERVICE DEPARTMENT.	
REFER TO THE E-CONTROLS PROGRAM SELECTION CHART, 2305227W, FOR MORE INFORMATION.	

Figure 3 - List of Installation Drawings

W12E INSTALLATION DRAWINGS BY TRACTOR

Winch Serial Number	Description	Installation Drawing Part Number
Electronic Control		
W12EE6N----C59	W12E CAT D8R SERIES II	2305410W
K12EE8S----C62	W12E CAT D9H, 594H	2315300
W12EE6N----C65	W12E CAT D9R W/ CL/BR STEER	2310794
W12EE6N----C66	W12E CAT D10N/R	2305222W
W12EE6N----C67	W12E CAT 583R	2310553
W12EE6N----C68	W12E CAT D9R, DIFF. STEER	2310794
W12EE6N----C76	W12E CAT D10T	2305222W
W12EE7S----C59	W12E CAT D8R SERIES II	2305410W
W12EE7S----C68	W12E CAT D9R W/DIFF STEER	2310794
W12EE7S----C74	W12E CAT 583T/D8T	2310553
W12EE7S----C75	W12E CAT D9T	2310794
W12EE7S----C76	W12E CAT D10T	2305222W
W12EE7S----C79	W12E CAT 587T	2310553
Power Control (push pull cable)		
W12EP*N----A61	W12E CAT D8K	263806W
W12EP*N----A64	W12E FIAT/HITACHI FD30B/C	388577W
W12EP*N----C63	W12E CAT 583H/K	2313207
W12EP*N----C64	W12E CAT 594H	2315144
W12EP6N----C65	W12E CAT D9R W/ CL/BR STEER	2304797W
W12EP*N----C67	W12E CAT 583R	2304847W
W12EP6N----C68	W12E CAT D9R, DIFF. STEER	2304797W
W12EP7S----C74	W12E CAT 583T/D8T	2304847W
W12EP7S----C79	W12E CAT 587T	2304847W
W12EP*N----H63	W12E IH OR DRESSER TD25E	322139W
W12EP*N----H64	W12E IH OR DRESSER TD25G/H/M	322139W
W12EP*N----K60	W12E KOMATSU D275A-2	2300346W
W12EP*N----K61	W12E KOMATSU D155A-1 & -2	261571W

- Notes:**
1. This list is for operators to keep track of necessary information of their winch installation drawings by tractors.
 2. If any of the installation drawings listed above is needed, please contact the Service Department of Allied Systems Company at 503-625-2560.

How to use the Illustrated Parts manual

G 03

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Index-Numerical

Part No	Page	Part No	Page	Part No	Page	Part No	Page	
130W	1007	22	1008	22	15162W	1E04	12	
	1008	51	1009	15		1A05	24	
	1009	27	1010	18		1E03	3	
	1010	32	1011	8		1A07	2	
	1011	28	1012	10		1A08	4	
	1012	31	15058W	1010	24	1A09	7	
	1013	50		1011	18	1A09	8	
2818W	1E04	4	15108W	1007	6	1A09	9	
2819W	1E04	3		1008	9	1A09	5	
2821W	1E04	3	15110W	1A09	9	1A09	6	
8048W	1C03	15		1011	15	15178W	1C04	33
7043W	1E04	31	15134W	1C04	22		1C03	26
9554W	1E05	32	15135W	1007	5		1C07	2
	1E07	22		1009	10		1C08	2
	1E08	22		1010	5		1C08	2
	1E09	22		1011	12		1D10	10
	1E09	22		1011	7		1D11	7
9543W	1E05	15	15136W	1D12	4		1D12	4
	1E05	24	15137W	1A08	4		1D13	4
	1E05	31		1A11	11		1D07-1D12	1E08
	1E07	31	15154W	1A07	1		1E28	1E28

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Index-Master

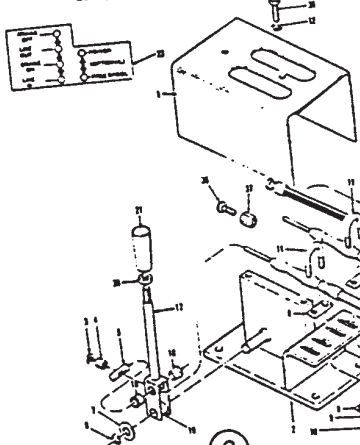
Description	Page No
Arch-Four Roller	1E04
Brake	1C01
Clutch	1B14
Covers	1A05
	1A06
	1E03
	1C06
	1A08
	1B14
	1C07-1D12
	1E28

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1 D 12

Gear-Handling

Caterpillar D4H D5H and D6H with Esco Grapple Before Grapple S/N HV-9459



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Item No	Part No	Description	Qty	Ref
1	332822W	Cover	1	24
2	381182W	Bracket	1	24
3	18425W	Lockwasher	2	24
4	15044W	Nut	2	24
5	198128W	Pin	2	24
6	90830W	Ring-Snap	2	24
7	15135W	Washer-Flat	4	24
8	198132W	Spacer	4	24
9	15155W	Lockwasher	4	24
10	15055W	Nut	2	24
11	198129W	U-Bolt	1	24
12	278227W	Lockwasher	2	24
13	198144W	Lever	2	24
14	278043W	Bushing	1	24
15	242189W	Bushing	1	24
16	198144W	Knob	1	24
17	278043W	Lever	2	24
18	198144W	Bushing	1	24
19	278043W	Bushing	1	24
20	15030W	Nut-Jam	1	24
21	198489W	Knob	1	24
22	383879W	Handlever	1	24
23	271731W	Discal	1	24

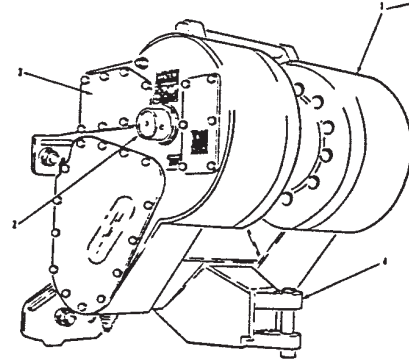
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A 01

Index-Illustrated

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

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W12E

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12/09/2016

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

1. Determine the function and application of the part required. Turn to the illustrated index page immediately behind the front cover, and select the most appropriate area.
2. Line up the black arrow containing the appropriate reference number, with the black tab on the division index page with the same reference number. Use the division index to determine the assembly which would normally contain the part required. Proceed then to locate the part on the assembly breakdown page.

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

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

When the part number is known:

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

General:

1. The assembly breakdowns include part numbers, descriptions, quantities required, keys and foot notes to help in selecting the correct parts.
2. 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.
3. 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.
4. 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.
5. Serial numbers are shown to allow for the most current parts information to be incorporated into the parts manual. See pages 0-6 and 07 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 U.S.A.

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 Specifications

Recommended Oil List

Recommended Oils* - General Conditions			
Manufacturer	Oil Type	Ambient Temperature Range	
		°F	°C
ExxonMobil	Mobil Fluid 424 (Factory fill)	-13 to 105	-25 to 43
John Deere	Hy-Gard™	-13 to 122	-25 to 50
Chevron	1000 THF	-13 to 105	-25 to 43
Caterpillar	Multipurpose Tractor Oil (MTO)	-13 to 104	-25 to 40
Case	Hy-Tran Ultra	-20 to 122	-30 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 non-recommended oils may void warranty.

Figure 3 - Recommended Oil List

Oil Capacity

The oil capacities for the W12E winch are as follows:

W12E without Dropbox..... 29 Gal. (110L)

W12E with Dropbox..... 30 Gal. (114L)

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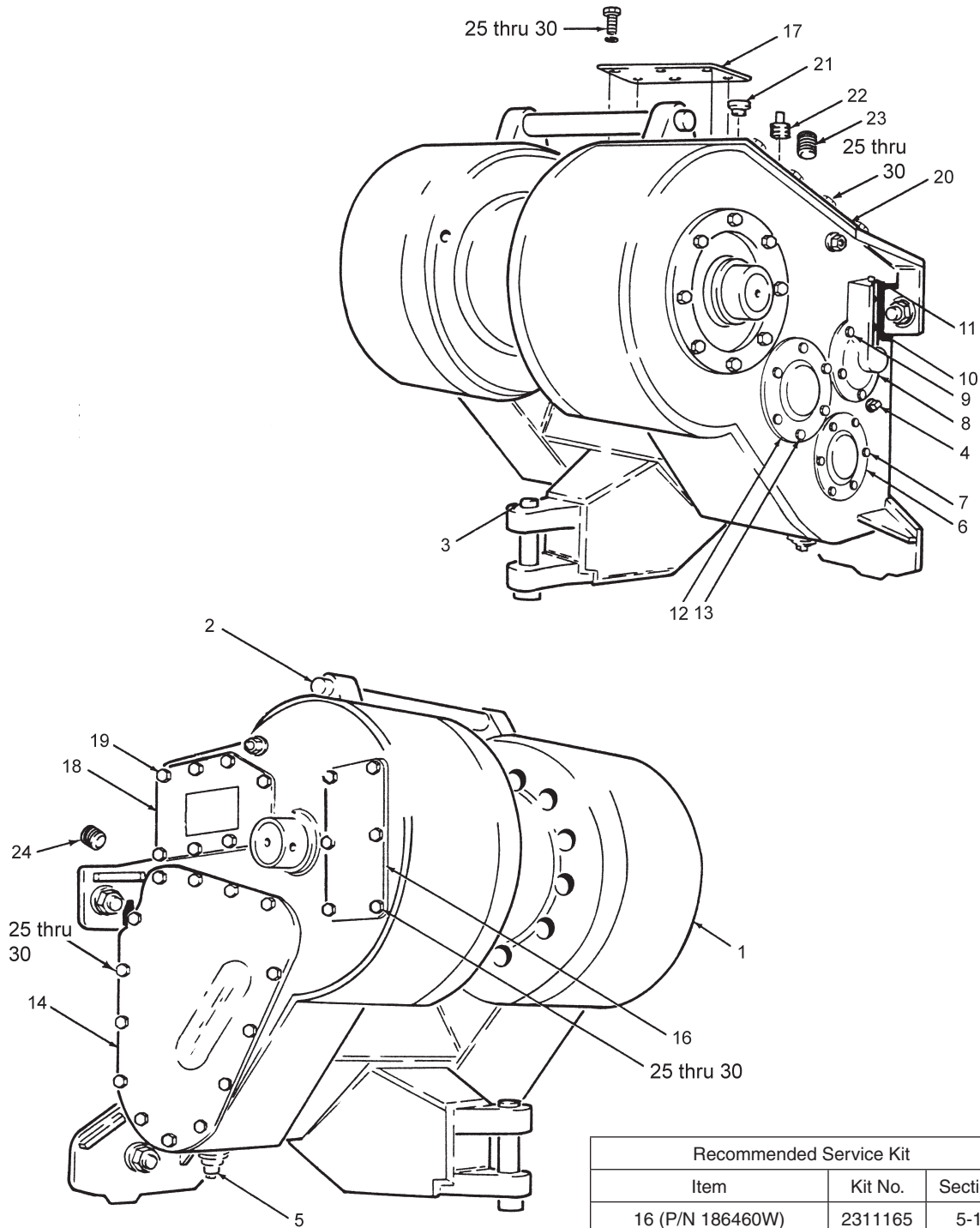


Frame / Mounting Parts / Nameplate & Decals

Frame and Covers	1-2 thru 1-7
Mounting Parts	1-8 thru 1-48
Nameplate & Decals	1-49

Frame and Covers

For Internal Option "N"
 Last Used on S/N AW12E-1397
 Page 1 of 2



Recommended Service Kit		
Item	Kit No.	Section
16 (P/N 186460W)	2311165	5-1
16 (P/N 2304734W)	2311375 2311376	5-1
8 (15895W), 14 (286046W), 16 (186460W, 2304734W), 17 (2314838), 18 (164708W, 2304732W), 20 (95455W)	281939W	5-1

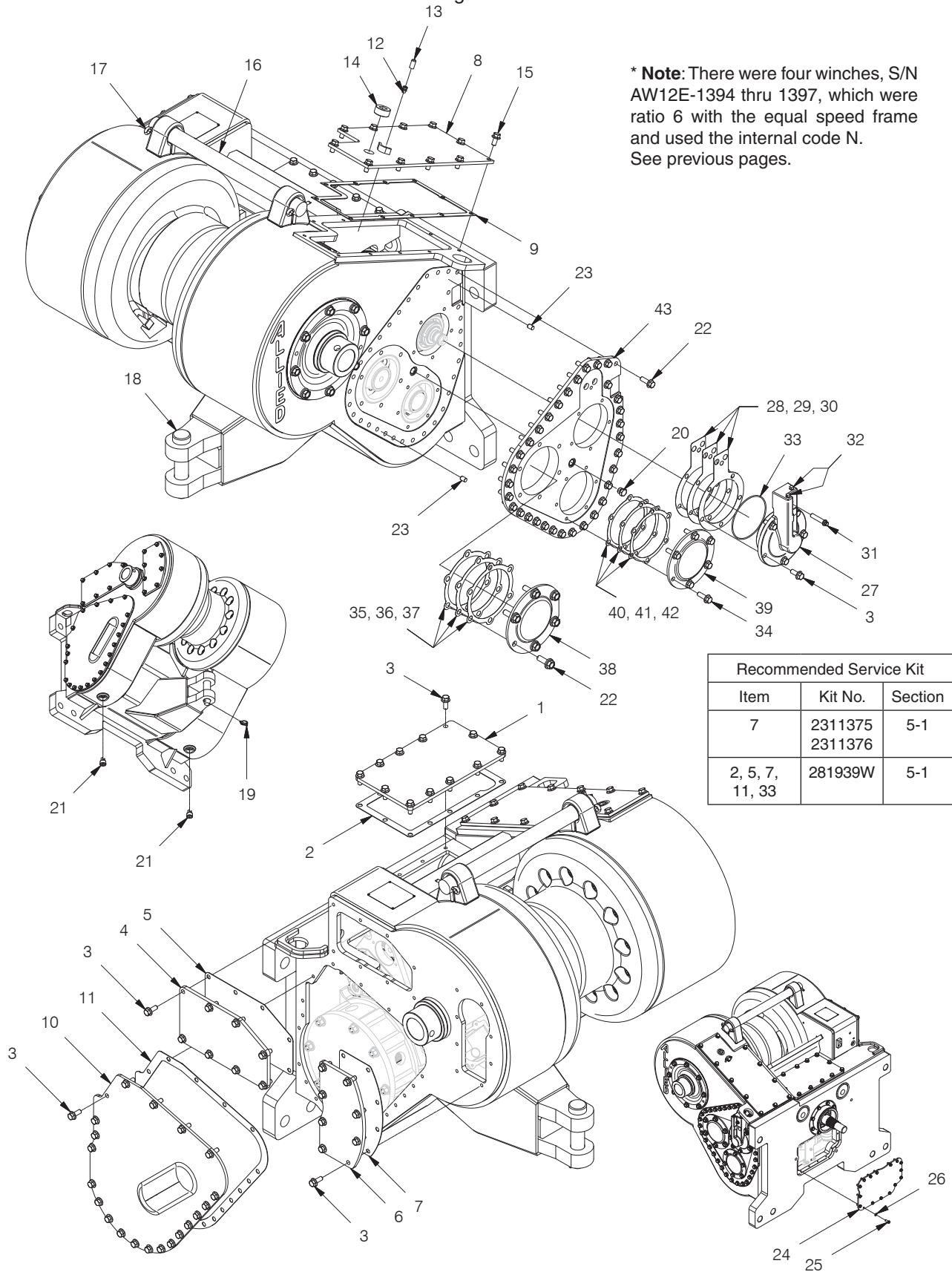
Frame and Covers
 For Internal Option "N"
 Last Used on S/N AW12E-1397
 Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	-----	Frame, Winch	1	16	2300507W	Plate, Cover	1
2	92606W	Rod, Tie	1		186460W	Gasket	1
	15272W	Pin, Cotter	2		*d 2304735W	Plate, Cover	1
3	95959W	Pin, Drawbar	1		*d 2304734W	Gasket	1
	15273W	Pin, Cotter	1	17	261561W	Plate, Cover	1
*b	2303221W	Pin, Retaining	1		2314838	Gasket	2
4	*e 15304W	Plug	1	18	164691W	Cover	1
*f	2305101W	Sight Gage	1		164708W	Gasket	1
5	222262W	Plug, Fitting	2		*d 2304733W	Cover	1
6	95490W	Retainer, Bearing	1		*d 2304732W	Gasket	1
	95033W	Shim .005	AR	19	*e 179443W	Capscrew	8
	95166W	Shim .007	AR		*e 15156W	Lockwasher	8
	95034W	Shim .020	AR		*f 2303848W	Capscrew	37
7	182209W	Capscrew	6	20	195408W	Cover	1
	15158W	Lockwasher	6		95455W	Gasket	1
8	263070W	Retainer, Bearing	1	21	15319W	Fitting	1
	263464W	Shim .005	AR	22	15306W	Fitting	1
	263465W	Shim .007	AR	23	21420W	Plug, Breather	1
	263466W	Shim .020	AR	24	*c 16923W	Fitting	1
	15895W	O-Ring	1	25	178402W	Capscrew	50
9	178402W	Capscrew	5	26	15158W	Lockwasher	50
	15158W	Lockwasher	5	27	*d 178402W	Capscrew	52
10	225264W	Capscrew	2	28	*d 15158W	Lockwasher	52
11	15307W	Fitting	1	29	*f 178402W	Capscrew	23
12	93287W	Retainer	1	30	*f 15158W	Lockwasher	23
	93284W	Shim .005	AR		*a	First used on S/N W12EP-1718 & AW12E-1001	
	93285W	Shim .007	AR		*b	First used on S/N AW12E-1093	
	93286W	Shim .020	AR		*c	Last used on S/N AW12E-1105	
13	182210W	Capscrew	6		*d	First used on S/N AW12E-1106	
	15160W	Lockwasher	6		*e	Last used on S/N AW12E-1124	
14	286045W	Plate, Cover	1		*f	First used on S/N AW12E-1125	
*a	286046W	Gasket	1				

Frame and Covers

For Internal Option "S" with Gear Ratios 4, & 6
 First Used on S/N AW12E-1398

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Recommended Service Kit		
Item	Kit No.	Section
7	2311375 2311376	5-1
2, 5, 7, 11, 33	281939W	5-1

Frame and Covers

For Internal Option "S" with Gear Ratios 4, & 6

First Used on S/N AW12E-1398

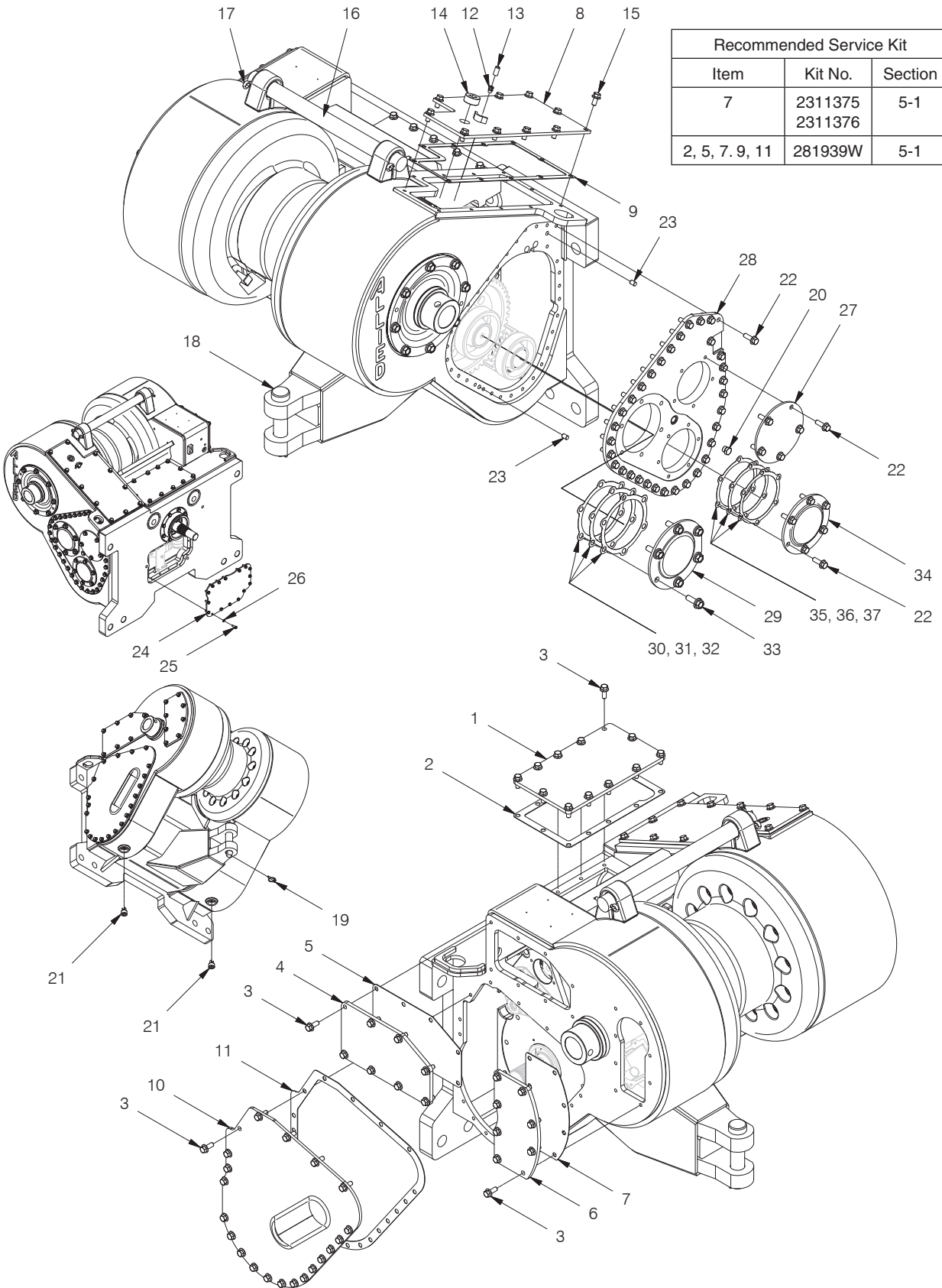
Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	261561W	Cover	1	23	176208W	Pin	2
2	2314838	Gasket, Cover	2	24	2306624W	Cover, Front	1
3	2303848W	Capscrew	54	25	179443W	Capscrew	16
4	2304733W	Plate, Valve Cover	1	26	15156W	Washer	16
5	2304732W	Gasket, Valve Cover	1	27	263070W	Retainer, Bearing	1
6	2304735W	Plate, Filter Cover	1	28	263464W	Shim .005	AR
7	2304734W	Gasket, Filter Cover	1	29	263465W	Shim .007	AR
8	195408W	Plate, Cover	1	30	263466W	Shim .020	1
9	95455W	Gasket	1	31	225264W	Capscrew	1
10	286045W	Plate, Cover	1	32	15307W	Fitting	2
11	286046W	Gasket	1	33	15895W	O-Ring	1
12	21420W	Plug, Breather	1	34	2303905W	Screw, Flange	6
13	2300962W	Cap, Breather	1	35	93284W	Shim .005	AR
14	15319W	Fitting	1	36	93285W	Shim .007	AR
15	2303902W	Capscrew	11	37	93286W	Shim .020	AR
16	92606W	Rod	1	38	93287W	Retainer	1
17	15272W	Pin	2	39	95490W	Retainer	1
18	95959W	Pin, Drawbar	1	40	95033W	Shim .005	AR
19	2303221W	Pin, Retaining	1	41	95166W	Shim .007	AR
20	14595W	Fitting	1	42	95034W	Shim .020	AR
21	222262W	Fitting	2	43	2306685W	Plate, Frame Insert	1
22	2303898W	Screw	39				

Frame and Covers

For Internal Option "S" with Gear Ratio 7

Page 1 of 2



Recommended Service Kit		
Item	Kit No.	Section
7	2311375 2311376	5-1
2, 5, 7, 9, 11	281939W	5-1

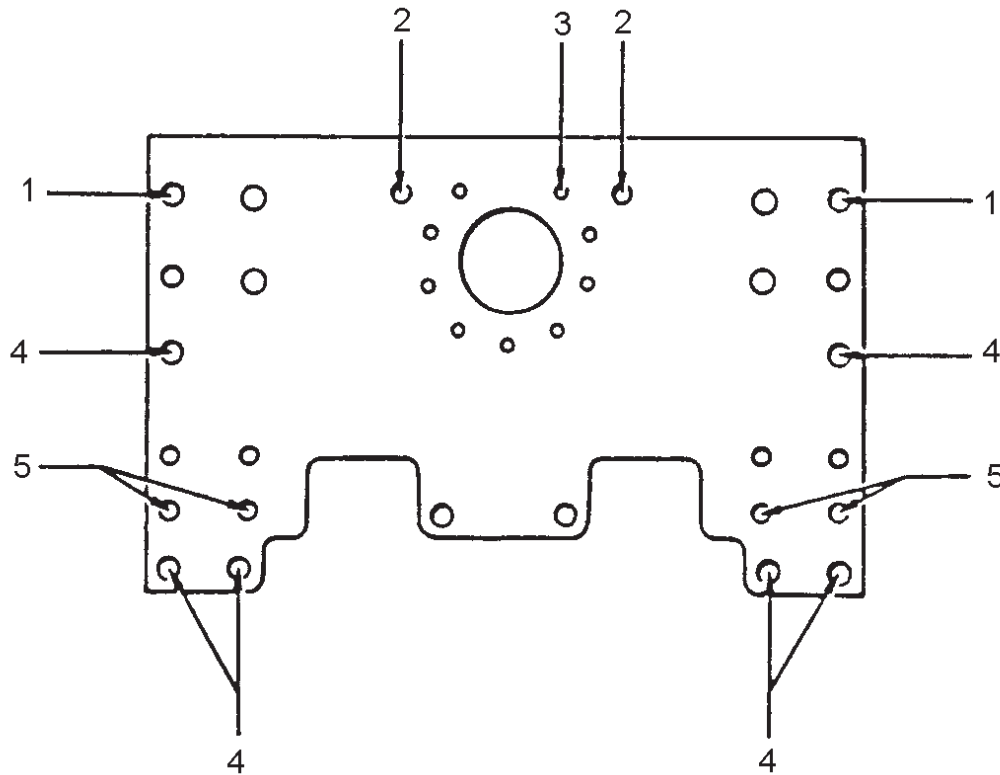
Frame and Covers

For Internal Option "S" with Gear Ratio 7
Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	261561W	Cover	1	22	2303898W	Capscrew	44
2	2314838	Gasket, Cover	2	23	176208W	Pin	2
3	2303848W	Capscrew	54	24	2306624W	Cover, Front	1
4	2304733W	Plate, Valve Cover	1	25	179443W	Capscrew	16
5	2304732W	Gasket, Valve Cover	1	26	15156W	Washer	16
6	2304735W	Plate, Filter Cover	1	27	*a 2310087	Cover, Clutch Shaft	1
7	2304734W	Gasket, Filter Cover	1	28	*a, *b 2306571W	Plate, Cover	1
8	195408W	Plate, Cover	1	28	*a, *c 2307941W	Plate, Frame Insert	1
9	95455W	Gasket	1	29	93287W	Retainer	1
10	286045W	Plate, Cover	1	30	93284W	Shim .005	AR
11	286046W	Gasket	1	31	93285W	Shim .007	AR
12	21420W	Plug, Breather	1	32	93286W	Shim .020	AR
13	2300962W	Cap, Breather	1	33	2303905W	Screw, Flange	6
14	15319W	Fitting	1	34	95490W	Retainer, Bearing	1
15	2303902W	Capscrew	11	35	95033W	Shim .005	AR
16	92606W	Rod	1	36	95166W	Shim .007	AR
17	15272W	Pin	2	37	95034W	Shim .020	AR
18	95959W	Pin, Drawbar	1				
19	2303221W	Pin, Retaining	1		*a Use 264159W Adhesive		
20	14595W	Fitting	1		*b Last Used on S/N AW12E-1228		
21	222262W	Fitting	2		*c First Used on S/N AW12E-1229		

Mounting Parts

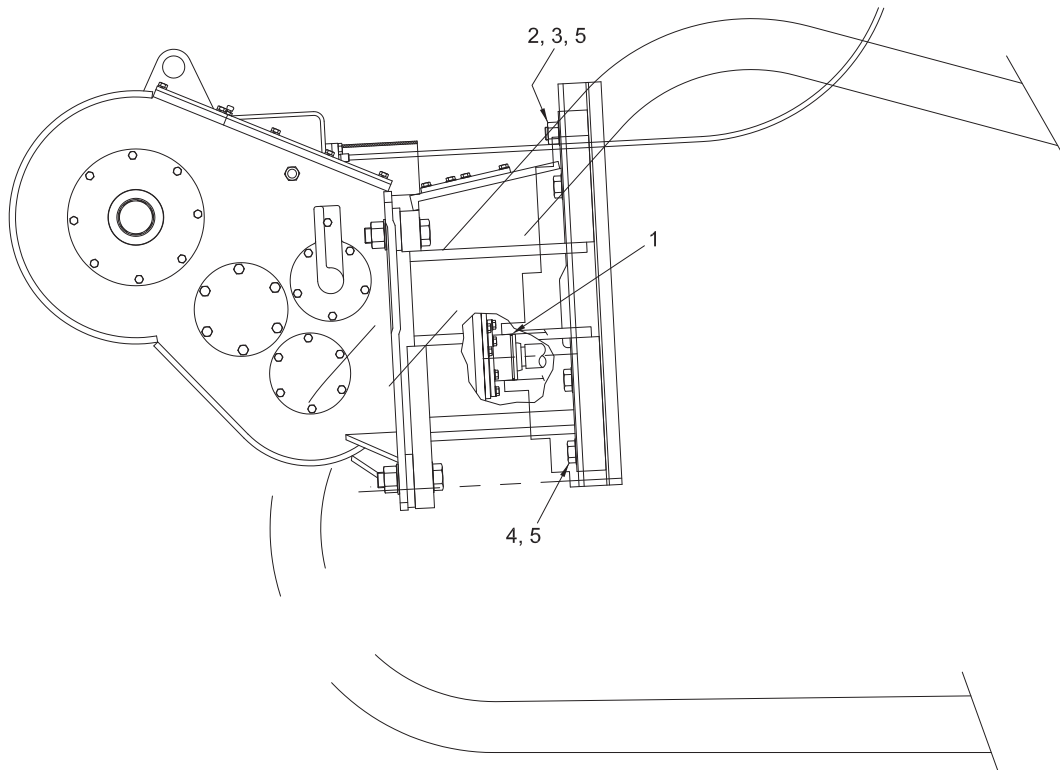
Caterpillar 583 (C63), 583H/K (C63) and D8K (C61)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 211513W	Stud	2	3	136385W	Plug	9
	221729W	Nut	2	4	18849W	Plug	6
	221786W	Lockwasher	2	5	*a 211235W	Stud	4
2	*a 2301853W	Stud	2		221725W	Nut	4
	134821W	Nut	2		15128W	Lockwasher	4
	15240W	Pin, Cotter	2				
	55434W	O-Ring	2				
					*a	Use 230064W Loctite Kit	

Mounting Parts

Caterpillar 583R (C67)
with Power Control

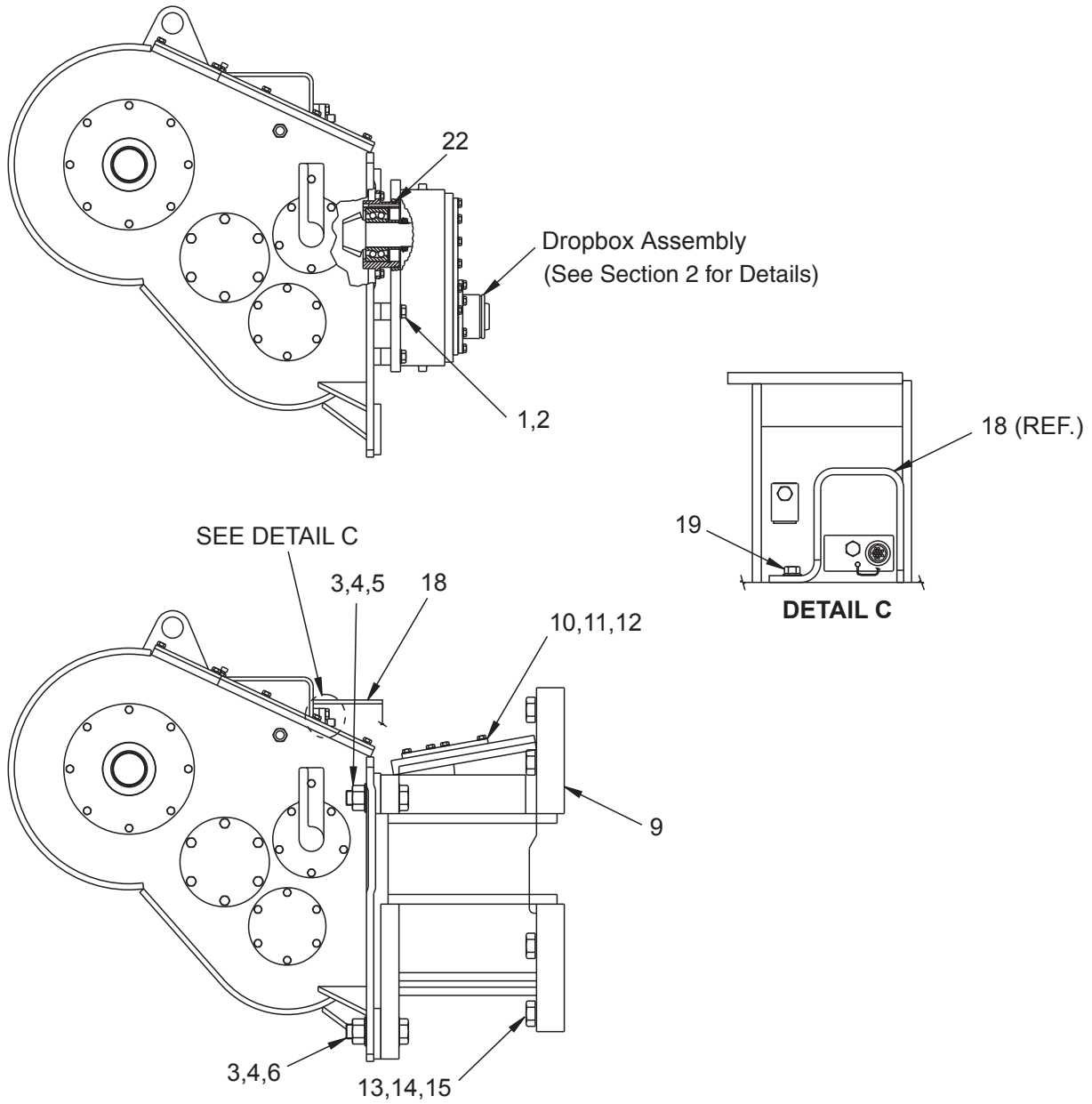


Note: This winch may include a drop box. See Drop Box pages in Section 2 for related drop box parts.

Item	Part No.	Description	Qty.	Item	Part No.	Description	B
1	15887W	O-ring	1	5	15128W	Washer	12
2	*a 2301140W	Stud	2				
3	221725W	Nut	2		*a	Use 230064W Loctite Kit on both ends of studs	
4	*a 1310819W	Capscrew	10				

Mounting Parts

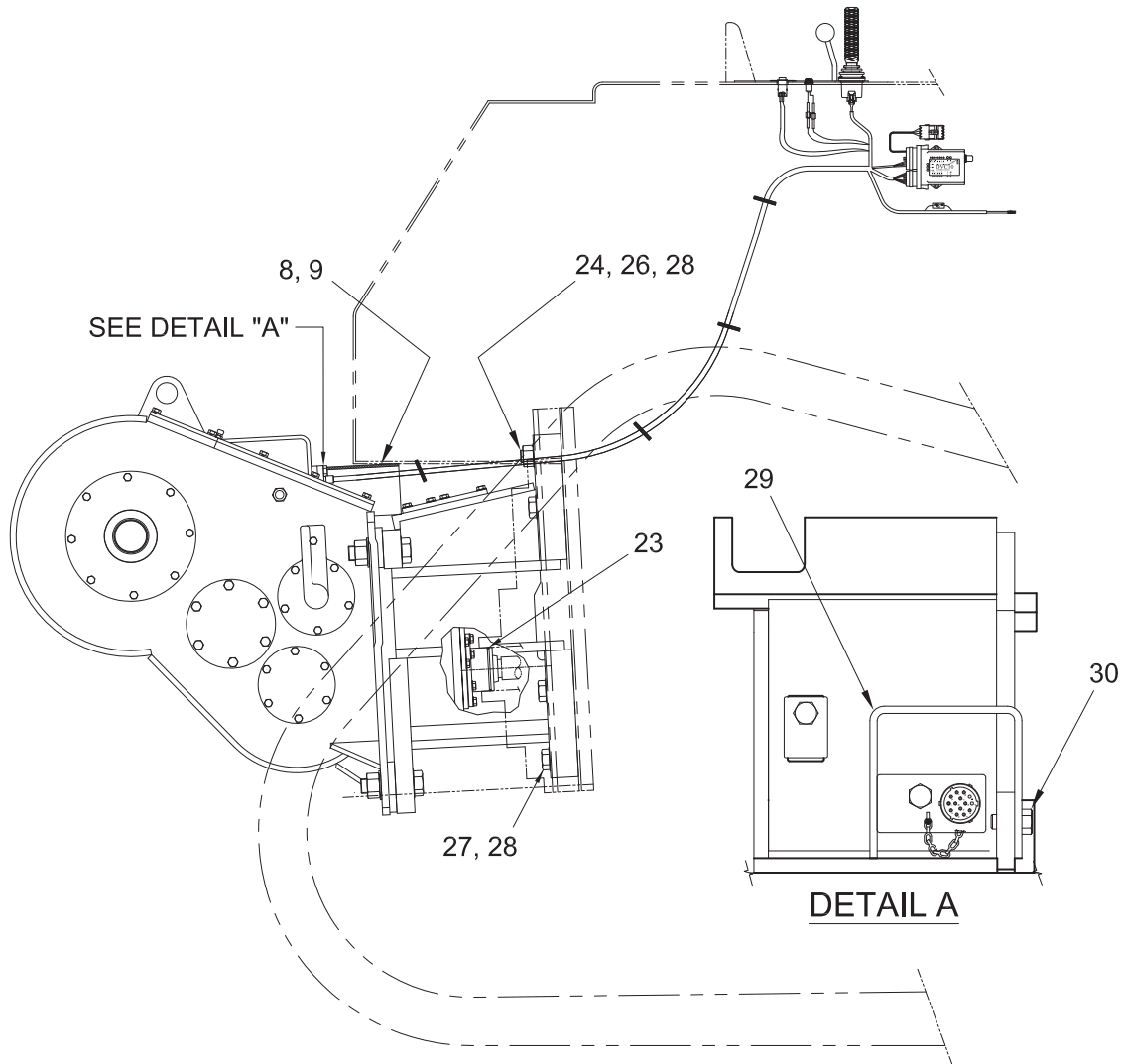
Caterpillar 583R (C67)
with Electronic Control
Last Used on S/N AW12E-1536
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Mounting Parts

Caterpillar 583R (C67)
with Electronic Control

Last Used on S/N AW12E-1536
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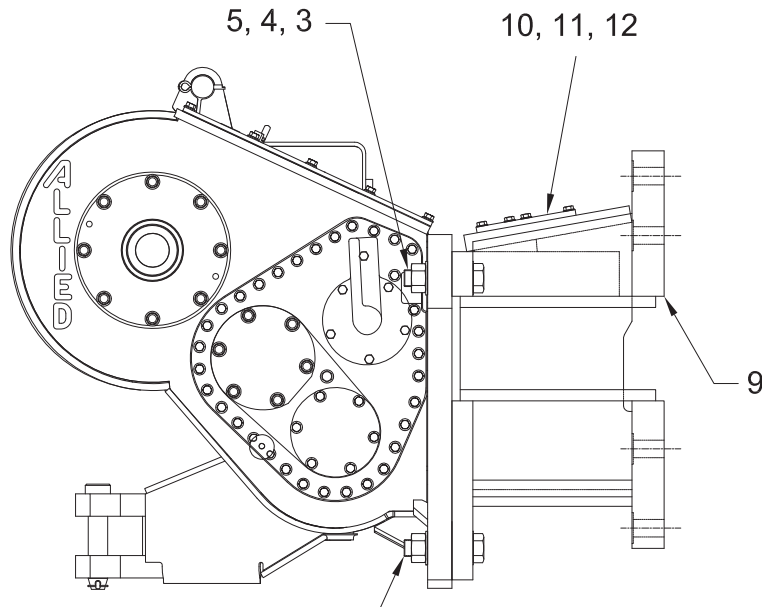
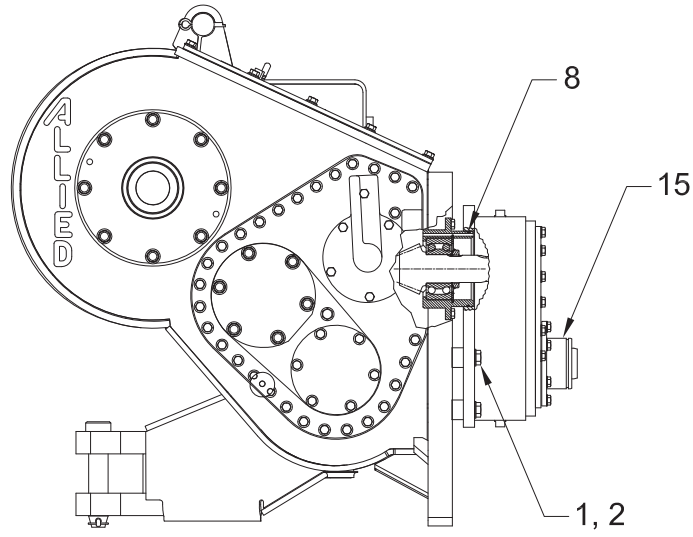
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 221662W	Capscrew	3	24	*d 2301140W	Stud	2
2	*a 221777W	Washer	3	25	2307842W	Plate, Handlever Mounting	1
3	*b, *c 221728W	Nut	8	26	221725W	Nut	2
4	*b, *c 221786W	Washer	14	27	1310819W	Capscrew	10
5	*f 2307101W	Stud	2	28	15128W	Washer	12
5	*b, *g 2303975W	Stud	2	29	2307919W	Guard, Cable	1
6	*c 2304826W	Capscrew	6	30	*a 398817W	Screw, Flanged	2
9	2304716W	Bracket, Mounting	1				
10	224978W	Plate, Cover	1		*a	Use 318702W Loctite	
11	221563W	Capscrew	10		*b	Use 230064W Loctite Kit on top center holes only	
12	221771W	Washer	10		*c	Use 318702W Loctite on outer and bottom holes only	
13	*d 2301140W	Stud	12		*d	Use 230064W Loctite Kit	
14	*d 15128W	Washer	12		*e	Used on winches with e-controls option only. Setscrew provided for winches with cable controls; see Hydraulics - Cable Controls in Section 3.	
15	*d 221725W	Nut	12		*f	Last Used on S/N AW12E-1160	
18	*e 2304827W	Guard, Cable	1		*g	First Used on S/N AW12E-1161	
19	*d, *e 398817W	Screw, Flanged	1				
22	90937W	O-Ring	1				
23	15887W	O-Ring	1				

Mounting Parts

Caterpillar 583R (C67)
with Electronic Control

First Used on S/N AW12E-1537

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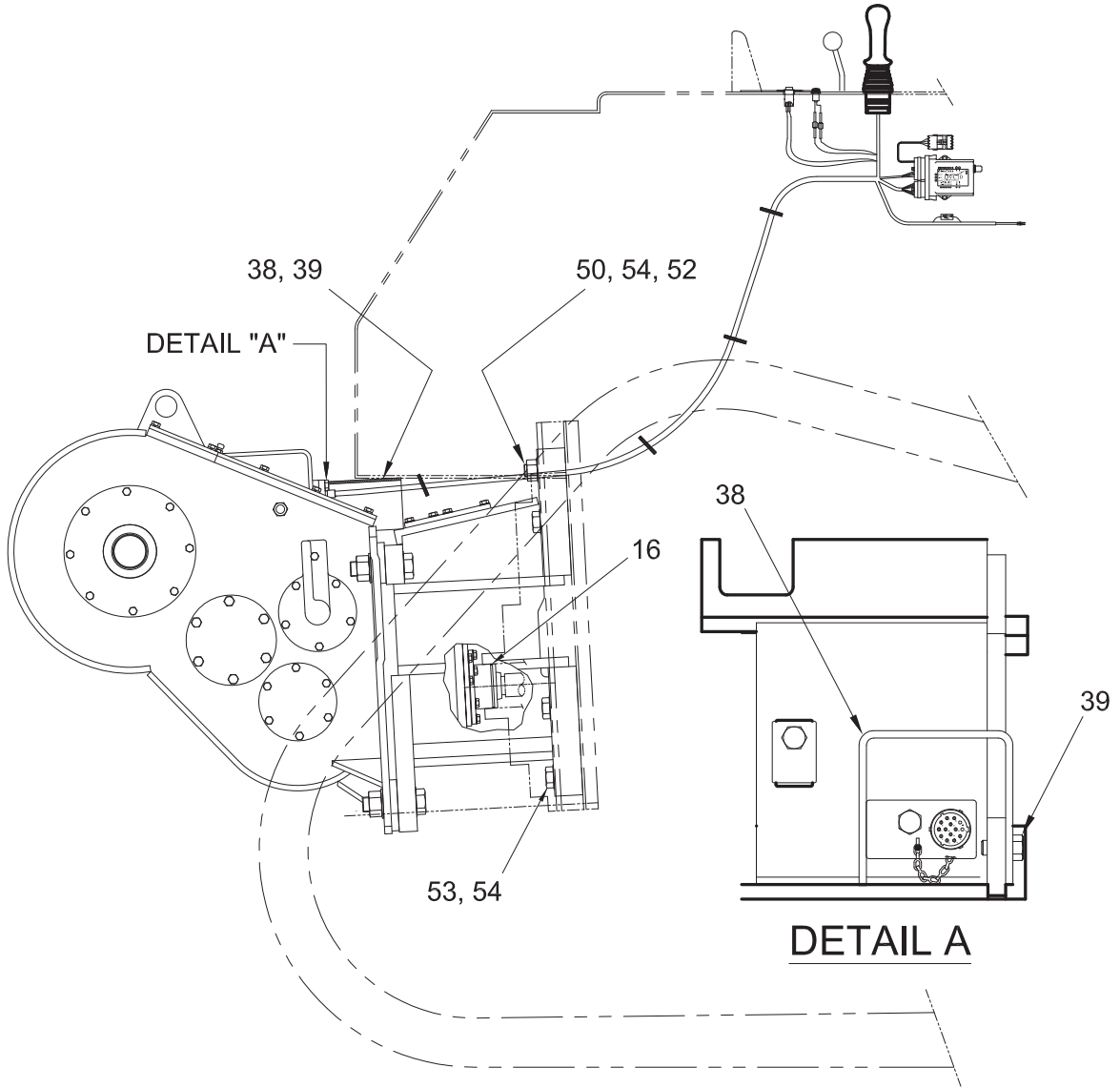


Mounting Parts

Caterpillar 583R (C67)
with Electronic Control

First Used on S/N AW12E-1537

Page 2 of 2



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 221662W	Capscrew	3	16	15887W	O-Ring	1
2	221777W	Washer	3	38	2307919W	Guard, Cable	1
3	221728W	Nut	8	39	*c 398817W	Screw, Flanged	2
4	221786W	Washer	14	50	*d 2301140W	Stud	2
5	*b 2303975W	Stud	2	52	221725W	Nut	2
6	*a 2307143W	Capscrew	6	53	*d 1310819W	Capscrew	10
8	90937W	O-Ring	1	54	15128W	Washer	12
9	2304716W	Bracket, Mounting	1				
10	224978W	Plate, Cover	1				
11	221563W	Capscrew	10		*a	Use 383789W Adhesive Sealant	
12	221771W	Washer	10		*b	Use 264134W Adhesive Sealant	
15	2304764W	Assembly, Gear Box	1		*c	Use 318702W Thread Locker	
					*d	Use 230064W Loctite Kit	

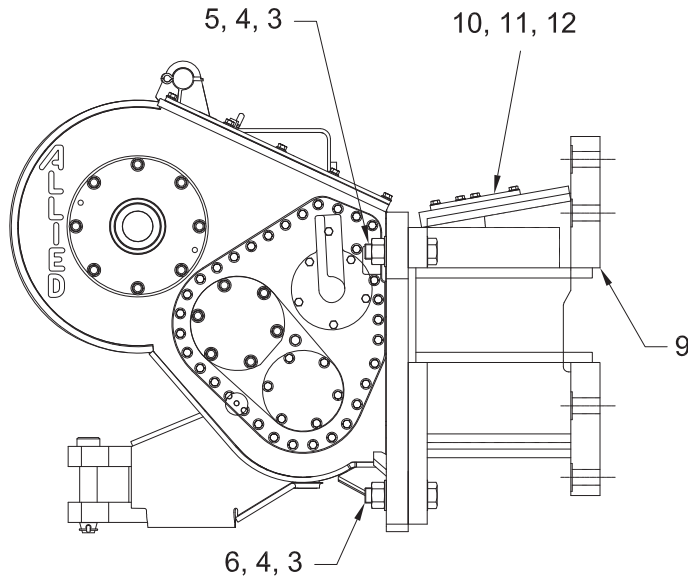
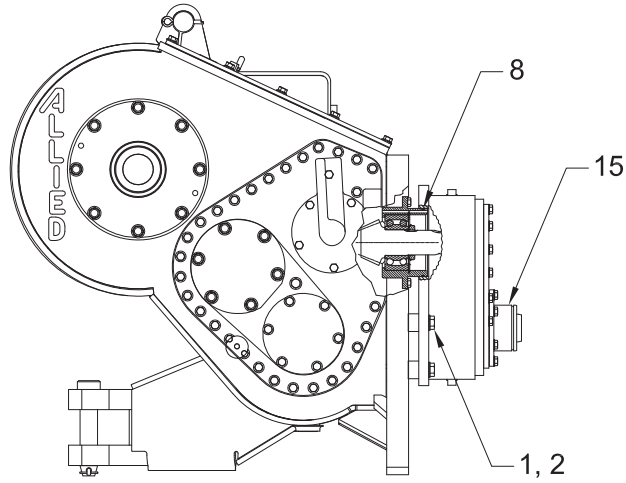
Mounting Parts

Caterpillar 583T (C74), PL83/PL87 (C79), D8T (C74)

with Electronic Control

Last Used on S/N AW12E-1536

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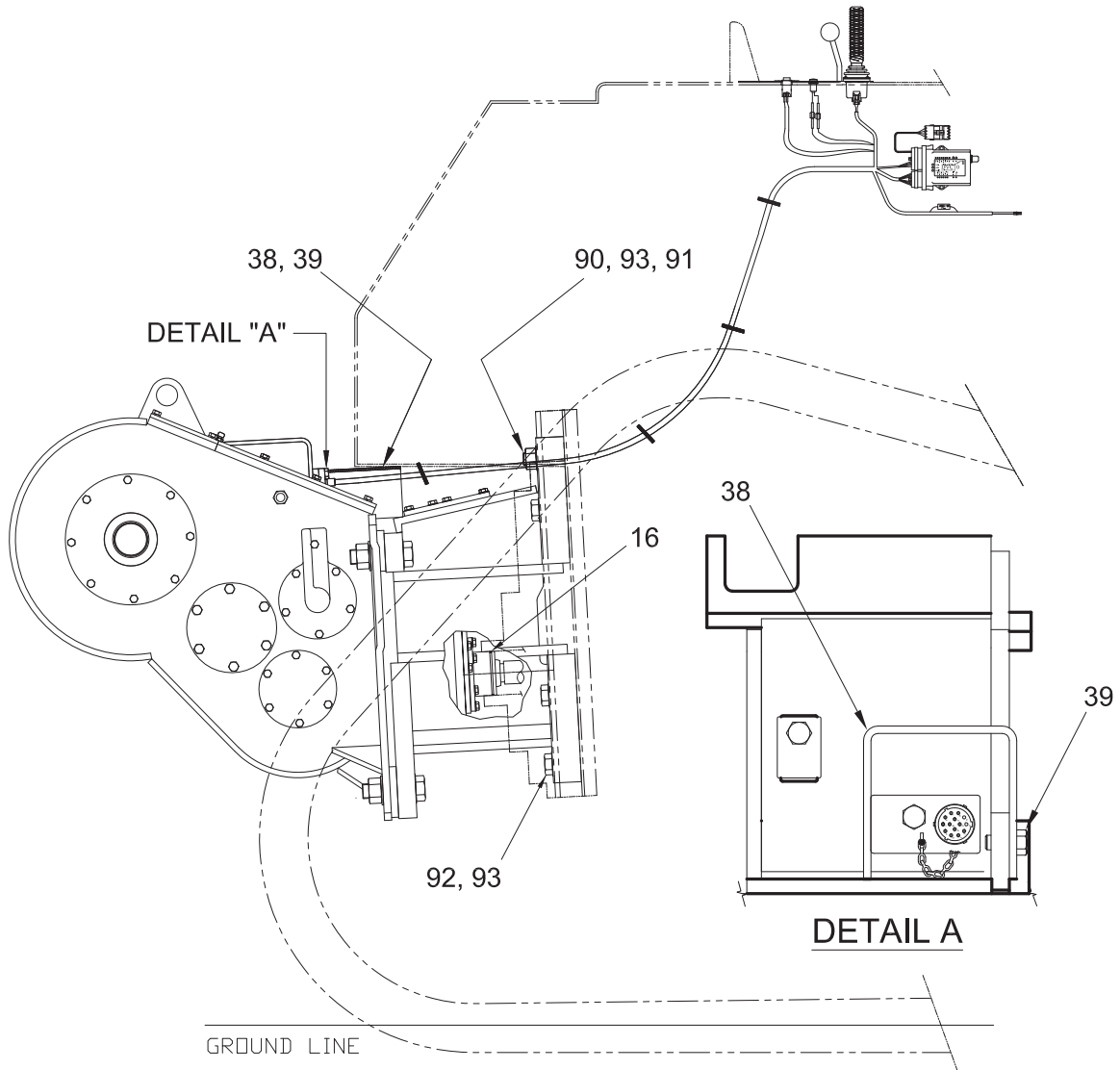
Mounting Parts

Caterpillar 583T (C74), PL83/PL87 (C79), D8T (C74)

with Electronic Control

Last Used on S/N AW12E-1536

Page 2 of 2



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty
1	*a 221662W	Capscrew	3	16	15887W	O-Ring	1
2	221777W	Washer	3	38	2307919W	Guard, Cable	1
3	221728W	Nut	8	39	*c 398817W	Screw, Flanged	2
4	221786W	Washer	14	90	*d 2310880	Stud	2
5	*b 2303975W	Stud	2	91	292661W	Nut	2
6	*a 2307143W	Capscrew	6	92	Y19C-M30120	Capscrew	10
8	90937W	O-Ring	1	93	296438W	Washer	12
9	2304716W	Bracket, Mounting	1				
10	224978W	Plate, Cover	1				
11	221563W	Capscrew	10		*a	Use 383789W Adhesive Sealant	
12	221771W	Washer	10		*b	Use 264134W Adhesive Sealant	
15	2304764W	Assembly, Gear Box	1		*c	Use 318702W Thread Locker	
					*d	Use 230064W Loctite Kit	

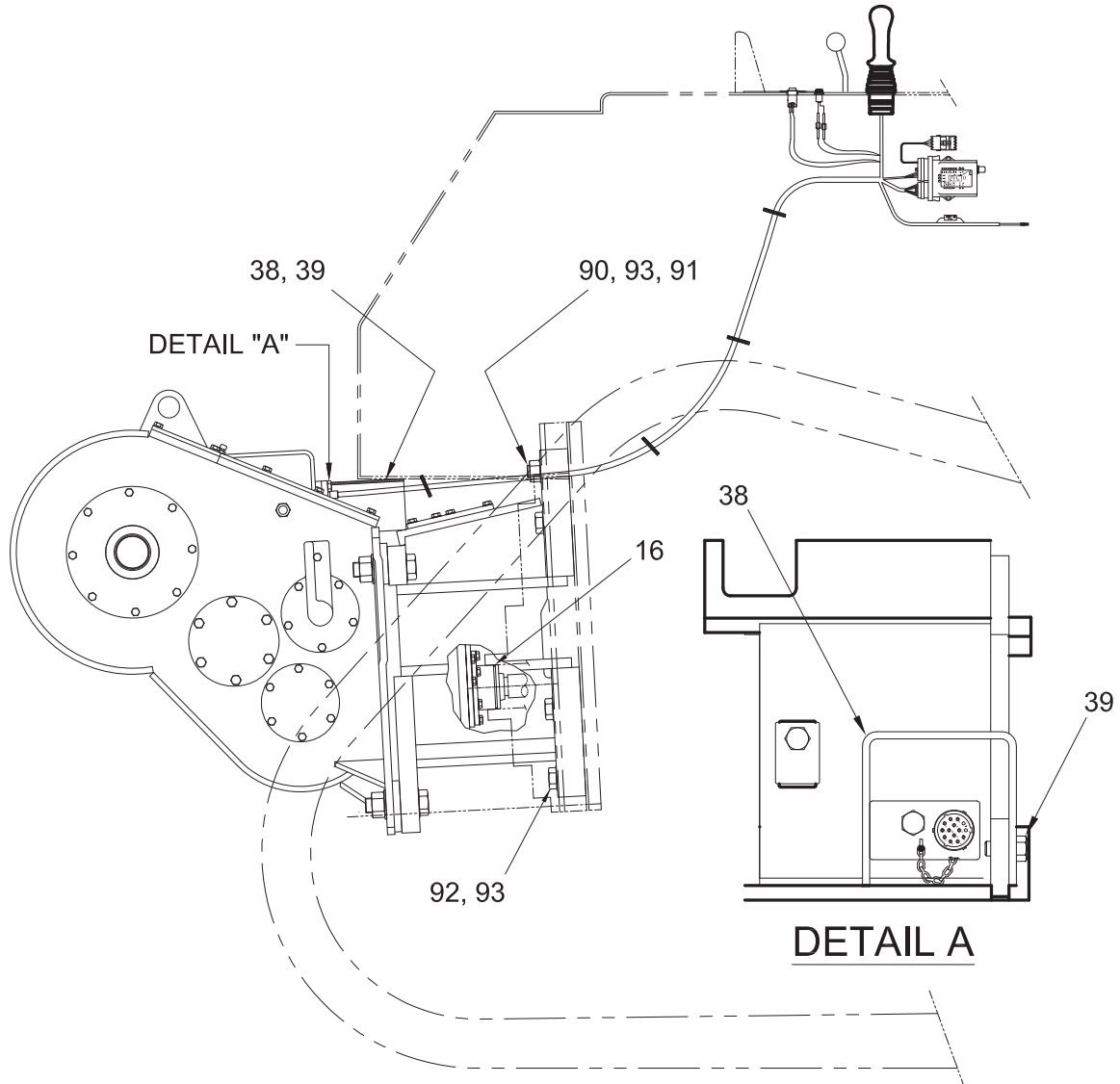
Mounting Parts

Caterpillar 583T (C74), PL83/PL87 (C79), D8T (C74)

with Electronic Control

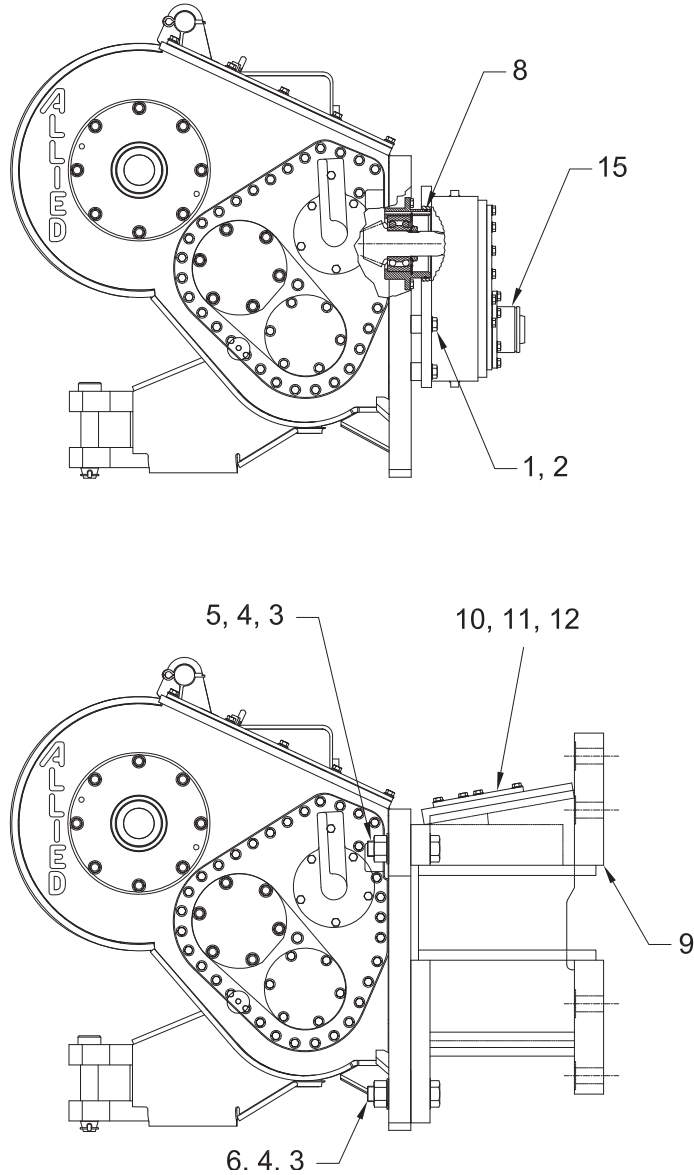
First Used on S/N AW12E-1537

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Mounting Parts

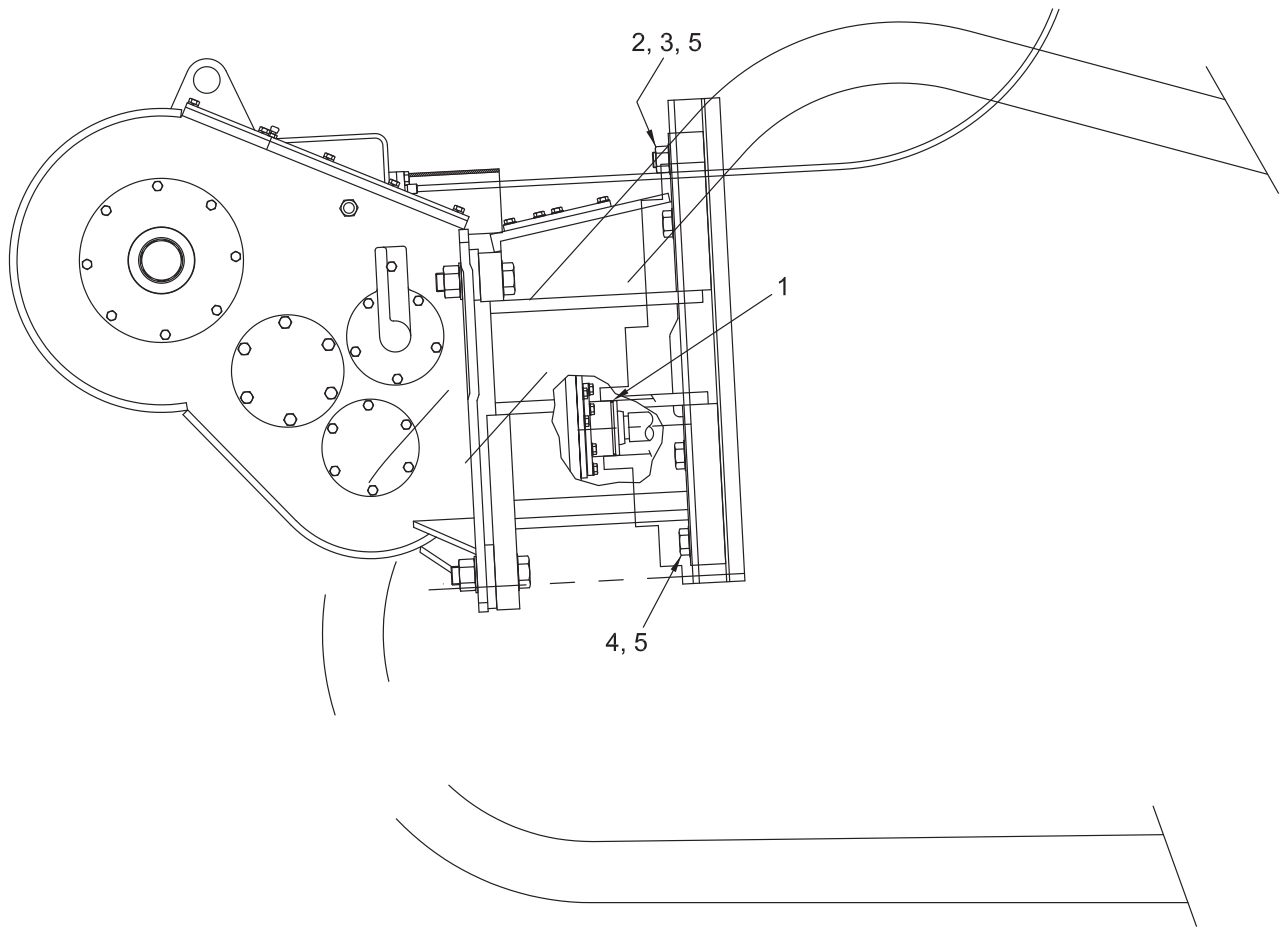
Caterpillar 583T (C74), PL83/PL87 (C79), D8T (C74)
 with Electronic Control
 First Used on S/N AW12E-1537
 Page 2 of 2



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty
1	*a 221662W	Capscrew	3	16	15887W	O-Ring	1
2	221777W	Washer	3	38	2307919W	Guard, Cable	1
3	221728W	Nut	8	39	*c 398817W	Screw, Flanged	2
4	221786W	Washer	14	90	*d 2310880	Stud	2
5	*b 2303975W	Stud	2	91	292661W	Nut	2
6	*a 2307143W	Capscrew	6	92	*d Y19C-M30120	Capscrew	10
8	90937W	O-Ring	1	93	296438W	Washer	12
9	2304716W	Bracket, Mounting	1				
10	224978W	Plate, Cover	1		*a	Use 383789W Adhesive Sealant	
11	221563W	Capscrew	10		*b	Use 264134W Adhesive Sealant	
12	221771W	Washer	10		*c	Use 318702W Thread Locker	
15	2304764W	Assembly, Gear Box	1		*d	Use 230064W Loctite Kit	

Mounting Parts

Caterpillar 587T (C79)
with Electronic Control



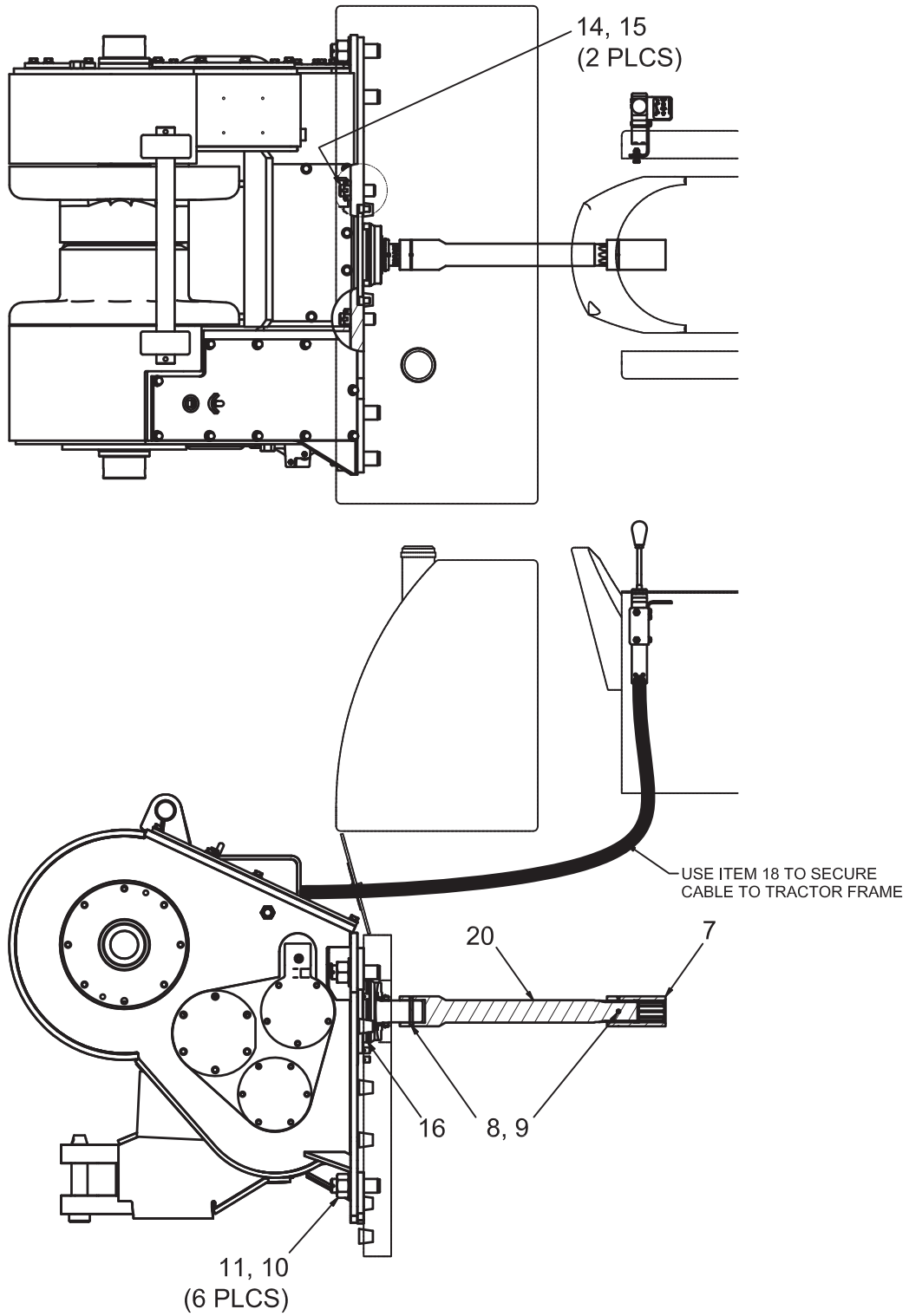
Note: This winch may include a drop box. See Drop Box pages in Section 2 for related drop box parts.

Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty
1	15887W	O-Ring	1	5	15128W	Washer	12
2	*a 2301140W	Stud	2				
3	221725W	Nut	2		*a	Use 230064W Loctite Kit on both ends of studs	
4	*a 1310819W	Capscrew	10				

Intentionally Blank

Mounting Parts

Caterpillar Pipelayer 594H (C64)
with Power Control
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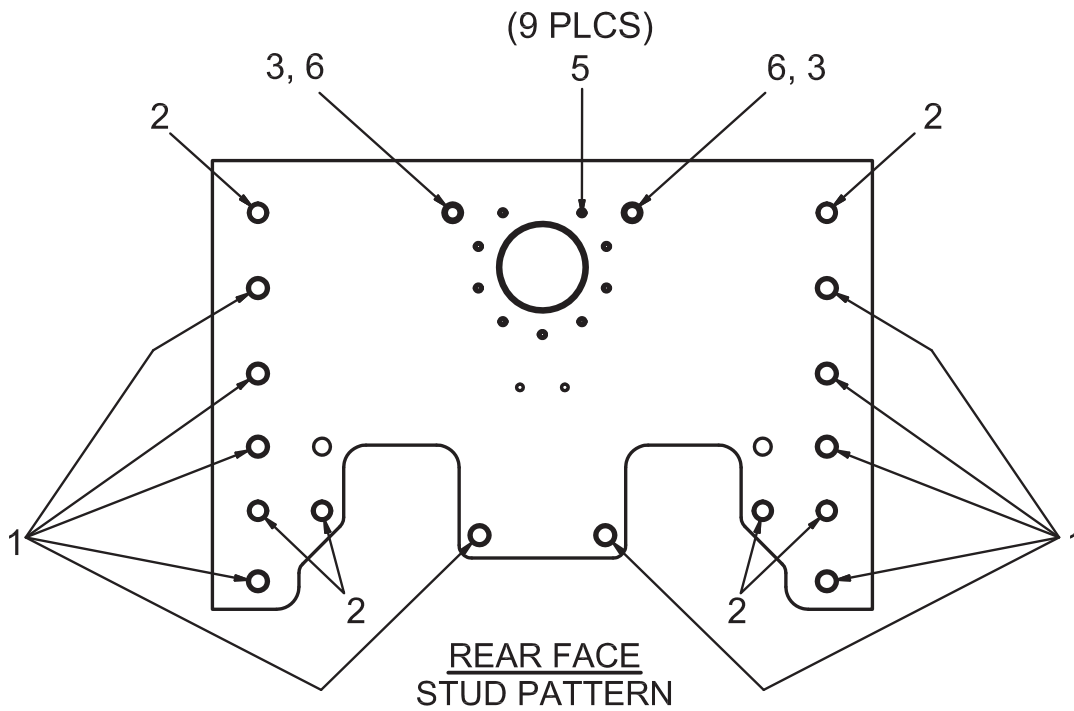


Mounting Parts

Caterpillar Pipelayer 594H (C64)

with Power Control

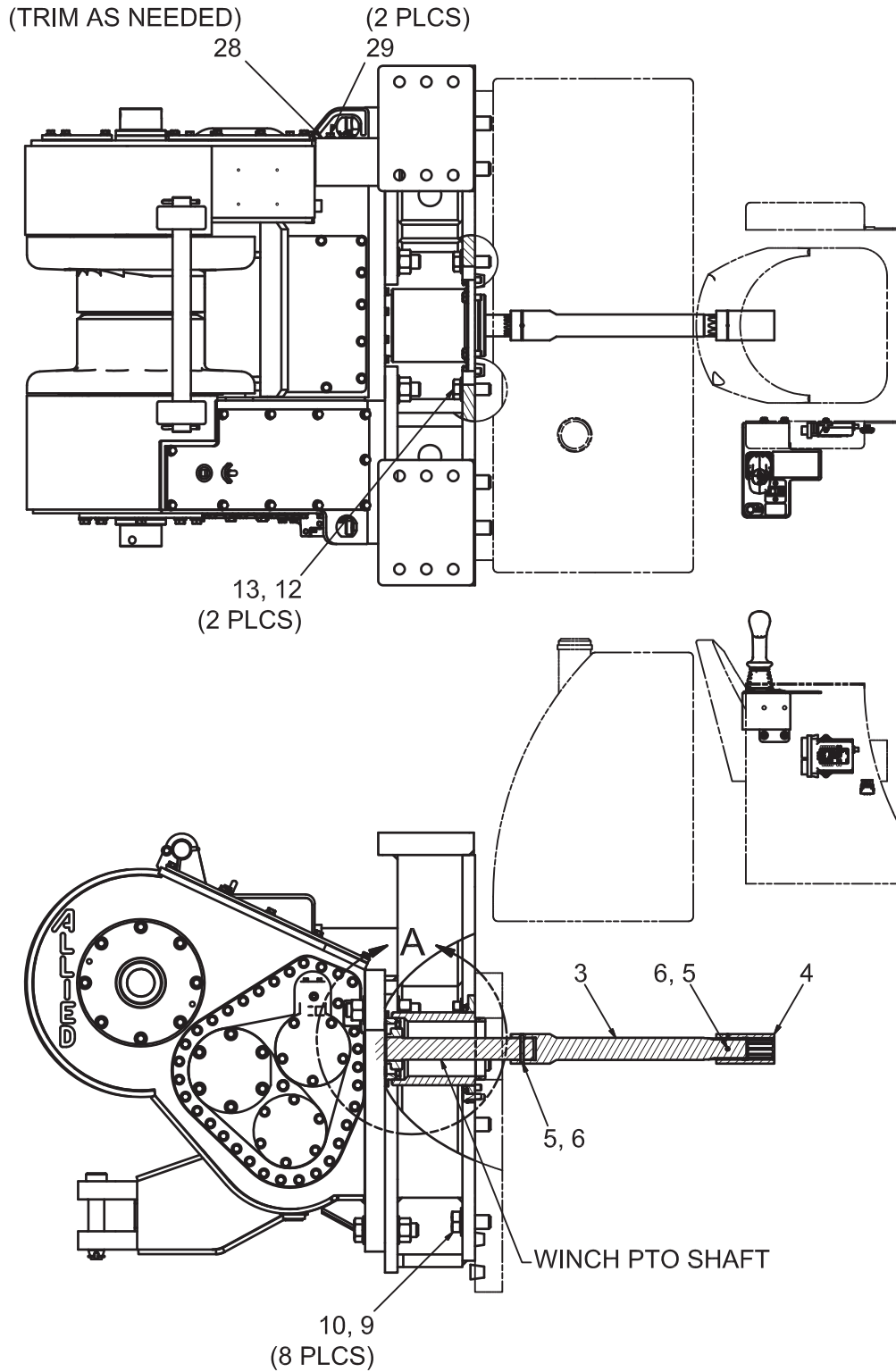
Page 2 of 2



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	18849W	Plug	10	11	221786W	Washer	6
2	*a 211513W	Stud	6	14	134821W	Nut	2
3	*a 2301853W	Stud	2	15	15240W	Pin, Cotter	2
5	136385W	Plug	9	16	90937W	O-Ring	1
6	55434W	O-Ring	2	18	387316W	Clamp	1
7	6327W	Coupling	1	20	2315319	Shaft	1
8	9450W	Pin	2				
9	90202W	Ring, Lock	2				
10	*b 221729W	Nut	6				
				*a	Use 230064W Locktite Kit		
				*b	Use 318702W Thread Lock		

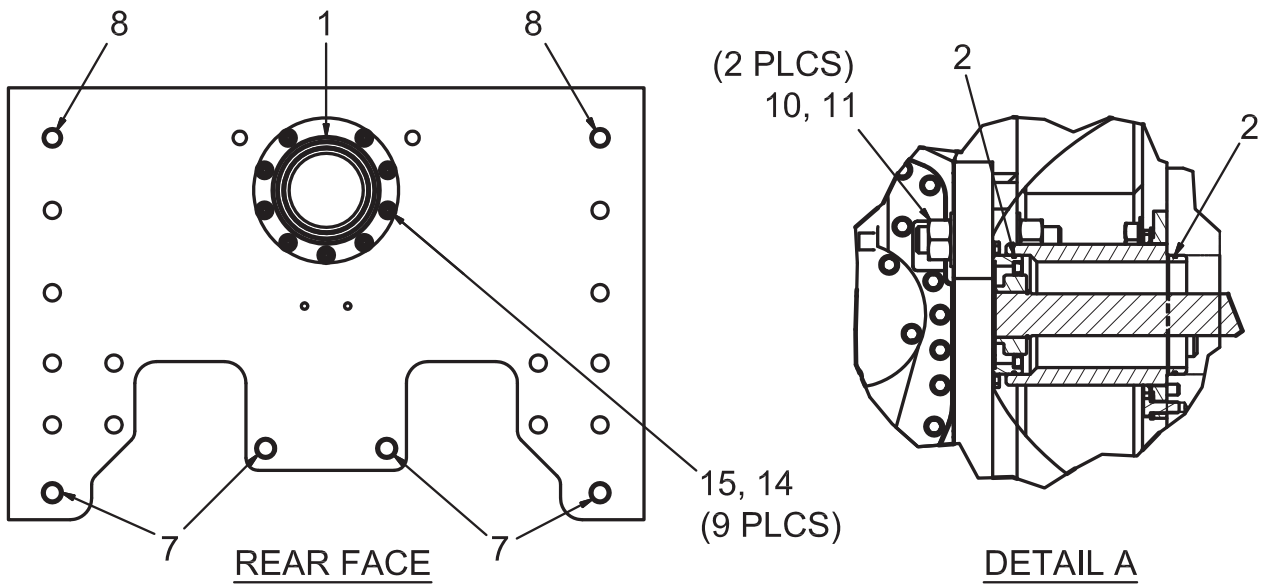
Mounting Parts

Caterpillar Pipelayer 594H (C64)
with Electronic Control
Page 1 of 2



Mounting Parts

Caterpillar Pipelayer 594H (C64)
with Electronic Control
Page 2 of 2



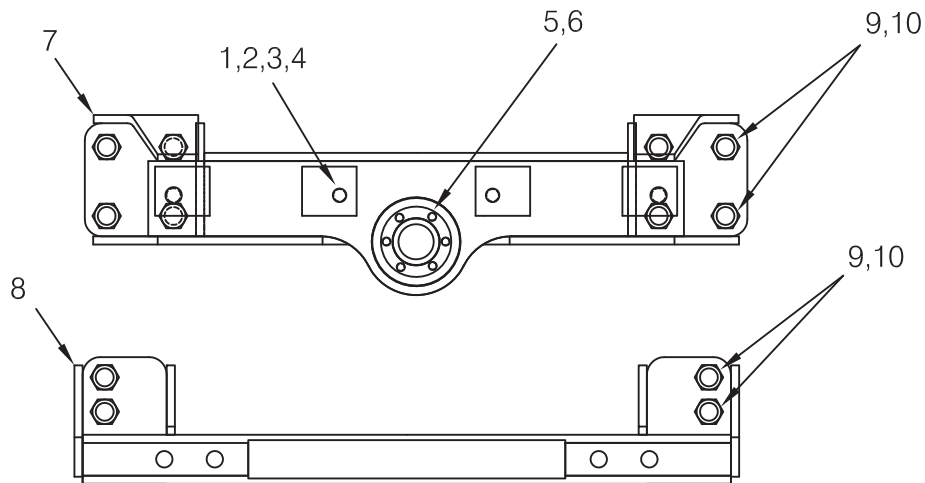
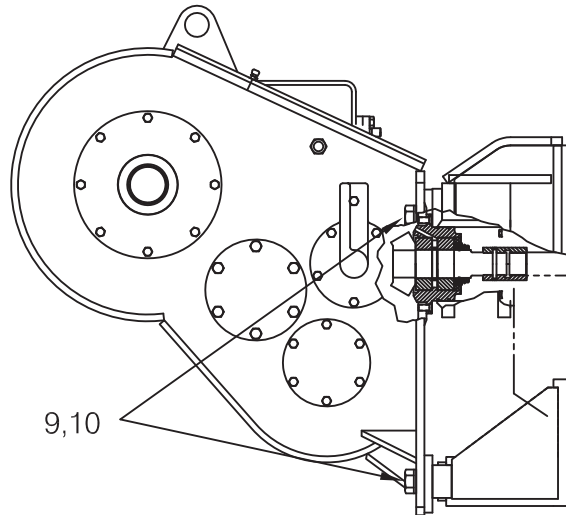
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2315290	Adapter, Pilot	1	11	*b 221729W	Nut	2
2	90937W	O-Ring	2	12	*b 2305268W	Capscrew	2
3	2315139	Shaft, Splined	1	13	225851	Washer	2
4	6327W	Coupling	1	14	221621W	Capscrew	9
5	9450W	Pin	2	15	221775W	Washer	9
6	90202W	Ring, Lock	2	28	2307919W	Guard, Cable	1
7	18849W	Plug	4	29	398817W	Screw, Flanged	2
8	*a 2315299	Stud	2		*a	Use 230064W Locktite Kit	
9	*b 244437W	Capscrew	8		*b	Use 318702W Thread Lock	
10	221786W	Washer	10				

Mounting Parts

Caterpillar D8L (C65)

Ratios #1 thru #4

without Gearbox

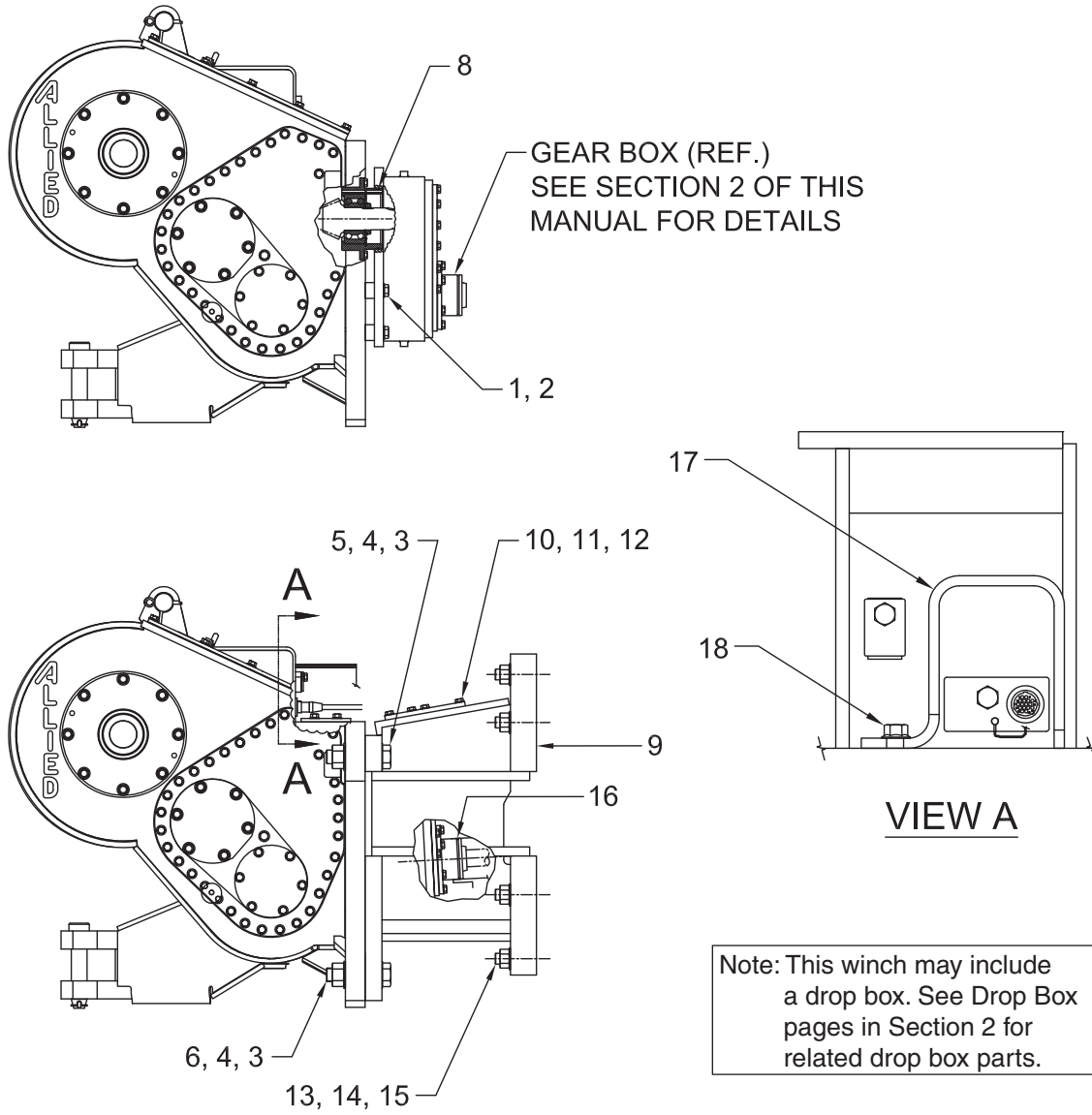


VIEW FROM REAR

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	134821W	Nut	2	8	339289W	Bracket, Bottom	1
2	15240W	Pin, Cotter	2	9	*a 2300059W	Capscrew	18
3	55434W	O-Ring	2	10	221786W	Washer	18
4	304381W	Stud	2				
5	16816W	Capscrew, Pilot Ring	6		*a	Use 226414W Stud Locking Compound & 226415W Primer	
6	15156W	Lockwasher, Pilot Ring	6				
7	339275W	Bracket, Top	1				

Mounting Parts

Caterpillar D8R Series II (C59)
 Ratios #6 & #7 with Gearbox
 Last Used on S/N AW12E-1252



Note: This winch may include a drop box. See Drop Box pages in Section 2 for related drop box parts.

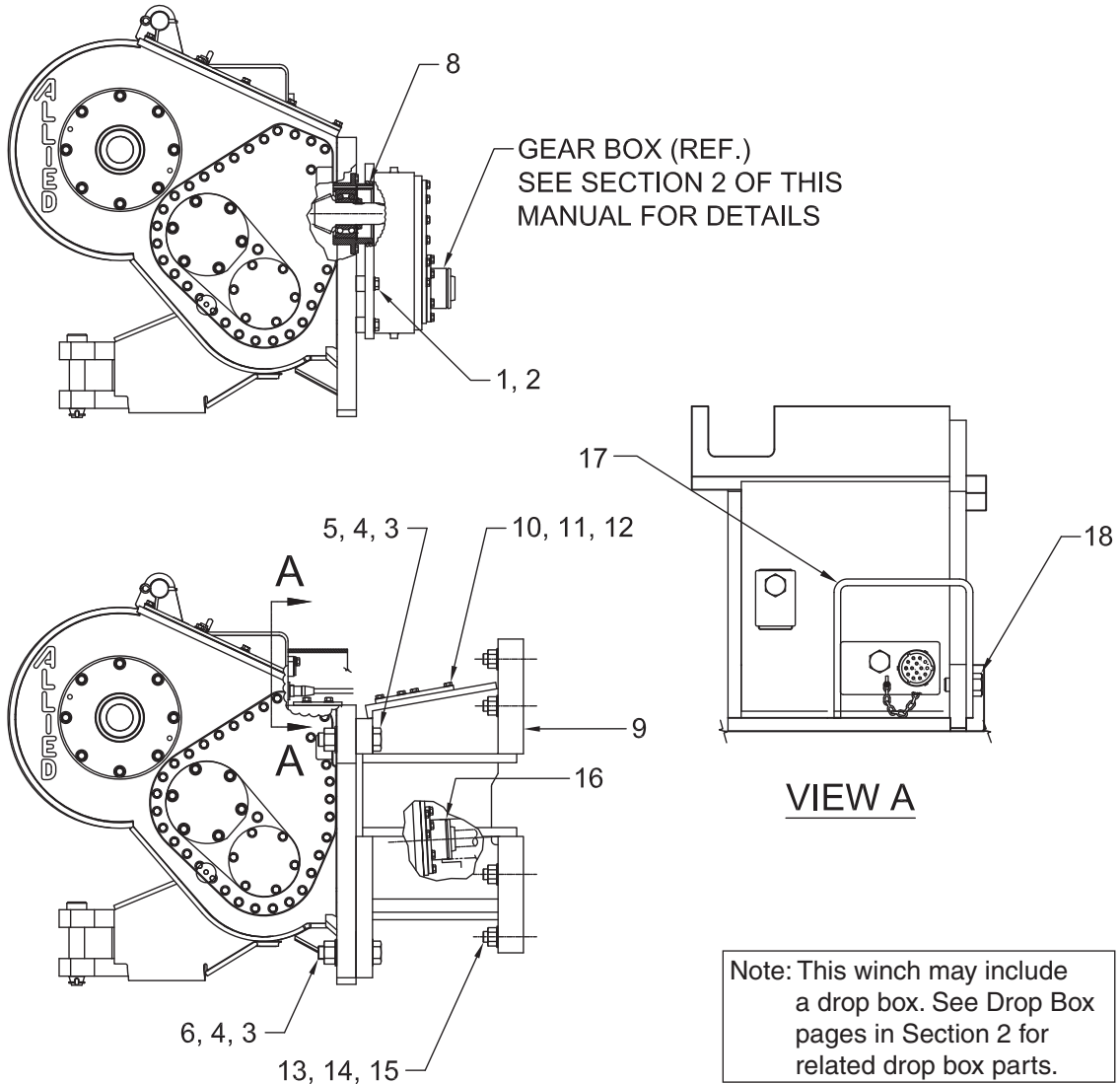
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 221662W	Capscrew	3	15	221725W	Nut	12
2	221777W	Washer	3	16	15887W	O-Ring	1
3	221728W	Nut	8	17	2304827W	Guard, Cable	1
4	221786W	Washer	14	18	*e 398817W	Screw, Flanged	2
5	*f 2207101W	Stud	2		*a	Use 383789W Adhesive/Sealant	
5	*c,*g 2303975W	Stud	2		*b	Use 264134W Adhesive/Sealant in Top Outer and Bottom Holes only	
6	*b 2304826W	Capscrew	6		*c	Use 264134W Adhesive/Sealant in Top Center holes only	
8	90937W	O-Ring	1		*d	Use 230064W Loctite Kit	
9	2304716W	Bracket, Mounting	1		*e	Used 318702W Thread Locker	
10	224798W	Plate, Cover	1		*f	Last Used on S/N AW12E-1160	
11	221563W	Capscrew	10		*g	First Used on S/N AW12E-1161	
12	221771W	Washer	10				
13	*d 2301785W	Stud	12				
14	15128W	Washer	12				

Mounting Parts

Caterpillar D8R Series II (C59)

Ratios #6 & #7 with Gearbox

Used on S/N AW12E-1253 thru S/N AW12E-1536

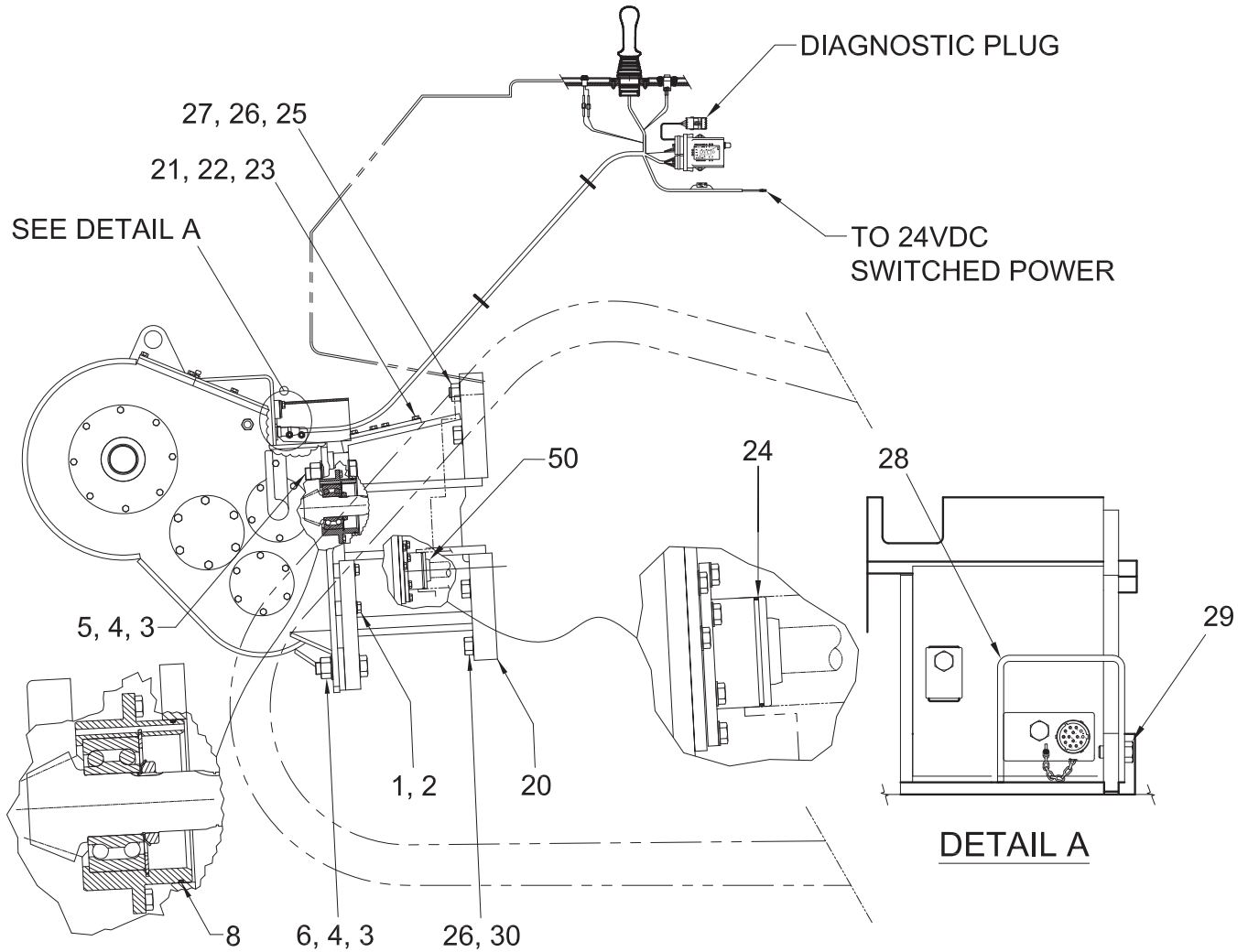


Note: This winch may include a drop box. See Drop Box pages in Section 2 for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 221662W	Capscrew	3	15	*f 221725W	Nut	12
2	221777W	Washer	3		*g 292661W	Nut	2
3	221728W	Nut	8	16	15887W	O-Ring	1
4	221786W	Washer	14	17	2307919W	Guard, Cable	1
5	*c 2303975W	Stud	2	18	*e 398817W	Screw, Flanged	2
6	*b 2304826W	Capscrew	6				
8	90937W	O-Ring	1		*a	Use 383789W Adhesive/Sealant	
9	2304716W	Bracket, Mounting	1		*b	Use 264134W Adhesive/Sealant in Top Outer and Bottom Holes only	
10	224798W	Plate, Cover	1		*c	Use 264134W Adhesive/Sealant in Top Center holes only	
11	221563W	Capscrew	10		*d	Use 230064W Loctite Kit	
12	221771W	Washer	10		*e	Used 318702W Thread Locker	
13	*d, *f 2301785W	Stud	12		*f	Used on D8R Serial Numbers 9EM007399 and Below	
	*g 2310800	Stud	2		*g	Used on D8R Serial Numbers 9EM007400 and Above	
14	*f 15128W	Washer	12				
	*g 296438W	Washer	12				

Mounting Parts

Caterpillar D8R Series II (C59)
 Ratios #6, #7 & #8 with Gearbox
 First Used on S/N AW12E-1537



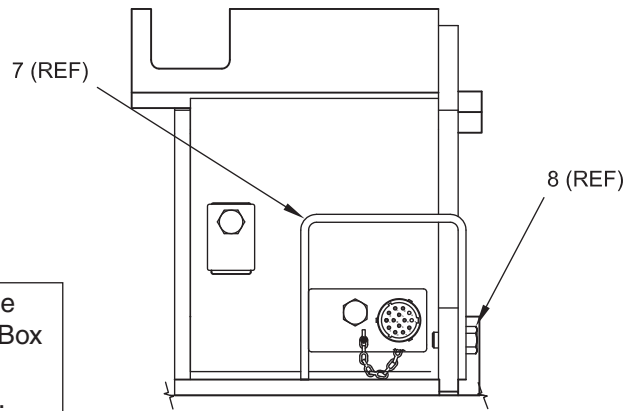
Note: This winch may include a drop box. See Drop Box pages in Section 2 for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 221662W	Capscrew	3	25	*c 2310800	Stud	2
2	221777W	Washer	3	26	296438W	Washer	12
3	221728W	Nut	8	27	292661W	Nut	2
4	221786W	Washer	14	28	2307919W	Guard, Cable	1
5	*b 2303975W	Stud	2	29	*d 398817W	Screw, Flanged	2
6	*a 2307143W	Capscrew	6	30	*c Y19C-M30120	Capscrew	10
8	90937W	O-Ring	1				
20	2304716W	Bracket, Mounting	1				
21	224798W	Plate, Cover	1		*a	Use 383789W Adhesive/Sealant	
22	221563W	Capscrew	10		*b	Use 264134W Adhesive/Sealant	
23	221771W	Washer	10		*c	Use 230064W Loctite Kit	
24	15887W	O-Ring	1		*d	Used 318702W Thread Locker	

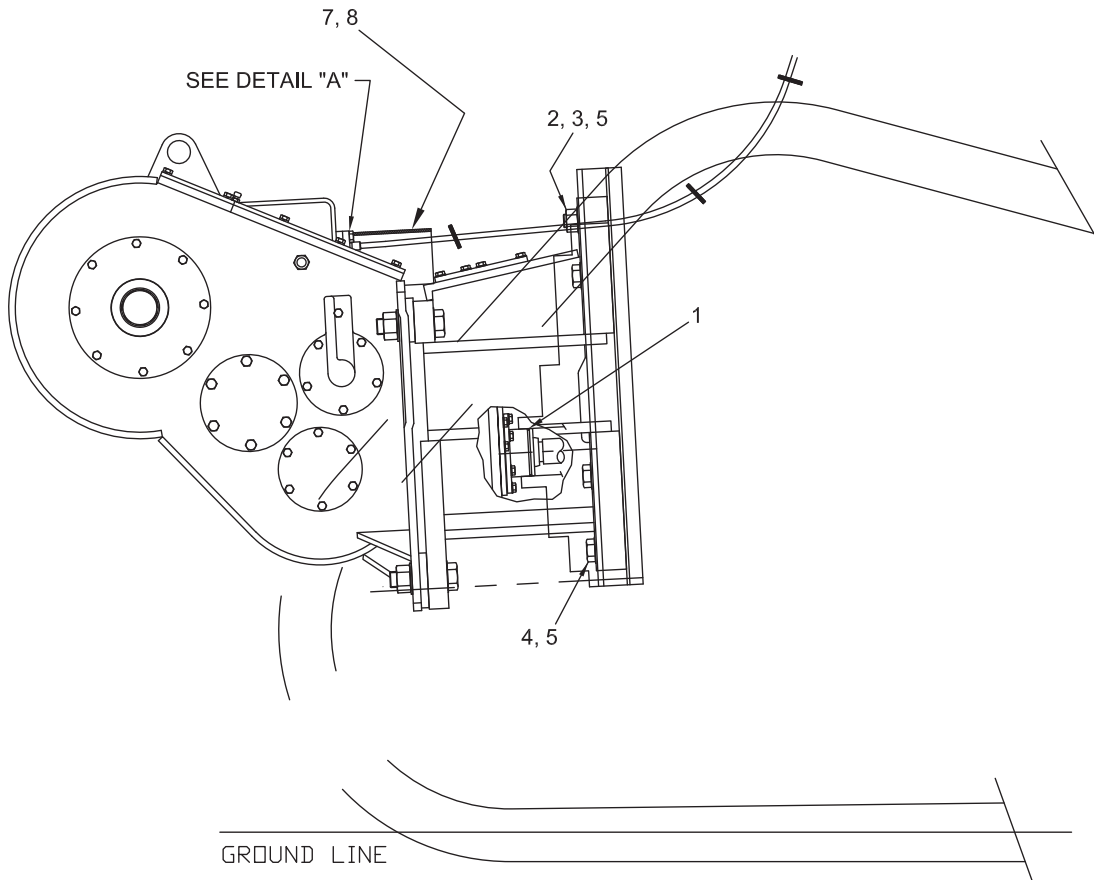
Mounting Parts

Caterpillar D8T (C74) & PL83/PL87 (C74)
with Electronic Control

Note: This winch may include a drop box. See Drop Box pages in Section 2 for related drop box parts.



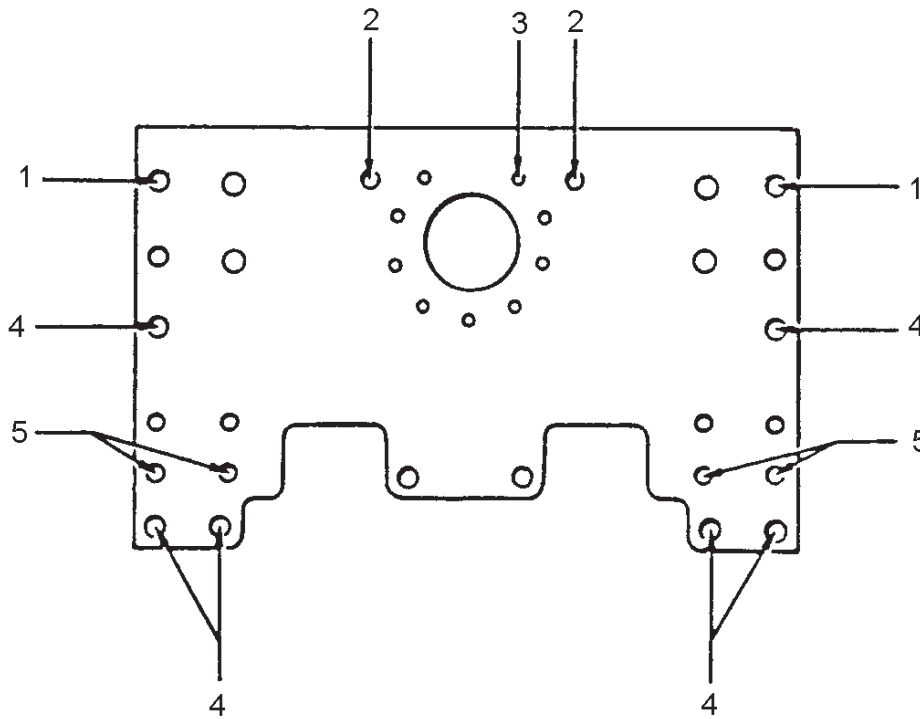
DETAIL A



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty
1	15887W	O-Ring	1	6	318702W	Locker, Thread	1
2	*a 2310880	Stud	2	7	2307919W	Guard, Cable	1
3	292661W	Nut	2	8	398817W	Screw, Flanged	2
4	*a Y19C-M30120	Capscrew	10		*a	Use 230064W Loctite Kit on both ends of studs	
5	296438W	Washer	12				

Mounting Parts

Caterpillar D9 (C62), D9N (C65), D9R (C68), D9T (C75)

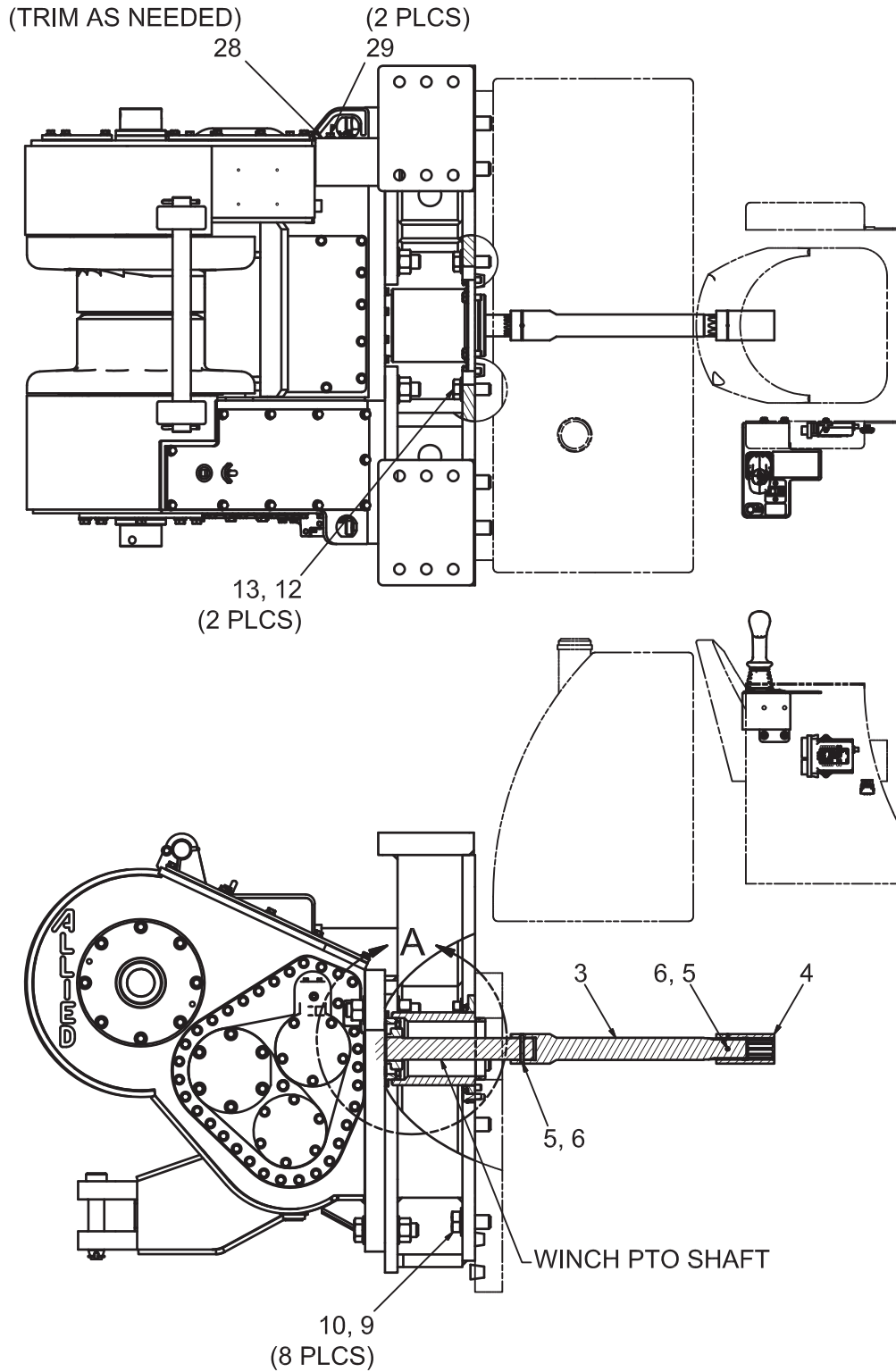


Note: This winch may include a drop box. See Drop Box pages in Section 2 for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	211513W	Stud	2	3	55434W	O-Ring	2
	221729W	Nut	2		136385W	Plug	9
	221786W	Lockwasher	2		4	18849W	Plug
2	2301853W	Stud	2	5	211513W	Stud	4
	134821W	Nut	2		136405W	Nut	4
	15240W	Pin, Cotter	2		15170W	Lockwasher	4

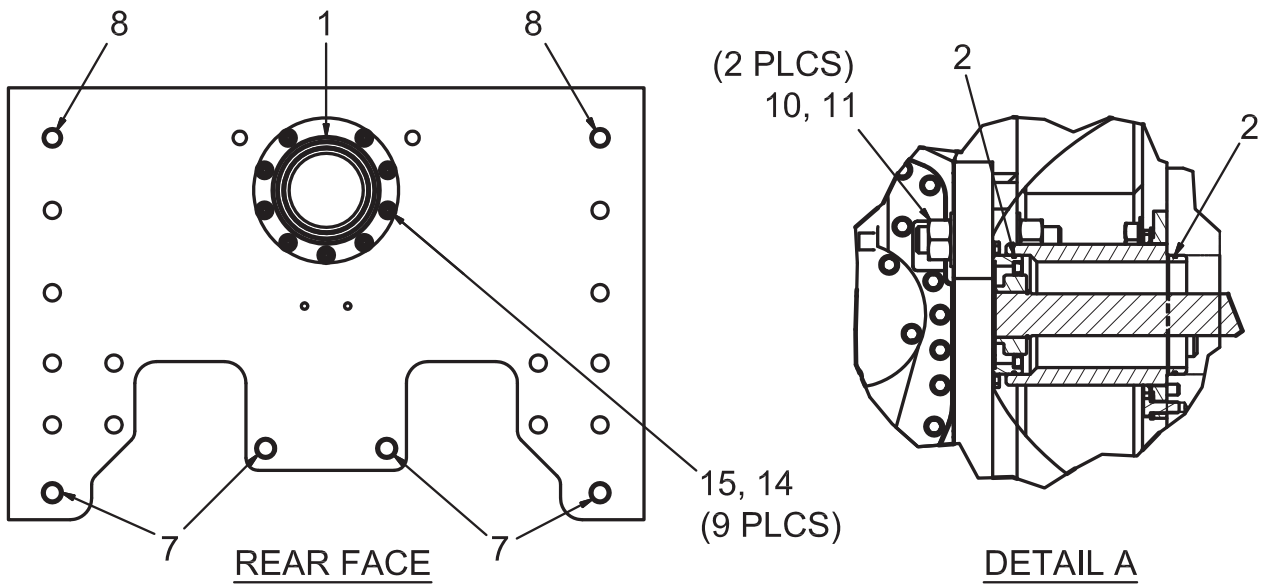
Mounting Parts

Caterpillar D9H (C62)
with Electronic Control
Page 1 of 2



Mounting Parts

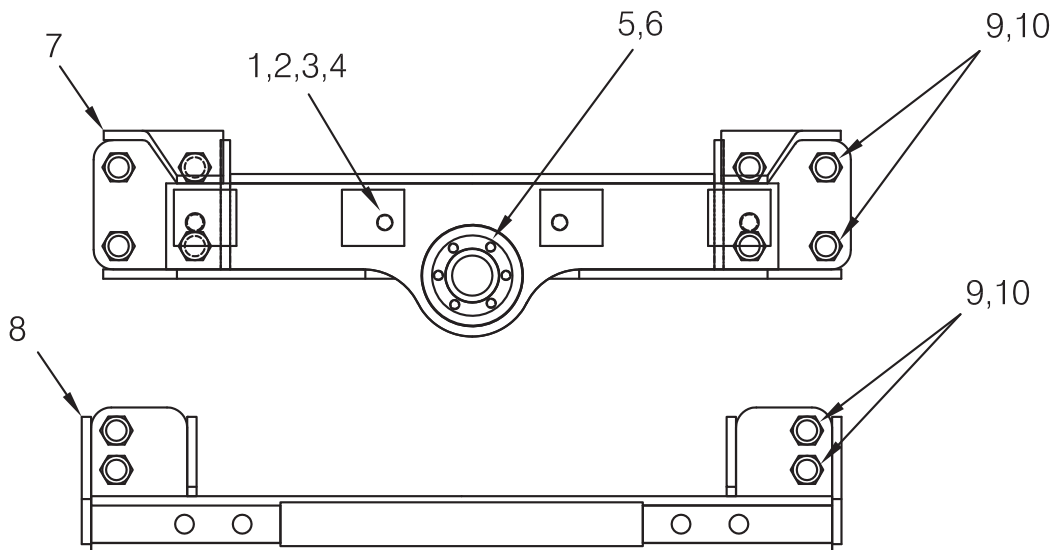
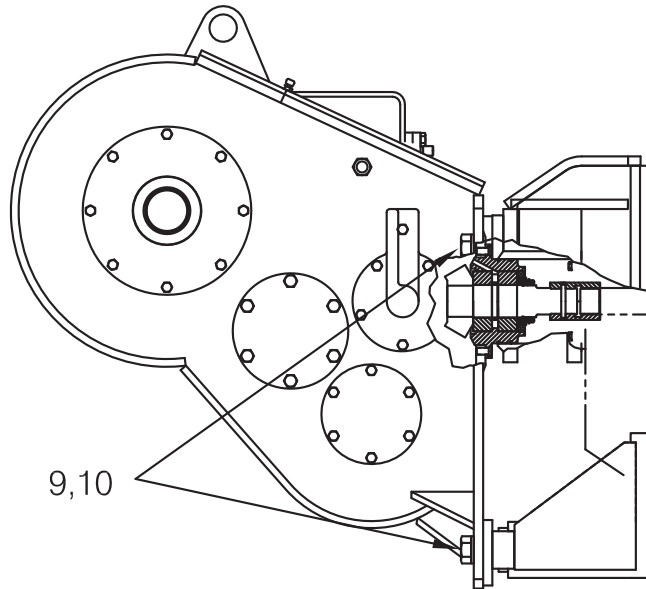
Caterpillar D9H (C62)
with Electronic Control
Page 2 of 2



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2315290	Adapter, Pilot	1	11	*b 221729W	Nut	2
2	90937W	O-Ring	2	12	*b 2305268W	Cap screw	2
3	2315139	Shaft, Splined	1	13	225851	Washer	2
4	6327W	Coupling	1	14	221621W	Cap screw	9
5	9450W	Pin	2	15	221775W	Washer	9
6	90202W	Ring, Lock	2	28	2307919W	Guard, Cable	1
7	18849W	Plug	4	29	398817W	Screw, Flanged	2
8	*a 2315299	Stud	2		*a	Use 230064W Locktite Kit	
9	*b 244437W	Cap screw	8		*b	Use 318702W Thread Lock	
10	221786W	Washer	10				

Mounting Parts

Caterpillar D9N (C56), D9R (C65, C68)
 Ratios #1 thru #4
 without Gearbox

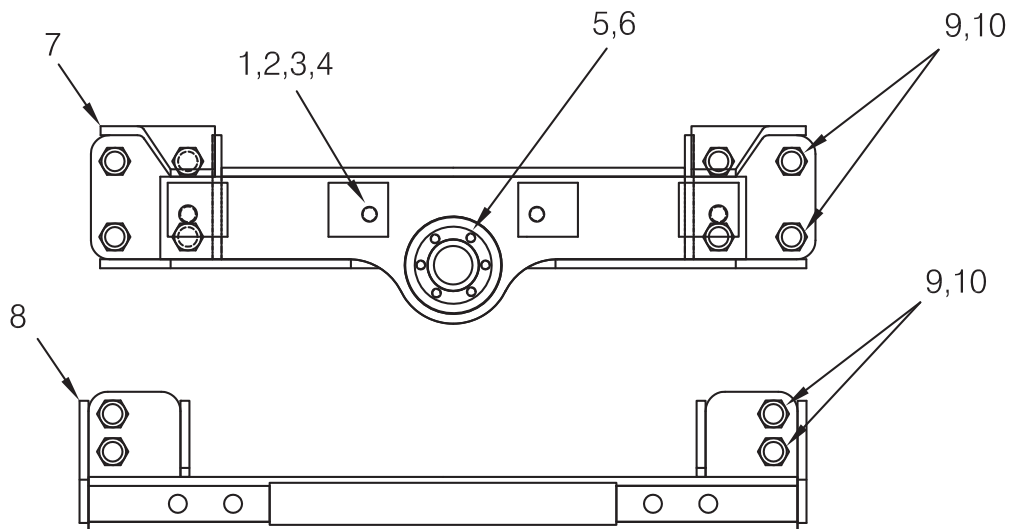
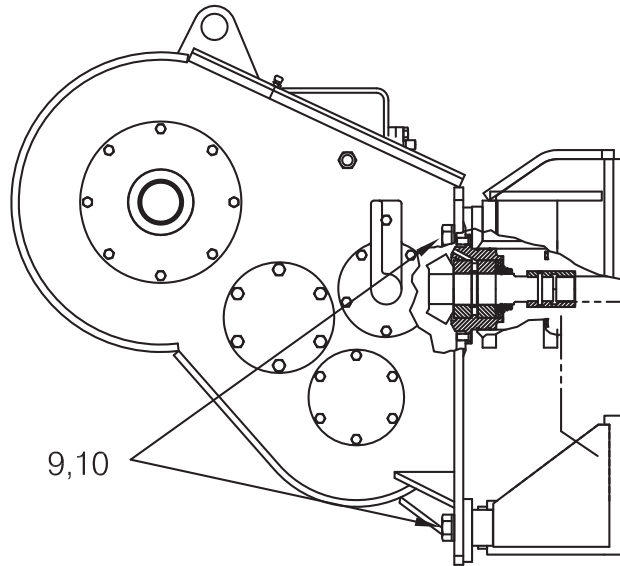


VIEW FROM REAR

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	134821W	Nut	2	8	339289W	Bracket, Bottom	1
2	15240W	Pin, Cotter	2	9	*a 2300059W	CapscREW	18
3	55434W	O-Ring	2	10	221786W	Washer	18
4	304381W	Stud	2				
5	16816W	CapscREW, Pilot Ring	6		*a Use 226414W Stud Locking Compound		
6	15156W	Lockwasher, Pilot Ring	6		& 226415W Primer		
7	339275W	Bracket, Top	1				

Mounting Parts

Caterpillar D10N and D10R (C66)
 Ratios #4 and #6
 without Gearbox

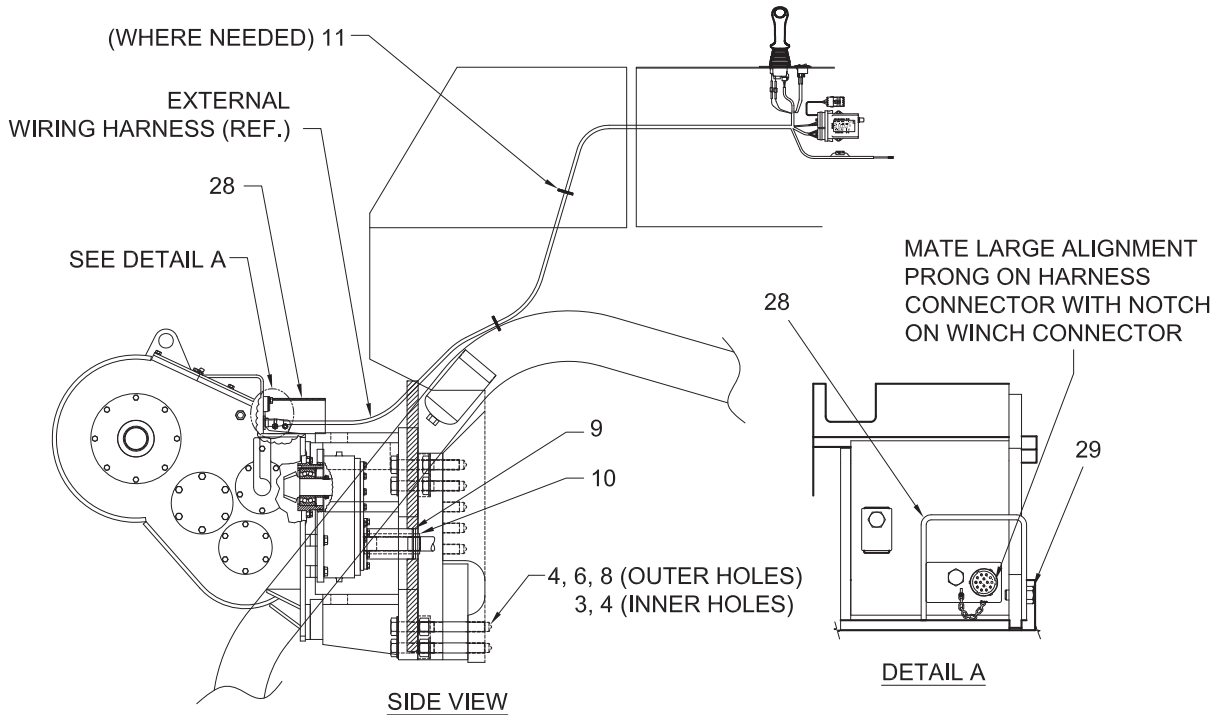
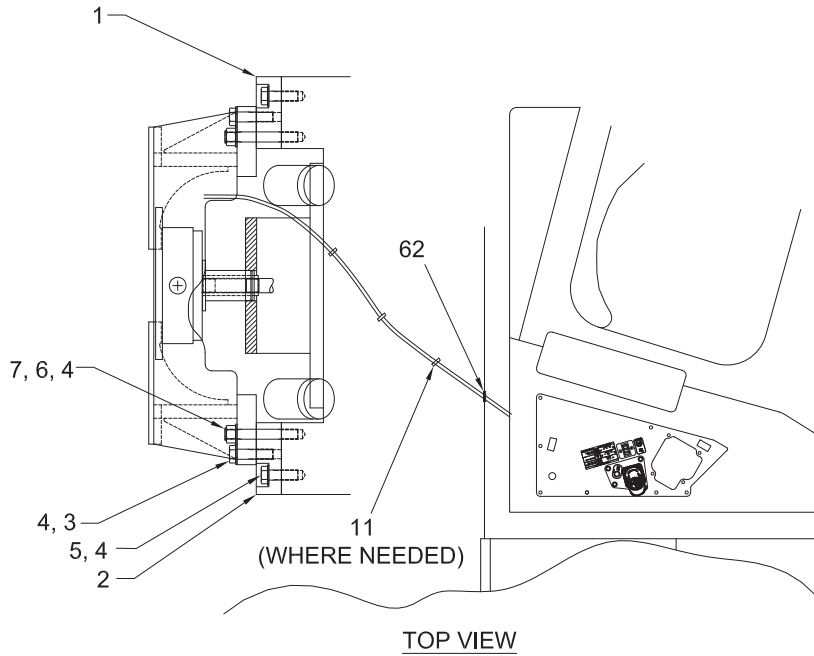


VIEW FROM REAR

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	134821W	Nut	2	8	2300135W	Bracket, Bottom	1
2	15240W	Pin, Cotter	2	9	*a 2300059W	Capscrew	18
3	55434W	O-Ring	2	10	221786W	Washer	18
4	304381W	Stud	2				
5	16816W	Capscrew, Pilot Ring	6		*a Use 226414W Stud Locking Compound		
6	15156W	Lockwasher, Pilot Ring	6		& 226415W Primer		
7	2300136W	Bracket, Top	1				

Mounting Parts

Caterpillar D10N, D10R (C66) and D10T (C76)
 Ratios #4, #6 & #7
 with Gearbox

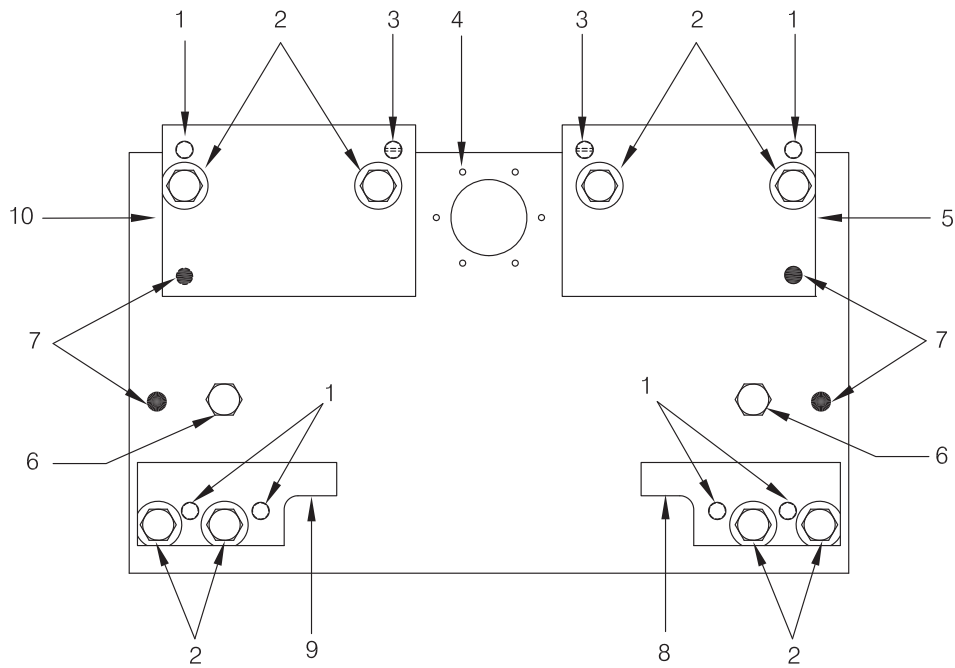


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305211W	Mounting Bracket, LH	1	10	2305218W	Coupling	1
2	2305212W	Mounting Bracket, RH	1	11	129563W	Clamp, Strap	6
3	*a 2305215W	Capscrew	8	28	2307919W	Guard, Cable	1
4	221786W	Washer	20	29	*b 398817W	Screw, Flanged	1
5	296868W	Capscrew	4	62	2306928W	Grommet (D10T Only)	1
6	221729W	Nut	8		*a	Use 230064W Thread Lock	
7	*a 2305216W	Stud	4		*b	Use 318702W Thread Lock	
8	*a 2305217W	Stud	4				
9	15887W	O-Ring	1				

Mounting Parts

Dresser/Dressta TD 25E PS (H63)

Last Used on S/N AW12E-1000

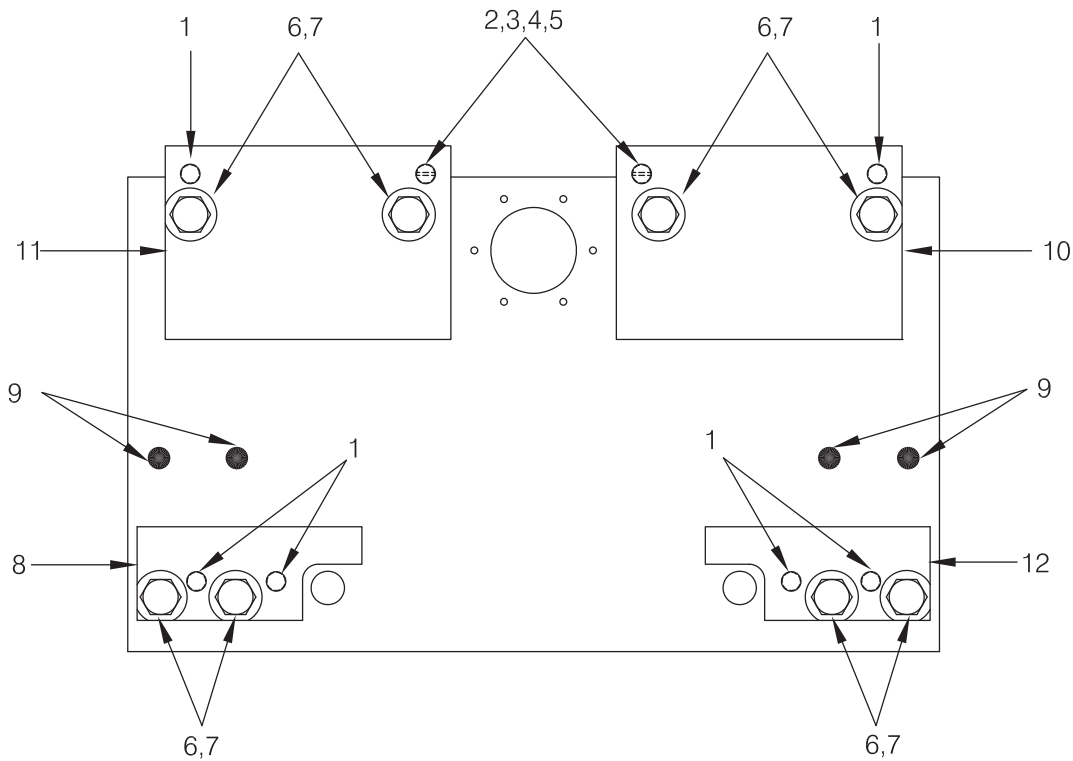


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	192948W	Stud	6	6	230465W	Plug	2
	221373W	Locknut	6		15866W	O-Ring	2
	15128W	Washer, Flat	6		18849W	Plug	4
2	296868W	Capscrew	8	8	296860W	Mounting Block, Bottom RH	1
	221786W	Washer	8	9	296859W	Mounting Block, Bottom LH	1
3	253817W	Stud	2	10	296858W	Mounting Block, Top LH	1
	55287W	O-Ring	2	11	296863W	Adapter, PTO	1
4	87242W	Plug	6	12	57597W	O-Ring	1
5	296857W	Mounting Block, Top RH	1				

Mounting Parts

Dresser/Dressta TD 25E/G (H64)

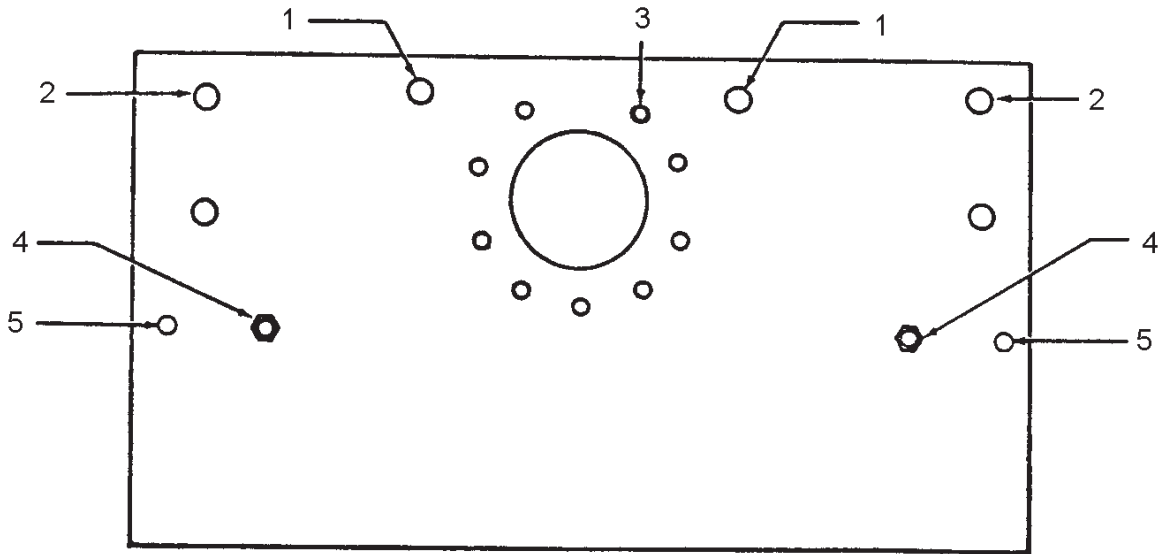
First Used on S/N AW12E-1001



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 192948W	Stud	6	8	296859W	Mounting Block, Bottom LH	1
2	*a 253817W	Stud	2	9	18849W	Plug	4
3	55434W	O-Ring	2	10	296857W	Mounting Block, Top RH	1
4	134821W	Nut	2	11	296858W	Mounting Block, Top LH	1
5	15240W	Pin, Cotter	2	12	296860W	Mounting Block, Bottom RH	1
6	*a 2302706W	Capscrew	8				
7	221786W	Washer	8		*a	Use 230064W Loctite Kit	

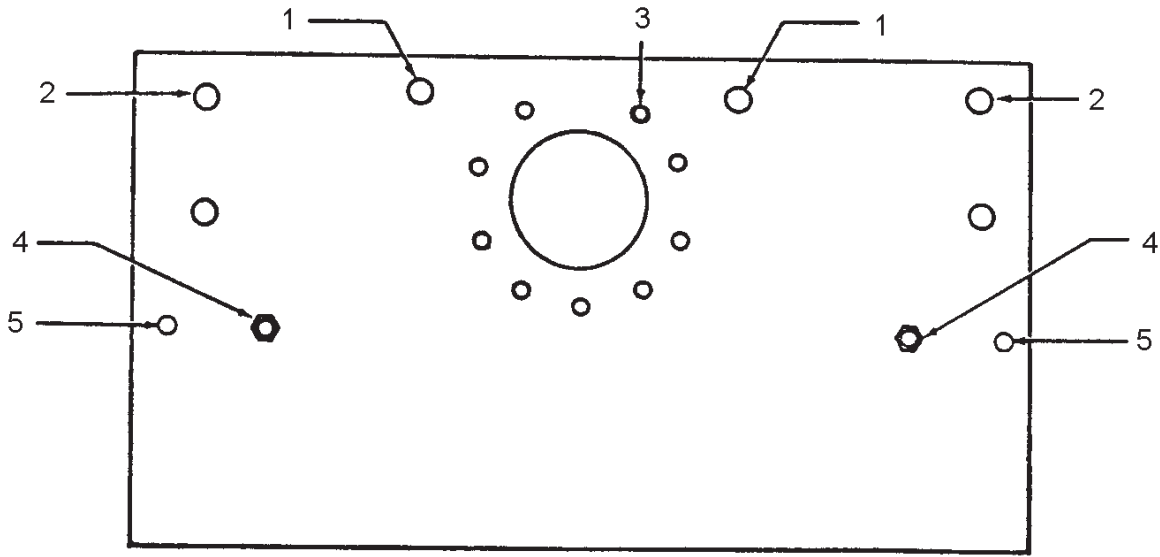
Mounting Parts

Dresser/Dressta TD25C PS (H61)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	9059W	Nut	2	3	87242W	Plug	9
	15283W	Pin, Cotter	2	4	230465W	Plug	2
	55434W	O-Ring	2	4	15866W	O-Ring	2
2	*a 198051W	Stud	2	5	18849W	Plug	2
	*a 230464W	Stud	2				
	221377W	Locknut	6				
				*a	Use 230064W Loctite Kit		

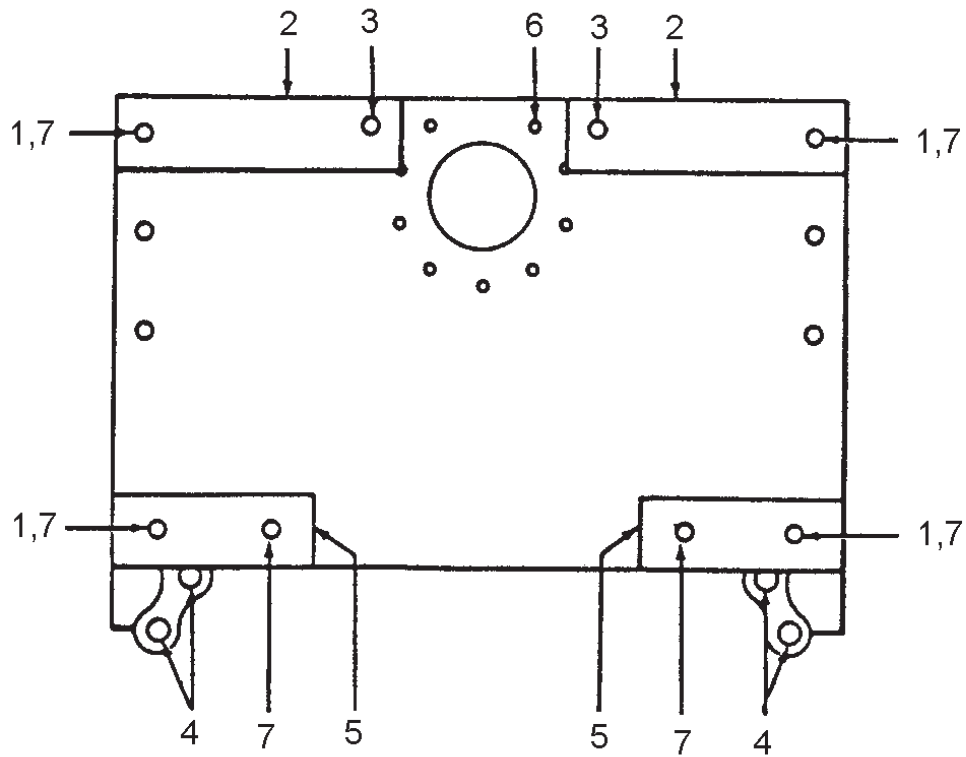
Mounting Parts
Dresser/Dresssta TD40B (H65)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	9059W	Nut	2	3	87242W	Plug	9
	15283W	Pin, Cotter	2	4	230465W	Plug	2
	55434W	O-Ring	2	4	15866W	O-Ring	2
	*a 198051W	Stud	2	5	18849W	Plug	2
2	*a 230464W	Stud	2				
	221377W	Locknut	6		*a Use 230064W Loctite Kit		

Mounting Parts

Fiat-Hitachi/New Holland FD30 (A61), FD30C (A64)

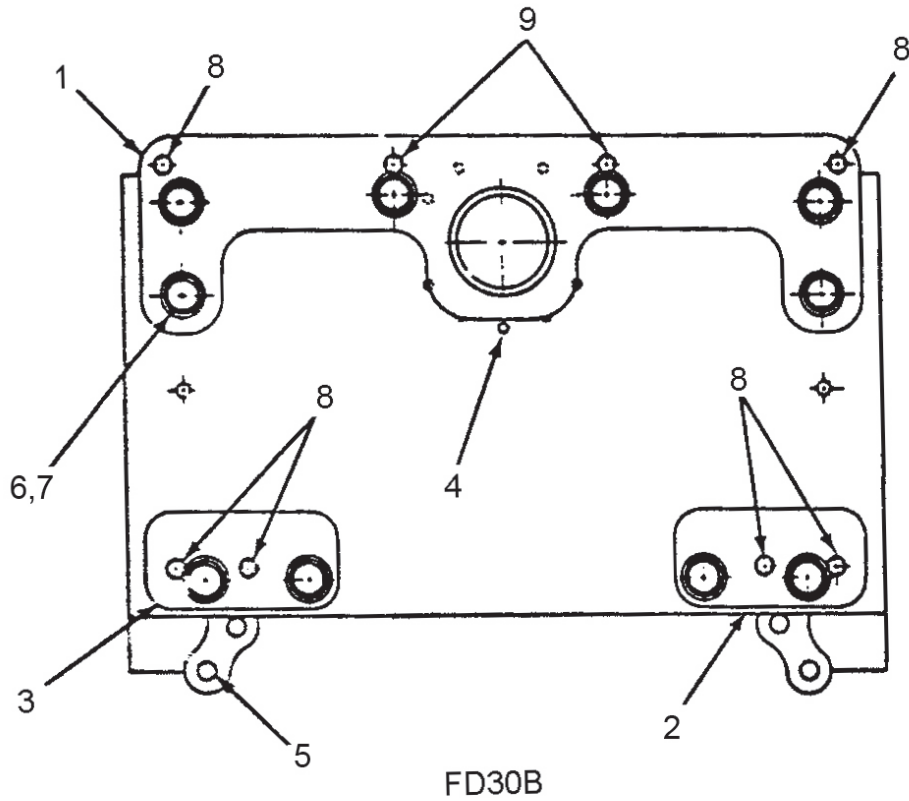


FD30, FD30C

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	223453W	Shim .020	AR	5	217625W	Plate	2
2	217626W	Plate	2	6	192949W	Plug	9
3	*a 217624W	Stud	2	7	*a 216224W	Stud	6
	55434W	O-Ring	2		15128W	Washer, Flat	6
	134821W	Nut	2		221725W	Nut	6
	15420W	Pin, Cotter	2				
4	18849W	Plug	4		*a	Use 230064W Loctite Kit	

Mounting Parts

Fiat-Hitachi/New Holland FD30B (A64)

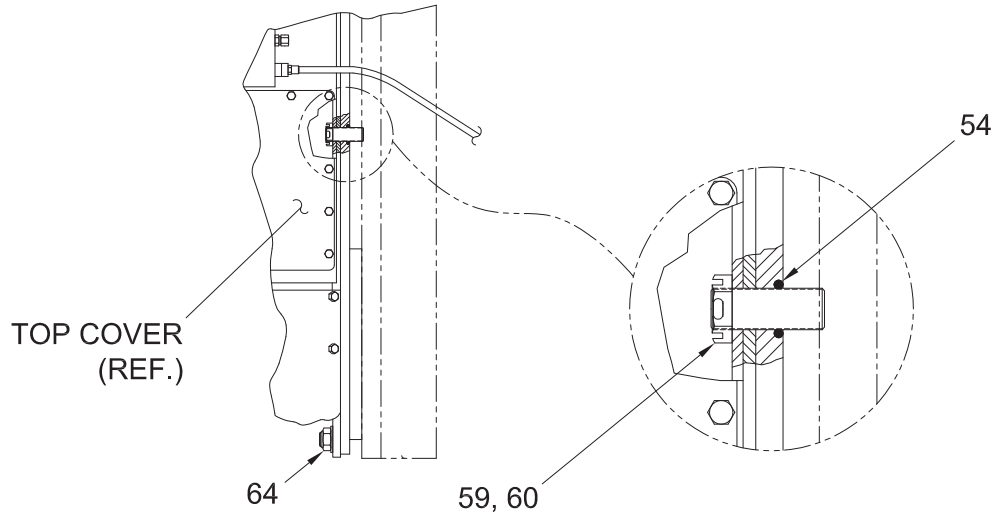


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	383920W	Assembly, Top Mounting Pad	1	7	15128W	Washer	16
2	383921W	Mounting Pad, Bottom RH	1	8	*a 216224W	Stud	6
3	383922W	Mounting Pad, Bottom LH	1	9	*a 217624W	Stud	2
4	192949W	Plug	9				
5	18849W	Plug	4				
6	383917W	Capscrew	10		*a Use 230064W Loctite Kit		

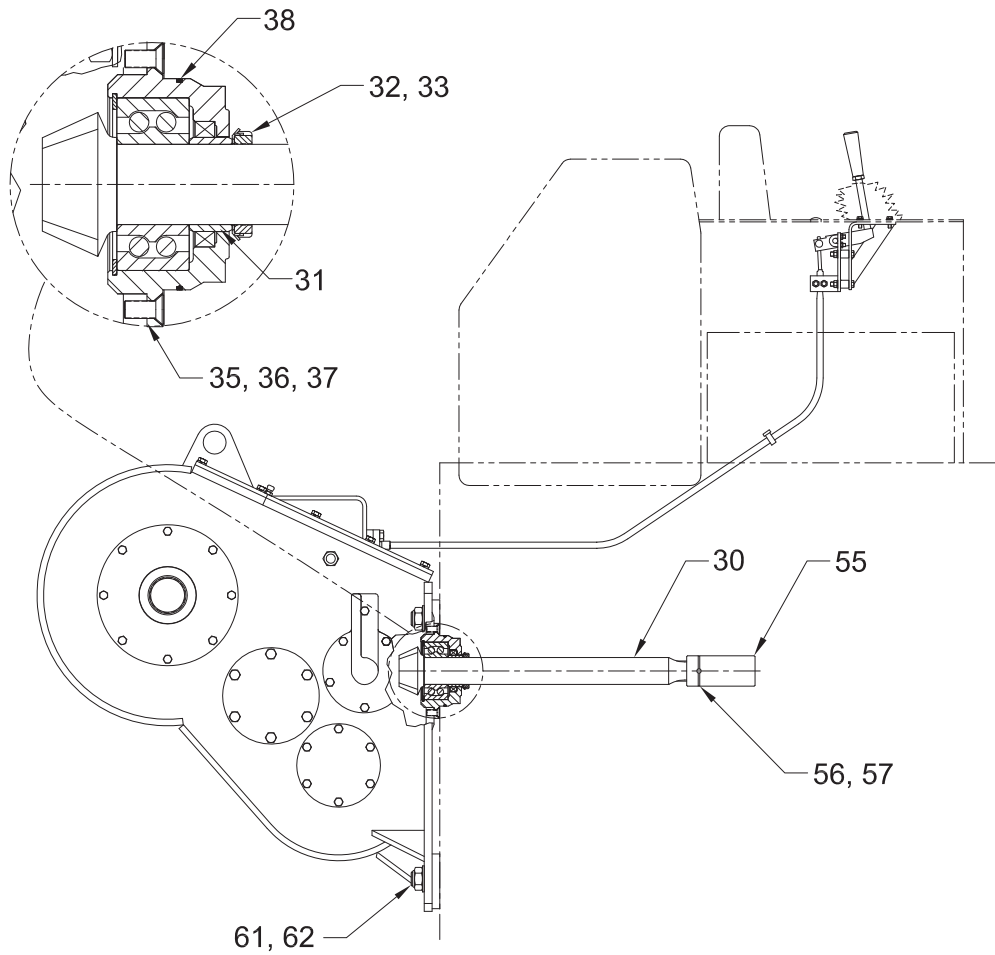
Mounting Parts

Komatsu D155A-1 & D155A-2 (K61)

Page 1 of 2



TOP VIEW

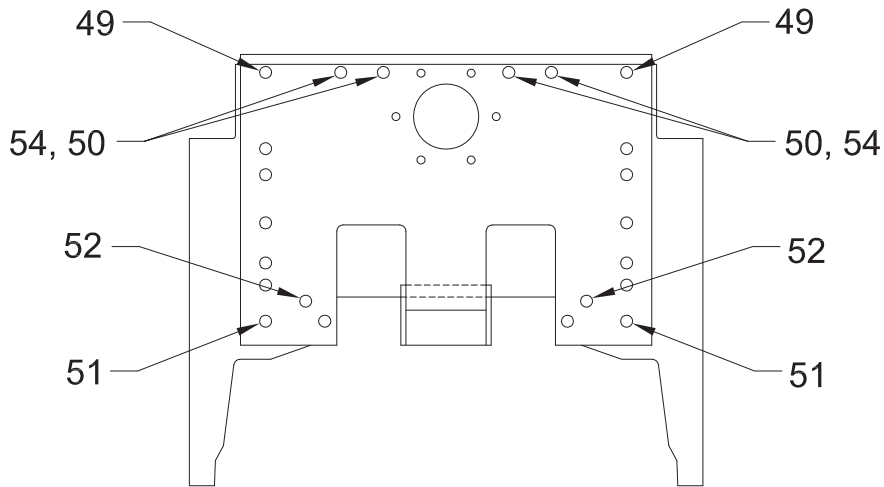


RIGHT-HAND SIDE VIEW

Mounting Parts

Komatsu D155A-1 & D155A-2 (K61)

Page 2 of 2



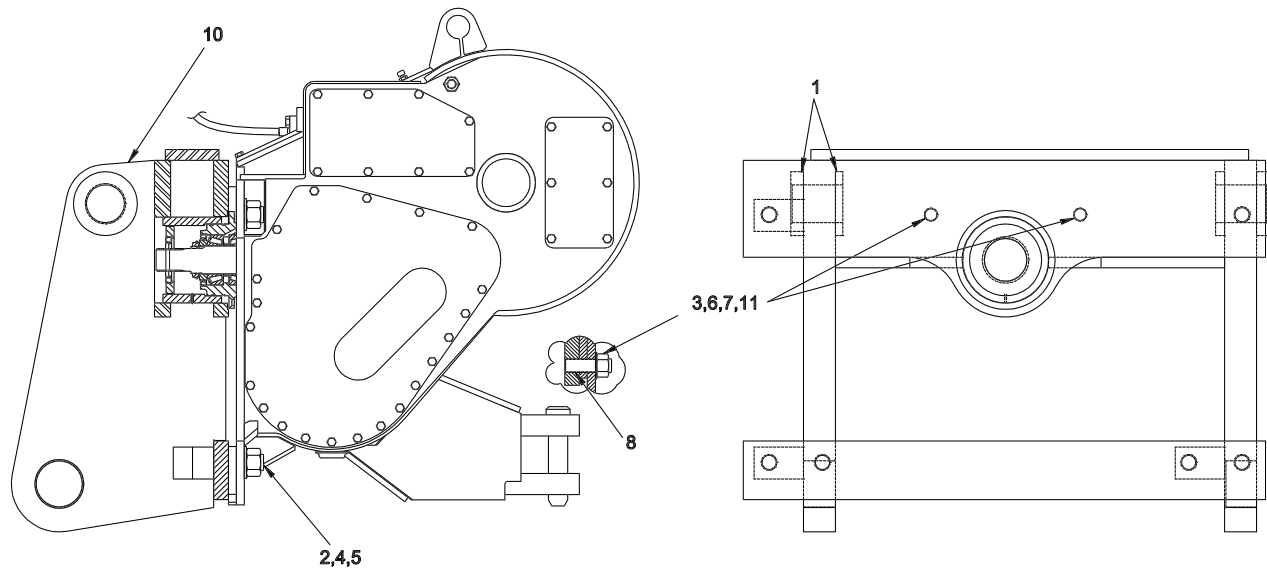
TRACTOR REAR FACE

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
30	213039W	Shaft, PTO	1	54	55287W	O-Ring	2
31	95813W	Spacer	1	55	213146W	Coupling	1
32	34056W	Nut, Lock	1	56	19942W	Pin	1
33	34055W	Washer, Lock	1	57	173048W	Ring, Lock	1
35	133256W	Shim .005	2	59	9059W	Nut, Slotted	2
36	133257W	Shim .007	2	60	15283W	Pin, Cotter	2
37	133258W	Shim .020	2	61	221729W	Nut	2
38	109453W	O-Ring	1	62	221786W	Washer	2
49	*a 224025W	Stud	2	64	271731W	Nut	2
50	*a 213036W	Stud	2				
51	*a 213037W	Stud	2				
52	18849W	Plug	10				
				*a	Use 230064W	Loctite Kit	

Mounting Parts

Komatsu D275A (K60)

Last Used on S/N AW12E-1092

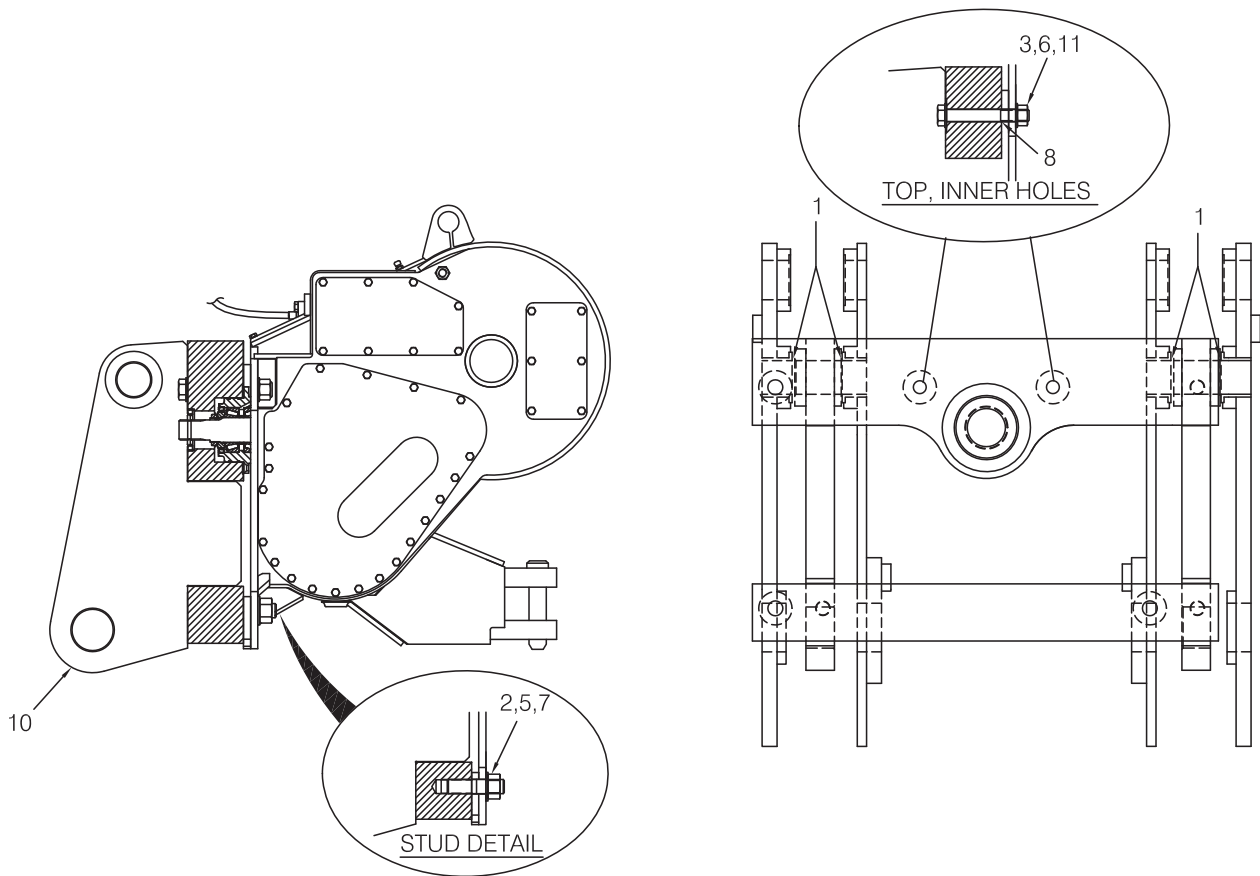


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2302999W	Shim	8	7	*a	15240W	Pin, Cotter
2	*a 230464W	Stud	6	8		55434W	O-Ring
3	253817W	Stud	2	10		2300347W	Bracket, Mounting
4	221729W	Nut	6	11		15128W	Washer
5	221786W	Washer	6		*a	Use 230064W	Loctite Kit
6	134821W	Nut	2				

Mounting Parts

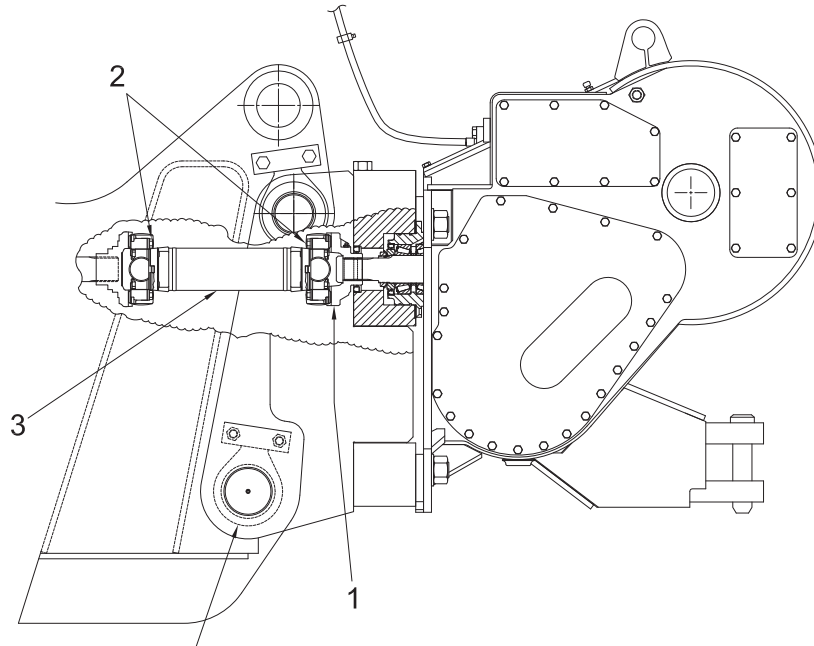
Komatsu D275A (K60)

First Used on S/N AW12E-1093

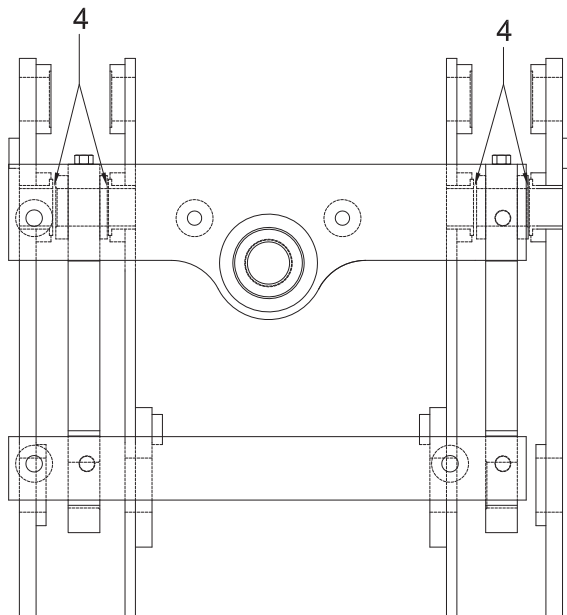


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2302999W	Shim .1046	8	8	*a 55434W	O-Ring	2
2	*a 2303975W	Stud	6	10	2303922W	Mounting Bracket	1
3	2303941W	Capscrew	2	11	15128W	Washer	4
5	*a 221786W	Washer	6				
6	221724W	Nut	2		*a Use 230064W	Loctite Kit	
7	*a 221728W	Nut	6				

Mounting Parts
Komatsu D275A-2 (K60)

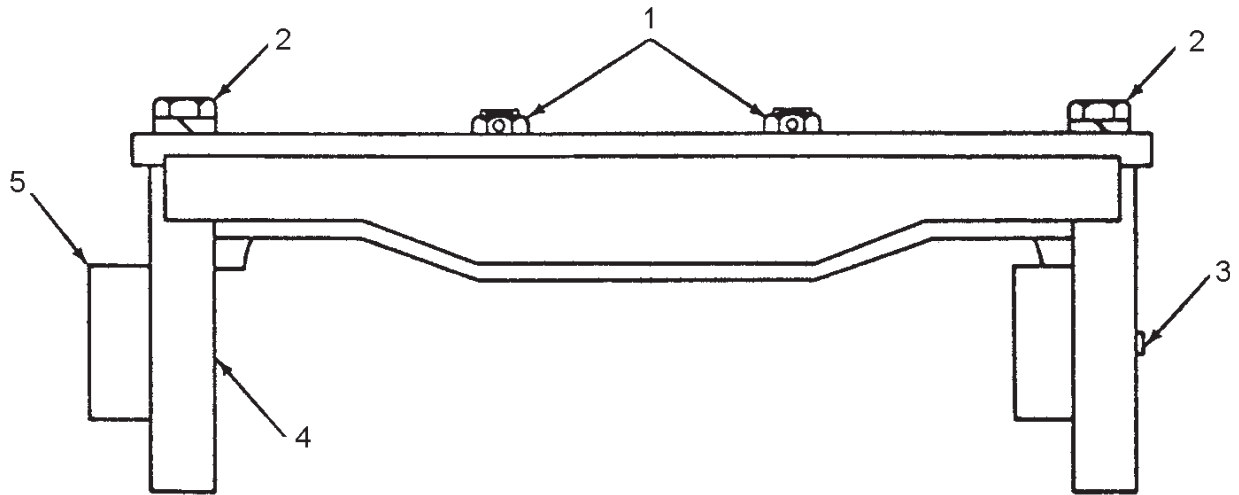


USE KOMATSU PINS, BUSHINGS, KEEPER PLATES AND CAPSCREWS (TOP & BOTTOM)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303029W	Yoke	1	3	374816W	Shaft, PTO Drive	1
2	221577W	Capscrew	8	4	2302999W	Shim .1046	8

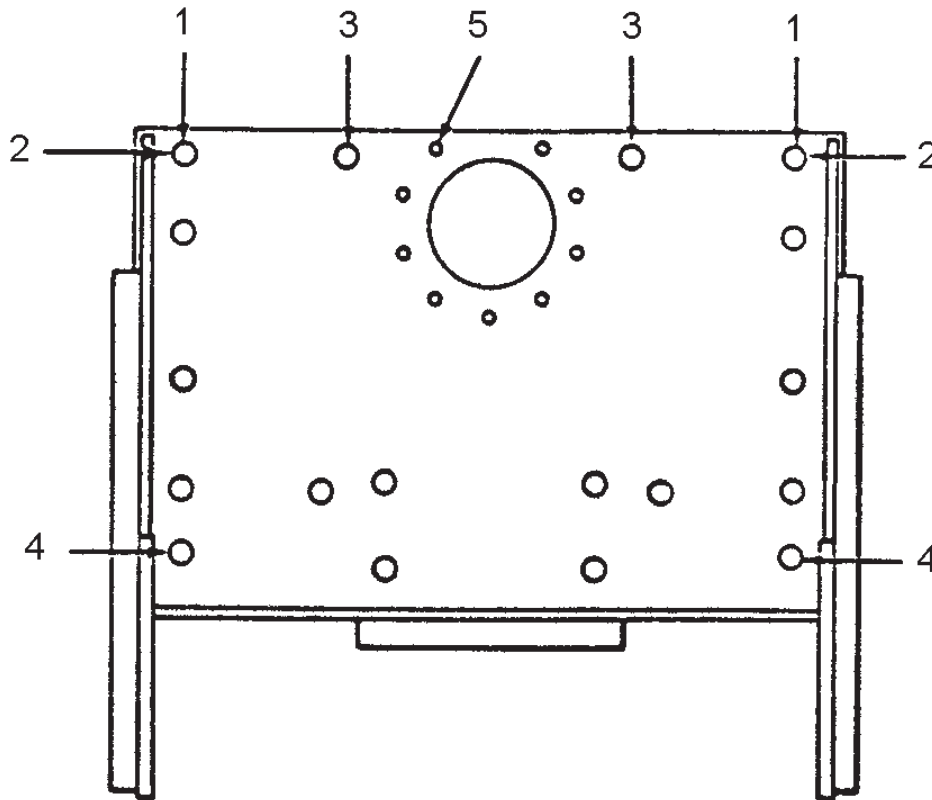
Mounting Parts
Komatsu D375A-1 (K64)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 253817W	Stud	2		15170W	Lockwasher	6
	134821W	Nut	2	3	15483W	Fitting	4
	15420W	Pin, Cotter	2	4	377700W	Bracket	1
	55434W	O-Ring	2	5	374817W	Washer, Shim	AR
2	*a 230464W	Stud	6				
	136405W	Nut	6				
				*a	Use 230064W Loctite Kit		

Mounting Parts

Terex D750A (G61) & D800 (G62)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 308412W	Stud	2		15240W	Pin, Cotter	2
	221373W	Locknut	2	4	244437W	Capscrew	2
2	55434W	O-Ring	2		15170W	Lockwasher	2
3	*a 304381W	Stud	2	5	18000W	Plug	9
	55434W	O-Ring	2				
	134821W	Nut	2		*a	Use 230064W Loctite Kit	

Nameplate & Decals

PTO 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 1,000	6		Change		
Every 5,000				* Evaluate	
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.

** 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.

IMPORTANT - For best Load Control Use only the following oils:
 Caterpillar -Multipurpose Tractor Oil (MTO)
 John Deere -Hy-Gard
 ExxonMobil -Mobil Fluid 424 (Factory Fill)
 Chevron -1000 THF

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

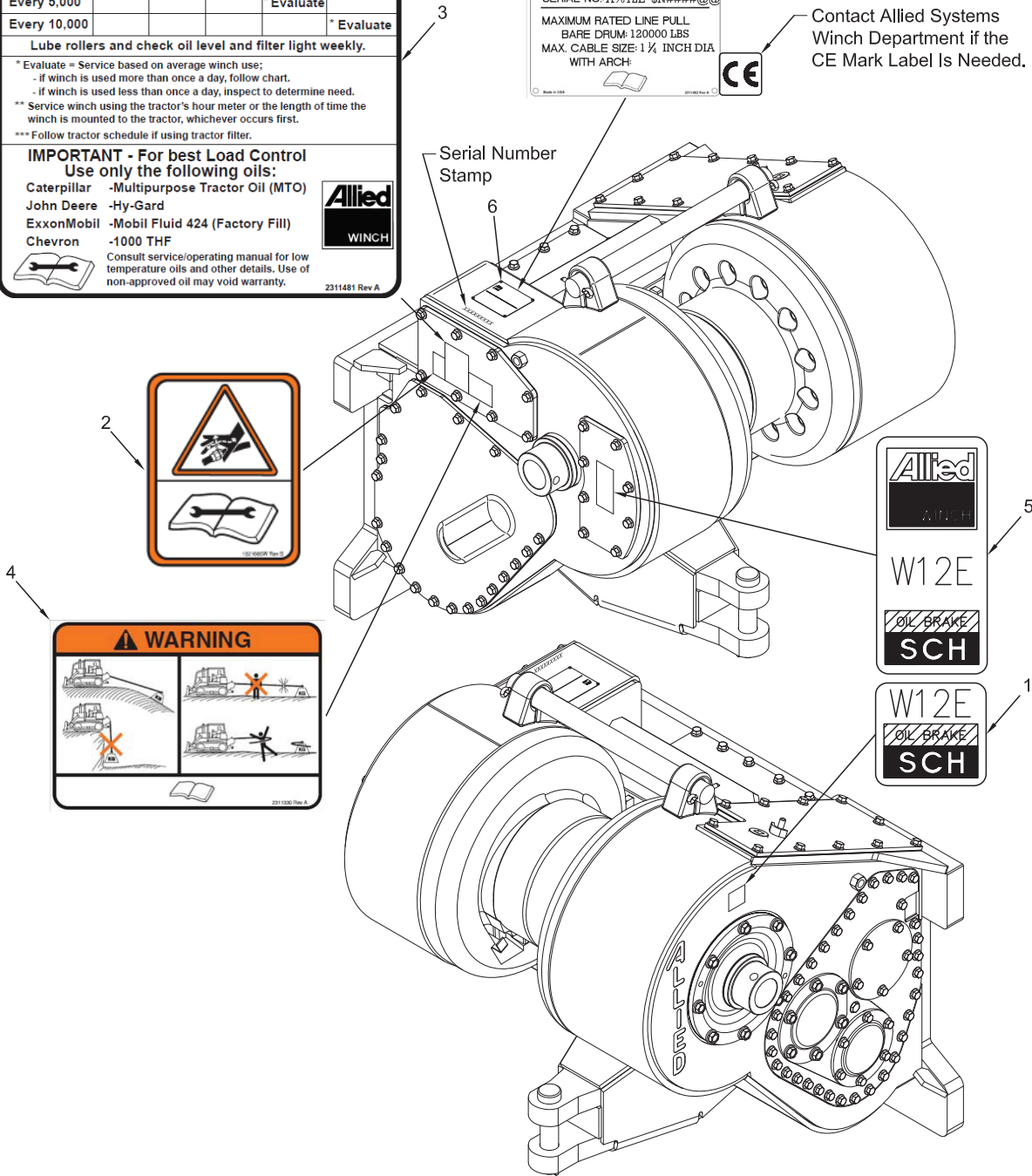
Allied WINCH

2311481 Rev A



Contact Allied Systems Winch Department if the Nameplate Is Needed.

Contact Allied Systems Winch Department if the CE Mark Label Is Needed.



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2300010W	Decal, RH	1	4	2311330	Decal, Load & Wire Rope Safety	1
2	1321665W	Decal, Warning	1	5	2300513W	Decal, LH	1
3	2311481	Decal, PTO Winch Maintenance	1	6	16602W	Screw	4

Intentionally Blank

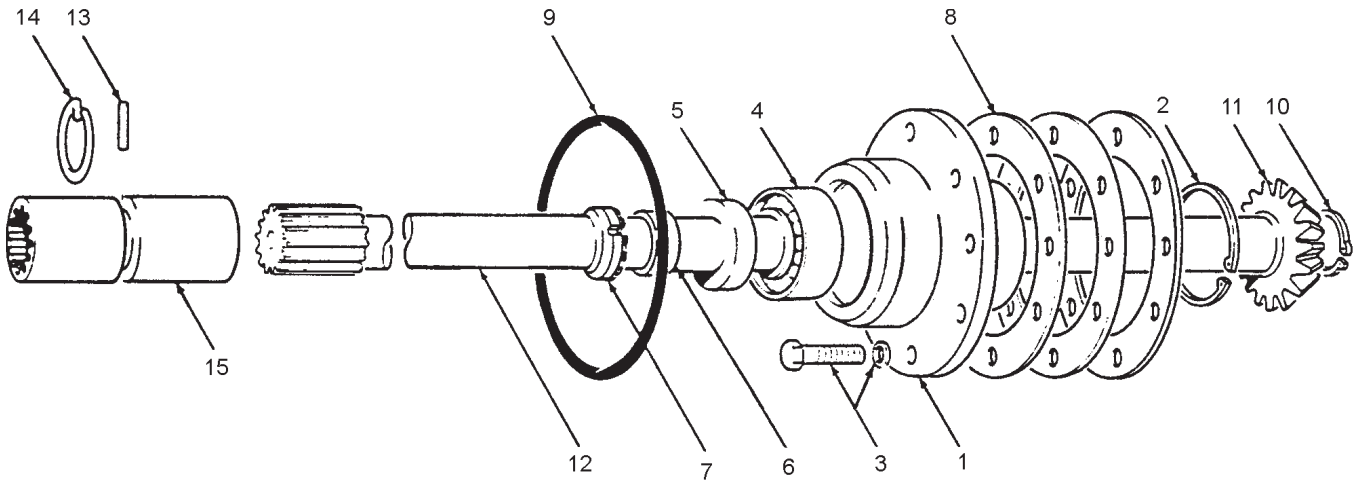
Gear Train

Bevel Gear Shaft	2-34 thru 2-37
Brake Shaft	2-40
Clutch	2-38 & 2-39
Drum Shaft Group	2-30 & 2-33
Gear Box	2-23 thru 2-28
Intermediate Gear Shaft	2-41
Oil Brake	2-29
PTO/Universal Shaft	2-2 thru 2-22
Wire Rope Lock	2-42 & 2-43

PTO Shaft Caterpillar

Tractor Model	Shaft-PTO (Item 12)			Pin (Item 13)	Ring - Lock (Item 14)	Coupler (Item 15)
	Gear Ratio					
	46.00:1	60.40:1	83.60:1			
Caterpillar 583 (C63) (Prior to 583R)*	193590W	-----	95824W	9450W	90202W	6327W
Caterpillar D8K (C61)	193590W	-----	95824W	9450W	90202W	6327W
Caterpillar 594 (C64)	193590W	-----	95825W	9450W	90202W	6327W
Caterpillar D9 (C62) (Prior to D9N)**	193590W	-----	95825W	9450W	90202W	6327W

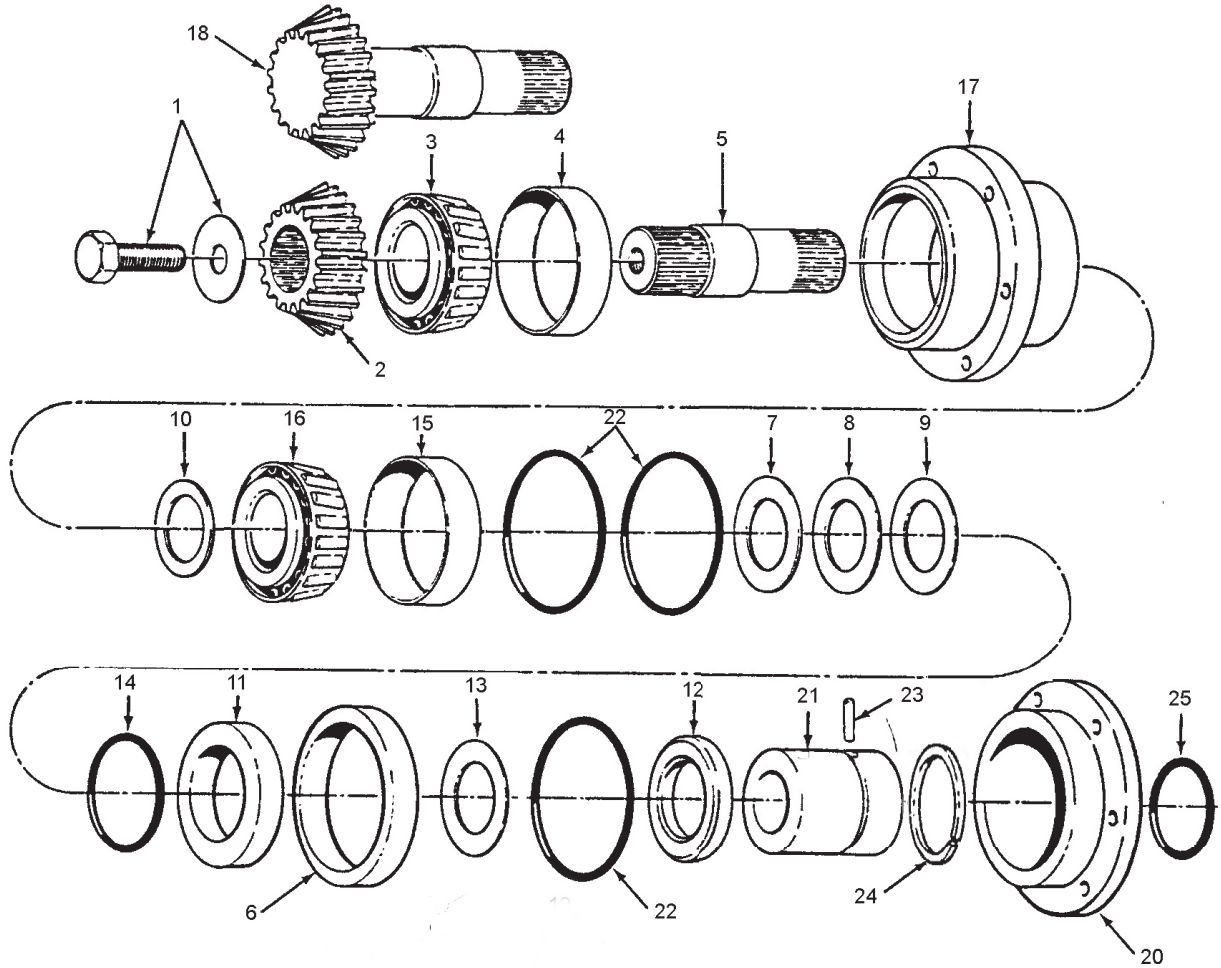
Note: * See page 2-14 for 583R
 ** See page 2-9 for D9N



Key
 A - 46:1:1 Ratio
 B - 83:6:1 Ratio

Item	Part No.	Description	Qty		Item	Part No.	Description	Qty	
			A	B				A	B
1	182191W	Carrier, Bearing	1	1	8	133258W	Shim .020	2	2
2	12981W	Ring, Snap	1	1	9	109453W	O-Ring	1	1
3	146322W	Capscrew	8	8	10	12940W	Ring, Snap	1	--
3	15929W	Lockwasher, Star	8	8	11	95601W	Gear, Spiral	1	--
4	125402W	Bearing, Ball	1	1	12	*a -----	Shaft, PTO	1	1
5	87355W	Seal, Oil	1	1	13	*a -----	Pin	1	1
6	95813W	Spacer	--	1	14	*a -----	Ring, Lock	1	1
7	34056W	Locknut	--	1	15	*a -----	Coupler	1	1
7	34055W	Lockwasher	--	1					
8	133256W	Shim .005	2	2		*a See Chart			
8	133257W	Shim .007	2	2					

PTO Shaft
Caterpillar D8L (C65)
without Dropbox

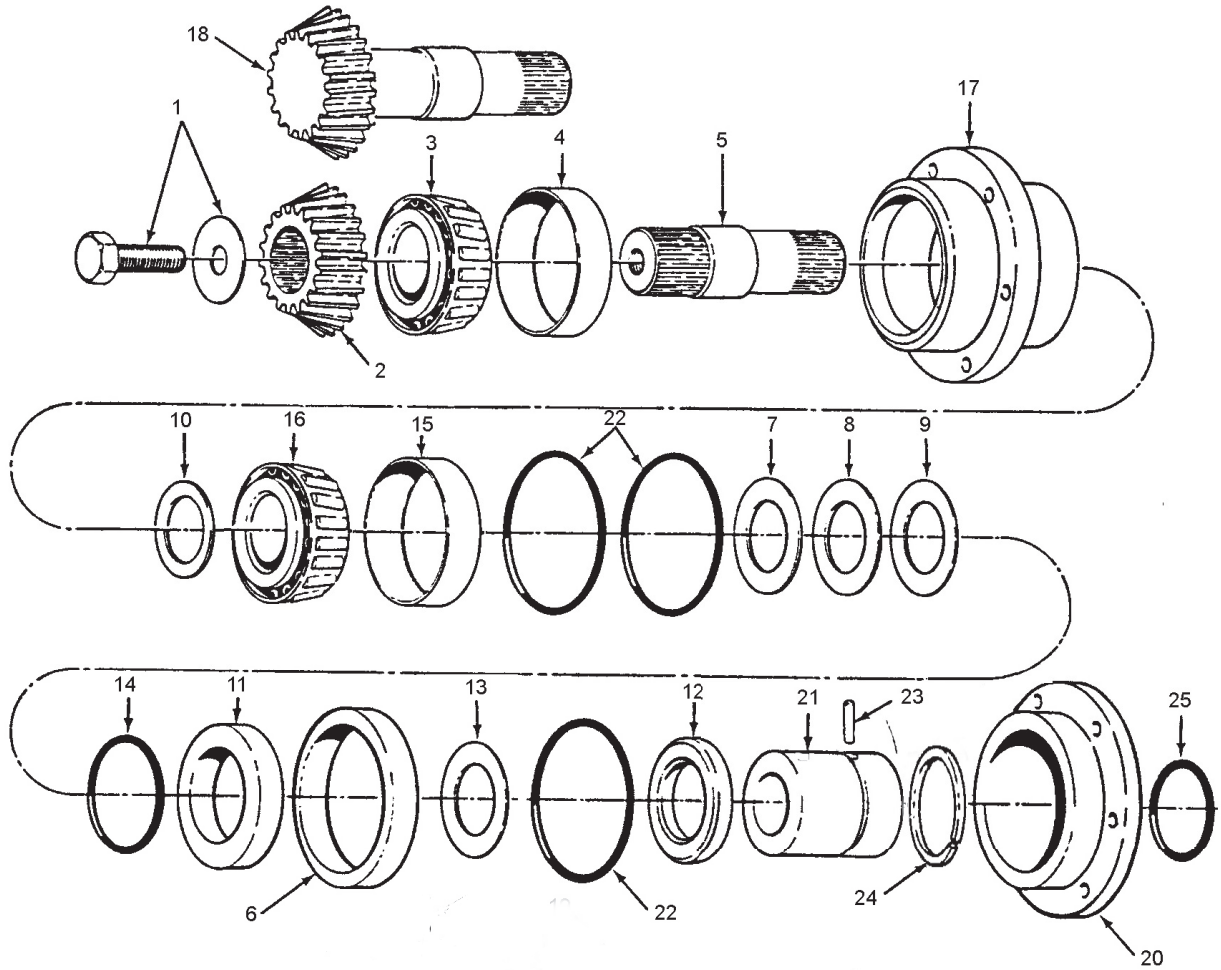


Key

- A - 46.1:1 Gear Ratio
- B - 60.4:1 Gear Ratio
- C - 83.6:1 Gear Ratio

Item	Part No.	Description	Qty			Item	Part No.	Description	Qty		
			A	B	C				A	B	C
1	*a 18617W	Capscrew	1	--	--	14	39366W	O-Ring	1	1	1
1	221743W	Washer, Flat	1	--	--	15	15179W	Cup, Bearing	1	1	1
2	95601W	Gear, Spiral	1	--	--	16	339490W	Cone, Bearing	1	1	1
3	339490W	Cone, Bearing	1	1	1	17	303875W	Carrier, Bearing	1	1	1
4	159179W	Cup, Bearing	1	1	1	18	303877W	Shaft	--	1	1
5	306470W	Shaft, Input	1	--	--	20	339286W	Ring, Pilot	1	1	1
6	44459W	Seal, Oil	1	1	1	21	339287W	Coupler	1	1	1
7	303899W	Shim .005	AR	AR	AR	22	109453W	O-Ring	3	3	3
8	303898W	Shim .007	AR	AR	AR	23	19932W	Pin	1	1	1
9	303897W	Shim .020	AR	AR	AR	24	173048W	Ring, Lock	1	1	1
10	303896W	Spacer	1	1	1	25	15887W	O-Ring	1	1	1
11	344836W	Spacer	1	1	1						
12	34056W	Locknut	1	1	1						
13	339492W	Washer	1	1	1						
						*a	Use 264134W Adhesive				

PTO Shaft
Caterpillar D9N & D9R (C65, C68)
without Dropbox



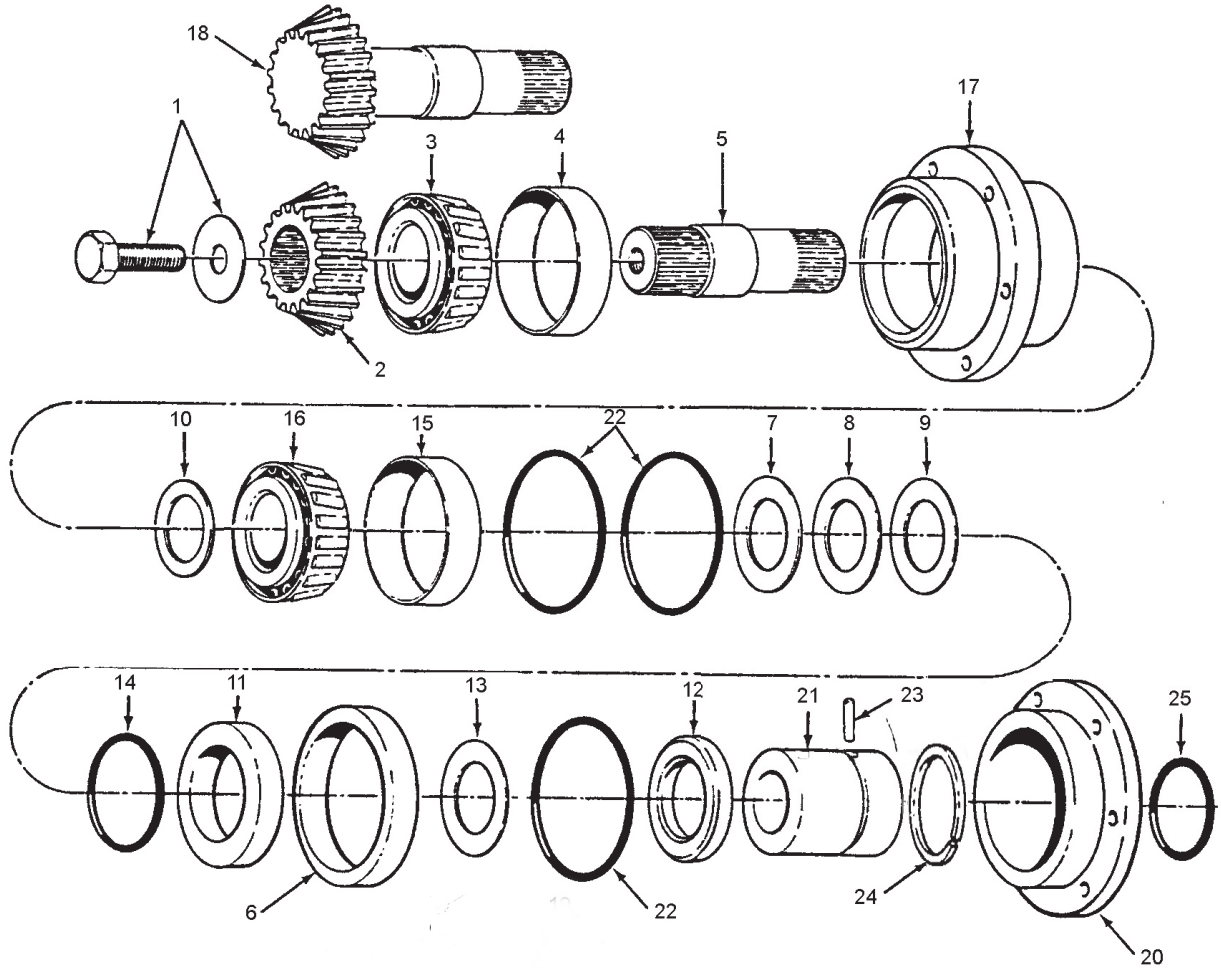
Key

- A - 46.1:1 Gear Ratio
- B - 60.4:1 Gear Ratio
- C - 83.6:1 Gear Ratio

Item	Part No.	Description	Qty			Item	Part No.	Description	Qty		
			A	B	C				A	B	C
1	*a 18617W	Capscrew	1	--	--	14	39366W	O-Ring	1	1	1
1	221743W	Washer	1	--	--	15	15179W	Cup, Bearing	1	1	1
2	95601W	Gear, Spiral	1	--	--	16	339490W	Cone, Bearing	1	1	1
3	339490W	Cone, Bearing	1	1	1	17	303875W	Carrier, Bearing	1	1	1
4	159179W	Cup, Bearing	1	1	1	18	303877W	Shaft	--	1	1
5	306470W	Shaft, Input	1	--	--	20	339286W	Ring, Pilot	1	1	1
6	44459W	Seal, Oil	1	1	1	21	339287W	Coupler	1	1	1
7	303899W	Shim .005	AR	AR	AR	22	109453W	O-Ring	3	3	3
8	303898W	Shim .007	AR	AR	AR	23	19932W	Pin	1	1	1
9	303897W	Shim .020	AR	AR	AR	24	173048W	Ring, Lock	1	1	1
10	303896W	Spacer	1	1	1	25	15887W	O-Ring	1	1	1
11	344836W	Spacer	1	1	1						
12	34056W	Locknut	1	1	1						
13	339492W	Washer	1	1	1						

*a Use 264134W Adhesive

PTO Shaft
Caterpillar D10N & D10R (C66)
without Dropbox



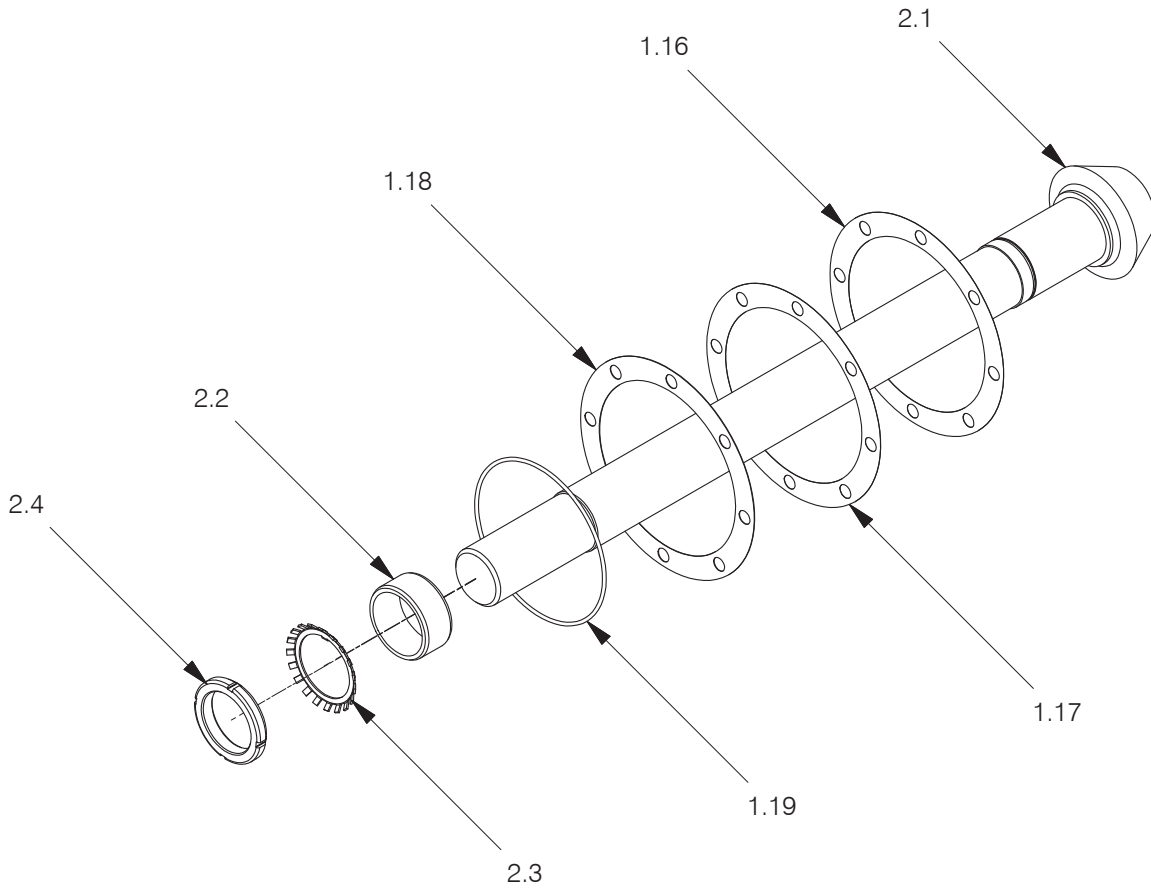
Key

- A - 46.1:1 Gear Ratio
- B - 60.4:1 Gear Ratio
- C - 83.6:1 Gear Ratio

Item	Part No.	Description	Qty			Item	Part No.	Description	Qty		
			A	B	C				A	B	C
1	*a 18617W	Capscrew	1	--	--	14	39366W	O-Ring	1	1	1
1	221743W	Washer	1	--	--	15	15179W	Cup, Bearing	1	1	1
2	95601W	Gear, Spiral	1	--	--	16	339490W	Cone, Bearing	1	1	1
3	339490W	Cone, Bearing	1	1	1	17	303875W	Carrier, Bearing	1	1	1
4	159179W	Cup, Bearing	1	1	1	18	303877W	Shaft	--	1	1
5	306470W	Shaft, Input	1	--	--	20	339286W	Ring, Pilot	1	1	1
6	44459W	Seal, Oil	1	1	1	21	339287W	Coupler	1	1	1
7	303899W	Shim .005	AR	AR	AR	22	109453W	O-Ring	3	3	3
8	303898W	Shim .007	AR	AR	AR	23	19932W	Pin	1	1	1
9	303897W	Shim .020	AR	AR	AR	24	173048W	Ring, Lock	1	1	1
10	303896W	Spacer	1	1	1	25	15887W	O-Ring	1	1	1
11	344836W	Spacer	1	1	1						
12	34056W	Locknut	1	1	1						
13	339492W	Washer	1	1	1						
							*a	Use 264134W Adhesive			

PTO Shaft

Caterpillar 583H/K (C63)
with Dropbox
Gear Ratios #3 (60.4:1), #4 (83.6:1)

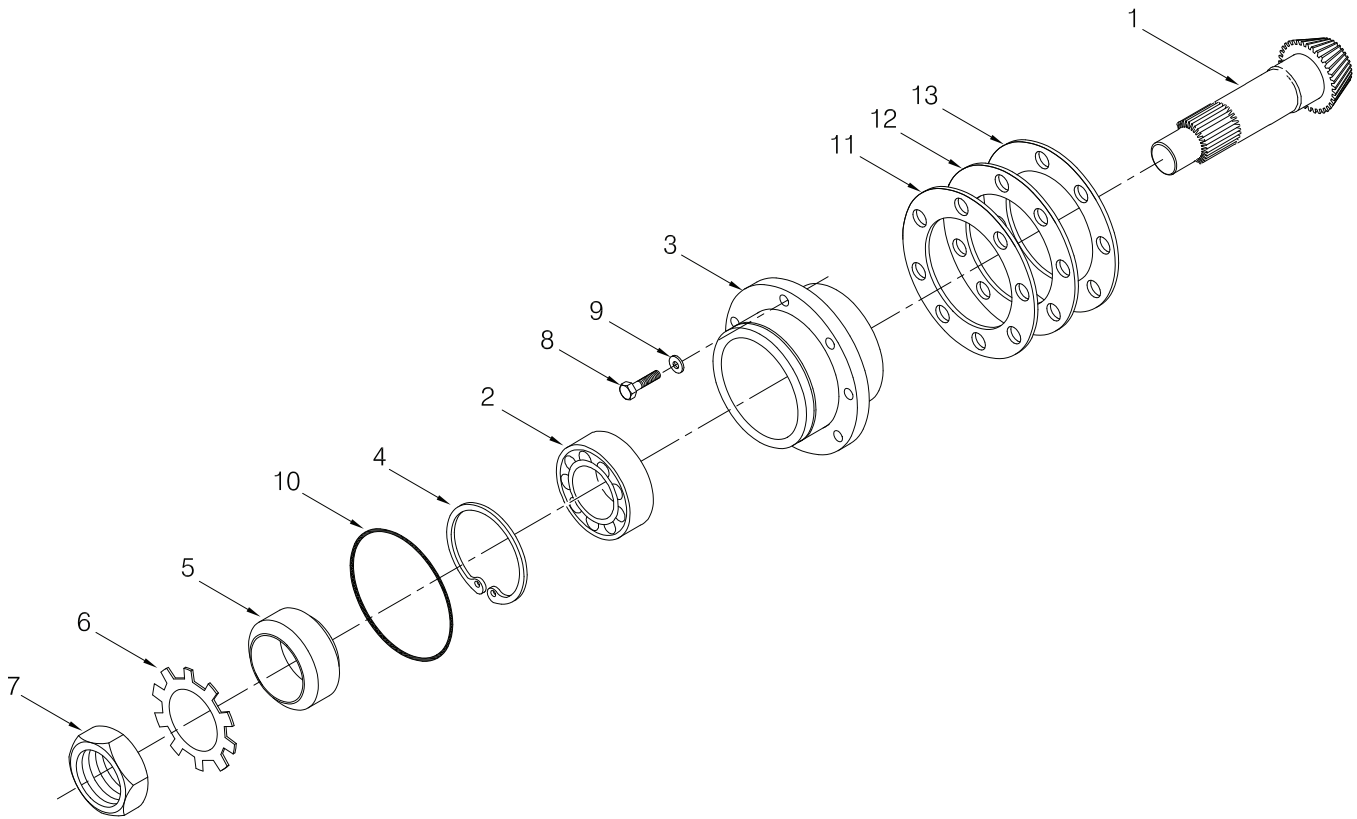


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1.16	133256W	Shim .005	AR	2.1	95824W	Shaft, PTO	1
1.17	133257W	Shim .007	AR	2.2	95813W	Spacer	1
1.18	133258W	Shim .020	AR	2.3	34055W	Lockwasher	1
1.19	90937W	O-Ring	1	2.4	34056W	Locknut	1

PTO Shaft

Caterpillar 583R (C67), 583T (C69), 587T (C79)
with Dropbox

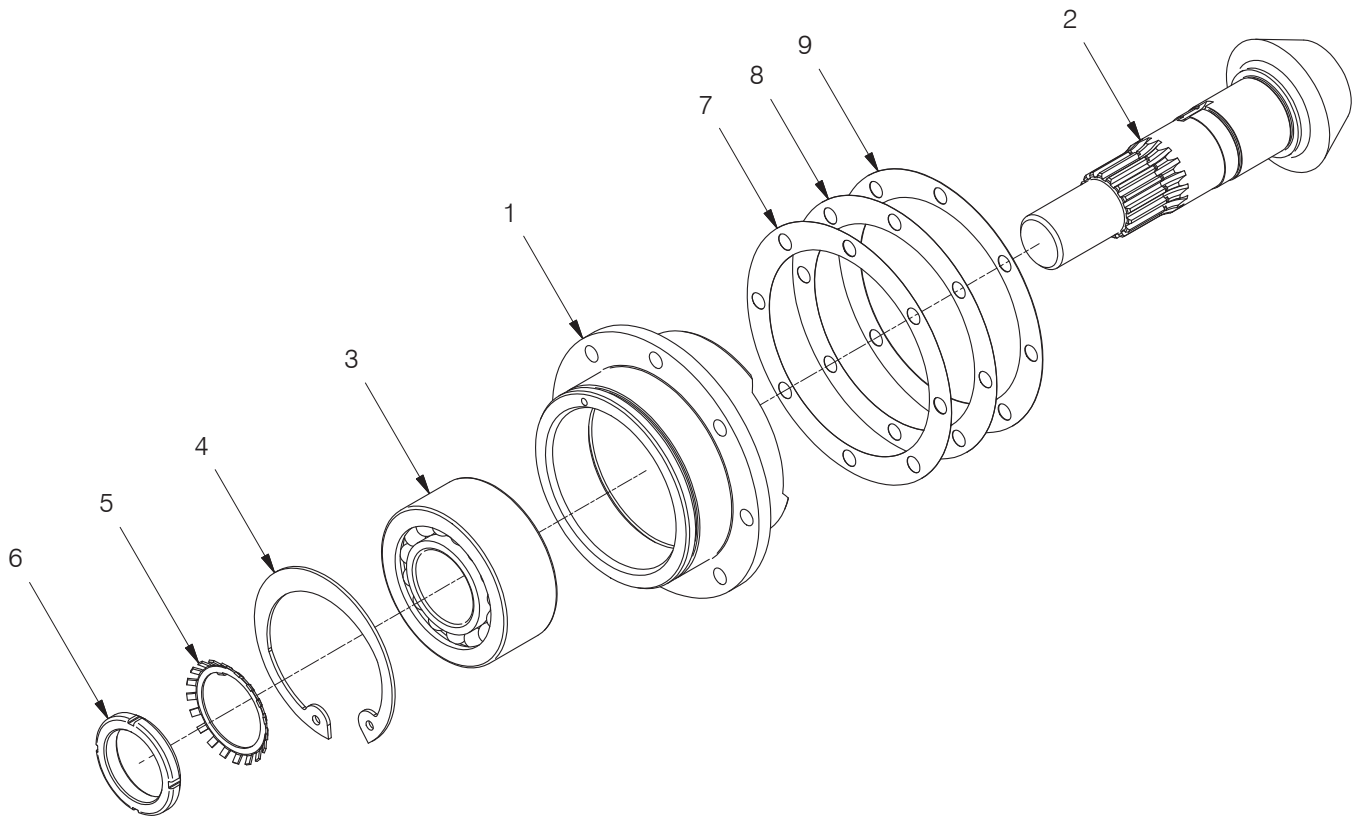
Gear Ratios #3 (60.4:1), #4 (83.6:1) & #6 (148.8:1) for C67
Gear Ratio #7 (148.0:1) for C69 & C79



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 2304627W	Shaft, PTO	1	8	178402W	Capscrew	8
1	2304934W	Shaft, PTO	1	9	15158W	Washer	8
2	125402W	Bearing, Ball	1	10	109453W	O-Ring	1
3	2304714W	Carrier, Bearing	1	11	133256W	Shim .005	AR
4	12981W	Ring, Snap	1	12	133257W	Shim .007	AR
5	*a 95813W	Spacer	1	13	133258W	Shim .020	AR
6	34055W	Lockwasher	1				
7	34056W	Locknut	1				
				*a	Used on S/N AW12E-1095 thru AW12E-1103		

PTO Shaft

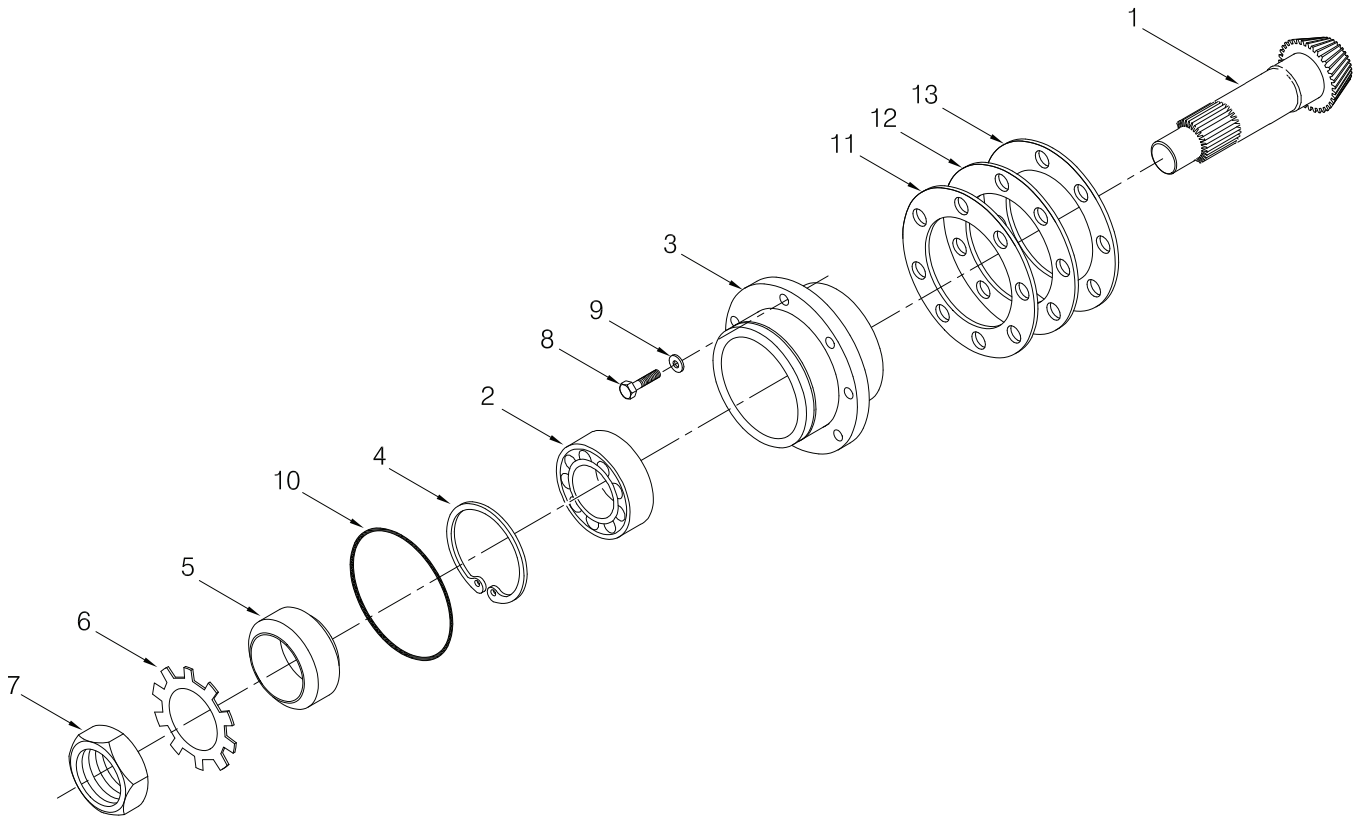
Caterpillar 583T (C74), D8T (C74)
with Dropbox
Gear Ratio #7 (148.0:1)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2306613W	Assembly, PTO - w/ Gearbox 148.8/1, Gear Ratio #7					
1	2306475W	. Pilot, PTO	1	6	34056W	. Locknut	1
2	2306473W	. Shaft, PTO Stub	1	7	133256W	Shim .005	AR
3	125402W	. Bearing, Ball	1	8	133257W	Shim .007	AR
4	12981W	. Ring, Snap	1	9	133258W	Shim .020	AR
5	34055W	. Lockwasher	1				

PTO Shaft

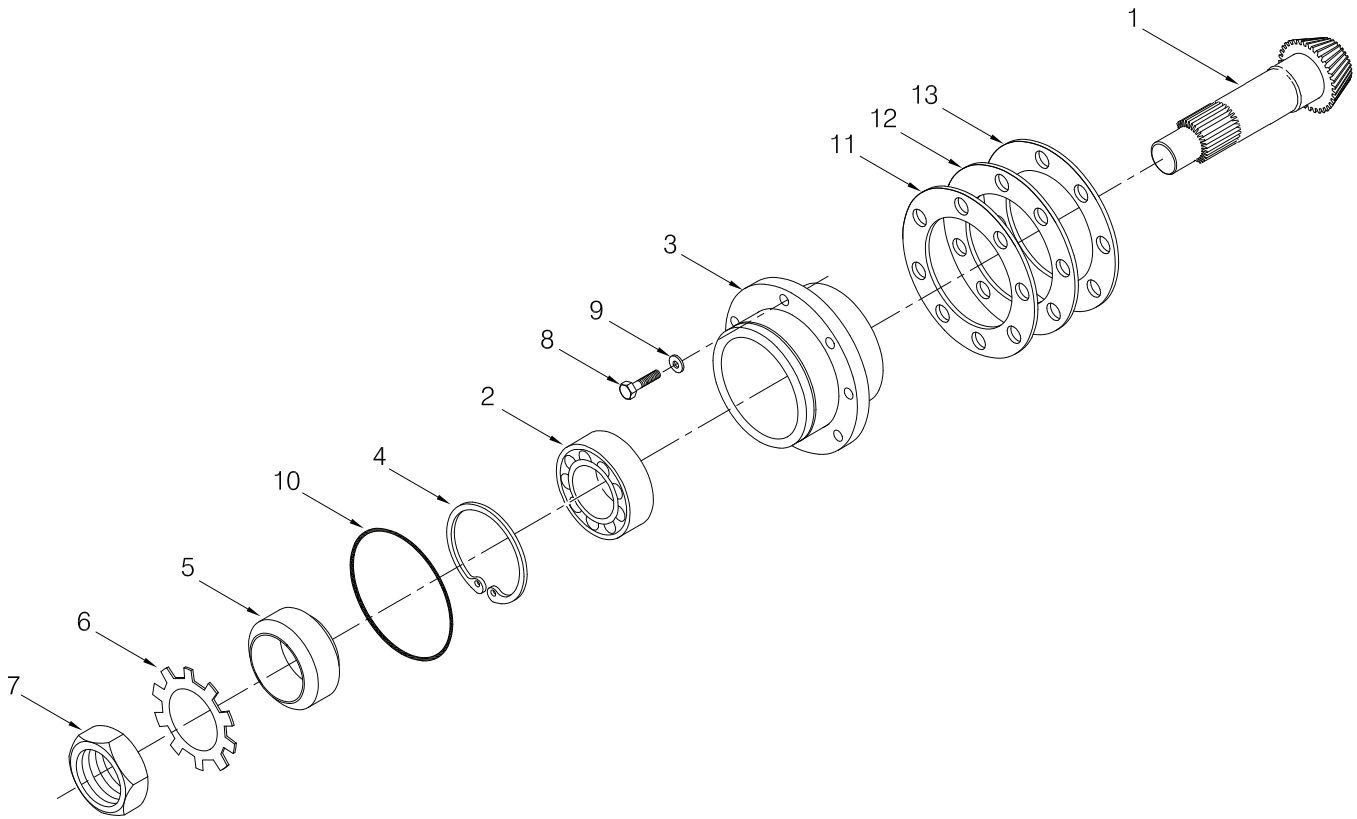
Caterpillar D8R Series II (C59), D8T (C69)
 with Dropbox
 Gear Ratio #6 (148.8:1) for C59
 Gear Ratio #7 (148.0:1) for C69



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 2304627W	Shaft, PTO	1	8	178402W	Capscrew	8
1	2304934W	Shaft, PTO	1	9	15158W	Washer	8
2	125402W	Bearing, Ball	1	10	109453W	O-Ring	1
3	2304714W	Carrier, Bearing	1	11	133256W	Shim .005	AR
4	12981W	Ring, Snap	1	12	133257W	Shim .007	AR
5	*a 95813W	Spacer	1	13	133258W	Shim .020	AR
6	34055W	Lockwasher	1				
7	34056W	Locknut	1				
				*a	Used on S/N AW12E-1095 thru AW12E-1103		

PTO Shaft

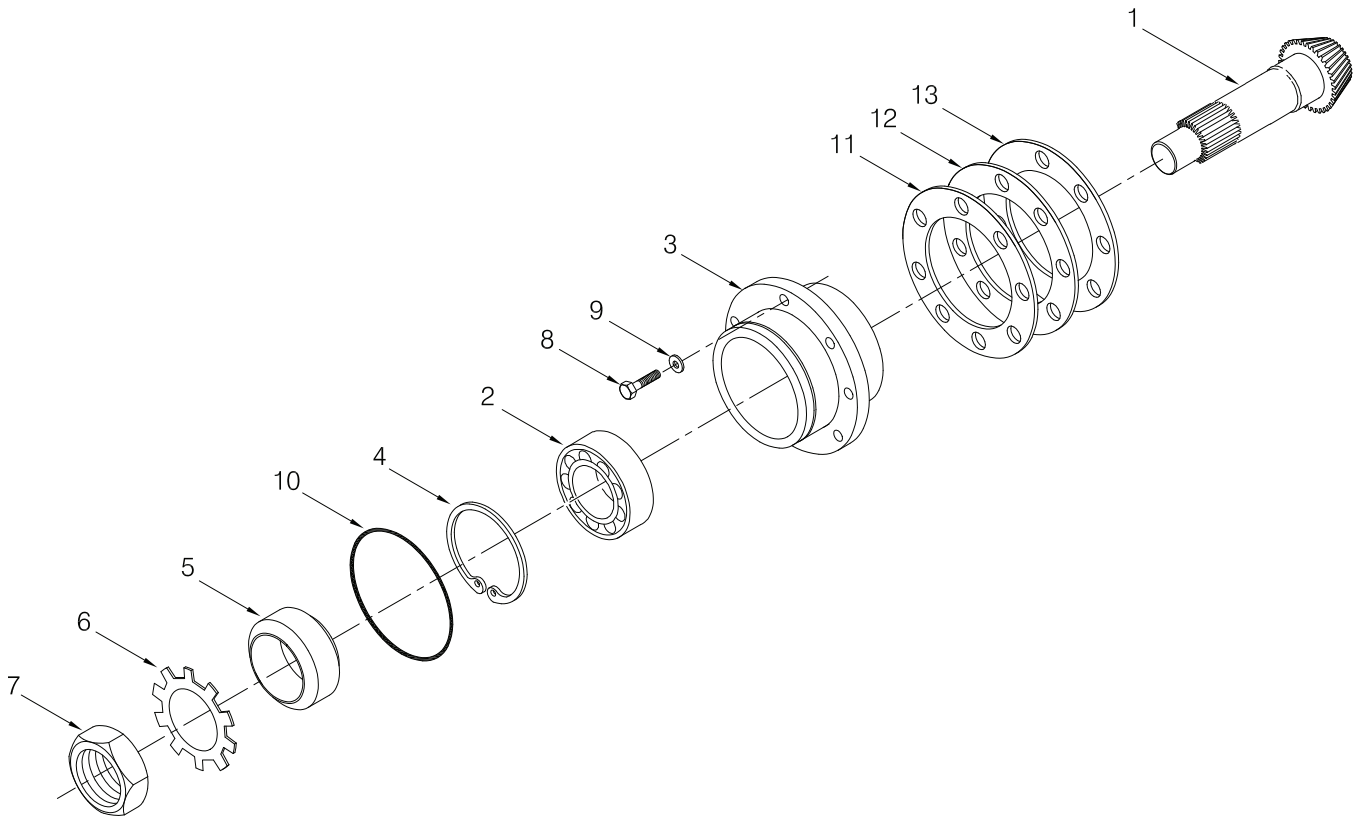
Caterpillar D9R (C65), D9T (C75)
 with Dropbox
 Gear Ratio #6 (148.8:1) for C65
 Gear Ratio #7 (148.0:1) for C75



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 2304627W	Shaft, PTO	1	8	178402W	Capscrew	8
1	2304934W	Shaft, PTO	1	9	15158W	Washer	8
2	125402W	Bearing, Ball	1	10	109453W	O-Ring	1
3	2304714W	Carrier, Bearing	1	11	133256W	Shim .005	AR
4	12981W	Ring, Snap	1	12	133257W	Shim .007	AR
5	*a 95813W	Spacer	1	13	133258W	Shim .020	AR
6	34055W	Lockwasher	1				
7	34056W	Locknut	1				
				*a	Used on S/N AW12E-1095 thru AW12E-1103		

PTO Shaft

Caterpillar D10N/R (C66), D10T (C76)
 with Dropbox
 Gear Ratios #4 (83.6:1) & #6 (148.8:1) for C66
 Gear Ratio #7 (148.0:1) for C76

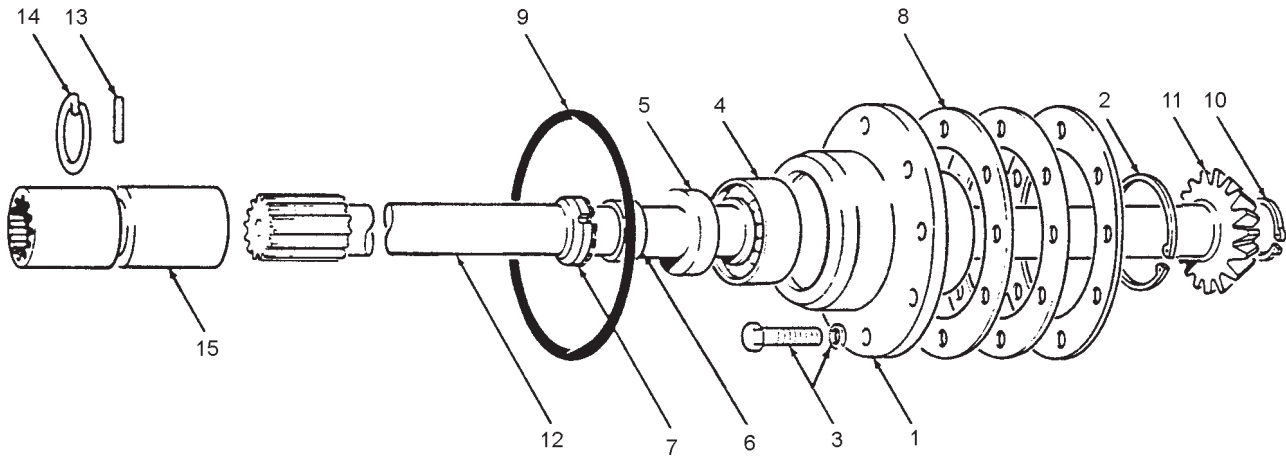


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 2304627W	Shaft, PTO	1	8	178402W	Capscrew	8
1	2304934W	Shaft, PTO	1	9	15158W	Washer	8
2	125402W	Bearing, Ball	1	10	109453W	O-Ring	1
3	2304714W	Carrier, Bearing	1	11	133256W	Shim .005	AR
4	12981W	Ring, Snap	1	12	133257W	Shim .007	AR
5	*a 95813W	Spacer	1	13	133258W	Shim .020	AR
6	34055W	Lockwasher	1				
7	34056W	Locknut	1				
				*a	Used on S/N AW12E-1095 thru AW12E-1103		

PTO Shaft

All Dresser/Dressta except TD25E/G (H64)

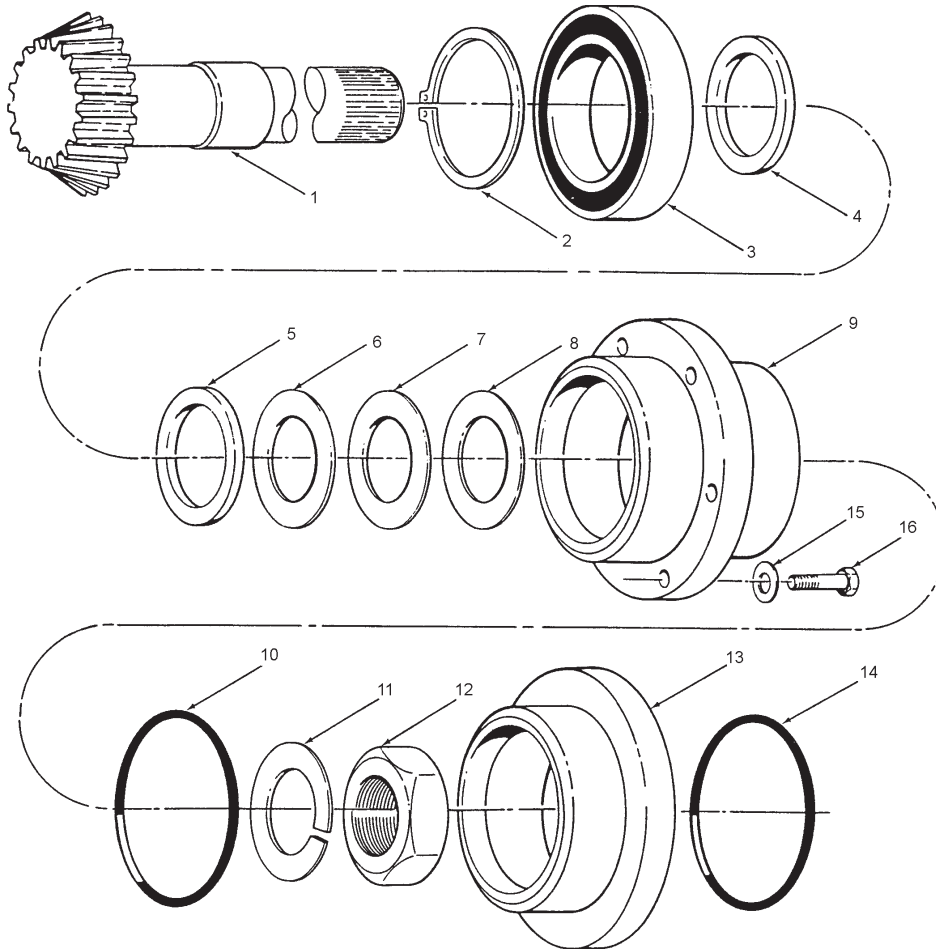
Tractor Model	Shaft-PTO (Item 12)		Pin (Item 13)	Ring - Lock (Item 14)	Coupler (Item 15)
	Gear Ratio				
	60.40:1	83.60:1			
Dresser TD25C PS	198048W	-----	198053W	12946W	198052W
Dresser TD40	308410W	308410W	-----	-----	-----



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	182191W	Carrier, Bearing	1	8	133258W	Shim .020	2
2	12981W	Ring, Snap	1	9	109453W	O-Ring	1
3	146322W	Capscrew	8	10	12940W	Ring, Snap	1
3	15929W	Lockwasher, Star	8	11	95601W	Gear, Spiral	1
4	125402W	Bearing, Ball	1	12	*a	-----	1
5	87355W	Seal, Oil	1	13	*a	-----	1
6	95813W	Spacer	1	14	*a	-----	1
7	34056W	Locknut	1	15	*a	-----	1
7	34055W	Lockwasher	1				
8	133256W	Shim .005	2		*a	See Chart	
8	133257W	Shim .007	2				

PTO Shaft

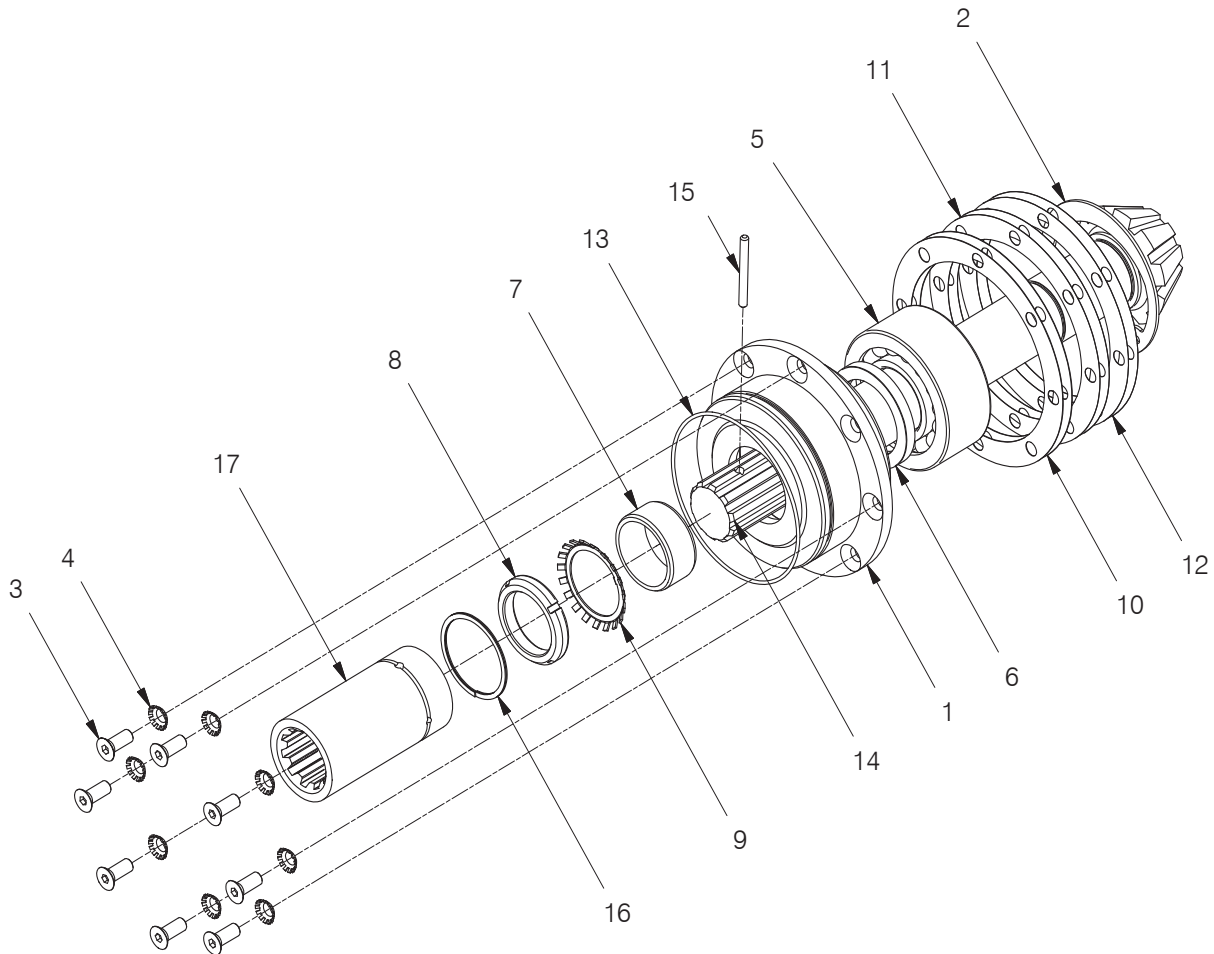
Dresser /Dressta TD25E/G (H64)
 Gear Ratios #3 (60.4:1) & #4 (83.6:1)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	308410W	Shaft, PTO	1	9	182191W	Carrier, Bearing	1
2	12981W	Ring, Snap	1	10	109453W	O-Ring	1
3	125402W	Bearing, Ball	1	11	34055W	Lockwasher	1
4	95813W	Spacer	1	12	34056W	Locknut	1
5	87355W	Seal, Oil	1	13	296863W	Adapter, PTO	1
6	133256W	Shim .002	2	14	57597W	O-Ring	1
7	133257W	Shim .005	2	15	15929W	Lockwasher, Star	8
8	133258W	Shim .020	1	16	146322W	Capscrew	8

PTO Shaft

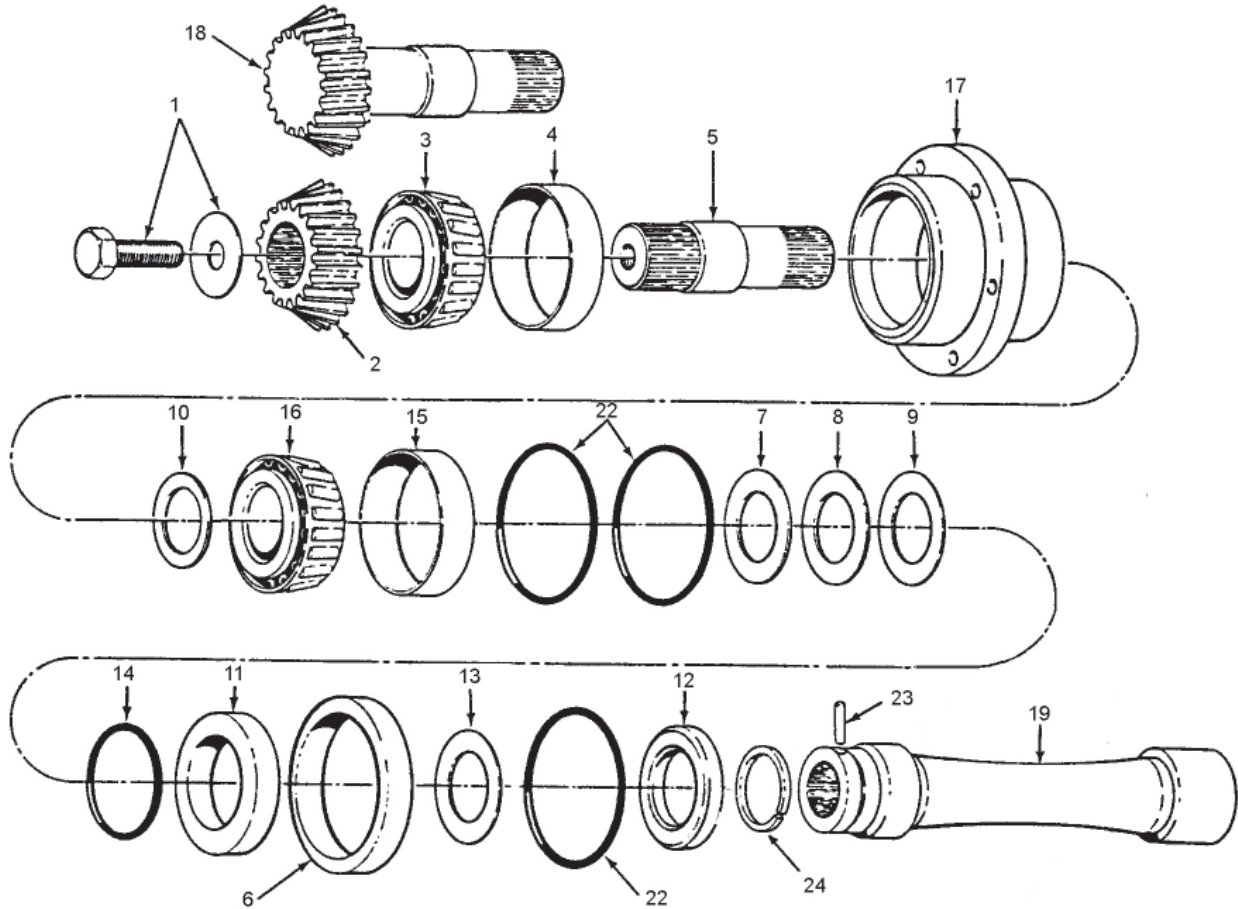
All Fiat-Hitachi/New Holland except FD30B (A64)
 Gear Ratio #3 (60.4:1) for 21C (A61) & FD40B/FP120/31 (A62);
 Gear Ratio #4 (83.6:1) for 41-B (A63) & FD40 (A65);
 Gear Ratios #3 (60.4:1) & #4 (83.6:1) for FD30 (A61)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	217623W	Carrier, Bearing	1	10	133256W	Shim .005	2
2	12981W	Ring, Snap	1	11	133257W	Shim .007	2
3	146322W	Capscrew	8	12	133258W	Shim .020	2
4	15929W	Lockwasher, Star	8	13	109453W	O-Ring	1
5	125402W	Bearing, Ball	1	14	277495W	Shaft, PTO	1
6	87355W	Seal, Oil	1	15	9450W	Pin	1
7	95813W	Spacer	1	16	90202W	Ring, Lock	1
8	34056W	Locknut	1	17	6327W	Coupler	1
9	34055W	Lockwasher	1				

PTO Shaft

Fiat-Hitachi/New Holland FD30B (A64)



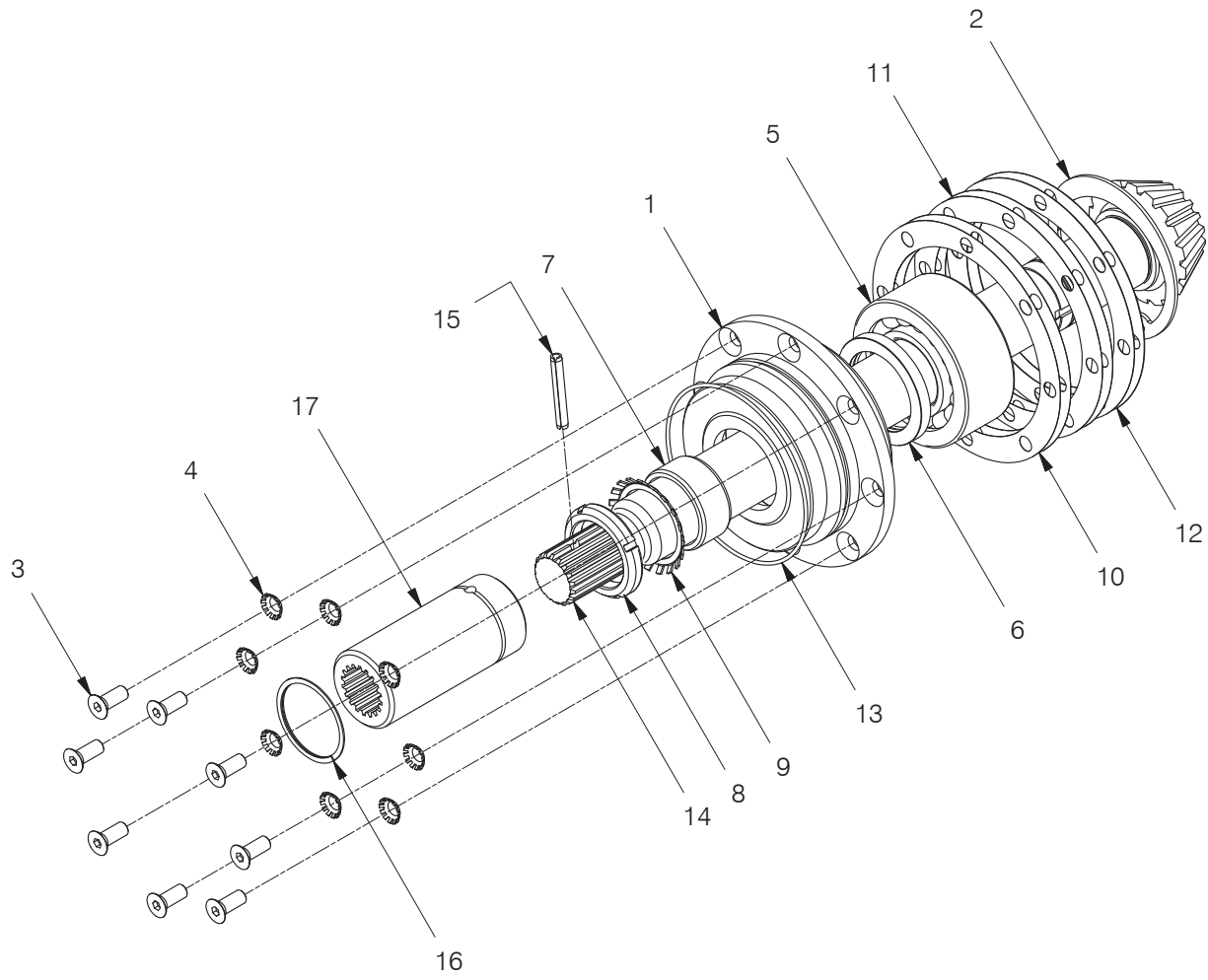
Key

- A - 46.1:1 Gear Ratio
- B - 60.4:1 Gear Ratio
- C - 83.6:1 Gear Ratio

Item	Part No.	Description	Qty			Item	Part No.	Description	Qty		
			A	B	C				A	B	C
1	*a 18617W	Capscrew	1	--	--	13	339492W	Washer	1	1	1
1	221743W	Washer, Flat	1	--	--	14	39366W	O-Ring	1	1	1
2	95601W	Gear, Spiral	1	--	--	15	15179W	Cup, Bearing	1	1	1
3	339490W	Cone, Bearing	1	1	1	16	339490W	Cone, Bearing	1	1	1
4	159179W	Cup, Bearing	1	1	1	17	303875W	Carrier, Bearing	1	1	1
5	306470W	Shaft, Input	1	--	--	18	303877W	Shaft	--	1	1
6	44459W	Seal, Oil	1	1	1	19	383915W	Shaft	1	1	1
7	303899W	Shim .005	AR	AR	AR	22	109453W	O-Ring	2	2	2
8	303898W	Shim .007	AR	AR	AR	23	19932W	Pin	1	1	1
9	303897W	Shim .020	AR	AR	AR	24	173048W	Ring, Lock	1	1	1
10	303896W	Spacer	1	1	1						
11	344836W	Spacer	1	1	1						
12	34056W	Locknut	1	1	1						

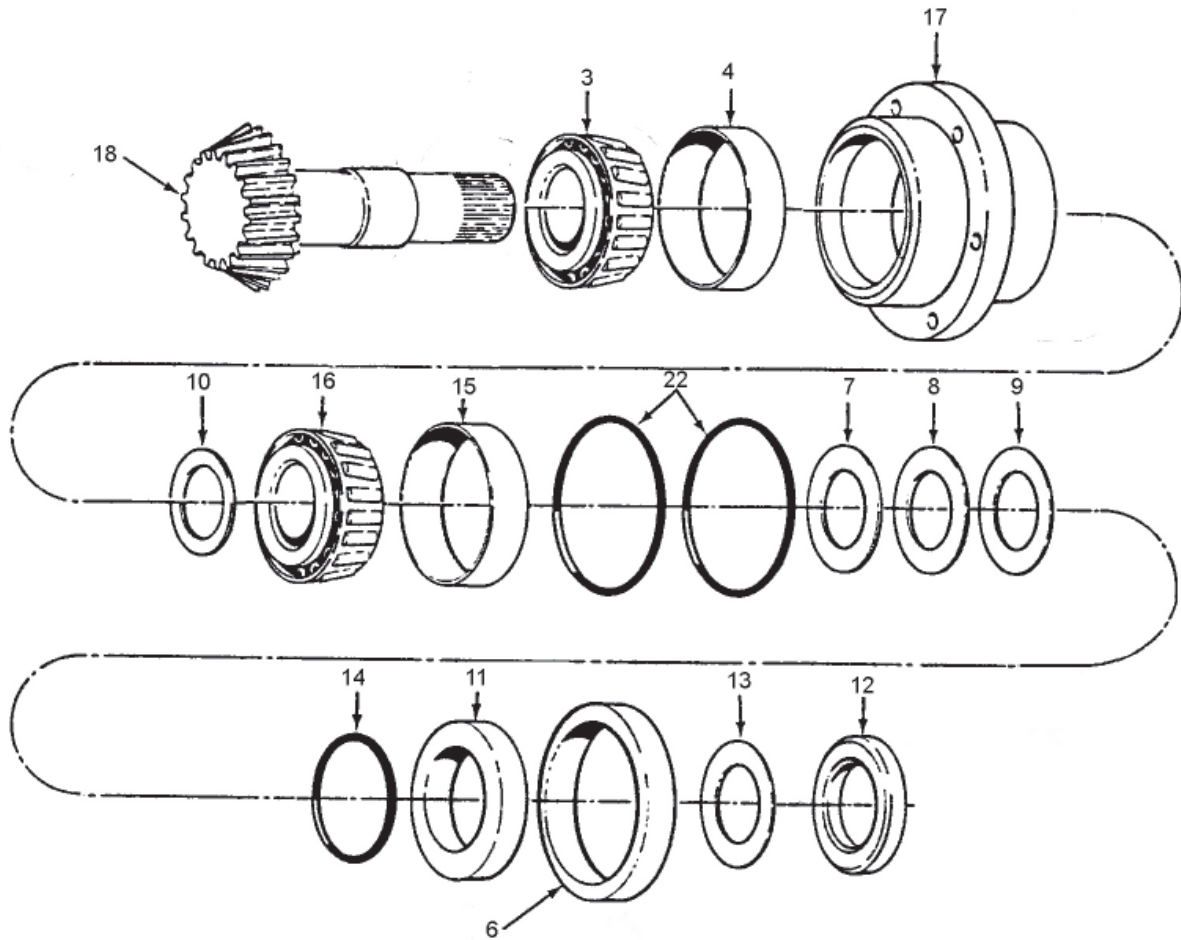
*a Use 264134W Adhesive

PTO Shaft
 Komatsu D155A-1 (K61)
 Gear Ratio #3 (60.4:1)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	182191W	Carrier, Bearing	1	10	133256W	Shim .005	2
2	12981W	Ring, Snap	1	11	133257W	Shim .007	2
3	146322W	Capscrew	8	12	133258W	Shim .020	2
4	15929W	Lockwasher, Star	8	13	109453W	O-Ring	1
5	125402W	Bearing, Ball	1	14	213039W	Shaft, PTO	1
6	87355W	Seal, Oil	1	15	19942W	Pin	1
7	95813W	Spacer	1	16	173048W	Ring, Lock	1
8	34056W	Locknut	1	17	213146W	Coupler	1
9	34055W	Lockwasher	1				

PTO Shaft
 Komatsu D275A (K60)
 Gear Ratio #4 (83.6:1)

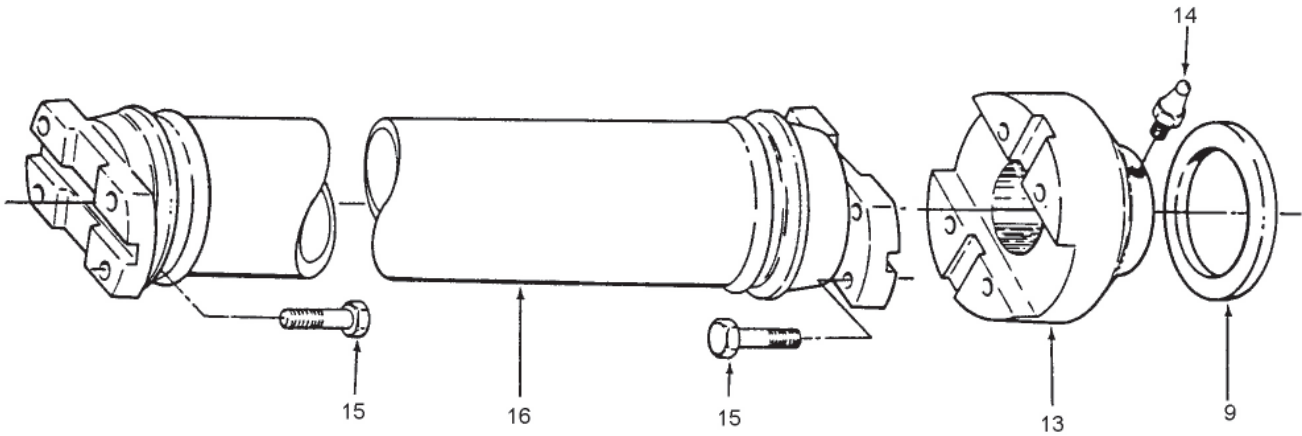


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
3	339490W	Cone, Bearing	1	12	34056W	Locknut	1
4	159179W	Cup, Bearing	1	13	339492W	Washer	1
6	44459W	Seal, Oil	1	14	39366W	O-Ring	1
7	303899W	Shim .005	AR	15	15179W	Cup, Bearing	1
8	303898W	Shim .007	AR	16	339490W	Cone, Bearing	1
9	303897W	Shim .020	AR	17	303875W	Carrier, Bearing	1
10	303896W	Spacer	1	18	303877W	Shaft	1
11	344836W	Spacer	1	22	109453W	O-Ring	2

Universal Shaft

Komatsu D275A (K60)

Gear Ratio #4 (83.6:1)

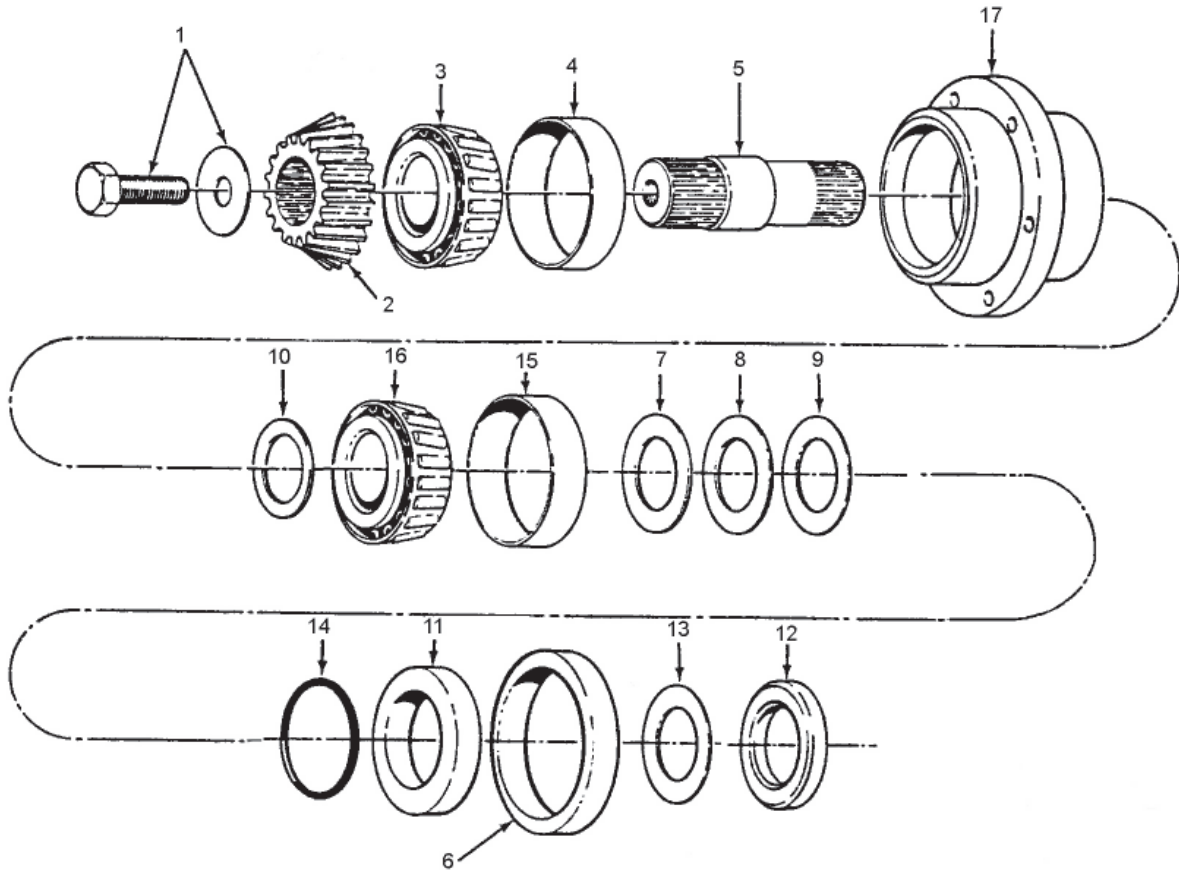


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
9	152848W	Seal, Oil	1	16	374816W	Shaft, Universal	1
13	2303029W	Yoke	1		383975W	Spider/Bearing (Not Shown)	2
14	16020W	Fitting, Grease	1				
15	*a 221577W	Capscrew	8		*a	Use 230064W Loctite Kit	

PTO Shaft

Komatsu D375A-1 (K64)

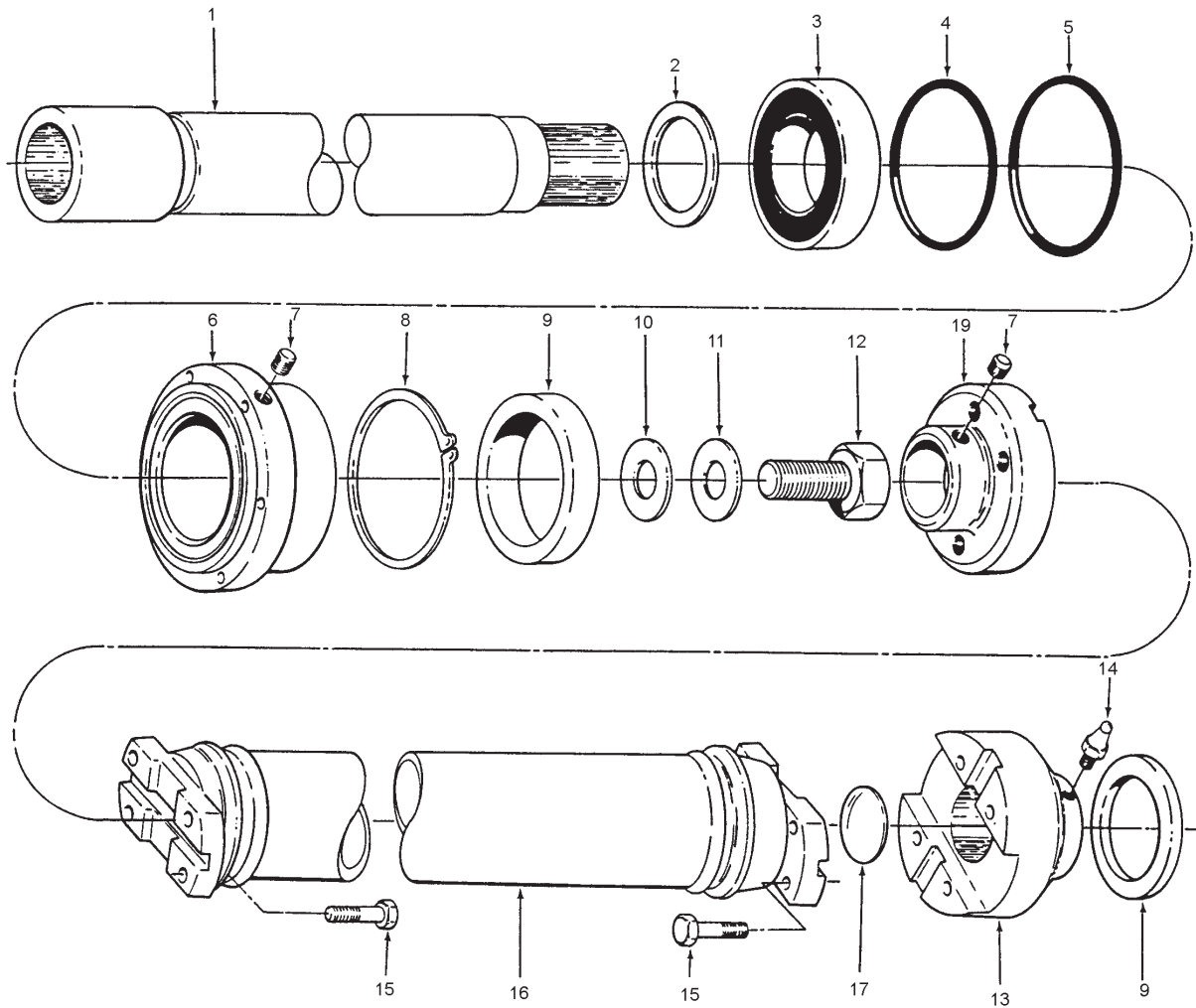
Gear Ratio #1 (46.1:1)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 18617W	Capscrew	1	10	303896W	Spacer	1
1	221743W	Washer	1	11	344836W	Spacer	1
2	95601W	Gear, Spiral	1	12	34056W	Locknut	1
3	339490W	Cone, Bearing	1	13	339492W	Washer	1
4	159179W	Cup, Bearing	1	14	39366W	O-Ring	1
5	306470W	Shaft, Input	1	15	15179W	Cup, Bearing	1
6	44459W	Seal, Oil	1	16	339490W	Cone, Bearing	1
7	303899W	Shim .005	AR	17	303875W	Carrier, Bearing	1
8	303898W	Shim .007	AR				
9	303897W	Shim .020	AR				

*a Use 264134W Adhesive

Universal Shaft
 Komatsu D375A-1 (K64)
 Gear Ratio #1 (46.1:1)



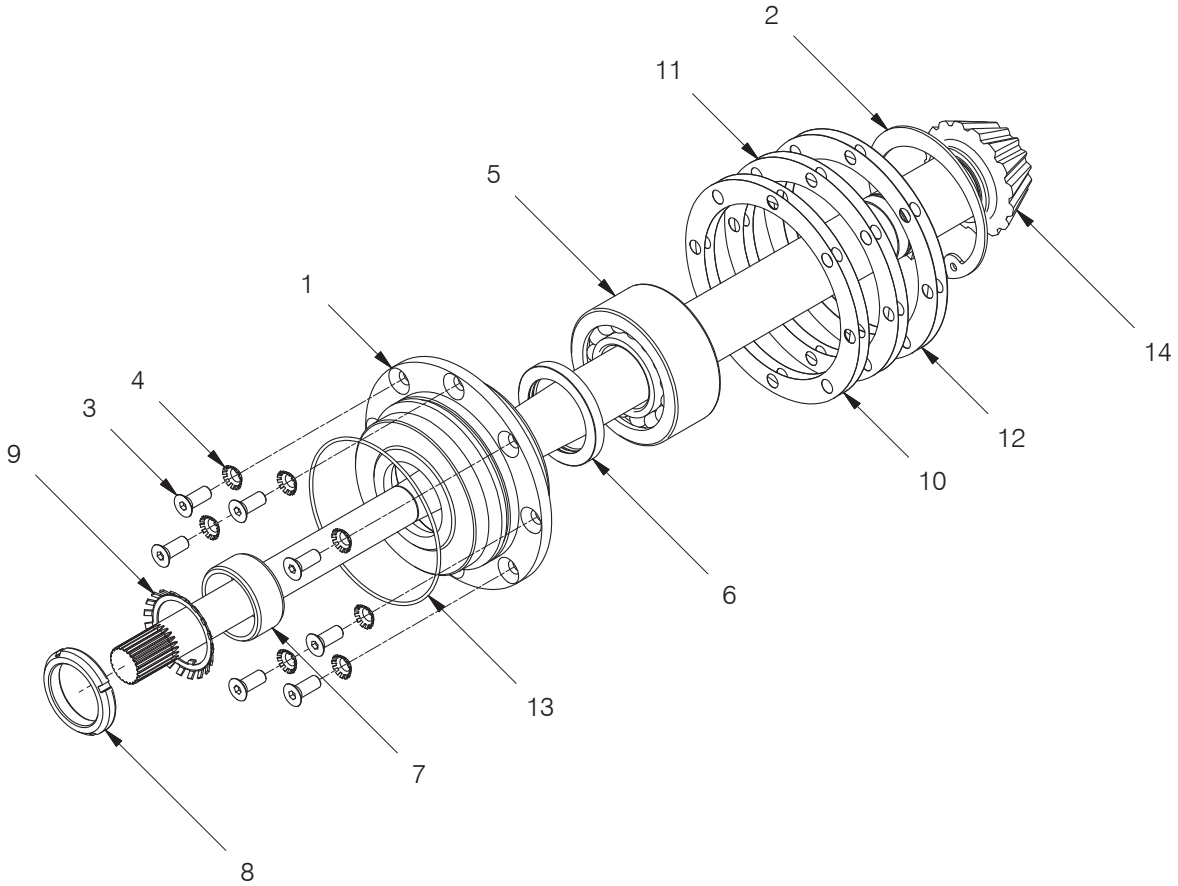
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	306469W	Coupler	1	12	*b 18519W	Capscrew	1
2	374811W	Washer	1	13	306472W	Yoke	1
3	125378W	Bearing, Ball	1	14	16020W	. Fitting, Grease	1
4	39747W	O-Ring	1	15	*b 221577W	Capscrew	8
5	15859W	O-Ring	1	16	374816W	Shaft, Universal	1
6	374815W	Carrier, Bearing	1	16	383975W	. Spider/Bearing (Not Shown)	2
7	15483W	Fitting	4	17	374812W	Plug	1
8	12919W	Ring, Snap	1	19	306472W	Yoke	1
9	152848W	Seal, Oil	2				
10	15136W	Washer	AR				
11	*a 221743W	Washer	1				
				*a	Use 350830W Sealant		
				*b	Use 230064W Loctite Kit		

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PTO Shaft

Terex 82-30, 82-30B, D750A (G61)

Gear Ratio #3 (60.4:1)

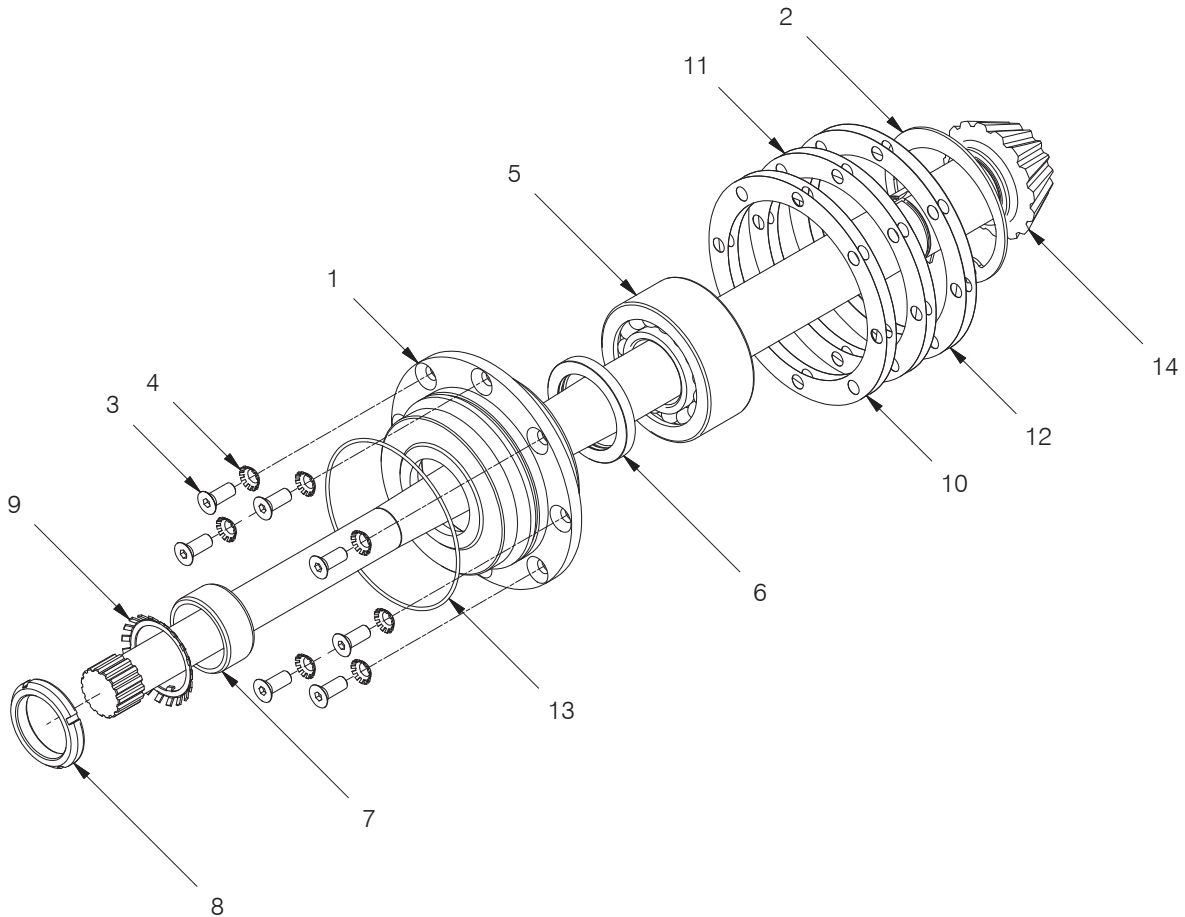


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	182191W	Carrier, Bearing	1	10	133256W	Shim .005	2
2	12981W	Ring, Snap	1	11	133257W	Shim .007	2
3	146322W	Capscrew	8	12	133258W	Shim .020	2
4	15929W	Lockwasher, Star	8	13	109453W	O-Ring	1
5	125402W	Bearing, Ball	1	14	260702W	Shaft, PTO	1
6	87355W	Seal, Oil	1		*a 328712W	Shaft, PTO	1
7	95813W	Spacer	1				
8	34056W	Locknut	1		*a	First Used on Tractor S/N 71300	
9	34055W	Lockwasher	1			- Winch S/N W12E-1876 & AW12E-1001	

PTO Shaft

Terex D800 (G62)

Gear Ratios #3 (60.4:1) & #4 (83.6:1)



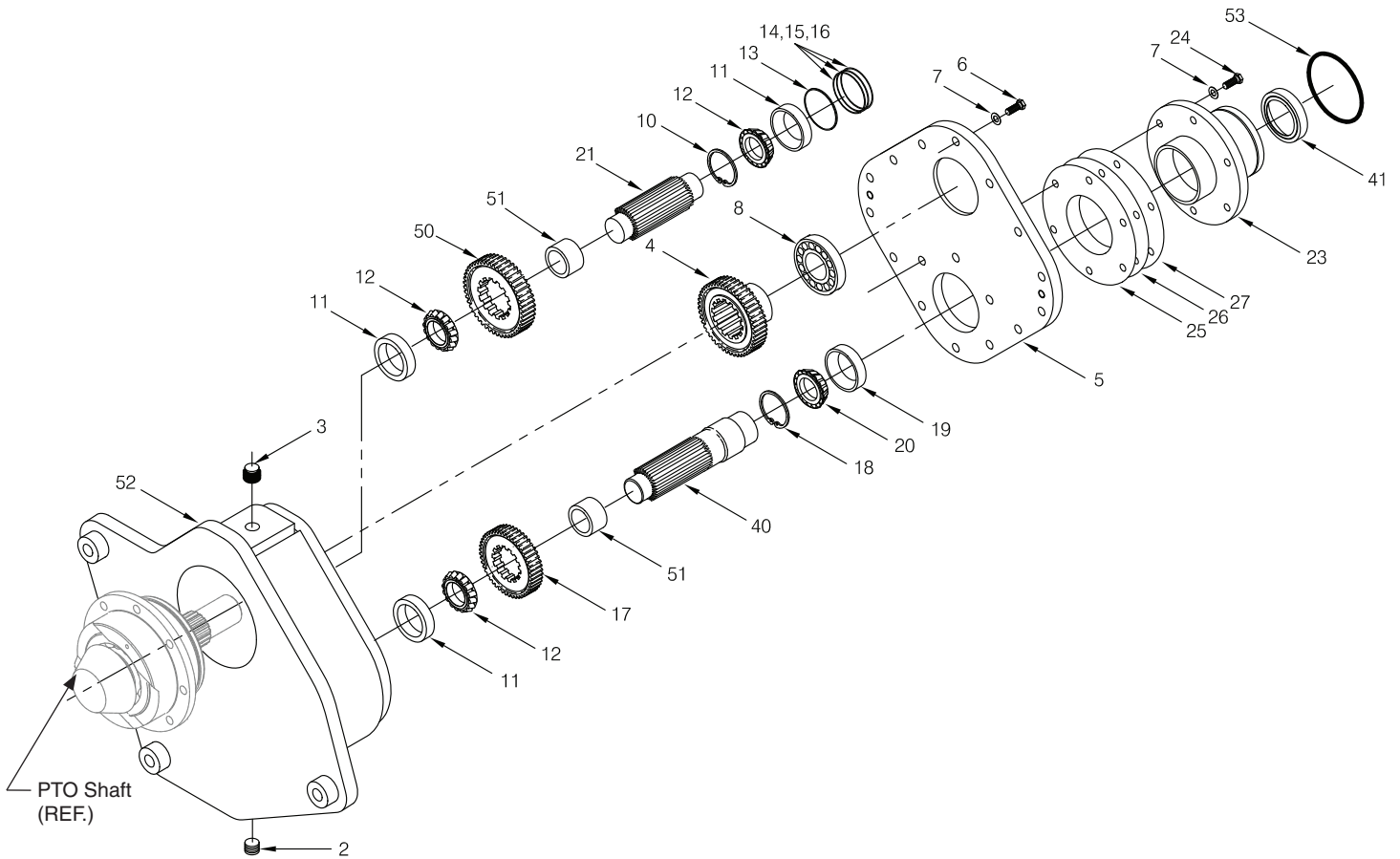
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	182191W	Carrier, Bearing	1	8	34056W	Locknut	1
2	12981W	Ring, Snap	1	9	34055W	Lockwasher	1
3	146322W	Capscrew	8	10	133256W	Shim .005	2
4	15929W	Lockwasher, Star	8	11	133257W	Shim .007	2
5	125402W	Bearing, Ball	1	12	133258W	Shim .020	2
6	87355W	Seal, Oil	1	13	109453W	O-Ring	1
7	95813W	Spacer	1	14	226441W	Shaft, PTO	1

Gear Box

Caterpillar 583R (C67)

Used on S/N AW12E-1095 thru 1103

Gear Ratio #3 (60.4:1) & Gear Ratio #4 (83.6:1)



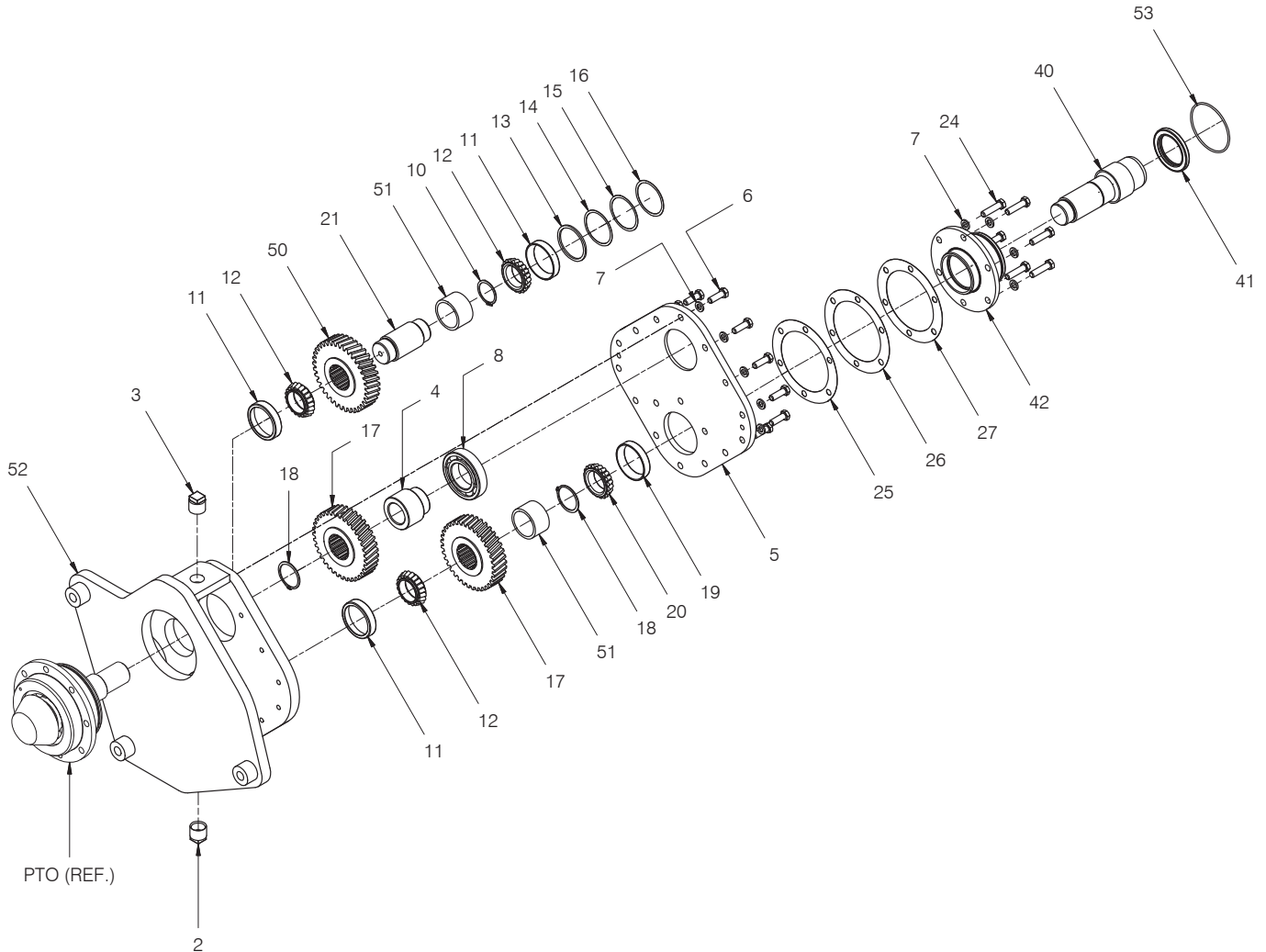
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
2	35504W	Fitting	1	20	29758W	Cone, Roller Bearing	1
3	15305W	Plug	1	21	2304702W	Shaft, Idler	1
4	2304662W	Gear, 36T	1	23	2304715W	Pilot, PTO	1
5	*a 2304670W	Plate, Cover	1	24	2302694W	Capscrew	6
6	2304671W	Capscrew	11	25	*b 2304850W	Shim .005	AR
7	15158W	Washer	17	26	*b 2304851W	Shim .007	AR
8	41212W	Bearing, Ball	1	27	*b 2304852W	Shim .008	AR
10	12944W	Ring, Snap	1	40	2304703W	Shaft, Input	1
11	374803W	Cup, Roller Bearing	3	41	123270W	Seal	1
12	274804W	Cone, Roller Bearing	3	50	2304661W	Gear, 37T	1
13	2304706W	Spacer	1	51	2304707W	Spacer	2
14	2304711W	Shim .005	AR	52	2304664W	Housing, Gear Box	1
15	2304712W	Shim .007	AR	53	15887W	O-Ring	1
16	2304713W	Shim .020	AR				
17	2304660W	Gear, 36T	1				
18	12963W	Ring, Snap	1				
19	45733W	Cup, Roller Bearing	1				
				*a	Use 358674W Loctite		
				*b	Use 313022W Sealant		

Gear Box

Caterpillar 583R (C67)

First Used on S/N AW12E-1104

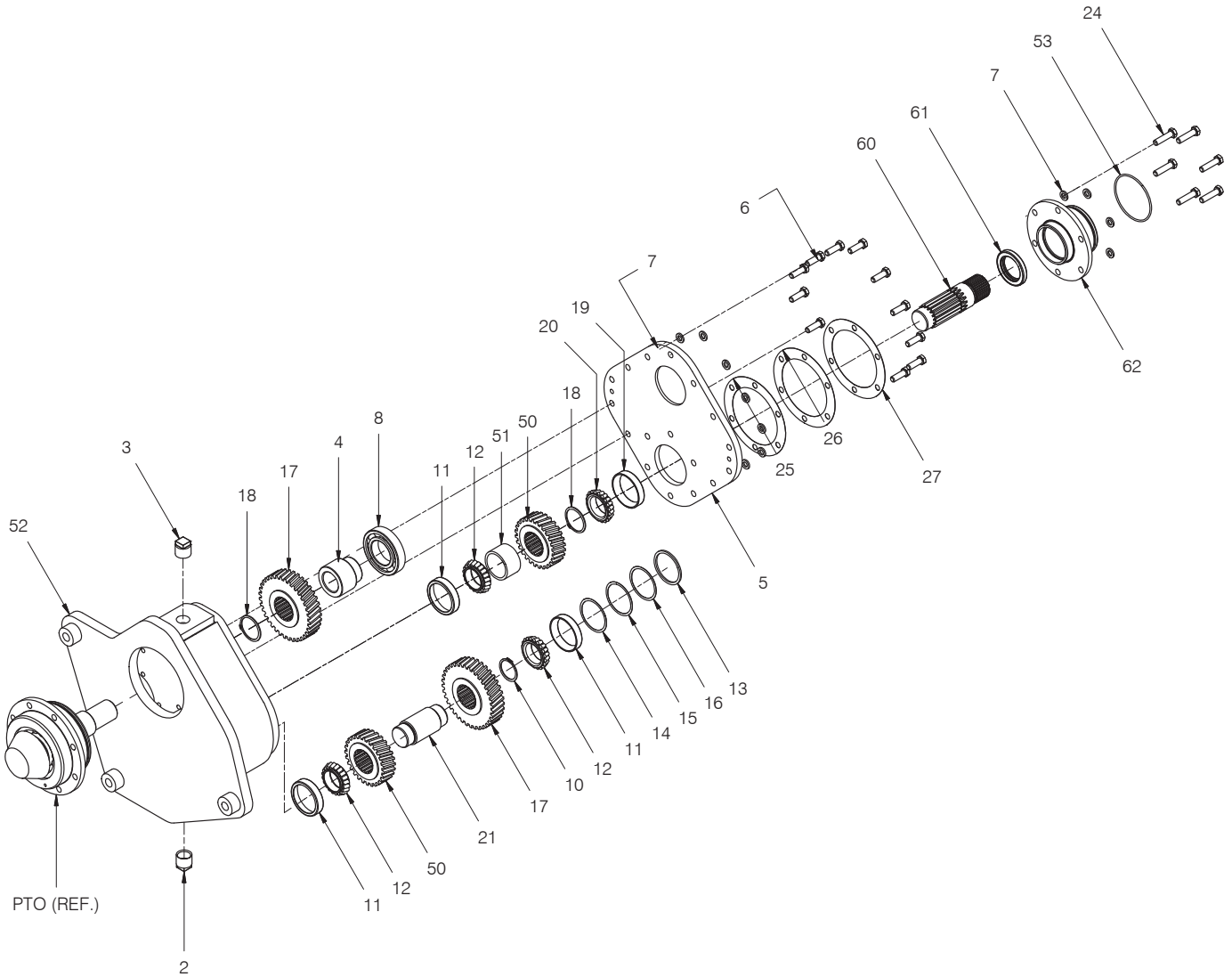
Gear Ratio #3 (60.4:1) & Gear Ratio #4 (83.6:1)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
2	35504W	Fitting	1	20	29758W	Cone, Roller Bearing	1
3	15305W	Plug	1	21	2304702W	Shaft, Idler	1
4	2304933W	Spacer	1	24	2302694W	Capscrew	6
5	*a 2304670W	Plate, Cover	1	25	*b 2304850W	Shim .005	AR
6	2304671W	Capscrew	11	26	*b 2304851W	Shim .007	AR
7	15158W	Washer	17	27	*b 2304852W	Shim .008	AR
8	41212W	Bearing, Ball	1	40	2304703W	Shaft, Input	1
10	12944W	Ring, Snap	1	41	123270W	Seal	1
11	374803W	Cup, Roller Bearing	3	42	2304715W	Pilot, PTO	1
12	374804W	Cone, Roller Bearing	3	50	2304661W	Gear, 37T	1
13	2304706W	Spacer	1	51	2304707W	Spacer	2
14	2304711W	Shim .005	AR	52	2304664W	Housing, Gear Box	1
15	2304712W	Shim .007	AR	53	15887W	O-Ring	1
16	2304713W	Shim .020	AR				
17	2304660W	Gear, 36T	2				
18	12963W	Ring, Snap	2				
19	45733W	Cup, Roller Bearing	1				
				*a	Use 264159W Sealant		
				*b	Use 280472W Adhesive Sealant		

Gear Box

Caterpillar 583R (C67)
 Gear Ratio #6 (148.8:1)
 Caterpillar 583T (C74) & 587T (C79)
 Gear Ratio #7 (148:1)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
2	35504W	Fitting	1	20	29758W	Cone, Roller Bearing	1
3	15305W	Plug	1	21	2304702W	Shaft, Idler	1
4	2304933W	Spacer	1	24	2302694W	Capscrew	6
5	*a 2304670W	Plate, Cover	1	25	*b 2304850W	Shim .005	AR
6	2304671W	Capscrew	11	26	*b 2304851W	Shim .007	AR
7	15158W	Washer	17	27	*b 2304852W	Shim .008	AR
8	41212W	Bearing, Ball	1	60	2304703W	Shaft, Input	1
10	12944W	Ring, Snap	1	61	123270W	Seal	1
11	374803W	Cup, Roller Bearing	3	62	2304715W	Pilot, PTO	1
12	374804W	Cone, Roller Bearing	3	50	2304700W	Gear, 27T	2
13	2304706W	Spacer	1	51	2304707W	Spacer	2
14	2304711W	Shim .005	AR	52	2304731W	Housing, Gear Box	1
15	2304712W	Shim .007	AR	53	15887W	O-Ring	1
16	2304713W	Shim .020	AR				
17	2304660W	Gear, 36T	2				
18	12963W	Ring, Snap	2				
19	45733W	Cup, Roller Bearing	1				
				*a	Use 264159W Sealant		
				*b	Use 280472W Adhesive Sealant		

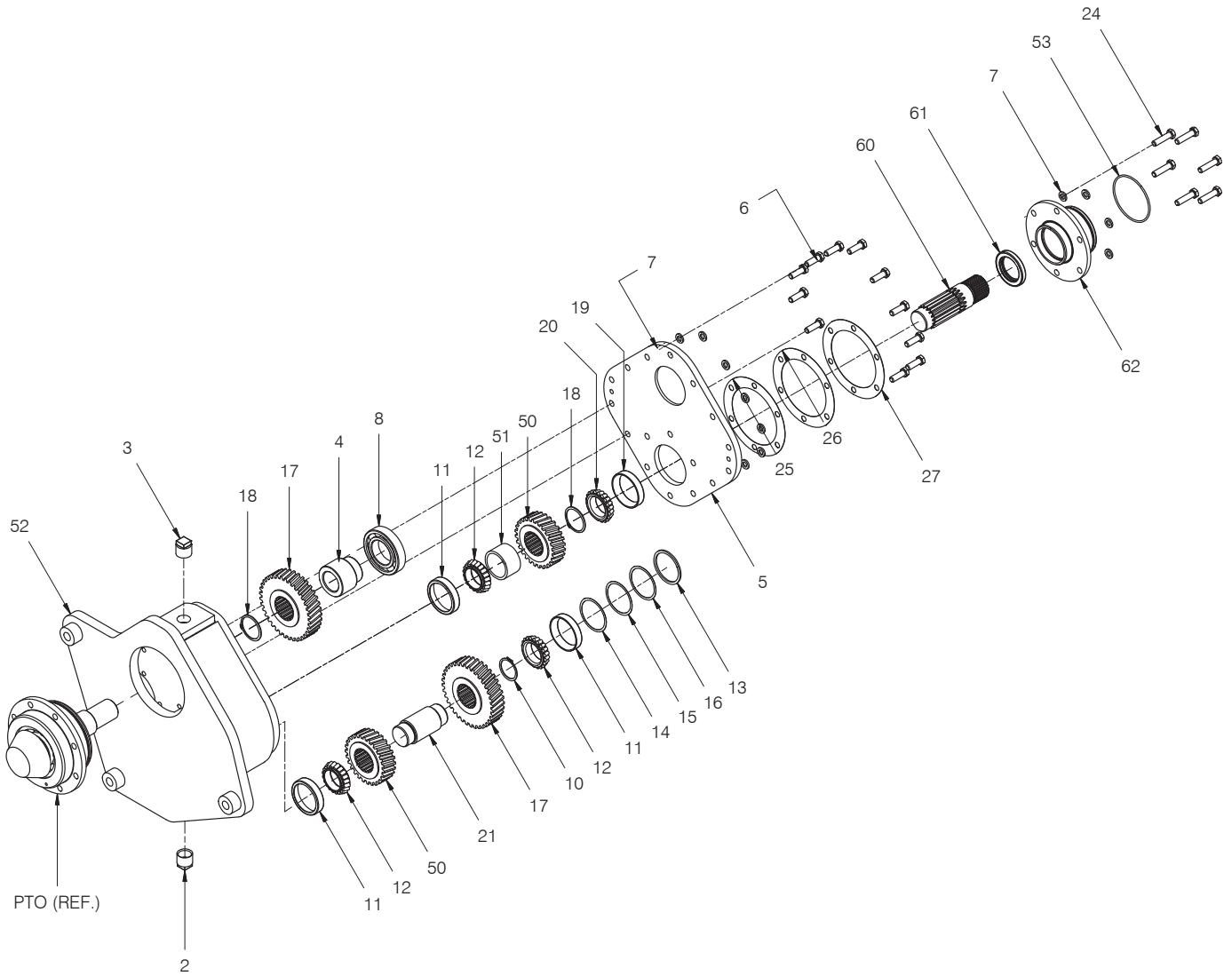
Gear Box

Caterpillar D8R Series II (C59)

Gear Ratio #6 (148.8:1)

Caterpillar D8T (C74)

Gear Ratio #7 (148:1)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
2	35504W	Fitting	1	20	29758W	Cone, Roller Bearing	1
3	15305W	Plug	1	21	2304702W	Shaft, Idler	1
4	2304933W	Spacer	1	24	2302694W	Capscrew	6
5	*a 2304670W	Plate, Cover	1	25	*b 2304850W	Shim .005	AR
6	2304671W	Capscrew	11	26	*b 2304851W	Shim .007	AR
7	15158W	Washer	17	27	*b 2304852W	Shim .008	AR
8	41212W	Bearing, Ball	1	60	2304703W	Shaft, Input	1
10	12944W	Ring, Snap	1	61	123270W	Seal	1
11	374803W	Cup, Roller Bearing	3	62	2304715W	Pilot, PTO	1
12	374804W	Cone, Roller Bearing	3	50	2304700W	Gear, 27T	2
13	2304706W	Spacer	1	51	2304707W	Spacer	2
14	2304711W	Shim .005	AR	52	2304731W	Housing, Gear Box	1
15	2304712W	Shim .007	AR	53	15887W	O-Ring	1
16	2304713W	Shim .020	AR				
17	2304660W	Gear, 36T	2				
18	12963W	Ring, Snap	2				
19	45733W	Cup, Roller Bearing	1				
				*a	Use 264159W Sealant		
				*b	Use 280472W Adhesive Sealant		

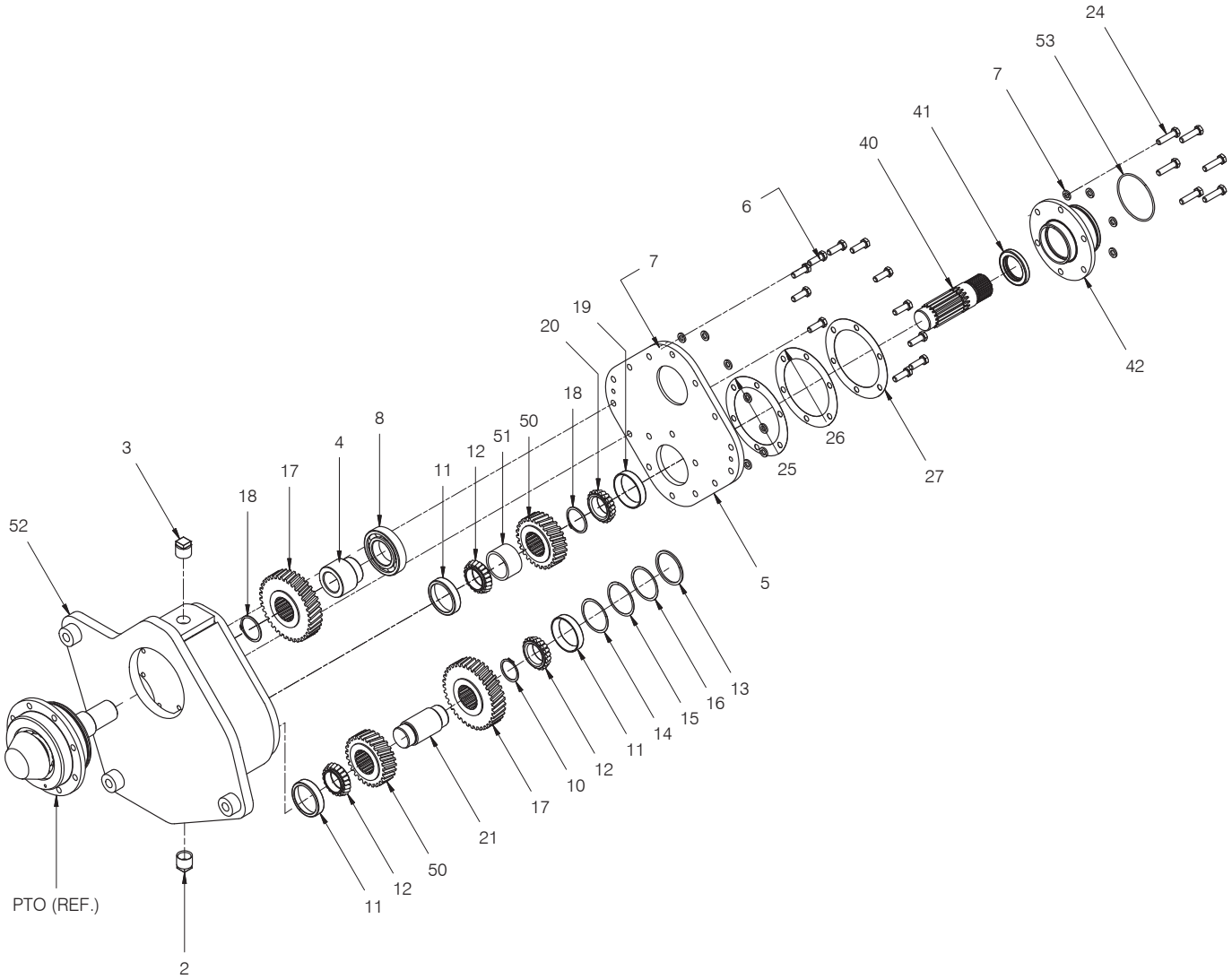
Gear Box

Caterpillar D9R (C65, C68)

Gear Ratio #6 (148.8:1)

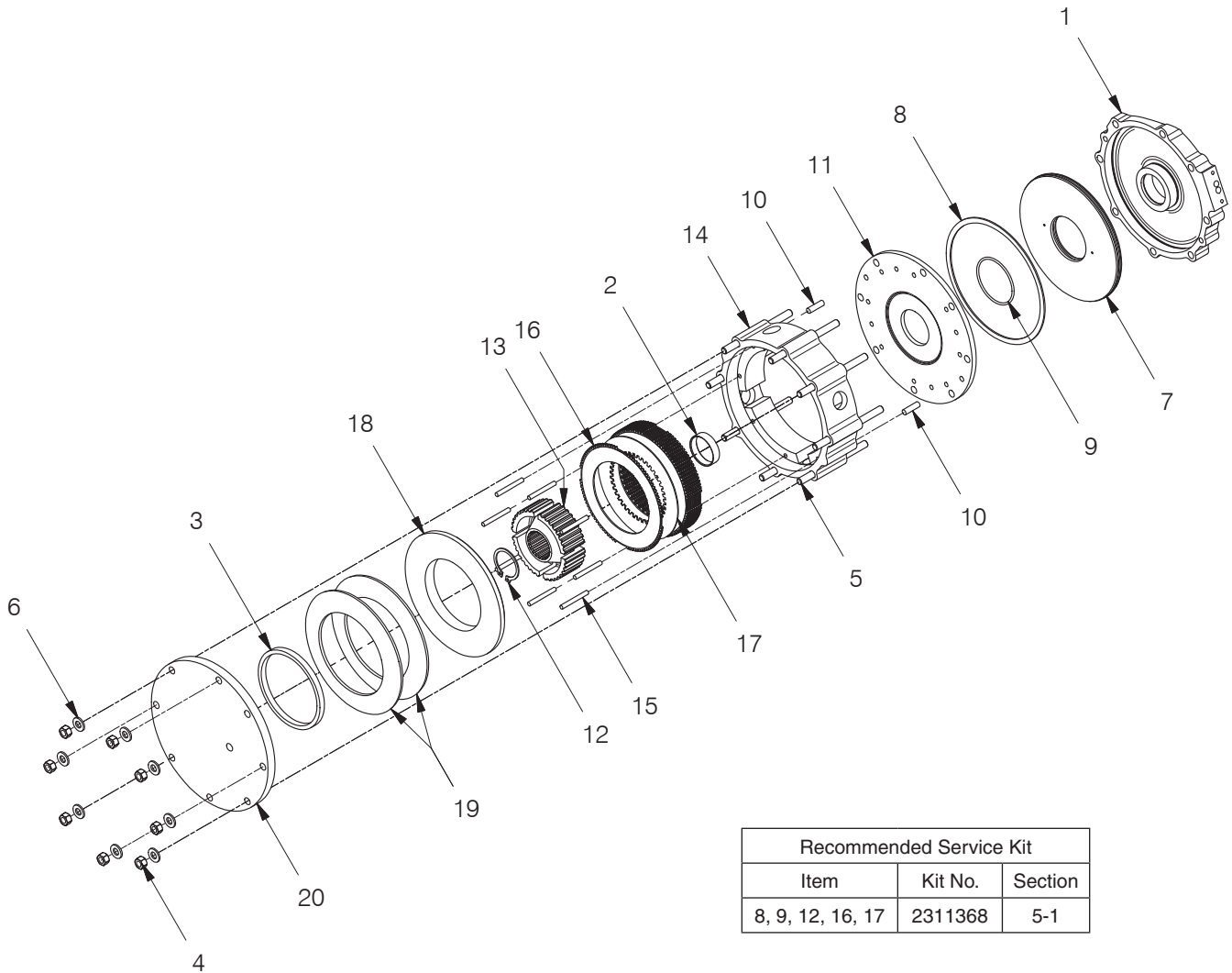
Caterpillar D9T (C75)

Gear Ratio #7 (148:1)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
2	35504W	Fitting	1	20	29758W	Cone, Roller Bearing	1
3	15305W	Plug	1	21	2304702W	Shaft, Idler	1
4	2304933W	Spacer	1	24	2302694W	Capscrew	6
5	*a 2304670W	Plate, Cover	1	25	*b 2304850W	Shim .005	AR
6	2304671W	Capscrew	11	26	*b 2304851W	Shim .007	AR
7	15158W	Washer	17	27	*b 2304852W	Shim .008	AR
8	41212W	Bearing, Ball	1	40	2304753W	Shaft, Input	1
10	12944W	Ring, Snap	1	41	2304751W	Seal	1
11	374803W	Cup, Roller Bearing	3	42	2304715W	Pilot, PTO	1
12	374804W	Cone, Roller Bearing	3	50	2304700W	Gear, 27T	2
13	2304706W	Spacer	1	51	2304707W	Spacer	2
14	2304711W	Shim .005	AR	52	2304731W	Housing, Gear Box	1
15	2304712W	Shim .007	AR	53	15887W	O-Ring	1
16	2304713W	Shim .020	AR				
17	2304660W	Gear, 36T	2				
18	12963W	Ring, Snap	2				
19	45733W	Cup, Roller Bearing	1				
				*a	Use 264159W Sealant		
				*b	Use 280472W Adhesive Sealant		

Oil Brake

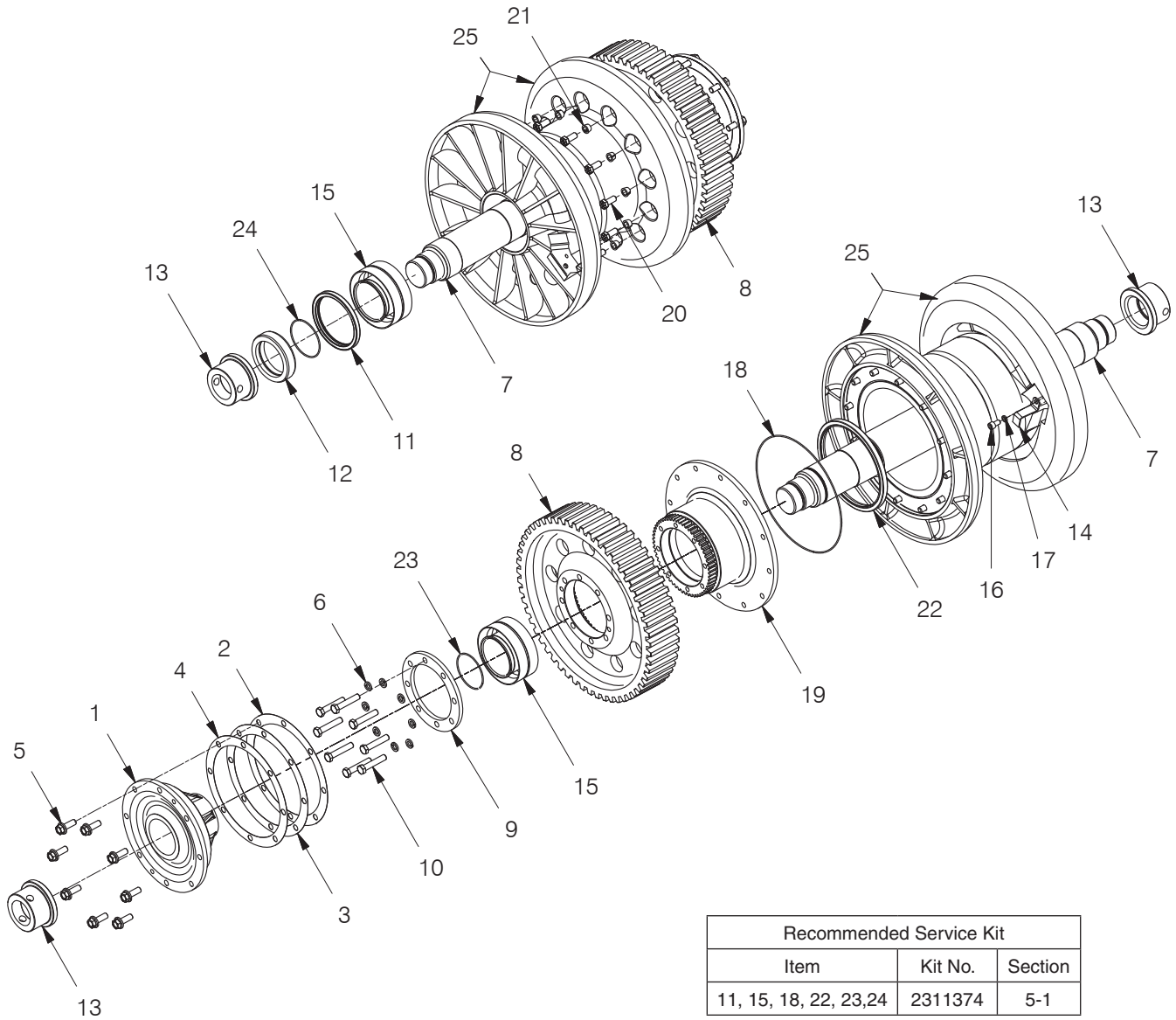


Recommended Service Kit		
Item	Kit No.	Section
8, 9, 12, 16, 17	2311368	5-1

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2305053W	Assembly, Brake	1	12	58905W	. Ring, Snap	1
1	*a 2305047W	. Housing, Piston	1	13	131985W	. Hub	1
1	*b 278791W	. Housing, Piston	1	14	265400W	. Cage	1
2	193604W	. Spacer	1	15	267521W	. Pin, Thrust	8
3	*c 2304973W	. Limiter, Stroke	1	16	328716W	. Disc, Friction	10
4	199594W	. Nut	8	17	264062W	. Plate, Separator	9
5	138908W	. Stud	8	18	287930W	. Ring	1
6	221775W	. Washer	8	19	131990W	. Spring	2
7	140401W	. Piston	1	20	182198W	. Cover	1
8	131982W	. Seal, Brake Piston	1				
8	*d 2313082	. Seal, Brake Piston	1	*a	Used on S/N AW12E-1106 thru AW12E-1112		
9	131983W	. O-Ring	1	*b	First Used on S/N AW12E-1113		
9	*d 15878W	. O-Ring	1	*c	First Used on S/N AW12E-1106 - Needed on All E-Controls Only		
10	92867W	. Pin, Dowel	2	*d	Included in Cold-Weather Seal Kit, P/N 2313084		
11	140447W	. Plate, Pressure	1				

Drum Shaft Group

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Recommended Service Kit		
Item	Kit No.	Section
11, 15, 18, 22, 23,24	2311374	5-1

Drum Shaft Group

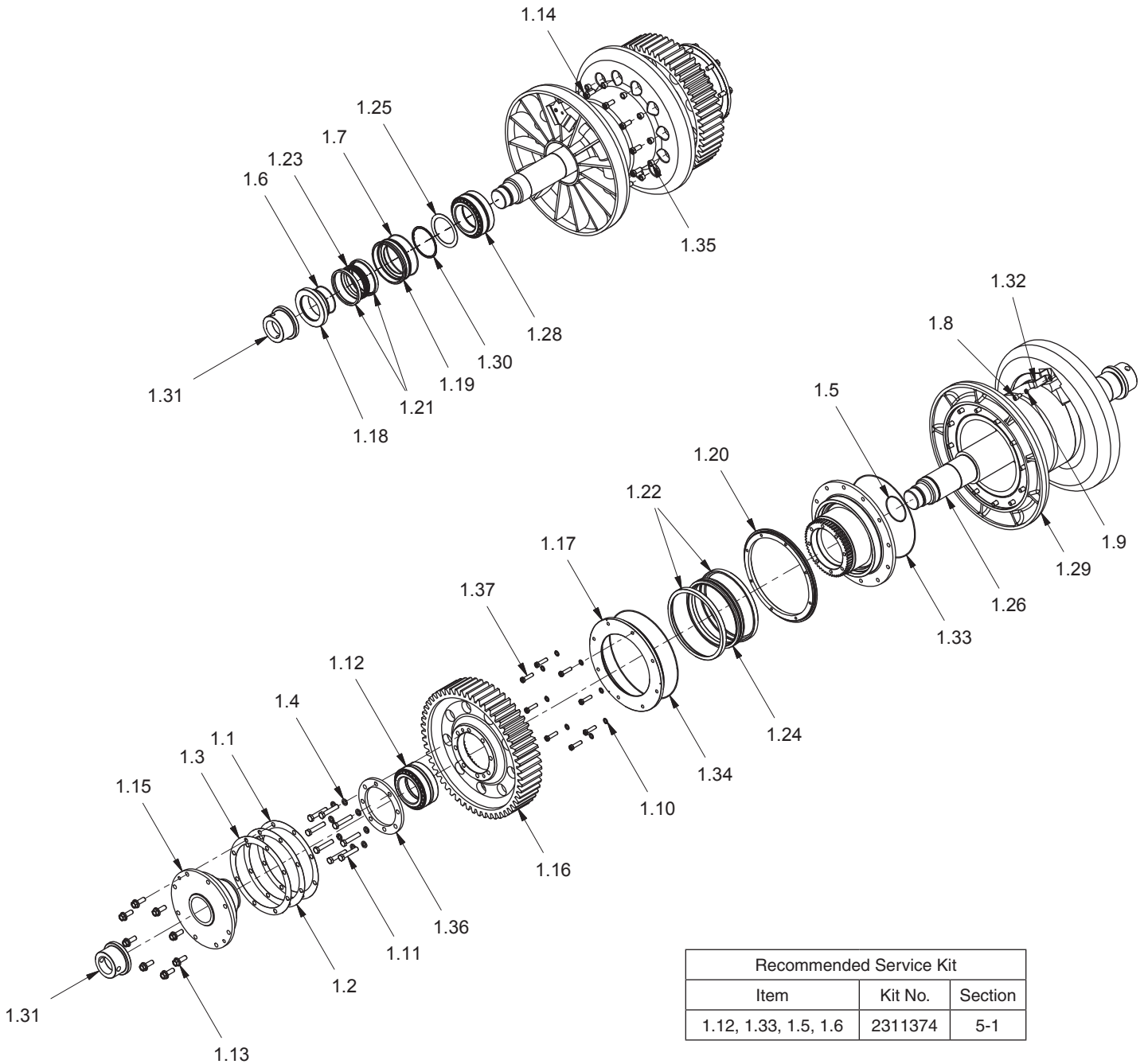
Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*b 172802W	Retainer, Drum Shaft	1	14	274908W	Keeper	1
1	*c 2310950	Retainer, Drum Shaft	1	15	230329W	Bearing	2
2	133274W	Shim .005	AR	16	16321W	Capscrew	1
3	133275W	Shim .007	AR	17	177949W	Washer	1
4	133276W	Shim .020	AR	18	39764W	O-Ring	1
5	2303905W	Capscrew	8	19	182178W	Adapter	1
6	15160W	Washer	8	20	2310891	Capscrew	12
7	*a, *b 242840W	Shaft, Drum	1	21	53559W	Thimble	12
7	*c 2310949	Shaft, Drum	1	22	141149W	Seal, Oil	1
8	*b 95496W	Gear, Drum	1	23	15886W	O-Ring	1
8	*c 2310951	Gear, Drum	1	24	15888W	O-Ring	1
9	95497W	Ring, Retainer	1	25	182179W	Drum, 14 inch	1
10	221637W	Capscrew	8				
11	44570W	Seal, Oil	1		*a	Use 280472W Adhesive Sealant	
12	172800W	Spacer	1		*b	Last Used on S/N AW12E-1481	
13	242833W	Nut, Drum Shaft	2		*c	First Used on S/N AW12E-1482	

Drum Shaft Group

With Extreme Seal

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Recommended Service Kit		
Item	Kit No.	Section
1.12, 1.33, 1.5, 1.6	2311374	5-1

Drum Shaft Group

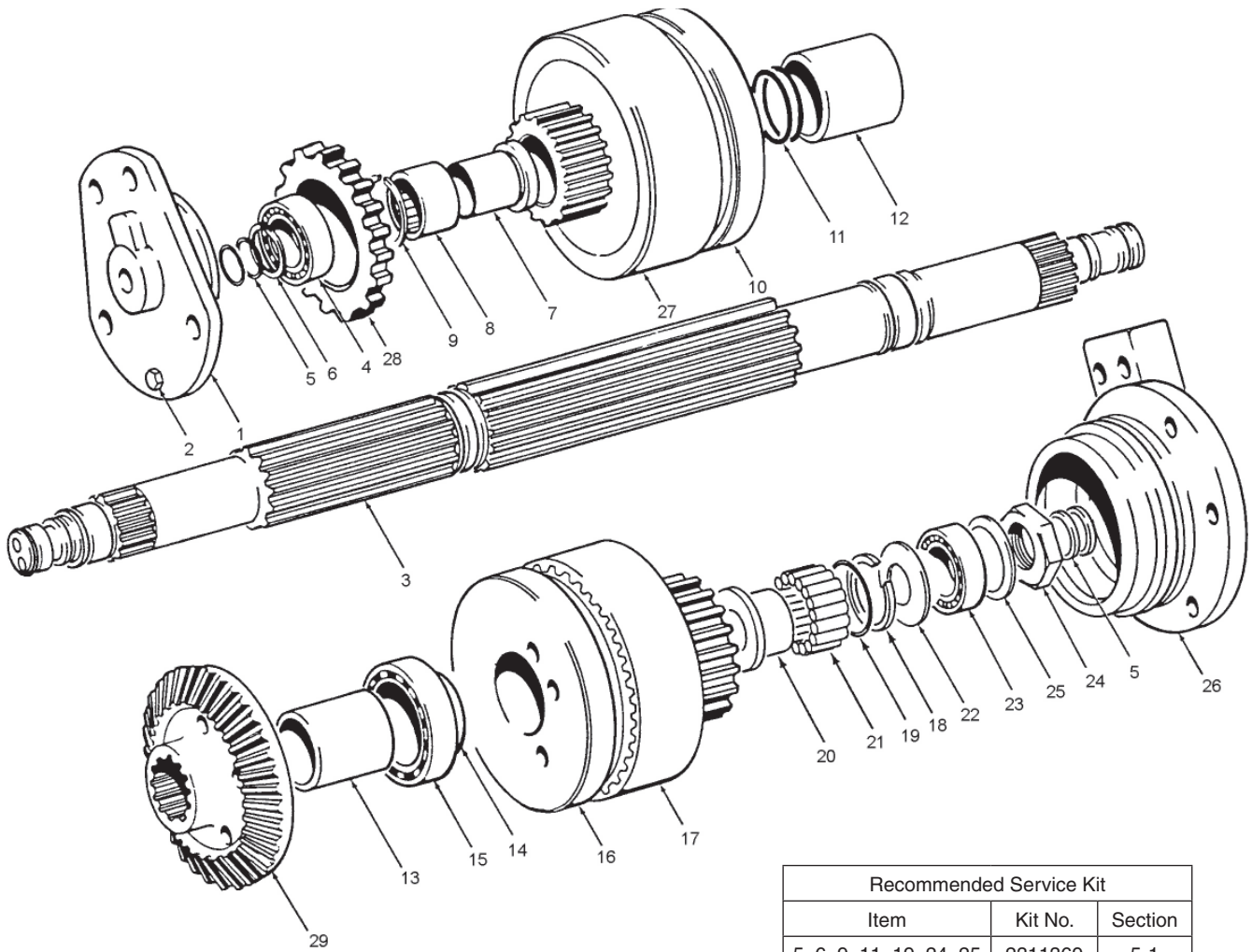
With Extreme Seal

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Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2315269	Group, Drum Shaft - Extreme Seal 1					
1.1	133274W	. Shim .005	AR	1.20	2315080	. Ring, Backing	1
1.2	133275W	. Shim .007	AR	1.21	2315081	. Adapter, Ring	2
1.3	133276W	. Shim .020	AR	1.22	2315082	. Adapter, Ring	2
1.4	15160W	. Washer	8	1.23	2315083	. Seal, Duo-Cone	1
1.5	15886W	. O-Ring	1	1.24	2315084	. Seal, Duo-Cone	1
1.6	15888W	. O-Ring	1	1.25	2315261	. Washer, Thrust	1
1.7	15898W	. O-Ring	1	1.26	2315268	. Shaft, Drum	1
1.8	16321W	. Capscrew	1	1.27	2315346	. Adapter	1
1.9	177949W	. Washer	1	1.28	2315348	. Bearing	1
1.10	207563W	. Seal	8	1.29	2315354	. Drum	1
1.11	221637W	. Seal	8	1.30	2302363W	. Ring, Snap	1
1.12	230329W	. Bearing, Roller	1	1.31	242833W	. Nut, Drum Shaft	2
1.13	2303905W	. Capscrew	8	1.32	274908W	. Keeper	1
1.14	2310891	. Capscrew	12	1.33	39764W	. O-Ring	1
1.15	2310950	. Retainer, Drum Shaft	1	1.34	39765W	. O-Ring	1
1.16	2310951	. Gear, Drum	1	1.35	53559W	. Thimble	12
1.17	2315067	. Retainer, RH Outer	1	1.36	95497W	. Ring, Retainer	1
1.18	2315071	. Spacer, Retainer	1	1.37	R13811077	. Capscrew	8
1.19	2315073	. Insert, Retainer	1	1.38	2300300W	Oil, Hydraulic	32 Gallon

Bevel Gear Shaft

Gear Ratios #1 (46.1:1), #3 (60.4:1), #4 (83.6:1), & #6 (148.8:1)



Recommended Service Kit		
Item	Kit No.	Section
5, 6, 9, 11, 19, 24, 25	2311369	5-1
4, 8, 15, 21, 23	2311372	5-1

Bevel Gear Shaft

Gear Ratios #1 (46.1:1), #3 (60.4:1), #4 (83.6:1), & #6 (148.8:1)

Key

- A - 46.1:1 Gear Ratio
- B - 60.4:1 Gear Ratio
- C - 83.6:1 & 148.8:1 Gear Ratio

Item	Part No.	Description	Qty			Item	Part No.	Description	Qty		
			A	B	C				A	B	C
1	263060W	Retainer, Bearing	1	1	1	18	12990W	Ring, Snap	1	1	1
1	263454W	Shim .005	AR	AR	AR	19	39675W	O-Ring, Reverse	2	2	2
1	263455W	Shim .007	AR	AR	AR	20	95478W	Carrier, Bearing	1	1	1
1	263456W	Shim .020	AR	AR	AR	21	230394W	Bearing, Roller	2	2	2
2	16830W	Capscrew	5	5	5	22	175189W	Washer	1	1	1
2	15158W	Lockwasher	5	5	5	23	30080W	Cone, Bearing	1	1	1
3	314847W	Shaft, Bevel	1	1	1	23	30059W	Cup, Bearing	1	1	1
4	30069W	Cone, Bearing	1	1	1	24	32967W	Locknut	1	1	1
4	30059W	Cup, Bearing	1	1	1	25	175193W	Lockwasher	1	1	1
5	95581W	Ring, Seal	4	4	4	26	263070W	Retainer, Bearing	1	1	1
6	263457W	Ring, Snap	1	1	1	26	263464W	Shim .005	AR	AR	AR
7	263458W	Carrier, Bearing	1	1	1	26	263465W	Shim .007	AR	AR	AR
8	230393W	Bearing, Roller	1	1	1	26	263466W	Shim .020	AR	AR	AR
9	12990W	Ring, Snap	1	1	1	27	193594W	Spider, 19T	--	--	1
10	-----	Clutch, Forward (2-38)	1	1	1	27	193598W	Spider, 24T	1	1	--
11	39678W	O-Ring, Forward	2	2	2	28	274912W	Gear, 80T	1	1	1
12	193601W	Spacer	1	1	1	28	*a 2304730W	Gear, 91T	--	--	1
13	263460W	Spacer	1	1	1	29	263471W	Gear	--	1	1
14	263461W	Spacer	1	1	1	29	263470W	Gear	1	--	--
15	41217W	Bearing, Ball	1	1	1						
16	-----	Clutch, Rev. (See 2-36)	1	1	1						
17	193591W	Spider	1	1	1						

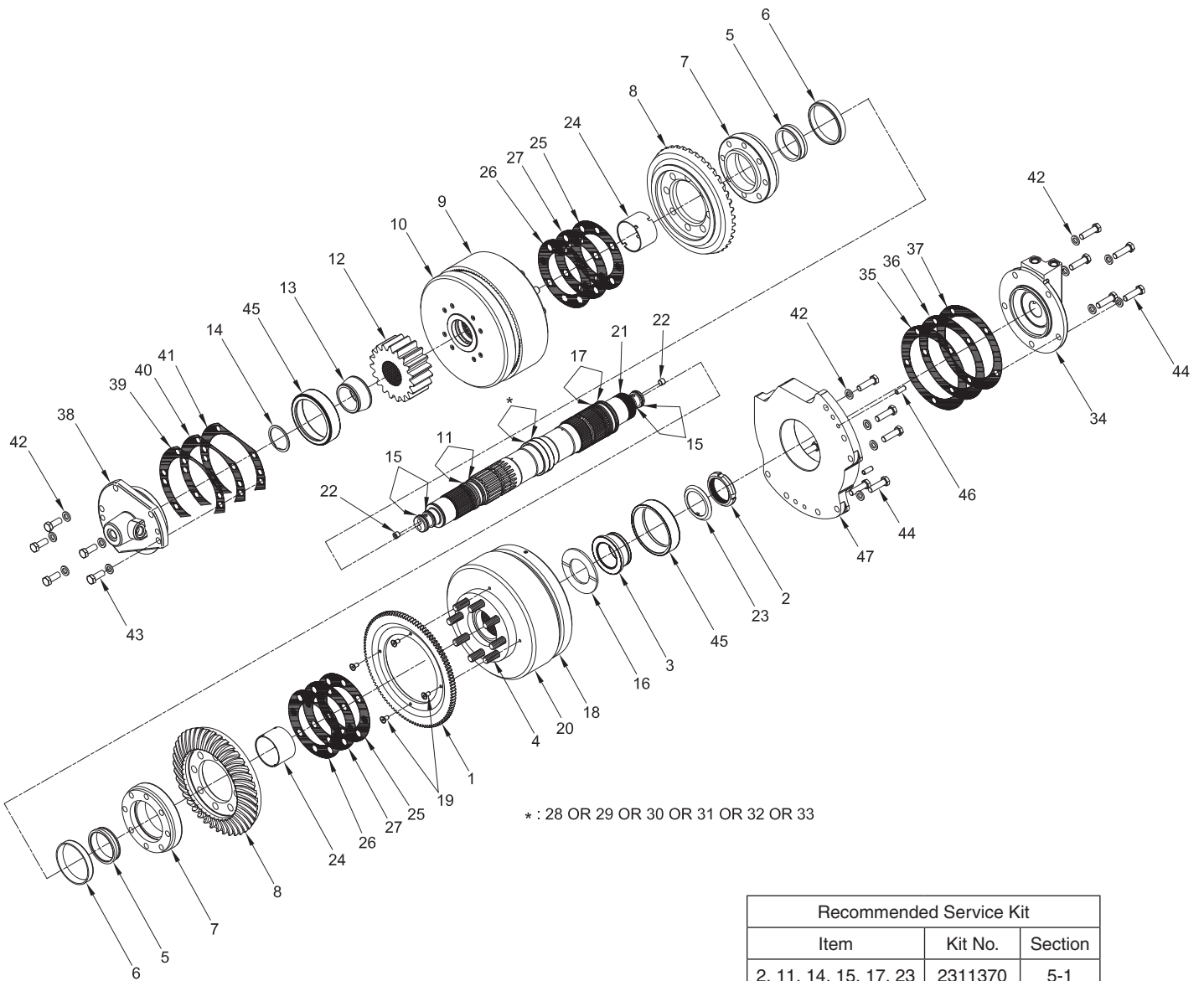
*a Used Only On Winches with 148.8:1 Ratio

Bevel Gear Shaft

Gear Ratio #7 (148:1)

Equal Speed

Page 1 of 2



Recommended Service Kit		
Item	Kit No.	Section
2, 11, 14, 15, 17, 23	2311370	5-1

Bevel Gear Shaft

Gear Ratio #7 (148:1)

Equal Speed

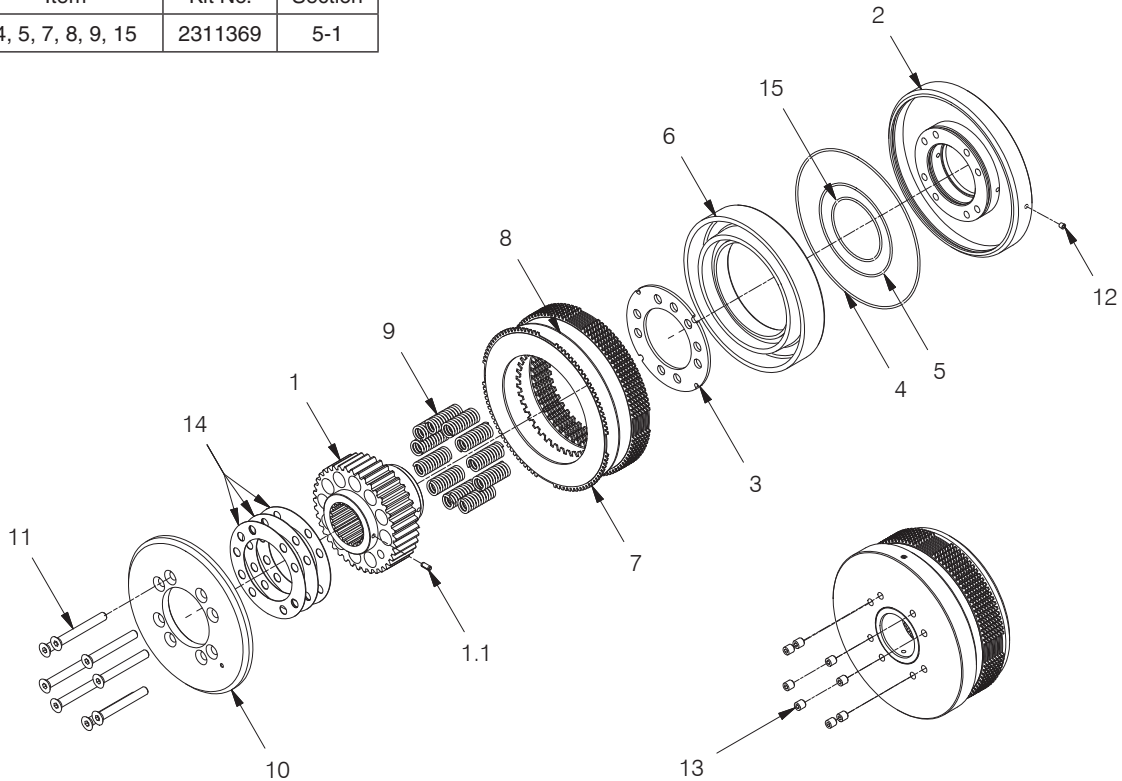
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Item	Part No.	Description	Qty	Item	Part No.	Description	Qty	
1	*b	2306450W	Gear, 108T	1	28	2310036	Spacer, 0.540" Long	AR
1	*c	2310510	Gear, 108T	1	29	2310037	Spacer, 0.544" Long	AR
2		32967W	Locknut, Bearing	1	30	2310038	Spacer, 0.552" Long	AR
3		30080W	Bearing Cone	1	31	2310039	Spacer, 0.556" Long	AR
4		220190W	Capscrew	16	32	2310040	Spacer, 0.564" Long	AR
5		2307949W	Cone, Bearing	4	33	2310041	Spacer, 0.568" Long	AR
6		2307950W	Cup, Bearing	4	34	2306551W	Retainer, Bearing	1
7		2307952W	Hub, Clutch	2	35	2306552W	Shim .005	AR
8		211504W	Gear - Spiral Bevel Assembly	2	36	2306553W	Shim .007	AR
9		2307951W	Housing, Clutch - RH	1	37	2306554W	Shim .020	AR
10	*d	2306439W	Assembly, Clutch - Reverse (2-39)	1	38	263060W	Retainer, Bearing	1
10	*e	2310578	Assembly, Clutch - RH (2-39)	1	39	263454W	Shim .005	AR
11		39495W	O-Ring	2	40	263455W	Shim .007	AR
12		2306435W	Gear, 19T	1	41	263456W	Shim .020	AR
13		30069W	Bearing, Cone	1	42	15158W	Washer	17
14		263457W	Snap Ring, Ext.	1	43	16830W	Capscrew	5
15		95581W	Ring, Seal	4	44	221569W	Capscrew	12
16		2310781	Washer	1	45	30059W	Cup, Roller Bearing	2
17		39678W	O-Ring	2	46	*f Y02F-1212	Pin	2
18	*d	2306437W	Assembly, Clutch - Forward (2-39)	1	46	*g 1151722W	Pin	2
18	*e	2310577	Assembly, Clutch - LH (2-39)	1	47	2306541W	Plate, Frame Insert	1
19	*a, *b	218068W	Pin	4				
19	*c	Y09G-0510	Capscrew	4	*a	Use 257291W Adhesive		
20	*b	2307953W	Housing, Clutch	1	*b	Last Singularly Used on S/N AW12E-1245 Only, Last Used on S/N AW12E-1300		
20	*c	2310511	Housing, Clutch - LH	1	*c	First Singularly Used on S/N AW12E-1246 Only, First Continuously Used on S/N AW12E-1301		
21		2306441W	Shaft, Bevel Gear	1	*d	Last Used on S/N AW12E-1292		
22		268492W	Plug, Special	2	*e	First Used on S/N AW12E-1293		
23		175193W	Lockwasher	1	*f	Last Used on S/N AW12E-1381		
24		2307954W	Spacer, 1.978" Long	2	*g	First Used on S/N AW12E-1382		
25		2307957W	Shim .020	AR				
26		2307955W	Shim .005	AR				
27		2307956W	Shim .007	AR				

Clutch

Gear Ratios #1 (46.1:1), #3 (60.4:1), #4 (83.6:1), & #6 (148.8:1)

Recommended Service Kit		
Item	Kit No.	Section
4, 5, 7, 8, 9, 15	2311369	5-1



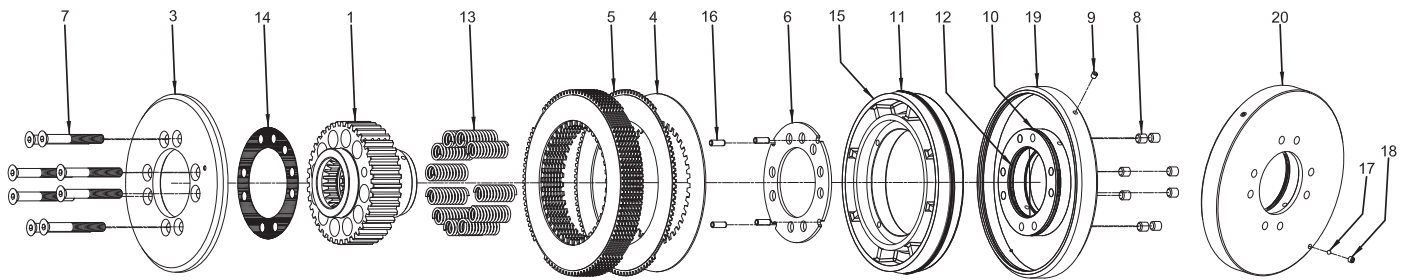
Key

- A - Forward Clutch
- B - Reverse Clutch

Item	Part No.	Description	Qty		Item	Part No.	Description	Qty	
			A	B				A	B
	31773W	Clutch, Forward	1	--	7	328716W	. Disc, Friction	8	8
	31774W	Clutch, Reverse	--	1	8	264062W	. Plate, Separator	8	8
1	317766W	. Hub, Clutch - Forward	1	--	9	264192W	. Spring	11	11
1.1	19899W	. Pin, Slotted	1	--	10	95473W	. Plate	1	1
1	317764W	. Hub, Clutch - Reverse	--	1	11	95474W	. Capscrew	8	8
2	261557W	. Plate, Retainer	1	1	12	141348W	. Plug, Pipe	1	3
3	2307971W	. Retainer	1	1	13	17118W	. Screw	8	8
4	89775W	. O-Ring	1	1	14	96735W	. Shim	AR	AR
4	*a 14718W	. O-Ring	2	2	15	79978W	. O-Ring	1	1
5	89776W	. O-Ring	1	1	15	*a R13802782	. O-Ring	2	2
5	*a 15895W	. O-Ring	2	2					
6	95469W	. Piston, Clutch	1	1					
						*a	Included in Cold-Weather Seal Kit, P/N 2313084		

Clutch

Gear Ratio #7 (148:1)



Recommended Service Kit		
Item	Kit No.	Section
4, 5, 10, 11, 12, 13	2311370	5-1

Key

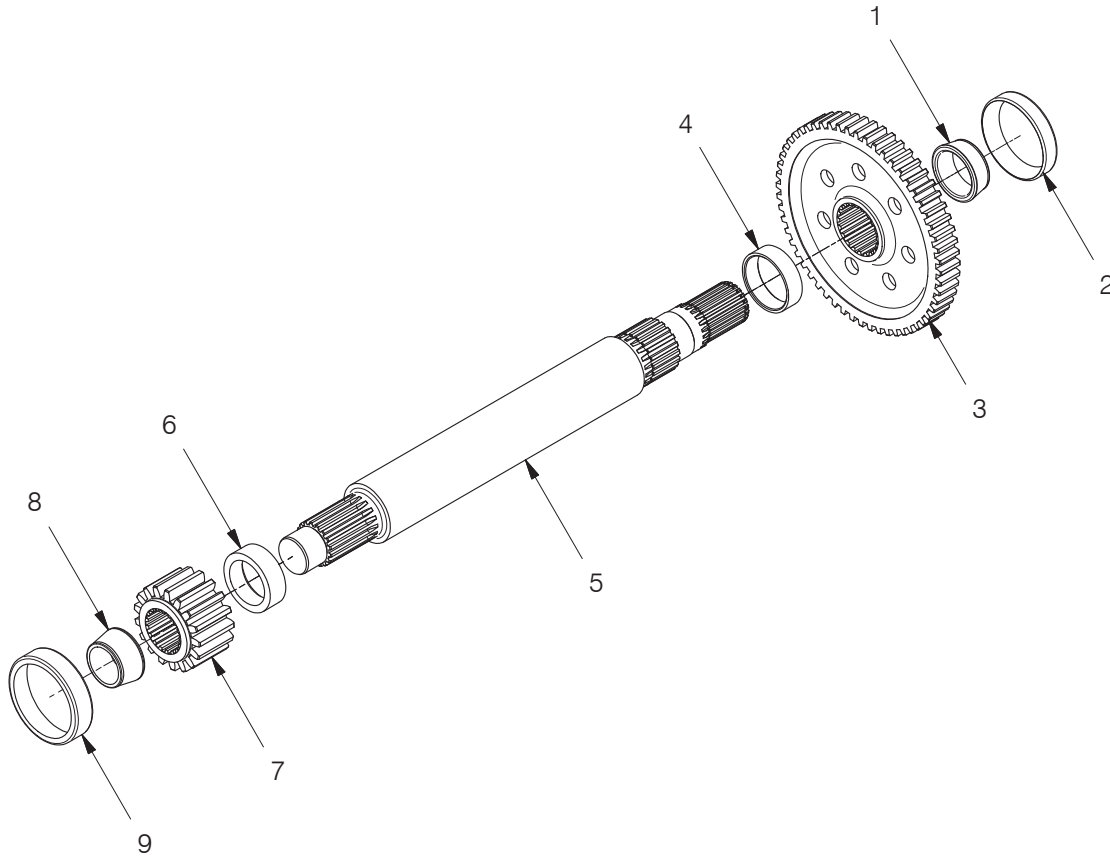
- A - Reverse Clutch
- B - Forward Clutch

Item	Part No.	Description	Qty		Item	Part No.	Description	Qty	
			A	B				A	B
	*a 2306439W	Clutch Assembly, Reverse	1	--	12	79978W	. O-Ring	1	1
	*b 2310578	Clutch Assembly, RH	1	--	12	*c R13802782	. O-Ring	2	2
	*a 2306437W	Clutch Assembly, Forward	--	1	13	264192W	. Spring	11	11
	*b 2310577	Clutch Assembly, LH	--	1	14	96735W	. Shim .031	AR	AR
1	2306438W	. Hub, Clutch - RH	1	--	15	2310356	. Clutch Assembly, Piston	1	1
1	2306436W	. Hub, Clutch - LH	--	1	16	222711W	. Pin	4	4
3	95473W	. Plate	1	1	17	*b 68964W	. Ball, Steel	1	1
4	264062W	. Plate, Separator	8	8	18	*b 2310528	. Plug, Orifice	1	1
5	328716W	. Disc, Friction	8	8	19	*a 261557W	. Housing, Piston	1	1
6	2307971W	. Retainer	1	1	20	*b 2310533	. Housing, Piston	1	1
7	95474W	. Capscrew	8	8					
8	17118W	. Setscrew	8	8					
9	141348W	. Plug, Pipe	1	1					
10	89775W	. O-Ring	1	1					
10	*c 14718W	. O-Ring	2	2					
11	89776W	. O-Ring	1	1					
11	*c 15895W	. O-Ring	2	2					

Note: For Ratio #7 clutches, Forward Clutch is on the right-hand side, and Reverse Clutch is on the left-hand side.

- *a** Last Used on S/N AW12E-1292
- *b** First Used on S/N AW12E-1293
- *c** Included in Cold-Weather Seal Kit, P/N 2313084

Brake Shaft



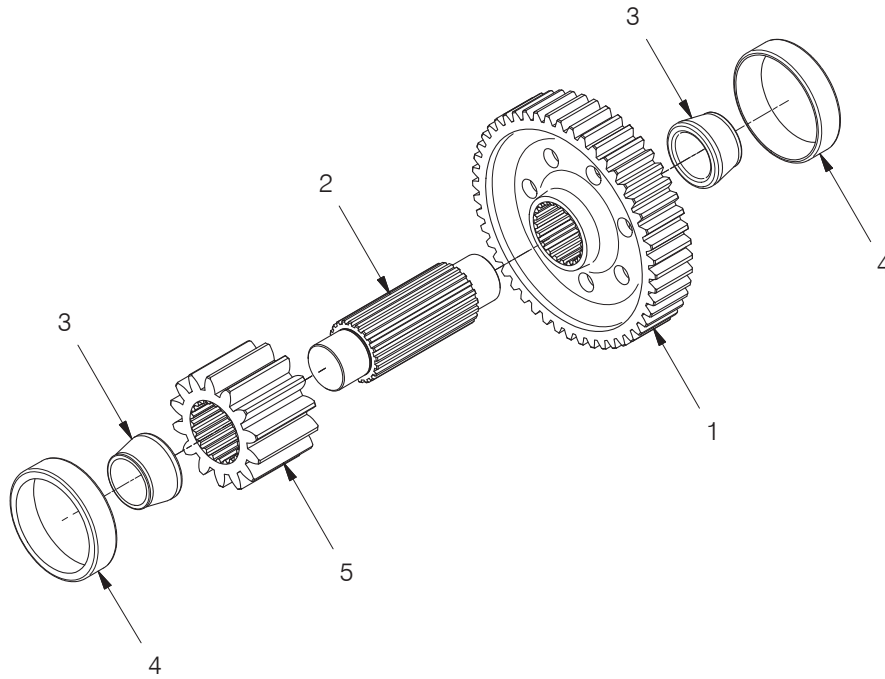
Recommended Service Kit		
Item	Kit No.	Section
1, 2, 8, 9	2311371	5-1

Key

A - 48.1:1 & 60.4:1 Gear Ratio
 B - 83.6:1 & 148.8:1 Gear Ratio

Item	Part No.	Description	Qty		Item	Part No.	Description	Qty	
			A	B				A	B
1	30101W	Cone, Bearing	1	1	5	308413W	Shaft, Brake	1	1
2	30100W	Cup, Bearing	1	1	6	94447W	Spacer	1	1
3	277496W	Gear, 51T	1	--	7	95489W	Gear	1	1
3	95816W	Gear, 56T	--	1	8	230326W	Cone, Bearing	1	1
4	95488W	Spacer	1	1	9	30104W	Cup, Bearing	1	1

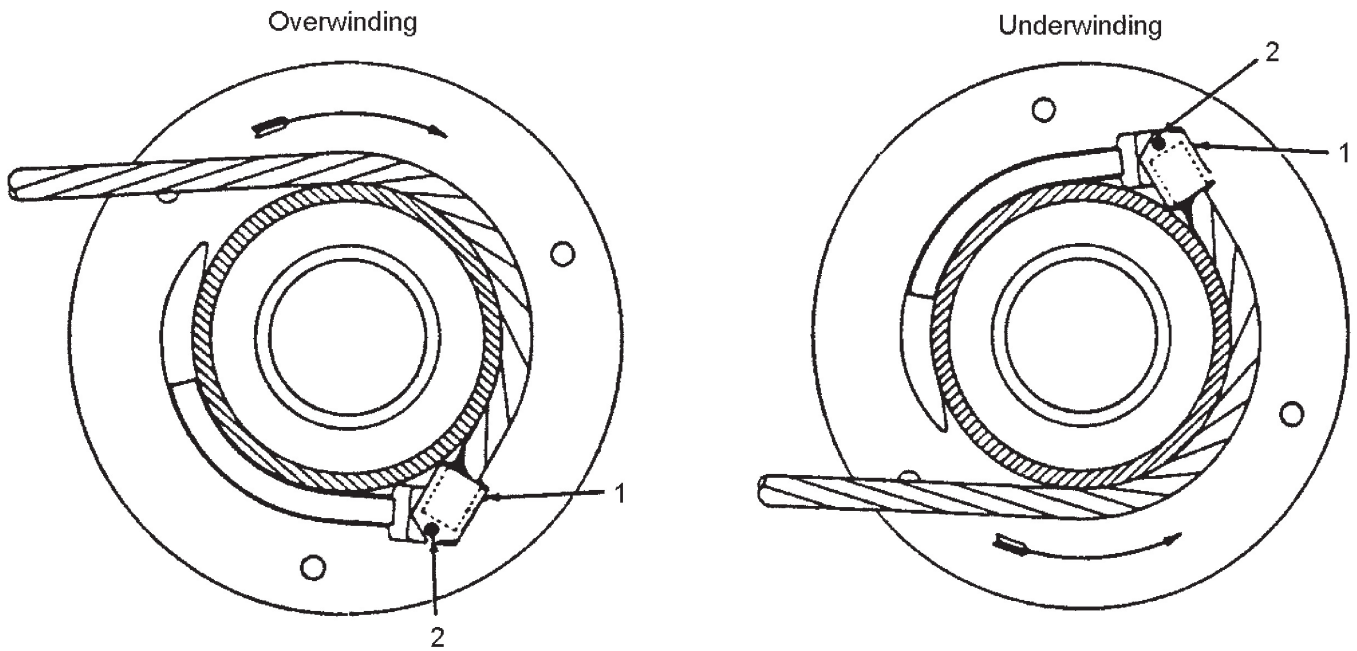
Intermediate Gear Shaft



Recommended Service Kit		
Item	Kit No.	Section
3, 4	2311374	5-1

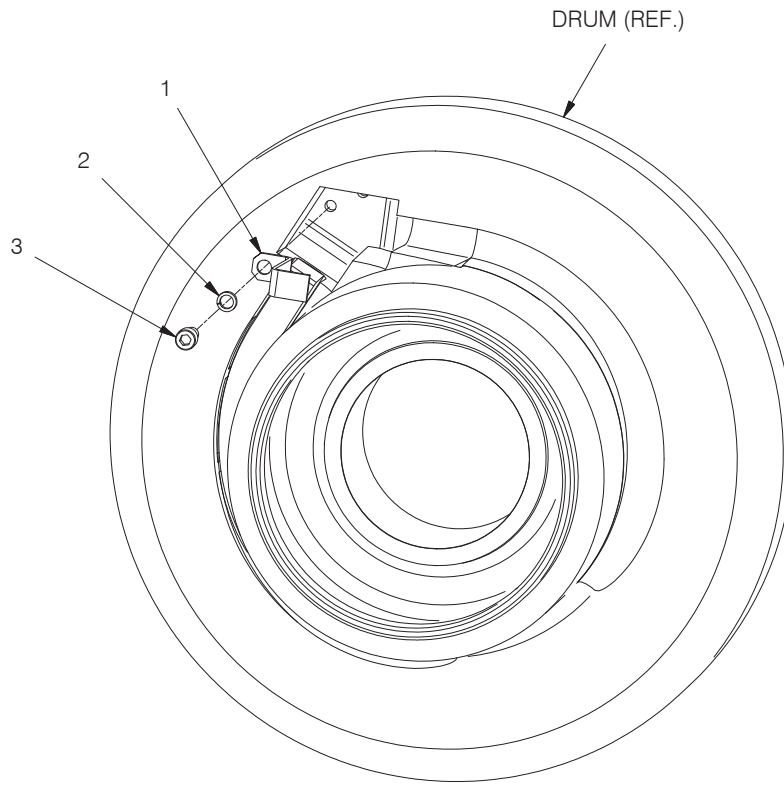
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	95494W	Gear	1	4	230327W	Cup, Bearing	2
2	95492W	Shaft	1	5	95493W	Gear	1
3	231011W	Cone, Bearing	2				

Wire Rope Lock



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	274908W	Keeper, Ferrule	1	2	177949W	Lockwasher	1
2	16321W	Capscrew	1				

Wire Rope Lock



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	274908W	Keeper, Ferrule	1	3	16321W	Capscrew	1
2	177949W	Lockwasher	1				

Intentionally Blank

Hydraulics/Controls

Power Controls

Control Lever Assembly	3-25 & 3-26
Control Valve	3-8 thru 3-10
Handling Gear	3-11 thru 3-24
Hydraulic Group	3-2 thru 3-7

Electronic Controls

Common Parts	3-120 & 3-121
Control Lever Assembly	3-122 thru 3-125
Control Lever Replacement Kit	3-126 & 3-127
Electronic Controls Adapter Cable Kit	3-118
Electronic Controls Module Selection	3-128
External Wiring Harness Repair Kit	3-61
GENII Electronic Controls Conversion Kit	3-113 thru 3-117
Handling Gear	3-70 thru 3-112
Hydraulic Group	3-28 thru 3-60
Internal Wiring	3-62 thru 3-65
Valve Manifold Assembly	3-66 & 3-69

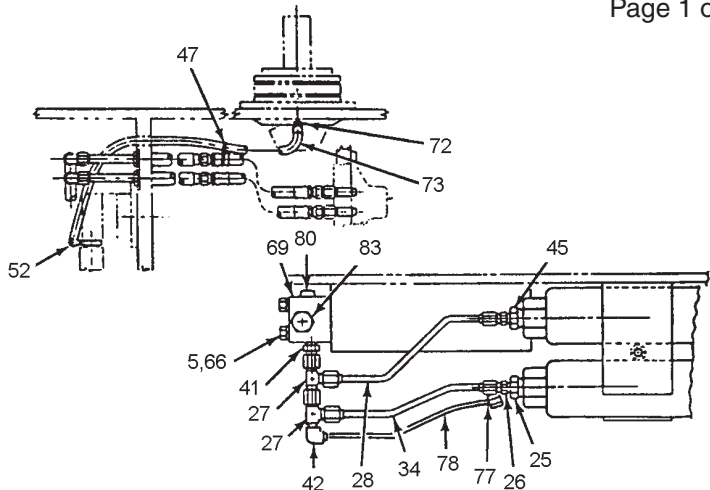
Common Parts

Hydraulic Pump Assembly	3-129 thru 3-133
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Hydraulic Group - Power Controls

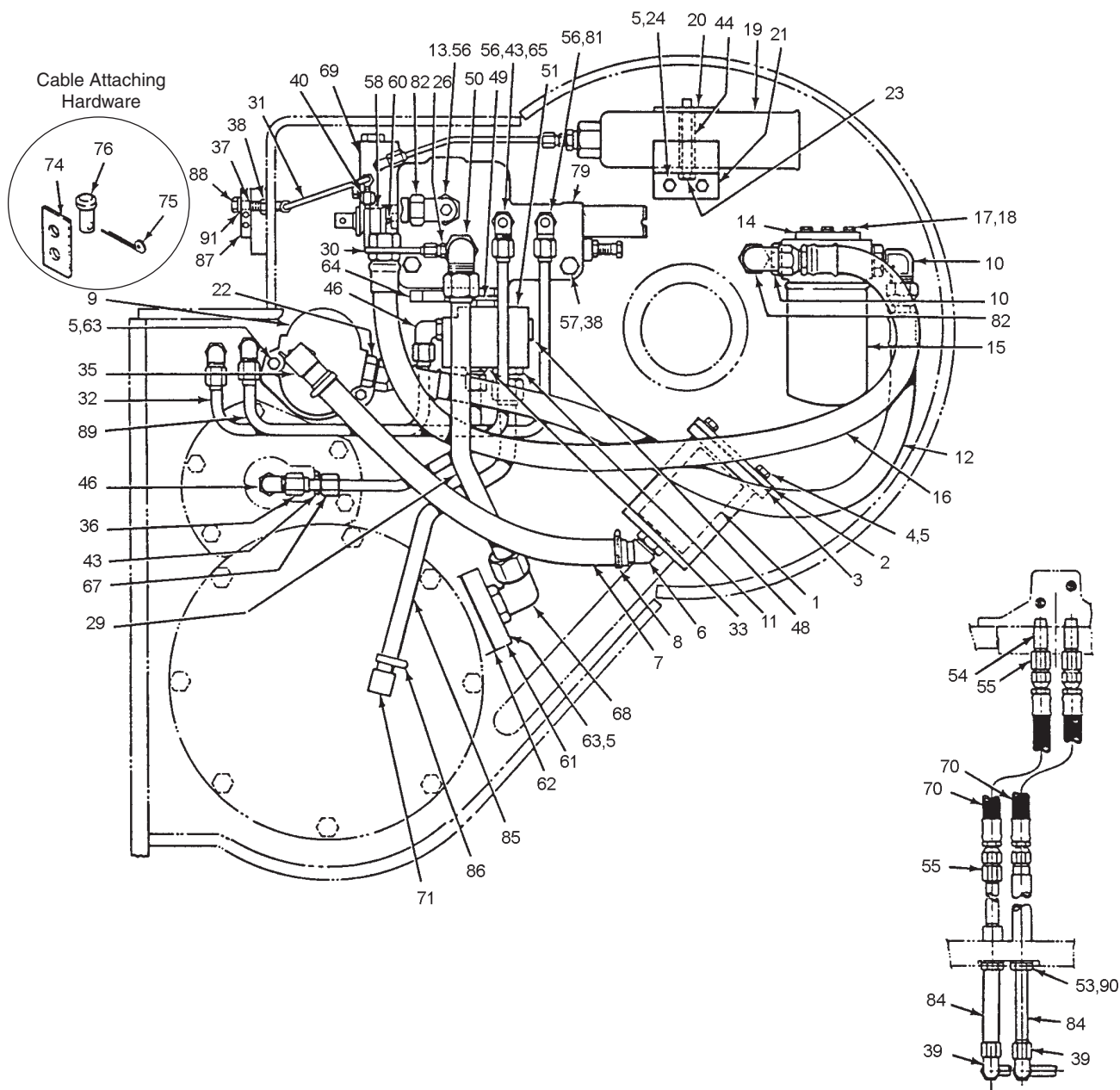
Last Used on S/N W12E-1599 & AW12E-1000

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Parts Service Gram	
Item	Gram
15	Contact your dealer

Recommended Service Kit		
Item	Kit No.	Section
3, 15A	2311165	5-1
3, 62, 74	281939W	5-1



Hydraulic Group - Power Controls

Last Used on S/N W12E-1599 & AW12E-1000

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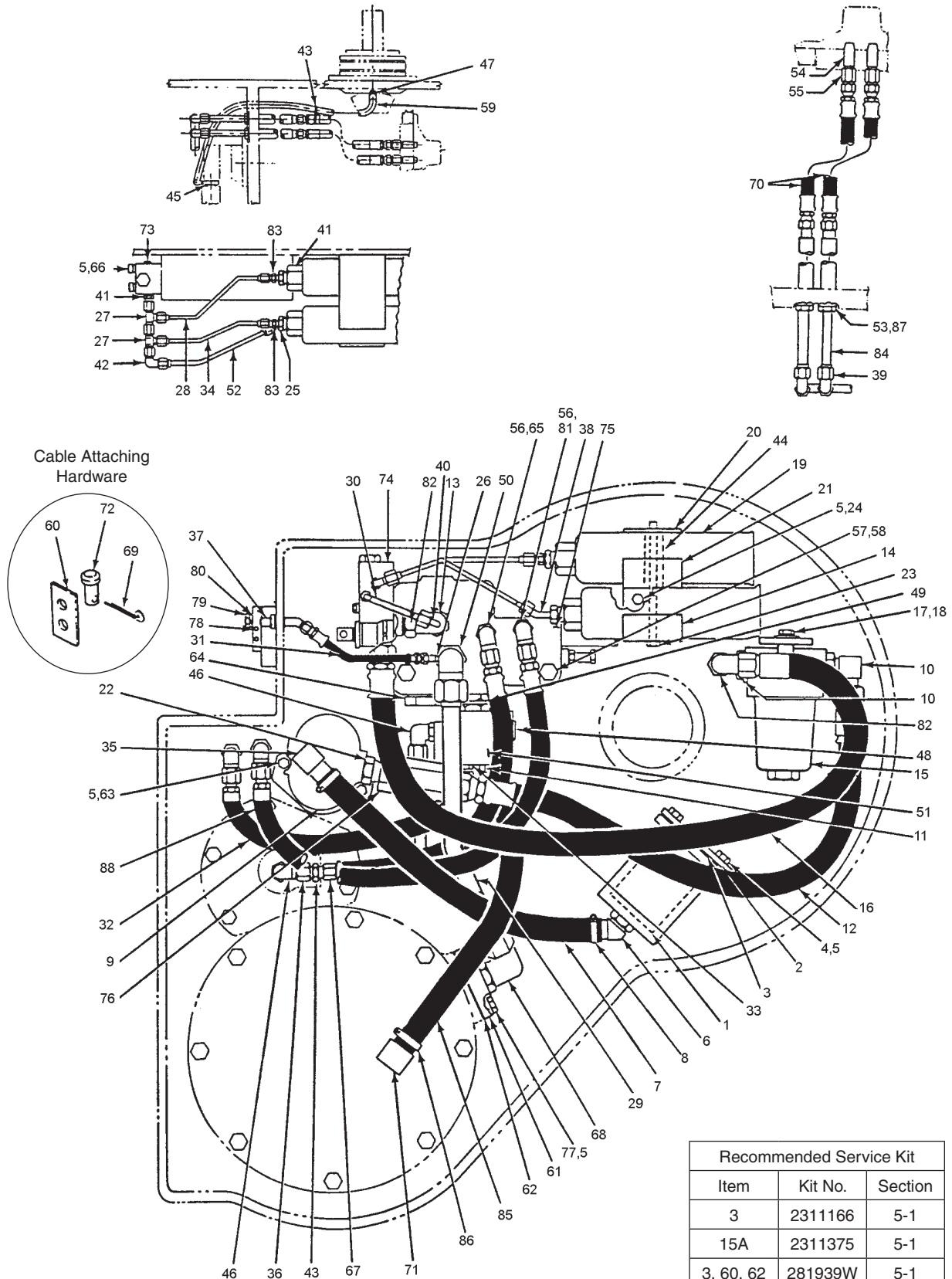
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	219172W	Strainer	1	46	16484W	. O-Ring	1
1	156689W	. O-Ring	1	47	*a 129563W	Clamp	1
2	265331W	Cover, Strainer	1	48	15963W	Fitting	1
3	265332W	Gasket	1	49	225232W	Fitting	1
4	16597W	Capscrew	4	49	16487W	. O-Ring	1
5	15156W	Lockwasher	12	50	225712W	Fitting	1
6	276090W	Fitting	1	50	16982W	. O-Ring	1
6	16486W	. O-Ring	1	51	225701W	Manifold	1
7	277234W	Hose	1	52	*a 14500W	Fitting	1
8	209639W	Clamp	2	53	14761W	Nut	2
9	-----	Pump, Hydraulic (3-129)	1	54	19589W	Fitting, Nipple	2
10	16561W	Fitting	2	55	14712W	Fitting	2
10	16486W	. O-Ring	1	56	14349W	Fitting	2
11	222505W	Fitting	1	57	198385W	Capscrew	3
11	16486W	. O-Ring	1	58	15158W	Lockwasher	3
12	124588W	Hose	1	59	279397W	Cam	1
13	164703W	Fitting	1	60	68370W	Pin, Slotted	1
13	16486W	. O-Ring	1	61	279392W	Block	1
14	277661W	Plate	1	62	196022W	Gasket	1
15	354125W	Assembly, Filter	1	63	16828W	Capscrew	1
15	277490W	. Element	1	64	226450W	Valve	1
16	277235W	Hose	1	64	16487W	. O-Ring	1
17	18498W	Capscrew	3	65	219246W	Fitting	1
18	15155W	Lockwasher	3	65	16484W	. O-Ring	1
19	327610W	Accumulator	3	66	241778W	Screw	2
20	267487W	Bracket	1	67	277237W	Tube	1
21	267488W	Plate	1	68	16948W	Fitting	1
22	89669W	Fitting	1	68	16982W	. O-Ring	1
22	16486W	. O-Ring	1	69	267018W	Valve	1
23	17258W	Capscrew	1	70	99443W	Hose	2
24	194090W	Capscrew	2	71	16165W	Fitting	1
25	69815W	Fitting	3	72	*a 339509W	Fitting, Special	1
26	16669W	Fitting	2	73	*a 158862W	Hose	1
27	17059W	Fitting	2	74	303946W	Gasket	1
28	217754W	Hose	1	75	15212W	Pin, Cotter	1
29	292543W	Tube	1	76	139W	Pin	1
30	277663W	Tube	1	77	14539W	Fitting	1
31	217754W	Hose	1	78	195893W	Hose	1
32	132009W	Hose	1	79	-----	Valve, Control (3-8)	1
33	16568W	Fitting	1	80	15483W	Fitting	1
34	280256W	Hose	1	81	198063W	Fitting	1
35	276091W	Fitting	1	81	16484W	. O-Ring	1
35	16487W	. O-Ring	1	82	83857W	Fitting	2
36	88297W	Hose	1	83	16805W	Capscrew	2
37	16463W	Fitting	1	84	225233W	Connector	2
38	14539W	Fitting	1	85	127009W	Hose	1
39	16989W	Fitting	2	86	127045W	Clamp	2
40	14500W	Fitting	1	87	236417W	Bracket, Cable	1
41	14668W	Fitting	2	88	16830W	Capscrew	1
42	16987W	Fitting	1	89	96480W	Hose	1
43	16541W	Fitting	1	90	177951W	Lockwasher	2
43	16484W	. O-Ring	1	91	15158W	Lockwasher	1
44	344839W	Spacer	2				
45	327611W	Fitting	3				
46	16559W	Fitting	2				

*a Caterpillar D8L, Komatsu D375A-1
& Fiat-Hitachi/New Holland FD30B Only

Hydraulic Group - Power Controls

Used on S/N W12E-1600 & AW12E-1001 thru AW12E-1105

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Hydraulic Group - Power Controls

Used on S/N W12E-1600 & AW12E-1001 thru AW12E-1105

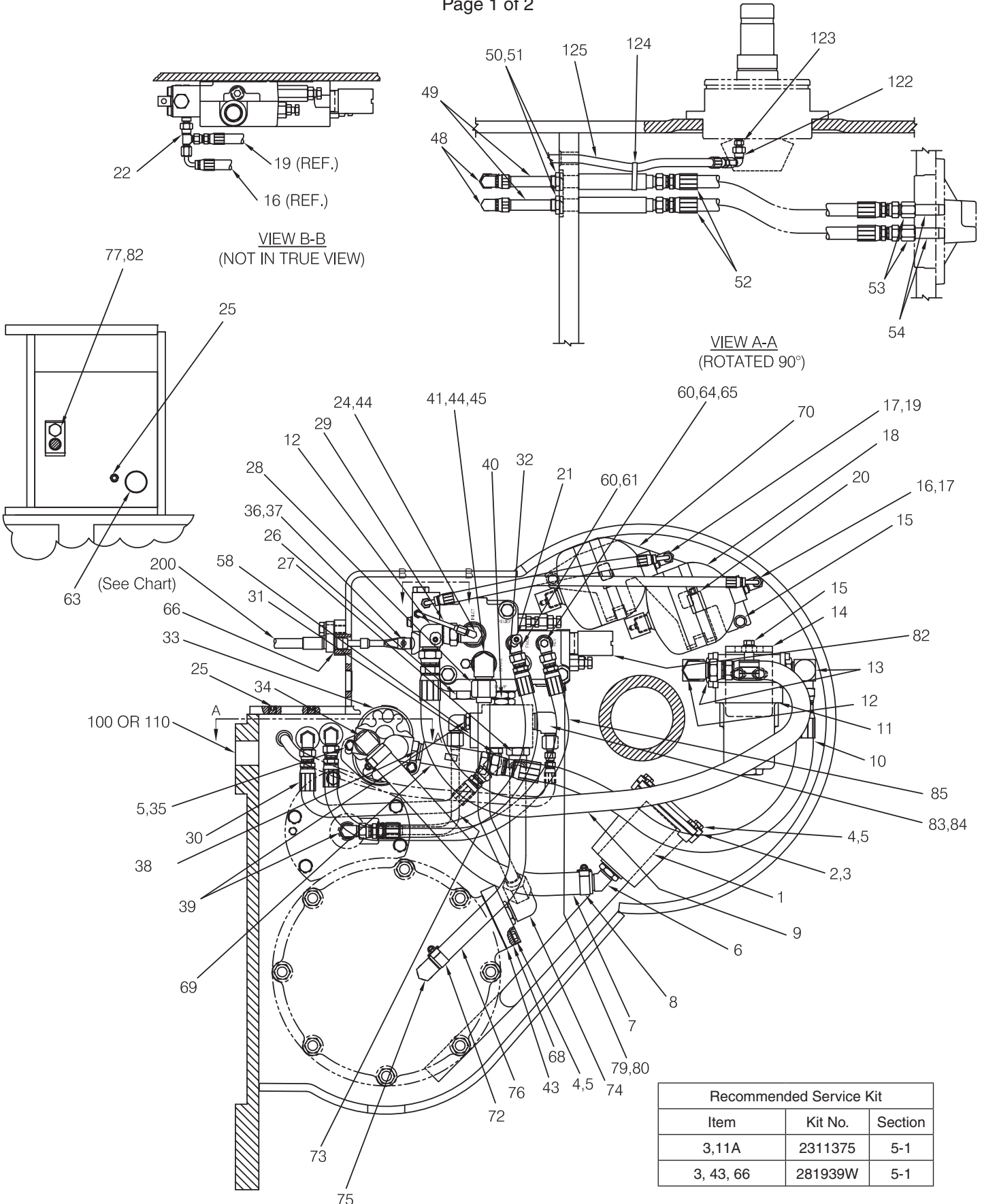
Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	219172W	Strainer	1	45	*c,*f 14500W	Fitting	1
1	156689W	. O-Ring	1	46	16559W	Fitting	2
2	265331W	Cover, Strainer	1	46	16484W	. O-Ring	1
2	*e 2300936W	Cover, Strainer	1	47	*c,*f 339509W	Fitting, Special	1
3	265332W	Gasket	1	48	15316W	Fitting	1
3	*e 2300935W	Gasket	1	49	225232W	Fitting	1
4	16597W	Capscrew	4	49	16487W	. O-Ring	1
5	15156W	Lockwasher	10	50	225712W	Fitting	1
6	276090W	Fitting	1	50	16487W	. O-Ring	1
6	16486W	. O-Ring	1	51	225701W	Manifold	1
7	277234W	Hose	1	52	383892W	Hose	1
8	209639W	Clamp	2	53	14761W	Nut	2
9	-----	Pump, Hydraulic (3-129)	1	54	19589W	Fitting, Nipple	2
10	16561W	Fitting	1	55	14723W	Fitting	2
10	16486W	. O-Ring	1	56	14349W	Fitting	2
11	222505W	Fitting	1	57	198385W	Capscrew	3
11	16486W	. O-Ring	1	58	15158W	Lockwasher	3
12	124588W	Hose	1	59	*c,*f 158862W	Hose	1
13	164703W	Fitting	1	60	303946W	Gasket	1
13	16486W	. O-Ring	1	61	279392W	Block	1
14	277661W	Plate	1	62	196022W	Gasket	1
15	279388W	Assembly, Filter	1	63	16828W	Capscrew	2
15	3001363W	. Element	1	64	226450W	Valve	1
15	55468W	. O-Ring	1	64	16487W	. O-Ring	1
15	*d 2300183W	Assembly, Filter	1	65	219246W	Fitting	1
15	*d 3001363W	. Element	1	65	16484W	. O-Ring	1
15	*d 55468W	. O-Ring	1	66	241778W	Screw	2
16	277235W	Hose	1	67	277237W	Tube	1
17	16829W	Capscrew	2	68	16948W	Fitting	1
17	*d 16598W	Capscrew	2	68	16982W	. O-Ring	1
18	15158W	Lockwasher	2	69	15212W	Pin, Cotter	1
18	*d 15156W	Lockwasher	2	70	99443W	Hose	2
18	15178W	Washer	2	71	16165W	Fitting	1
18	*d 15176W	Washer	2	72	139W	Pin	1
19	327610W	Accumulator	3	73	15483W	Fitting	1
20	267487W	Bracket	1	74	-----	Valve, Control (3-8 & 3-9)	1
21	267488W	Plate	1	75	-----	Valve, Control (3-8 & 3-9)	1
22	89669W	Fitting	1	76	271729W	Valve, Check	1
22	16485W	. O-Ring	1	76	210641W	. O-Ring	1
23	18552W	Capscrew	1	77	16805W	Capscrew	2
24	194090W	Capscrew	2	78	236417W	Bracket, Cable	1
25	69815W	Fitting	3	79	16830W	Capscrew	1
26	14538W	Fitting	1	80	15158W	Lockwasher	1
27	17059W	Fitting	2	81	322679W	Fitting	1
28	217754W	Hose	1	81	16550W	Fitting	1
29	262543W	Tube	1	81	16486W	. O-Ring	1
30	277663W	Tube	1	82	83857W	Fitting	2
31	217754W	Hose	1	83	14669W	Fitting	2
32	132009W	Hose	1	84	225233W	Connector	2
33	16568W	Fitting	1	85	127009W	Hose	1
33	16484W	. O-Ring	1	86	127045W	Clamp	2
34	280256W	Hose	1	87	177951W	Lockwasher	2
35	*a 276091W	Fitting	1	88	96480W	Hose	1
35	*b 2303677W	Fitting	1	89	*f 16987W	Fitting	1
36	88297W	Hose	1				
37	16463W	Fitting	1		*a Last Used on S/N W12E-1851		
38	14539W	Fitting	1		*b First Used on S/N W12E-1852		
39	16989W	Fitting	2		*c Caterpillar D8L, D9N, D9R without Dropbox, Komatsu D155A, D275A, D375A-1 & Fiat- Hitachi/New Holland FD30B Only		
40	14500W	Fitting	1		*d First Used on S/N AW12E-1072		
41	327611W	Fitting	3		*e First Used on S/N AW12E-1081		
42	16987W	Fitting	1		*f Caterpillar 583R Pipelayer with Dropbox only		
43	*c,*f 129563W	Clamp	1				
44	267489W	Spacer	2				

Hydraulic Group - Power Controls

First Used on S/N AW12E-1106

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Hydraulic Group - Power Controls

First Used on S/N AW12E-1106

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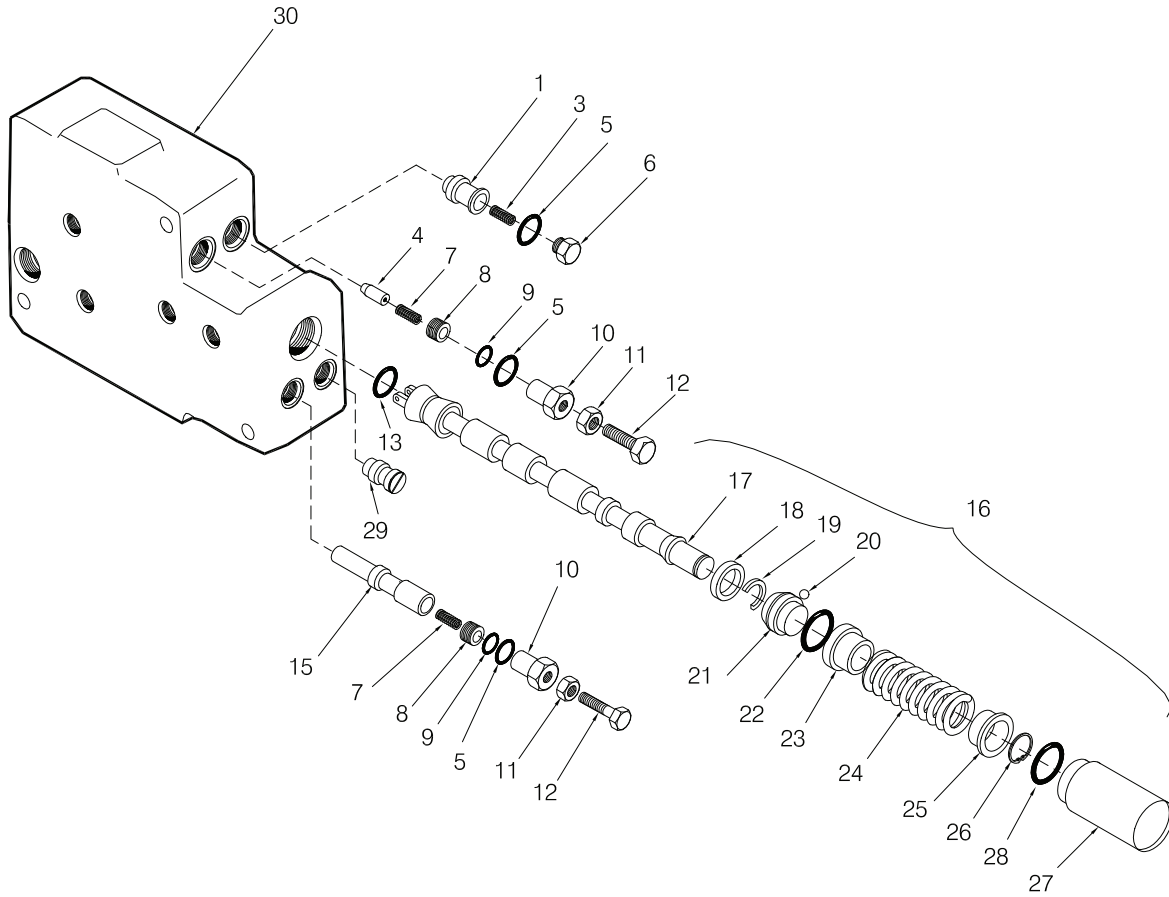
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1	219172W	Strainer	1	58	225701W	Manifold	1
1	156689W	. O-Ring	1	60	14349W	Fitting	2
2	2300936W	Cover, Strainer	1	61	219246W	Fitting	1
3	2300935W	Gasket	1	63	*d 2304823W	Plug	1
4	16805W	Capscrew	6	64	322679W	Fitting	1
5	15156W	Lockwasher	6	65	16550W	Fitting	1
6	276090W	Fitting	1	65	16486W	. O-Ring	1
6	16486W	. O-Ring	1	66	303946W	Gasket	1
7	277234W	Hose	1	68	279392W	Block	1
8	209639W	Clamp	2	69	*f 271729W	Check Valve	1
9	277235W	Assembly, Hose	1	69	210641W	. O-Ring	1
10	*f 124588W	Assembly, Hose	1	69	*g 2307710W	Check Valve	1
10	*g 76227W	Assembly, Hose	1	70	2304698W	Mounting Plate, Accumulator	1
11	2300183W	Filter	1	72	127045W	Clamp	2
11	3001363W	. Element	1	73	277237W	Assembly, Tube	1
11	55468W	. . O-Ring	1	74	16948W	Fitting	1
12	83857W	Fitting	2	74	16982W	. O-Ring	1
13	16561W	Fitting	2	75	16165W	Fitting	1
13	16486W	. O-Ring	1	76	127009W	Hose	1
14	2304699W	Bracket, Filter Mounting	1	77	16830W	Capscrew	1
15	*b 1300780W	Screw, Flanged	6	79	198385W	Capscrew	3
16	2305067W	Assembly, Hose	1	80	15158W	Washer	4
17	162155W	Fitting	2	82	-----	Valve, Control (3-10)	1
18	R16271	Accumulator	2	83	15316W	Fitting	1
18	*e 2302110W	Accumulator	1	83	*a 17300W	Fitting	1
19	2305066W	Assembly, Hose	1	84	*a 17777W	Fitting	1
20	2302109W	Clamp	2	85	96480W	Assembly, Hose	1
21	*b 2305986W	Setscrew	2	100	*h 18849W	Plug	2
22	17059W	Fitting	1	110	*j 18001W	Plug	2
24	164703W	Fitting	1	122	*a 16987W	Fitting	1
24	16486W	. O-Ring	1	123	*a,*b,*k 14668W	Fitting	1
25	*c 2305987W	Setscrew	5	123	*l,*m 225094W	Fitting	1
26	226405W	Valve Assembly	1	124	*a 129563W	Fitting	1
27	222505W	Fitting	1	125	*a 158862W	Assembly, Hose	1
27	16486W	. O-Ring	1	200	See Chart Below	Cable, Push/Pull	1
28	262543W	Assembly, Tube	1				
29	277663W	Assembly, Tube	1				
30	132009W	Assembly, Hose	1				
31	16568W	Fitting	1				
31	16484W	. O-Ring	1				
32	88297W	Assembly, Hose	1				
33	-----	Pump, Hydraulic (3-129)	1				
34	2303677W	Fitting, Hose	1				
35	16828W	Capscrew	2				
36	139W	Pin	1				
37	15212W	Pin	1				
38	*b,*f 89669W	Fitting	1				
38	*g 220153	Fitting	1				
39	16559W	Fitting	2				
39	16484W	. O-Ring	1				
40	225232W	Union, Adapter	1				
41	*b 225712W	Fitting	1				
41	16487W	. O-Ring	1				
43	196022W	Gasket	1				
44	*b 14500W	Fitting	2				
45	*b 16923W	Fitting	1				
46	15134W	Washer	2				
47	17062W	Fitting	2				
48	16989W	Fitting	2				
49	225233W	Connector	2				
50	14761W	Nut	2				
51	177951W	Washer	2				
52	99443W	Assembly, Hose	2				
53	14723W	Fitting	2				
54	*b 19589W	Fitting	2				

ITEM 200 CABLE, PUSH/PULL	TRACTOR
306473W, 145"	KOM D275A-2 (K60) CAT-D10N/R (C66), D10T (C76); W/ GEAR BOX
303944W, 96"	DR TD25E (H63), TD25G/H/M (H64) CAT 583R (C67), 583T (C74), 587T (C79) CAT D8R (C56/580, D8RII (C59), D8T (C74)
303945W, 120"	F/H FD30B/C (A64) CAT D9R (C65/68), D9T (C75)
303942W, 82"	CAT 583H/K (C63)

*a	Used on Fiat-Hitachi/New Holland FD30B/C, Komatsu D275A-2 & Caterpillar 583R Pipelayer with Dropbox Only
*b	Use 273338W Pipe Thread Sealant
*c	Use 318702W Thread Lock
*d	Use 318701W Adhesive
*e	First Used on S/N AW12E-1113
*f	Last Used on S/N AW12E-1304
*g	First Used on S/N AW12E-1305
*h	For Fiat-Hitachi FD30B/C (A64), Komatsu Ratio P4N (K60)
*j	For CAT 583H/K (C63), Fiat-Hitachi FD30B/C (A64), Dressta Ratio P3N/P4N (H63/64).
*k	Last Used on S/N AW12E-1315
*l	First Used on S/N AW12E-1316
*m	Use 246108W Pipe Thread Sealant

Control Valve - Power Controls

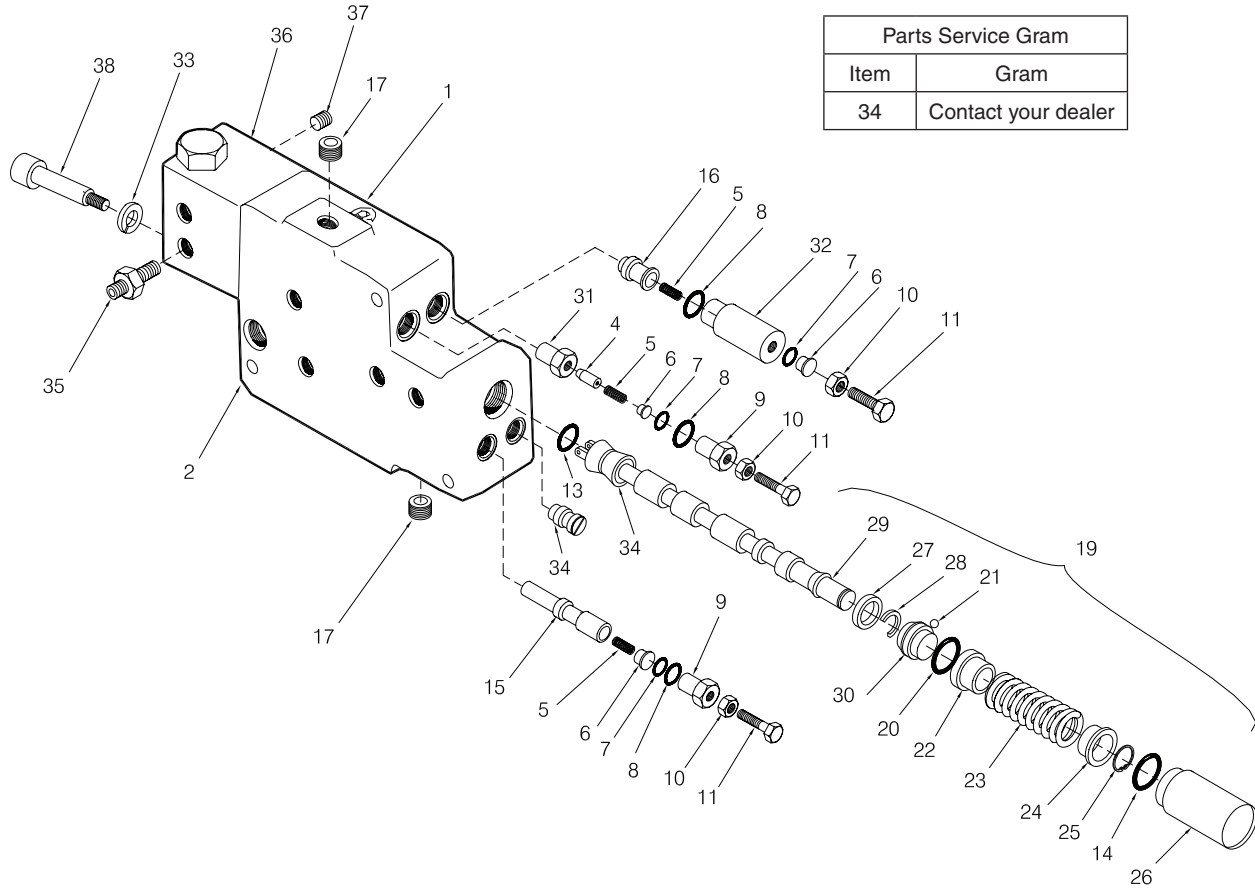
Last Used on S/N W12E-1599 & AW12E-1000



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
	276098W	Valve, Control	1				
1	196006W	. Spool, Forward Mod.	1	17	258217W	.. Spool	1
3	275508W	. Spring	1	18	258220W	.. Ring	1
4	195991W	. Plunger, Relief	1	19	196000W	.. Ring	1
5	16484W	. O-Ring	3	20	170987W	.. Ball	8
6	275507W	. Fitting	1	21	195997W	.. Retainer, Detent	1
7	195992W	. Spring, Relief	2	22	118365W	.. O-Ring	1
8	195993W	. Plug	2	23	238992W	.. Spacer	1
9	15860W	. O-Ring	2	24	166911W	.. Spring, Spool	1
10	196004W	. Fitting	2	25	166905W	.. Retainer, Spring	1
11	15027W	. Nut, Jam	2	26	196002W	.. Ring, Snap	1
12	195995W	. Capscrew	2	27	196009W	.. Cap, Spool	1
13	118361W	. O-Ring	1	28	39376W	.. O-Ring	1
15	196003W	. Spool, Reverse Mod.	1	29	15314W	. Fitting	1
16	262088W	. Spool, PFR	1	30	NSS	. Body, Valve	1

Control Valve - Power Controls

Used on S/N W12E-1600 & AW12E-1001 thru AW12E-1039

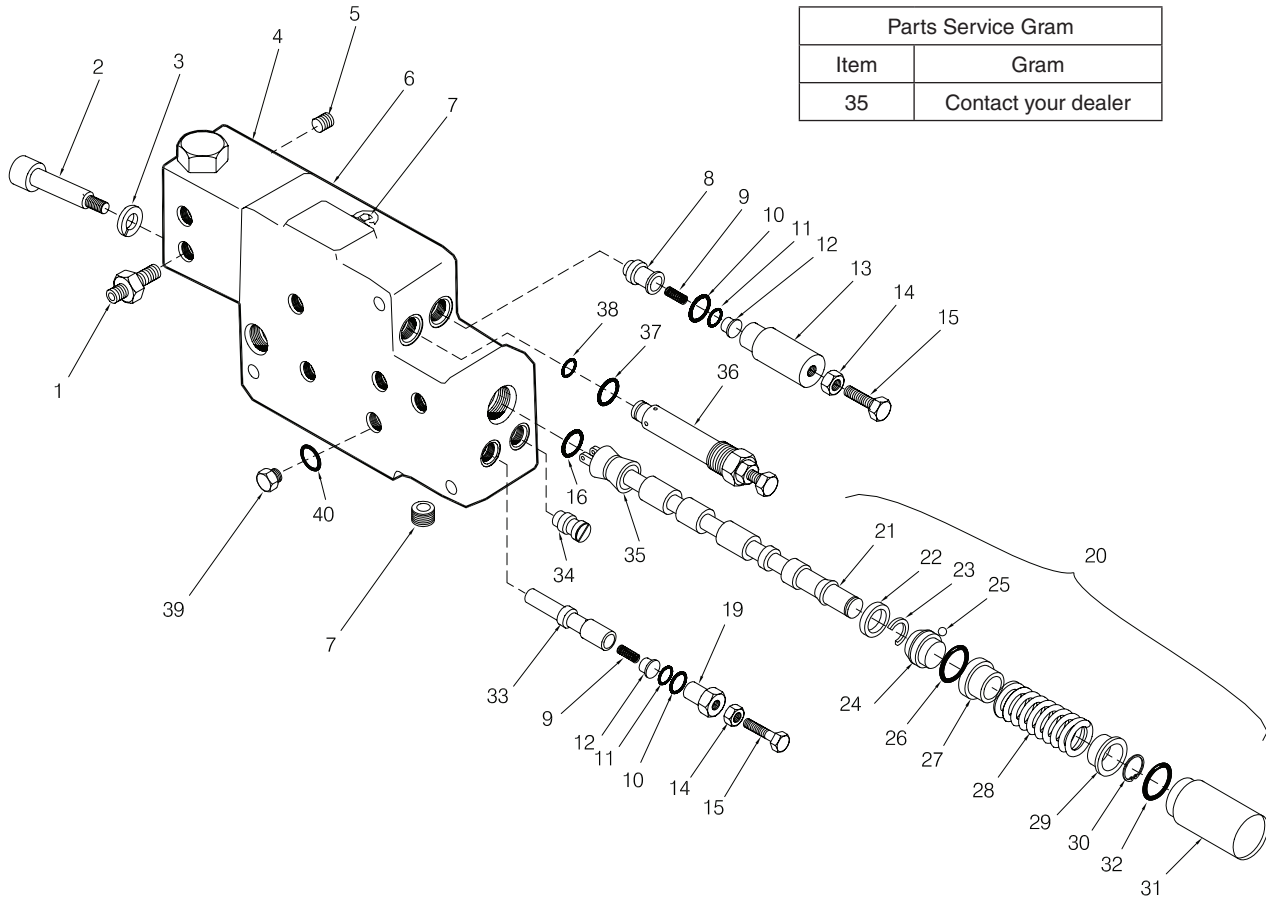


Parts Service Gram	
Item	Gram
34	Contact your dealer

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	279394W	Valve, Control	1				
1	276098W	. Valve, Control	1	21	170987W	... Ball	8
2	NSS	.. Body, Valve	1	22	238992W	... Spacer	1
4	195991W	.. Plunger, Relief	1	23	166911W	... Spring, Spool	1
5	195992W	.. Spring, Relief	2	24	166905W	... Retainer, Spring	1
6	195993W	.. Plug	3	25	196002W	... Ring, Snap	1
7	15860W	.. O-Ring	3	26	196009W	... Cap, Spool	1
8	16484W	.. O-Ring	3	27	258220W	... Ring	1
9	196004W	.. Fitting	3	28	196000W	... Ring	1
10	15027W	.. Nut, Jam	3	29	258217W	... Spool	1
11	195995W	.. Capscrew	2	30	195997W	... Retainer, Detent	1
13	118361W	.. O-Ring	1	31	195990W	.. Seat, Relief	1
14	39376W	.. O-Ring	1	32	226445W	.. Fitting	1
15	196003W	.. Spool, Reverse Mod.	1	33	15156W	. Lockwasher	1
16	196006W	.. Spool, Forward Mod.	1	34	279397W	. Cam	1
17	15962W	.. Fitting	2	34	68370W	. Pin, Slotted	1
18	15314W	.. Fitting	1	35	14668W	. Fitting	2
19	262088W	.. Spool, PFR	1	36	267018W	. Valve	1
20	118365W	... O-Ring	1	37	15483W	. Fitting	2

Control Valve - Power Controls

First Used on S/N AW12E-1040

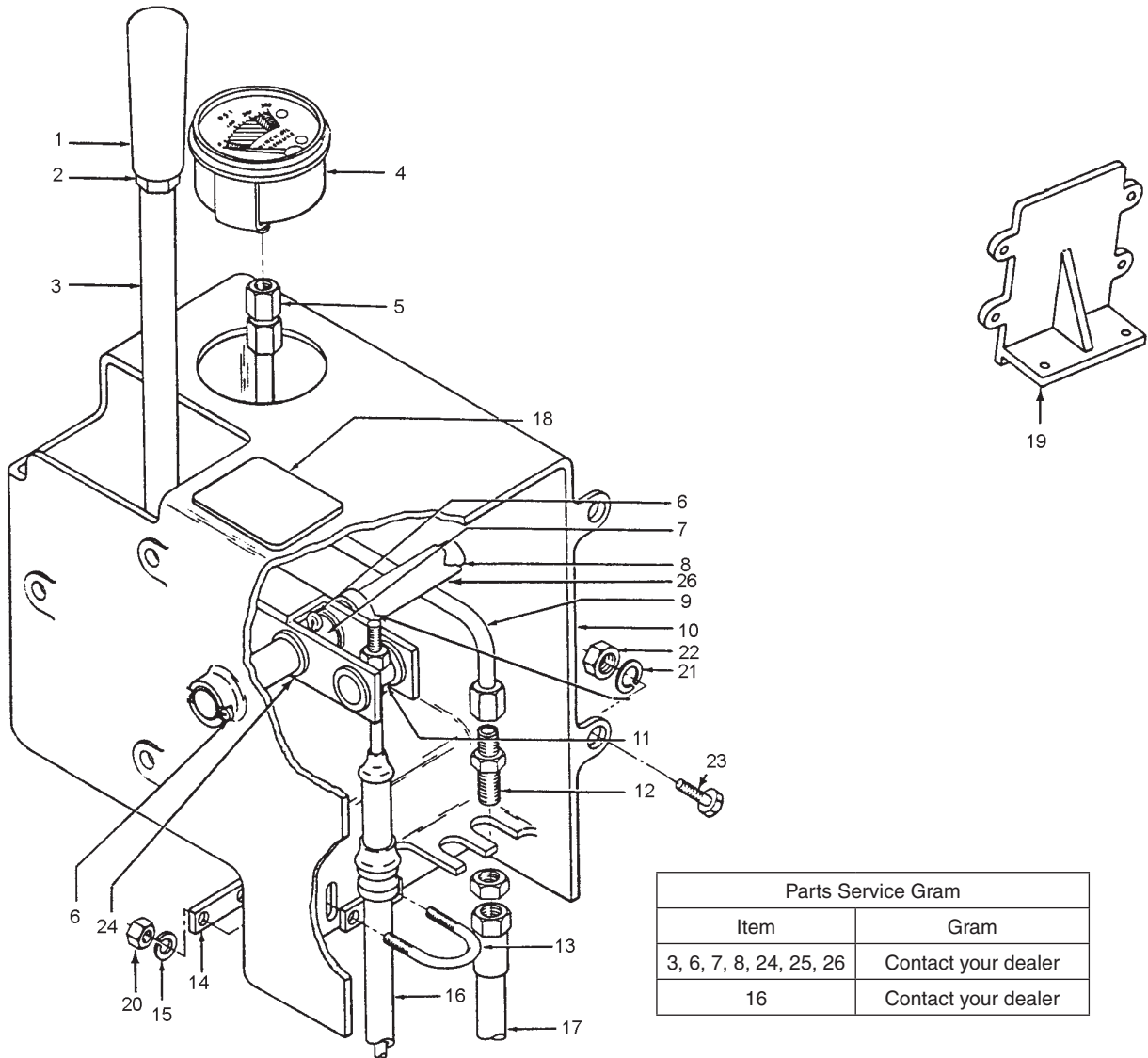


Parts Service Gram	
Item	Gram
35	Contact your dealer

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2300301W	Valve, Control	1				
1	14668W	. Fitting	2	23	196000W	.. Ring	1
2	241778W	. Screw	2	24	195997W	.. Retainer, Detent	1
3	15156W	. Lockwasher	2	25	170987W	.. Ball	8
4	267018W	. Valve	1	26	118365W	.. O-Ring	1
5	15483W	. Fitting	2	27	238992W	.. Spacer	1
6	NSS	. Body, Valve	1	28	166911W	.. Spring, Spool	1
7	15962W	. Fitting	2	29	166905W	.. Retainer, Spring	1
8	196006W	. Spool, Forward. Mod.	1	30	196002W	.. Ring, Snap	1
9	195992W	. Spring, Relief	2	31	196009W	.. Cap, Spool	1
10	16484W	. O-Ring	2	32	39376W	. O-Ring	1
11	15860W	. O-Ring	2	33	196003W	. Spool, Reverse. Mod.	1
12	195993W	. Plug	2	34	15314W	. Fitting	1
13	226445W	. Fitting	1	35	279397W	. Cam	1
14	15027W	. Nut, Jam	2	35	68370W	. Pin, Slotted	1
15	195995W	. Capscrew	2	36	2300308W	. Relief	1
16	118361W	. O-Ring	1	37	16484W	.. O-Ring	1
19	196004W	. Fitting	1	38	265787W	.. O-Ring	1
20	262088W	. Spool, PFR	1	39	14595W	. Fitting	1
21	258217W	.. Spool	1	40	209744	.. O-Ring	1
22	258220W	.. Ring	1				

Handling Gear - Power Controls

All Caterpillar Except D8L (C65), D9N (C65), D9R (C65, C68), D10N (C66) & D10R (C66)
Last Used During 1993

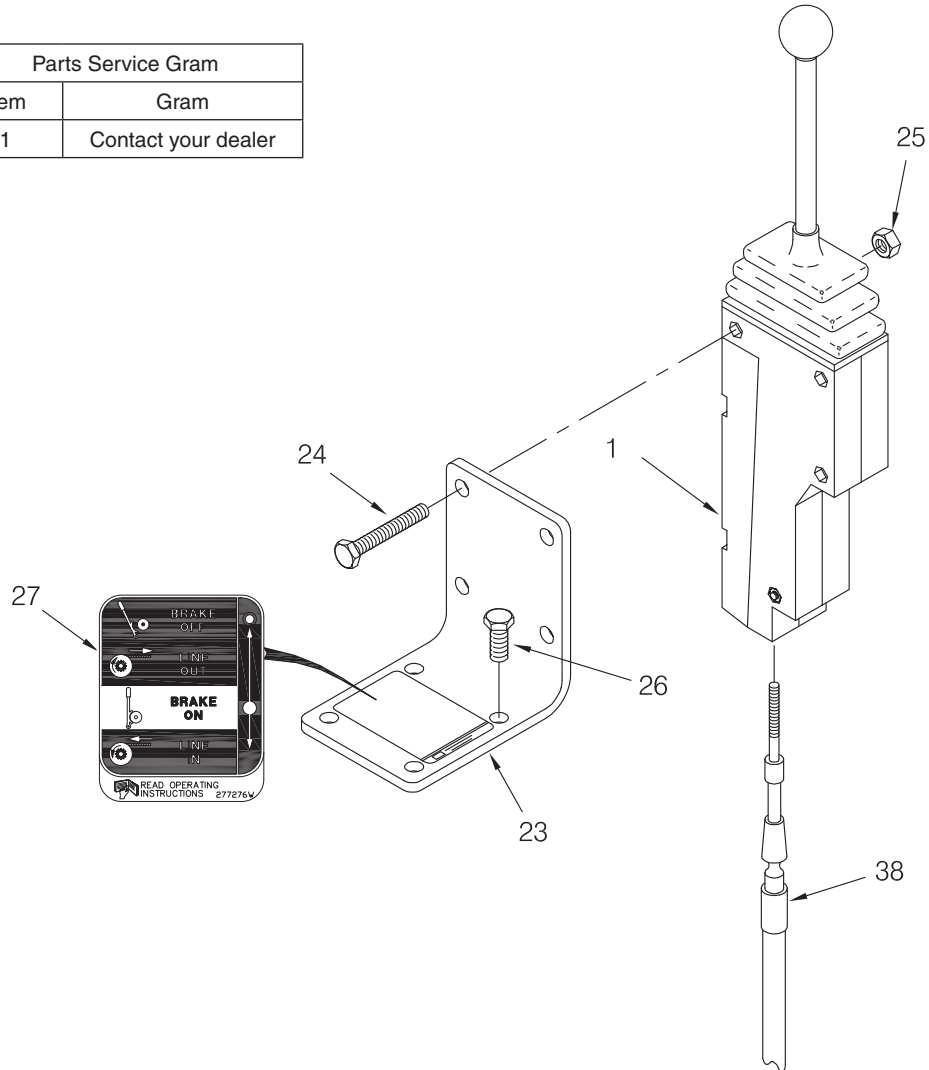


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	196462W	Assembly Control Lever	1				
1	2303105W	. Knob	1	17*a, *b, *d	205006W	Assembly, Hose	1
2	15030W	. Nut, Jam	1	18	277276W	Decal	1
3	196465W	. Lever	1	19	*a 261570W	Bracket	1
3	196144W	. Bushing	4	20	15055W	Nut	2
4	*d 192407W	. Gauge, Oil Pressure	1	21	15156W	Lockwasher	6
5	*d 14712W	. Fitting	1	21	15155W	Lockwasher	4
6	15225W	. Pin, Cotter	3	22	15056W	Nut	6
7	196132W	. Spacer	1	22	15055W	Nut	4
8	196468W	. Pin	1	23	16828W	Capscrew	6
9	*d 196134W	. Tube	1	23	18497W	Capscrew	4
10	196114W	. Housing	1	24	*c 15135W	Washer	3
11	196128W	. Pin	1	25	*c 391016W	Washer	1
12	*d 16445W	. Fitting	1	26	*c 271748W	Spacer	1
13	196129W	. U-Bolt	1				
14	196130W	. Spacer	2				
15	15155W	. Lockwasher	2				
16	303945W	Cable	1				
17	*d 255059W	Assembly, Hose	1				
				*a	Caterpillar D8K & D9 Only		
				*b	Caterpillar 583 & 584 Only		
				*c	First Used on S/N W12E-1600 & AW12E-1001		
				*d	Last Used on S/N AW12E-1000		

Handling Gear - Power Controls

All Caterpillar Except D8L (C65), D9N (C65), D9R (C65, C68) without Dropbox;
 D10N (C66) & D10R (C66) without Dropbox
 "New Style" Implemented During 1993

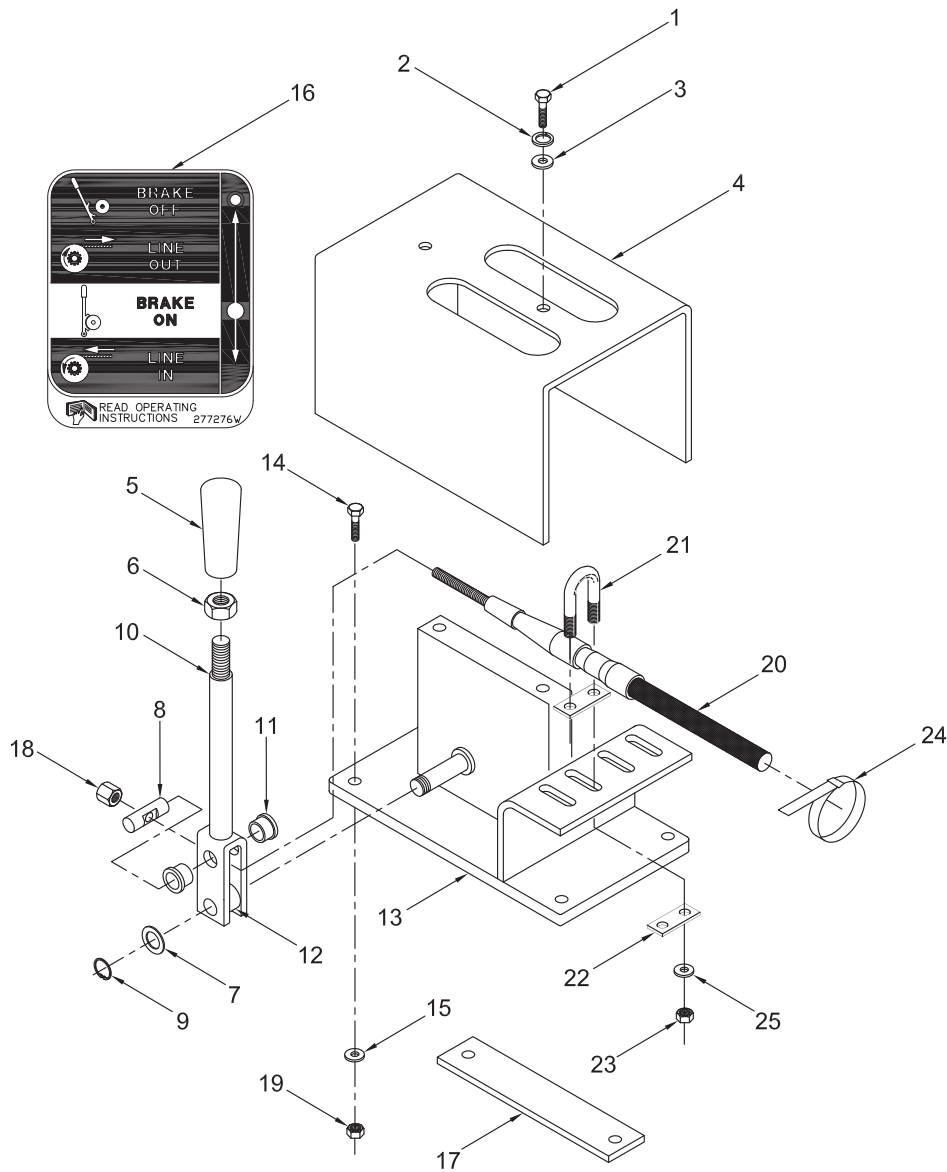
Parts Service Gram	
Item	Gram
1	Contact your dealer



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 1300785W	Assembly, Control Lever (3-25)	1	25	*a 191941W	Nut	3
1	2303984W	Assembly, Control Lever (3-26)	1	26	390288W	Screw	4
23	*a 2300202W	Bracket, Control Lever	1	27	277276W	Decal	1
23	2304386W	Bracket, Control Lever	1	38	303945W	Cable	1
24	*a 3003079W	Screw, Flanged	3				
24	2304380W	Capscrew	3		*a	Last Used on S/N AW12E-1075	

Handling Gear - Power Controls

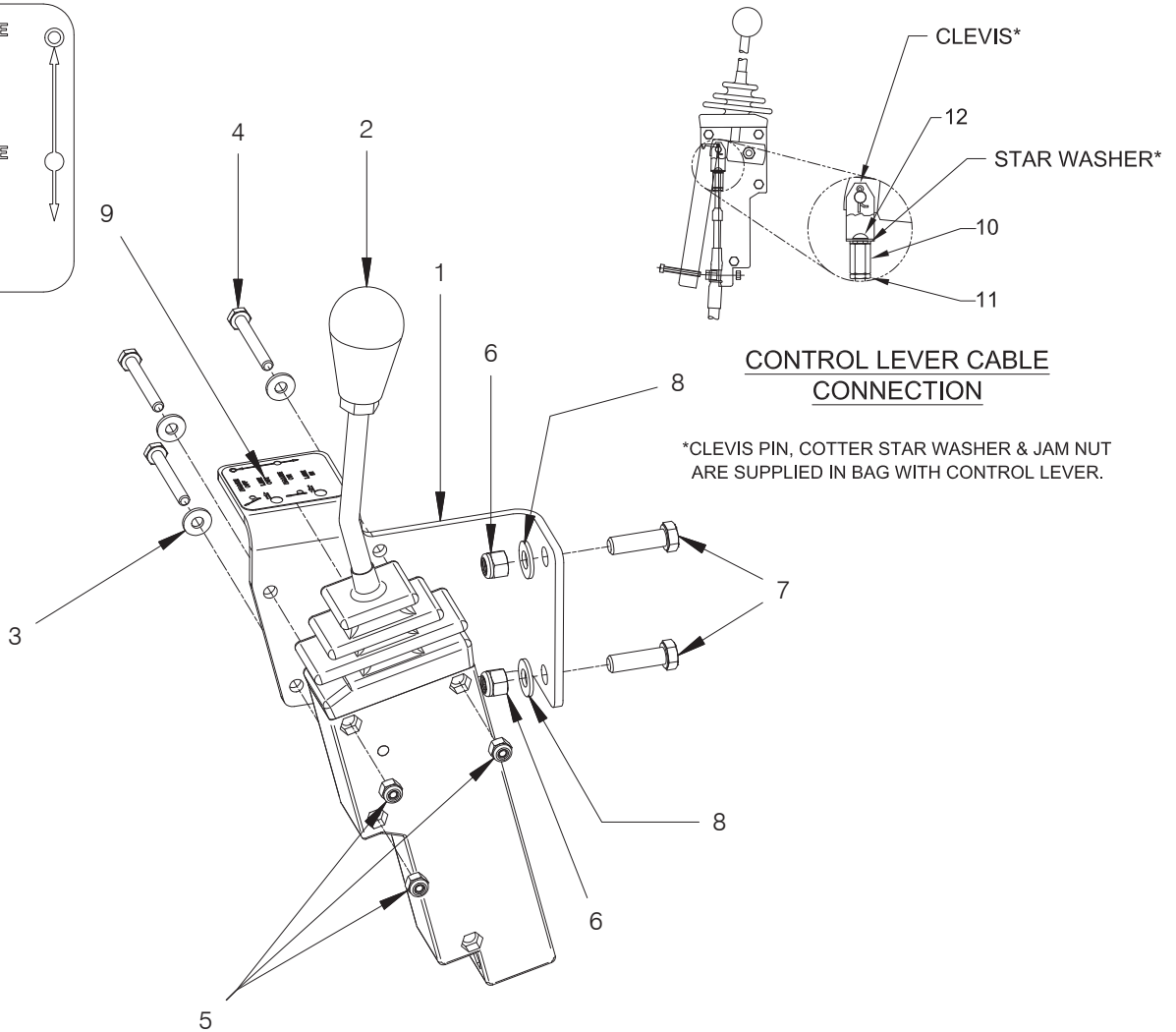
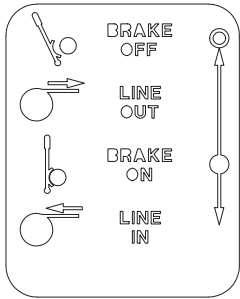
Caterpillar D8L (C65), D9N (C65), D9R (C65, C68) without Dropbox;
D10N (C66) & D10R (C66) without Dropbox



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	332820W	Assembly, Control Lever	1				
1	16836W	. Capscrew	2	16	277276W	Decal	1
2	15155W	. Lockwasher	2	17	*a 333990W	Plate	2
3	18515W	. Washer	2	18	15106W	Nut , Tall	1
4	332822W	. Cover	1	19	15056W	Nut	4
5	2303105W	. Knob	1	20	303945W	Cable, Push-Pull	1
6	15030W	. Nut, Jam	1	21	*c NSS	U-Bolt	1
7	15135W	. Washer	1	22	*c NSS	Spacer	2
8	196128W	. Pin	1	23	*c NSS	Nut	2
9	190930W	. Ring, Snap	1	24	129563W	Clamp	3
10	276036W	. Lever	1	25	*c NSS	Lockwasher	2
11	196144W	. Bushing, Nylon	2				
12	276043W	. Bushing, Brass	1	*a	Caterpillar D8L, D9N/R & D10N/R Only		
13	332823W	. Bracket	1	*b	Caterpillar D10N/R Only		
14	*a 16597W	Capscrew	4	*c	Included in 2300995W U-Bolt Kit		
15	15156W	Lockwasher	4	*d	Last used on S/N AW12E-1000		

Handling Gear - Power Controls

Caterpillar 583K (C63) Pipelayer without Freespool

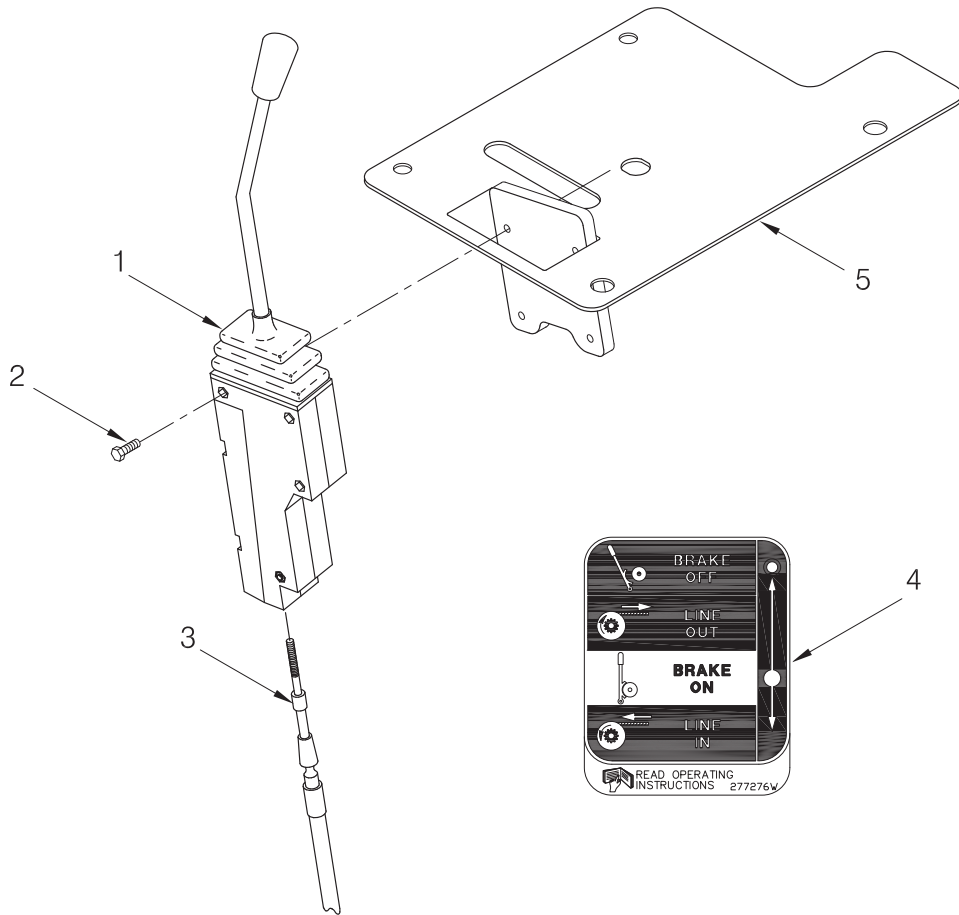


*CLEVIS PIN, COTTER STAR WASHER & JAM NUT ARE SUPPLIED IN BAG WITH CONTROL LEVER.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2313206	Plate, Control Lever Mounting	1	7	16828W	Capscrew	2
2	2307354W	Assembly, Control Lever (3-26)	1	8	221767W	Washer	2
3	221763W	Washer	3	9	277276W	Decal	1
4	Y01C-0432	Capscrew	3	10	383881W	Nut, Tall	1
5	R13811189	Lock Nut	3	11	15024W	Nut	1
6	R13811191	Lock Nut	2	12	18717W	Capscrew	1

Handling Gear - Power Controls

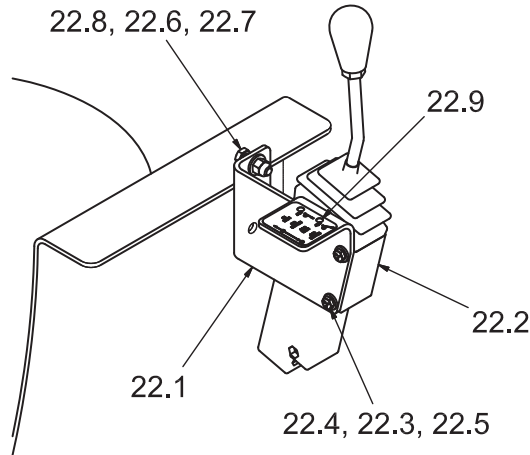
Caterpillar 583R (C67) Pipelayer with Dropbox



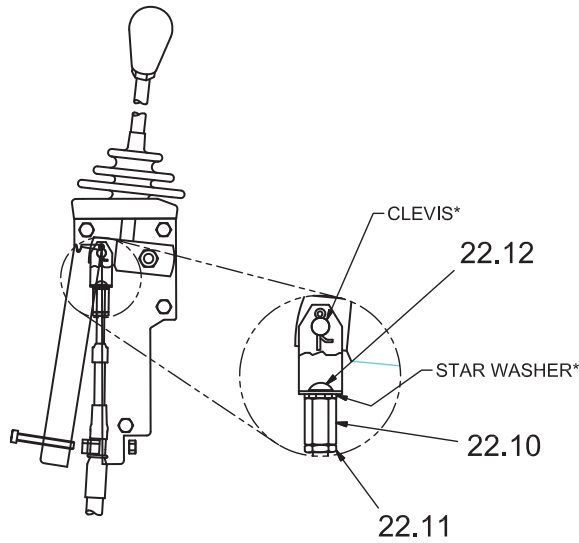
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2304804W	Assembly, Control Lever (3-26)	1	4	277276W	Decal	1
2	2304380W	Capscrew	3	5	2304776W	Bracket, Control Lever	1
3	303944W	Cable, Push-Pull	1				

Handling Gear - Power Controls

Caterpillar Pipelayer 594H (C64)



CONTROL LEVER VIEW



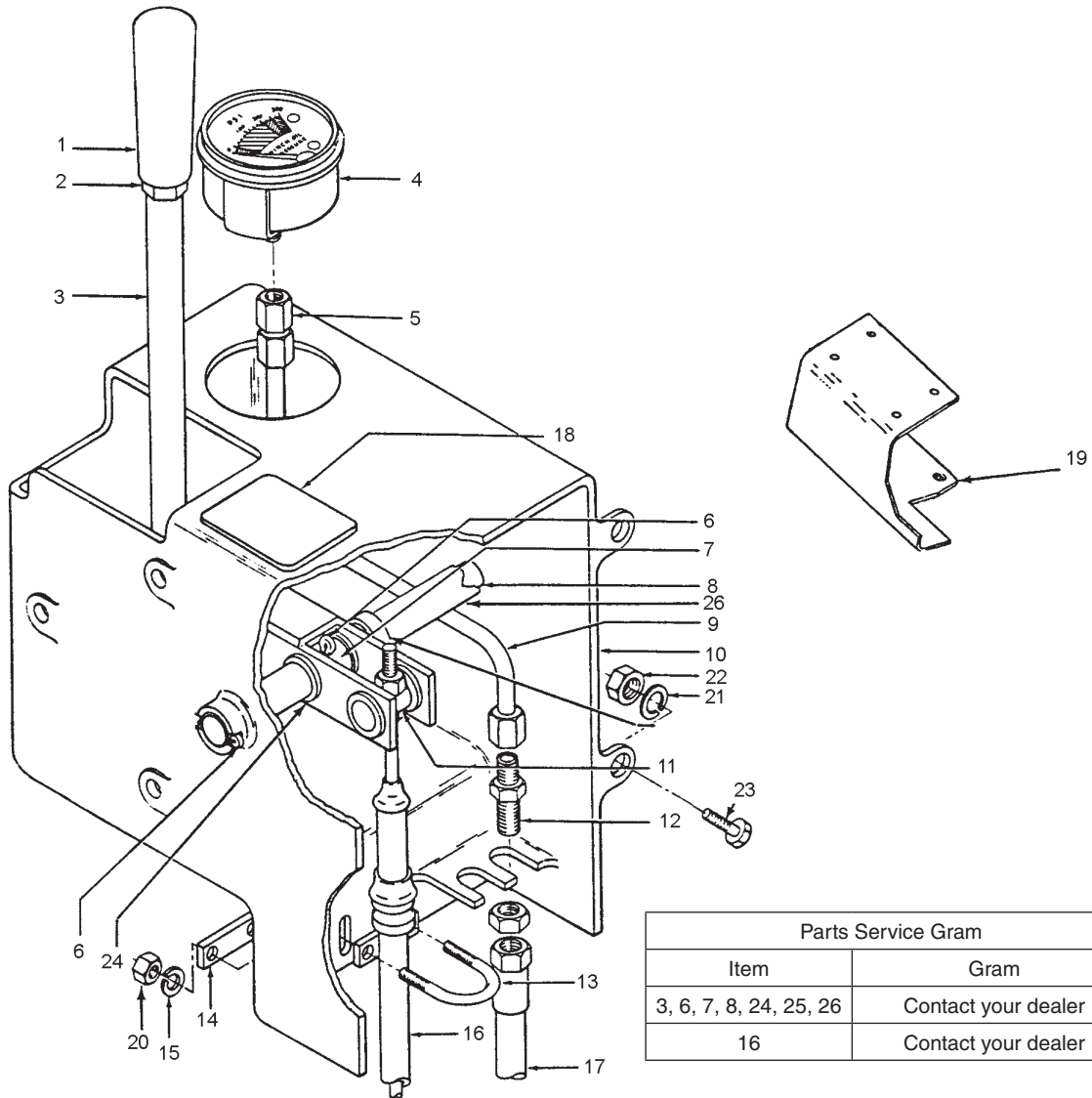
CONTROL LEVER CABLE CONNECTION

*CLEVIS PIN, COTTER, STAR WASHER & JAM NUT ARE SUPPLIED IN BAG WITH CONTROL LEVER

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
22.1	2313206	Plate, Control Lever Mounting	1	22.7	16828W	Capscrew	2
22.2	2307354W	Assembly, Control Lever (3-26)	1	22.8	221767W	Washer	2
22.3	221763W	Washer	3	22.9	277276W	Decal, Control Lever - W/O FS	4
22.4	Y01C-0432	Capscrew	3	22.10	383881W	Nut, Tall	1
22.5	R13811189	Nut	3	22.11	15024W	Nut	1
22.6	R13811191	Nut, Lock	2	22.12	18717W	Capscrew	1

Handling Gear - Power Controls

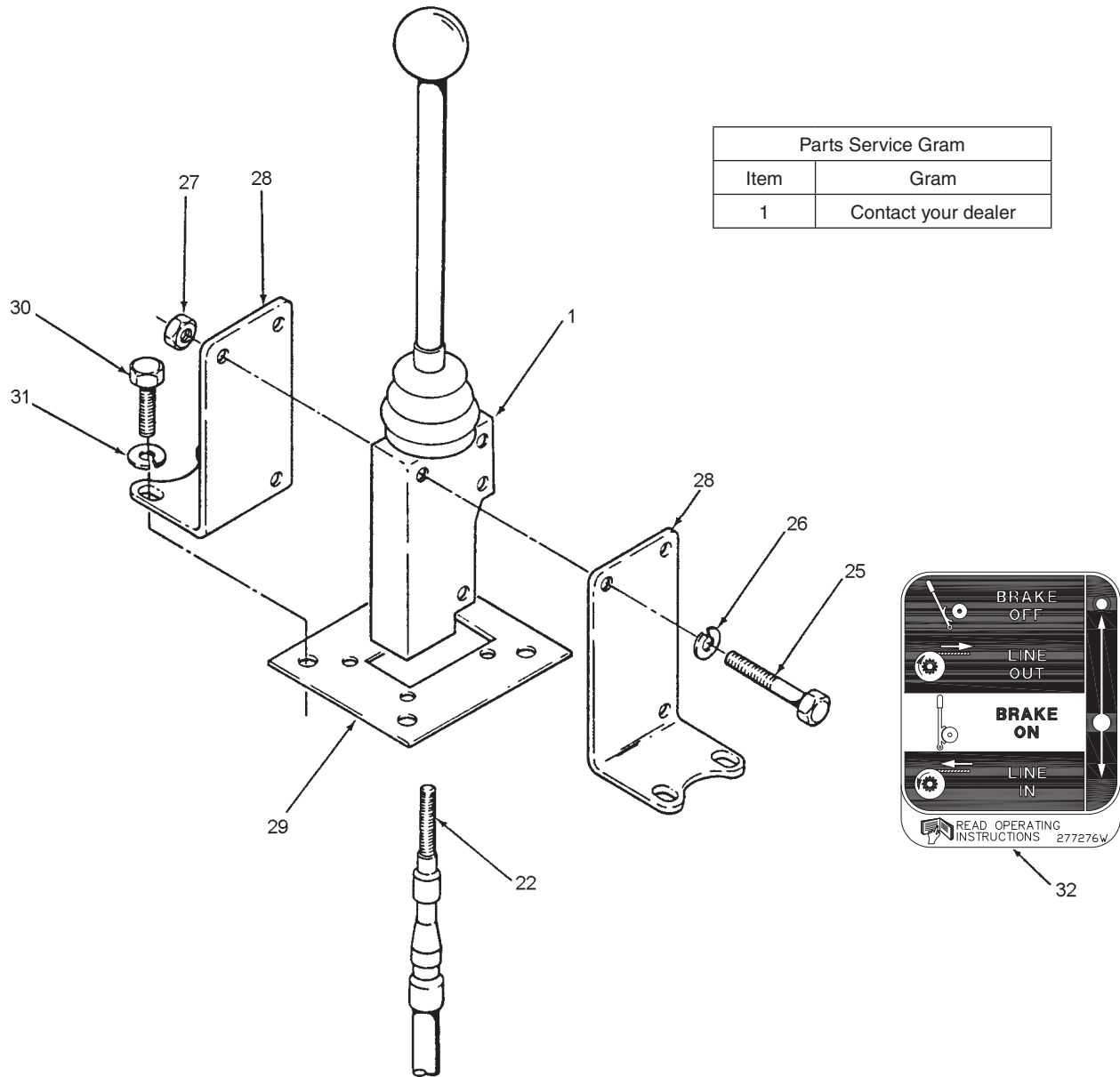
All Dresser/Dressta Except TD25E/G (H64)
Last Used During 1993



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	196462W	Assembly, Control Lever	1				
1	2303105W	. Knob	1	17	*b 255059W	Assembly, Hose	1
2	15030W	. Nut, Jam	1	17	*b 205006W	Assembly, Hose	1
3	196465W	. Lever	1	18	277276W	Decal	1
3	196144W	. Bushing	4	19	203225W	Bracket	1
4	*b 192407W	. Gauge, Oil Pressure	1	20	15055W	Nut	2
5	*b 14712W	. Fitting	1	21	15156W	Lockwasher	6
6	15225W	. Pin, Cotter	3	21	15155W	Lockwasher	4
7	196132W	. Spacer	1	22	15056W	Nut	6
8	196468W	. Pin	1	22	15055W	Nut	4
9	*b 196134W	. Tube	1	23	16828W	Capscrew	6
10	196114W	. Housing	1	23	18497W	Capscrew	4
11	196128W	. Pin	1	24	*a 15135W	Washer	3
12	*b 16445W	. Fitting	1	25	*a 391016W	Washer	1
13	196129W	. U-Bolt	1	26	*a 271748W	Spacer	1
14	196130W	. Spacer	2				
15	15155W	. Lockwasher	2				
16	303945W	Cable	1				
				*a	First Used on S/N W12E-1600 & AW12E-1001		
				*b	Last Used on S/N AW12E-1000		

Handling Gear - Power Controls

Dresser/Dressta TD25E/G (H64)
Last Used on S/N AW12E-1071

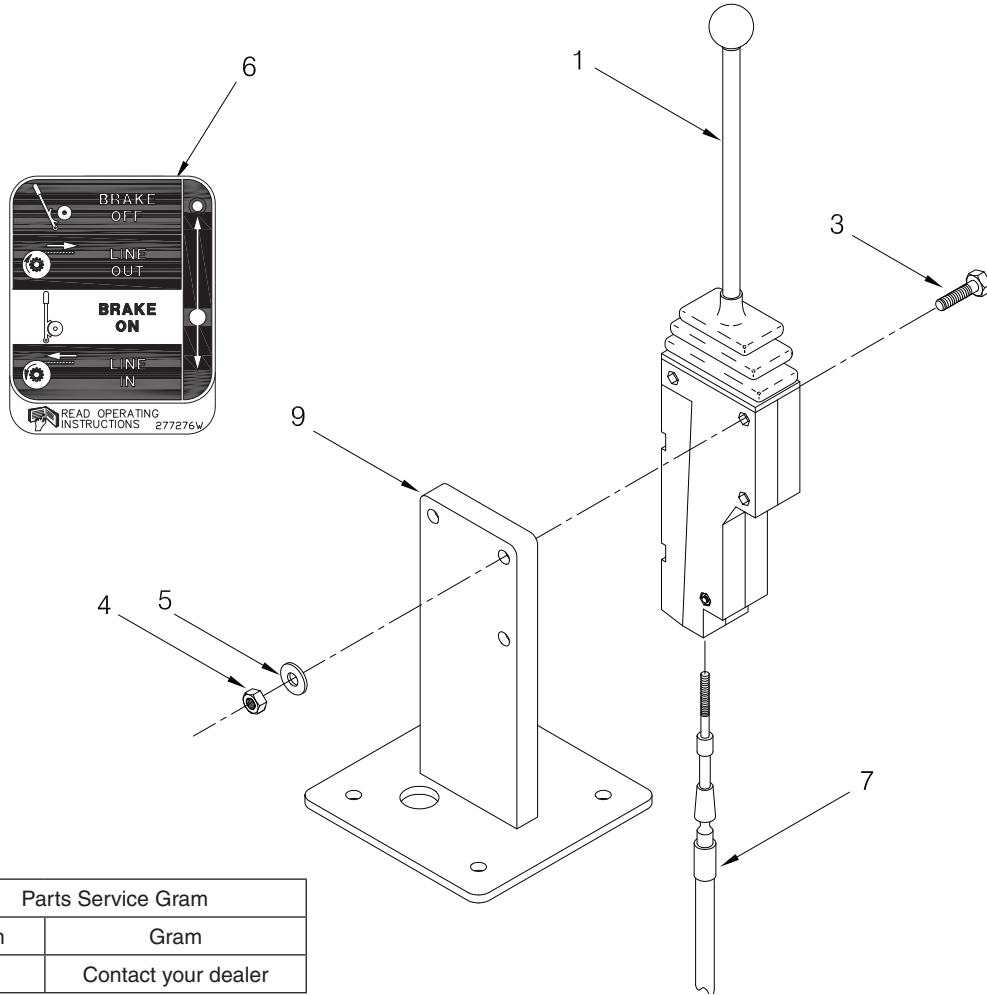


Parts Service Gram	
Item	Gram
1	Contact your dealer

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	1300785W	Assembly, Control Lever (3-25)	1	28	1300789W	Bracket	2
22	303944W	Cable	1	29	1303508W	Plate	1
25	18513W	Capscrew	1	30	16805W	Capscrew	4
26	15155W	Lockwasher	3	31	15156W	Lockwasher	4
27	15055W	Nut	3	32	277276W	Decal	1

Handling Gear - Power Controls

Dresser/Dressta TD25E/G (H64)
 First Used on S/N AW12E-1072



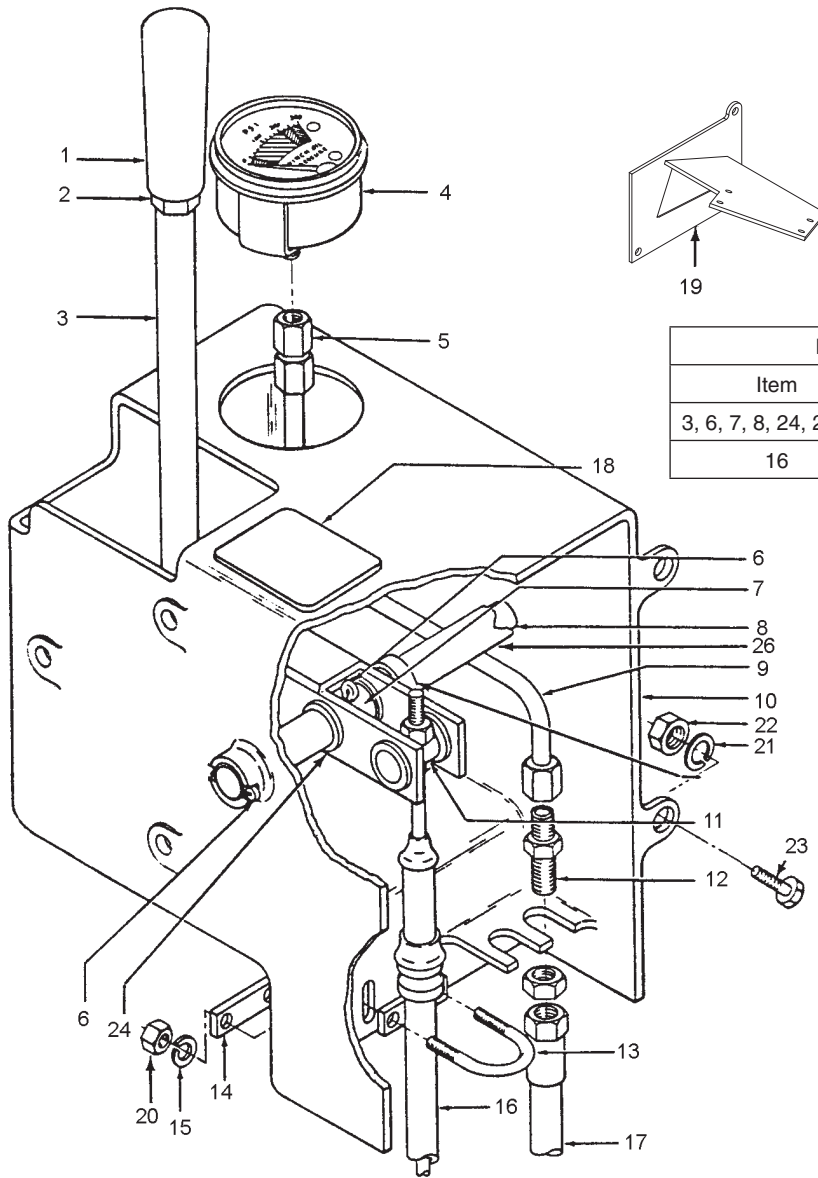
Parts Service Gram	
Item	Gram
1	Contact your dealer

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 1300785W	Assembly, Control Lever (3-25)	1	6	277276W	Decal	1
1	2303984W	Assembly, Control Lever (3-26)	1	7	303944W	Cable	1
3	*a 18518W	Capscrew	3	9	*a 2300369W	Bracket	1
3	2304380W	Capscrew	3	9	2304387W	Bracket	1
4	*a 191534W	Nut	3				
5	*a 18515W	Washer	3		*a	Last Used on S/N AW12E-1091	

Handling Gear - Power Controls

Komatsu D155A-1 (K61)

Last Used During 1993



Parts Service Gram	
Item	Gram
3, 6, 7, 8, 24, 25, 26	Contact your dealer
16	Contact your dealer

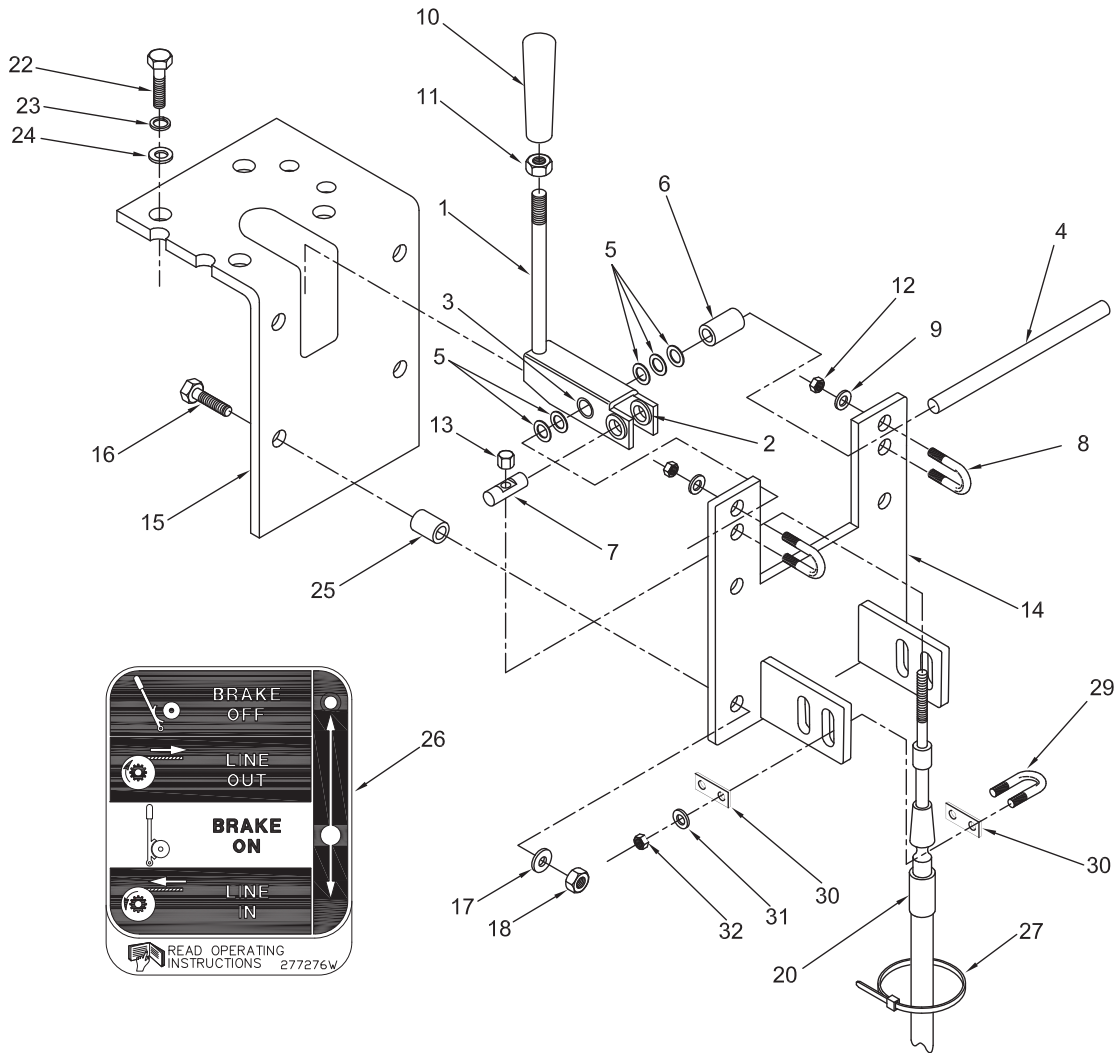
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	196462W	Assembly, Control Lever	1				
1	2303105W	. Knob	1	17	*b 255059W	Assembly, Hose	1
2	15030W	. Nut, Jam	1	17	*b 205006W	Assembly, Hose	1
3	196465W	. Lever	1	18	277276W	Decal	1
3	196144W	. Bushing	4	19	328708W	Bracket	1
4	*b 192407W	. Gauge, Oil Pressure	1	20	15055W	Nut	2
5	*b 14712W	. Fitting	1	21	15156W	Lockwasher	6
6	15225W	. Pin, Cotter	3	21	15155W	Lockwasher	4
7	196132W	. Spacer	1	22	15056W	Nut	6
8	196468W	. Pin	1	22	15055W	Nut	4
9	*b 196134W	. Tube	1	23	16828W	Capscrew	6
10	196114W	. Housing	1	23	18497W	Capscrew	4
11	196128W	. Pin	1	24	*a 15135W	Washer	3
12	*b 16445W	. Fitting	1	25	*a 391016W	Washer	1
13	196129W	. U-Bolt	1	26	*a 271748W	Spacer	1
14	196130W	. Spacer	2				
15	15155W	. Lockwasher	2				
16	303945W	Cable	1				
				*a	First Used on S/N W12E-1600 & AW12E-1001		
				*b	Last Used on S/N AW12E-1000		

Handling Gear - Power Controls

Komatsu D375A-1 (K64)

"New Style" Implemented During 1993

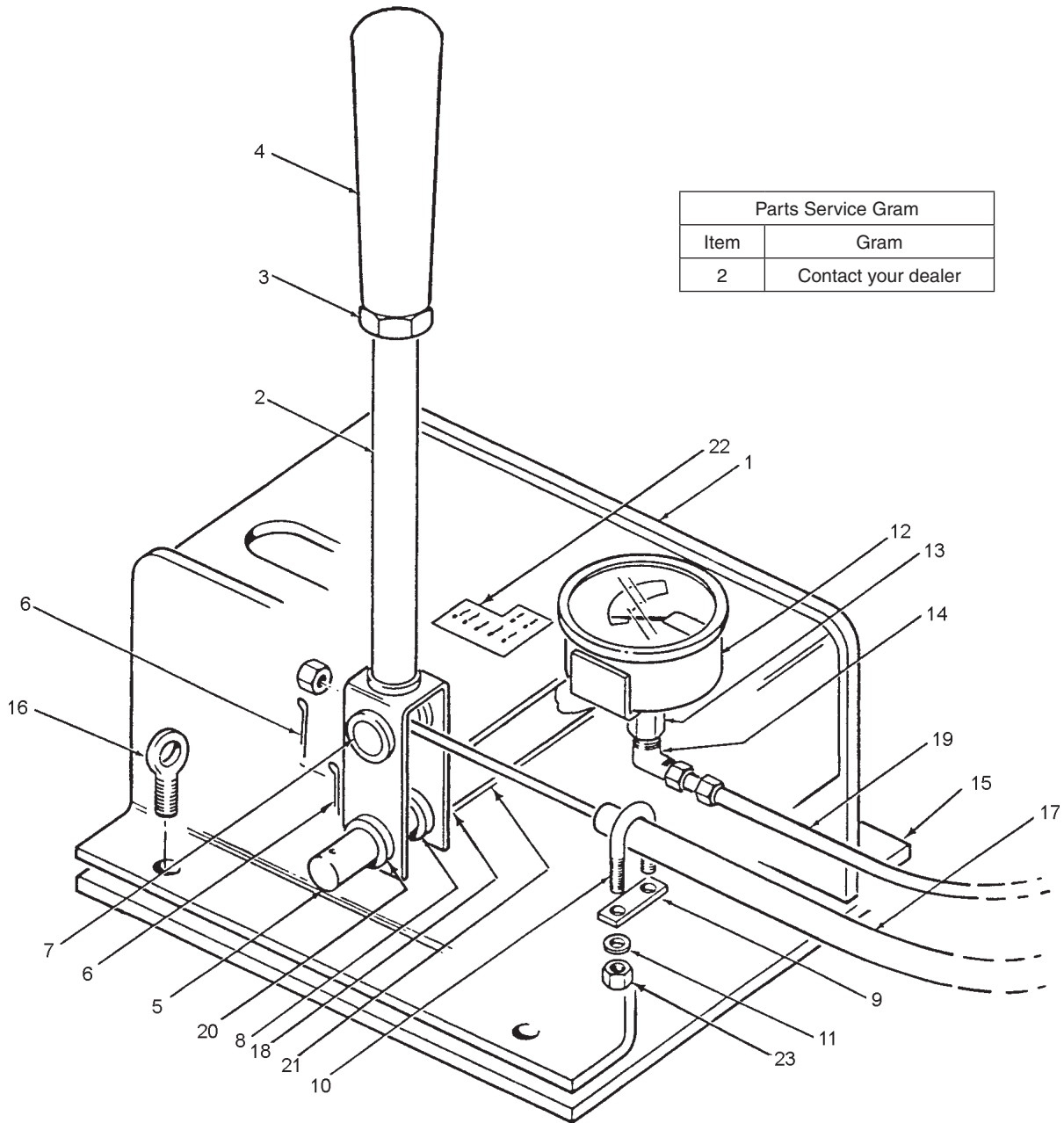
for Komatsu D155A (K61) & D275A/275A-2 (K60)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	264051W	Assembly, Control Lever	1				
1	276031W	. Assembly, Lever	1	17	15156W	Lockwasher	4
2	196144W	. Bushing	2	18	15056W	Nut	4
3	276043W	. Bushing	1	20	306473W	Cable	1
4	276081W	. Pin	1	21	322759W	Plug (Not Shown)	1
5	15135W	. Washer	5	22	16691W	Capscrew	4
6	271747W	. Spacer	1	23	15155W	Lockwasher	4
7	196128W	. Pin	2	24	18515W	Washer	4
8	196129W	. U-Bolt	2	25	77124W	Spacer	4
9	15155W	. Washer	4	26	277276W	Decal	1
10	2303105W	. Knob	1	27	129563W	Strap Clamp	1
11	15030W	. Nut	1	28	2300995W	Clamp Kit, U-Bolt	1
12	15055W	. Nut	4	29	196129W	. U-Bolt	1
13	2301487W	. Nut	1	30	196130W	. Spacer	2
14	261567W	. Bracket	1	31	15155W	. Washer	2
15	377712W	Bracket, Mounting	1	32	15055W	. Nut	2
16	16376W	Capscrew	4				

Handling Gear - Power Controls

Terex D750A (G61) & D800 (G62)

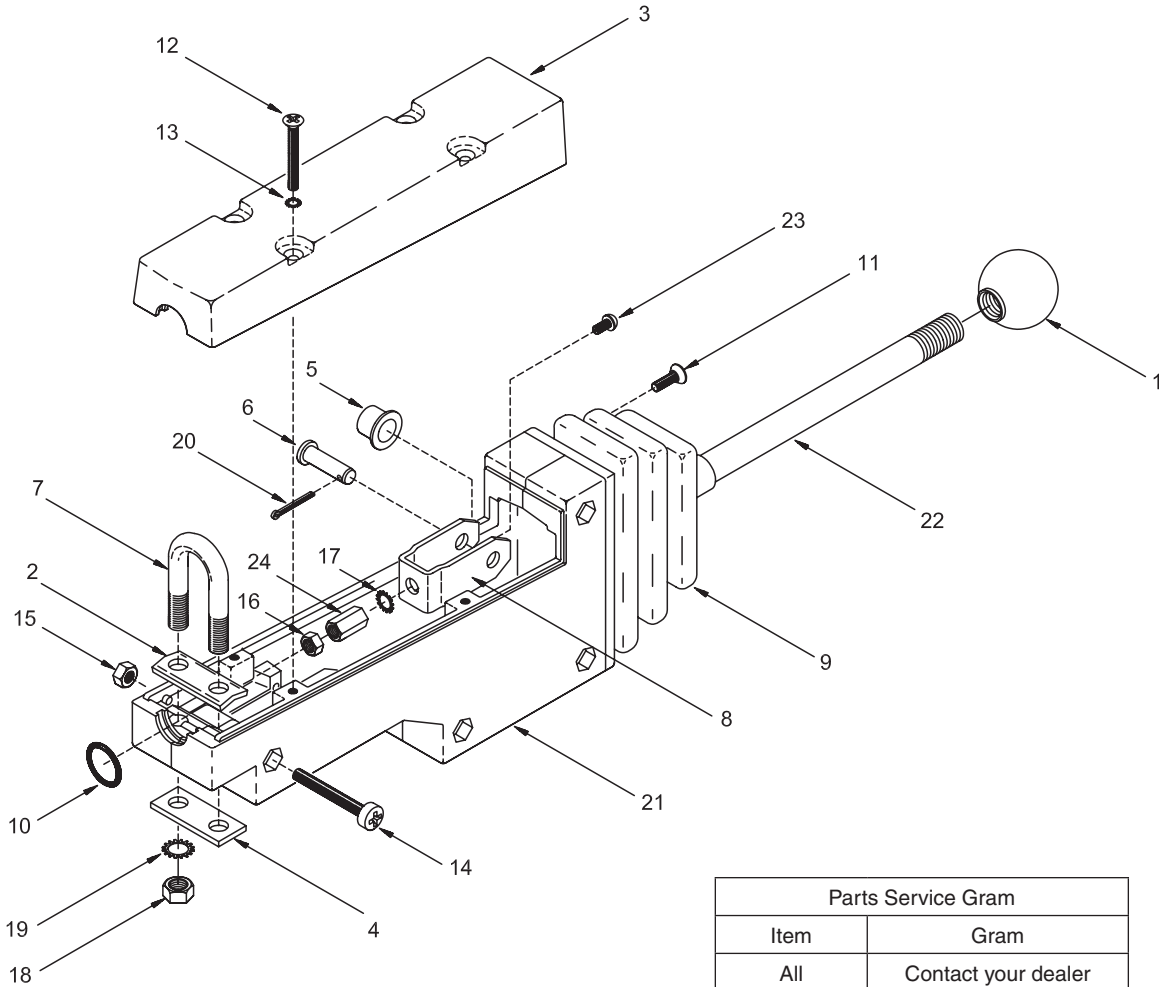


Parts Service Gram	
Item	Gram
2	Contact your dealer

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	261131W	Assembly, Control Lever	1				
1	261127W	. Housing	1	12	192407W	. Gauge, Oil Pressure	1
2	260618W	. Lever	1	13	14345W	. Fitting	1
2	*a 276036W	. Lever	1	14	14501W	. Fitting	1
2	*a 276043W	. Bushing	1	15	265409W	. Plate	1
3	15030W	. Nut, Jam	1	16	240491W	. Eyebolt	4
4	2303105W	. Knob	1	17	303944W	. Cable	1
5	276041W	. Pin	1	18	*a 391016W	Washer	1
6	15225W	. Pin, Cotter	3	19	165504W	Assembly, Hose	1
7	*a 276041W	. Pin	1	20	*a 15135W	Washer	3
7	196128W	. Pin	1	21	*a 271748W	Spacer	1
8	196132W	. Spacer	1	22	277276W	Decal	1
9	196130W	. Spacer	2	23	15055W	Nut	2
10	196129W	. U-Bolt	1				
11	15155W	. Lockwasher	2				
				*a	First Used on S/N W12E-1600 & AW12E-1001		

Control Lever Assembly - Power Controls

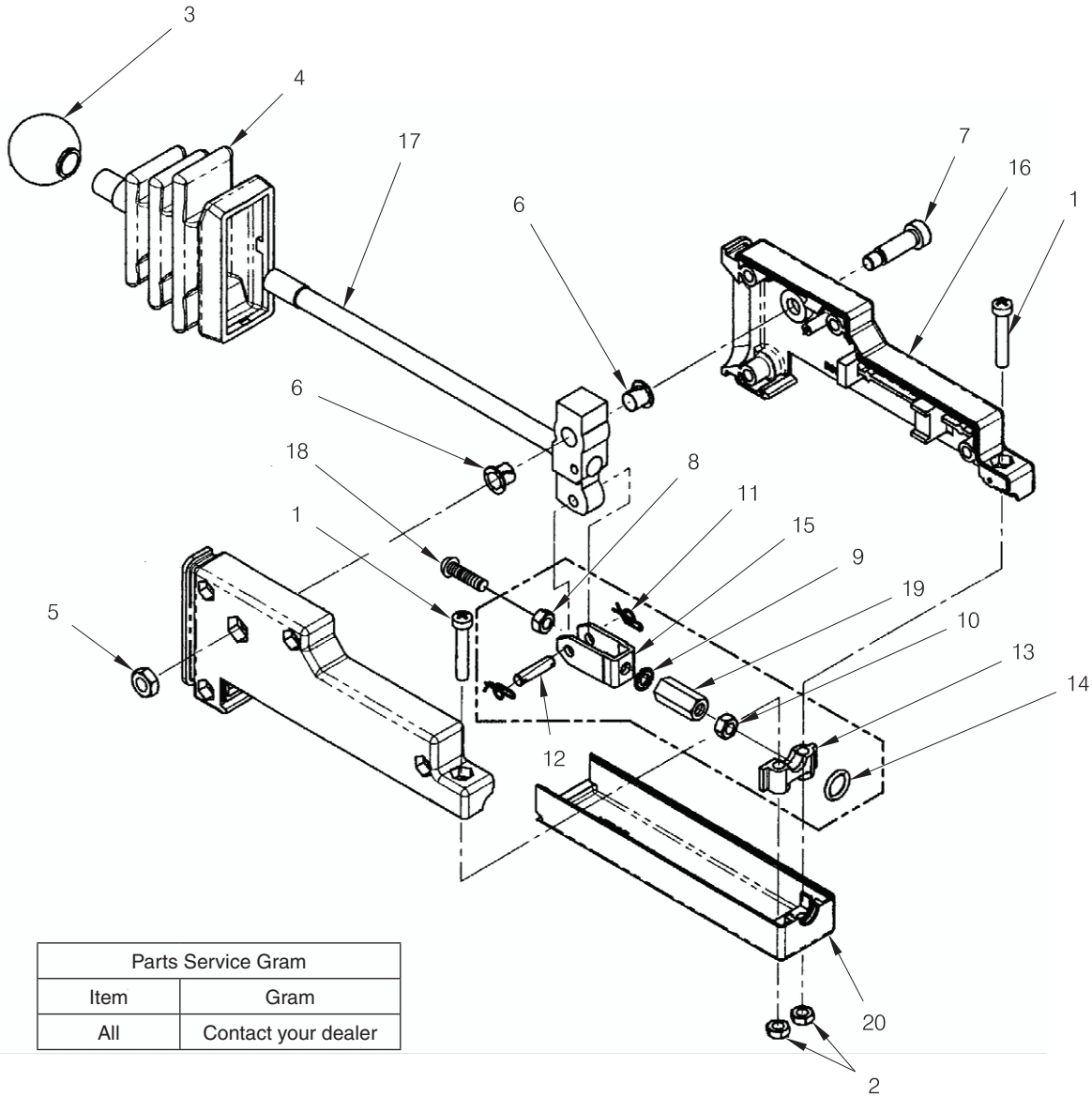
Last Used on S/N AW12E-1075



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	1300785W	Assembly, Control Lever	1				
1	1302049W	. Knob	1	15	15024W	. Nut	1
2	1302048W	. Clamp, Cable	1	16	15004W	. Nut	1
3	1302047W	. Cover	1	17	15923W	. Washer	1
4	1302046W	. Clamp, Base	1	18	15005W	. Nut	2
5	1302045W	. Bearing	2	19	15932W	. Lockwasher	2
6	1302044W	. Pin, Clevis	1	20	1302039W	. Pin	1
7	1302043W	. U-Bolt	1	21	NSS	. Housing	1
8	1302042W	. Clevis	1	22	NSS	. Lever	1
9	1302041W	. Boot	1	23	*a, *b 18717W	. Capscrew, Button Head	1
10	1302040W	. O-Ring	1	24	*b 383881W	. Nut, Tall	1
11	1306003W	. Screw	4				
12	1306002W	. Screw	4				
13	221867W	. Lockwasher	4		*a	Use 318702W Thread Lock	
14	1306001W	. Screw	1		*b	Dresser TD 25E/G Only	

Control Lever Assembly - Power Controls

First Used on S/N AW12E-1076



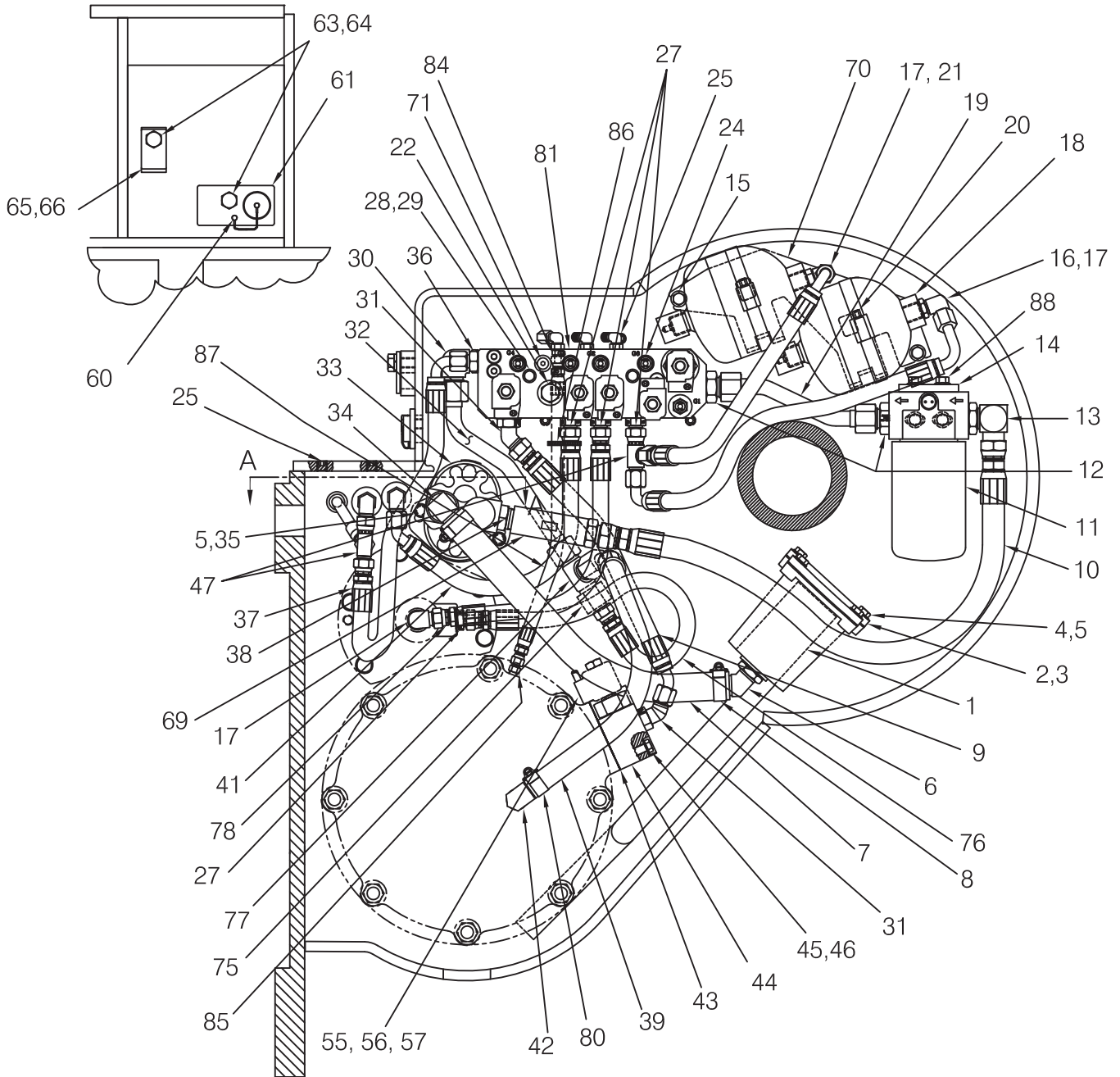
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2303982W	Assembly, Control Lever	1				
	2303984W	Assembly, Control Lever	1				
	2304804W	Assembly, Control Lever	1				
	2307354W	Assembly, Control Lever	1				
1	*a -----	. Screw	2	13	*b -----	. Adapter, Cable	1
2	*a -----	. Nut	2	14	*b -----	. O-Ring	1
3	2304339W	. Knob	1	15	*b -----	. Clevis	1
4	2304340W	. Boot	1	16	-----	. Cover	1
5	2304341W	. Nut, Jam	1	17	*c -----	. Lever	1
6	2304342W	. Bearing	2	18	18717W	Capscrew	1
7	2304343W	. Screw	1	19	383881W	Nut, Tall	1
8	*b -----	. Nut	1	20	2304604W	Cover	1
9	*b -----	. Washer	1				
10	*b -----	. Nut	1				
11	*b -----	. Pin, Cotter	2				
12	*b -----	. Pin	1				
					*a	Included in 2304338W Hardware Kit	
					*b	Included in 2305023W Cable Attaching Hardware Kit	
					*c	Typical Lever Shown Here. Your Lever May Vary.	

Intentionally Blank

Hydraulic Group - Electronic Controls (Ratios #1, 3, 4, 6)

Last Used on S/N AW12E-1228

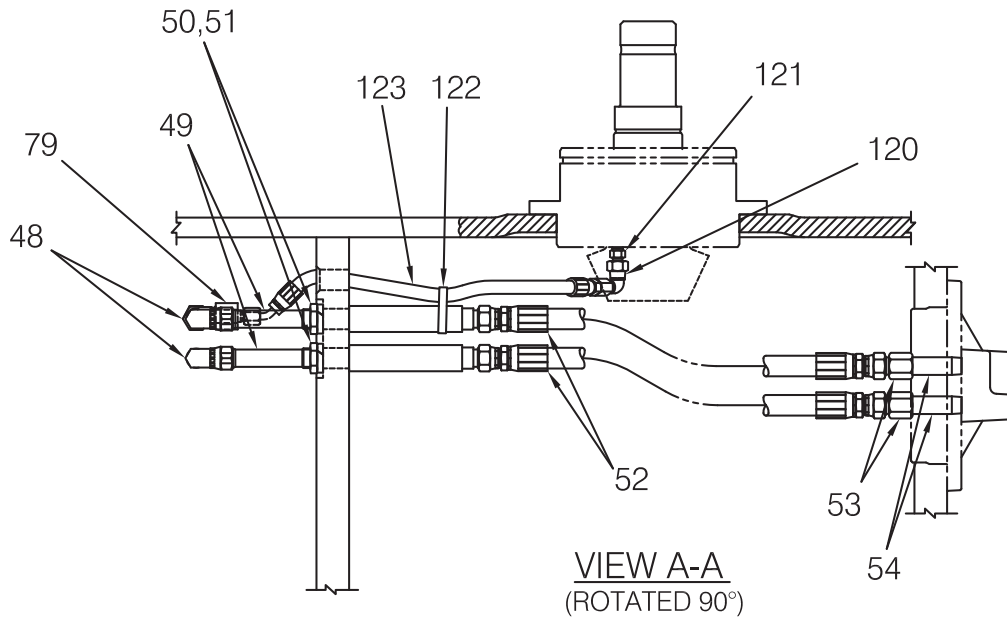
Page 1 of 3



NOTE: ELECTRICAL CONNECTIONS OMITTED FOR CLARITY. SEE INTERNAL WIRING SECTION FOR DETAILS.

**Hydraulic Group - Electronic Controls
(Ratios #1, 3, 4, 6)**

Last Used on S/N AW12E-1228
Page 2 of 3



Recommended Service Kit		
Item	Kit No.	Section
3, 11A	2311376	5-1
3, 43, 66	281939W	5-1

Hydraulic Group - Electronic Controls (Ratios #1, 3, 4, 6)

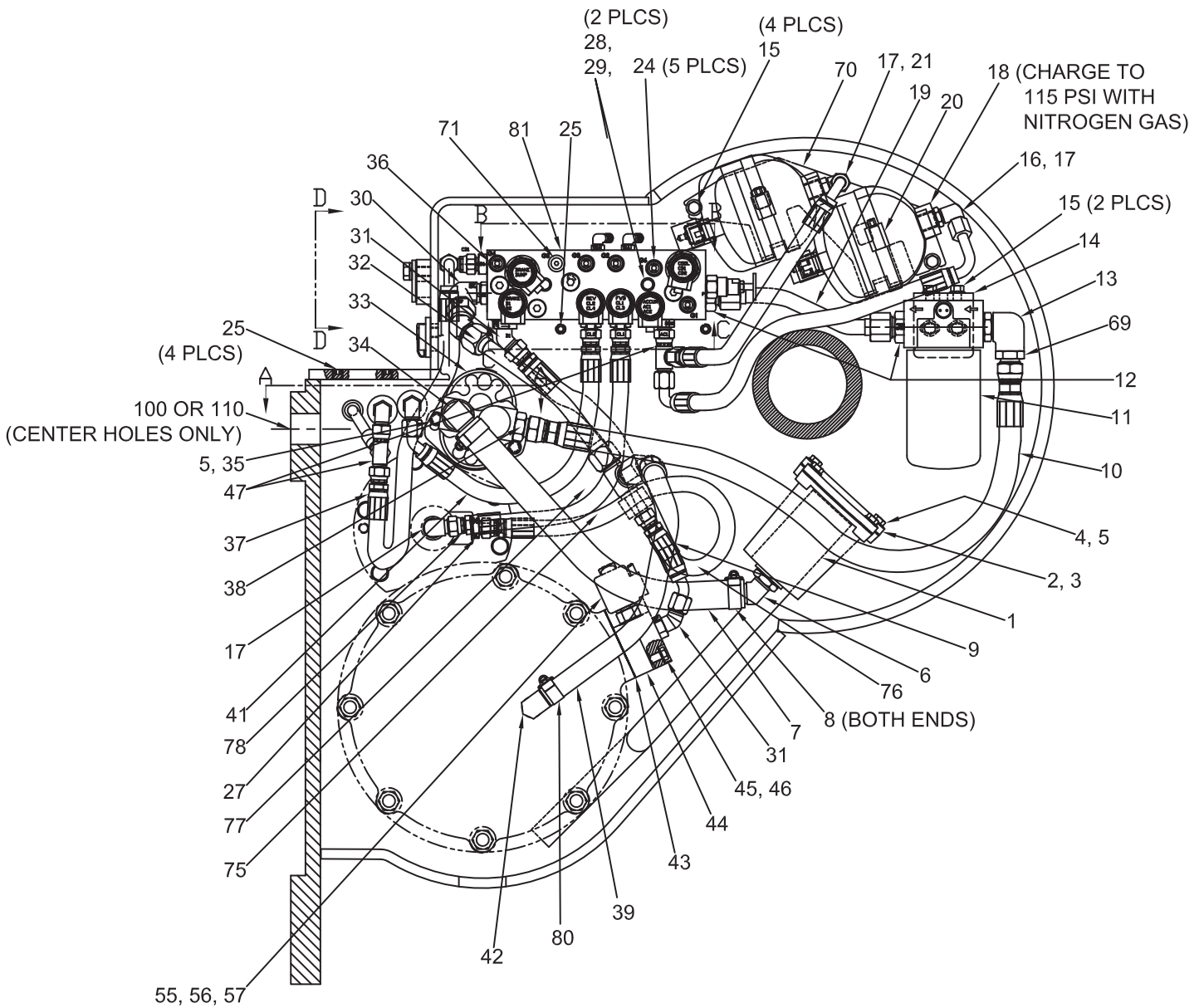
Last Used on S/N AW12E-1228

Page 3 of 3

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	219172W	Strainer	1	46	15134W	Washer	2
1	156689W	. O-Ring	1	47	17062W	Fitting	2
2	2300936W	Plate, Cover	1	48	16989W	Fitting	2
3	2300935W	Gasket	1	49	225233W	Connector, Special	2
4	16805W	Capscrew	4	50	14761W	Nut	2
5	15156W	Washer	6	51	177951W	Washer	2
6	276090W	Fitting	1	52	99443W	Assembly, Hose	2
7	277234W	Assembly, Hose	1	53	14723W	Fitting	2
8	209639W	Clamp, Heavy Duty	2	54	*b 19589W	Fitting	2
9	2304858W	Assembly, Hose	1	55	R15005	Coil, 24V	2
10	124588W	Assembly, Hose	1	56	2305260W	Valve	2
11	2304111W	Assembly, Filter	1	57	2304845W	Washer, Tab	2
11	2304112W	. Element, Filter	1	58	2304859W	Assembly, Hose	1
11	2304862W	. Switch, Pressure	1	59	17777W	Fitting	1
11	2305132W	. Head, Filter	1	60	16602W	Screw	1
12	16543W	Fitting	2	61	*d 2304503W	Retainer, Connector	1
13	16561W	Fitting	1	63	16830W	Capscrew	2
14	2304699W	Mounting Bracket, Filter	1	64	15158W	Washer	2
15	*b 1300780W	Screw, Serrated Flange	4	65	2304366W	Plate, Cover	1
16	2304856W	Assembly, Hose	1	66	303946W	Gasket	1
17	16559W	Fitting	3	69	271729W	Valve, Check	1
18	*a R16271	Accumulator	2	69	210641W	. O-Ring	1
18	2302110W	Accumulator	2	70	2304698W	Mounting Plate, Accumulator	1
19	2304737W	Assembly, Inlet Tube	1	75	14066	Fitting	1
20	2302109W	Clamp, Heavy Duty	2	76	88297W	Assembly, Hose	1
21	2304857W	Assembly, Hose	1	77	14563W	Fitting	1
22	2304824W	Plate, Cavity	1	78	2304854W	Assembly, Hose	1
24	2304825W	Fitting	5	79	16923W	Fitting	1
25	*c 2305987W	Screw	7	79	*e 17777W	Fitting	1
27	16541W	Fitting	4	80	127045W	Clamp	1
28	*b 18524W	Capscrew	2	81	2303889W	Assembly, Valve Manifold (3-66)	1
29	*b 18515W	Washer	2	84	*a 16931W	Fitting	1
30	111331W	Fitting	1	85	*a 14668W	Fitting	1
31	16569W	Fitting	2	86	*a 137852W	Clamp, Strap	1
32	2304860W	Tube, Cooling	1	87	*a 2305052W	Assembly, Hose	1
33	2302963W	Pump, Hydraulic (3-130)	1	88	1300780W	Screw, Serrated Flange	2
34	2303677W	Fitting	1	120	*e 16987W	Fitting	1
35	16828W	Capscrew	2	121	*b,*e 14668W	Fitting	1
36	16909W	Fitting	1	122	*e 137852W	Strap, Clamp	1
37	2304855W	Assembly, Hose	1	123	*e 2304859W	Assembly, Hose	1
38	*b 89669W	Fitting	1				
39	2305051W	Hose	1		*a Last Used on S/N AW12E-1112		
41	2304853W	Assembly, Hose	1		*b Use 273338W Pipe Thread Sealant		
42	16165W	Fitting	1		*c Use 318702W Thread Lock		
43	196022W	Gasket	1		*d Use 236308W Ultra Blue Sealant		
44	*a 2304725W	Manifold, Brake Dump	1		*e Used on Caterpillar D9R and D10N/R with Dropbox Only		
44	2305259W	Manifold, Brake Dump	1				
45	16379W	Capscrew	2				

Hydraulic Group - Electronic Controls (Ratios #1, 3, 4, 6)

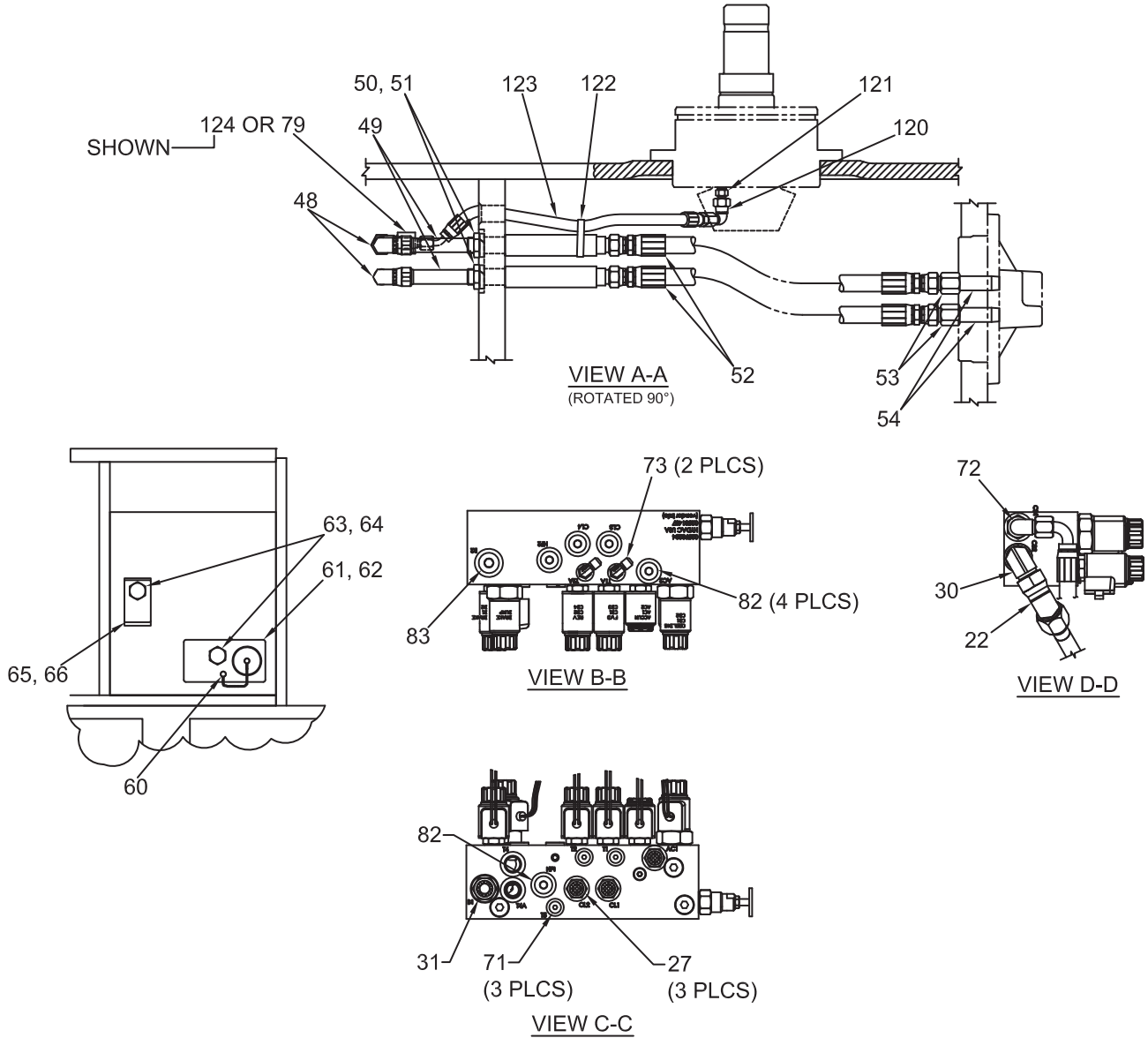
Used on S/N AW12E-1229 thru AW12E-1433
Page 1 of 3



NOTE: ELECTRICAL CONNECTIONS OMITTED FOR CLARITY. SEE INTERNAL WIRING SECTION FOR DETAILS.

Hydraulic Group - Electronic Controls (Ratios #1, 3, 4, 6)

Used on S/N AW12E-1229 thru AW12E-1433
Page 2 of 3



Recommended Service Kit		
Item	Kit No.	Section
3, 11A	2311376	5-1
3, 43, 66	281939W	5-1

Hydraulic Group - Electronic Controls (Ratios #1, 3, 4, 6)

Used on S/N AW12E-1229 thru AW12E-1433

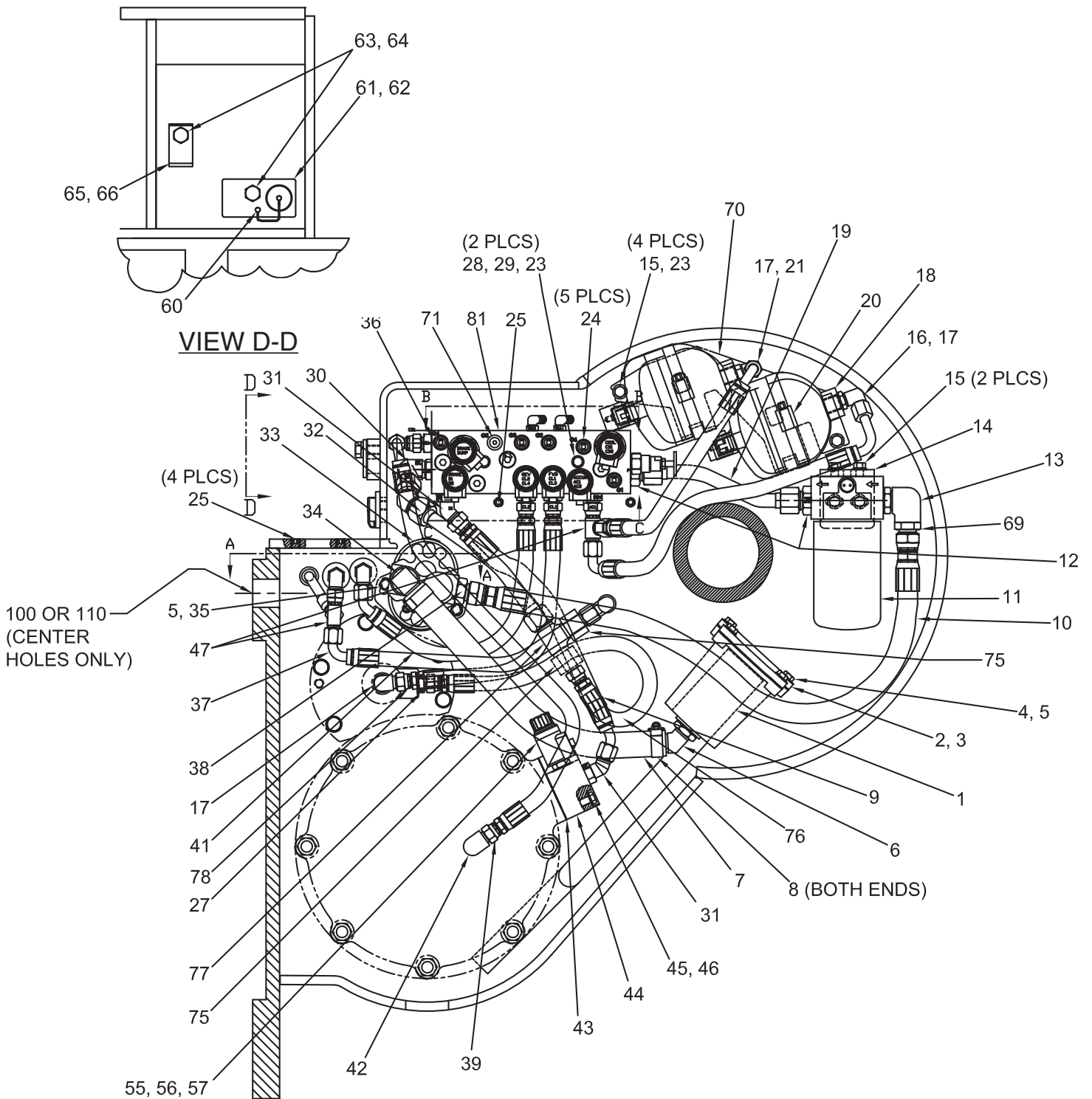
Page 3 of 3

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	219172W	Strainer	1	47	17062W	Fitting	2
1	156689W	. O-Ring	1	48	16989W	Fitting	2
2	2300936W	Plate, Cover	1	49	225233W	Connector, Special	2
3	2300935W	Gasket	1	50	14761W	Nut	2
4	16805W	Capscrew	4	51	177951W	Washer	2
5	15156W	Washer	6	52	99443W	Assembly, Hose	2
6	276090W	Fitting	1	53	14723W	Fitting	2
7	277234W	Assembly, Hose	1	54	*d 19589W	Fitting, Pipe	2
8	209639W	Clamp, Heavy Duty	2	55	R15005	Coil, 24V	1
9	2310122	Assembly, Hose	1	56	2305260W	Valve, 2 Way Spool	1
10	76227W	Assembly, Hose	1	57	2304845W	Washer, Tab	1
11	2304111W	Assembly, Filter	1	60	16602W	Screw	1
11	2304112W	. Element, Filter	1	61	*c 2304503W	Retainer, Connector	1
11	2304862W	. Switch, Pressure	1	63	16830W	Capscrew	2
11	2305132W	. Head, Filter	1	64	15158W	Washer	2
12	16543W	Fitting, O-Ring	2	65	2304366W	Plate, Cover	1
13	2307740W	Fitting, O-Ring	1	66	303946W	Gasket	1
14	2304699W	Mounting Bracket, Filter	1	69	2310015	Valve, Check	1
15	*d 1300780W	Screw, Serrated Flange	6	70	2304698W	Mounting Plate, Accumulator	1
16	2310111	Assembly, Hose	1	71	222442W	Fitting, O-Ring	4
17	16559W	Fitting, O-Ring	3	72	16989W	Fitting	1
18	R16271	Accumulator	2	73	16556W	Fitting, O-Ring	2
19	2306738W	Assembly, Inlet Tube	1	75	14066	Fitting	1
20	2302109W	Clamp, Heavy Duty	2	76	2310121	Assembly, Hose	1
21	2310112	Assembly, Hose	1	77	14563W	Fitting	1
22	214219W	Fitting	1	78	2304854W	Assembly, Hose	1
24	2304825W	Test Fitting, QC	5	79	16923W	Fitting	1
25	*b 2305987W	Setscrew, SLG	7	80	127045W	Clamp	1
27	16541W	Fitting, O-Ring	4	81	2306547W	Assembly, Valve Manifold (3-67)	1
28	*d 18526W	Capscrew	2	82	235691W	Fitting, O-Ring	5
29	*d 18515W	Washer	2	83	233693W	Fitting, O-Ring	1
30	111331W	Fitting, O-Ring	1	100	18849W	Plug (1.625 Thread Size)	2
31	16569W	Fitting, O-Ring	2	110	18001W	Plug (1.44 Thread Size)	2
32	2310465	Assembly, Cooling Tube	1	120	16987W	Fitting	1
33	2302963W	Pump, Hydraulic (3-130)	1	121	*d, *e 14668W	Fitting	1
34	2303677W	Fitting, Special Hose	1	121	*d, *f 225094W	Fitting	1
35	16828W	Capscrew	2	122	137852W	Clamp, Strap	1
36	16909W	Fitting, O-Ring	1	123	2304859W	Assembly, Hose	1
37	2304855W	Assembly, Hose	1	124	17777W	Fitting	1
38	*a 142682W	Fitting, O-Ring	1				
39	2305051W	Hose, SPL Cooling	1		*a Use 273338W Pipe Thread Sealant		
41	2304853W	Assembly, Hose	1		*b Use 318702W Thread Lock		
42	16165W	Fitting, Hose Nip	1		*c Use 236308W Ultra Blue Sealant		
43	196022W	Gasket	1		*d Use 246108W Pipe Thread Sealant		
44	2305056W	Manifold, Brake Dump	1		*e Last Used on S/N AW12E-1315		
45	16379W	Capscrew	2		*f First Used on S/N AW12E-1316		
46	15134W	Washer	2				

Hydraulic Group - Electronic Controls (Ratios #1, 3, 4, 6)

Used on S/N AW12E-1434 thru AW12E-1456

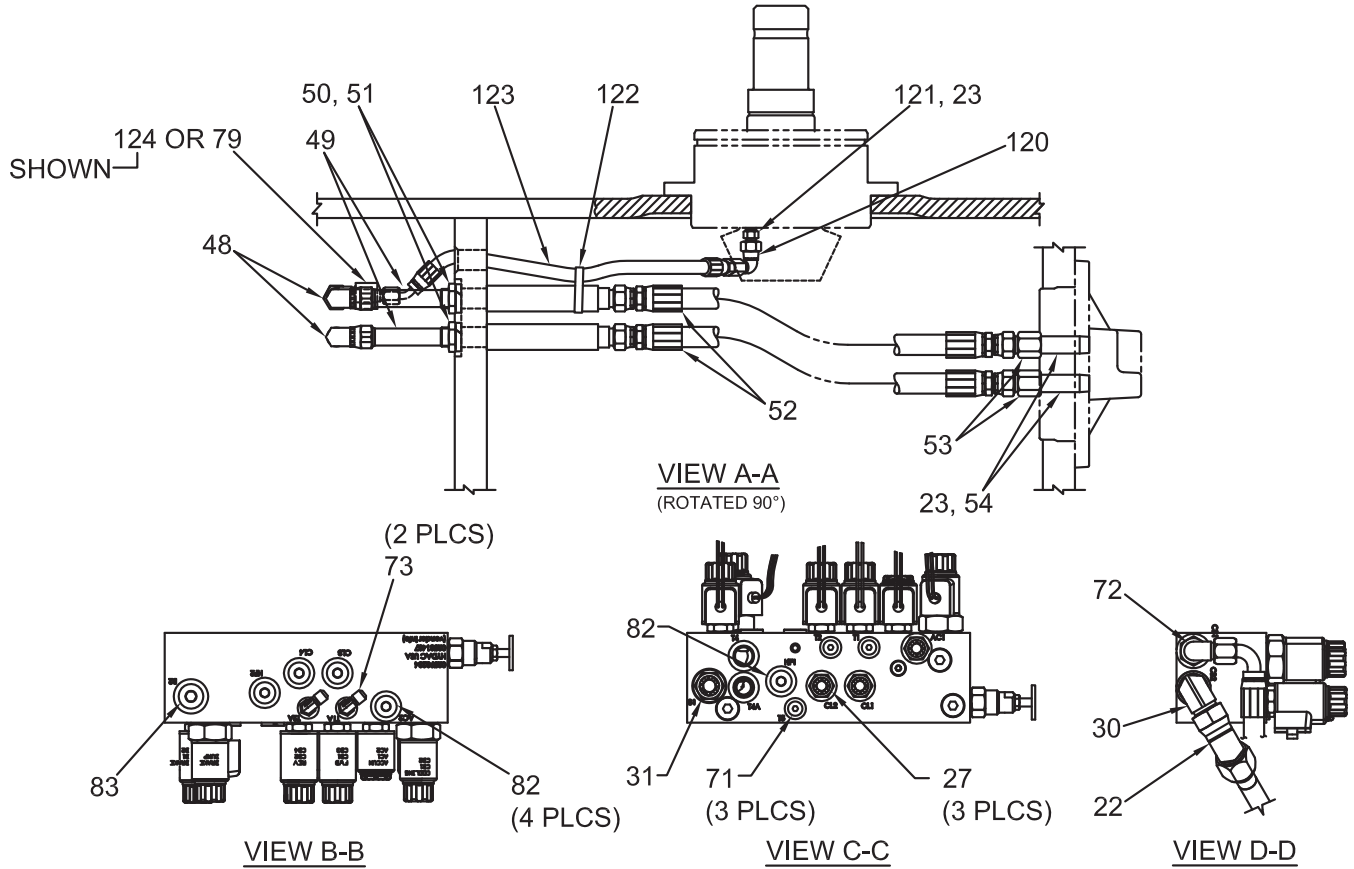
Page 1 of 3



Hydraulic Group - Electronic Controls (Ratios #1, 3, 4, 6)

Used on S/N AW12E-1434 thru AW12E-1456

Page 2 of 3



Recommended Service Kit		
Item	Kit No.	Section
3, 11A	2311376	5-1
3, 43, 66	281939W	5-1

Hydraulic Group - Electronic Controls (Ratios #1, 3, 4, 6)

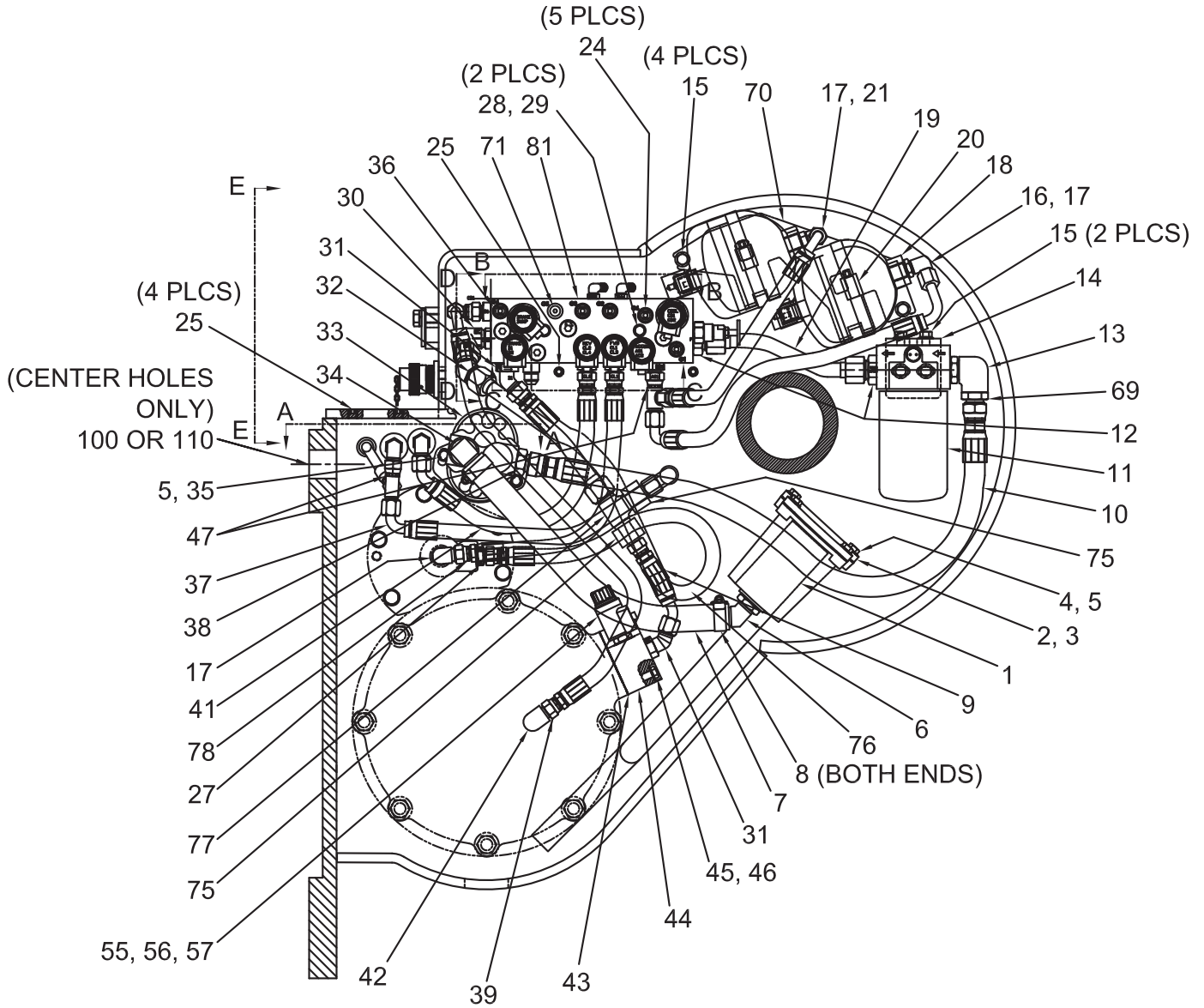
Used on S/N AW12E-1434 thru AW12E-1456

Page 3 of 3

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	219172W	Strainer	1	45	16379W	Capscrew	2
1	156689W	. O-Ring	1	46	15134W	Washer	2
2	2300936W	Plate, Cover	1	47	17062W	Fitting	2
3	2300935W	Gasket	1	48	16989W	Fitting	2
4	16805W	Capscrew	4	49	225233W	Connector, Special	2
5	15156W	Washer	6	50	14761W	Nut	2
6	276090W	Fitting	1	51	177951W	Washer	2
7	277234W	Hose	1	52	99443W	Assembly, Hose	2
8	209639W	Clamp, Heavy Duty	2	53	14723W	Fitting	2
9	2310122	Assembly, Hose	1	54	*a 19589W	Fitting, Pipe	2
10	76227W	Assembly, Hose	1	55	2310256	Coil, Valve - 24V	1
11	2304111W	Assembly, Filter	1	56	2311111	Valve, Cartridge	1
11	2304112W	. Element, Filter	1	60	16602W	Screw	1
11	2304862W	. Switch, Pressure	1	61	*b 2304503W	Retainer, Connector	1
11	2305132W	. Head, Filter	1	63	16830W	Capscrew	2
12	16543W	Fitting, O-Ring	2	64	15158W	Washer	2
13	2307740W	Fitting, O-Ring	1	65	2304366W	Plate, Cover	1
14	2304699W	Mounting Bracket, Filter	1	66	303946W	Gasket	1
15	*a 1300780W	Screw, Serrated Flange	6	67	2303901W	Harness, Internal	1
16	2310111	Assembly, Hose	1	68	2304877W	Plug, 2 Terminals	1
17	16559W	Fitting, O-Ring	3	69	2310015	Valve, Check	1
18	R16271	Accumulator	2	70	2304698W	Mounting Plate, Accumulator	1
19	2306738W	Tube Assembly, Inlet	1	71	222442W	Fitting, O-Ring	4
20	2302109W	Clamp, Heavy Duty	2	72	16989W	Fitting	1
21	2310112	Assembly, Hose	1	73	16556W	Fitting, O-Ring	2
22	214219W	Fitting	1	74	2305050W	Harness, Brake Dump	1
24	2304825W	Test Fitting, QC	5	75	14066	Fitting	2
25	2305987W	Setscrew, SLG	7	76	2310121	Assembly, Hose	1
27	16541W	Fitting, O-Ring	4	77	14563W	Fitting	1
28	*a 18526W	Capscrew	2	78	2304854W	Assembly, Hose	1
29	*a 18515W	Washer	2	79	16923W	Fitting	1
30	111331W	Fitting, O-Ring	1	81	2306547W	Assembly, Valve Manifold (3-67)	1
31	16569W	Fitting, O-Ring	2	82	235691W	Fitting, O-Ring	5
32	2310465	Assembly, Cooling Tube	1	83	233693W	Fitting, O-Ring	1
33	2302963W	Pump, Hydraulic (3-130)	1	100	18849W	Plug (1.625 Thread Size)	2
34	2303677W	Fitting, Special Hose	1	110	18001W	Plug (1.44 Thread Size)	2
35	16828W	Capscrew	2	120	16987W	Fitting	1
36	16909W	Fitting, O-Ring	1	121	*a 225094W	Fitting with Orifice	1
37	2310713	Assembly, Hose	1	122	137852W	Clamp, Strap	1
38	142682W	Fitting, O-Ring	1	123	2304859W	Assembly, Hose	1
39	2310774	Assembly, Hose	1	124	17777W	Fitting	1
41	2304853W	Assembly, Hose	1				
42	17300W	Fitting	1		*a Use 246108W Pipe Thread Sealant		
43	196022W	Gasket	1		*b Use 236308W Loctite Ultra Blue Sealant		
44	2311099	Manifold, Brake Dump	1				

Hydraulic Group - Electronic Controls
(Ratios #1, 3, 4, 6)

First Used on S/N AW12E-1457
 Page 1 of 3

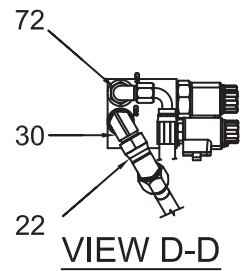
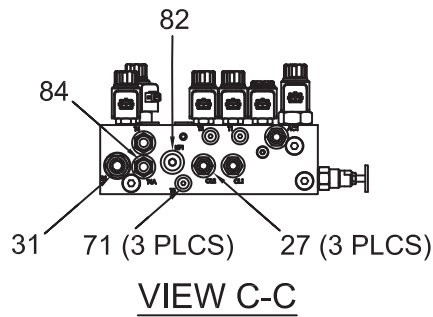
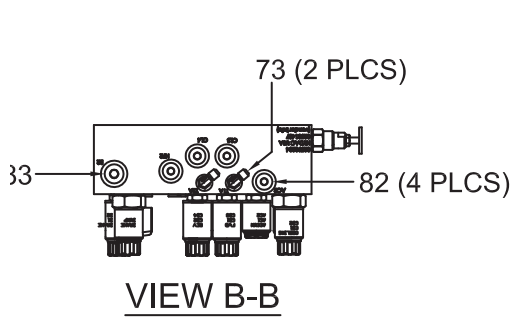
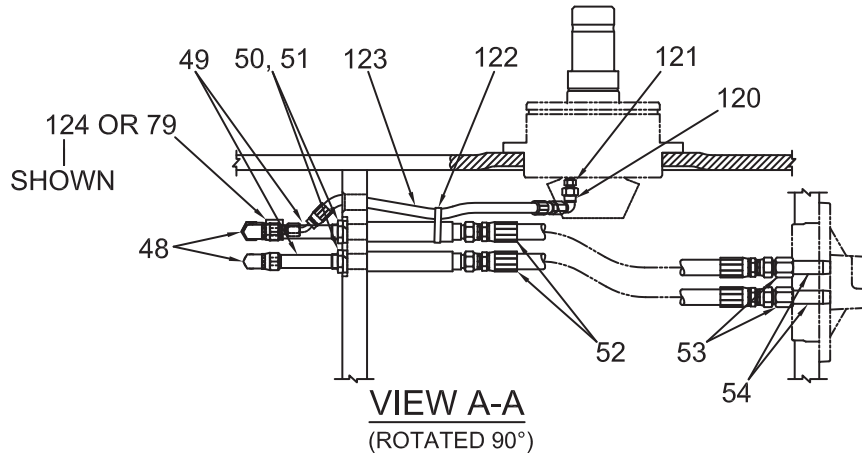


NOTE: ELECTRICAL CONNECTIONS OMITTED FOR CLARITY. SEE INTERNAL WIRING SECTION FOR DETAILS.

**Hydraulic Group - Electronic Controls
(Ratios #1, 3, 4, 6)**

First Used on S/N AW12E-1457

Page 2 of 3



Recommended Service Kit		
Item	Kit No.	Section
3, 11A	2311376	5-1
3, 43, 66	281939W	5-1

Hydraulic Group - Electronic Controls (Ratios #1, 3, 4, 6)

First Used on S/N AW12E-1457

Page 3 of 3

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	219172W	Strainer	1	44	2311099	Manifold, Brake Dump	1
1	156689W	. O-Ring	1	45	16379W	Capscrew	2
2	2300936W	Plate, Cover	1	46	15134W	Washer	2
3	2300935W	Gasket	1	47	17062W	Fitting	2
4	16805W	Capscrew	4	48	16989W	Fitting	2
5	15156W	Washer	6	49	225233W	Connector, Special	2
6	276090W	Fitting	1	50	14761W	Nut	2
7	277234W	Hose	1	51	177951W	Washer	2
8	209639W	Clamp, Heavy Duty	2	52	99443W	Assembly, Hose	2
9	2310122	Assembly, Hose	1	53	14723W	Fitting	2
10	76227W	Assembly, Hose	1	54	*a 19589W	Fitting, Pipe	2
11	2304111W	Assembly, Filter	1	55	2214907	Coil, Valve - 24V	1
11	2304112W	. Element, Filter	1	56	2311111	Valve, Cartridge	1
11	2304862W	. Switch, Pressure	1	60	16602W	Screw	1
11	2305132W	. Head, Filter	1	61	*b 2311807	Retainer, Connector	1
12	16543W	Fitting, O-Ring	2	63	16830W	Capscrew	2
13	2307740W	Fitting, O-Ring	1	64	15158W	Washer	2
14	2304699W	Mounting Bracket, Filter	1	65	2304366W	Plate, Cover	1
15	*a 1300780W	Screw, Serrated Flange	6	66	303946W	Gasket	1
16	2310111	Assembly, Hose	1	67	2311443	Harness, Internal	1
17	16559W	Fitting, O-Ring	3	68	2312259	Plug, 2 Terminals	1
18	R16271	Accumulator	2	69	2310015	Valve, Check	1
19	2306738W	Assembly, Inlet Tube	1	70	2304698W	Mounting Plate, Accumulator	1
20	2302109W	Clamp, Heavy Duty	2	71	222442W	Fitting, O-Ring	4
21	2310112	Assembly, Hose	1	72	16989W	Fitting	1
22	214219W	Fitting	1	73	16556W	Fitting, O-Ring	2
24	2304825W	Fitting, QC Test	5	74	2311900	Harness, Brake Dump	1
25	2305987W	Setscrew, SLG	7	75	14066	Fitting	2
27	16541W	Fitting, O-Ring	4	76	2310121	Assembly, Hose	1
28	*a 18526W	Capscrew	2	77	14563W	Fitting	1
29	18515W	Washer	2	78	2304854W	Assembly, Hose	1
30	111331W	Fitting, O-Ring	1	79	16923W	Fitting	1
31	16569W	Fitting, O-Ring	2	81	2311887	Assembly, Valve Manifold (3-68)	1
32	2310465	Assembly, Cooling Tube	1	82	235691W	Fitting, O-Ring	5
33	2302963W	Pump, Hydraulic (3-130)	1	83	233693W	Fitting, O-Ring	1
34	2303677W	Fitting, Special Hose	1	84	2313404	Valve, Check	1
35	16828W	Capscrew	2	120	16987W	Fitting	1
36	16909W	Fitting, O-Ring	1	121	*a 225094W	Fitting with Orifice	1
37	2310713	Assembly, Hose	1	122	137852W	Clamp, Strap	1
38	142682W	Fitting, O-Ring	1	123	2304859W	Assembly, Hose	1
39	2310774	Assembly, Hose	1	124	17777W	Fitting	1
41	2304853W	Assembly, Hose	1				
42	17300W	Fitting	1		*a Use 246108W Pipe Thread Sealant		
43	196022W	Gasket	1		*b Use 236308W Loctite Ultra Blue Sealant		

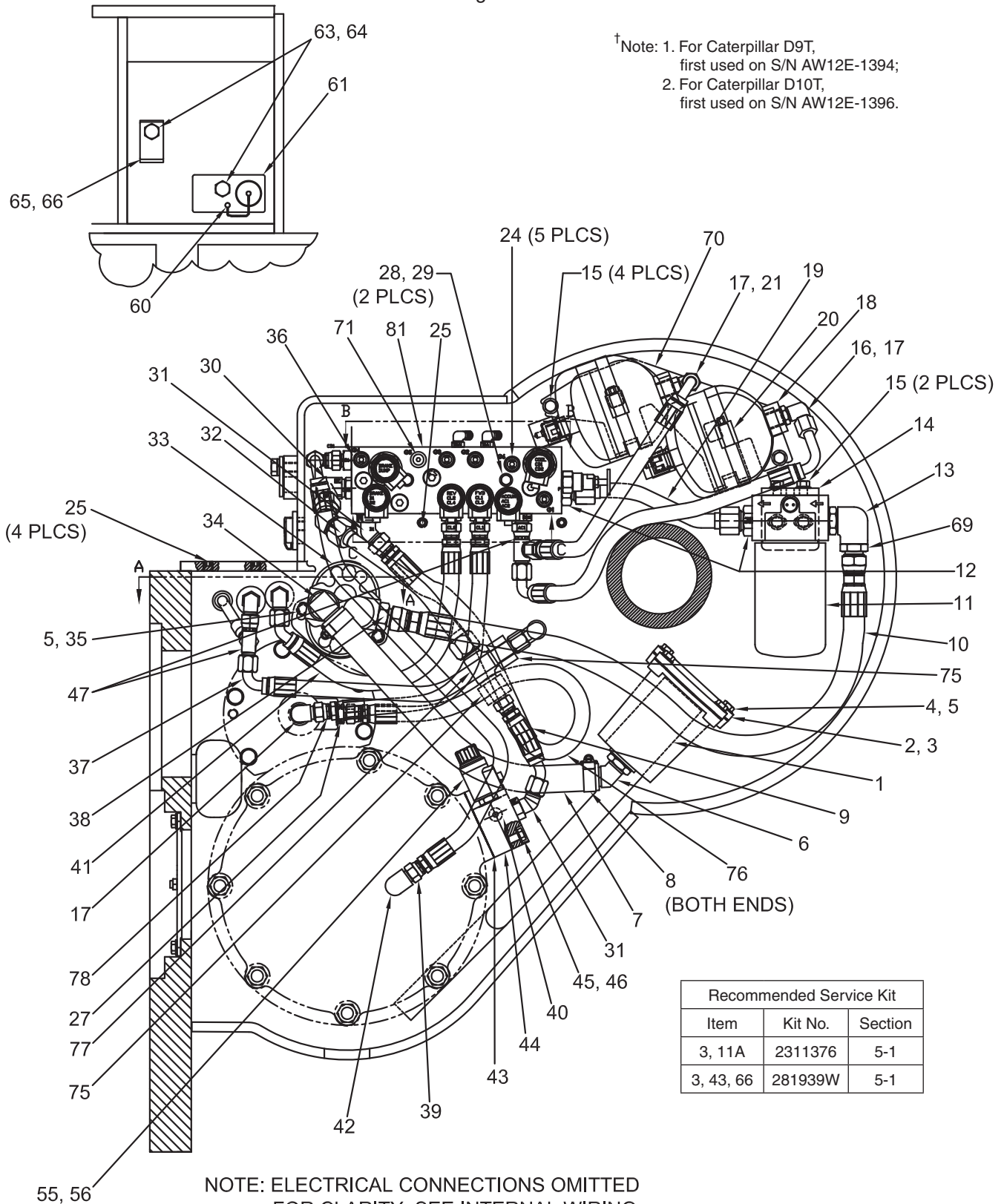
Hydraulic Group - Electronic Controls (Ratios #1, 3, 4, 6)

Heavy Duty Frame

Used on S/N AW12E-1434† thru AW12E-1456

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†Note: 1. For Caterpillar D9T,
first used on S/N AW12E-1394;
2. For Caterpillar D10T,
first used on S/N AW12E-1396.



NOTE: ELECTRICAL CONNECTIONS OMITTED FOR CLARITY. SEE INTERNAL WIRING SECTION FOR DETAILS.

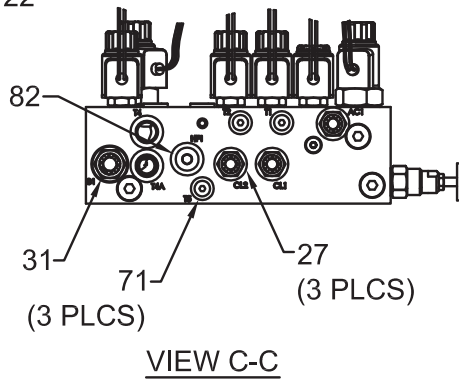
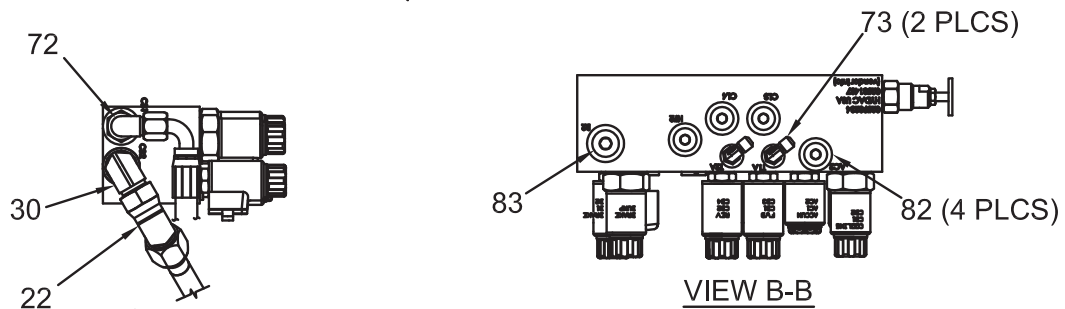
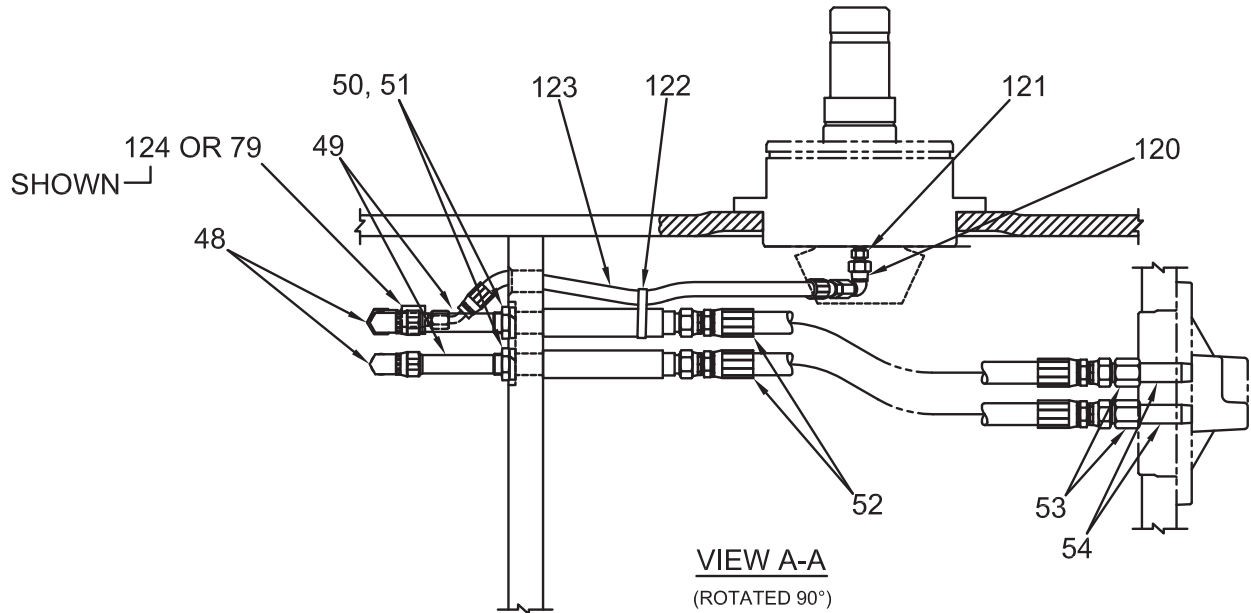
Recommended Service Kit		
Item	Kit No.	Section
3, 11A	2311376	5-1
3, 43, 66	281939W	5-1

Hydraulic Group - Electronic Controls (Ratios #1, 3, 4, 6)

Heavy Duty Frame

Used on S/N AW12E-1434 thru AW12E-1456

Page 2 of 3



Hydraulic Group - Electronic Controls (Ratios #1, 3, 4, 6)

Heavy Duty Frame

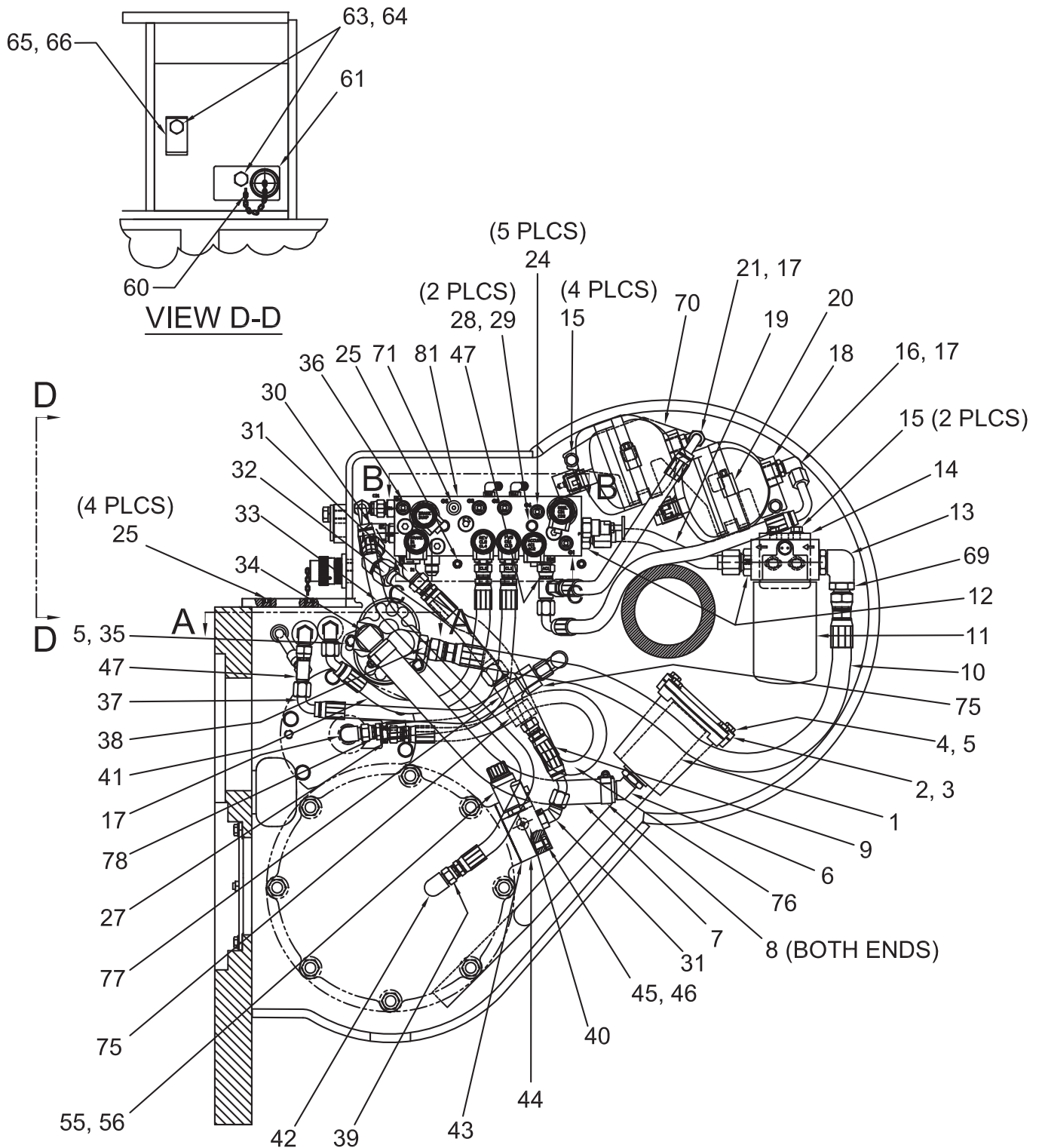
Used on S/N AW12E-1434 thru AW12E-1456

Page 3 of 3

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	219172W	Strainer	1	43	196022W	Gasket	1
1	156689W	. O-Ring	1	44	2311099	Manifold, Brake Dump	1
2	2300936W	Plate, Cover	1	45	16379W	Capscrew	2
3	2300935W	Gasket	1	46	15134W	Washer	2
4	16805W	Capscrew	4	47	17062W	Fitting	2
5	15156W	Washer	6	48	16989W	Fitting	2
6	276090W	Fitting	1	49	225233W	Connector, Special	2
7	277234W	Hose	1	50	14761W	Nut	2
8	209639W	Clamp, Heavy Duty	2	51	177951W	Washer	2
9	2310122	Assembly, Hose	1	52	99443W	Assembly, Hose	2
10	76227W	Assembly, Hose	1	53	14723W	Fitting	2
11	2304111W	Assembly, Filter	1	54	*a 19589W	Fitting, Pipe	2
11	2304112W	. Element, Filter (Not Shown)	1	55	2310256	Coil, Valve - 24V	1
11	2304862W	. Switch, Pressure (Not Shown)	1	56	2311111	Valve, Cartridge	1
11	2305132W	. Head, Filter (Not Shown)	1	60	16602W	Screw	1
12	16543W	Fitting, O-Ring	2	61	*b 2304503W	Retainer, Connector	1
13	2307740W	Fitting, O-Ring	1	63	16830W	Capscrew	2
14	2304699W	Mounting Bracket, Filter	1	64	15158W	Washer	2
15	*a 1300780W	Screw, Serrated Flange	6	65	2304366W	Plate, Cover	1
16	2310111	Assembly, Hose	1	66	303946W	Gasket	1
17	16559W	Fitting, O-Ring	3	67	2303901W	Harness, Internal	1
18	R16271	Accumulator	2	68	2304877W	Plug, 2 Terminals	1
19	2306738W	Tube Assembly, Inlet	1	69	2310015	Valve, Check	1
20	2302109W	Clamp, Heavy Duty	2	70	2304698W	Mounting Plate, Accumulator	1
21	2310112	Assembly, Hose	1	71	222442W	Fitting, O-Ring	4
22	214219W	Fitting	1	72	16989W	Fitting	1
24	2304825W	Test Fitting, QC	5	73	16556W	Fitting, O-Ring	2
25	2305987W	Setscrew, SLG	7	74	2305050W	Harness, Brake Dump	1
27	16541W	Fitting, O-Ring	4	75	14066	Fitting	2
28	*a 18526W	Capscrew	2	76	2310121	Assembly, Hose	1
29	*a 18515W	Washer	2	77	14563W	Fitting	1
30	111331W	Fitting, O-Ring	1	78	2304854W	Assembly, Hose	1
31	16569W	Fitting, O-Ring	2	79	16923W	Fitting	1
32	2310465	Assembly, Cooling Tube	1	81	2306547W	Assembly, Valve Manifold (3-67)	1
33	2302963W	Pump, Hydraulic (3-130)	1	82	235691W	Fitting, O-Ring	5
34	2303677W	Fitting, Special Hose	1	83	233693W	Fitting, O-Ring	1
35	16828W	Capscrew	2	120	16987W	Fitting	1
36	16909W	Fitting, O-Ring	1	121	*a 225094W	Fitting with Orifice	1
37	2310713	Assembly, Hose	1	122	137852W	Clamp, Strap	1
38	142682W	Fitting, O-Ring	1	123	2304859W	Assembly, Hose	1
39	2310774	Assembly, Hose	1	124	17777W	Fitting	1
40	222443W	Fitting	1				
41	2304853W	Assembly, Hose	1		*a Use 246108W Pipe Thread Sealant		
42	17300W	Fitting	1		*b Use 236308W Loctite Ultra Blue Sealant		

Hydraulic Group - Electronic Controls
(Ratios #1, 3, 4, 6)

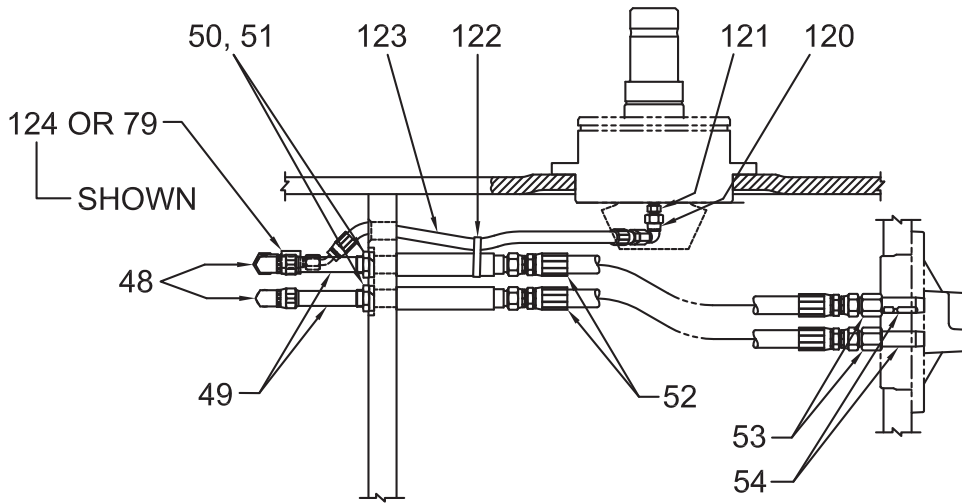
Heavy Duty Frame
 First Used on S/N AW12E-1457
 Page 1 of 3



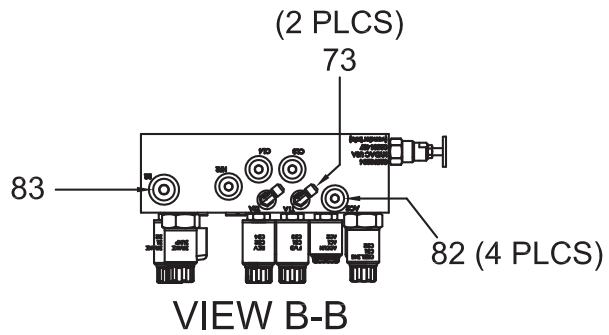
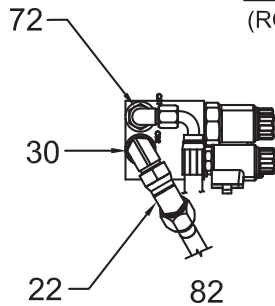
NOTE: ELECTRICAL CONNECTIONS OMITTED FOR CLARITY.
 SEE INTERNAL WIRING SECTION FOR DETAILS.

Hydraulic Group - Electronic Controls
(Ratios #1, 3, 4, 6)

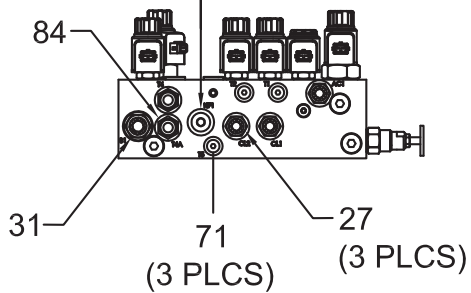
Heavy Duty Frame
 First Used on S/N AW12E-1457
 Page 2 of 3



VIEW A-A
 (ROTATED 90°)



VIEW B-B



VIEW C-C

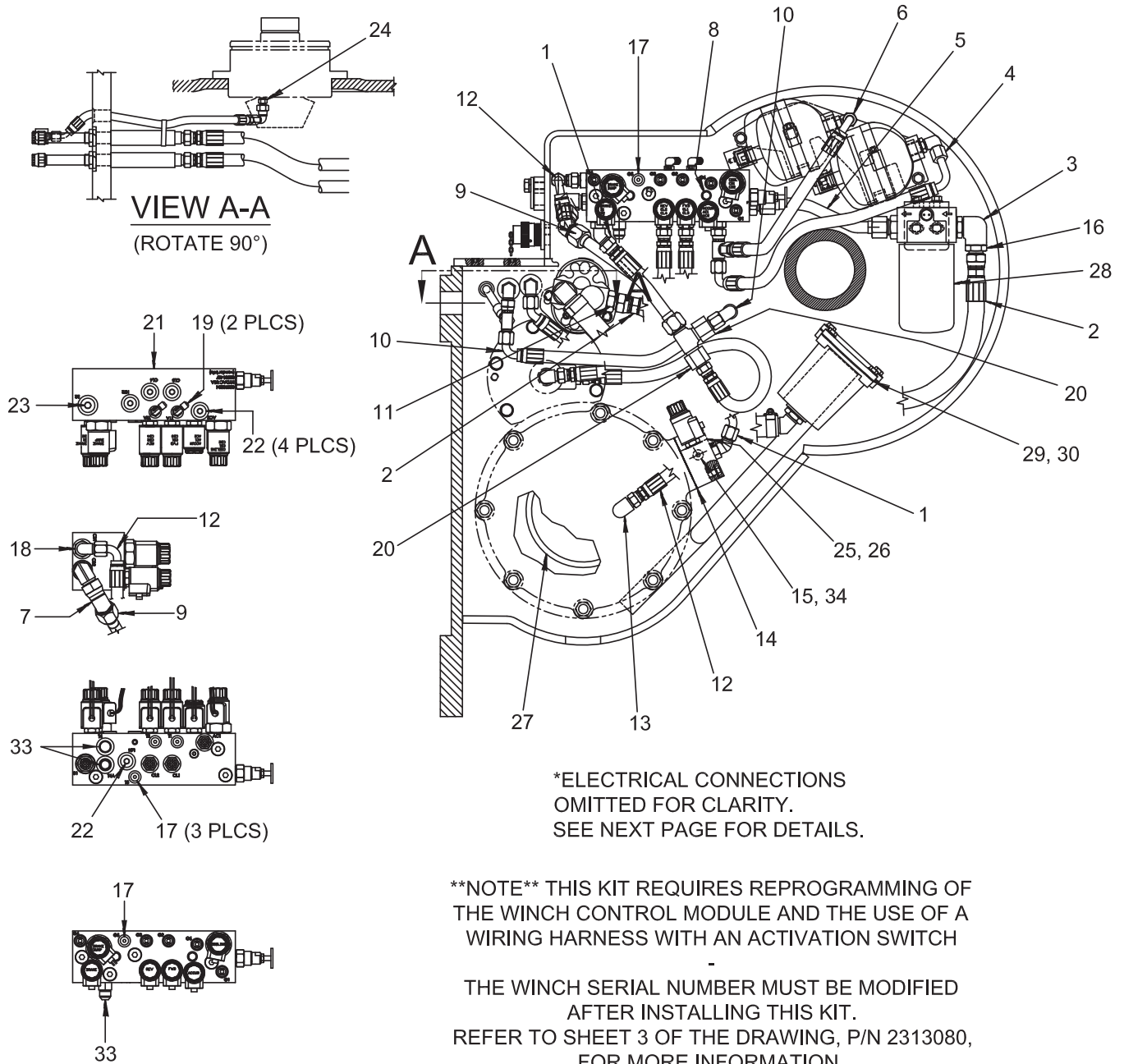
Recommended Service Kit		
Item	Kit No.	Section
3, 11A	2311376	5-1
3, 43, 66	281939W	5-1

Hydraulic Group - Electronic Controls (Ratios #1, 3, 4, 6)

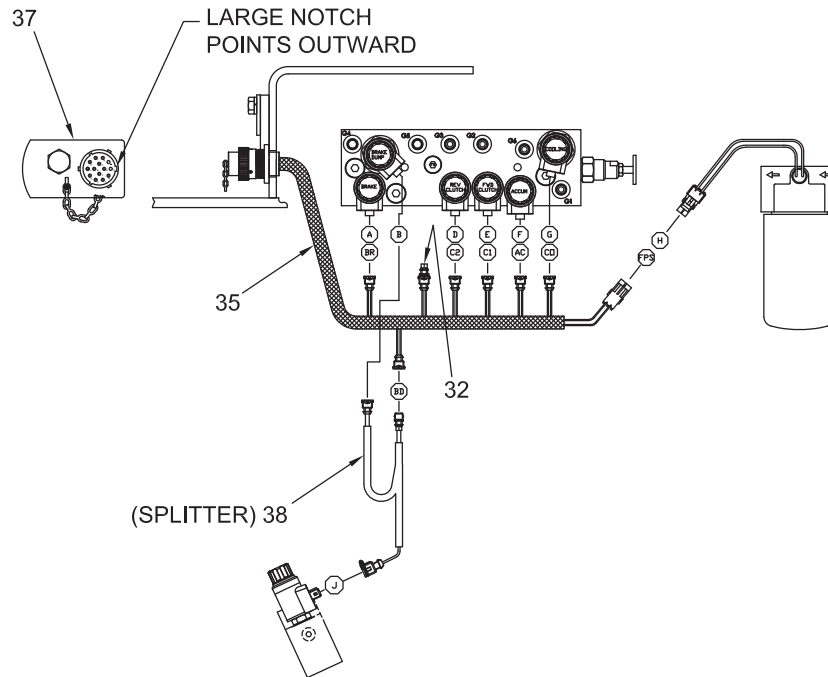
Heavy Duty Frame
First Used on S/N AW12E-1457
Page 3 of 3

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	219172W	Strainer	1	44	2311099	Manifold, Brake Dump	1
1	156689W	. O-Ring	1	45	16379W	Capscrew	2
2	2300936W	Plate, Cover	1	46	15134W	Washer	2
3	2300935W	Gasket	1	47	17062W	Fitting	2
4	16805W	Capscrew	4	48	16989W	Fitting	2
5	15156W	Washer	6	49	225233W	Connector, Special	2
6	276090W	Fitting	1	50	14761W	Nut	2
7	277234W	Hose	1	51	177951W	Washer	2
8	209639W	Clamp, Heavy Duty	2	52	99443W	Assembly, Hose	2
9	2310122	Assembly, Hose	1	53	14723W	Fitting	2
10	76227W	Assembly, Hose	1	54	*a 19589W	Fitting, Pipe	2
11	2304111W	Assembly, Filter	1	55	2314907	Coil, Valve - 24V	1
11	2304112W	. Element, Filter (Not Shown)	1	56	2311111	Valve, Cartridge	1
11	2304862W	. Switch, Pressure (Not Shown)	1	60	16602W	Screw	1
11	2305132W	. Head, Filter (Not Shown)	1	61	*b 2311807	Retainer, Connector	1
12	16543W	Fitting, O-Ring	2	63	16830W	Capscrew	2
13	2307740W	Fitting, O-Ring	1	64	15158W	Washer	2
14	2304699W	Mounting Bracket, Filter	1	65	2304366W	Plate, Cover	1
15	*a 1300780W	Screw, Serrated Flange	6	66	303946W	Gasket	1
16	2310111	Assembly, Hose	1	67	2311443	Harness, Internal	1
17	16559W	Fitting, O-Ring	3	68	2312259	Plug, 2 Terminals	1
18	R16271	Accumulator	2	69	2310015	Valve, Check	1
19	2306738W	Assembly, Inlet Tube	1	70	2304698W	Mounting Plate, Accumulator	1
20	2302109W	Clamp, Heavy Duty	2	71	222442W	Fitting, O-Ring	4
21	2310112	Assembly, Hose	1	72	16989W	Fitting	1
22	214219	Fitting	1	73	16556W	Fitting, O-Ring	2
24	2304825W	Test Fitting, QC	5	74	2311900	Harness, Brake Dump	1
25	2305987W	Setscrew, SLG	7	75	14066	Fitting	2
27	16541W	Fitting, O-Ring	4	76	2310121	Assembly, Hose	1
28	*a 18526W	Capscrew	2	77	14563W	Fitting	1
29	*a 18515W	Washer	2	78	2304854W	Assembly, Hose	1
30	111331W	Fitting, O-Ring	1	79	16923W	Fitting	1
31	16569W	Fitting, O-Ring	2	81	2311887	Assembly, Valve Manifold (3-68)	1
32	2310465	Assembly, Cooling Tube	1	82	235691W	Fitting, O-Ring	5
33	2302963W	Pump, Hydraulic (3-130)	1	83	233693W	Fitting, O-Ring	1
34	2303677W	Fitting, Special Hose	1	84	2313404	Valve, Check	2
35	16828W	Capscrew	2	120	16987W	Fitting	1
36	16909W	Fitting, O-Ring	1	121	*a 225094W	Fitting with Orifice	1
37	2310713	Assembly, Hose	1	122	137852W	Clamp, Strap	1
38	142682W	Fitting, O-Ring	1	123	2307938W	Assembly, Hose	1
39	2310774	Assembly, Hose	1	124	17777W	Fitting	1
40	222443W	Fitting	1				
41	2304853W	Assembly, Hose	1		*a Use 246108W Pipe Thread Sealant		
42	17300W	Fitting	1		*b Use 236308W Loctite Ultra Blue Sealant		
43	196022W	Gasket	1				

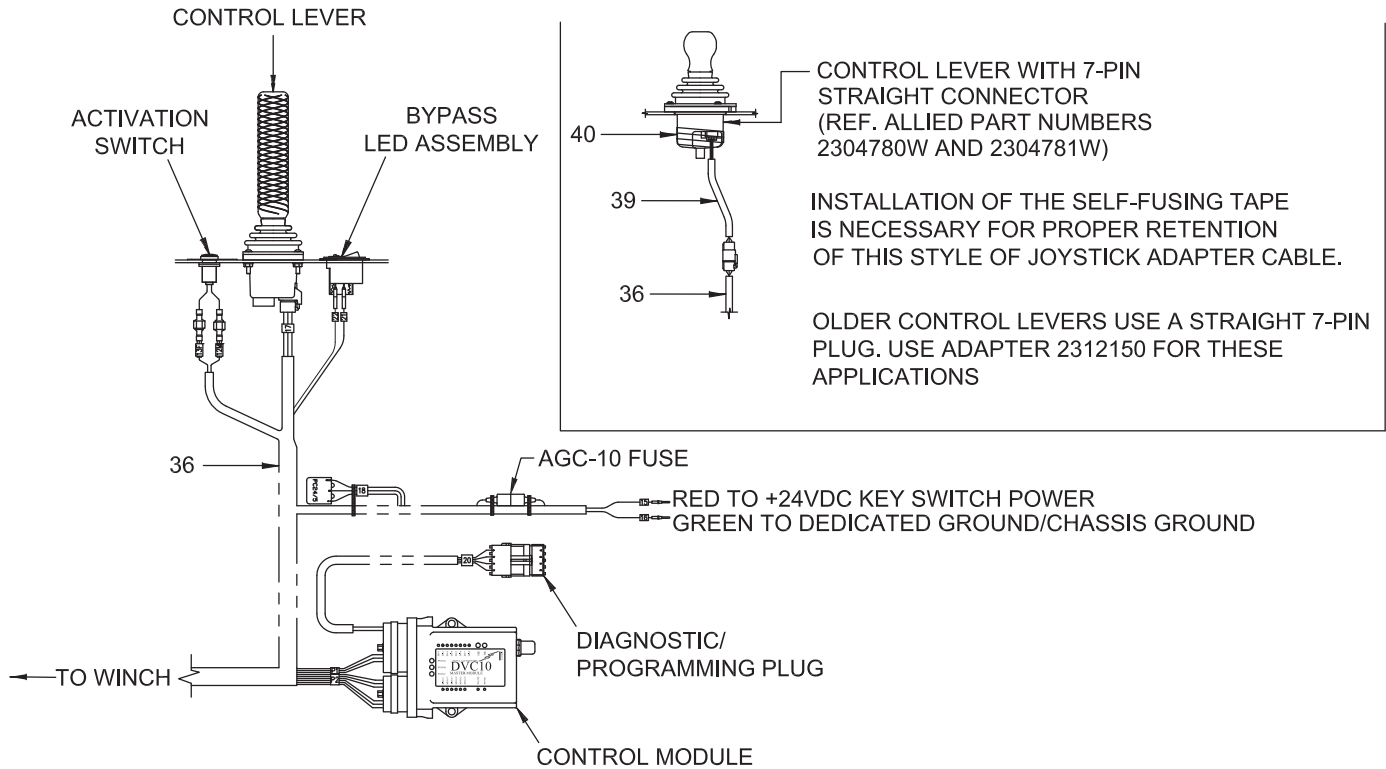
**Hydraulic Group - Electronic Controls
(Ratios #1, 3, 4, 6)
Conversion**



Hydraulic Group - Electronic Controls (Ratios #1, 3, 4, 6) Conversion



ELECTRICAL CONNECTIONS



CONTROL LEVER CONNECTIONS

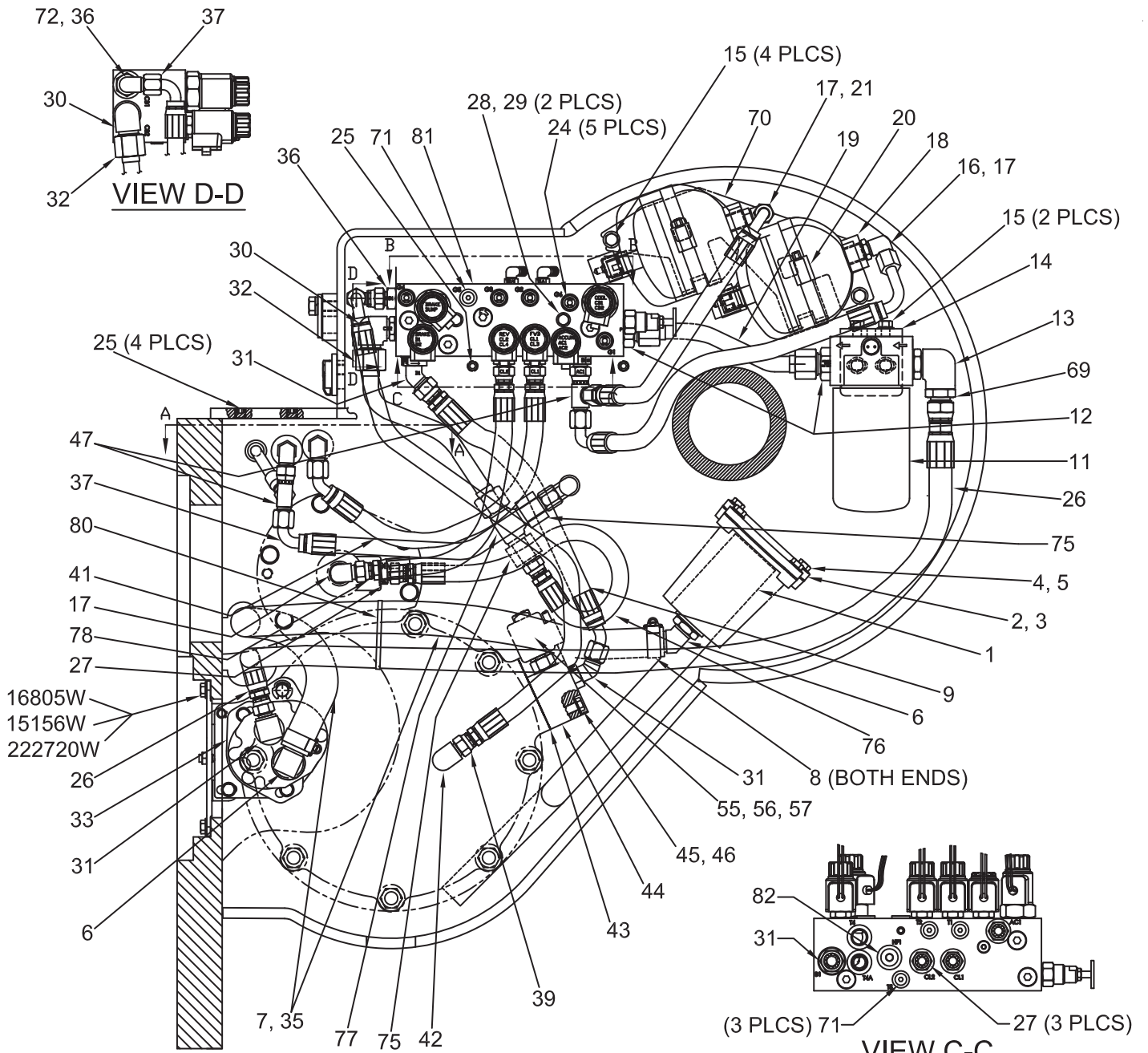
Hydraulic Group - Electronic Controls (Ratios #1, 3, 4, 6) Conversion

Page 3 of 3

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2310122	Assembly, Hose	1	22	235691W	Fitting, O-Ring	5
2	76227W	Assembly, Hose	1	23	233693W	Fitting, O-Ring	1
3	2307740W	Fitting, O-Ring	1	24	225094W	Fitting with Orifice	1
4	2310111	Assembly, Hose	1	25	2311111	Valve, Cartridge	1
5	2306738W	Assembly, Inlet Tube	1	25	2310260	. Kit, Seal	1
6	2310112	Assembly, Hose	1	26	2311559	Coil, Valve - 24VDC	1
7	214219	Fitting	1	27	2304973W	Limiter, Stroke	1
8	18526W	Capscrew	2	28	2304112W	Element, Filter	1
9	2310465	Assembly, Cooling Tube	1	29	219172W	Strainer	1
10	2310713	Assembly, Hose	1	29	156689W	. O-Ring	1
11	142682W	Fitting, O-Ring	1	30	L0281939W	Kit, Gasket	1
12	2310774	Assembly, Hose	1	31	2307755W	Kit, Software, Winch Updating	1
13	17300W	Fitting	1	32	2312259	Plug, Counter - Internal Harness	1
14	196022W	Gasket	1	33	2313404	Valve, Check	2
15	2311099	Manifold, Brake Dump	1	34	222443W	Fitting, O-Ring	1
16	2310015	Valve, Check	1	35	2311443	Harness, Internal Wiring	1
17	222442W	Fitting, O-Ring	4	36	2311444	Harness, External Wiring	1
18	16989W	Fitting	1	37	2311807	Retainer, Connector	1
19	16556W	Fitting, O-Ring	2	38	2311900	Harness, Brake Dump	1
20	14066	Fitting	2	39	2312150	Adapter, Wiring Harness	1
21	2311887	Assembly, Valve Manifold (3-68)	1	40	2304796W	Tape, Self Fusing	1

Hydraulic Group - Electronic Controls (Ratio #7)

Last Used on S/N AW12E-1433
Page 1 of 3

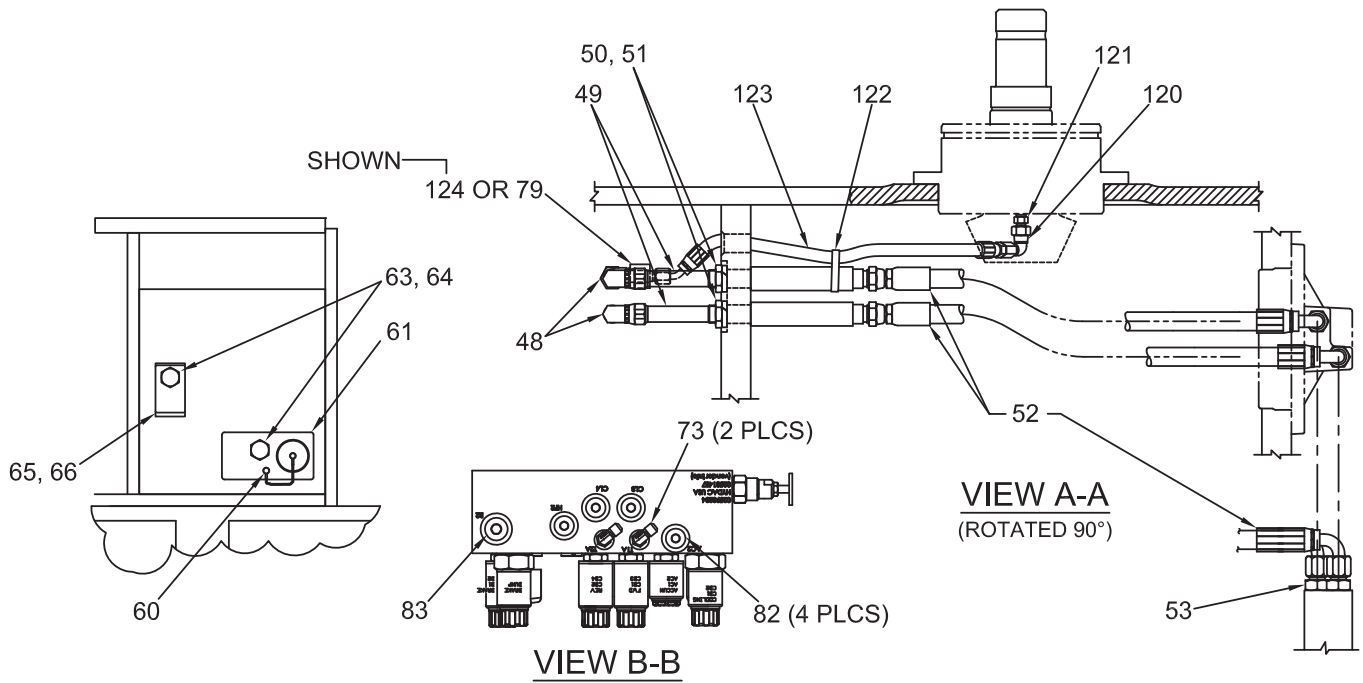


NOTE: ELECTRICAL CONNECTIONS OMITTED FOR CLARITY. SEE INTERNAL WIRING SECTION FOR DETAILS.

VIEW C-C
W/O FREESPOOL
(T4 & T4A ARE OPEN)

**Hydraulic Group - Electronic Controls
(Ratio #7)**

Last Used on S/N AW12E-1433
Page 2 of 3



Recommended Service Kit		
Item	Kit No.	Section
3, 11A	2311376	5-1
3, 43, 66	281939W	5-1

Hydraulic Group - Electronic Controls (Ratio #7)

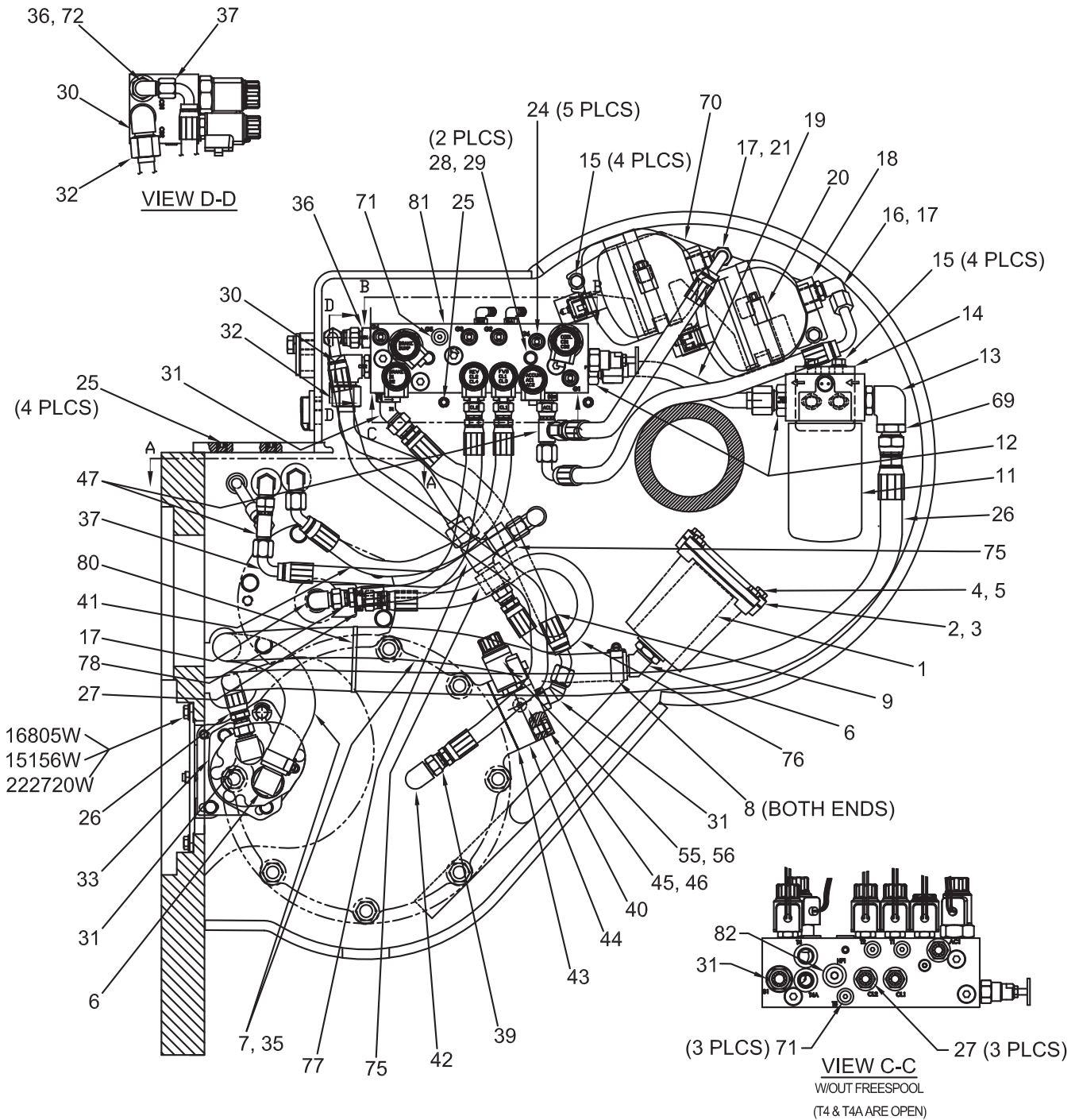
Last Used on S/N AW12E-1433

Page 3 of 3

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	219172W	Strainer	1	45	16379W	Capscrew	2
1	156689W	. O-Ring	1	46	15134W	Washer	2
2	2300936W	Cover	1	47	17062W	Fitting	2
3	2300935W	Gasket	1	48	16989W	Fitting	2
4	16805W	Capscrew	4	49	225233W	Connector, Special	2
5	15156W	Washer	6	50	14761W	Fitting	2
6	276090W	Fitting	2	51	177951W	Washer	2
7	2307935W	Hose	1	52	2307937W	Assembly, Hose	2
8	209639W	Clamp, Heavy Duty	2	53	131460W	Fitting	2
9	2310122	Assembly, Hose	1	55	R15005	Coil, 24V	1
11	2304111W	Assembly, Filter	1	56	2305260W	Valve, 2-Way Spool	1
11	2304112W	. Element, Filter	1	57	2304845W	Washer, Tab	1
11	2304862W	. Switch, Pressure	1	60	16602W	Screw	1
11	2305132W	. Head, Filter	1	61	*b 2304503W	Retainer, Connector	1
12	16543W	Fitting	2	63	16830W	Capscrew	2
13	2307740W	Fitting	1	64	15158W	Washer	2
14	2304699W	Mounting Bracket, Filter	1	65	2304366W	Plate, Cover	1
15	*a 1300780W	Screw, Serrated Flange	6	66	303946W	Gasket	1
16	2310111	Assembly, Hose	1	69	*c 2310015	Valve, Check	1
17	16559W	Fitting	3	70	2304698W	Mounting Plate, Accumulator	1
18	R16271	Accumulator	2	71	222442W	Fitting, O-Ring	4
19	2306738W	Assembly, Inlet Tube	1	72	16989W	Fitting	1
20	2302109W	Clamp, Heavy Duty	2	73	16556W	Fitting, O-Ring	2
21	2310112	Assembly, Hose	1	75	14066	Fitting	2
24	2304825W	Fitting, QC Test	5	76	2310121	Assembly, Hose	1
25	2305987W	Setscrew	7	77	14563W	Fitting	1
26	2310016	Assembly, Hose	1	78	2304854W	Assembly, Hose	1
27	16541W	Fitting	4	79	16923W	Fitting	1
28	*a 18526W	Capscrew	2	80	129563W	Clamp, Strap	1
29	*a 18515W	Washer	2	81	*c 2306547W	Assembly, Valve Manifold (3-67)	1
30	111331W	Fitting	1	82	235691W	Fitting, O-Ring	5
31	16569W	Fitting	3	83	233693W	Fitting, O-Ring	1
32	2307757W	Assembly, Tube	1	120	16987W	Fitting	1
33	2306641W	Assembly, Pump (3-132/133)	1	121	*a 225094W	Fitting, Orifice	1
35	137852W	Clamp, Strap	2	122	137852W	Clamp, Strap	1
36	16909W	Fitting	1	123	2307938W	Assembly, Hose	1
37	2310713	Assembly, Hose	1	124	17777W	Fitting	1
39	2310774	Assembly, Hose	1				
41	2304853W	Assembly, Hose	1		*a Use 246108 Pipe Thread Sealant		
42	17300W	Fitting	1		*b Use 236308 Ultra Blue Sealant		
43	196022W	Gasket	1		*c First Used on S/N AW12E-1229		
44	2305056W	Dump, Valve Manifold	1				

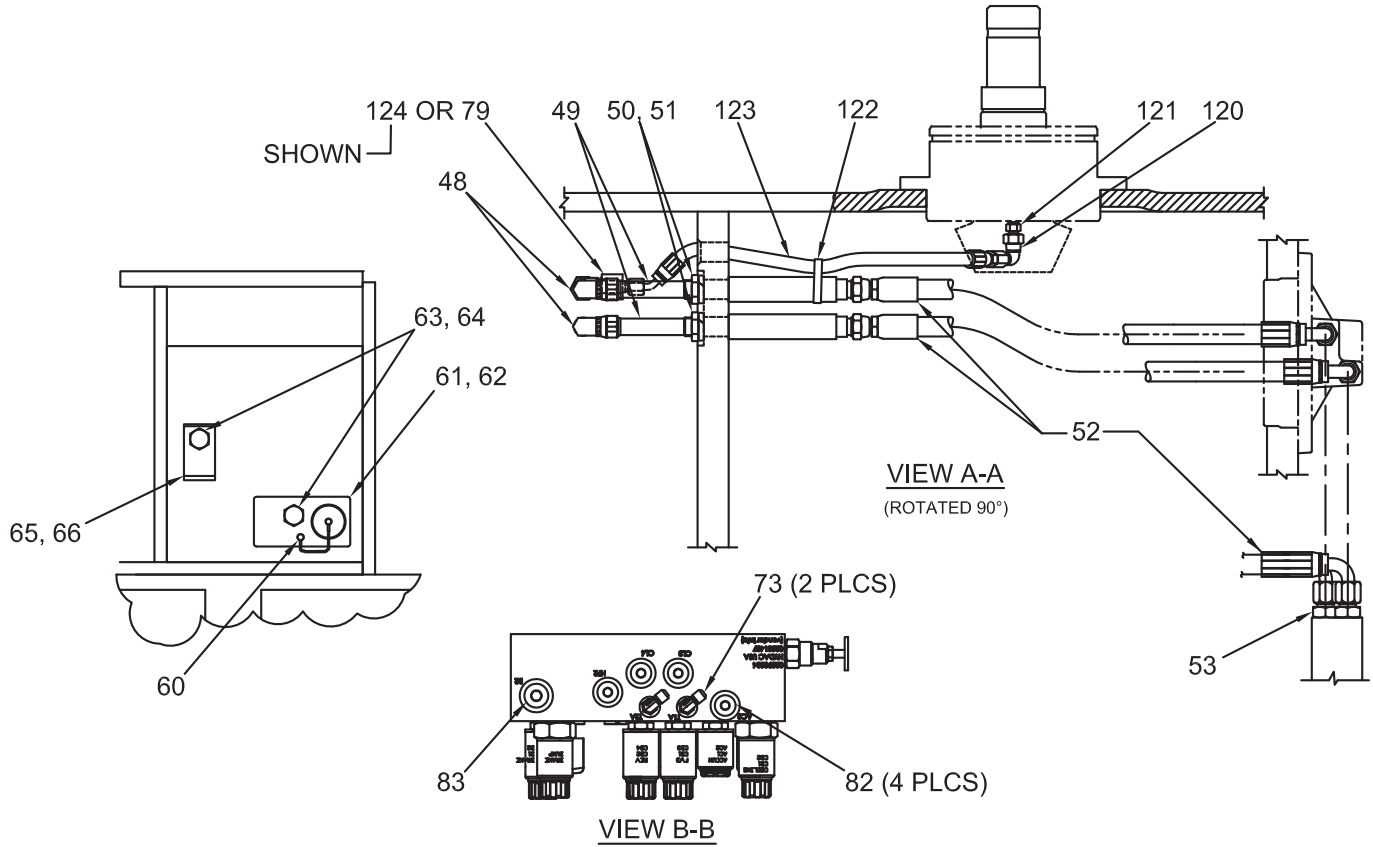
Hydraulic Group - Electronic Controls (Ratio #7)

Used on S/N AW12E-1434 thru AW12E-1456
Page 1 of 3



Hydraulic Group - Electronic Controls (Ratio #7)

Used on S/N AW12E-1434 thru AW12E-1456
Page 2 of 3



Recommended Service Kit		
Item	Kit No.	Section
3, 11A	2311376	5-1
3, 43, 66	281939W	5-1

Hydraulic Group - Electronic Controls (Ratio #7)

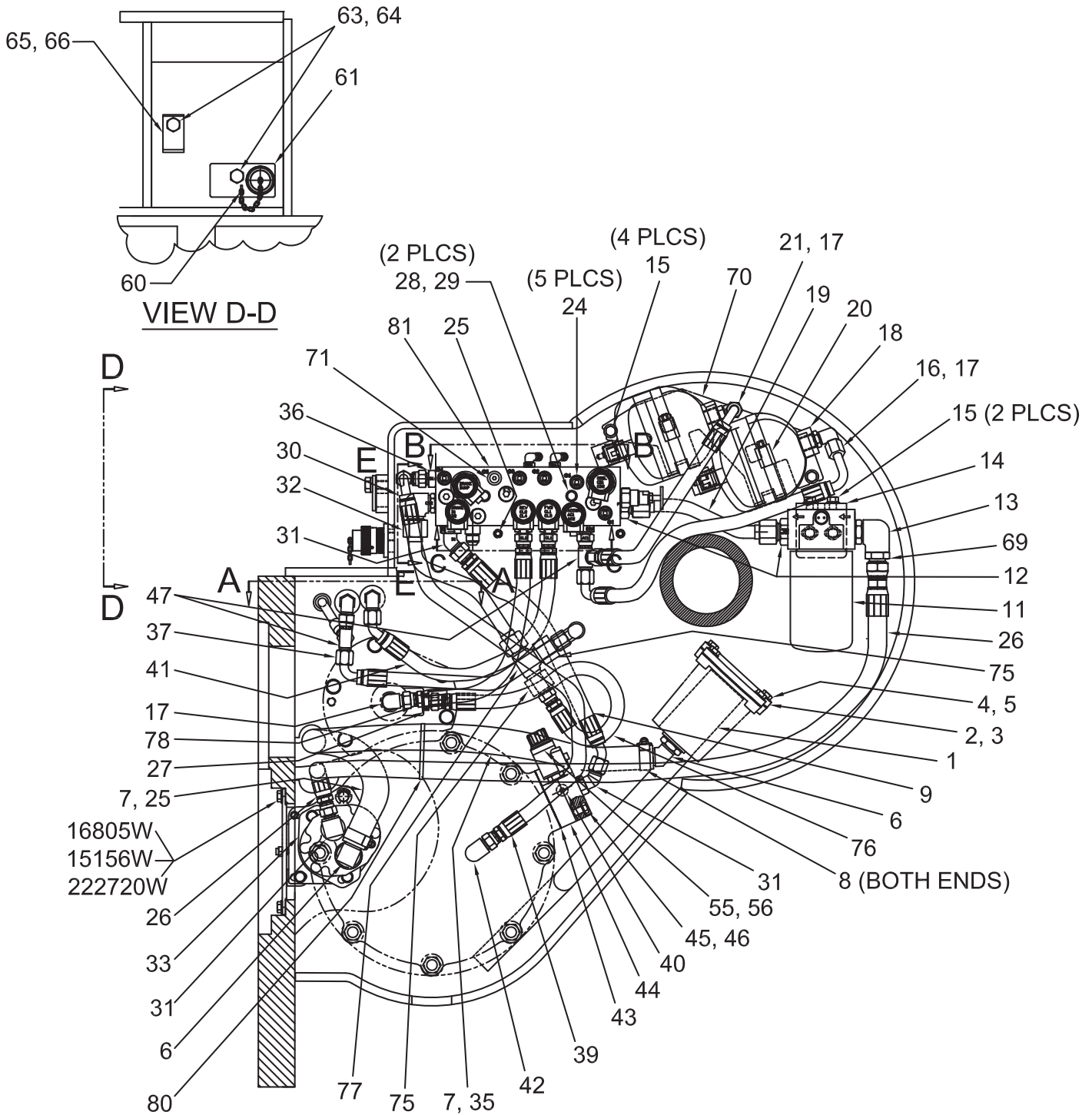
Used on S/N AW12E-1434 thru AW12E-1456

Page 3 of 3

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	219172W	Strainer	1	43	196022W	Gasket	1
1	156689W	. O-Ring	1	44	2311099	Manifold, Brake Dump	1
2	2300936W	Cover	1	45	16379W	Capscrew	2
3	2300935W	Gasket	1	46	15134W	Washer	2
4	16805W	Capscrew	4	47	17062W	Fitting	2
5	15156W	Washer	6	48	16989W	Fitting	2
6	276090W	Fitting	2	49	225233W	Connector, Special	2
7	2307935W	Hose	1	50	14761W	Fitting	2
8	209639W	Clamp, Heavy Duty	2	51	177951W	Washer	2
9	2310122	Assembly, Hose	1	52	2307937W	Assembly, Hose	2
11	2304111W	Assembly, Filter	1	53	131460W	Fitting	2
11	2304112W	. Element, Filter	1	55	2310256	Coil, 24VDC Valve	1
11	2304862W	. Switch, Pressure	1	56	2311111	Valve, 2-Way Spool	1
11	2305132W	. Head, Filter	1	60	16602W	Screw	1
12	16543W	Fitting	2	61	2304503W	Retainer, Connector	1
13	2307740W	Fitting	1	63	16830W	Capscrew	2
14	2304699W	Mounting Bracket, Filter	1	64	15158W	Washer	2
15	*a 1300780W	Screw, Serrated Flange	6	65	2304366W	Plate, Cover	1
16	2310111	Assembly, Hose	1	66	303946W	Gasket	1
17	16559W	Fitting	3	69	2310015	Valve, Check	1
18	R16271	Accumulator	2	70	2304698W	Mounting Plate, Accumulator	1
19	2306738W	Assembly, Inlet Tube	1	71	222442W	Fitting, O-Ring	4
20	2302109W	Clamp, Heavy Duty	2	72	16989W	Fitting	1
21	2310112	Assembly, Hose	1	73	16556W	Fitting, O-Ring	2
24	2304825W	Fitting, QC Test	5	75	14066	Fitting	2
25	2305987W	Setscrew	3	76	2310121	Assembly, Hose	1
26	2310016	Assembly, Hose	1	77	14563W	Fitting	1
27	16541W	Fitting	4	78	2304854W	Assembly, Hose	1
28	*a 18526W	Capscrew	2	79	16923W	Fitting	1
29	*a 18515W	Washer	2	80	129563W	Clamp, Strap	1
30	111331W	Fitting	1	81	2306547W	Assembly, Valve Manifold (3-67)	1
31	16569W	Fitting	3	82	235691W	Fitting, O-Ring	5
32	2307757W	Assembly, Tube	1	83	233693W	Fitting, O-Ring	1
33	2306641W	Assembly, Pump (3-132/133)	1	120	16987W	Fitting	1
35	137852W	Clamp, Strap	2	121	*a 225094W	Fitting, Orifice	1
36	16909W	Fitting	1	122	137852W	Clamp, Strap	1
37	2310713	Assembly, Hose	1	123	2307938W	Assembly, Hose	1
39	2310774	Assembly, Hose	1	124	17777W	Fitting	1
40	222443W	Fitting	1				
41	2304853W	Assembly, Hose	1		*a Use 246108 Pipe Thread Sealant		
42	17300W	Fitting	1		*b Use 236308 Ultra Blue Sealant		

Hydraulic Group - Electronic Controls (Ratio #7)

Used on S/N AW12E-1457 thru AW12E-1574
Page 1 of 3

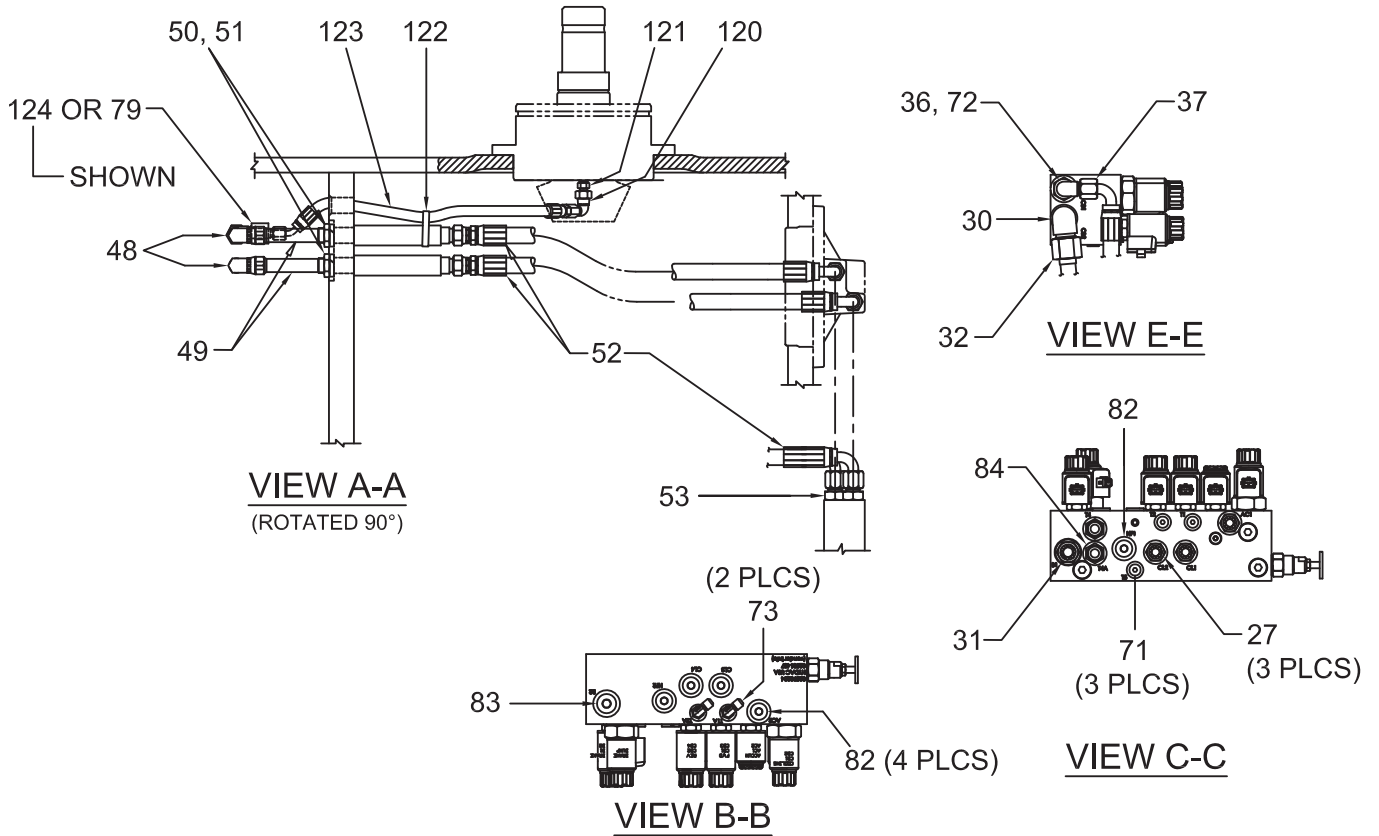


NOTE: ELECTRICAL CONNECTIONS OMITTED FOR CLARITY.
SEE INTERNAL WIRING SECTION FOR DETAILS.

**Hydraulic Group - Electronic Controls
(Ratio #7)**

Used on S/N AW12E-1457 thru AW12E-1574

Page 2 of 3



Recommended Service Kit		
Item	Kit No.	Section
3, 11A	2311376	5-1
3, 43, 66	281939W	5-1

Hydraulic Group - Electronic Controls (Ratio #7)

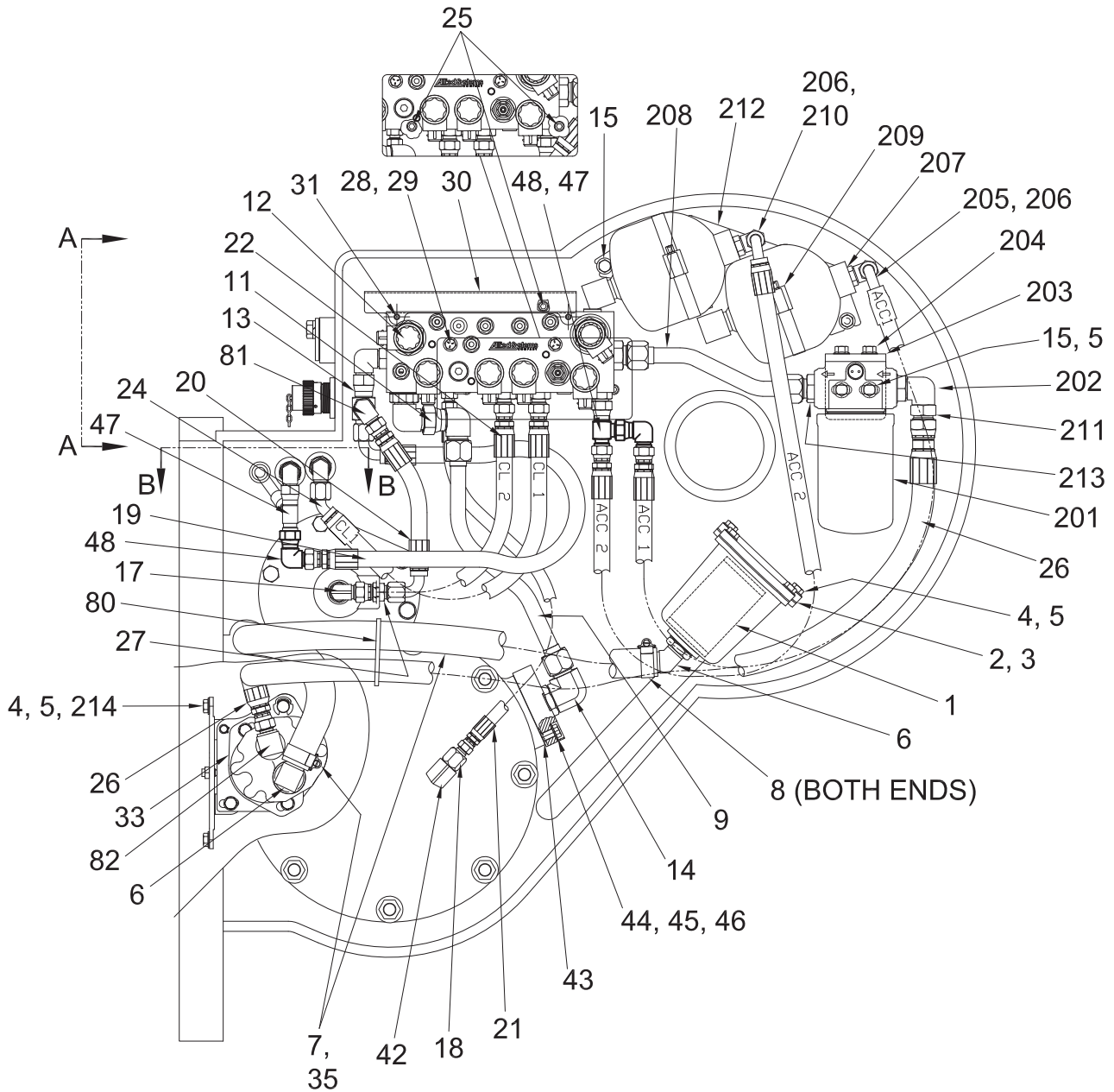
Used on S/N AW12E-1457 thru AW12E-1574

Page 3 of 3

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	219172W	Strainer	1	45	16379W	Capscrew	2
1	156689W	. O-Ring	1	46	15134W	Washer	2
2	2300936W	Cover	1	47	17062W	Fitting	2
3	2300935W	Gasket	1	48	16989W	Fitting	2
4	16805W	Capscrew	4	49	225233W	Connector, Special	2
5	15156W	Washer	6	50	14761W	Fitting	2
6	276090W	Fitting	2	51	177951W	Washer	2
7	2307935W	Hose	1	52	2307937W	Assembly, Hose	2
8	209639W	Clamp, Heavy Duty	2	53	131460W	Fitting	2
9	2310122	Assembly, Hose	1	55	2314907	Coil, 24VDC Valve	1
11	2304111W	Assembly, Filter	1	56	2311111	Valve, 2-Way Spool	1
11A	2304112W	. Element, Filter	1	60	16602W	Screw	1
11B	2304862W	. Switch, Pressure	1	61	*b 2311807	Retainer, Connector	1
11C	2305132W	. Head, Filter	1	63	16830W	Capscrew	2
12	16543W	Fitting	2	64	15158W	Washer	2
13	2307740W	Fitting	1	65	2304366W	Plate, Cover	1
14	2304699W	Mounting Bracket, Filter	1	66	303946W	Gasket	1
15	*a 1300780W	Screw, Serrated Flange	6	67	2311443	Harness, Internal	1
16	2310111	Assembly, Hose	1	68	2312259	Plub, Counter	1
17	16559W	Fitting	3	69	2310015	Valve, Check	1
18	R16271	Accumulator	2	70	2304698W	Mounting Plate, Accumulator	1
19	2306738W	Assembly, Inlet Tube	1	71	222442W	Fitting, O-Ring	4
20	2302109W	Clamp, Heavy Duty	2	72	16989W	Fitting	1
21	2310112	Assembly, Hose	1	73	16556W	Fitting, O-Ring	2
24	2304825W	Fitting, QC Test	5	74	2311900	Harness, Brake Dump	1
25	2305987W	Setscrew	3	75	14066	Fitting	2
26	2310016	Assembly, Hose	1	76	2310121	Assembly, Hose	1
27	16541W	Fitting	4	77	14563W	Fitting	1
28	*a 18526W	Capscrew	2	78	2304854W	Assembly, Hose	1
29	18515W	Washer	2	79	16923W	Fitting	1
30	111331W	Fitting	1	80	129563W	Clamp, Strap	1
31	16569W	Fitting	3	81	2311887	Assembly, Valve Manifold (3-68)	1
32	2307757W	Assembly, Tube	1	82	235691W	Fitting, O-Ring	5
33	2306641W	Assembly, Pump (3-132/133)	1	83	233693W	Fitting, O-Ring	1
35	137852W	Clamp, Strap	2	84	2313404	Valve, Check	2
36	16909W	Fitting	1	120	16987W	Fitting	1
37	2310713	Assembly, Hose	1	121	*a 225094W	Fitting, Orifice	1
39	2310774	Assembly, Hose	1	122	137852W	Clamp, Strap	1
40	222443W	Fitting	1	123	2307938W	Assembly, Hose	1
41	2304853W	Assembly, Hose	1	124	17777W	Fitting	1
42	17300W	Fitting	1				
43	196022W	Gasket	1		*a Use 246108 Pipe Thread Sealant		
44	2311099	Manifold, Brake Dump	1		*b Use 236308 Loctite Ultra Blue Sealant		

**Hydraulic Group - Electronic Controls
(Ratio #7)**

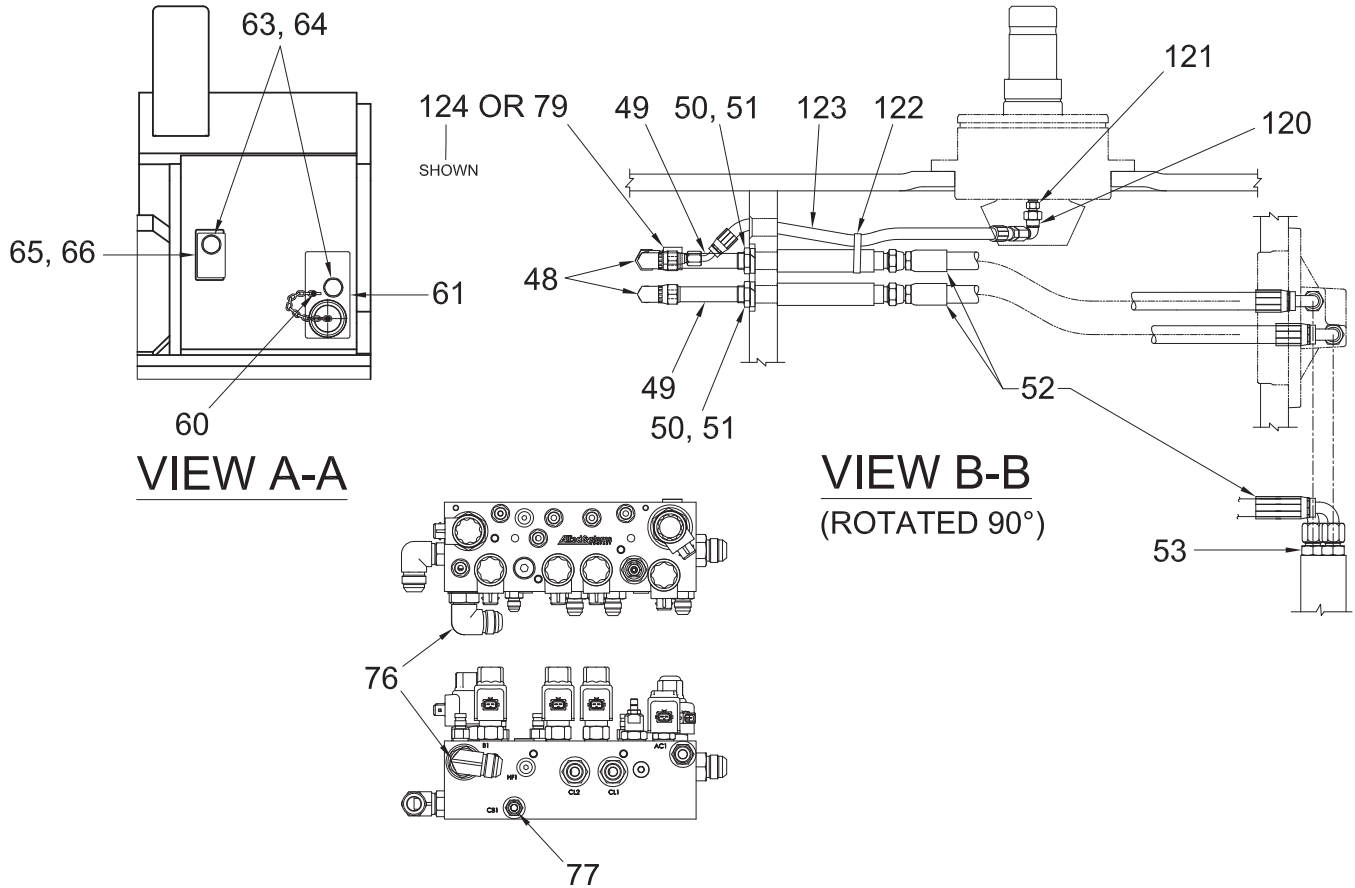
First Used on S/N AW12E-1575
Page 1 of 3



ELECTRICAL CONNECTIONS OMITTED FOR CLARITY.
SEE INTERNAL WIRING PAGE FOR DETAILS.

**Hydraulic Group - Electronic Controls
(Ratio #7)**

First Used on S/N AW12E-1575
Page 2 of 3



Recommended Service Kit		
Item	Kit No.	Section
3, 201A	2311376	5-1
3, 43, 66	281939W	5-1

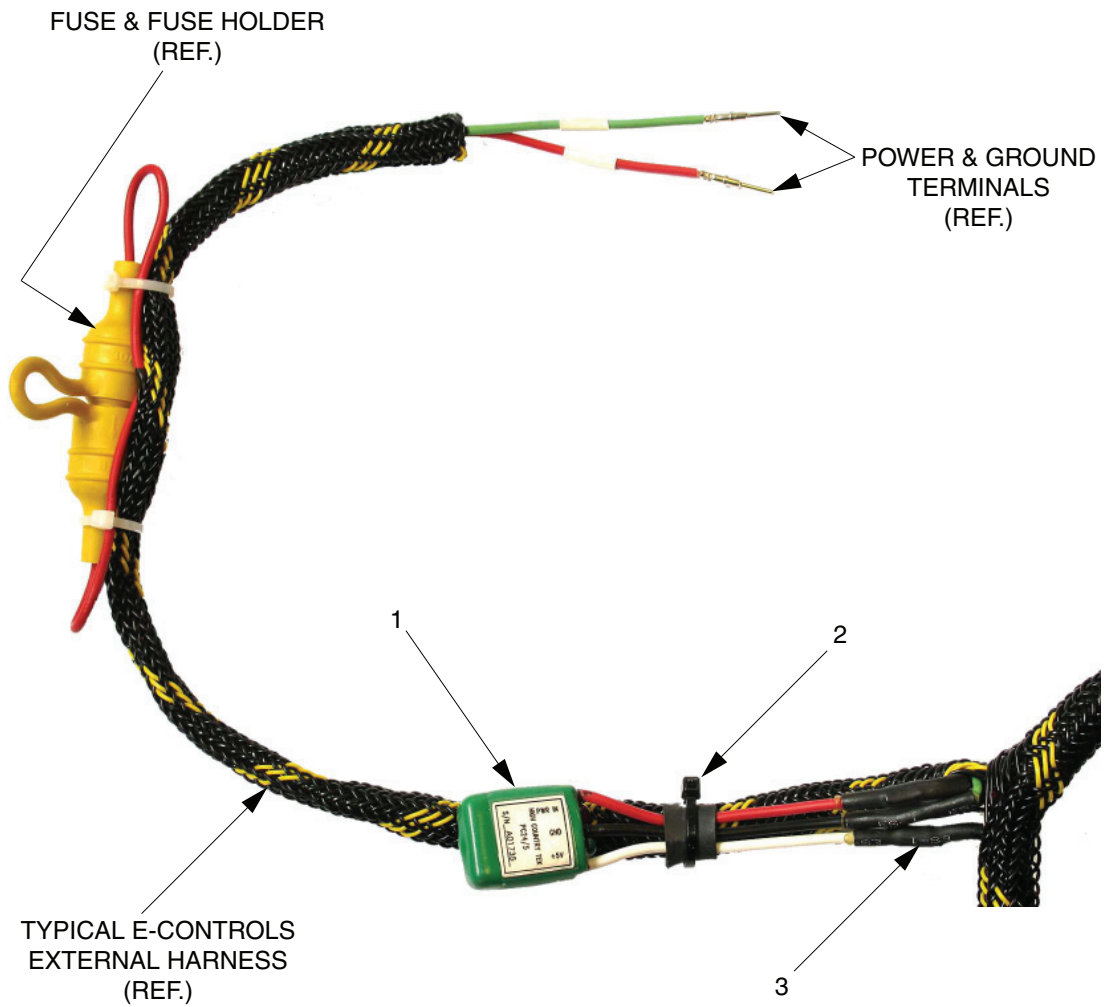
Hydraulic Group - Electronic Controls (Ratio #7)

First Used on S/N AW12E-1575

Page 3 of 3

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	219172W	Strainer	1	52	2307937W	Assembly, Hose	2
1	156689W	. O-Ring	1	53	131460W	Fitting	2
2	2300936W	Cover	1	60	16602W	Screw	1
3	2300935W	Gasket	1	61	*b 2311807	Connector, Retainer	1
4	*c 16805W	Capscrew	4	63	*a 16830W	Capscrew	2
5	15156W	Washer	6	64	15158W	Washer	2
6	276090W	Fitting	2	65	2304366W	Plate, Cover	1
7	2307935W	Assembly, Hose	1	66	303946W	Gasket	1
8	209639W	Clamp, Heavy Duty	2	67	2311443	Harness, Internal	1
9	2315910	Tube, Brake	1	76	16561W	Fitting	1
11	83857W	Fitting	1	77	211560	Fitting	1
12	2315717	Assembly, E-Control Manifold (3-69)	1	79	16923W	Fitting	1
13	17063W	Fitting	1	80	129563W	Tie, Cable (Black)	1
14	222402W	Fitting	1	81	209155	Fitting	1
15	*a 1300780W	Screw, Serrated Flange	4	82	16569W	Fitting	1
17	16559W	Fitting	1	120	16987W	Fitting	1
18	226904	Fitting	1	121	*a 225094W	Fitting, Orifice	1
19	2315762	Assembly, Hose	1	122	137852W	Clamp, Strap	1
20	2315761	Assembly, Hose	1	123	2307938W	Assembly, Hose	1
21	187878W	Assembly, Hose	1	124	17777W	Fitting	1
22	2304854W	Assembly, Hose	1	201	2304111W	Assembly, Filter	1
24	2315760	Assembly, Hose	1	201A	2304112W	. Element, Filter	1
25	*a 2305987W	Setscrew	3	201B	2304862W	. Switch, Pressure	1
26	2310016	Assembly, Hose	1	201C	2305132W	. Head, Filter	1
27	16541W	Fitting	1	202	2307740W	Fitting	1
28	*a 18526W	Capscrew	2	203	2304699W	Bracket, Filter Mounting	1
29	18515W	Washer	2	204	*c 1300780W	Screw, Flange	2
30	2315822	Guard, Splash	1	205	246970	Assembly, Hose	1
31	*c 133469W	Capscrew	2	206	16559W	Fitting	2
33	2306641W	Assembly, Pump (3-132/133)	1	207	R16271	Accumulator	2
35	137852W	Tie, Cable (Black)	2	208	2306738W	Assembly, Inlet Tube	1
42	17300W	Fitting	1	209	2302109W	Clamp, Heavy Duty	2
43	196022W	Gasket	1	210	591242	Assembly, Hose	1
44	279392W	Block	1	211	2310015	Valve, Check	1
45	*c 16828W	Capscrew	2	212	2304698W	Bracket, Mounting	1
46	15134W	Washer	2	213	16543W	Fitting	1
47	17062W	Fitting	2	214	222720W	Pin	1
48	16989W	Fitting	4				
49	225233W	Connector, Special	2		*a Use 273338W Pipe Thread Sealant		
50	14761W	Nut	2		*b Use 1324880W RTV Sealant Prior to Assembly		
51	177951W	Washer	2		*c Use 318702W Thread Locker at Assembly		

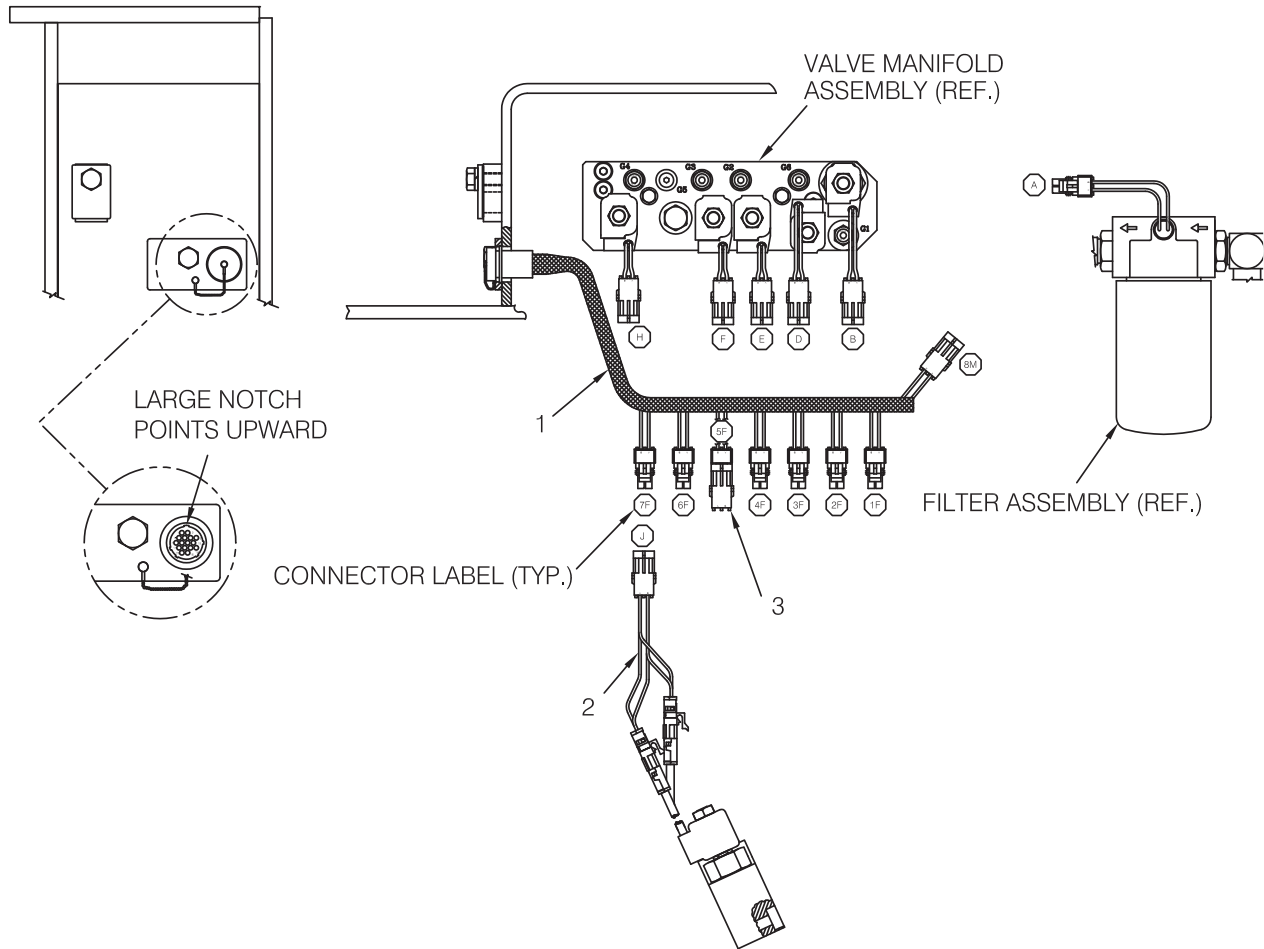
External Wiring Harness Repair Kit - Electronic Controls



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2313717	Repair Kit, eControls Harness					
		Voltage Converter	1				
1	2304349W	. Converter, 24-5DC	1	3	236713	. Tube, Heat-Shrink	6 in.
2	242601	. Cable Tie	1	4	2313699	. Installation Instructions (Not Shown)	1

Internal Wiring - Electronic Controls

Last Used on S/N AW12E-1228

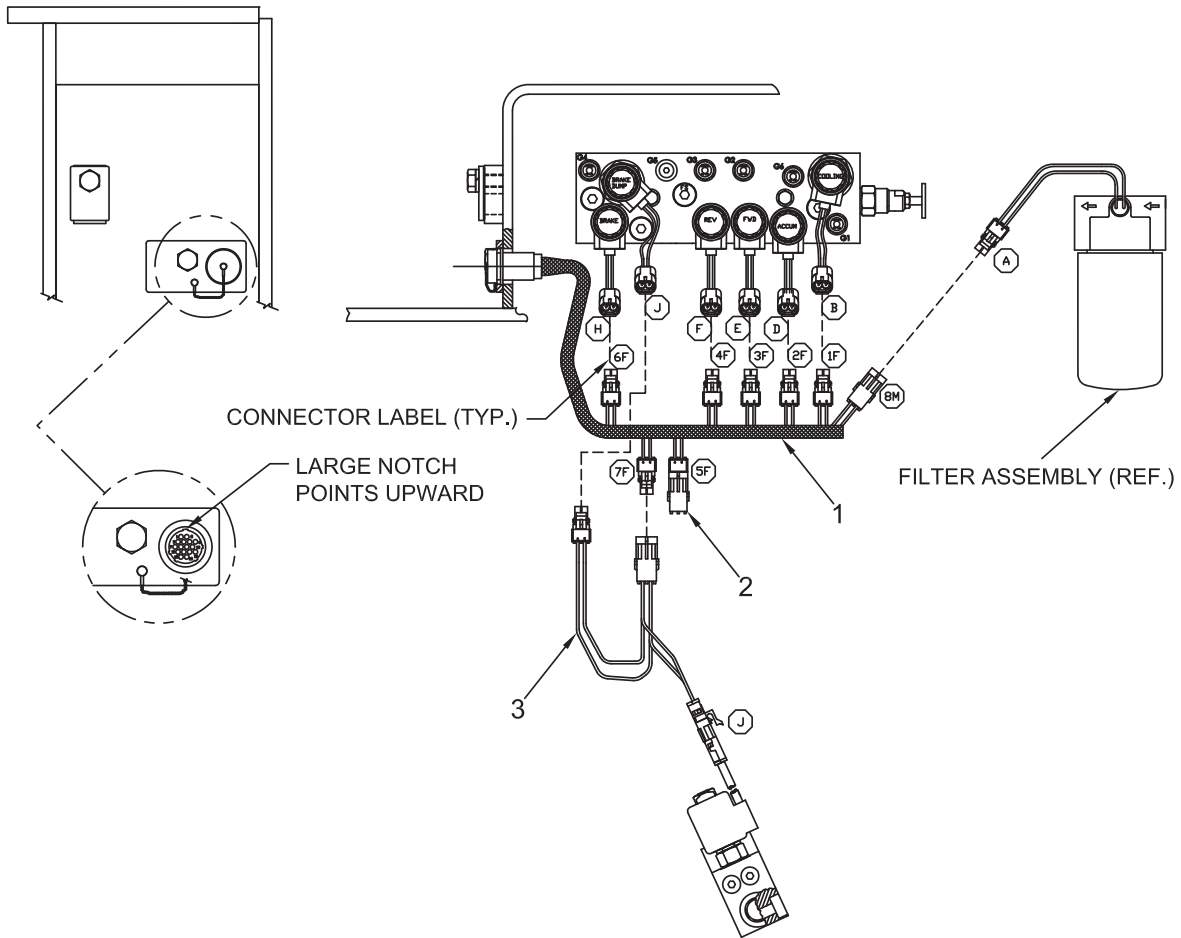


WINCH CONNECTION	HARNESS CONNECTOR	WIRE PAIR COLORS	FUNCTION
A	8M	WHI & LTGRN	PR. SWITCH
B	1F	BLK & GRAY	COOLING
D	2F	BLK & GRAY	ACCUMULATOR
PLUGGED	5F	ORG & BLK	FREESPOOL
E	3F	YEL & DKBLU	FORWARD
F	4F	BRN & YEL	REVERSE
H	6F	TAN & PUR	BRAKE
J	7F	PINK & BLK	BRAKE DUMP

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303901W	Harness, Internal	1	3	2304877W	Plug, 2-Term	1
2	2305050W	Harness, Brake Dump	1				

Internal Wiring - Electronic Controls

Used on S/N AW12E-1229 thru AW12E-1456

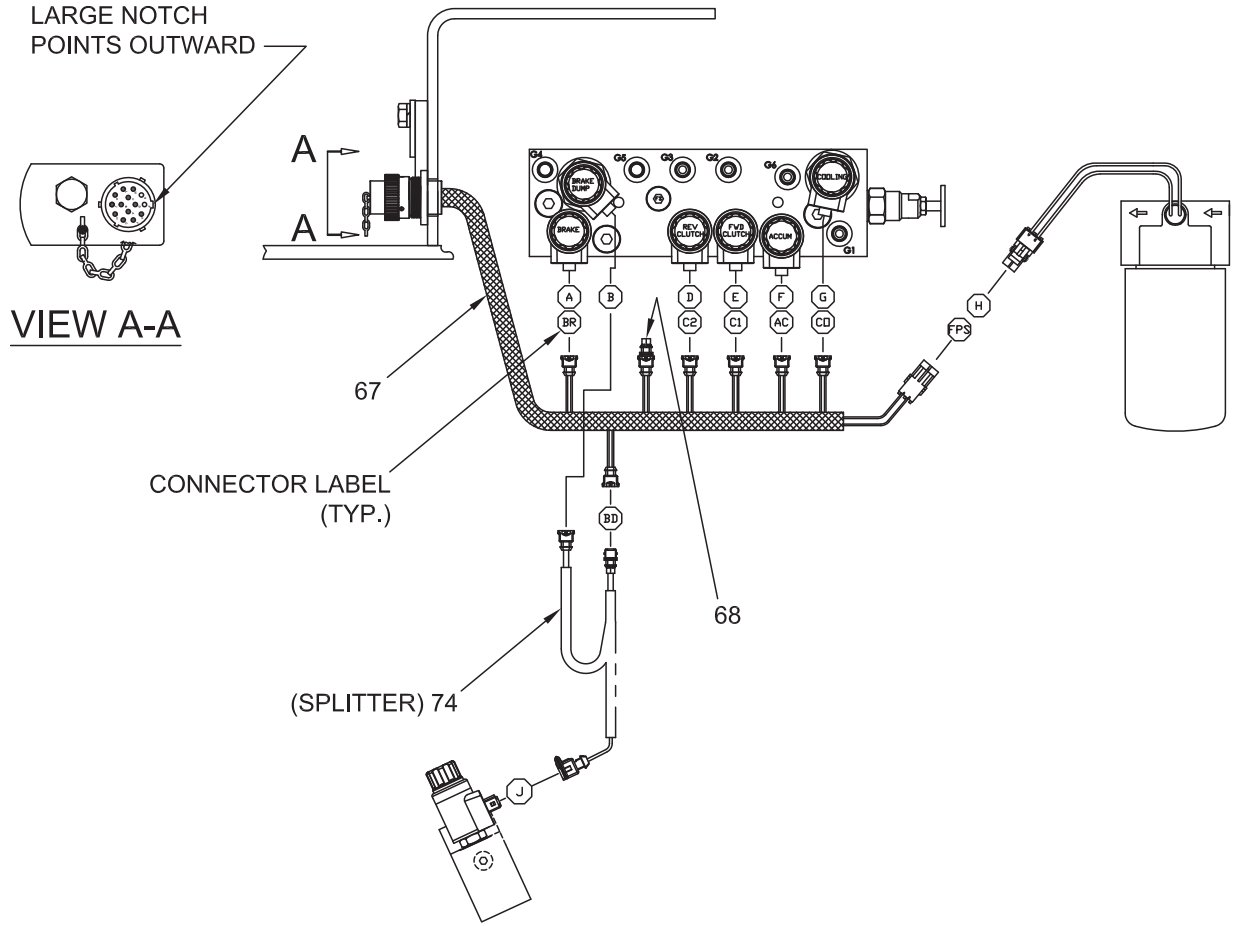


WINCH VALVE CONNECTION	HARNESS CONNECTOR	WIRE PAIR COLORS	FUNCTION
A	8M	WHI & LTGRN	PR. SWITCH
B	1F	BLK & GRAY	COOLING
D	2F	BLK & GRAY	ACCUMULATOR
PLUGGED	5F	ORG & BLK	FREESPOOL
E	3F	YEL & DKBLU	FORWARD
F	4F	BRN & YEL	REVERSE
H	6F	TAN & PUR	BRAKE
J	7F	PINK & BLK	BRAKE DUMP

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303901W	Harness, Internal	1	3	2305050W	Harness, Brake Dump	1
2	2304877W	Plug, 2 Term.	1				

Internal Wiring - Electronic Controls

Used on S/N AW12E-1457 thru S/N AW12E-1574

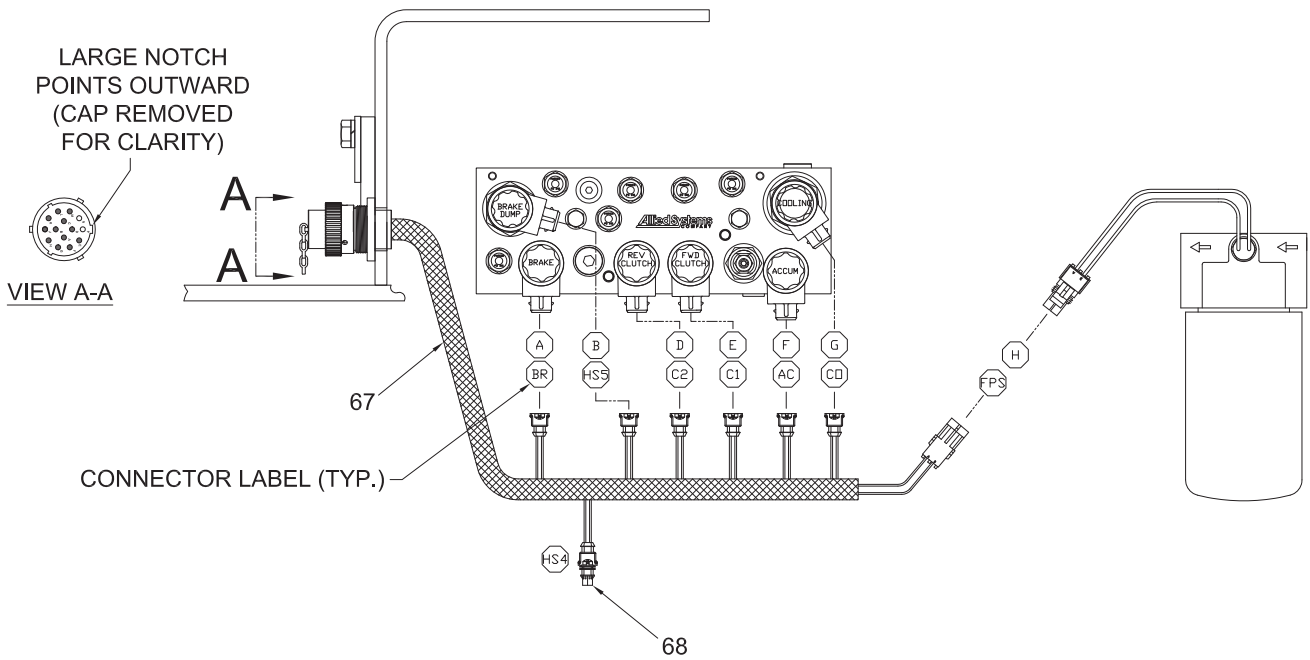


WINCH CONNECTION	HARNESS CONNECTOR	WIRE PAIR COLORS	FUNCTION
A	BR	TAN & PUR	BRAKE
B	SPLITTER	-	BRAKE DUMP
-	BD	PINK & BLK	BRAKE DUMP
PLUGGED	FS	ORG & BLK	FREESPOOL
D	C2	BRN & YEL	REVERSE
E	C1	YEL & DKBLU	FORWARD
F	AC	BLK & GRAY	ACCUMULATOR
G	CD	BLK & GRAY	COOLING
H	FPS	WHI & LTGRN	PR. SWITCH
J	SPLITTER	-	BRAKE DUMP

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
67	2311443	Harness, Internal	1	74	2311900	Harness, Brake Dump	1
68	2312259	Plug, 2-Term	1				

Internal Wiring - Electronic Controls

First Used on S/N AW12E-1575

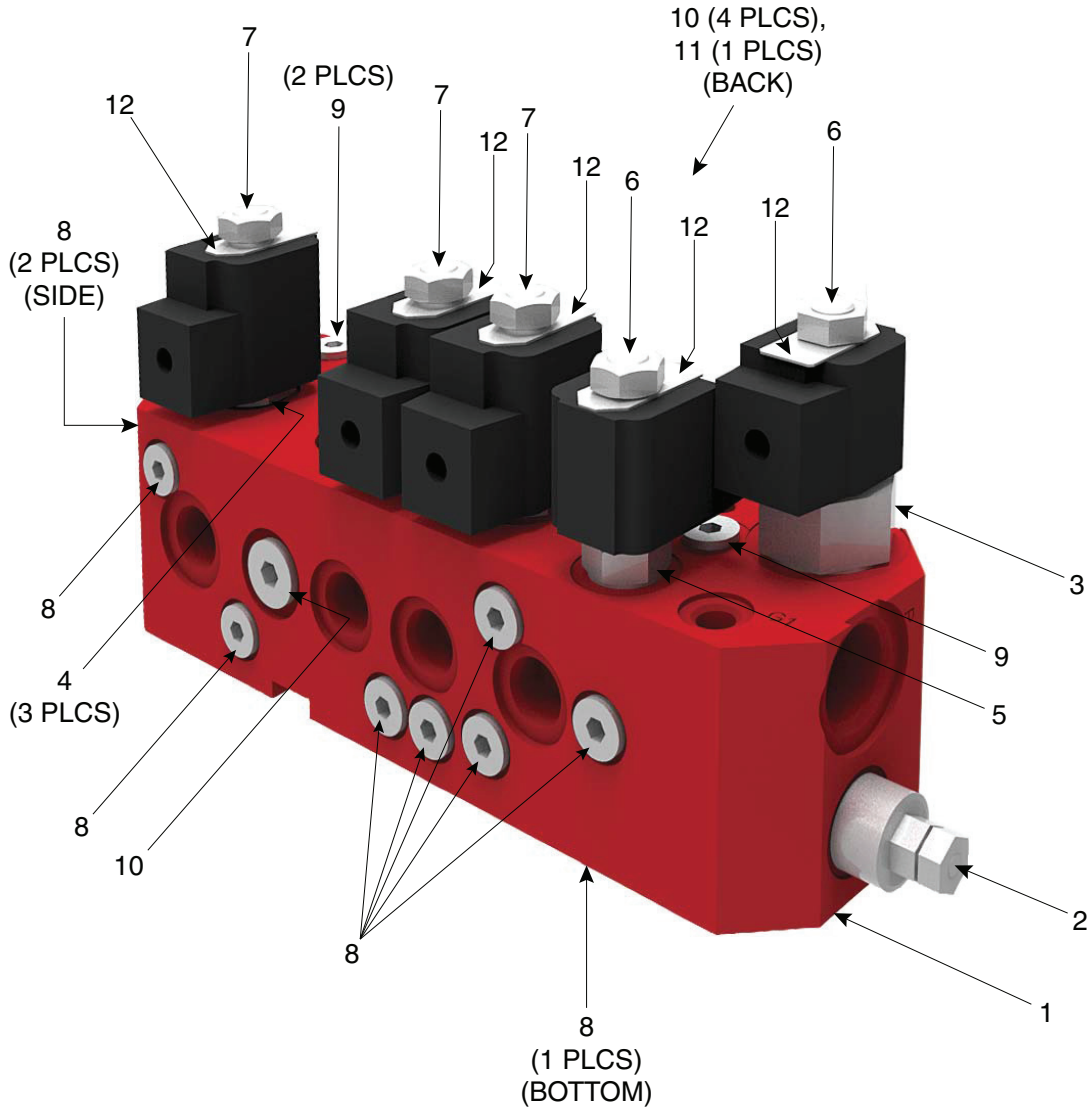


WINCH CONNECTION	HARNESS CONNECTOR	WIRE PAIR COLORS	FUNCTION
A	BR	TAN & PUR	BRAKE
PLUGGED	HS4	BLK & GRAY	NOT USED
B	HS5	DRG & BLK	BRAKE DUMP
D	C2	BRN & YEL	REVERSE
E	C1	YEL & DKBLU	FORWARD
F	AC	PINK & BLK	ACCUMULATOR
G	CD	BLK & GRAY	COOLING
H	FPS	WHI & LTGRN	PR. SWITCH

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
67	2311443	Harness, Internal	1	68	2312259	Plug, Counter	1

Valve Manifold Assembly - Electronic Controls

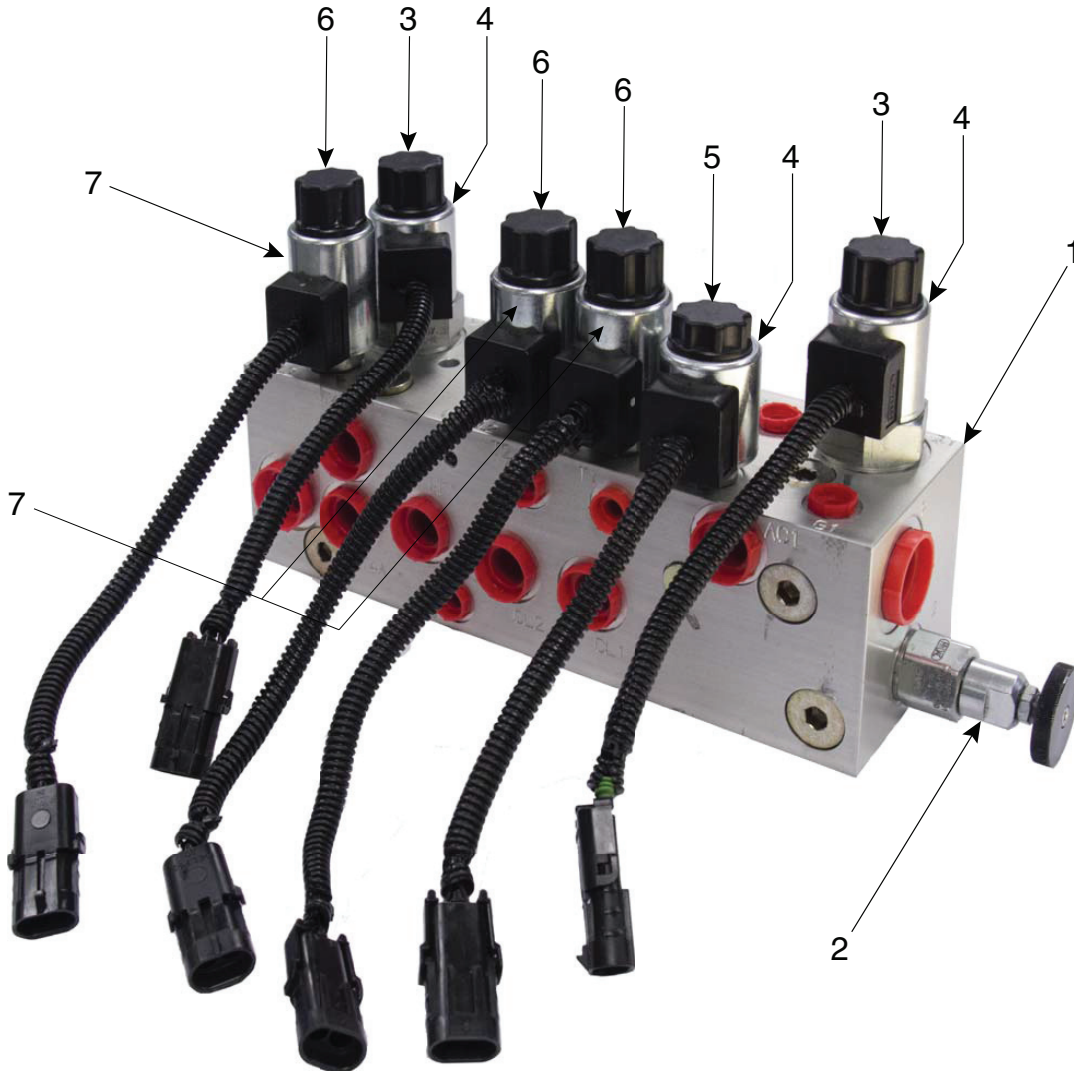
Last Used on S/N AW12E-1228



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2303889W	Assembly, Valve Manifold	1				
1	NSS	. Block (Red Color)	1	5	2304842W	. Valve, Solenoid	1
2	2300308W	. Valve, Relief	1	6	R15006	. Coil, 24V DC	2
2	2304971W	. . Kit, Seal	1	7	R15005	. Coil, 24V DC	3
2	16484W	. . O-Ring	1	8	222442W	. Plug	10
2	265787W	. . O-Ring	1	9	222443W	. Plug	3
3	2304840W	. Valve, Solenoid	1	10	235691W	. Plug	5
3	2304972W	. . Kit, Seal	1	11	233693W	. Plug	1
4	2304841W	. Valve, Proportional	3	12	2304845W	. Washer, Tab	5
4	R15012	. . Kit, Seal	1				

Valve Manifold Assembly- Electronic Controls

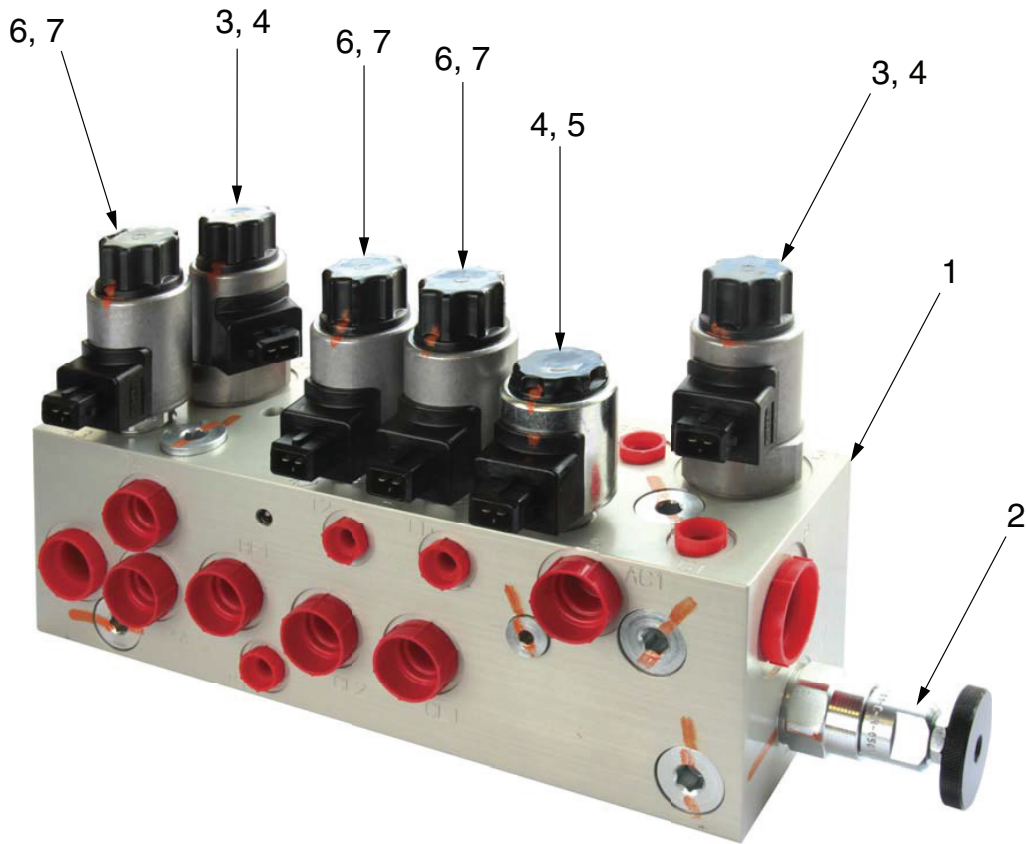
Used on S/N AW12E-1229 thru AW12E-1456
 and with the letter "Z" stamped at the end of the serial number code
 on the top left side of the winch frame
 (Refer to pages 0-6 & 0-7 for more information)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2306547W	Assembly, Valve Manifold	1				
1	NSS	. Block (Silver Color)	1	5	2310253	. Valve, Cartridge	1
2	2310255	. Valve, Relief	1	5	2310259	. . Kit, Seal	1
2	2310260	. . Kit, Seal	1	6	2310254	. Valve, Proportional Valve	3
3	2310252	. Valve, Cartridge	2	6	2310261	. . Kit, Seal	1
3	2310258	. . Kit, Seal	1	7	2310256	. Coil, Proportional Valve - 24 VDC	3
4	2307770W	. Coil, Valve - 24 VDC	3				
4	2310259	. . Kit, Seal	1				

Valve Manifold Assembly- Electronic Controls

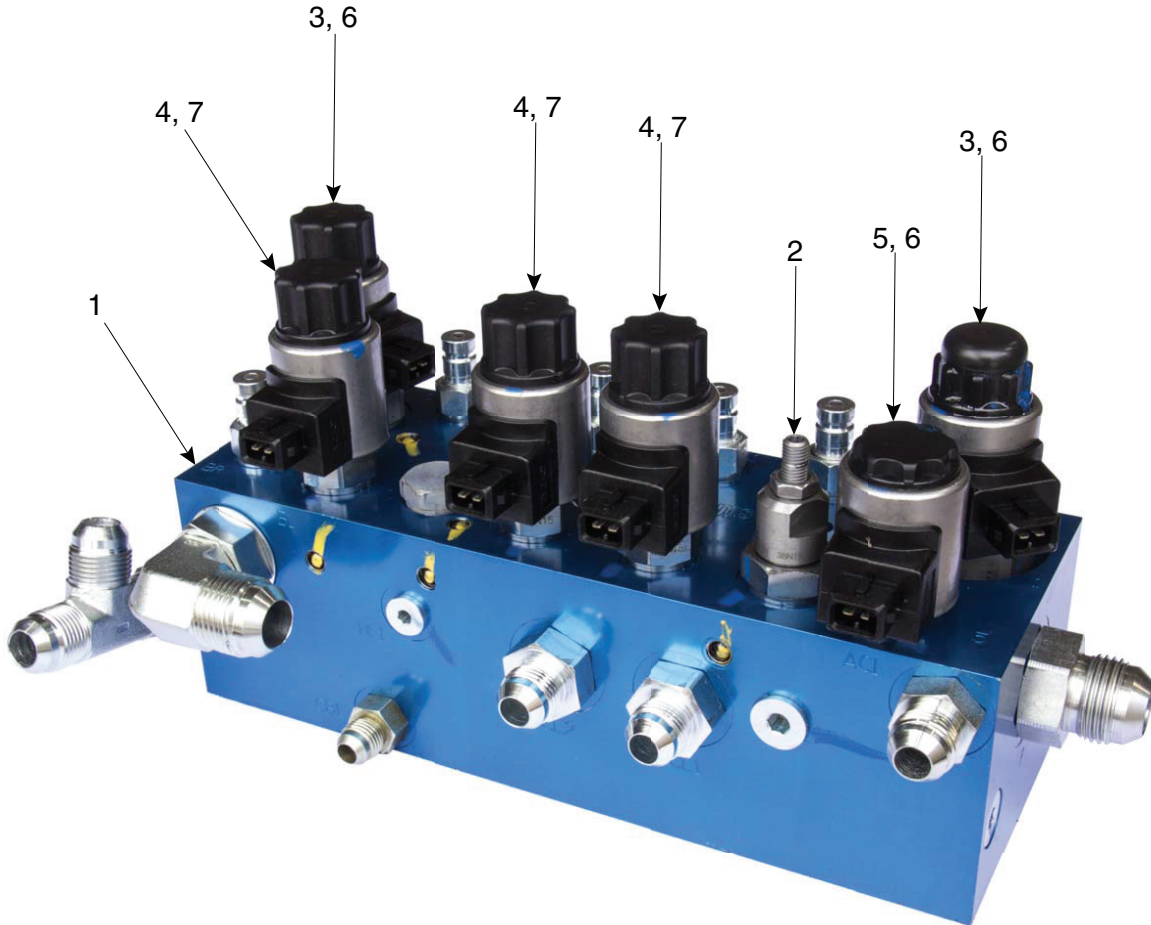
Used on S/N AW12E-1457 thru AW12E-1574
 and with the letter "ZV" stamped at the end of the serial number code
 on the top left side of the winch frame
 (Refer to pages 0-6 & 0-7 for more information)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2311887	Assembly, Valve Manifold	1				
1	NSS	. Block (Silver Color)	1	4	2311558	. Coil, Valve, 24 VDC	3
2	2310255	. Valve, Relief	1	5	2310253	. Valve, Cartridge	1
2	2310260	. . Kit, Seal	1	6	2310254	. Valve, Proportional	3
3	2310252	. Valve, Cartridge	2	7	2314908	. Coil, Proportional Valve, 24 VDC	3
3	2310258	. . Kit, Seal	1				

Valve Manifold Assembly- Electronic Controls

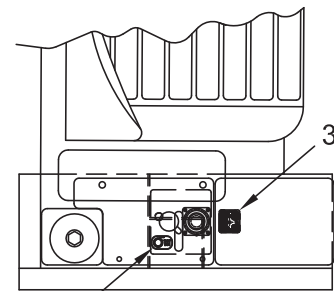
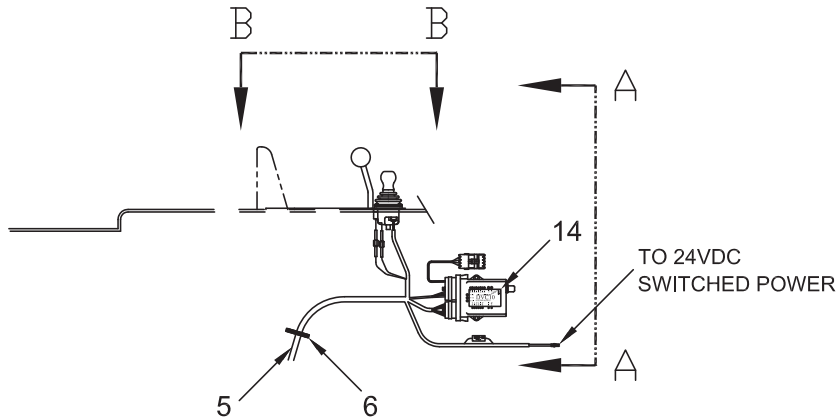
First Used on S/N AW12E-1575
 and with the letter "ZZ" stamped at the end of the serial number code
 on the top left side of the winch frame
 (Refer to pages 0-6 & 0-7 for more information)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2315717	Assembly, Valve Manifold	1				
1	NSS	. Block (Blue Color)	1	5	2310253	. Valve, Cartridge	1
2	2315807	. Valve, Relief	1		254400	. . Kit, Seal	1
	2310260	. . Kit, Seal	1	6	2311558	. Coil, 24 VDC Valve	3
3	2310252	. Valve, Cartridge	2	7	2315811	. Coil, 24 VDC Proportional Valve	3
	2310258	. . Kit, Seal	1				
4	2315808	. Valve, Proportional	3				
	254396	. . Kit, Seal	1				

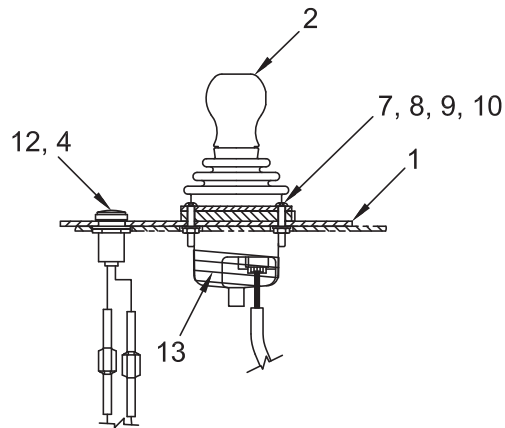
Handling Gear - Electronic Controls

Caterpillar 583R (C67), 583T (C69, C74) and 587T (C79) with Dropbox
 Last Used on S/N AW12E-1181



12, 4
VIEW B-B

NOTE: When Item 1 is installed in place of CAT cover plate the counterweight control decal will need to be salvaged or replaced.



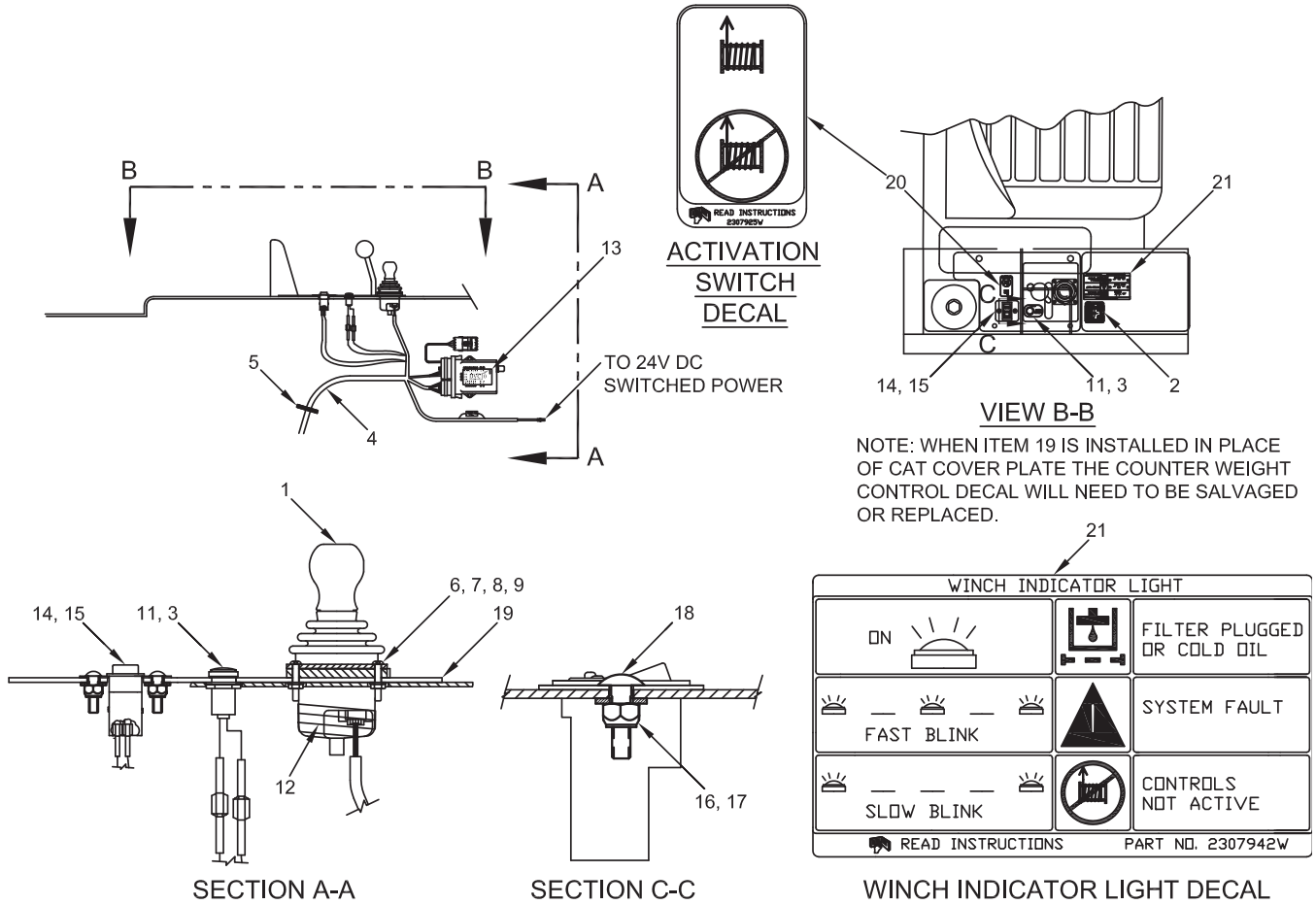
SECTION A-A

NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2306411W	Plate, Control Lever Mounting	1	9	*a 15039W	Nut	4
2	2304780W	Assembly, Control Lever - w/o FS (3-122)	1	10	*a 197066W	Washer	4
3	2305250W	Decal, Control Lever - w/o FS	1	12	2303912W	Assembly, Bypass LED	1
4	2304504W	Decal, Filter LED	1	13	2304796W	Tape, Self-Fusing	1
5	2303900W	Harness, External Wiring	1	14	*b -----	Module, E-Controls - Programmed	1
6	137852W	Clamp, Strap	6		*a	Use 318702W Thread Lock	
7	*a 2304779W	Collar, Control Lever Mounting	1		*b	See ECM selection guide on page 3-128	
8	*a 2304892W	Screw	4				

Handling Gear - Electronic Controls

Caterpillar 583R (C67), 583T (C69, C74) and 587T (C79) with Dropbox
Used on S/N AW12E-1182 thru AW12E-1244

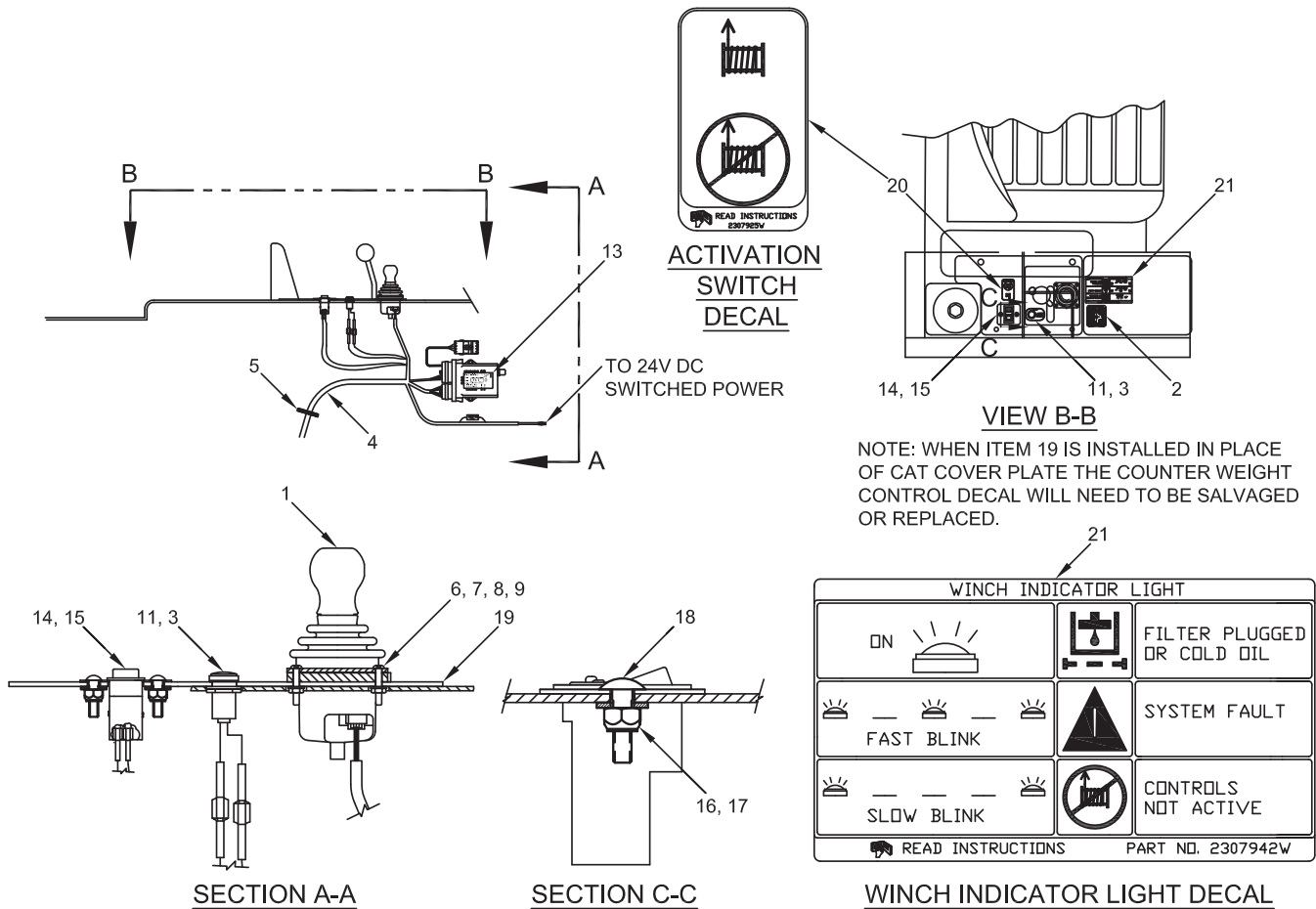


NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2304780W	Assembly, Control Lever - w/o FS (3-122)	1	14	2307849W	Assembly, Rocker Switch - w/ Lock	1
2	2305250W	Decal, Control Lever - w/o FS	1	15	2307643W	Plate, Switch Mounting	1
3	*b 2307944W	Decal, Winch Light	1	16	15127W	Washer	2
4	2307576W	Harness, External Wiring	1	17	15113W	Nut	2
5	137852W	Clamp, Strap	AR	18	Y25G-0416	CapscREW	2
6	*a 2304779W	Collar, Control Lever Mounting	1	19	2307842W	Plate, Control Lever Mounting	1
7	*a 2304892W	CapscREW	4	20	*b 2307925W	Decal, Activation Switch	1
8	*a 15039W	Nut	4	21	*b 2307942W	Decal, Winch Indicator Light	1
9	*a 197066W	Washer	4		*a	Use 318702W Thread Lock	
11	2303912W	Assembly, Bypass LED	1		*b	First Used on S/N AW12E-1194 Only, First Continuously Used on S/N AW12E-1203	
12	2307389W	Tubing, Heat Shrink	1		*c	See ECM selection guide on page 3-128.	
13	*c - - - - -	Module, E-Controls - Programmed	1				

Handling Gear - Electronic Controls

Caterpillar 583R (C67), 583T (C69, C74) and 587T (C79) with Dropbox
Used on S/N AW12E-1245 thru AW12E-1315

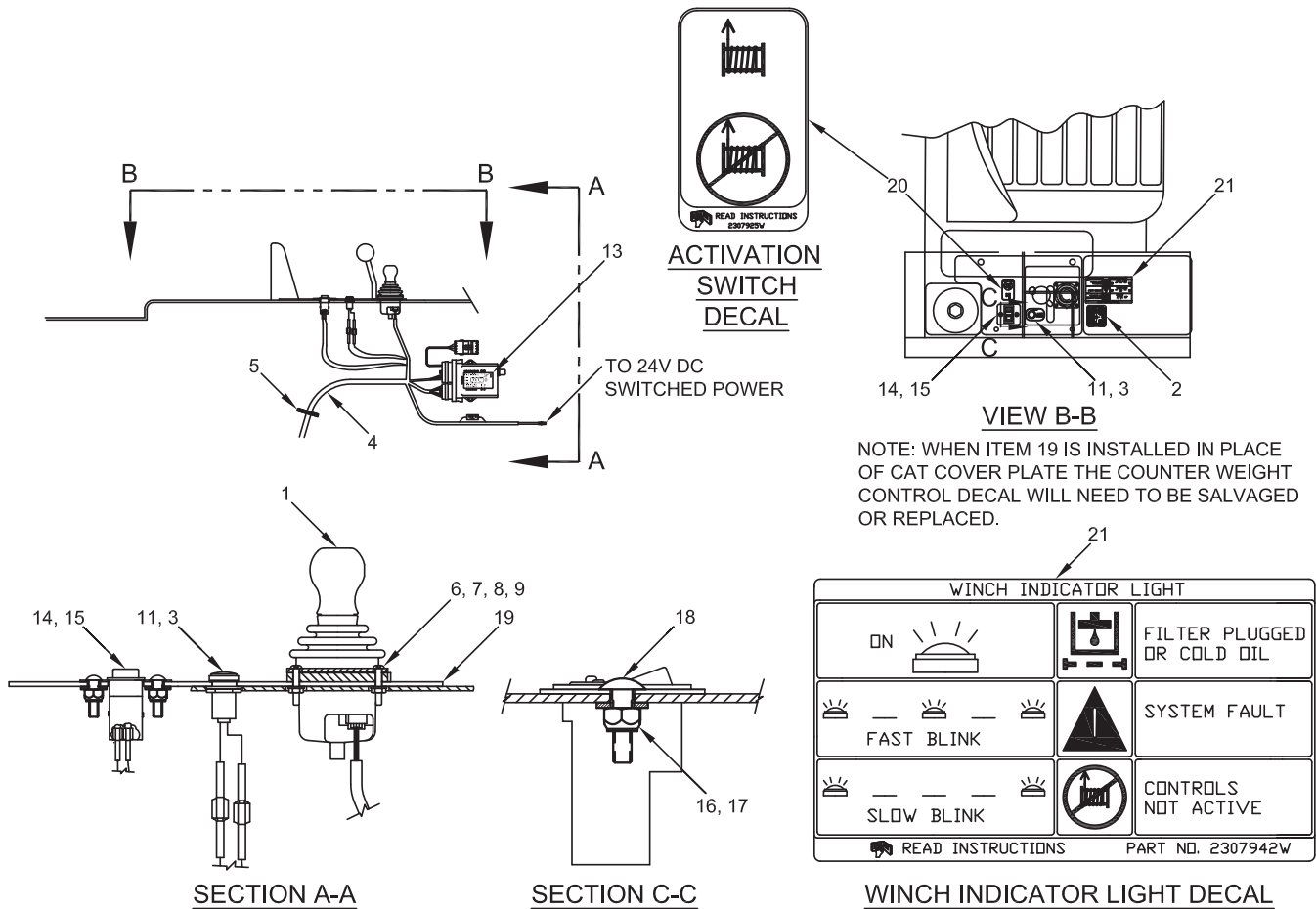


NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2307886W	Assembly, Control Lever - w/o FS (3-123)	1	13	*b	ECM, Programmed	1
2	2305250W	Decal, Control Lever - w/o FS	1	14	2307849W	Assembly, Rocker Switch - w/ Lock	1
3	2307944W	Decal, Winch Light	1	15	2307643W	Plate, Switch Mounting	1
4	2307576W	Harness, External Wiring	1	16	15127W	Washer	2
4	2310076	Adaptor	1	17	15113W	Nut	2
5	137852W	Clamp, Strap	AR	18	Y25G-0416	Capscrew	2
6	*a 2304779W	Collar, Control Lever Mounting	1	19	2307842W	Plate, Control Lever Mounting	1
7	*a 2304892W	Capscrew	4	20	2307925W	Decal, Activation Switch	1
8	*a 15039W	Nut	4	21	2307942W	Decal, Winch Indicator Light	1
9	*a 197066W	Washer	4				
11	2303912W	Assembly, Bypass LED	1				
					*a	Use 318702W Thread Lock	
					*b	See ECM selection guide on page 3-128.	

Handling Gear - Electronic Controls

Caterpillar 583R (C67), 583T (C69, C74) and 587T (C79) with Dropbox
Used on S/N AW12E-1316 thru AW12E-1456



NOTE: WHEN ITEM 19 IS INSTALLED IN PLACE OF CAT COVER PLATE THE COUNTER WEIGHT CONTROL DECAL WILL NEED TO BE SALVAGED OR REPLACED.

NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

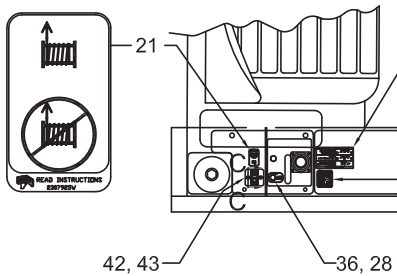
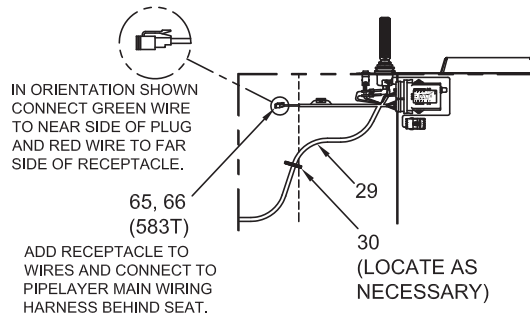
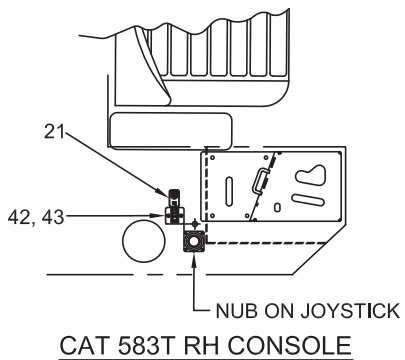
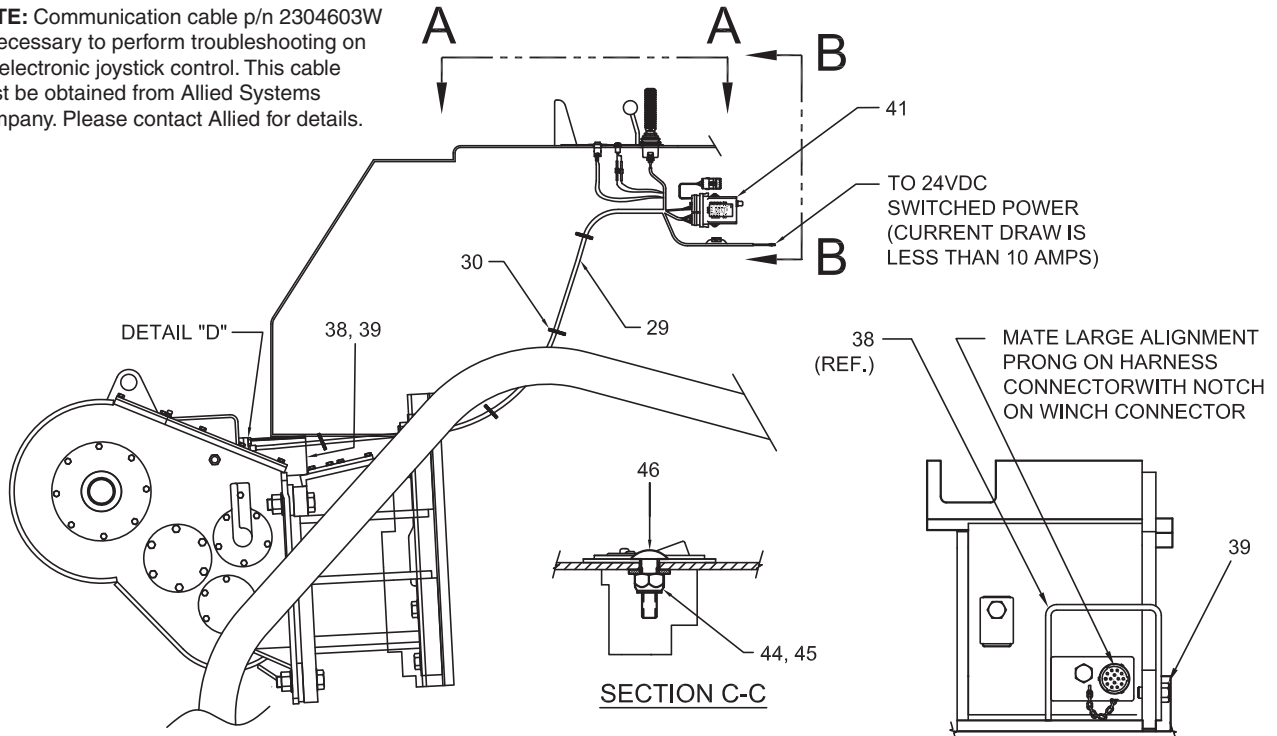
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2307886W	Assembly, Control Lever - w/o FS (3-123)	1	14	2307849W	Assembly, Rocker Switch - w/ Lock	1
2	2305250W	Decal, Control Lever - w/o FS	1	15	2307643W	Plate, Switch Mounting	1
3	2307944W	Decal, Winch Light	1	16	15127W	Washer	2
4	2310079	Harness, External Wiring	1	17	15113W	Nut	2
5	137852W	Clamp, Strap	AR	18	Y25G-0416	Cap screw	2
6	*a 2304779W	Collar, Control Lever Mounting	1	19	2307842W	Plate, Control Lever Mounting	1
7	*a 2304892W	Cap screw	4	20	2307925W	Decal, Activation Switch	1
8	*a 15039W	Nut	4	21	2307942W	Decal, Winch Indicator Light	1
9	*a 197066W	Washer	4				
11	2303912W	Assembly, Bypass LED	1				
13	*b -----	ECM, Programmed	1				
				*a	Use 318702W Thread Lock		
				*b	See ECM selection guide on page 3-128.		

Handling Gear - Electronic Controls

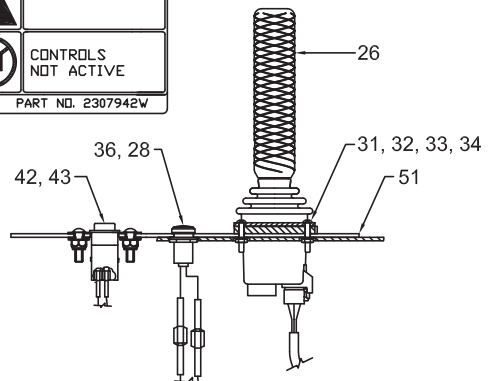
Caterpillar 583R (C67), 583T (C69, C74) and 587T (C79) with Dropbox
Used on S/N AW12E-1457 thru S/N AW12E-1536

Page 1 of 2

NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.



WINCH INDICATOR LIGHT		
ON		FILTER PLUGGED OR COLD OIL
FAST BLINK		SYSTEM FAULT
SLOW BLINK		CONTROLS NOT ACTIVE
READ INSTRUCTIONS		PART NO. 2307942W



NOTE: WHEN ITEM 51 IS INSTALLED IN PLACE OF CAT COVER PLATE, THE COUNTER WEIGHT CONTROL DECAL WILL NEED TO BE SALVAGED OR REPLACED.

Handling Gear - Electronic Controls

Caterpillar 583R (C67), 583T (C69, C74) and 587T (C79) with Dropbox
Used on S/N AW12E-1457 thru S/N AW12E-1536

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
21	2307925W	Decal, Activation Switch	1	38	2307919W	Guard, Cable	1
25	2307942W	Decal, Winch Indicator Light	1	39	*a 398817W	Screw, Flanged	2
26	2310552	Assembly, Control Lever - w/o FS (3-125)	1	41	*b - - - - -	ECM, Programmed	1
27	2305250W	Decal, Control - w/o FS	1	42	2307849W	Assembly, Rocker Switch - w/ Lock	1
28	2307944W	Decal, Winch Light	1	43	2307643W	Plate, Switch Mounting	1
29	2311444	Harness, External Wiring	1	44	15127W	Washer	2
30	137852W	Clamp, Strap	AR	45	15113W	Nut	2
31	*a 2304779W	Collar, Control Lever Mounting	1	46	Y25G-0416	Capscrew	2
32	*a 2304892W	Capscrew	4	51	2307842W	Plate, Control Lever Mounting	1
33	15039W	Nut	4				
34	197066W	Washer	4				
36	2303912W	Assembly, Bypass LED	1				

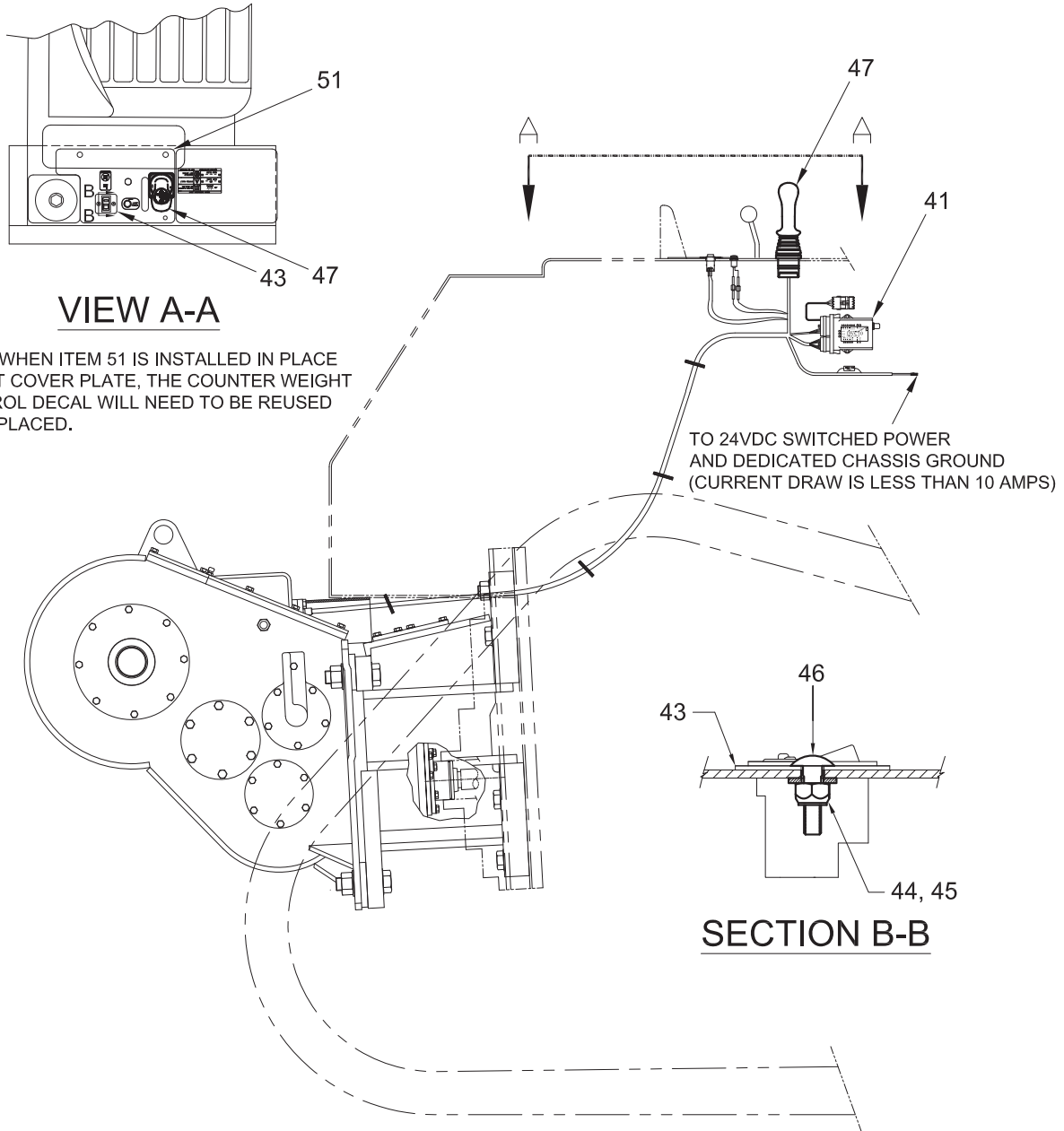
*a Use 318702W Thread Locker
*b See ECM selection guide on page 3-128.

Handling Gear - Electronic Controls

Caterpillar 583R (C67), and 587T (C79) with Dropbox

First Used on S/N AW12E-1537

Page 1 of 2



Note: See E-Controls Common Parts Pages for More Related Installation Information.

Handling Gear - Electronic Controls

Caterpillar 583R (C67), and 587T (C79) with Dropbox

First Used on S/N AW12E-1537

Page 2 of 2

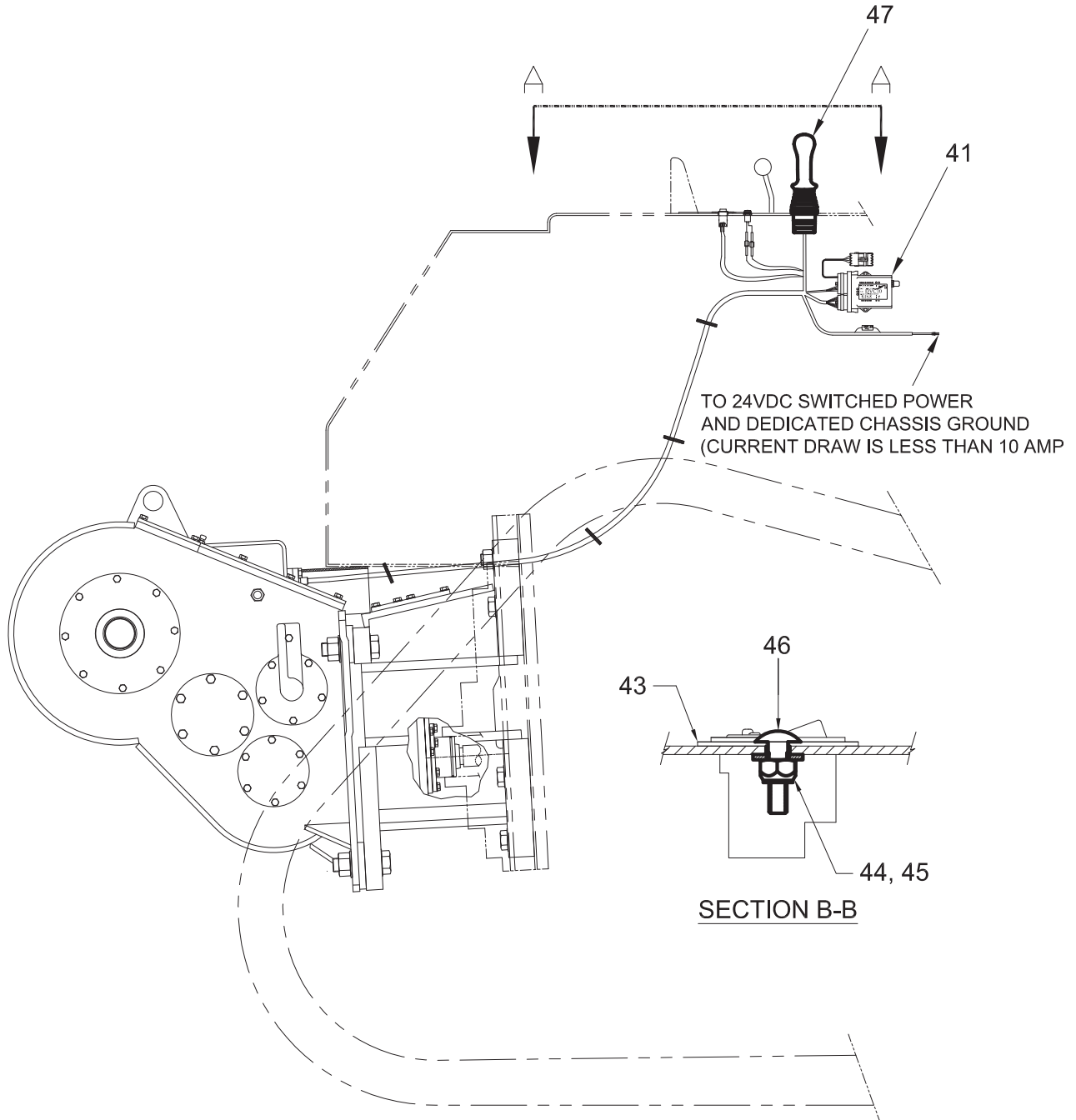
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
41	*a	-----	1	47	2314999	Kit, E-Control Lever Replacement	1
43	2307643W	Plate, Switch Mounting	1			(3-126/127)	
44	15127W	Washer	2	51	2307842W	Plate, Control Lever Mounting	1
45	15113W	Nut	2				
46	Y25G-0416	Capscrew	2			*a See ECM selection guide on page 3-128.	

Handling Gear - Electronic Controls

Caterpillar 583T (C74) with Dropbox

First Used on S/N AW12E-1537

Page 1 of 2



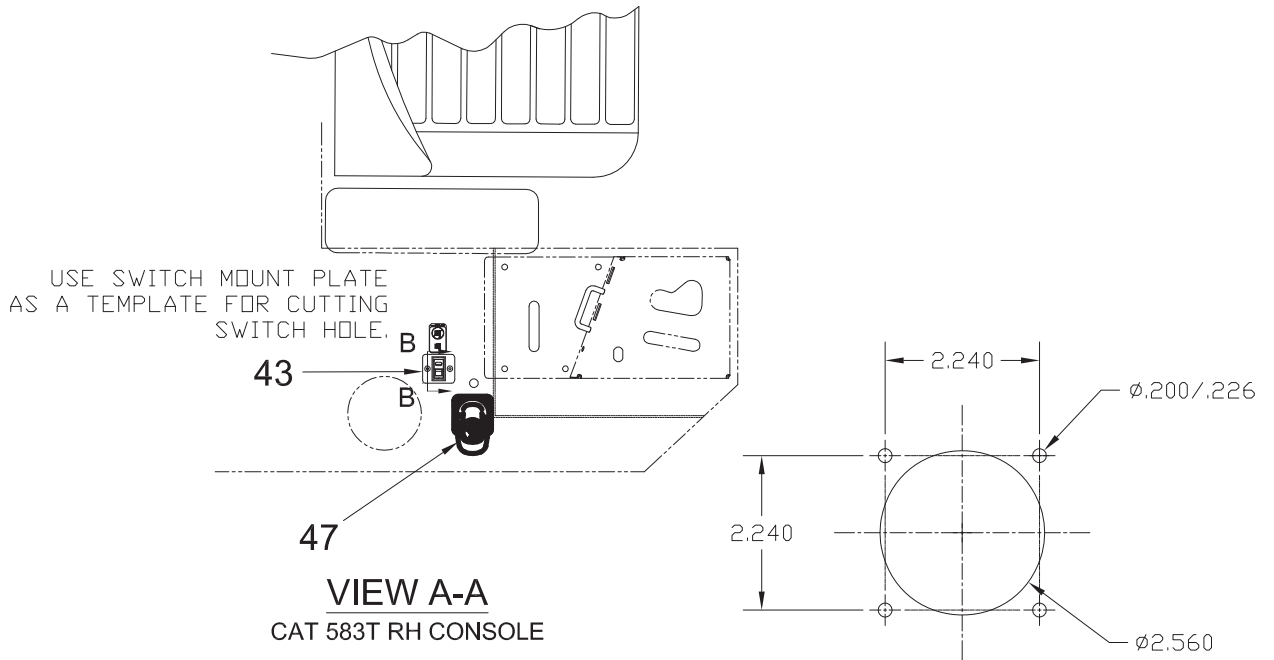
Note: See E-Controls Common Parts Pages for More Related Installation Information.

Handling Gear - Electronic Controls

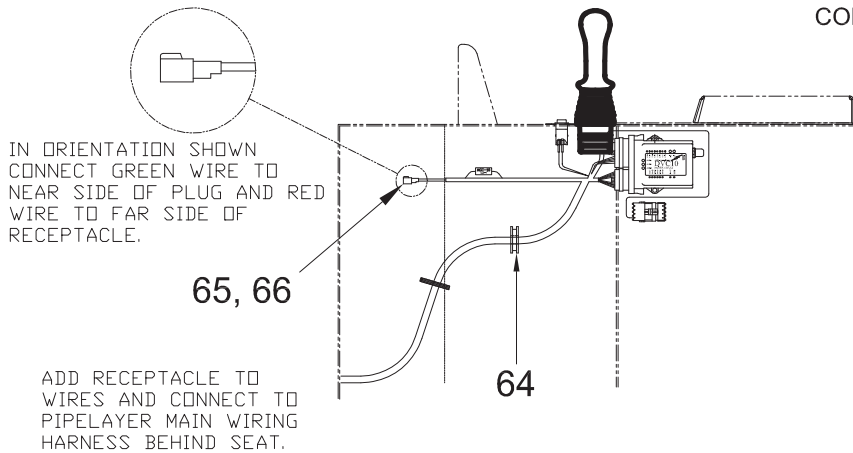
Caterpillar 583T (C74) with Dropbox

First Used on S/N AW12E-1537

Page 2 of 2



CAT 583T RH CONSOLE
CONTROL LEVER MOUNTING HOLE PATTERN

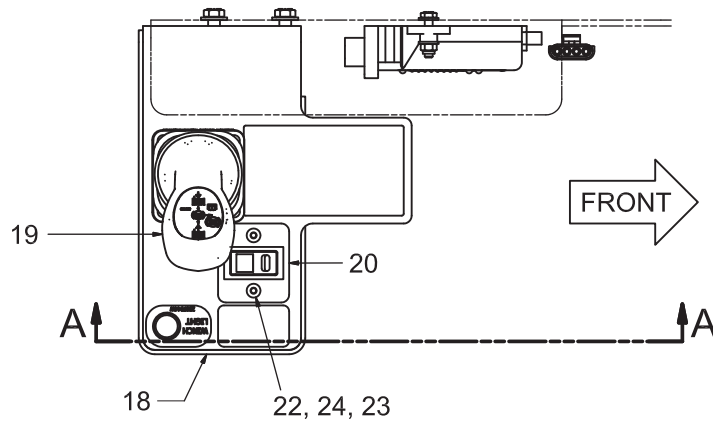


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
41	*a	Module, E-Controls - Programmed	1	64	2314668	Grommet	1
43	2307643W	Plate, Switch Mounting	1	65	243503	Receptacle	1
44	15127W	Washer	2	66	243505	Lock	1
45	15113W	Nut	2				
46	Y25G-0416	Capscrew	2				
47	2314999	Kit, E-Control Lever Replacement (3-126/127)	1				

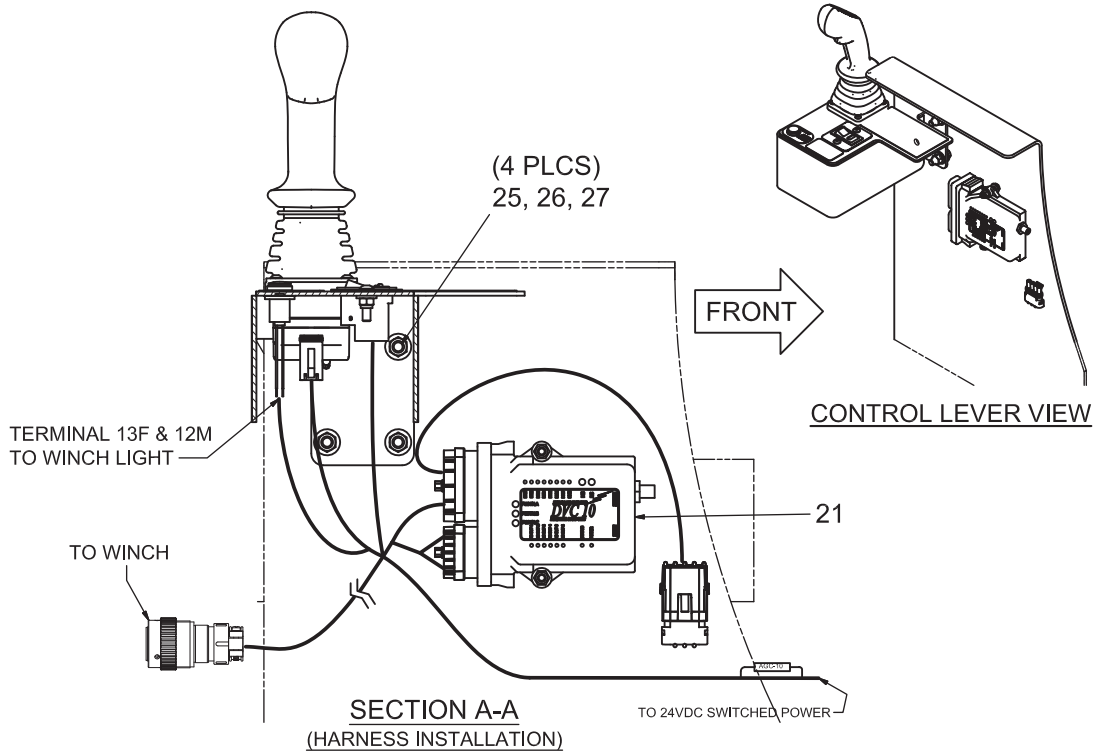
*a See ECM selection guide on page 3-128

Handling Gear - Electronic Controls

Caterpillar 594H (C64)
First Used on S/N AW12E-1537



TOP VIEW OF CONTROL CONSOLE



SECTION A-A
(HARNESS INSTALLATION)

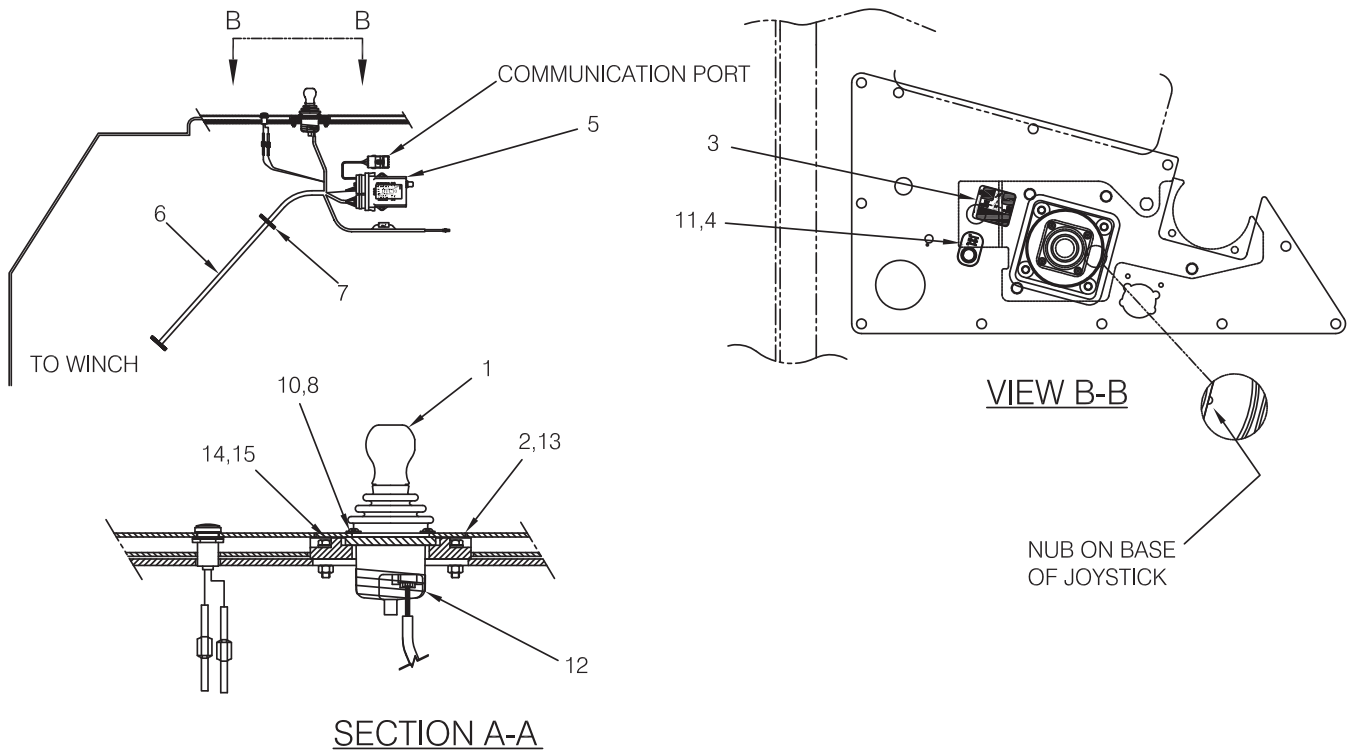
Note: See E-Controls Common Parts Pages for More Related Installation Information.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
18	2315343	Mounting, Controls	1	24	15113W	Nut	2
19	2314999	Kit, E-Control Lever Replacement	1	25	221499W	Capscrew	4
20	2307643W	Plate, Switch Mounting	1	26	221767W	Washer	8
21	*a	Module, E-Controls - Programmed	1	27	15115W	Nut	4
22	Y25G-0416	Capscrew	2				
23	221763W	Washer	2				

*a See ECM selection guide on page 3-128

Handling Gear - Electronic Controls

Caterpillar D8R Series II (C59) with Dropbox
Last Used on S/N AW12E-1181

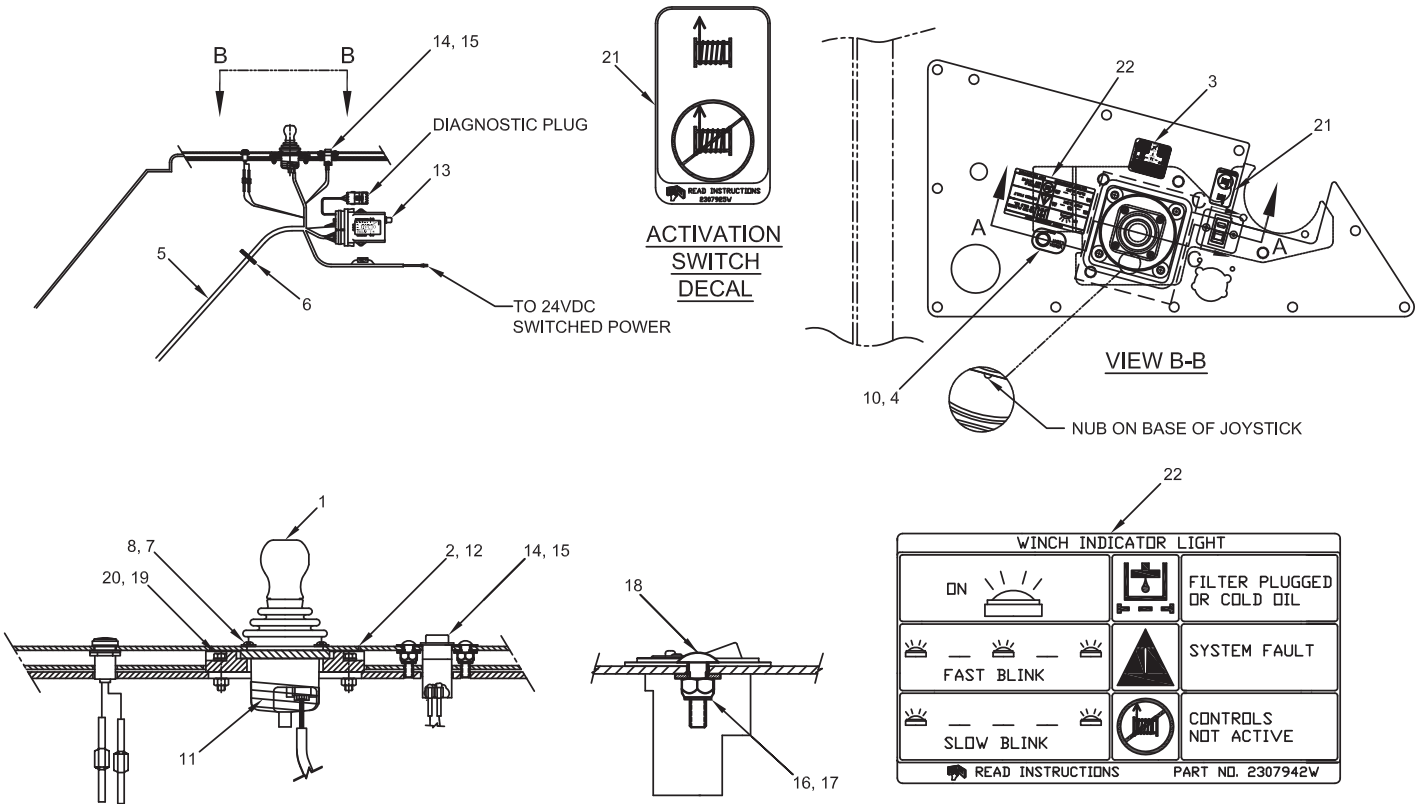


NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2304780W	Assembly, Control Lever (3-122)	1	11	2303912W	Assembly, Bypass LED	1
2	2305411W	Plate, Mounting	1	12	2304796W	Tape, Self-Fusing	1
3	2305250W	Decal	1	13	2305412W	Plate, Control Lever	1
4	2304504W	Decal, Filter LED	1	14	*a 292680W	Washer	4
5	*b -----	Module, E-Controls - Programmed	1	15	*a 287816W	Capscrew	4
6	2303900W	Harness, External Wiring	1				
7	137852W	Strap, Clamp	AR		*a	Use 318702W Thread Lock	
8	*a 18695W	Screw	4		*b	See ECM selection guide on page 3-128	
10	*a 197066W	Washer	4				

Handling Gear - Electronic Controls

Caterpillar D8R Series II (C59) with Dropbox
Used on S/N AW12E-1182 thru AW12E-1244

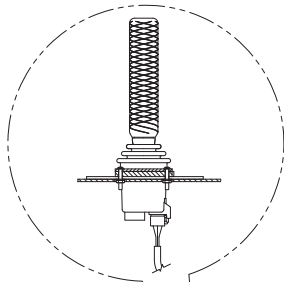


NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

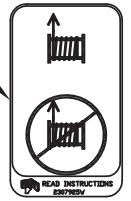
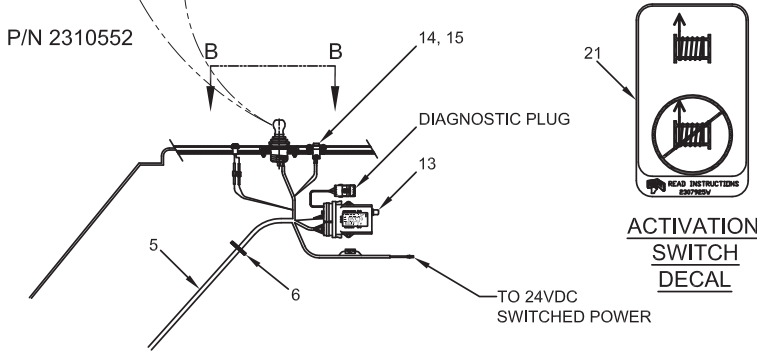
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2304780W	Assembly, Control Lever - w/o FS (3-122)	1	15	2307643W	Plate, Switch Mounting	1
2	2305411W	Plate, Control Lever Mounting	1	16	15127W	Washer	2
3	2305250W	Decal, Control Lever - w/o FS	1	17	15113W	Nut	2
4	*b 2307944W	Decal, Winch Light	1	18	Y25G-0416	Capscrew	2
5	2307576W	Harness, External Wiring	1	19	*a 292680W	Washer	4
6	137852W	Strap, Clamp	AR	20	*a 287816W	Capscrew	4
7	*a 18695W	Capscrew	4	21	*b 2307925W	Decal, Activation Switch	1
8	*a 197066W	Washer	4	22	*b 2307942W	Decal, Winch Indicator Light	1
10	2303912W	Assembly, Bypass LED	1				
11	2304796W	Tape, Self-Fusing	1		*a	Use 318702W Thread Lock	
12	2305412W	Plate, Control Lever Cover	1		*b	First Used on S/N AW12E-1194 Only, then jumped to S/N AW12E-1203 & Continued from there	
13	*c -----	Module, E-Controls - Programmed	1		*c	See ECM selection guide on page 3-128.	
14	2307849W	Assembly, Rocker Switch w/ Lock	1				

Handling Gear - Electronic Controls

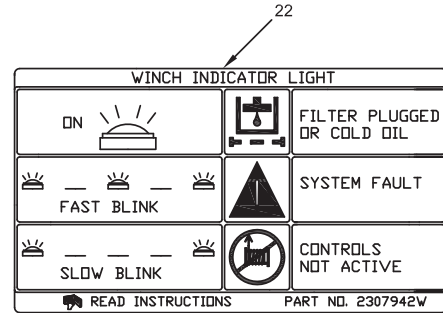
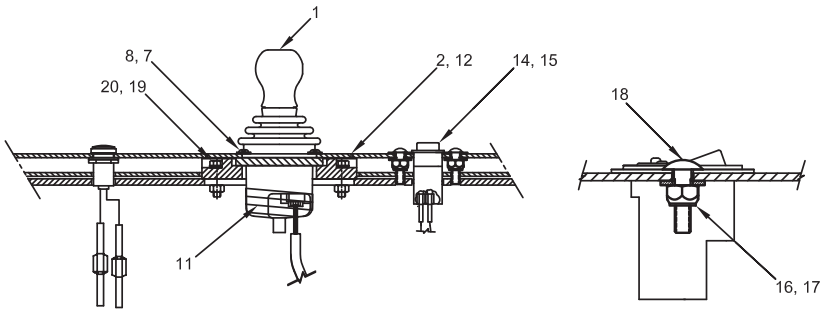
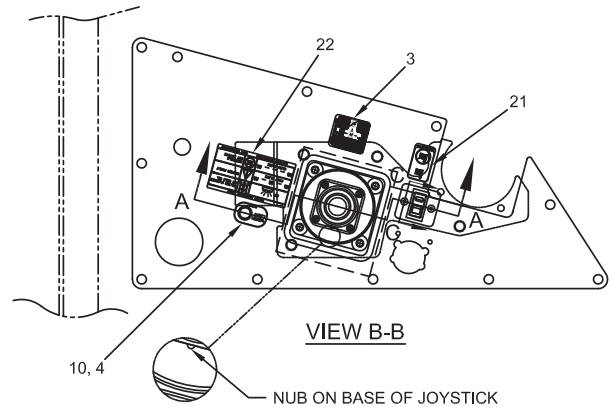
Caterpillar D8R Series II (C59) with Dropbox
Used on S/N AW12E-1245 thru AW12E-1315



Parts Service Gram	
Item	Gram
P/N 2310552	Contact your dealer



ACTIVATION SWITCH DECAL

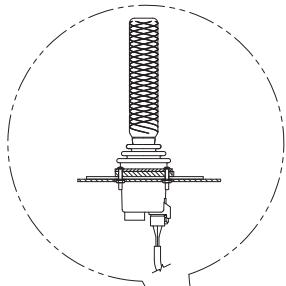


NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

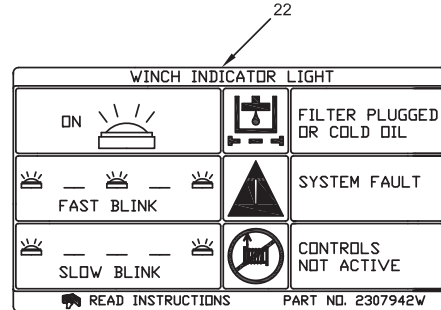
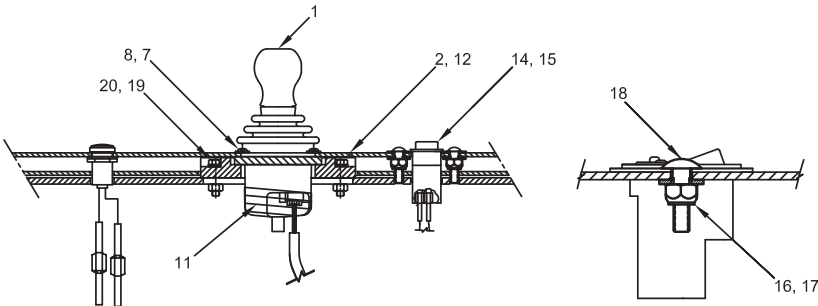
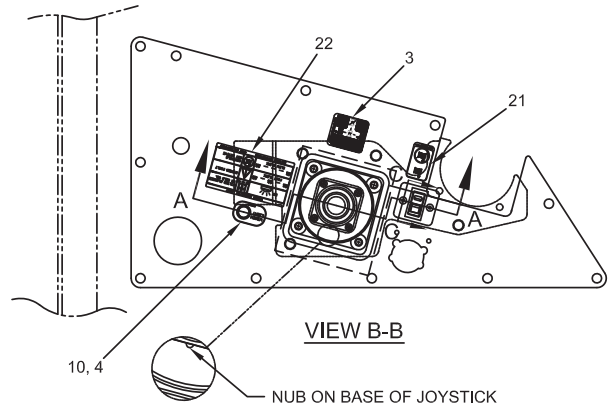
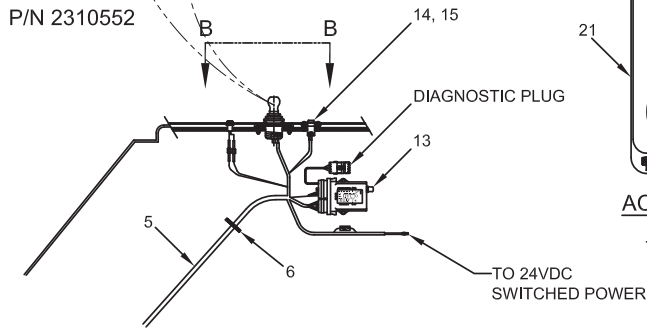
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2307886W	Assembly, Control Lever - w/o FS (3-123)	1	13	*c - - - - -	Module, E-Controls - Programmed	1
1	*b 2310552	Assembly, Control Lever - w/o FS (3-125)	1	14	2307849W	Assembly, Rocker Switch w/ Lock	1
2	2305411W	Plate, Control Lever Mounting	1	15	2307643W	Plate, Switch Mounting	1
3	2305250W	Decal, Control Lever - w/o FS	1	16	15127W	Washer	2
4	2307944W	Decal, Winch Light	1	17	15113W	Nut	2
5	2307576W	Harness, External Wiring	1	18	Y25G-0416	Capscrew	2
5	2310076	Adaptor	1	19	*a 292680W	Washer	4
6	137852W	Strap, Clamp	AR	20	*a 287816W	Capscrew	4
7	*a 18695W	Capscrew	4	21	2307925W	Decal, Activation Switch	1
8	*a 197066W	Washer	4	22	2307942W	Decal, Winch Indicator Light	1
10	2303912W	Assembly, Bypass LED	1				
11	2304796W	Tape, Self-Fusing	1				
12	2305412W	Plate, Control Lever Cover	1				
					*a	Use 318702W Thread Lock	
					*b	Contact Your Dealer to See Service Gram A3-C-9	
					*c	See ECM selection guide on page 3-128.	

Handling Gear - Electronic Controls

Caterpillar D8R Series II (C59) with Dropbox
Used on S/N AW12E-1316 thru AW12E-1456



Parts Service Gram	
Item	Gram
P/N 2310552	Contact your dealer



NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty	
1	2307886W	Assembly, Control Lever - w/o FS (3-123)	1	13	*c	-----	Module, E-Controls - Programmed	1
1	*b 2310552	Assembly, Control Lever - w/o FS (3-125)	1	14	2307849W	Assembly, Rocker Switch w/ Lock	1	
2	2305411W	Plate, Control Lever Mounting	1	15	2307643W	Plate, Switch Mounting	1	
3	2305250W	Decal, Control Lever w/o FS	1	16	15127W	Washer	2	
4	2307944W	Decal, Winch Light	1	17	15113W	Nut	2	
5	2310079	Harness, External Wiring	1	18	Y25G-0416	Capscrew	2	
6	137852W	Strap, Clamp	AR	19	*a 292680W	Washer	4	
7	*a 18695W	Capscrew	4	20	*a 287816W	Capscrew	4	
8	*a 197066W	Washer	4	21	2307925W	Decal, Activation Switch	1	
10	2303912W	Assembly, Bypass LED	1	22	2307942W	Decal, Winch Indicator Light	1	
11	2304796W	Tape, Self-Fusing	1					
12	2305412W	Plate, Control Lever Cover	1					
					*a	Use 318702W Thread Lock		
					*b	See Service Gram A3-C-9		
					*c	See ECM selection guide on page 3-128.		

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Handling Gear - Electronic Controls

Caterpillar D8R Series II (C59) with Dropbox
 Used on S/N AW12E-1457 through S/N AW12E-1536

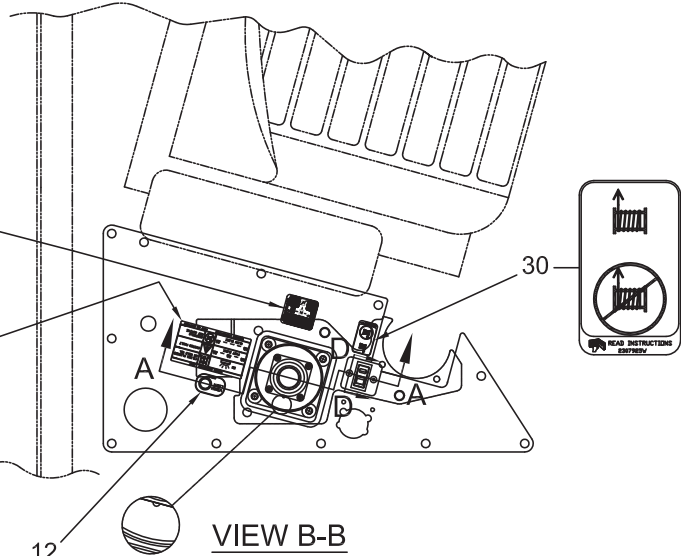
Page 1 of 2

NOTE:

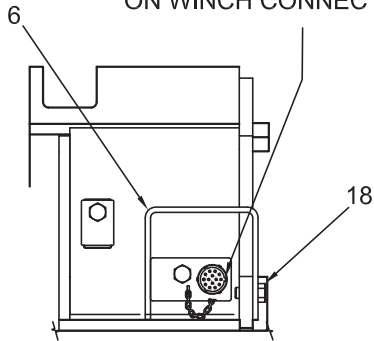
Communication cable, P/N 2304603W, is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.



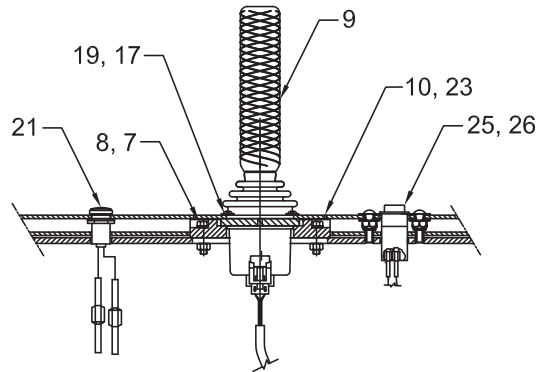
WINCH INDICATOR LIGHT		
ON		FILTER PLUGGED OR COLD OIL
FAST BLINK		SYSTEM FAULT
SLOW BLINK		CONTROLS NOT ACTIVE
READ INSTRUCTIONS		PART NO. 2307942W



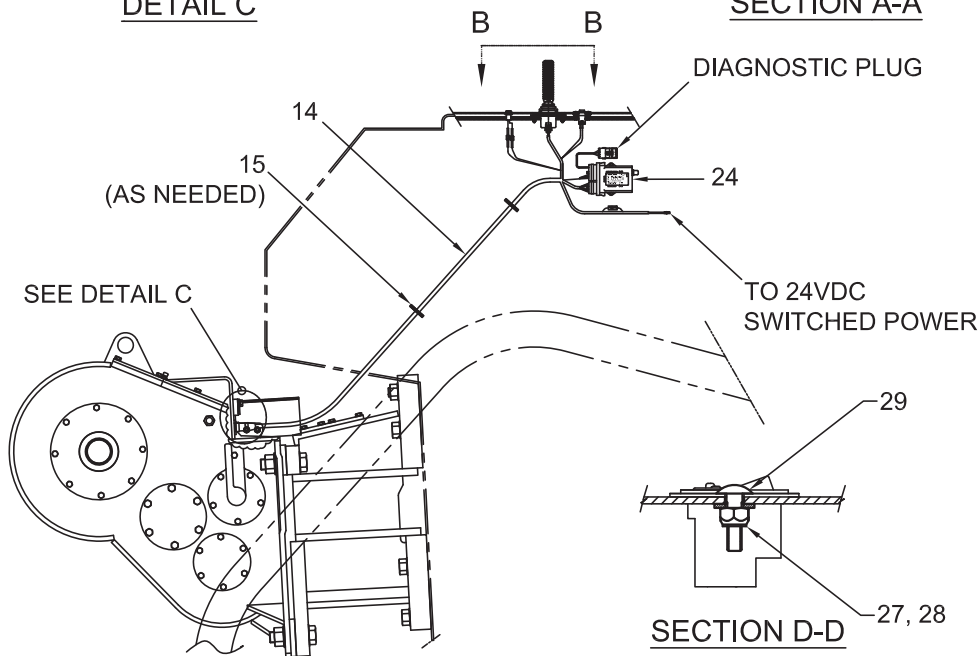
MATE LARGE ALIGNMENT PRONG ON HARNESS CONNECTOR WITH NOTCH ON WINCH CONNECTOR



DETAIL C



SECTION A-A



SECTION D-D

Handling Gear - Electronic Controls

Caterpillar D8R Series II (C59) with Dropbox
 Used on S/N AW12E-1457 through S/N AW12E-1536
 Page 2 of 2

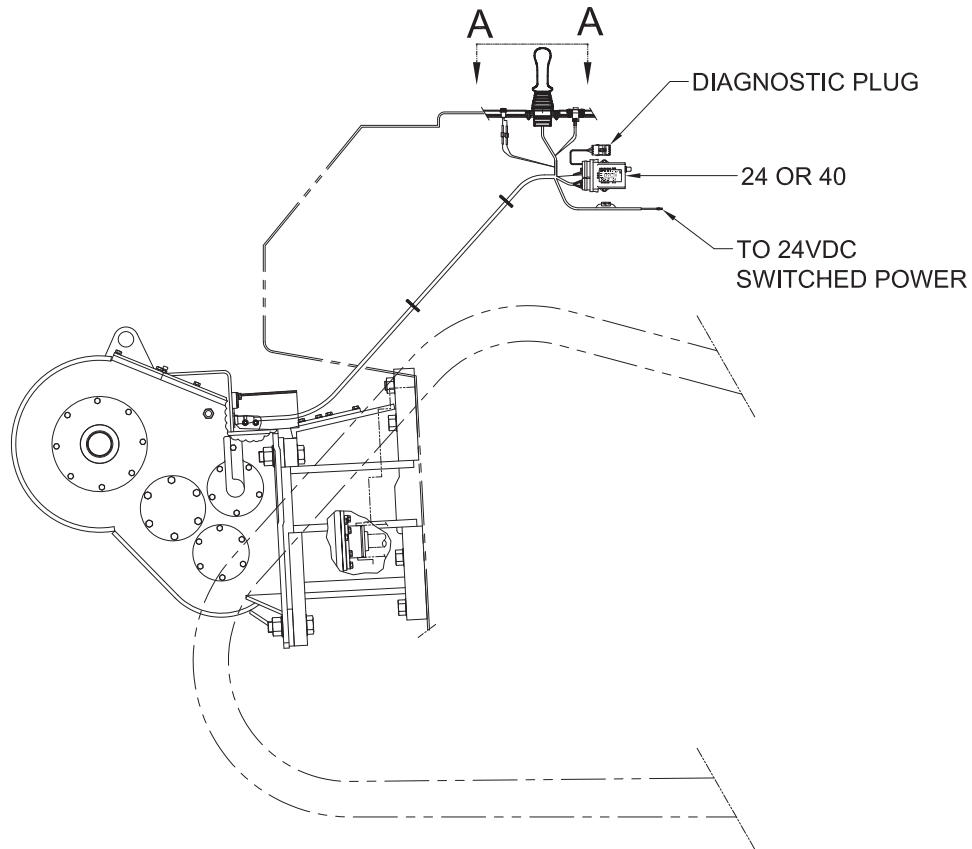
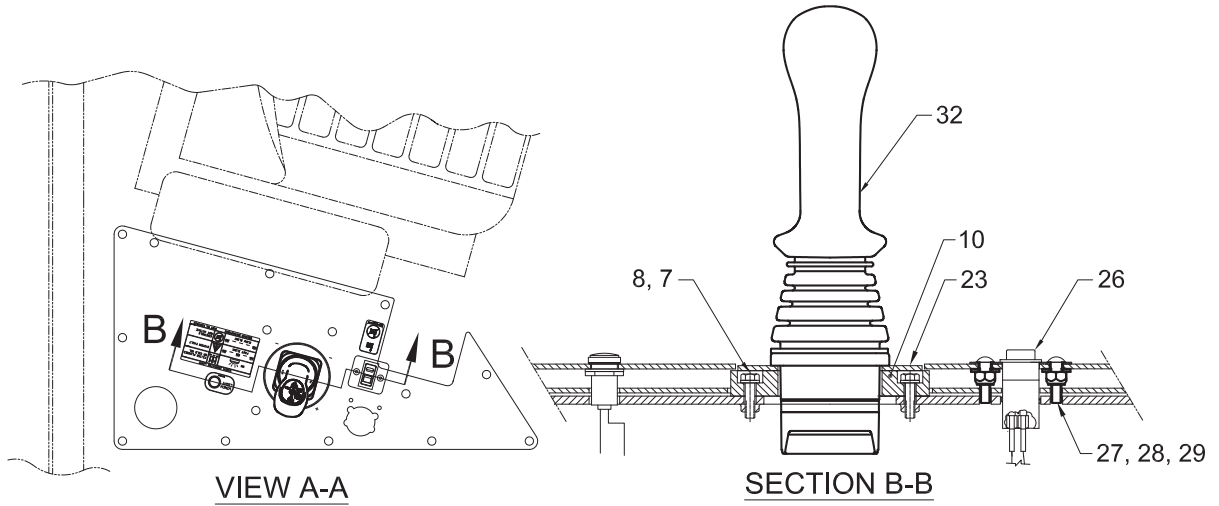
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
6	207919W	Guard, Cable	1	21	2303912W	Assembly, Bypass LED	1
7	292680W	Washer	4	23	2305412W	Plate, Control Lever Cover	1
8	*a 287816W	Capscrew	4	24	*b - - - - -	Module, E-Controls - Programmed	1
9	2310552	Assembly, Control Lever - w/o FS (3-125)	1	25	2307849W	Assembly, Rocker Switch w/ Lock	1
10	2305411W	Plate, Control Lever Mounting	1	26	2307643W	Plate, Switch Mounting	1
11	2305250W	Decal, Control Lever - w/o FS	1	27	15127W	Washer	2
12	2307944W	Decal, Winch Light	1	28	15113W	Nut	2
14	2311444	Harness, External Wiring	1	29	Y25G-0416	Capscrew	2
15	137852W	Clamp, Strap	AR	30	2307925W	Decal, Activation Switch	1
17	*a 18695W	Capscrew	4	31	2307942W	Decal, Winch Indicator Light	1
18	398817W	Screw, Flanged	2		*a	Use 318702W Thread Lock	
19	197066W	Washer	4		*b	See ECM selection guide on page 3-128.	

Handling Gear - Electronic Controls

Caterpillar D8R Series II (C59) with Dropbox

First Used on S/N AW12E-1537

Page 1 of 2



Note: See E-Controls Common Parts Pages for More Related Installation Information.

Handling Gear - Electronic Controls

Caterpillar D8R Series II (C59) with Dropbox

First Used on S/N AW12E-1537

Page 2 of 2

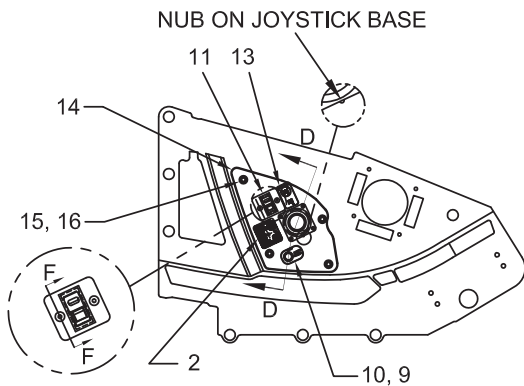
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
7	292680W	Washer	4	29	Y25G-0416	Capscrew	2
8	*a 287816W	Capscrew	4	32	2314999	Kit, E-Control Lever Replacement (3-126/127)	1
10	2315078	Plate, Control Lever Mounting	1	40	*b -----	Module, E-Control - Programmed	1
23	2305412W	Plate, Control Lever Cover	1				
24	*b -----	Module, E-Control - Programmed	1				
26	2307643W	Plate, Switch Mounting	1		*a	Use 230064W Locktite Kit	
27	15127W	Washer	2		*b	See ECM selection guide on page 3-196.	
28	15113W	Nut	2				

Handling Gear - Electronic Controls

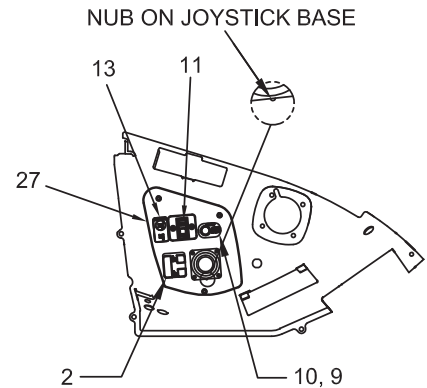
Caterpillar D8T (C69, C74) with Dropbox

Last Used on S/N AW12E-1181

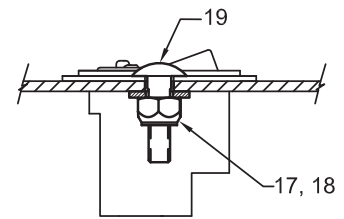
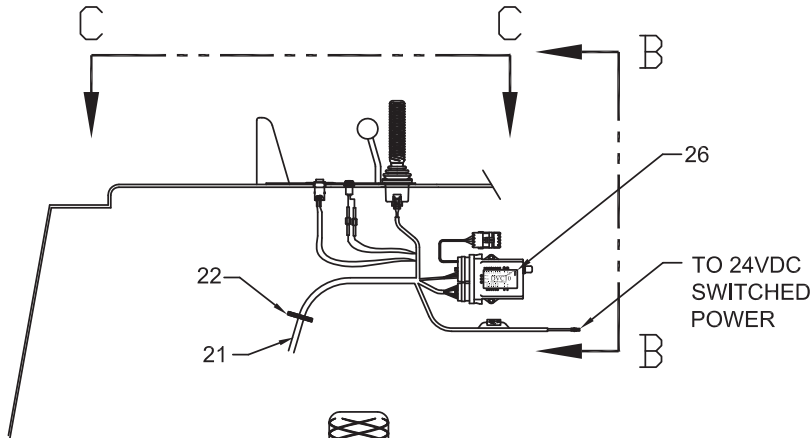
Page 1 of 2



CAT D8T RH CONSOLE
(VIEW C-C)

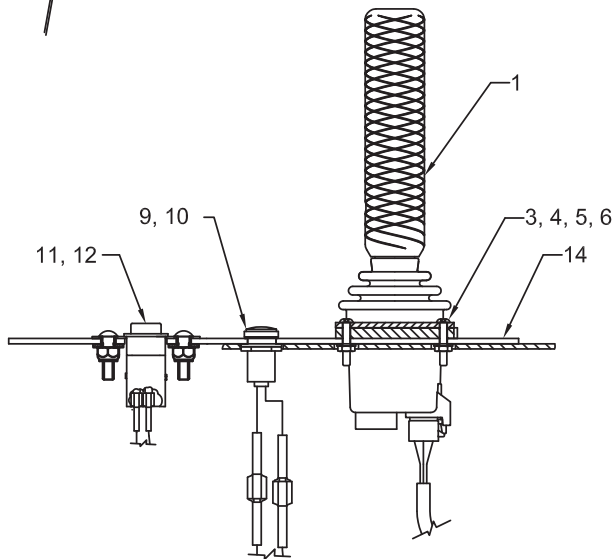


CAT D8T TIER 4i RH CONSOLE
(VIEW C-C)

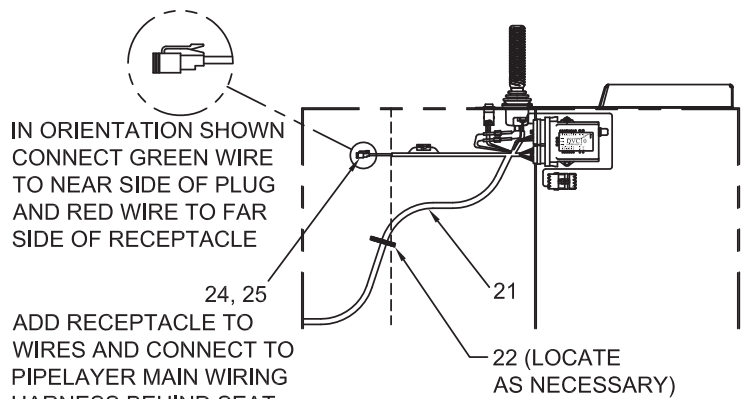


SECTION F-F

Parts Service Gram	
Item	Gram
P/N 2310552	Contact your dealer



SECTION D-D



VIEW B-B

NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

Handling Gear - Electronic Controls

Caterpillar D8T (C69, C74) with Dropbox

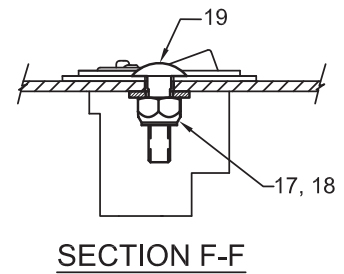
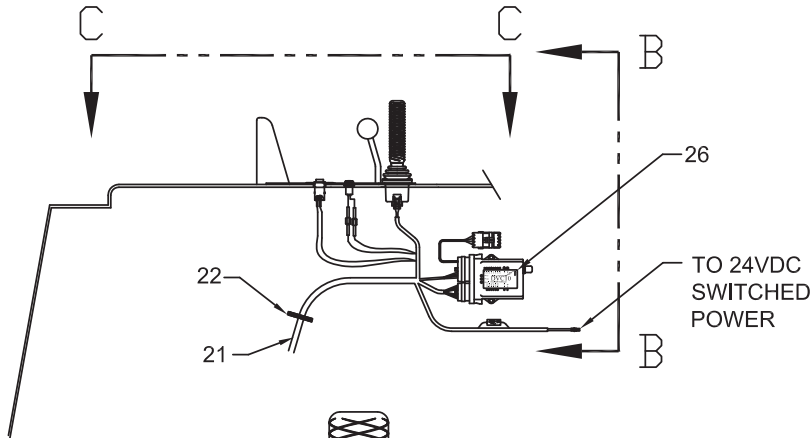
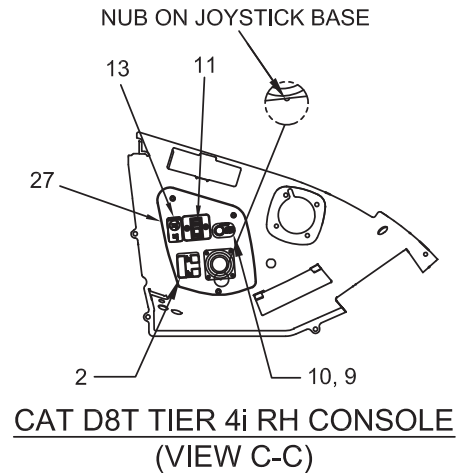
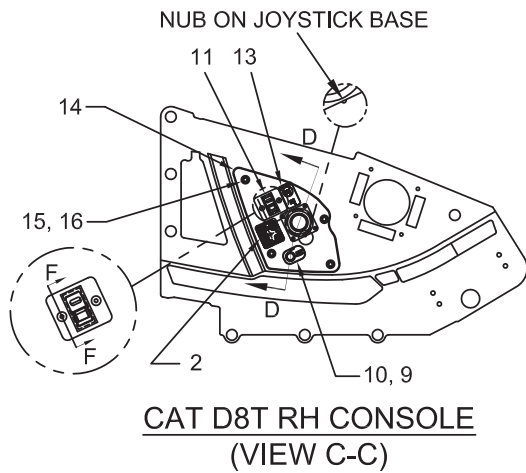
Last Used on S/N AW12E-1181

Page 2 of 2

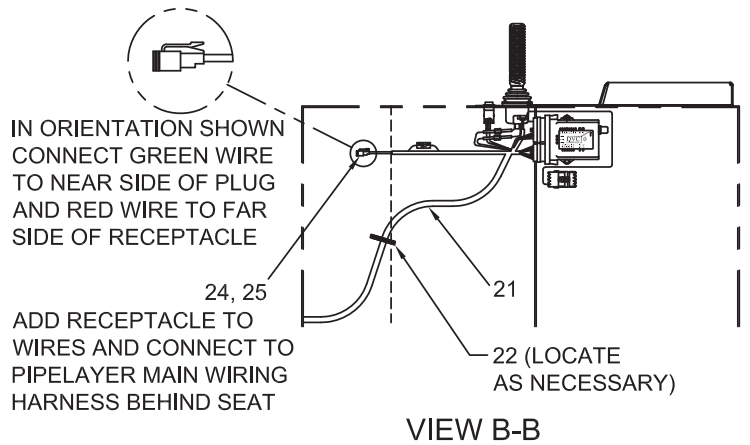
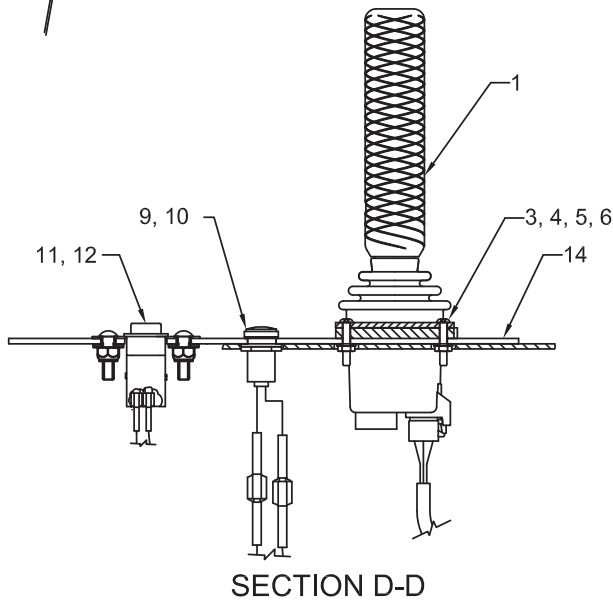
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*b 2310552	Assembly, Control Lever - w/o FS (3-125)	1	16	156133W	Nut	4
2	2305250W	Decal, Control Lever - w/o FS	1	17	15127W	Washer	2
3	2304779W	Collar, Control Lever Mounting	1	18	15113W	Nut	2
4	*a 2304892W	Capscrew	4	19	Y25G-0416	Capscrew	2
5	15039W	Nut	4	21	2310079	Harness, External Wiring	1
6	*a 197066W	Washer	4	22	137852W	Clamp, Strap	6
9	2303912W	Assembly, Bypass LED	1	24	249955	Receptacle	1
10	2307944W	Decal, Winch Light	1	25	249956	Lock	1
11	2307849W	Assembly, Switch - w/ Lock	1	26	*c - - - - -	Module, E-Control - Programmed	1
12	2307643W	Plate, Switch Mounting	1	27	2314134	Plate, Control Lever	1
13	2307925W	Decal, Activation Switch	1				
14	2307841W	Plate, Control Lever	1		*a	Use 318702W Thread Lock	
15	134803W	Screw	4		*b	Contact Your Dealer to See Service Gram A3-C-9	
					*c	See ECM selection guide on page 3-128.	

Handling Gear - Electronic Controls

Caterpillar D8T (C69, C74) with Dropbox
 Used on S/N AW12E-1182 thru AW12E-1456
 Page 1 of 2



Parts Service Gram	
Item	Gram
P/N 2310552	Contact your dealer



NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

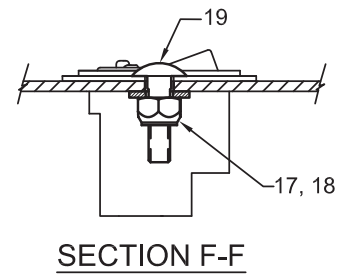
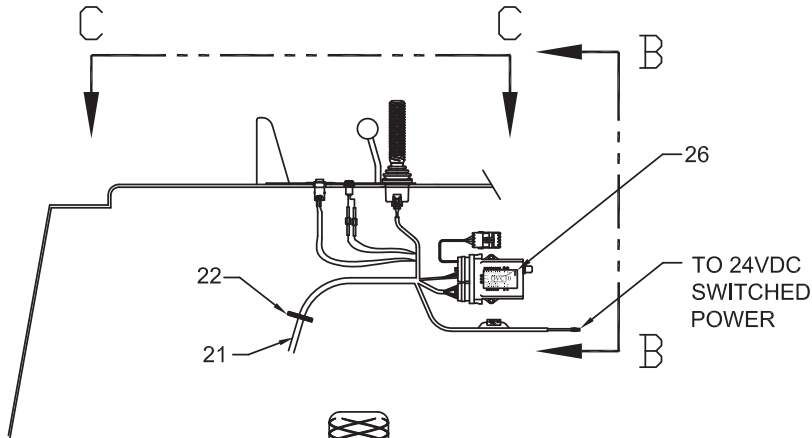
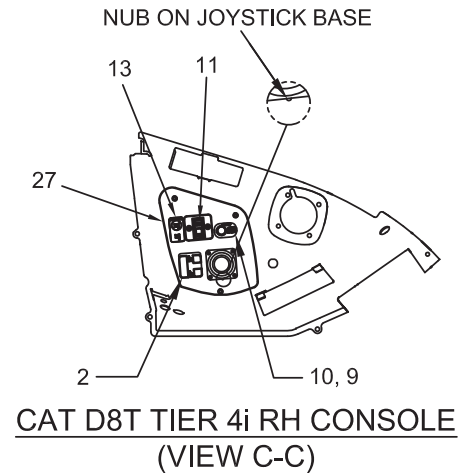
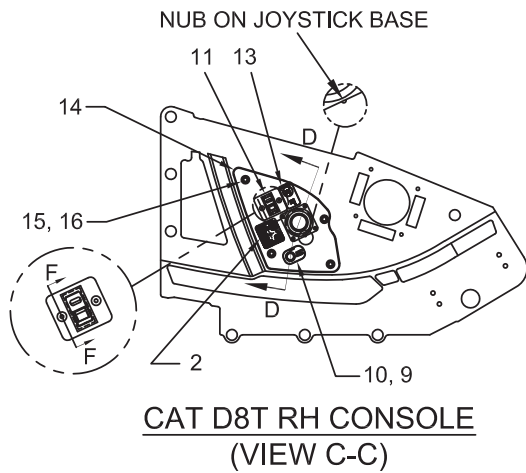
Handling Gear - Electronic Controls

Caterpillar D8T (C69, C74) with Dropbox
 Used on S/N AW12E-1182 thru AW12E-1456
 Page 2 of 2

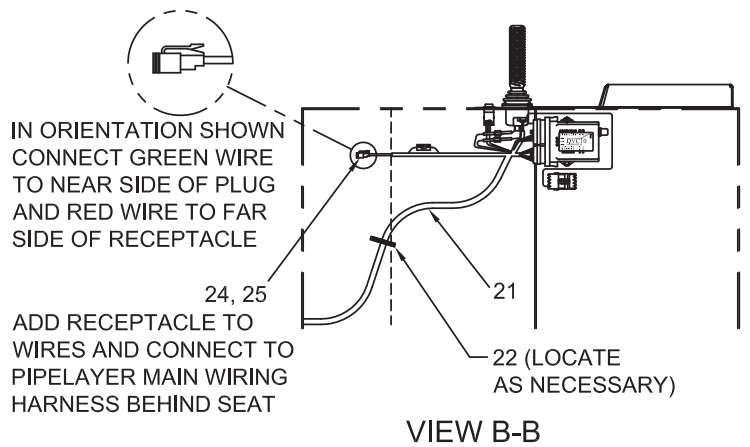
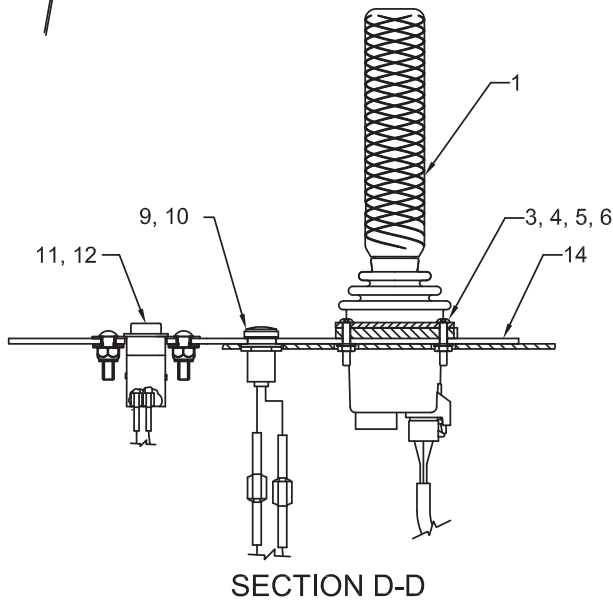
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*b 2310552	Assembly, Control Lever - w/o FS (3-125)	1	16	156133W	Nut	4
2	2305250W	Decal, Control Lever - w/o FS	1	17	15127W	Washer	2
3	2304779W	Collar, Control Lever Mounting	1	18	15113W	Nut	2
4	*a 2304892W	Capscrew	4	19	Y25G-0416	Capscrew	2
5	15039W	Nut	4	21	2310079	Harness, External Wiring	1
6	*a 197066W	Washer	4	22	137852W	Clamp, Strap	6
9	2303912W	Assembly, Bypass LED	1	24	249955	Receptacle	1
10	2307944W	Decal, Winch Light	1	25	249956	Lock	1
11	2307849W	Assembly, Switch - w/ Lock	1	26	*c - - - - -	Module, E-Controls - Programmed	1
12	2307643W	Plate, Switch Mounting	1	27	2314134	Plate, Control Lever	1
13	2307925W	Decal, Activation Switch	1				
14	2307841W	Plate, Control Lever	1				
15	134803W	Screw	4				
					*a	Use 318702W Thread Lock	
					*b	Contact Your Dealer to See Service Gram A3-C-9	
					*c	See ECM selection guide on page 3-128.	

Handling Gear - Electronic Controls

Caterpillar D8T (C74) with Dropbox
 Used on S/N AW12E-1457 thru S/N AW12E-1536
 Page 1 of 2



Parts Service Gram	
Item	Gram
P/N 2310552	Contact your dealer



NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

Handling Gear - Electronic Controls

Caterpillar D8T (C74) with Dropbox
 Used on S/N AW12E-1457 thru S/N AW12E-1536
 Page 2 of 2

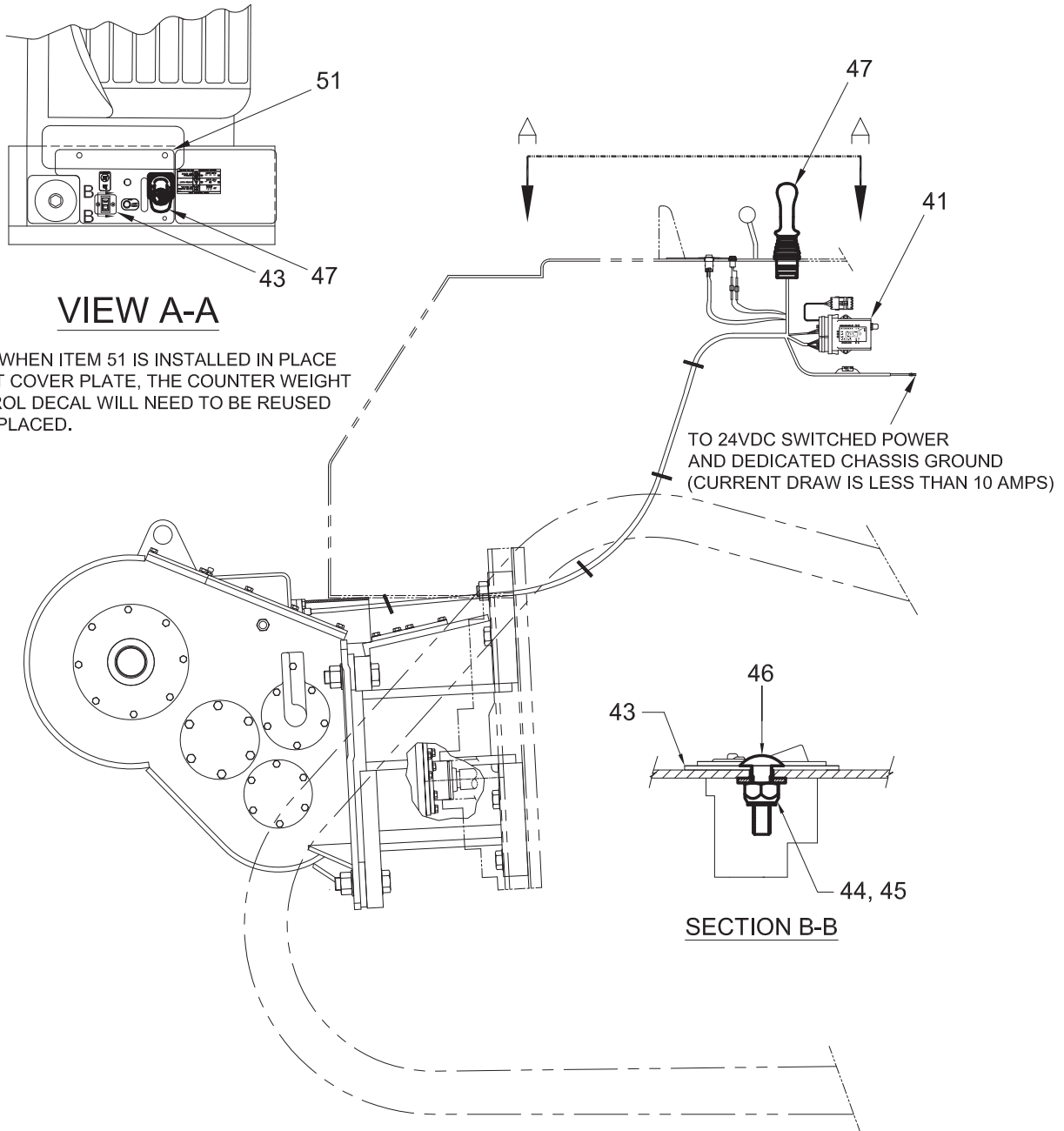
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*b 2310552	Assembly, Control Lever - w/o FS (3-125)	1	16	156133W	Nut	4
2	2305250W	Decal, Control Lever - w/o FS	1	17	15127W	Washer	2
3	2304779W	Collar, Control Lever Mounting	1	18	15113W	Nut	2
4	*a 2304892W	Capscrew	4	19	Y25G-0416	Capscrew	2
5	15039W	Nut	4	21	2311444	Harness, External Wiring	1
6	*a 197066W	Washer	4	22	137852W	Clamp, Strap	6
9	2303912W	Assembly, Bypass LED	1	24	249955	Receptacle	1
10	2307944W	Decal, Winch Light	1	25	249956	Lock	1
11	2307849W	Assembly, Switch - w/ Lock	1	26	*c - - - - -	Module, E-Controls - Programmed	1
12	2307643W	Plate, Switch Mounting	1	27	2314134	Plate, Control Lever	1
13	2307925W	Decal, Activation Switch	1				
14	2307841W	Plate, Control Lever	1				
15	134803W	Screw	4				
					*a	Use 318702W Thread Lock	
					*b	Contact Your Dealer to See Service Gram A3-C-9	
					*c	See ECM selection guide on page 3-128.	

Handling Gear - Electronic Controls

Caterpillar D8T (C74) with Dropbox

First Used on S/N AW12E-1537

Page 1 of 2



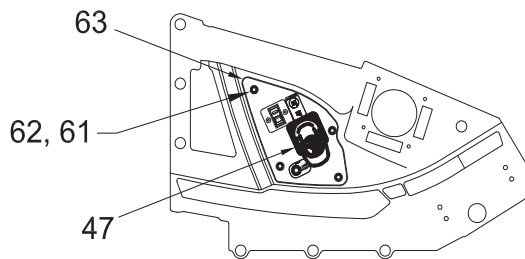
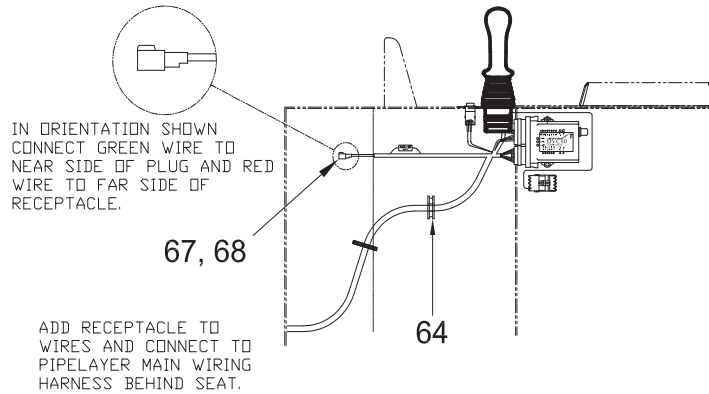
Note: See E-Controls Common Parts Pages for More Related Installation Information.

Handling Gear - Electronic Controls

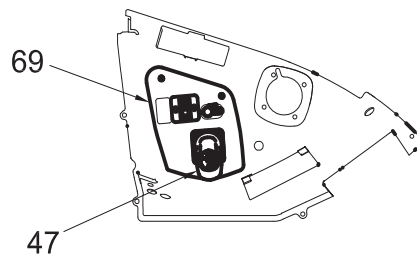
Caterpillar D8T (C74) with Dropbox

First Used on S/N AW12E-1537

Page 2 of 2



CAT D8T & D10T RH CONSOLE



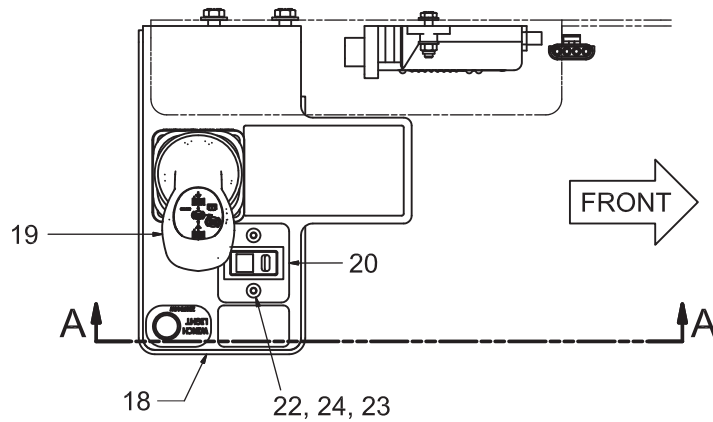
CAT D8T TIER 4i RH CONSOLE

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
41	*a	Module, E-Controls - Programmed	1	62	156133W	Nut	4
43	2307643W	Plate, Switch Mounting	1	63	2307841W	Plate, Control Lever	1
44	15127W	Washer	2	64	2314668	Grommet	1
45	15113W	Nut	2	67	906122	Receptacle	1
46	Y25G-0416	Capscrew	2	68	246806	Wedglock	1
47	2314999	Kit, E-Control Lever Replacement (3-126/127)	1	69	2314134	Plate, Control Lever	1
61	134803W	Screw, Flange	4				

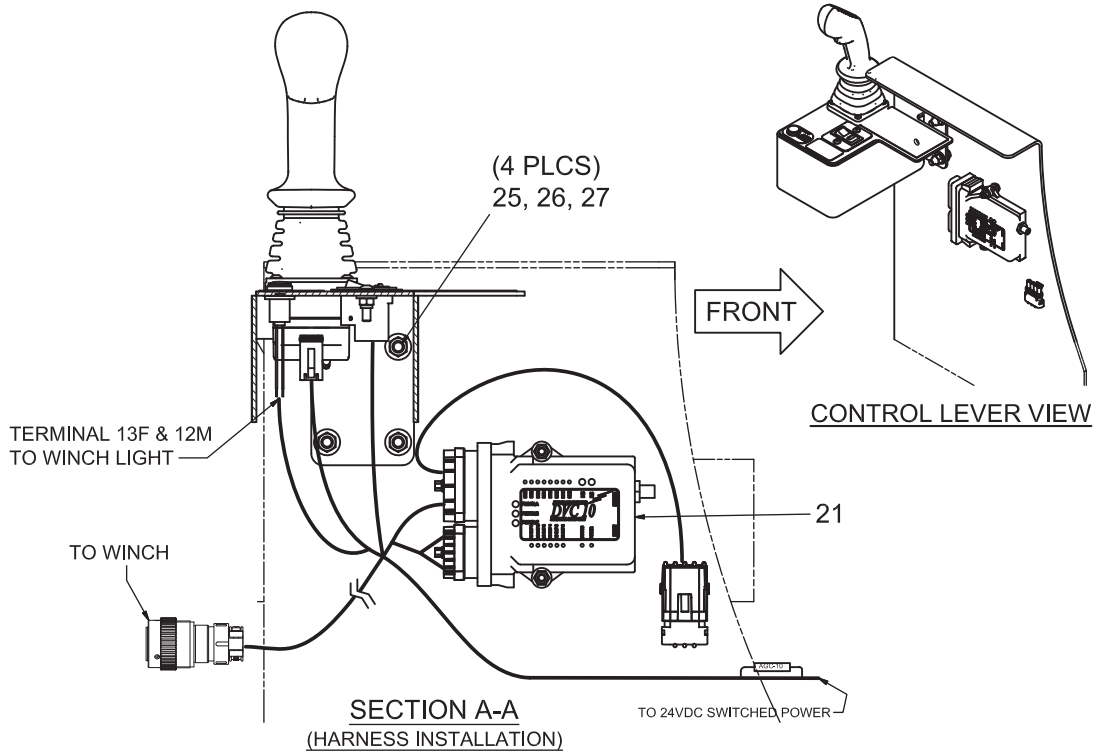
*a See ECM selection guide on page 3-128

Handling Gear - Electronic Controls

Caterpillar D9H (C62)
First Used on S/N AW12E-1537



TOP VIEW OF CONTROL CONSOLE



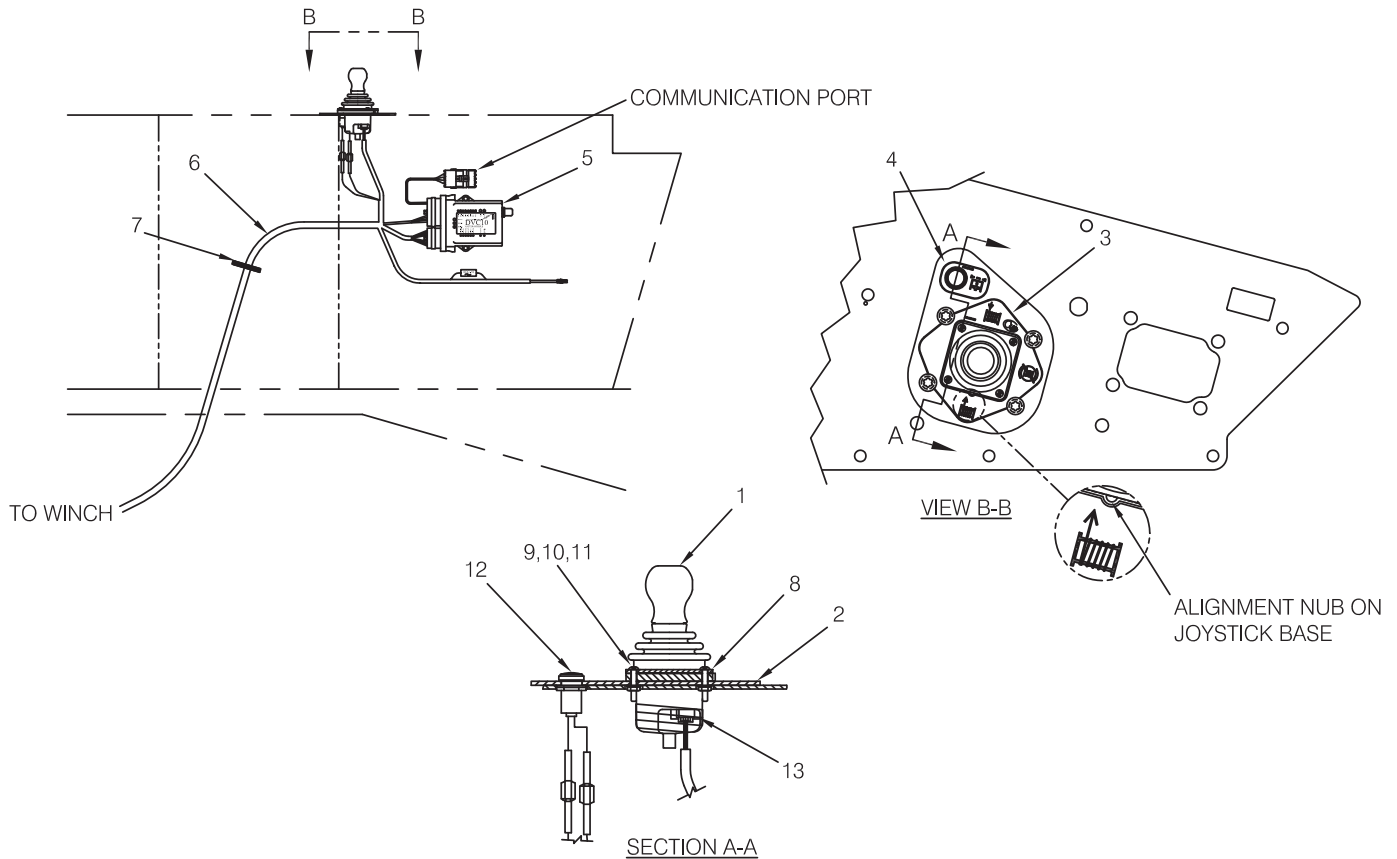
Note: See E-Controls Common Parts Pages for More Related Installation Information.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
18	2315343	Mounting, Controls	1	24	15113W	Nut	2
19	2314999	Kit, E-Control Lever Replacement	1	25	221499W	Capscrew	4
		(3-126/127)	1	26	221767W	Washer	8
20	2307643W	Plate, Switch Mounting	1	27	15115W	Nut	4
21	*a	Module, E-Controls - Programmed	1				
22	Y25G-0416	Capscrew	2				
23	221763W	Washer	2				

*a See ECM selection guide on page 3-128

Handling Gear - Electronic Controls

Caterpillar D9R (C65) with Dropbox
 Last Used on S/N AW12E-1181

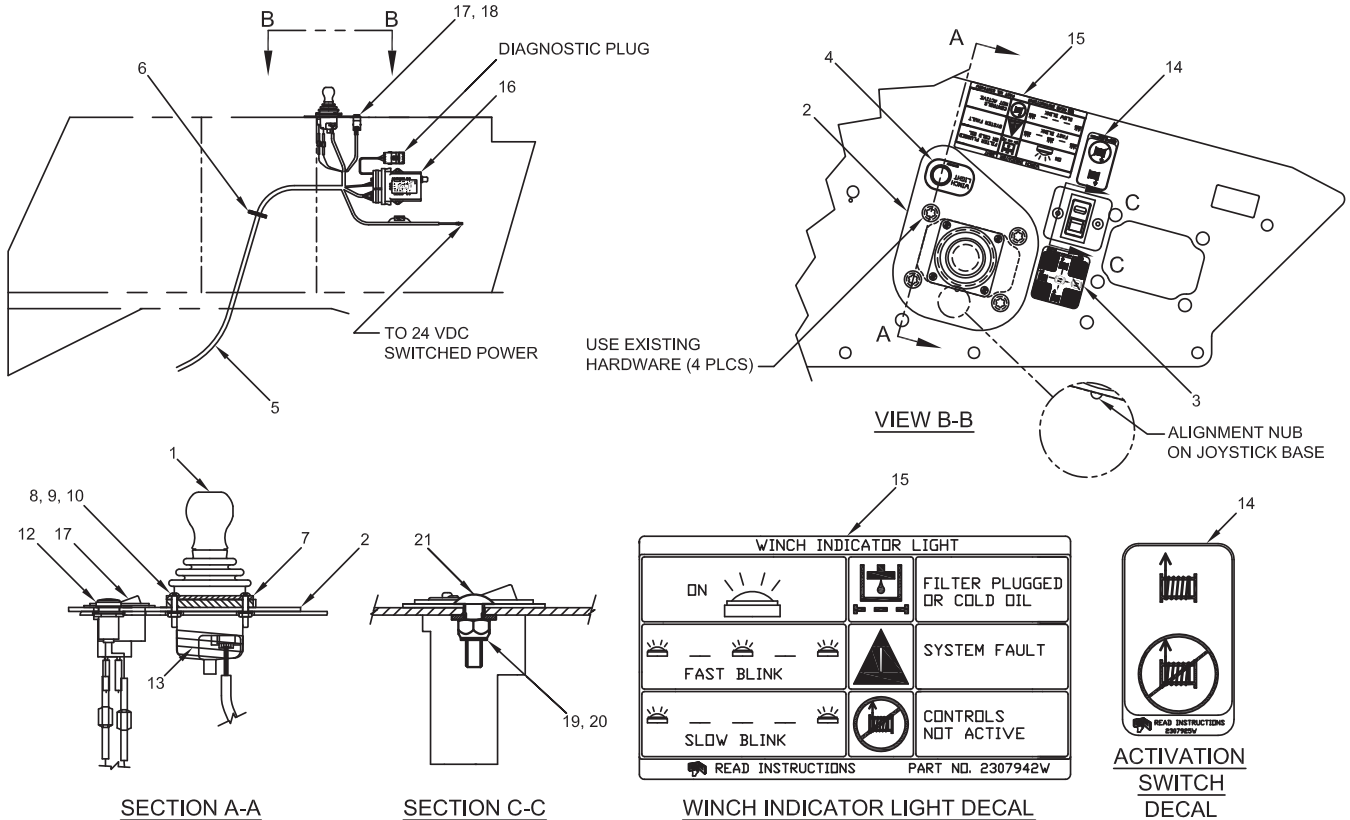


NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2304780W	Assembly, Control Lever - w/o FS (3-122)	1	9	*a 2304892W	Screw	4
2	2304815W	Plate, Control Lever Mounting	1	10	*a 15039W	Nut	4
3	2304673W	Decal, Control Lever	1	11	*a 197066W	Washer	4
4	2304504W	Decal, Filter LED	1	12	2303912W	Assembly, Bypass LED	1
5	*b -----	Module, E-Controls - Programmed	1	13	2304796W	Tape, Self-Fusing	1
6	2303900W	Harness, External Wiring	1		*a	Use 318702W Thread Lock	
7	137852W	Clamp, Strap	AR		*b	See ECM selection guide on page 3-128	
8	2304779W	Collar, Control Lever Mounting	1				

Handling Gear - Electronic Controls

Caterpillar D9R (C65) with Dropbox
Used on S/N AW12E-1245 thru AW12E-1315

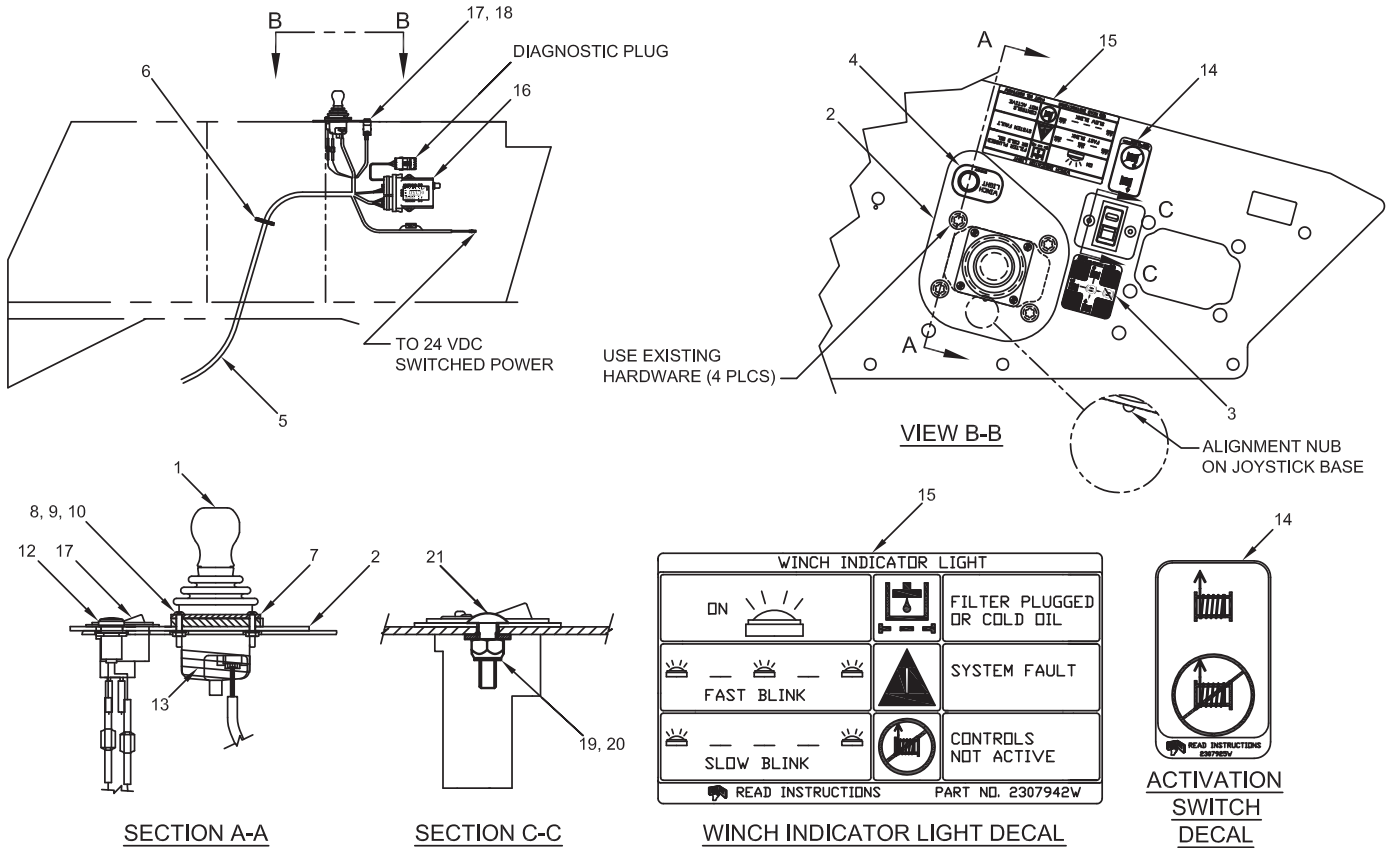


NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*c 2307886W	Assembly, Control Lever - w/o FS (3-123)	1	13	2304796W	Tape, Self-Fusing	1
2	2304815W	Plate, Control Lever Mounting	1	14	2307925W	Decal, Activation Switch	1
3	2305250W	Decal, Control Lever - w/o FS	1	15	2307942W	Decal, Winch Indicator Light	1
4	2307944W	Decal, Winch Light	1	16	*b -----	Module, E-Controls - Programmed	1
5	2307576W	Harness, External Wiring	1	17	2307849W	Assembly, Rocker Switch - w/ Lock	1
5	2310076	Adaptor	1	18	2307643W	Plate, Switch Mounting	1
6	137852W	Clamp, Strap	AR	19	15127W	Washer	2
7	2304779W	Collar, Control Lever Mounting	1	20	15113W	Nut	2
8	*a 2304892W	Capscrew	4	21	Y25G-0416	Capscrew	2
9	*a 15039W	Nut	4		*a	Use 318702W Thread Lock	
10	*a 197066W	Washer	4		*b	See ECM selection guide on page 3-128	
12	2303912W	Assembly, Bypass LED	1				

Handling Gear - Electronic Controls

Caterpillar D9R (C65) with Dropbox
Used on S/N AW12E-1316 thru AW12E-1456

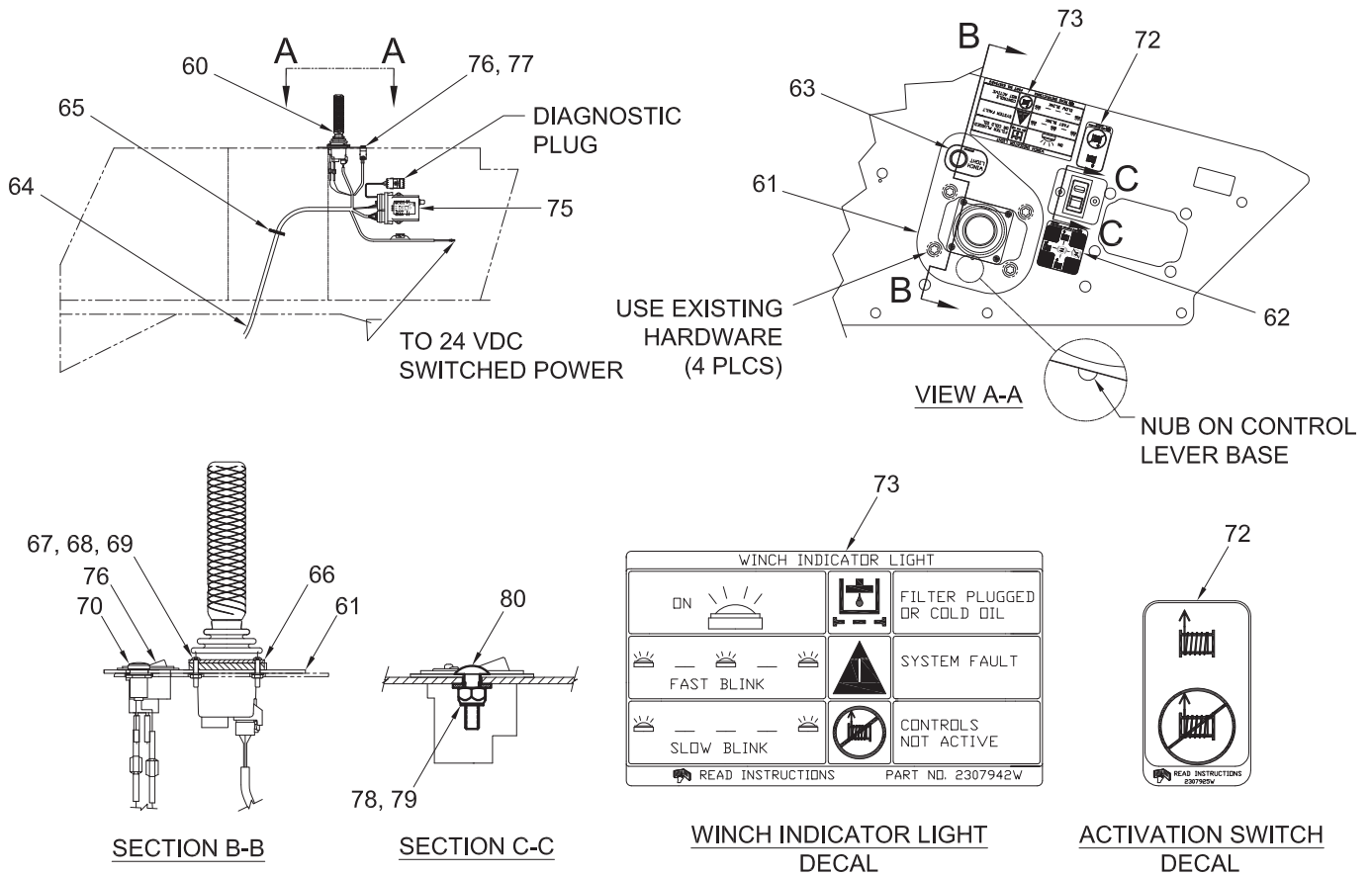


NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2307886W	Assembly, Control Lever - w/o FS (3-123)	1	13	2304796W	Tape, Self-Fusing	1
2	2304815W	Plate, Control Lever Mounting	1	14	2307925W	Decal, Activation Switch	1
3	2305250W	Decal, Control Lever - w/o FS	1	15	2307942W	Decal, Winch Indicator Light	1
4	2307944W	Decal, Winch Light	1	16	*b -----	Module, E-Controls - Programmed	1
5	2310079	Harness, External Wiring	1	17	2307849W	Assembly, Rocker Switch - w/ Lock	1
6	137852W	Clamp, Strap	AR	18	2307643W	Plate, Switch Mounting	1
7	2304779W	Collar, Control Lever Mounting	1	19	15127W	Washer	2
8	*a 2304892W	Capscrew	4	20	15113W	Nut	2
9	*a 15039W	Nut	4	21	Y25G-0416	Capscrew	2
10	*a 197066W	Washer	4				
12	2303912W	Assembly, Bypass LED	1				
				*a	Use 318702W Thread Lock		
				*b	See ECM selection guide on page 3-128		

Handling Gear - Electronic Controls

Caterpillar D9R (C65, C68), D9T (C75) with Dropbox
 Used on S/N AW12E-1457 thru S/N AW12E-1536

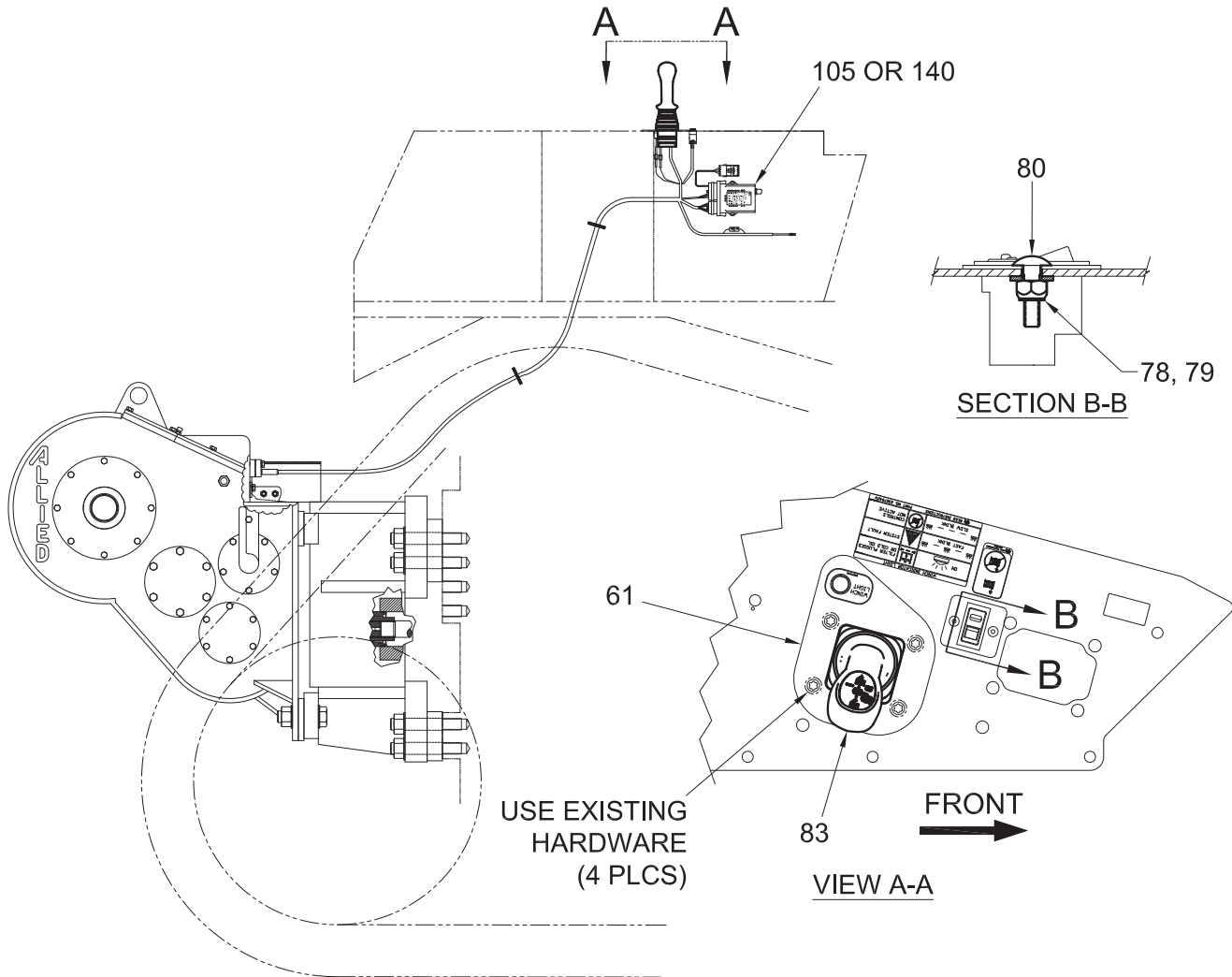


NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
60	2310552	Assembly, Control Lever - w/o FS (3-125)	1	72	2307925W	Decal, Activation Switch	1
61	2304815W	Plate, Control Lever Mounting	1	73	2307942W	Decal, Winch Indicator Light	1
62	2305250W	Decal, Control Lever - w/o FS	1	75	*b	-----	1
63	2307944W	Decal, Winch Light	1	76	2307849W	Assembly, Rocker Switch - w/ Lock	1
64	2311444	Harness, External Wiring	1	77	2307643W	Plate, Switch Mounting	1
65	137852W	Clamp, Strap	AR	78	15127W	Washer	2
66	2304779W	Collar, Control Lever Mounting	1	79	15113W	Nut	2
67	*a 2304892W	Capscrew	4	80	Y25G-0416	Capscrew	2
68	15039W	Nut	4				
69	197066W	Washer	4				
70	2303912W	Assembly, Bypass LED	1				
					*a	Use 318702W Thread Lock	
					*b	See ECM selection guide on page 3-128	

Handling Gear - Electronic Controls

Caterpillar D9R (C65, C68), D9T (C75) with Dropbox
 First Used on S/N AW12E-1537

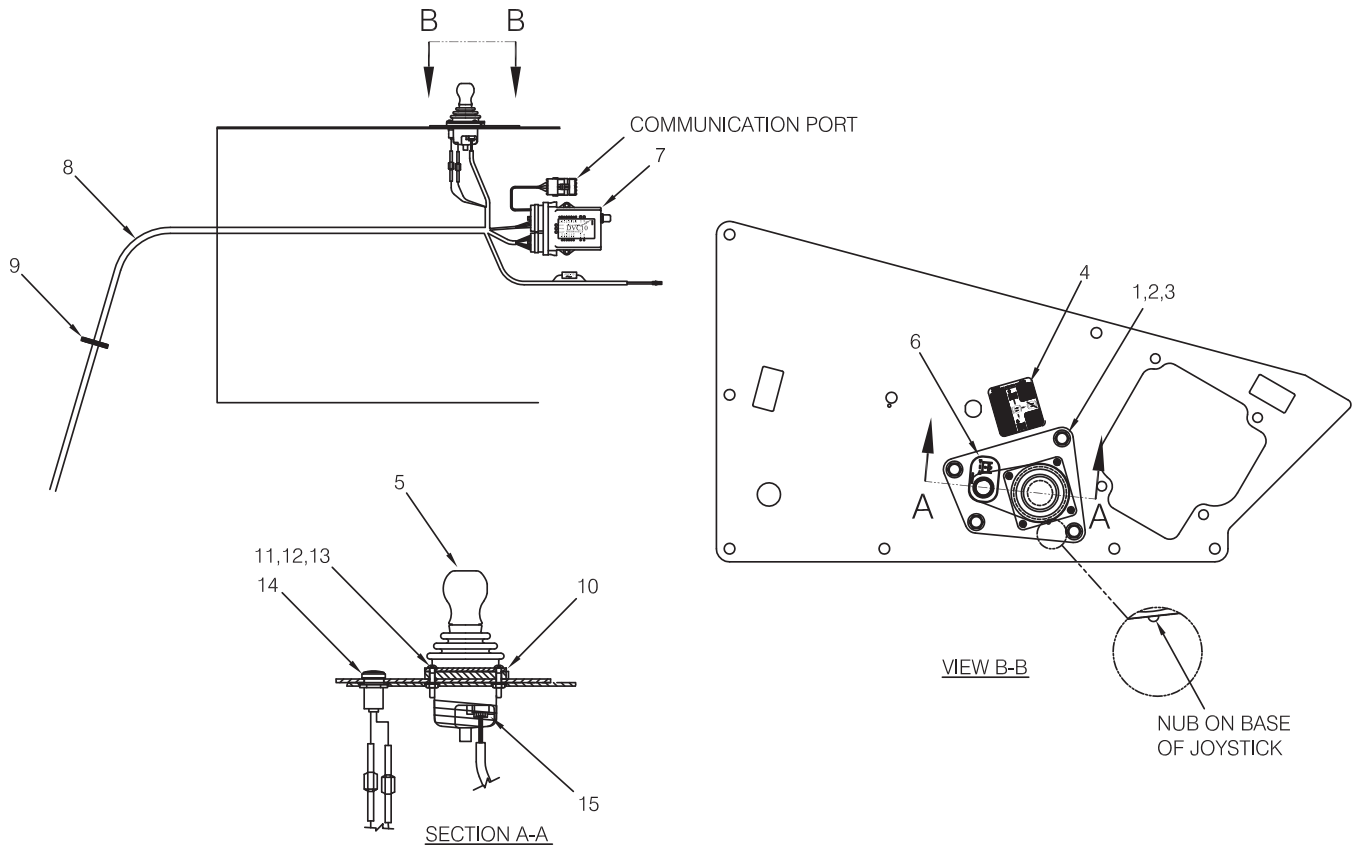


Note: See E-Controls Common Parts Pages for More Related Installation Information.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
61	2304815W	Plate, Control Lever Mounting	1	105	*a	Module, E-Controls - Ratio 6 Only	1
78	15127W	Washer	2	140	*a	Module, E-Controls - Ratios 7 & 8	1
79	15113W	Nut	2				
80	Y25G-0416	Capscrew	2		*a	See ECM selection guide on page 3-128	
83	2314999	Kit, E-Control Lever Replacement (3-126/127)	1				

Handling Gear - Electronic Controls

Caterpillar D10N (C66), D10R (C66) & D10T (C76) with Dropbox
 Last Used on S/N AW12E-1181

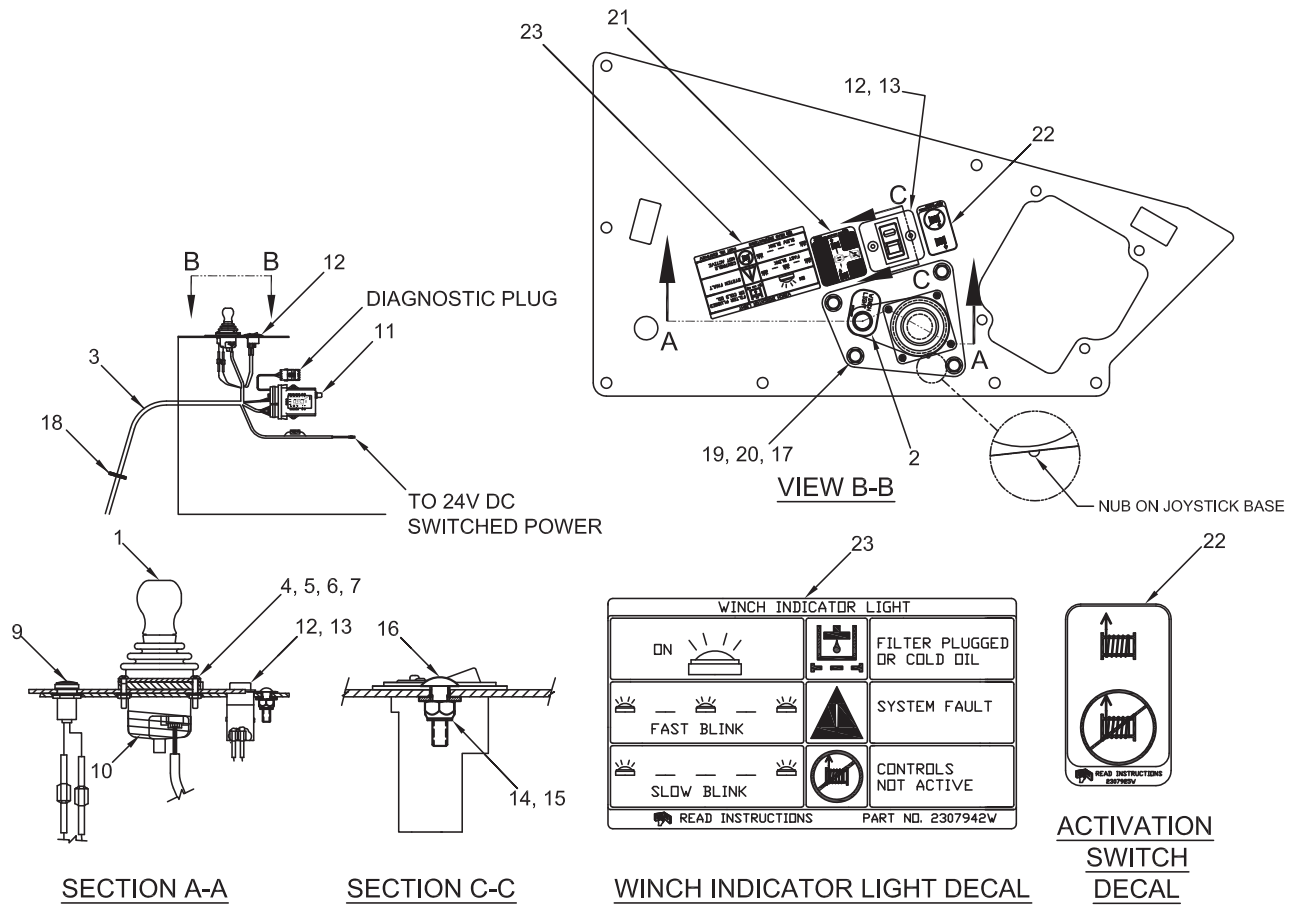


NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305228W	Bracket, Mounting	1	10	2304779W	Collar, Control Lever Mounting	1
2	134803W	Capscrew	4	11	*a 2304892W	Capscrew	4
3	156133W	Nut	4	12	*a 15039W	Nut	4
4	2305250W	Decal, Control Lever	1	13	*a 197066W	Washer	4
5	2304780W	Assembly, Control Lever - w/o FS (3-122)	1	14	2303912W	Assembly, Bypass LED	1
6	2304504W	Decal, Filter LED	1	15	2304796W	Tape, Self-Fusing	1
7	*b -----	Module, E-Controls - Programmed	1		*a	Use 318702W Thread Lock	
8	2303900W	Harness, External Wiring	1		*b	See ECM selection guide on page 3-128	
9	129563W	Clamp, Strap	AR				

Handling Gear - Electronic Controls

Caterpillar D10N (C66), D10R (C66) & D10T (C76) with Dropbox
Used on S/N AW12E-1182 thru AW12E-1244

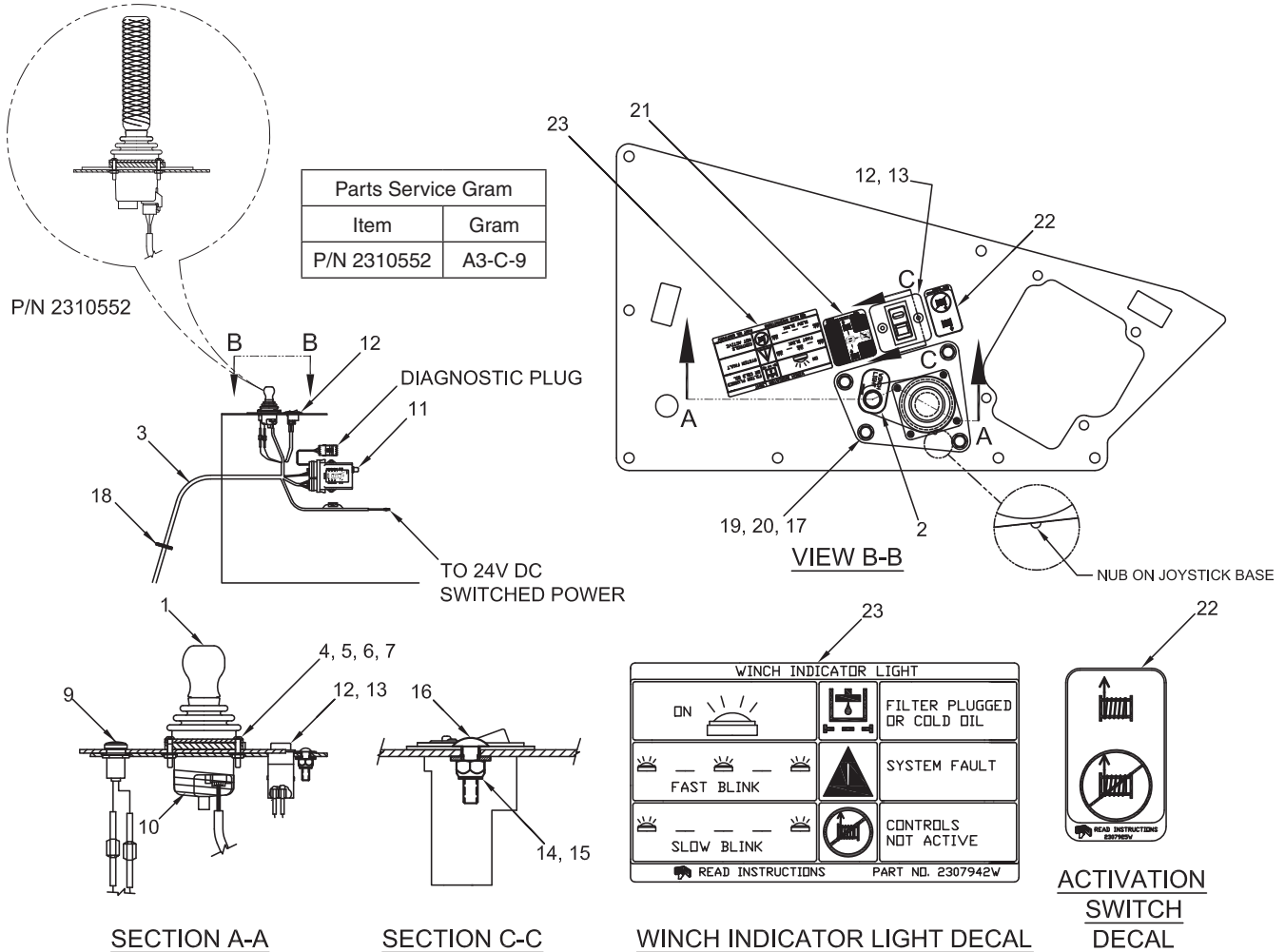


NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2304780W	Assembly, Control Lever - w/o FS (3-122)	1	16	Y25G-0416	Capscrew	2
2	*b 2307944W	Decal, Winch Light	1	17	2305228W	Bracket, Control Lever	1
3	2307576W	Harness, External Wiring	1	18	129563W	Clamp, Strap	AR
4	*a 2304779W	Collar, Control Lever Mounting	1	19	134803W	Capscrew	4
5	*a 2304892W	Capscrew	4	20	156133W	Nut	4
6	*a 15039W	Nut	4	21	2305250W	Decal, Control Lever - w/o FS	1
7	*a 197066W	Washer	4	22	*b 2307925W	Decal, Activation Switch	1
9	2303912W	Assembly, Bypass LED	1	23	*b 2307942W	Decal, Winch Indicator Light	1
10	2304796W	Tape, Self-Fusing	1				
11	*c -----	Module, E-Controls - Programmed	1		*a	Use 318702W Thread Lock	
12	2307849W	Assembly, Rocker Switch - w/ Lock	1		*b	First Used on S/N AW12E-1194 Only, then jumped to S/N AW12E-1203 & continued from there	
13	2307643W	Plate, Switch Mounting	1		*c	See ECM selection guide on page 3-128	
14	15127W	Washer	2				
15	15113W	Nut	2				

Handling Gear - Electronic Controls

Caterpillar D10N (C66), D10R (C66) & D10T (C76) with Dropbox
Used on S/N AW12E-1245 thru AW12E-1315



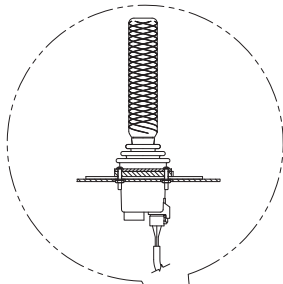
NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2307886W	Assembly, Control Lever - w/o FS (3-123)	1	14	15127W	Washer	2
1	*b 2310552	Assembly, Control Lever - w/o FS (3-125)	1	15	15113W	Nut	2
2	2307944W	Decal, Winch Light	1	16	Y25G-0416	Capscrew	2
3	2307576W	Harness, External Wiring	1	17	2305228W	Bracket, Control Lever	1
3	2310076	Adaptor	1	18	129563W	Clamp, Strap	AR
4	*a 2304779W	Collar, Control Lever Mounting	1	19	134803W	Capscrew	4
5	*a 2304892W	Capscrew	4	20	156133W	Nut	4
6	*a 15039W	Nut	4	21	2305250W	Decal, Control Lever - w/o FS	1
7	*a 197066W	Washer	4	22	2307925W	Decal, Activation Switch	1
9	2303912W	Assembly, Bypass LED	1	23	2307942W	Decal, Winch Indicator Light	1
11	*c -----	Module, E-Controls - Programmed	1				
12	2307849W	Assembly, Rocker Switch - w/ Lock	1	*a	Use 318702W Thread Lock		
13	2307643W	Plate, Switch Mounting	1	*b	Contact Your Dealer to See Service Gram A3-C-9		
				*c	See ECM selection guide on page 3-128		

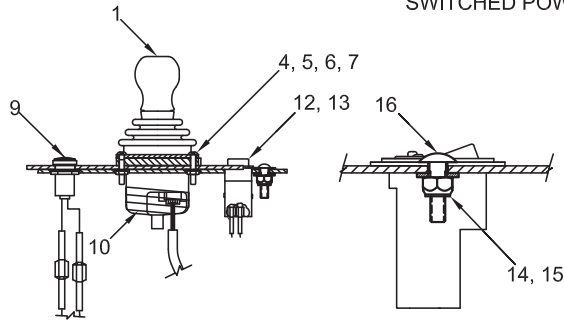
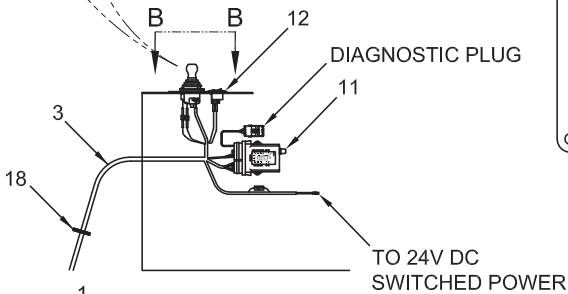
Handling Gear - Electronic Controls

Caterpillar D10N (C66), D10R (C66) & D10T (C76) with Dropbox
Used on S/N AW12E-1316 thru AW12E-1456

Parts Service Gram	
Item	Gram
P/N 2310552	Contact your dealer

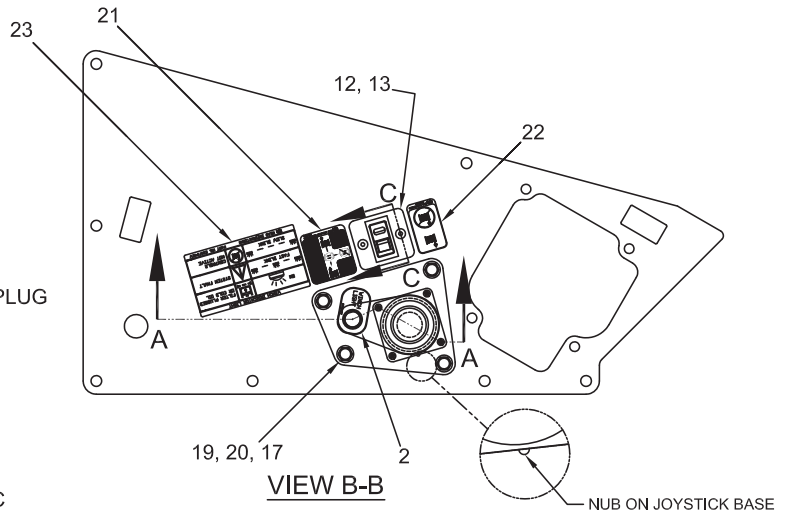


P/N 2310552

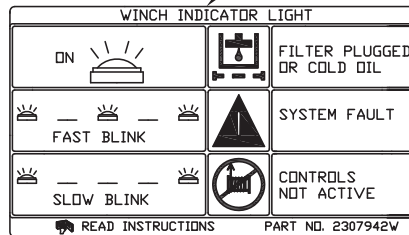


SECTION A-A

SECTION C-C



VIEW B-B



WINCH INDICATOR LIGHT DECAL



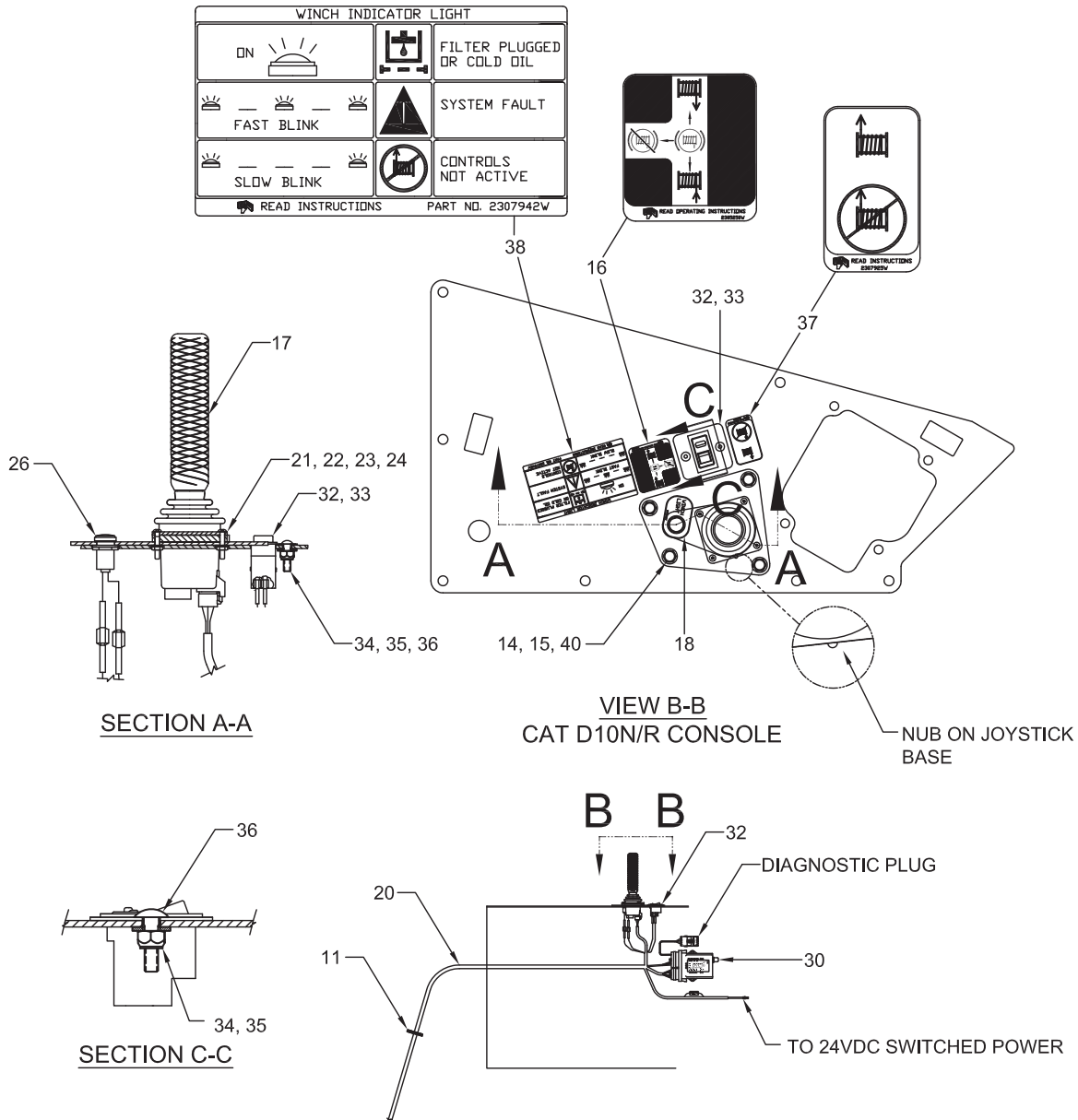
ACTIVATION SWITCH DECAL

NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2307886W	Assembly, Control Lever - w/o FS (3-123)	1	14	15127W	Washer	2
1	*b 2310552	Assembly, Control Lever - w/o FS (3-125)	1	15	15113W	Nut	2
2	2307944W	Decal, Winch Light	1	16	Y25G-0416	Capscrew	2
3	2310079	Harness, External Wiring	1	17	2305228W	Bracket, Control Lever	1
4	*a 2304779W	Collar, Control Lever Mounting	1	18	129563W	Clamp, Strap	AR
5	*a 2304892W	Capscrew	4	19	134803W	Capscrew	4
6	*a 15039W	Nut	4	20	156133W	Nut	4
7	*a 197066W	Washer	4	21	2305250W	Decal, Control Lever - w/o FS	1
9	2303912W	Assembly, Bypass LED	1	22	2307925W	Decal, Activation Switch	1
11	*c -----	Module, E-Controls - Programmed	1	23	2307942W	Decal, Winch Indicator Light	1
12	2307849W	Assembly, Rocker Switch - w/ Lock	1				
13	2307643W	Plate, Switch Mounting	1				
				*a	Use 318702W Thread Lock		
				*b	Contact Your Dealer to See Service Gram A3-C-9		
				*c	See ECM selection guide on page 3-128		

Handling Gear - Electronic Controls

Caterpillar D10N (C66) & D10R (C66) with Dropbox
Used on S/N AW12E-1457 thru S/N AW12E-1536



NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

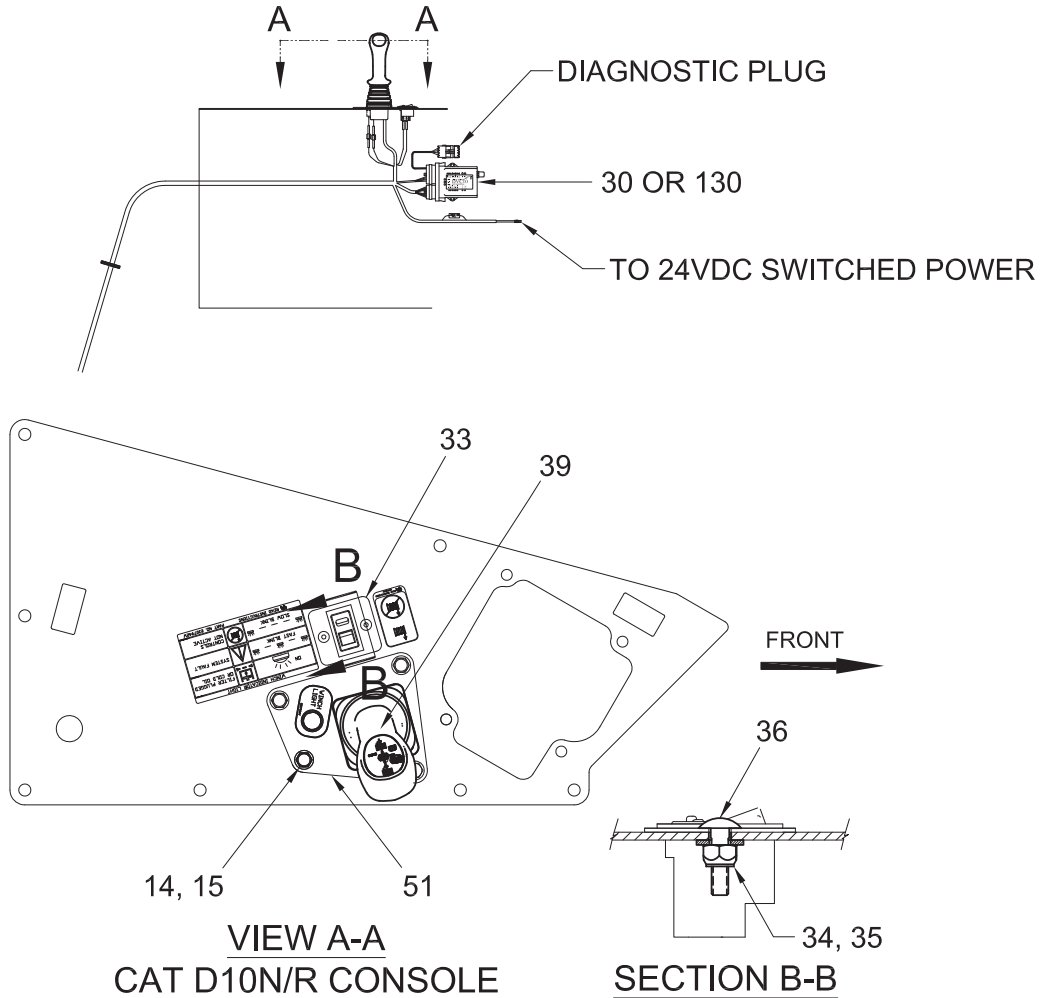
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
11	129563W	Clamp, Strap	AR	26	2303912W	Assembly, Bypass LED	1
14	134803W	Capscrew	4	30	*b -----	Module, E-Controls - Programmed	1
15	156133W	Nut	4	32	2307849W	Assembly, Switch	1
16	2305250W	Decal, Control Lever - w/o FS	1	33	2307643W	Plate, Switch Mounting	1
17	2310552	Assembly, Control Lever - w/o FS (3-125)	1	34	15127W	Washer	2
18	2307944W	Decal, Winch Light	1	35	15113W	Nut	2
20	2311444	Harness, External Wiring	1	36	Y25G-0416	Capscrew	2
21	2304779W	Collar, Control Lever Mounting	1	37	2307925W	Decal, Activation Switch	1
22	*a 2304892W	Capscrew	4	38	2307942W	Decal, Winch Indicator Light	1
23	15039W	Nut	4				
24	197066W	Washer	4				

*a Use 318702W Thread Lock

*b See ECM selection guide on page 3-128

Handling Gear - Electronic Controls

Caterpillar D10N (C66) & D10R (C66) with Dropbox
 First Used on S/N AW12E-1537



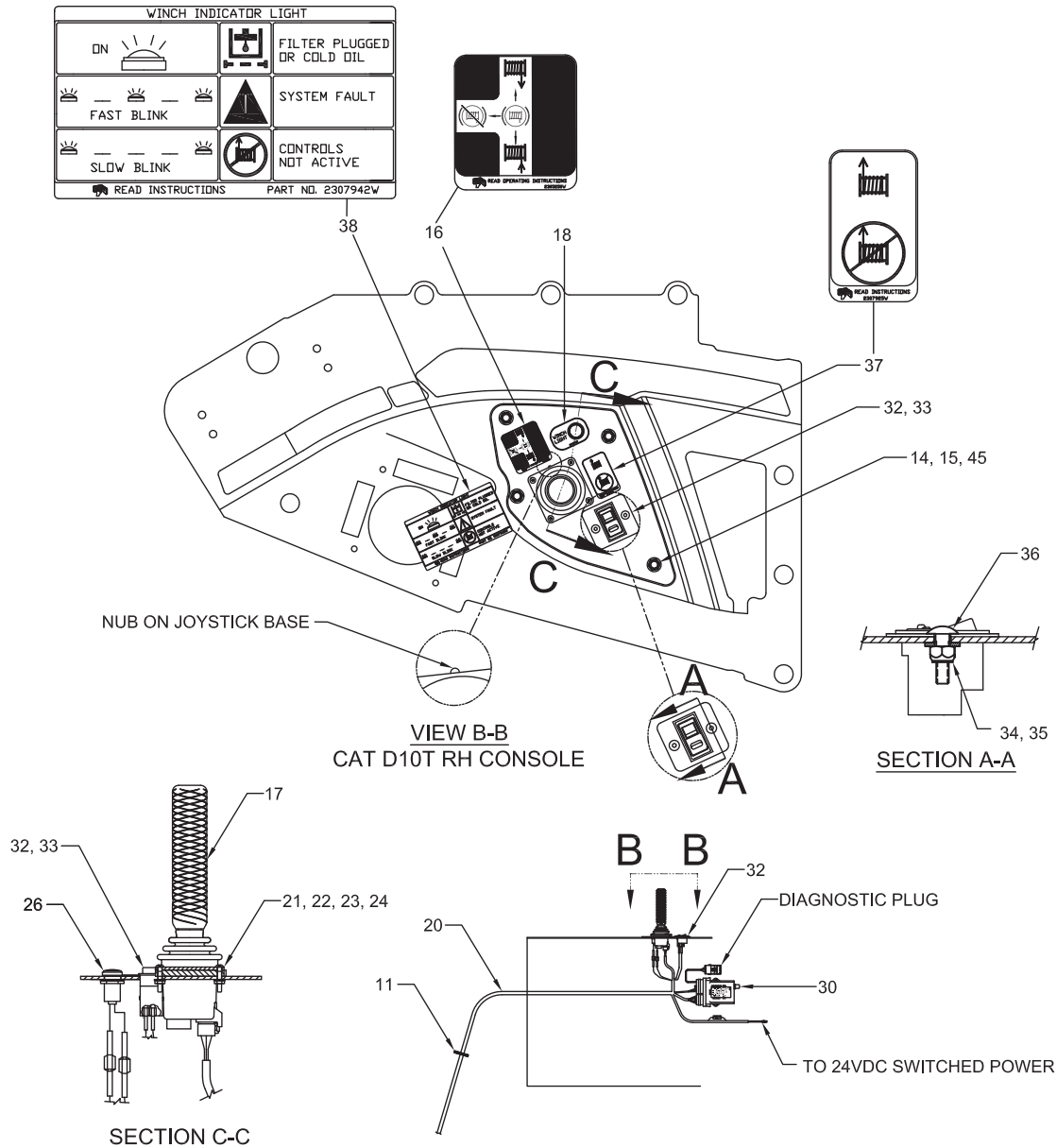
Note: See E-Controls Common Parts Pages
 for More Related Installation Information.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
14	134803W	Capscrew	4	36	Y25G-0416	Capscrew	2
15	156133W	Nut	4	39	2314999	Kit, E-Control Lever Replacement (3-126/127)	1
30	*a	Module, E-Controls - Programmed (Ratio 6 Only)	1	51	2305228W	Plate, Control Lever	1
33	2307643W	Plate, Switch Mounting	1				
34	15127W	Washer	2				
35	15113W	Nut	2				

*a See ECM selection guide on page 3-128

Handling Gear - Electronic Controls

Caterpillar D10T (C76) with Dropbox
Used on S/N AW12E-1457 thru S/N AW12E-1536

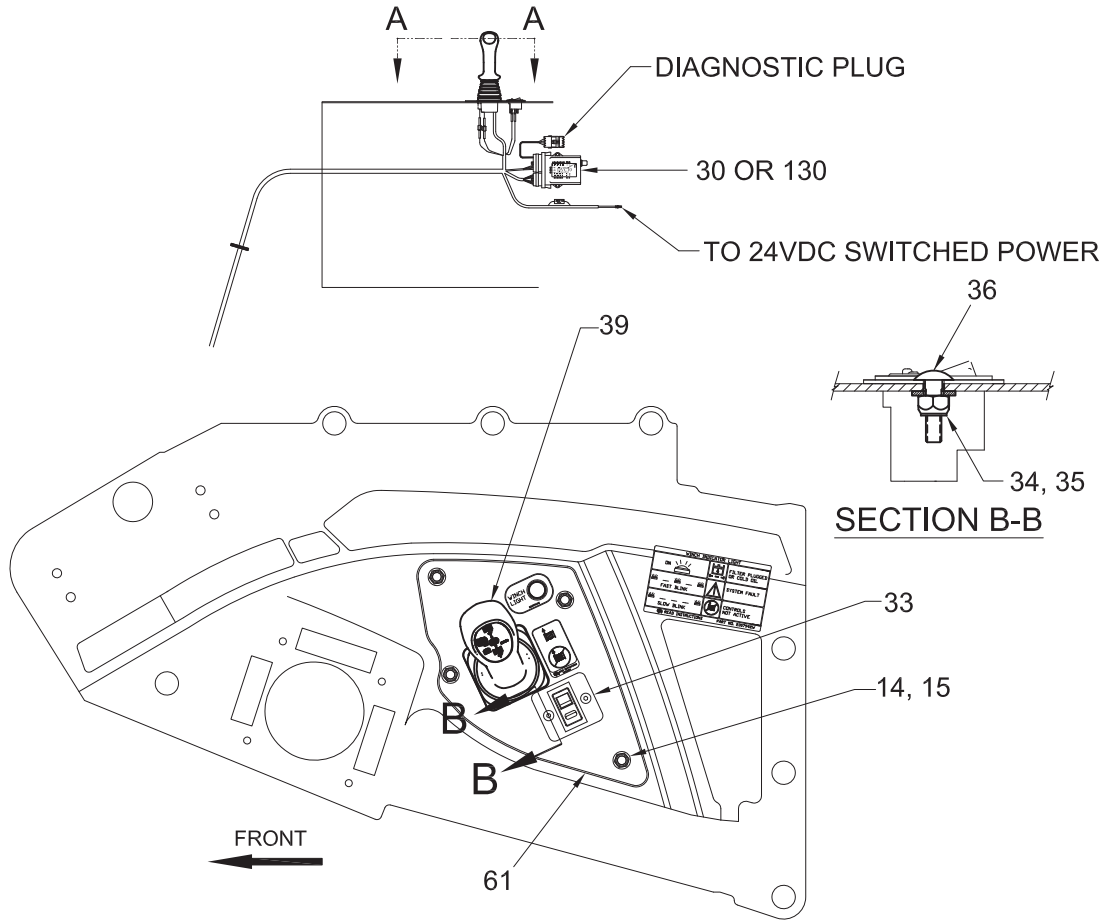


NOTE: Communication cable p/n 2304603W is necessary to perform troubleshooting on the electronic joystick control. This cable must be obtained from Allied Systems Company. Please contact Allied for details.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
11	129563W	Clamp, Strap	AR	30	*b - - - - -	Module, E-Controls - Programmed	1
14	134803W	Capscrew	4	32	2307849W	Assembly, Switch	1
15	156133W	Nut	4	33	2307643W	Plate, Switch Mounting	1
16	2305250W	Decal, Control Lever - w/o FS	1	34	15127W	Washer	2
17	2310552	Assembly, Control Lever - w/o FS (3-125)	1	35	15113W	Nut	2
18	2307944W	Decal, Winch Light	1	36	Y25G-0416	Capscrew	2
20	2311444	Harness, External Wiring	1	37	2307925W	Decal, Activation Switch	1
21	2304779W	Collar, Control Lever Mounting	1	38	2307942W	Decal, Winch Indicator Light	1
22	*a 2304892W	Capscrew	4	45	2307841W	Plate, Control Lever	1
23	15039W	Nut	4				
24	197066W	Washer	4				
26	2303912W	Assembly, Bypass LED	1				
				*a		Use 318702W Thread Lock	
				*b		See ECM selection guide on page 3-128	

Handling Gear - Electronic Controls

Caterpillar D10T (C76) with Dropbox
 First Used on S/N AW12E-1537



VIEW A-A
CAT D10T RIGHT-HAND SIDE CONSOLE

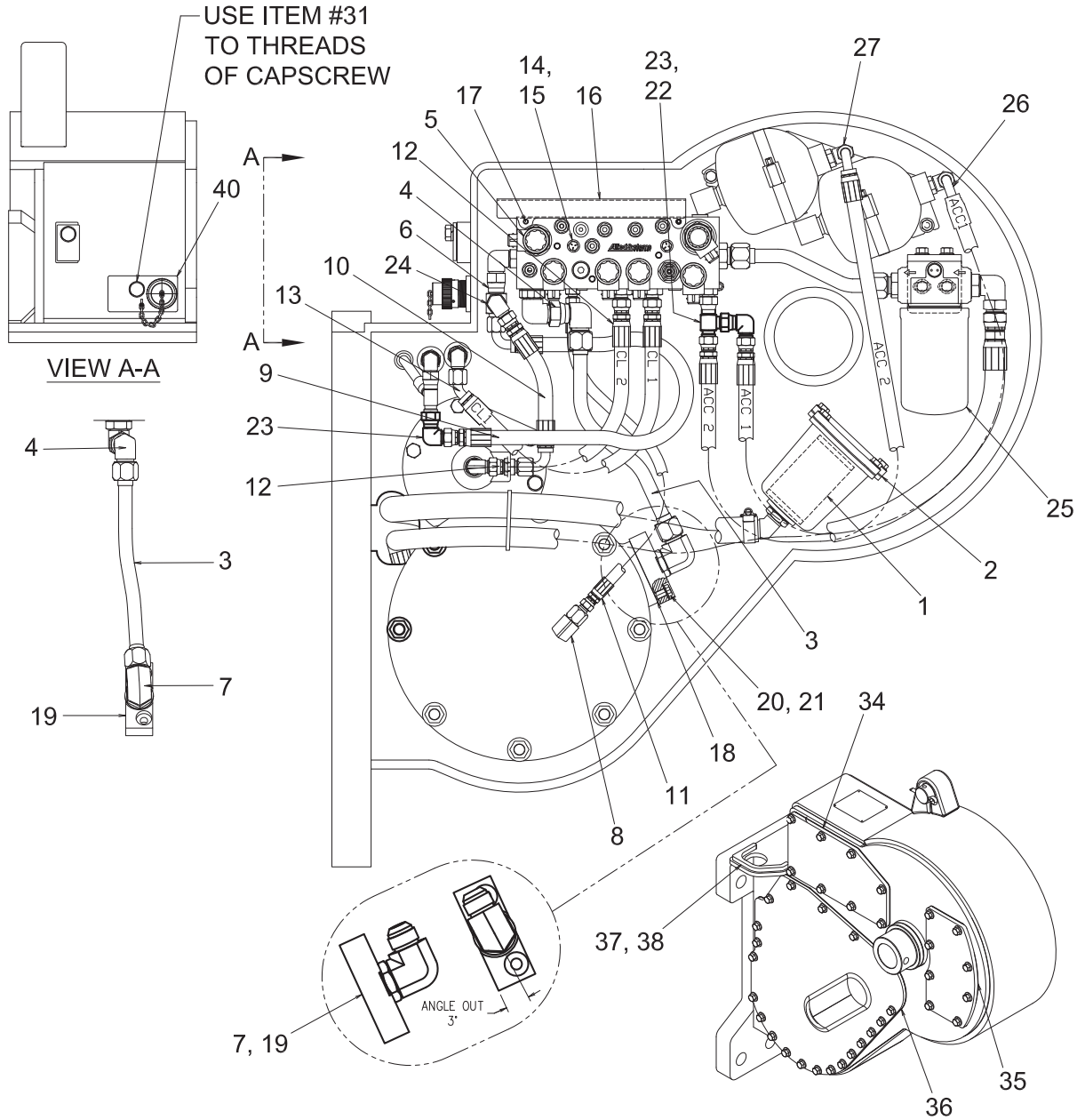
Note: See E-Controls Common Parts Pages for More Related Installation Information.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
14	134803W	Capscrew	4	39	2314999	Kit, E-Control Lever Replacement (3-126/127)	1
15	156133W	Nut	4	61	2307841W	Plate, Control Lever	1
30	*a	Module, E-Controls - Programmed (Ratio 6 Only)	1	130	*a	Module, E-Controls - Programmed (Ratios 7 & 8)	1
33	2307643W	Plate, Switch Mounting	1				
34	15127W	Washer	2				
35	15113W	Nut	2				
36	Y25G-0416	Capscrew	2				
					*a	See ECM selection guide on page 3-128	

GENII Electronic Controls Conversion Kit

For All W12E Winches with Gear Ratios 7 & 8 prior to S/N AW12E-1575

Page 1 of 5

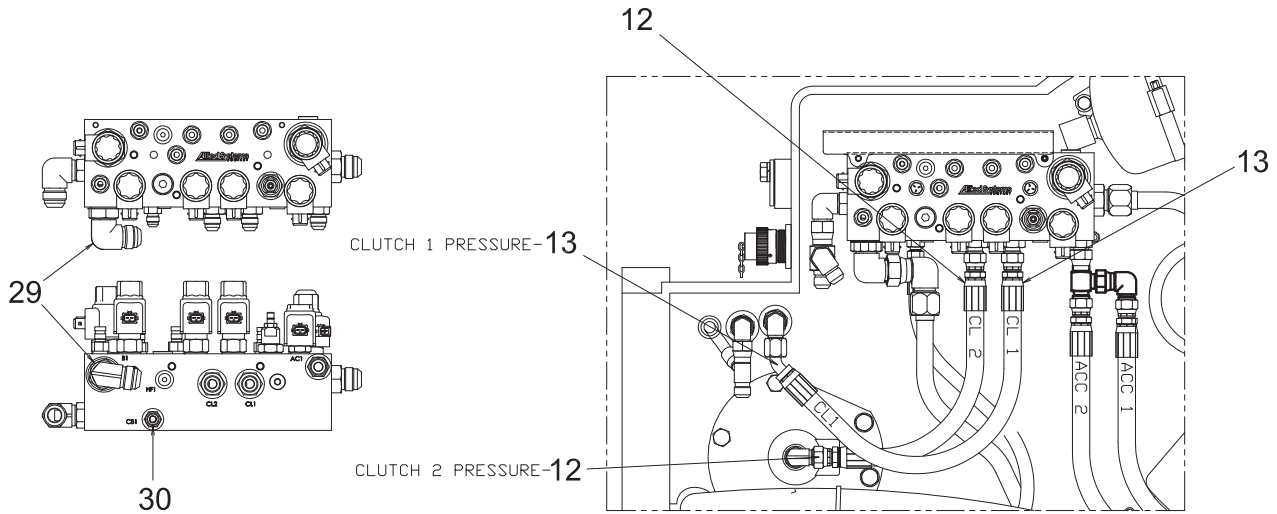


GenII eCONTROLS INSTALLATION

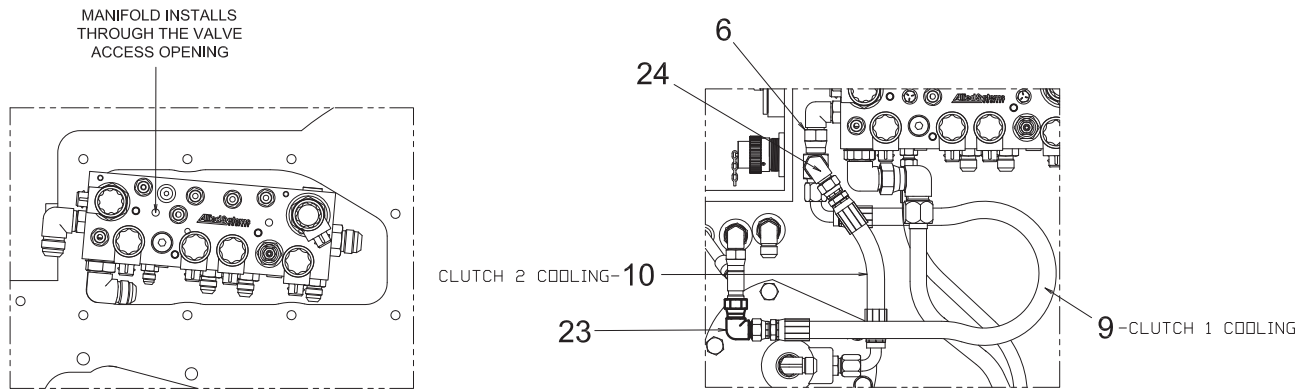
GENII Electronic Controls Conversion Kit

For All W12E Winches with Gear Ratios 7 & 8 prior to S/N AW12E-1575

Page 2 of 5



CLUTCH ACTUATION HOSE ROUTING



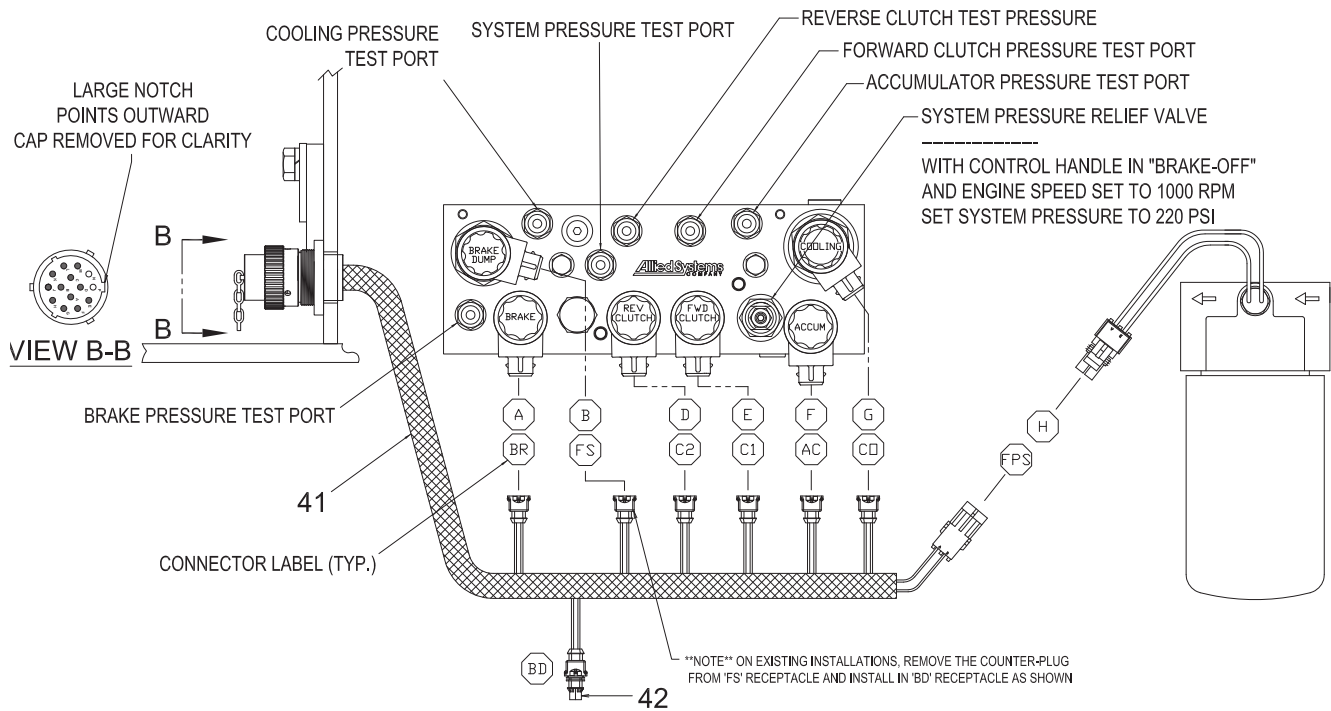
CLUTCH COOLING HOSE ROUTING

SUPPLEMENTAL INSTALLATION DETAILS

GENII Electronic Controls Conversion Kit

For All W12E Winches with Gear Ratios 7 & 8 prior to S/N AW12E-1575

Page 3 of 5

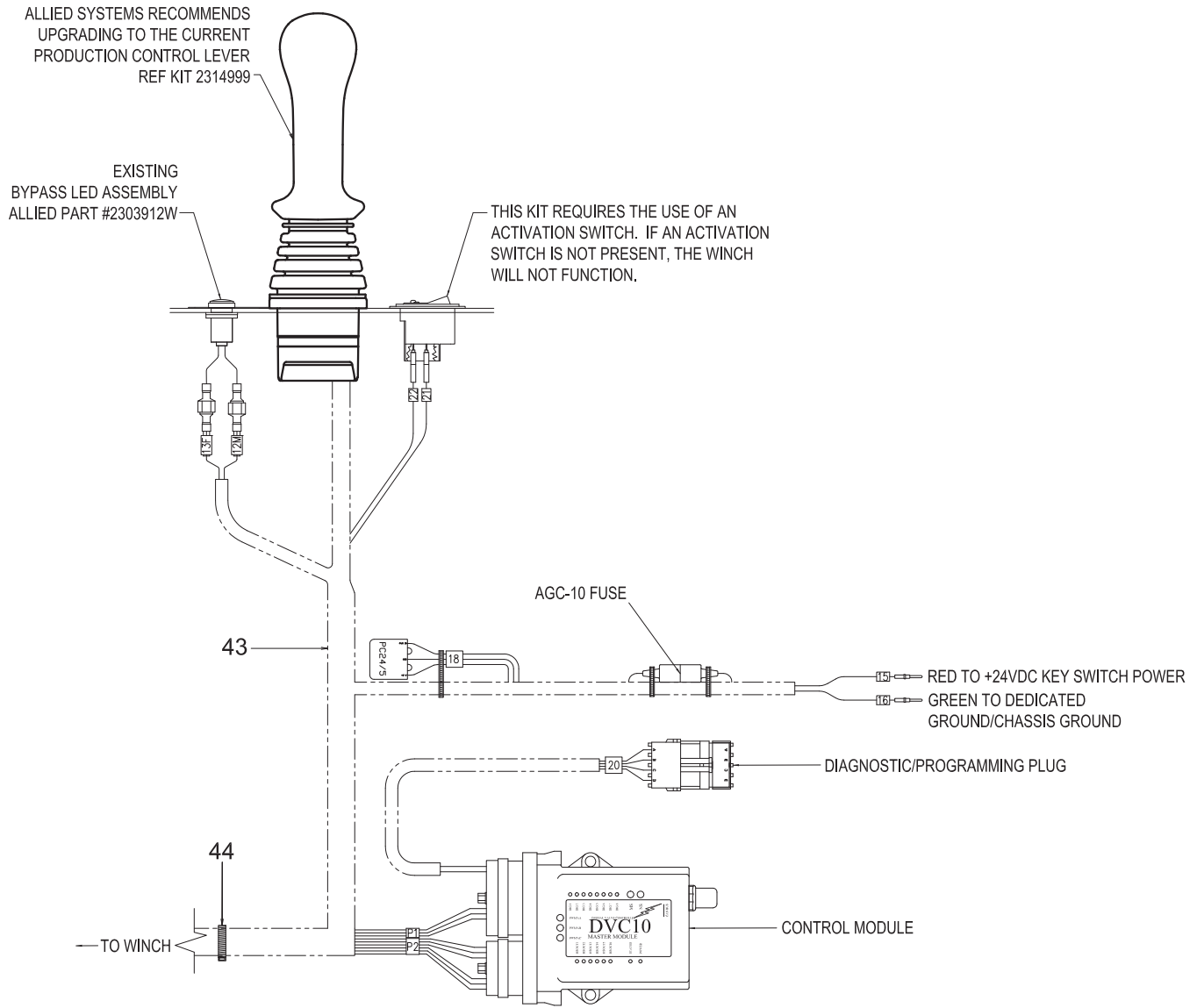


WINCH CONNECTION	HARNESS CONNECTOR	WIRE PAIR COLORS	FUNCTION
A	BR	TAN & PUR	BRAKE
PLUGGED	BD	BLK & GRAY	NOT USED
B	FS	ORG & BLK	BRAKE DUMP
D	C2	BRN & YEL	REVERSE
E	C1	YEL & DKBLU	FORWARD
F	AC	PINK & BLK	ACCUMULATOR
G	CD	BLK & GRAY	COOLING
H	FPS	WHI & LTGRN	PR. SWITCH

INTERNAL HARNESS INSTALLATION AND CONNECTIONS

GENII Electronic Controls Conversion Kit

For All W12E Winches with Gear Ratios 7 & 8 prior to S/N AW12E-1575



EXTERNAL HARNESS INSTALLATION

GENII Electronic Controls Conversion Kit

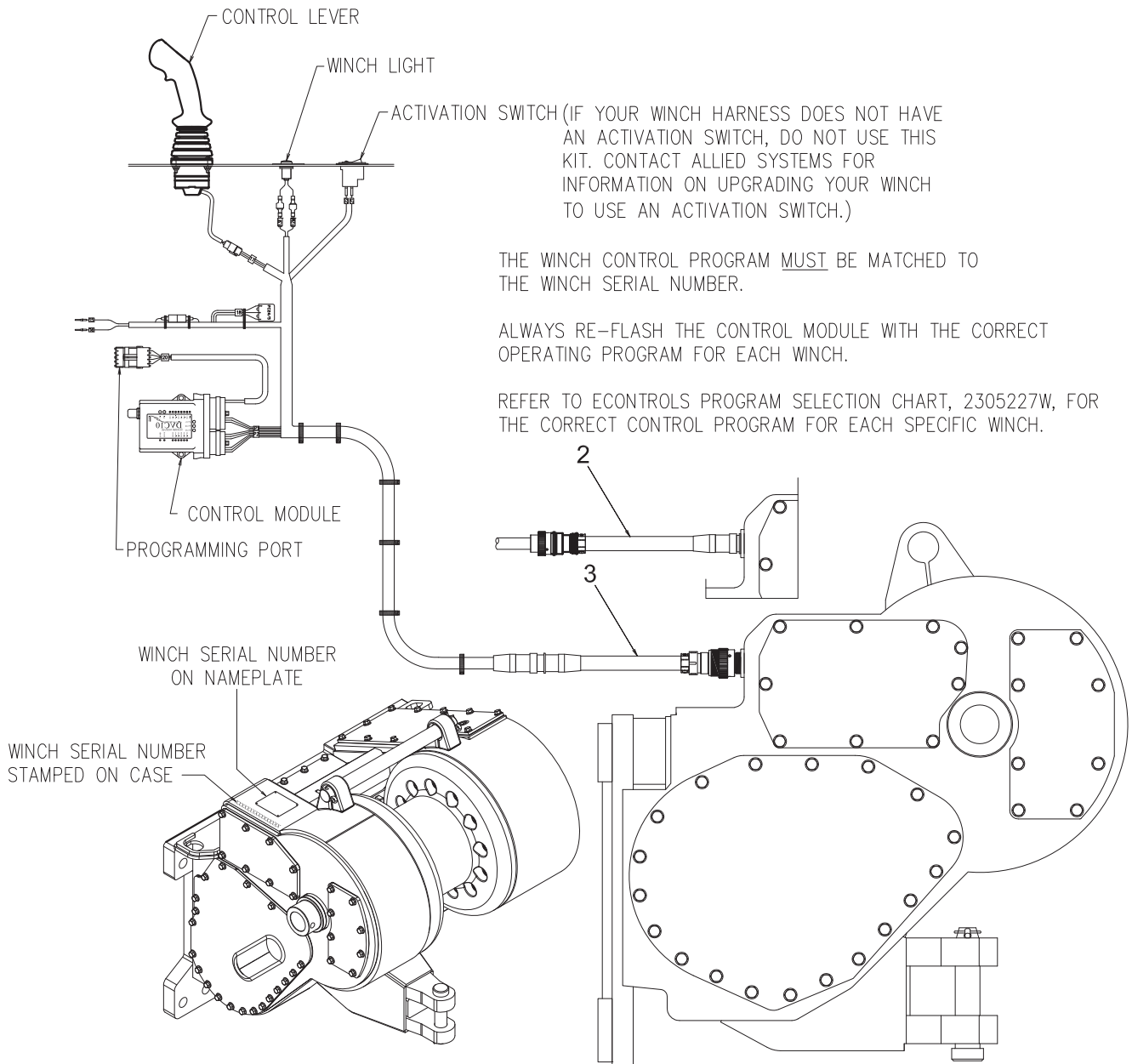
For All W12E Winches with Gear Ratios 7 & 8 prior to S/N AW12E-1575

Page 5 of 5

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2315953	Kit, High Flow Manifold Conversion	1	25	2304112W	. Element, Filter	1
1	219172W	. Strainer	1	26	246970	. Assembly, Hose	1
1	156689W	. O-Ring	1	27	591242	. Assembly, Hose	1
2	2300935W	. Gasket	1	28	2307755W	. Kit, Updating Winch Software	1
3	2315910	. Tube, Brake	1	29	16561W	. Fitting	1
4	83857W	. Fitting	1	30	211560	. Fitting	1
5	2315717	. Assembly, E-Control Manifold (3-69)	1	31	27338W	. Sealant, Pipe Thread	1
6	17063W	. Fitting	1	32	1324880W	. Sealant, Adhesive	1
7	222402W	. Fitting	1	33	318702W	. Locker, Thread	1
8	226904	. Fitting	1	34	2314839	. Gasket, Valve Cover	2
9	2315762	. Assembly, Hose	1	35	2314840	. Gasket, Filter Cover	2
10	2315761	. Assembly, Hose	1	36	286046W	. Gasket, Brake Cover	1
11	247723	. Assembly, Hose	1	37	2316297	. Tag, W12E GENII E-Controls Rebuild	1
12	2304854W	. Assembly, Hose	1	38	137852W	. Tie, Cable	1
13	2315760	. Assembly, Hose	1	40	*b 2311807	. Retainer, Connector	1
14	*a 18526W	. Capscrew	2	41	2311443	. Harness, Internal	1
15	18515W	. Washer	2	42	2312259	. Plug, Counter	1
16	2315822	. Guard, Splash	1	43	2311444	. Harness, External	1
17	*c 133469W	. Capscrew	2	44	137852W	. Tie, Cable (Black)	10
18	196022W	. Gasket	1				
19	279392W	. Block	1		*a Use 27338W Pipe Thread Sealant to Threads of Capscrews		
20	*c 16828W	. Capscrew	2		*b Use 1324880W Adhesive Sealant to Interface of Harness and Retainer		
21	15134W	. Washer	2		*c Use 318702W Thread Locker to Threads of Capscrews		
22	17062W	. Fitting	1				
23	16989W	. Fitting	2				
24	209155	. Fitting	1				

Electronic Controls Adapter Cable Kit

First Used on S/N AW12E-1182 and Up



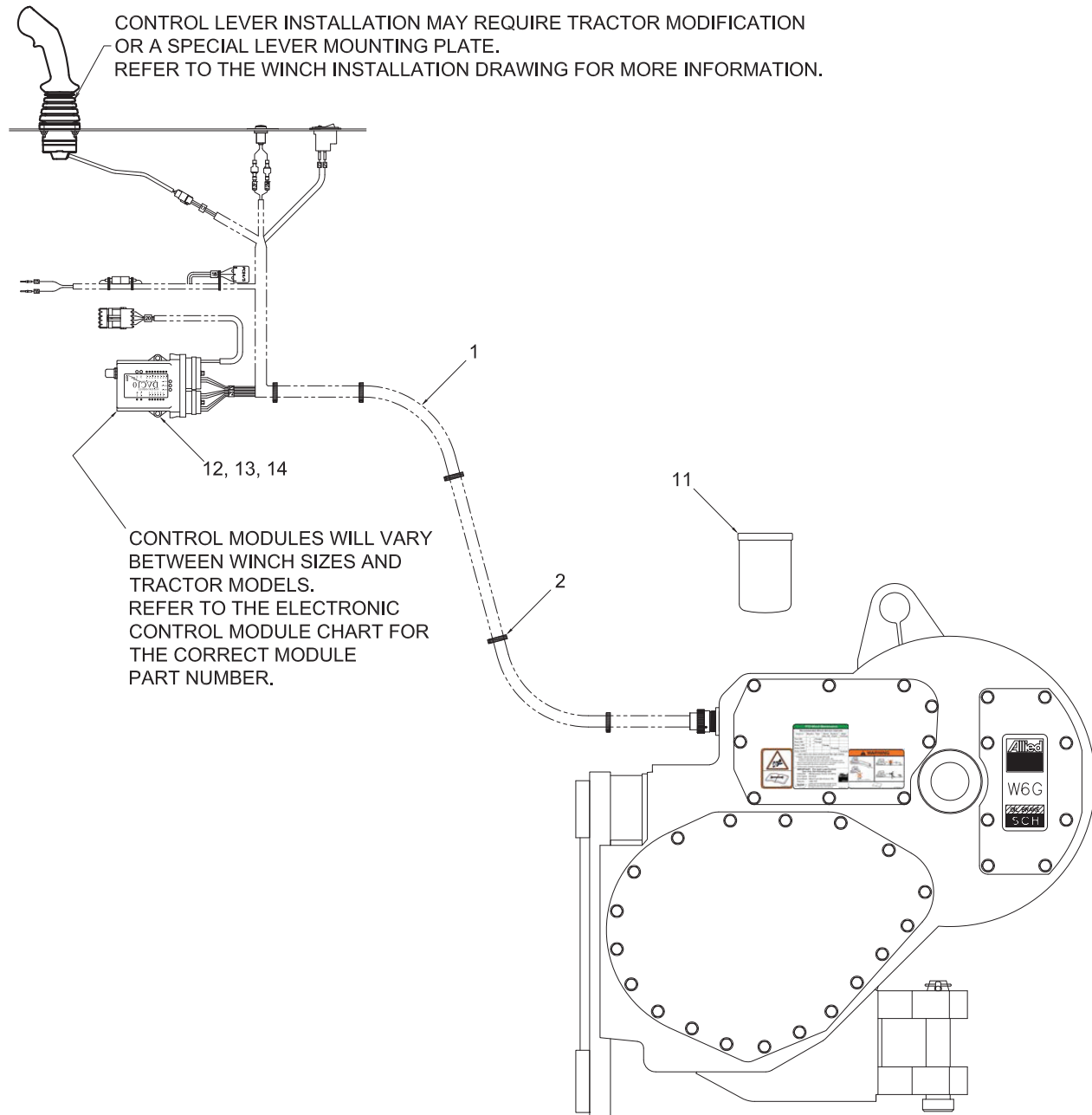
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2315253	Kit, E-Controls Adapter Cable	1	3	2315252	. Cable, Adapter	1
		2315250	. Drawing, E-Controls Adapter Cable Installation			1	
2	2315251	. Cable, Adapter - AMP Winch to Deutsch Harness	1	4	2305227W	. Chart, E-Controls & ECM Program	1

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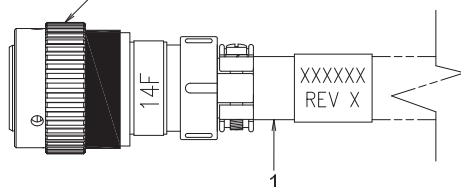
Common Parts - Electronic Controls

First Used on S/N AW12E-1537

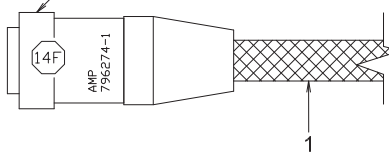
Page 1 of 2



METAL PLUG WITH CABLE CLAMP (DEUTSCH) OF EXTERNAL WIRING HARNESS, P/N 2311444



PLASTIC PLUG WITH SOCKET TERMINAL & CABLE CLAMP (AMP) OF EXTERNAL WIRING HARNESS, P/N 2310079



WIRING HARNESS PLUG IDENTIFICATION

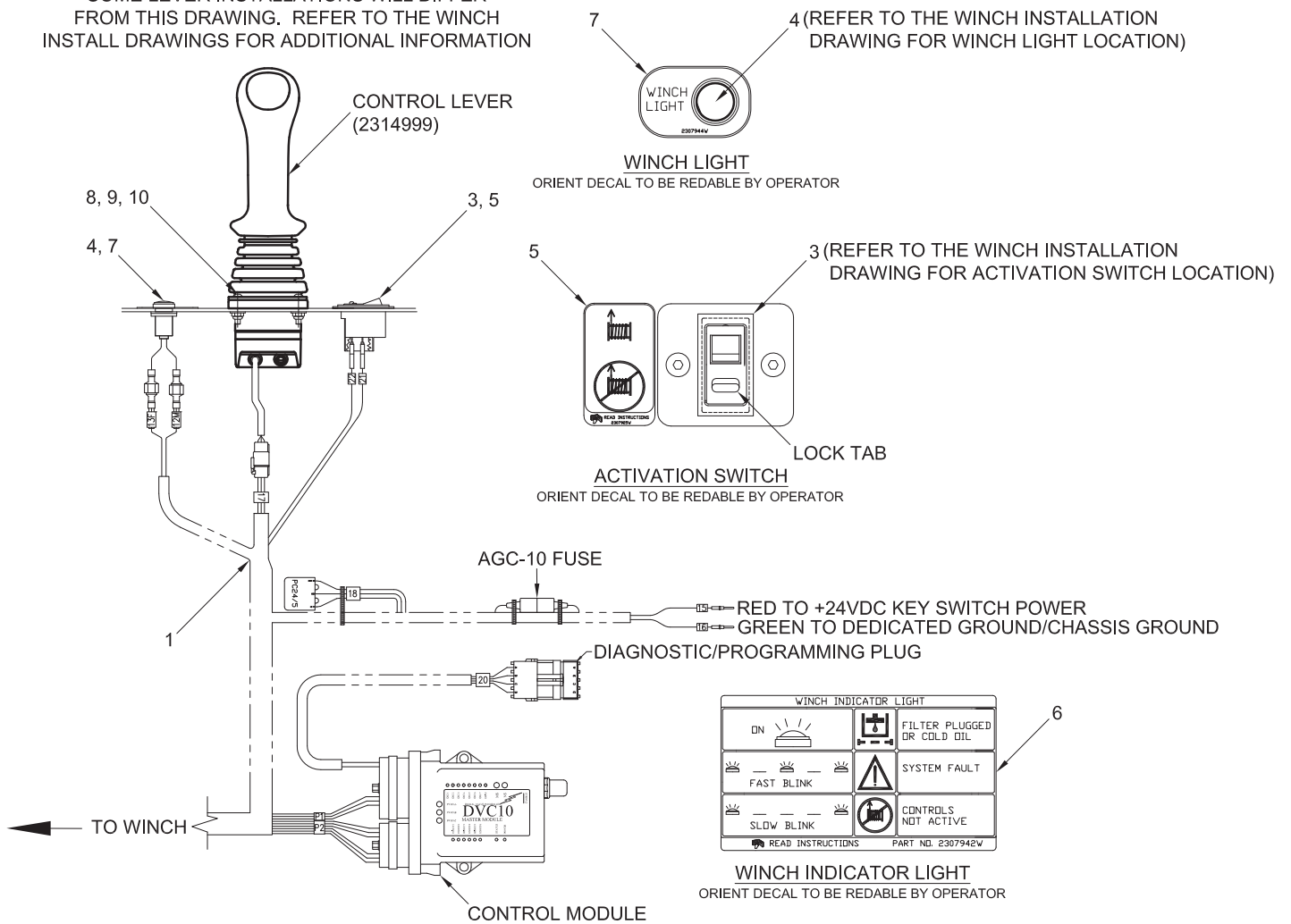
(ORDER DEFERENT HARNESS OR KIT BASED ON THE DEFFERENT PLUG)

Common Parts - Electronic Controls

First Used on S/N AW12E-1537

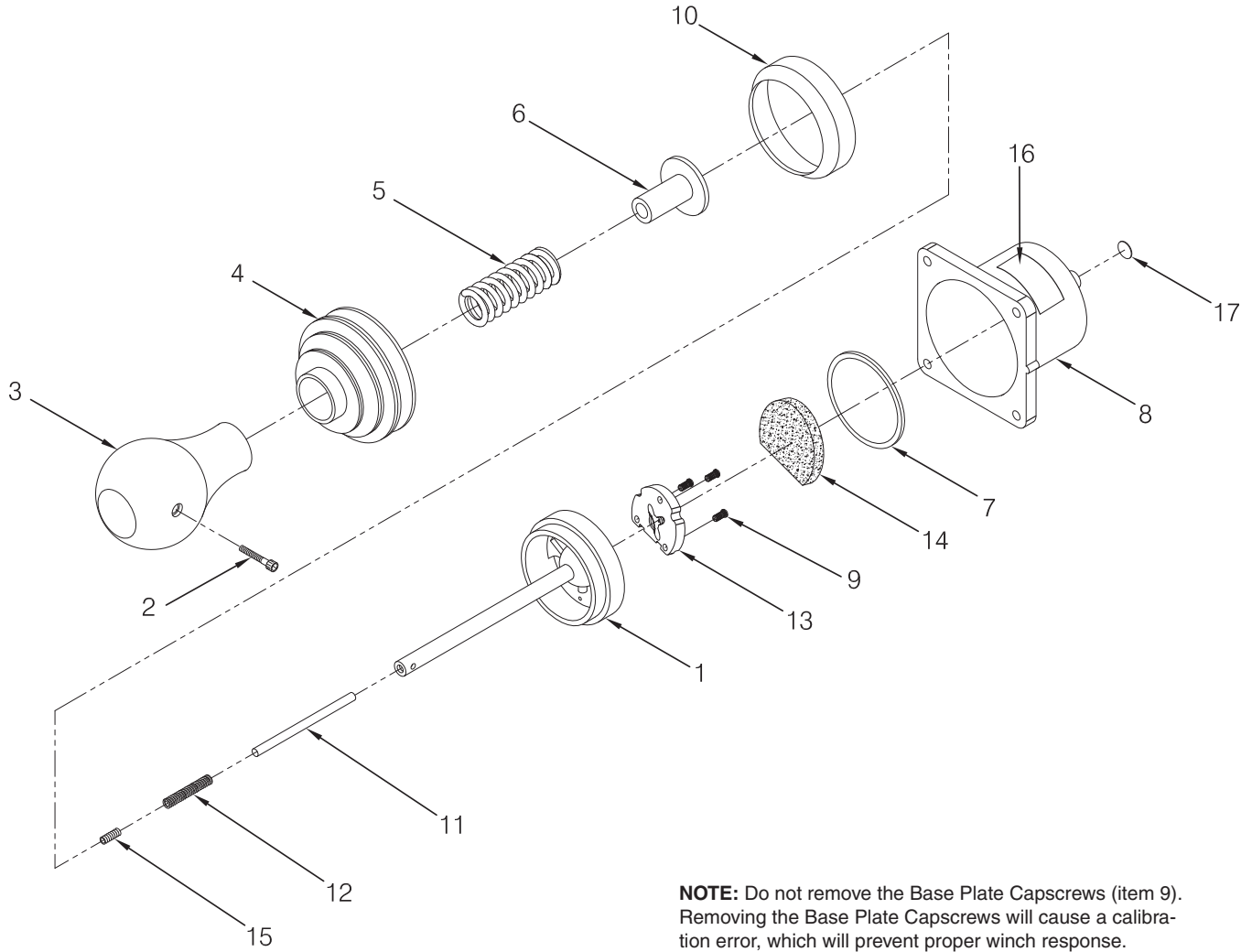
Page 2 of 2

SOME LEVER INSTALLATIONS WILL DIFFER FROM THIS DRAWING. REFER TO THE WINCH INSTALL DRAWINGS FOR ADDITIONAL INFORMATION



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty	
1	*a	2311444	Harness, Wiring - EXT.	1	8	Y25G-(1024)16	Capscrew	4
	*b	2312313	Kit, External Harness Replacement	1	9	Y35E-#10	Washer	4
		2310079	. Harness, External Wiring	1	10	224191	Nut	4
		2312150	. Adapter	1	11	2304112W	Element, Filter	1
		2304796W	. Tape, Self Fusing	1	12	221763W	Washer	4
2		137852W	Tie, Cable - Black	10	13	15113W	Nut	2
3		2307849W	Assembly, Rocker Switch	1	14	R13801782	Capscrew	2
4		2303912W	Assembly, Bypass LED	1				
5		2307925W	Decal, Switch Activation	1				
6		2307942W	Decal, Winch Light Indicator	1				
7		2307944W	Decal, Winch Light	1				
					*a	Metal Deutsch Connector sealing Plug		
					*b	Plastic AMP Plug		

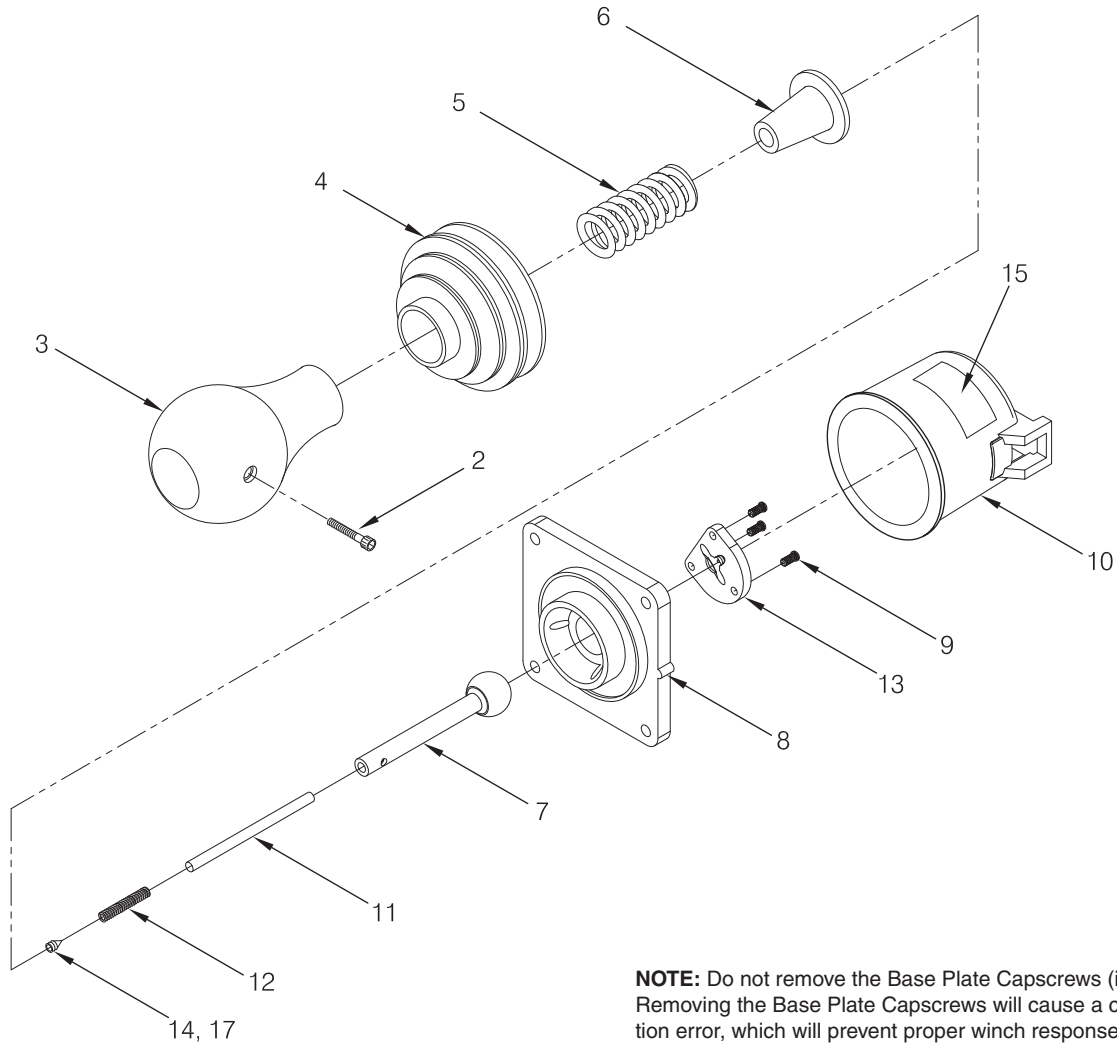
Control Lever Assembly - Electronic Controls



NOTE: Do not remove the Base Plate Capscrews (item 9). Removing the Base Plate Capscrews will cause a calibration error, which will prevent proper winch response.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2304780W	Assembly, Control Lever - w/o FS	1				
1	NSS	. Lever, Drilled & Tapped	1	12	2303992W	. Spring	1
2	*c NSS	. . Screw	1	13	2304672W	. Plate, Detent - w/o Freespool	1
3	*c NSS	. . Knob	1	14	2304782W	. Filter, Dust	1
4	*a,*c NSS	. . Boot	1	15	*b 302090W	. Setscrew	1
5	2304836W	. . Spring	1	16	2305068W	. Sticker, ID - w/o Freespool	1
6	2304832W	. . Collar	1	17	2305428W	. Disc, Adhesive	1
7	39362W	. . O-Ring	1				
8	2304837W	. . Cup, Base	1	*a	Use 219941 Contact Adhesive		
9	NSS	. . Screw, Base	3	*b	Use 383789W Adhesive Sealant		
10	NSS	. Collar, Interior Boot	1	*c	Included in 2305048W Service Kit		
11	2303991W	. Pin, Detent	1				

Control Lever Assembly - Electronic Controls

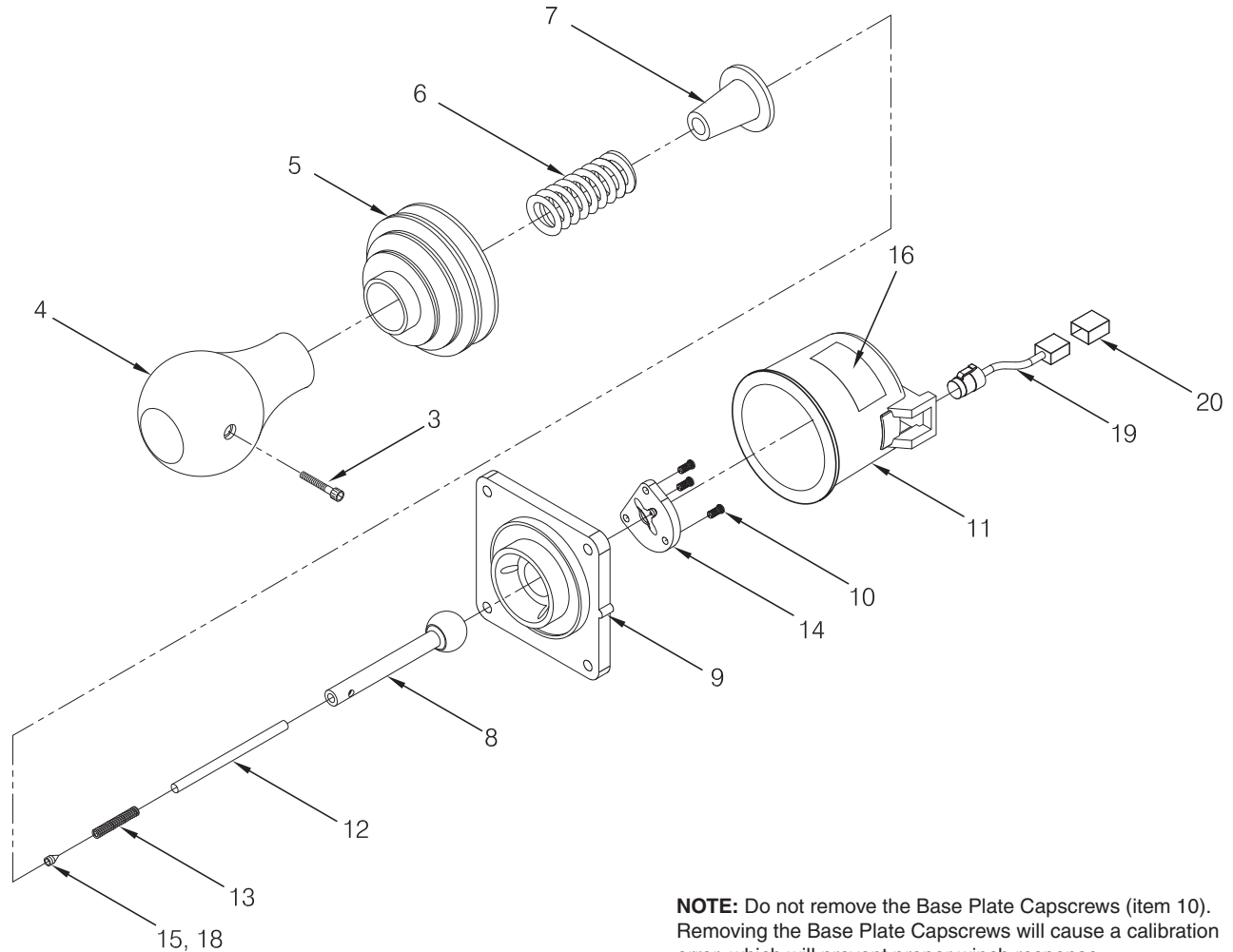


NOTE: Do not remove the Base Plate Capscrews (item 9). Removing the Base Plate Capscrews will cause a calibration error, which will prevent proper winch response.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2307886W	Assembly, Control Lever - w/o FS	1				
2	*d NSS	.. Screw	1	12	2303992W	. Spring	1
3	*c NSS	.. Knob	1	13	2307877W	. Plate, Detent	1
4	*a,*c NSS	.. Boot	1	14	*b 302090W	. Setscrew	1
5	NSS	.. Spring	1	15	2310162	. ID Sticker	1
6	NSS	.. Collar	1	17	2305428W	. Disc, Adhesive	AR
7	NSS	.. Shaft	1				
8	NSS	.. Base, Control Lever	1	*a	Use 219941 Contact Adhesive		
9	NSS	.. Screw, Base	3	*b	Use 318702W Thread Lock		
10	NSS	.. Cup, Base	1	*c	Included in 2305048W Service Kit		
11	2303991W	. Pin	1	*d	First Used on S/N AW6-3260		

Control Lever Assembly - Electronic Controls

2304780W Replacement Kits

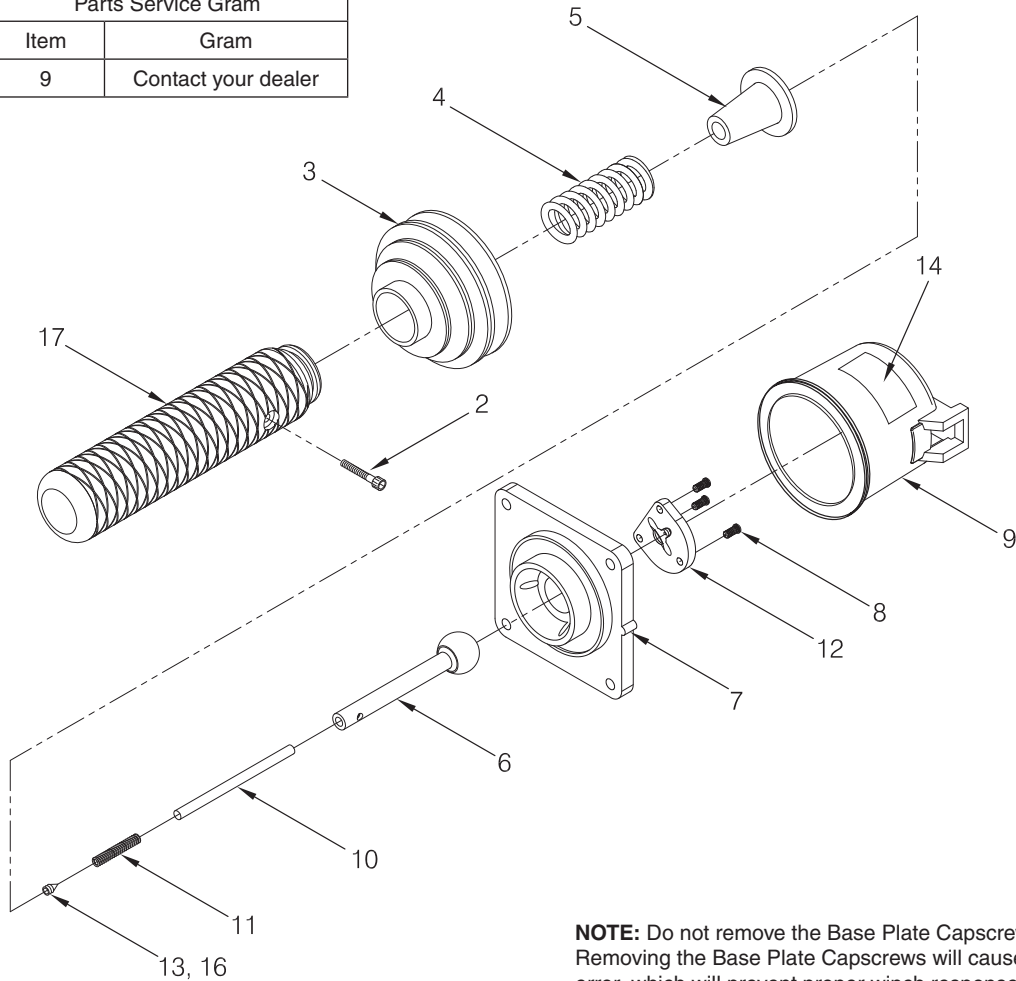


NOTE: Do not remove the Base Plate Capscrews (item 10). Removing the Base Plate Capscrews will cause a calibration error, which will prevent proper winch response.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2310214	2304780W Replacement Kit	1				
1	2307886W	. Assembly, Control Lever - w/o FS	1	13	2303992W	.. Spring	1
3	*c	NSS ... Screw	1	14	2307877W	.. Plate, Detent	1
4	*c	NSS ... Knob	1	15	*b 302090W	.. Setscrew	1
5	*a,*c	NSS ... Boot	1	16	2310162	.. Sticker, ID	1
6	NSS	... Spring	1	18	2305428W	.. Disc, Adhesive	AR
7	NSS	... Collar	1	19	2310257	.. Assembly, Adapter	1
8	NSS	... Shaft	1	20	232619	.. Tube, Heat Shrink	1
9	NSS	... Base, Control Lever	1				
10	NSS	... Screw, Base	3		*a	Use 219941 Contact Adhesive	
11	NSS	... Cup, Base	1		*b	Use 318702W Thread Lock	
12	2303991W	.. Pin	1		*c	Included in 2305048W Service Kit	

Control Lever Assembly - Electronic Controls

Parts Service Gram	
Item	Gram
9	Contact your dealer

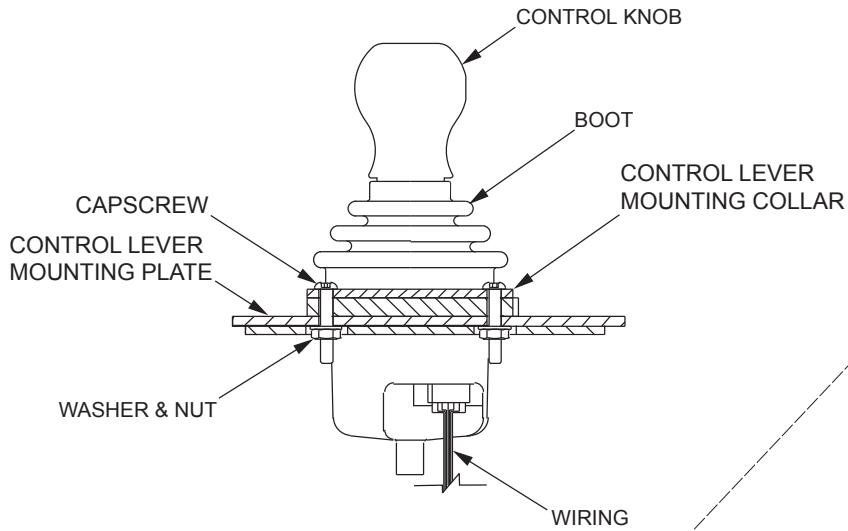


NOTE: Do not remove the Base Plate Capscrews (item 8). Removing the Base Plate Capscrews will cause a calibration error, which will prevent proper winch response.

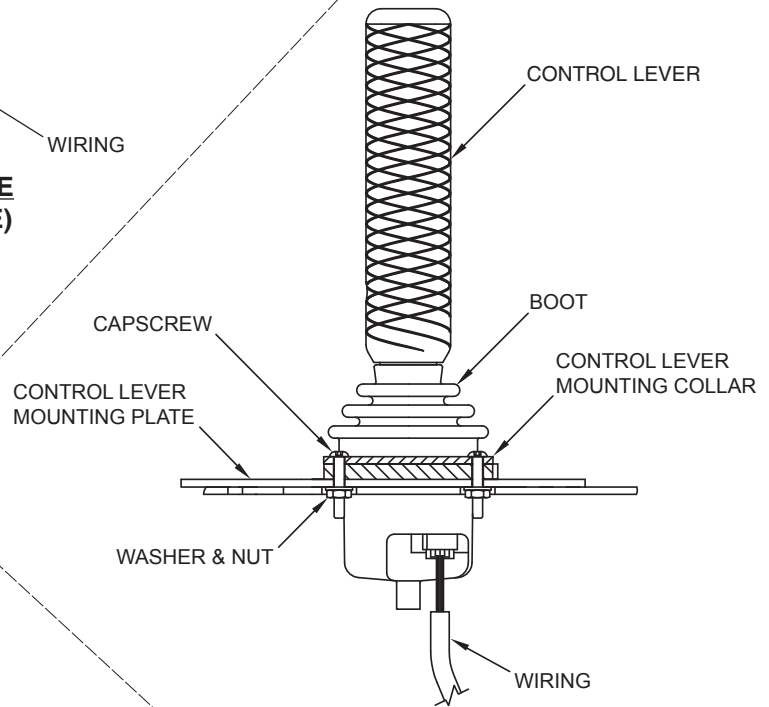
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2310552	Assembly, Control Lever - w/o FS	1				
2	NSS	.. Screw	1	11	2303992W	. Spring	1
3	NSS	.. Boot	1	12	2307877W	. Plate, Detent	1
4	NSS	.. Spring	1	13	*a 302090W	. Setscrew	1
5	NSS	.. Collar	1	14	2310162	. Sticker, ID	1
6	NSS	.. Shaft	1	16	2305428W	. Disc, Adhesive	AR
7	NSS	.. Base, Control Lever	1	17	2310585	. Assembly, Handle	1
8	NSS	.. Screw, Base	3				
9	NSS	.. Cup, Base	1		*a	Use 383789W Adhesive Sealant	
10	2303991W	. Pin	1				

Control Lever Replacement Kit - Electronic Controls

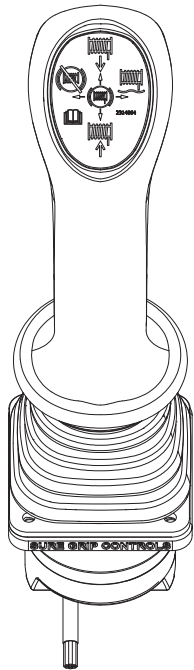
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**OLDER TYPE
(OBSOLETE)**



**OLD TYPE
(OBSOLETE)**

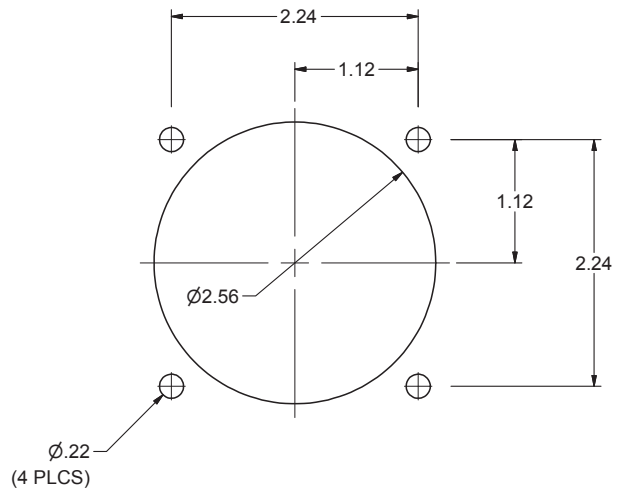
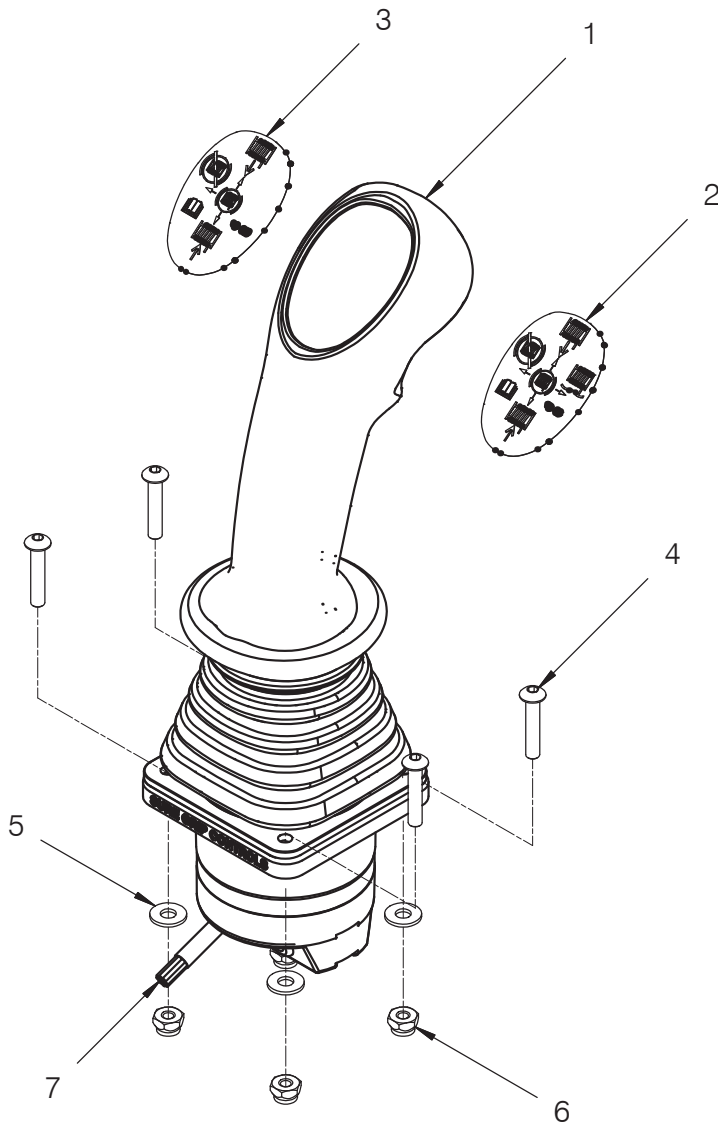


**NEW TYPE
(CURRENT)**

← **USE THIS CONTROL LEVER FOR ALL
ELECTRONIC CONTROLS APPLICATIONS.
(SEE NEXT PAGE FOR DETAILS.)**

Control Lever Replacement Kit - Electronic Controls

Page 2 of 2



TYPICAL DASHBOARD CUTOUT

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2314999	Kit, E-Control Lever Replacement	1				
1	2314854	. Lever, Control	1	5	Y35E-#10	. Washer	4
2	2314864	. Decal, Control Lever - W/ FS	1	6	224191	. Nut	4
3	2314863	. Decal, Control Lever - W/O FS	1	7	2310076	. Adapter, Electrical	1
4	Y25G-(1024)16	. Capscrew	4				

Electronic Control Module Selection

Use the following chart to select the correct Electronic Control Module (ECM) for your winch. Most winches will use the ECM listed in the top section. Determine the sequence number of your winch, and find the part number of the ECM programmed for your winch.

Some winches have been modified, or have non-standard features, and require a different program. If the sequence number for your winch ends with "X", "Z", or "ZV", or if your control level has a non-standard "E-Pattern", select the ECM programmed for your winch from the lower section of the below chart.

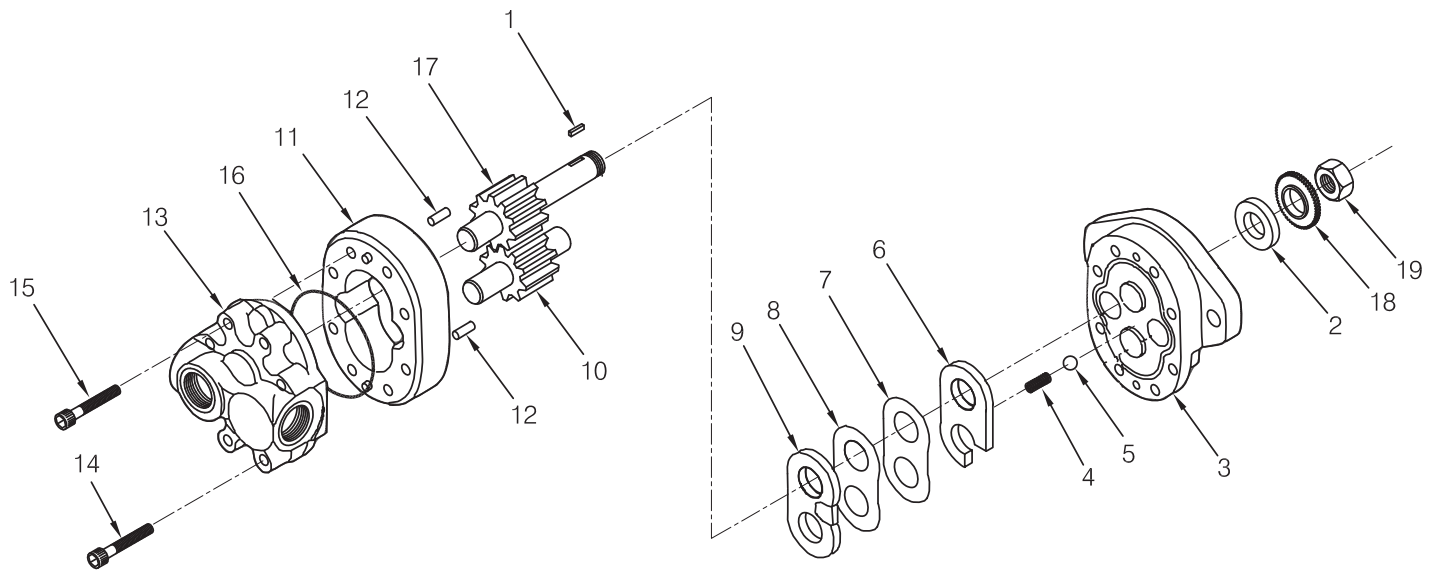
Standard Winches					
Sequence Number		Pre-Programmed Electronic Control Module Part Number	Components and Features		
First Used	Last Used		Manifold*	Activation Switch	Amp Jr Connectors
1000	1181	2307753W	Red Manifold 2303889W		
1182	1228	2307831W		✓	
1229	1456	2310137	Silver Manifold 2306547W	✓	
1457	1574	2312265	Silver Manifold 2311887W	✓	✓
1575	Present	2315774	Blue Manifold 2314998	✓	✓
Modified or Non-Standard Winches					
Winch Identification		Pre-Programmed Electronic Control Module Part Number	Components and Features		
			Manifold	Activation Switch	Amp Jr Connectors
Winch sequence Numbers (1000 thru 1181) ending in "X" have a kit installed that adds an activation switch to the winch		2307831W	Red Manifold 2303889W	✓	
Winches for special application use a Non-Standard "E-Pattern" Control Lever		2307422W	Silver Manifold 2306547W	✓	
Winches for special application use a Non-Standard "E-Pattern" Control Lever program have improved brake/clutch overlap		2307832W		✓	
Any Sequence Number for modified winches where the 'Serial Number Code' ends in "Z"		2310137		✓	
Any sequence number for modified winches where the "Serial Number Code" ends in "ZV"		2312265	Silver Manifold 2311887W	✓	✓
Any sequence number for modified winches where the "Serial Number Code" ends in "ZZ"		2315774	Blue Manifold 2314998	✓	✓

* See pages XX through XX for details of manifolds.

3-129

Hydraulic Pump Assembly

Gear Ratios #1 (46.1:1), #3 (60.4:1), #4 (83.6:1), & #6 (148.8:1)
 Last Used on S/N AW12E-1092

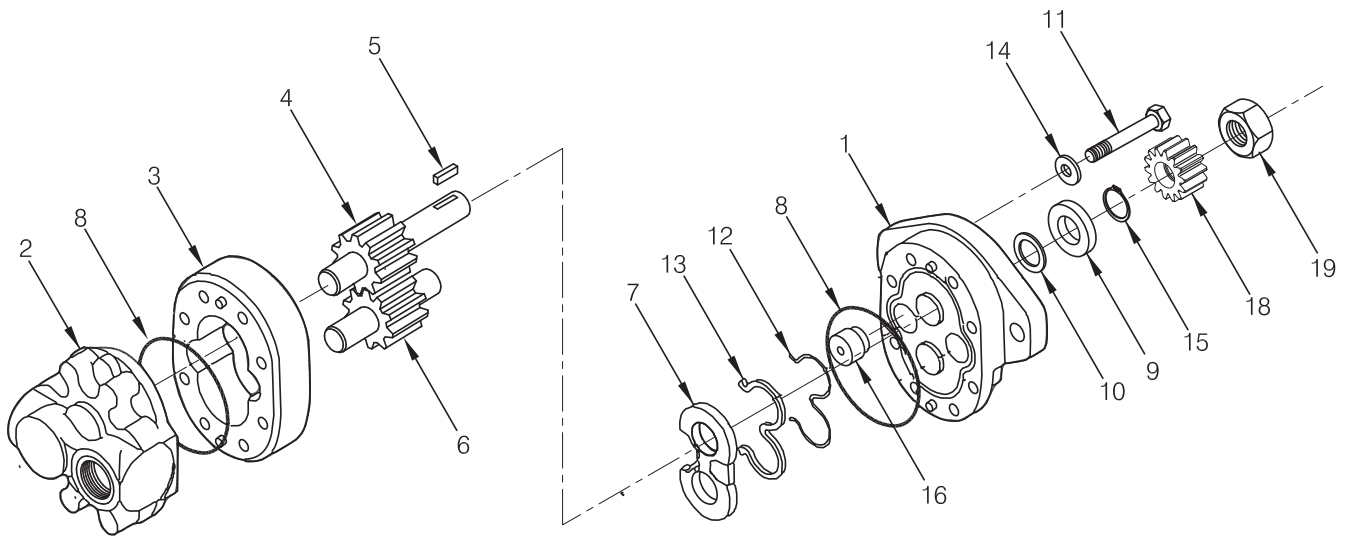


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	314833W	Pump, Hydraulic	1				
1	316823W	. Key	1	12	160756W	. Pin, Dowel	2
2	*a NSS	. Seal	1	13	316820W	. Plate, Back	1
3	316821W	. Plate, Front	1	14	199040W	. Capscrew	4
4	*a NSS	. Spring	2	15	160758W	. Capscrew	4
5	*a NSS	. Ball	2	16	*a NSS	. O-Ring	1
6	*a NSS	. Seal, Diaphragm	1	17	NSS	. Gear, Drive	1
7	*a NSS	. Gasket	1	18	274911W	Pinion, Pump	1
8	*a NSS	. Gasket, Backup	1	19	138750W	Nut	1
9	*a NSS	. Diaphragm	1				
10	NSS	. Gear, Idler	1		*a	Included in Repair Kit 171252W	
11	NSS	. Body	1				

3-130

Hydraulic Pump Assembly

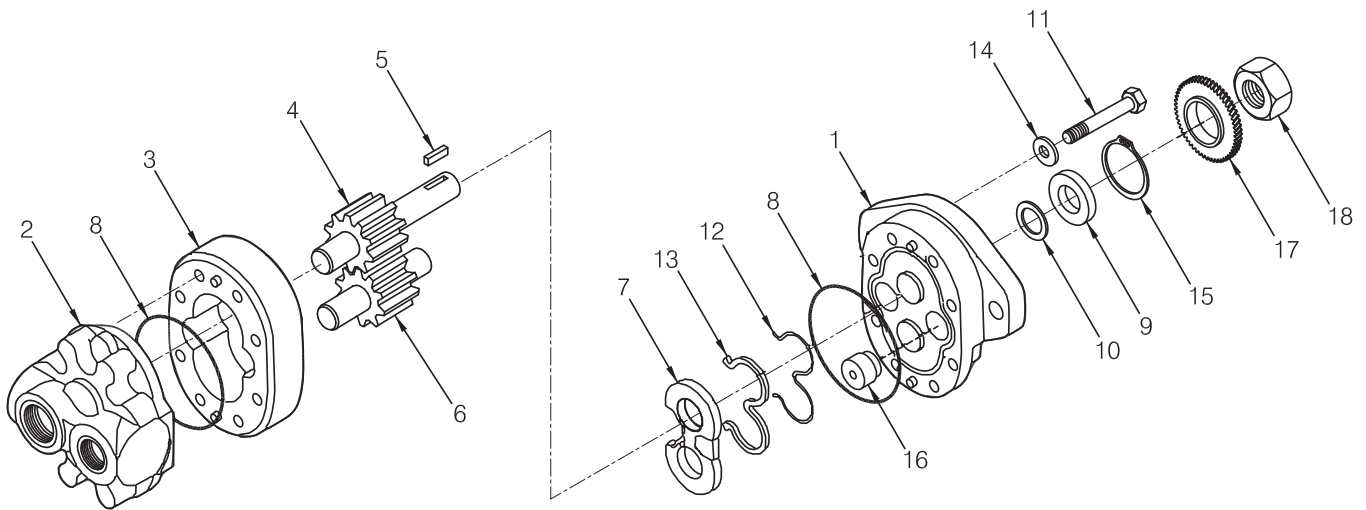
Gear Ratios #1 (46.1:1), #3 (60.4:1), #4 (83.6:1), & #6 (148.8:1)
 First Used on S/N AW12E-1093



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2302963W	Pump, Hydraulic	1				
1	NSS	. Plate, Front	1	13	*a NSS	. Seal	1
2	NSS	. Plate, Back	1	14	NSS	. Washer	4
3	NSS	. Body	1	15	NSS	. Ring, Retaining	1
4	NSS	. Gear, Drive	1	16	NSS	. Plug	1
5	316823W	. Key	1	18	274911W	Pinion, Pump	1
6	NSS	. Gear, Idler	1	18	*b 2304729W	Pinion, Pump	1
7	*a NSS	. Plate, Wear	1	19	138750W	Nut	1
8	*a NSS	. O-Ring	1	19	*b 2304736W	Nut	1
9	*a NSS	. Seal	1				
10	*a NSS	. Washer	1		*a	Included in Repair Kit 2302937W	
11	NSS	. Capscrew	4		*b	Used on Units with Ratio #6 Only	
12	*a NSS	. Gasket	1				

Hydraulic Pump Assembly

Gear Ratio #7 (148:1)

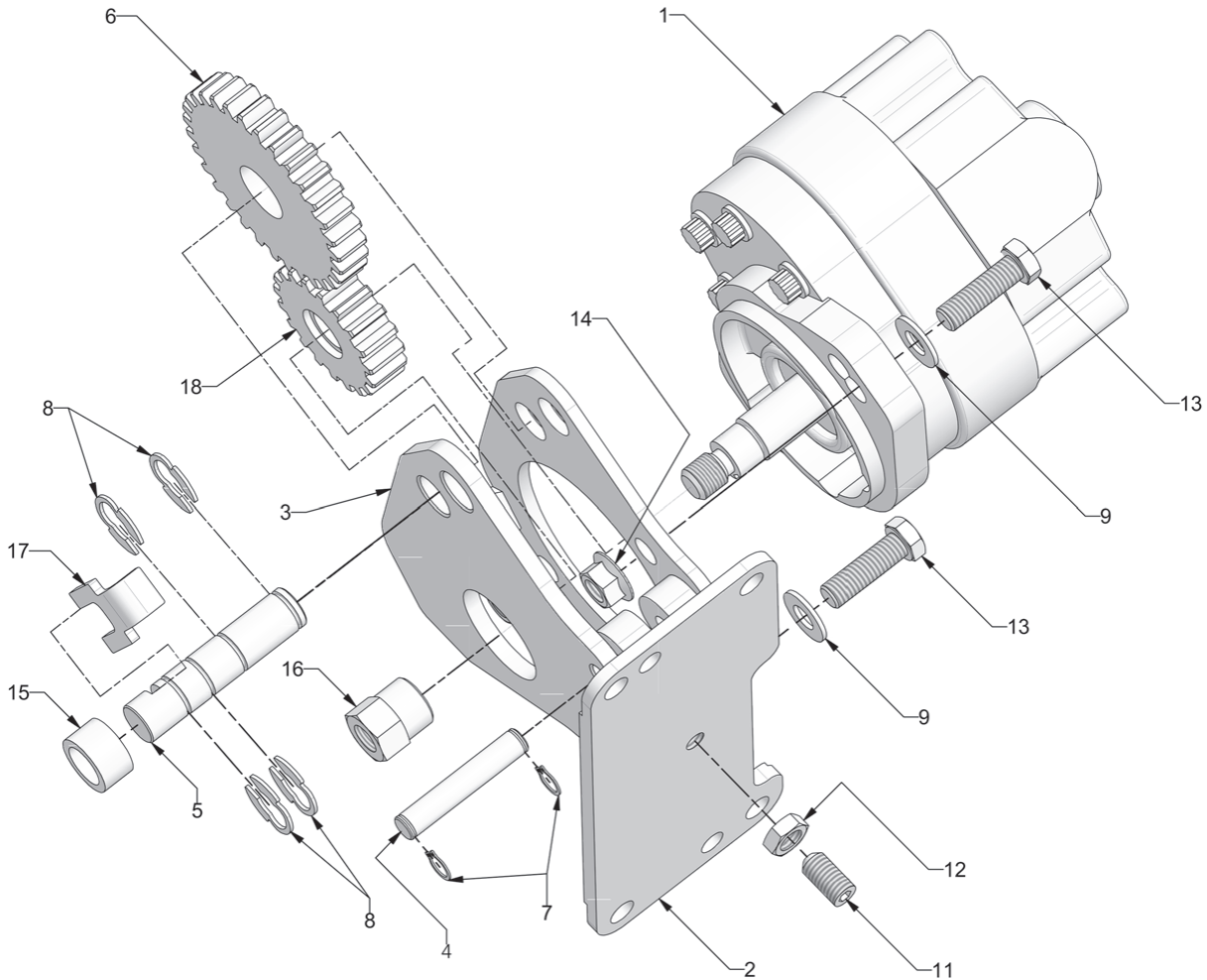


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty	
	2302989W	Pump, Hydraulic	1					
1	NSS	. Plate, Front	1	11	NSS	. Capscrew	4	
2	NSS	. Plate, Back	1	12	*a	NSS	. Gasket	1
3	NSS	. Body	1	13	*a	NSS	. Seal	1
4	NSS	. Gear, Drive	1	14	NSS	. Washer	4	
5	316823W	. Key	1	15	NSS	. Ring, Retaining	1	
6	NSS	. Gear, Idler	1	16	NSS	. Plug	1	
7	*a	NSS	1	17	2303541W	Pinion, Pump	1	
8	*a	NSS	1	18	138750W	Nut	1	
9	*a	NSS	1					
10	*a	NSS	1		*a	Included in 2302937W Repair Kit		

Hydraulic Pump Assembly

Heavy Duty Frame, Ratio #7
 Last Used on S/N AW12E-1379

Note: This page is for customer reference only because it shows the original design of the hydraulic pump assembly, which has already been upgraded and shown on the next page . To order part(s), see the next page, please.

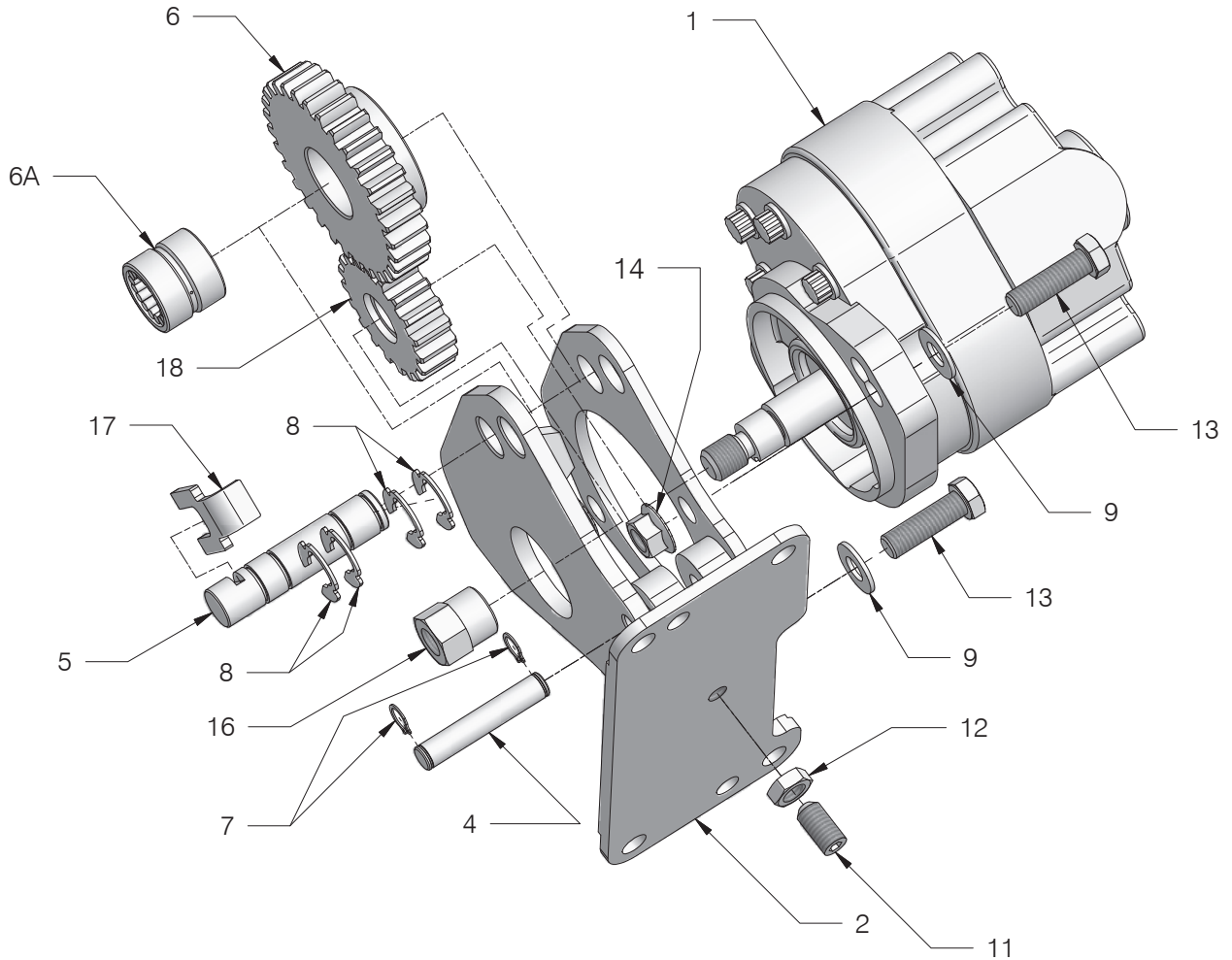


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2306641W	Assembly, Hydraulic Pump	1				
1	2302989W	Pump, Hydraulic (See 3-131)	1	12	15086W	Nut	1
2	2306629W	Plate, Pump Mounting	1	13	16828W	Capscrew	3
3	2306635W	Mounting, Pump	1	14	156133W	Nut	3
4	2306639W	Shaft, Pump Pivot	1	15	2303650W	Bearing, Needle	1
5	*a 2306638W	Shaft, Pump Gear	1	16	2304736W	Nut, Pump	1
5	*b 2310491	Shaft, Pump Gear	1	17	*b 2310490	Clip, Retainer	1
6	2306642W	Gear, 31T	1	18	2306637W	Gear, 19T (with 1.78 Gear Box)	1
7	12897W	Ring, Snap	2				
8	2306640W	Ring, Retaining	4				
9	15134W	Washer	3				
11	16205W	Setscrew	1				
				*a	Last Used on S/N AW12E-1308		
				*b	First Used on S/N AW12E-1309		

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Hydraulic Pump Assembly

Heavy Duty Frame, Ratio #7
First Used on S/N AW12E-1398



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2306641W	Assembly, Hydraulic Pump	1				
1	2302989W	Pump, Hydraulic (See 3-131)	1	9	15134W	Washer	3
2	2306629W	Plate, Pump Mounting	1	11	16205W	Setscrew	1
3	2306635W	Mounting, Pump	1	12	15086W	Nut	1
4	2306639W	Shaft, Pump Pivot	1	13	16828W	Capscrew	3
5	2311031	Shaft, Pump Gear	1	14	156133W	Nut	3
6	2311029	Gear, 31T	1	16	2304736W	Nut, Pump	1
6A	2310973	Bearing, Needle	1	17	2310490	Clip, Retainer	1
7	12897W	Ring, Snap	2	18	2306637W	Gear, 19T (with 1.78 Gear Box)	1
8	2306640W	Ring, Retaining	4				

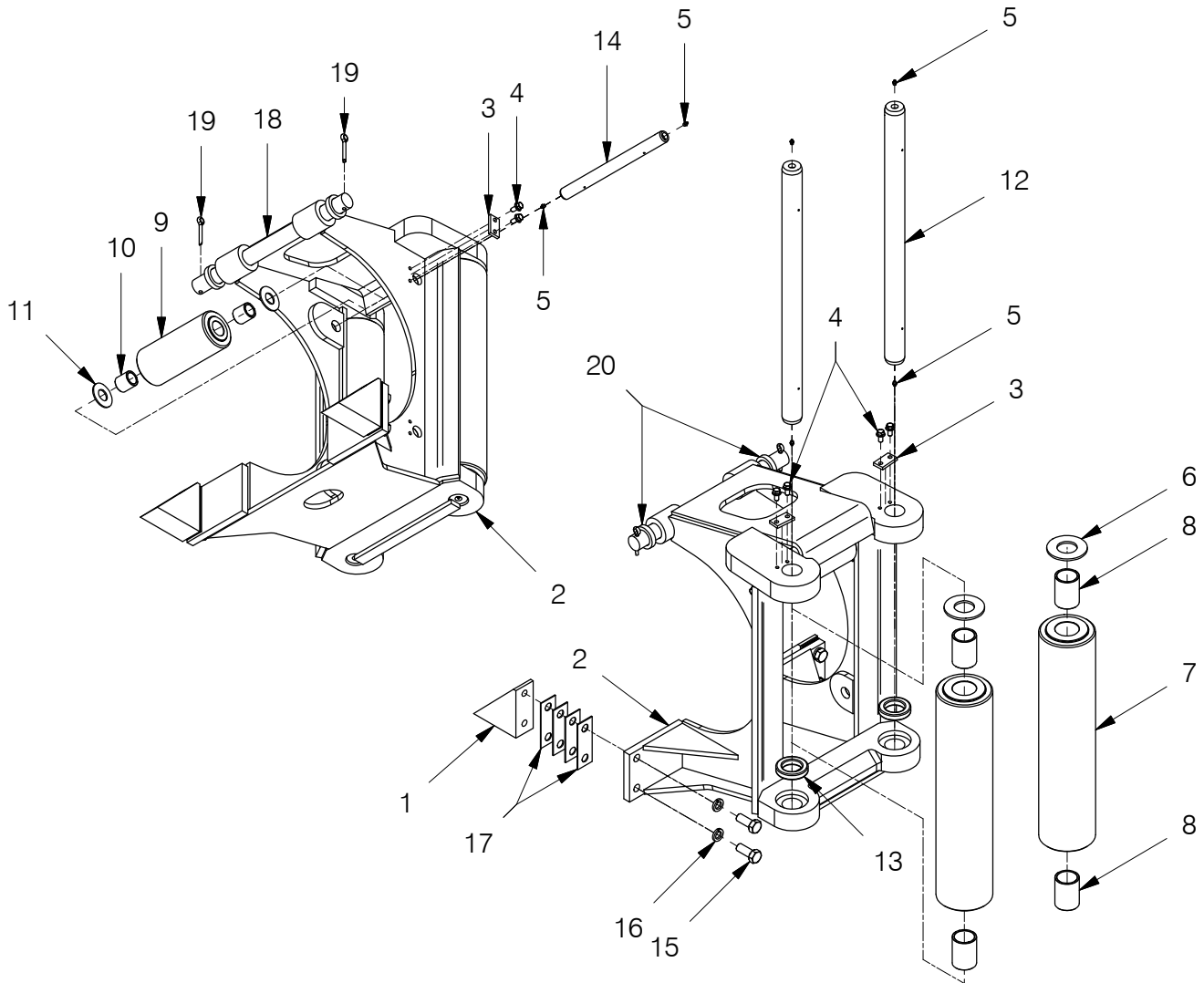
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Optional Equipment

Fairlead	4-2 & 4-3
Wire Rope Guide Rolls	4-4
Wire Rope Assemblies	4-5

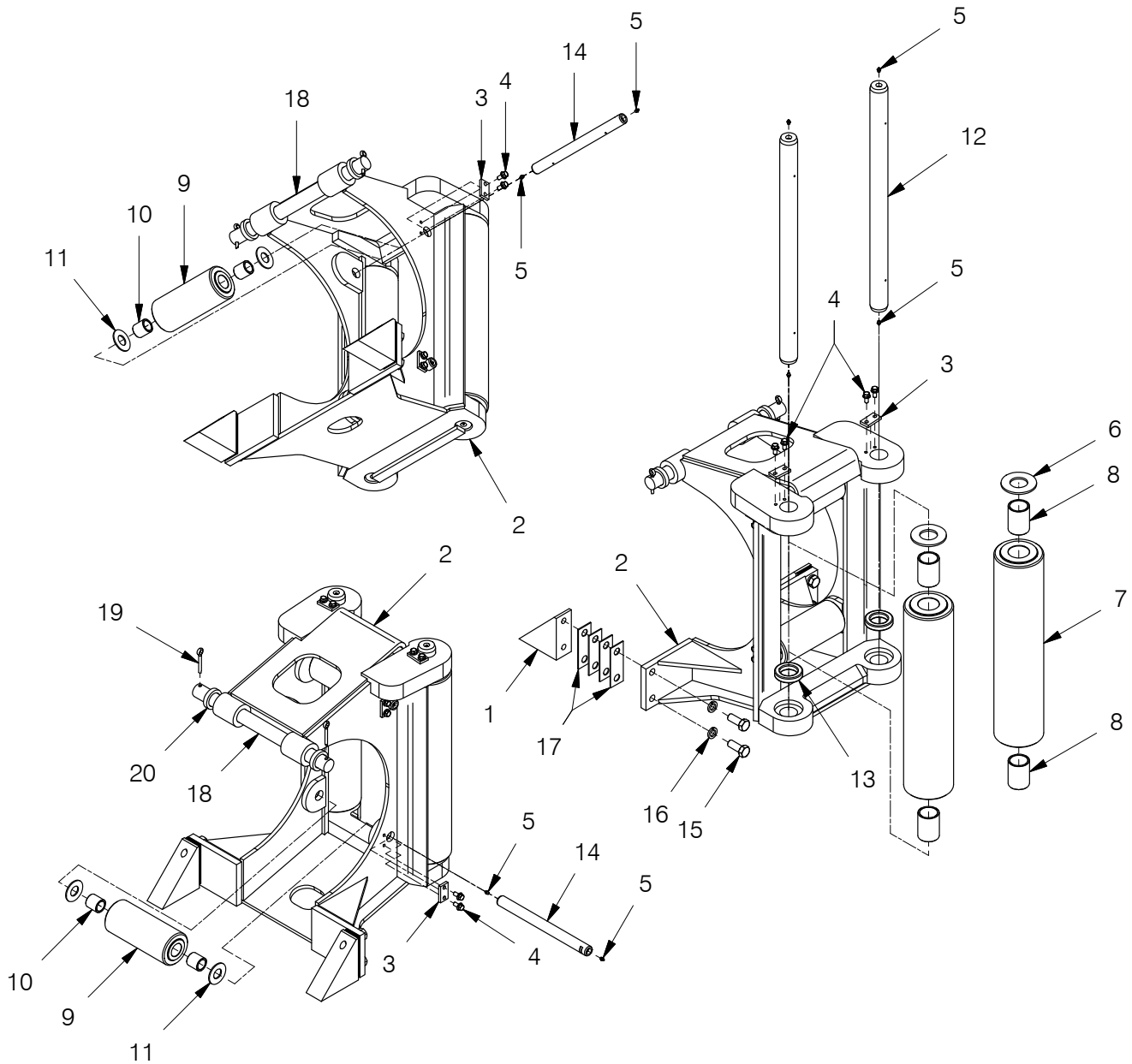


Fairlead
Three Rollers



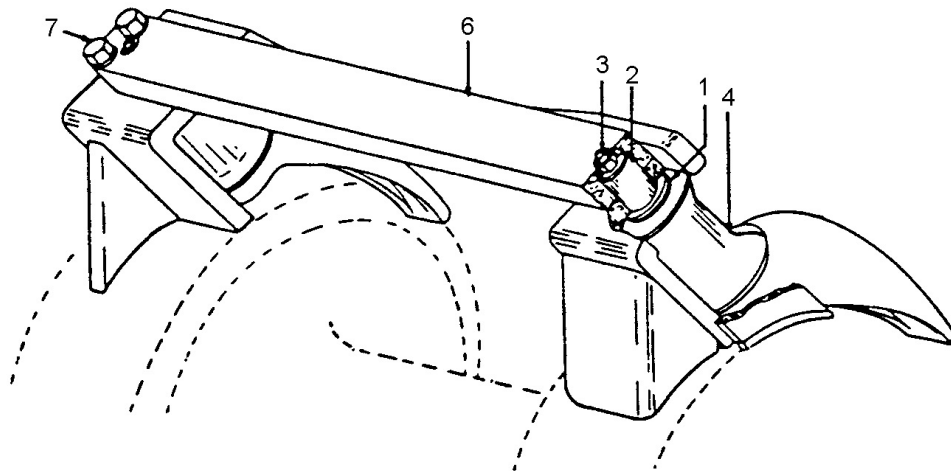
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	182733W	Plate, Bracket	2	11	92720W	Washer	2
2	95801W	Frame	1	12	93981W	Shaft	2
3	93166W	Keeper	3	13	230353W	Bearing, Thrust	2
4	398817W	Screw, Flanged	6	14	93658W	Shaft	1
5	16001W	Fitting, Grease	6	15	18670W	Capscrew	4
6	38672W	Washer	2	16	15166W	Lockwasher	4
7	93980W	Roller	2	17	96504W	Shim .135	AR
8	93979W	.Bushing	2	18	92606W	Rod, Tie	1
9	92212W	Roller	1	19	15272W	Pin, Cotter	2
10	59419W	.Bushing	2	20	173608W	Spacer	2

Fairlead
Four Rollers



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	182733W	Plate, Bracket	2	11	92720W	Washer	4
2	95801W	Frame	1	12	93981W	Shaft	2
3	93166W	Keeper	4	13	230353W	Bearing, Thrust	2
4	398817W	Screw, Flanged	8	14	93658W	Shaft	2
5	16001W	Fitting, Grease	8	15	18670W	Capscrew	4
6	38672W	Washer	2	16	15166W	Lockwasher	4
7	93980W	Roller	2	17	96504W	Shim .135	AR
8	93979W	. Bushing	2	18	92606W	Rod, Tie	1
9	92212W	Roller	2	19	15272W	Pin, Cotter	2
10	59419W	. Bushing	4	20	173608W	Spacer	2

Wire Rope Guide Rolls



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	95668W	Washer	4	4	35135W	. Bushing	4
2	95669W	Pin, Roller	2	6	95888W	Guard, Tie	1
3	16006W	Fitting, Grease	2	7	16645W	Capscrew	4
4	95666W	Roller	2	7	15160W	Lockwasher	4
4	-----	. Roller	2				

Wire Rope Assemblies

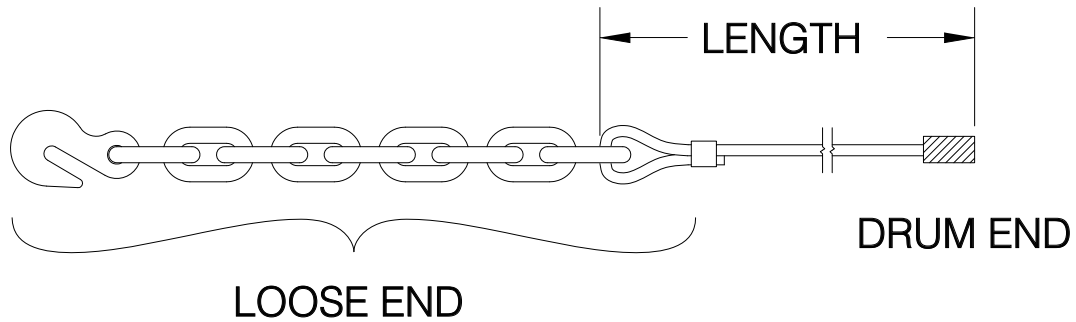


Figure A

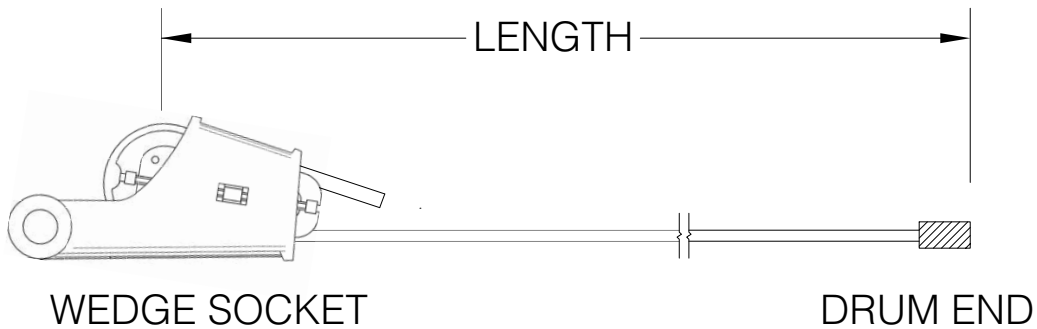


Figure B

Part No.	Wire Diameter	Length Ft (M)	Part No.	Wire Diameter	Length Ft (M)
WR8-188J	*a 1"	188 (57) *	YS10-182JWS	*b 1 1/4"	182 (55) **
WR8-286J	*a 1"	286 (87) **			
WR9-150J	*a 1 1/8"	150 (46) *			
WR9-229J	*a 1 1/8"	229 (70) **			
WR10-119J	*a 1 1/4"	119 (36) *			
WR10-182J	*a 1 1/4"	182 (55) **			
			* Length to fill drum up to 2/3 capacity (recommended)		
			** Length to fill drum to full capacity		
			*a J Series Wire Rope (Illustrated in Figure A)		
			*b JWS Series Wire Rope (Illustrated in Figure B)		

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Recommended Service Kits

Recommended Winch Service Intervals	5-2
Recommended Service Kits	5-3
• Filter Kit - 2311165	5-4
• Filter Kit - 2311166	5-5
• Filter Kit - 2311375	5-6
• Filter Kit - 2311376	5-7
• Gasket Kit - 281939W	5-8 & 5-9
• Clutch Shaft Kit - 2311369	5-10
• Clutch Shaft Kit - 2311370	5-11
• Brake Assembly Kit - 2311368	5-12
• Brake Shaft Bearing Kit - 2311371	5-13
• Clutch Shaft Bearing Kit - 2311372	5-14
• Clutch Shaft Bearing Kit - 2311373	5-15
• Drum & Intermediate Shaft Bearing & Seal Kit - 2311374	5-16

Recommended Winch Service Intervals

Allied Systems Company is pleased to announce an additional tool to keep your customer's 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.

PTO 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 1,000	6		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.

IMPORTANT - For best Load Control
Use only the following oils:

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

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





2311481 Rev C

Table 1 Recommended Winch Service Intervals

Recommended Service Kits

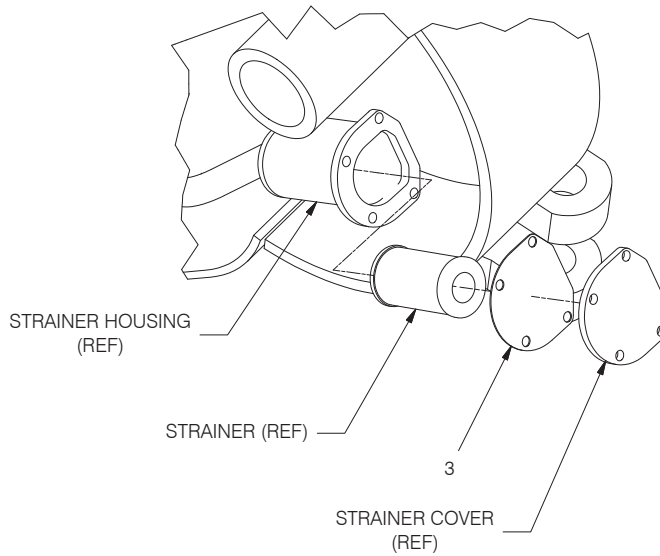
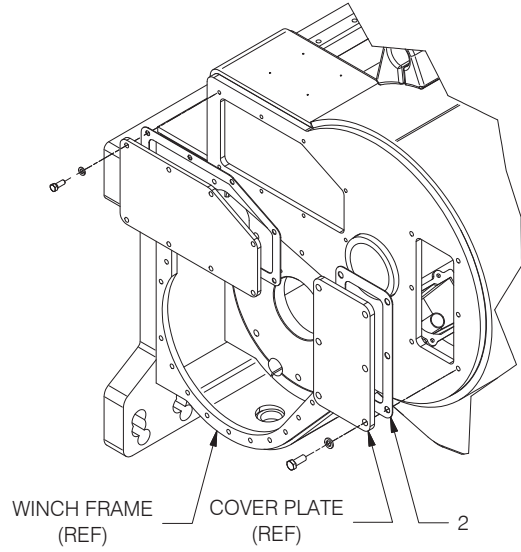
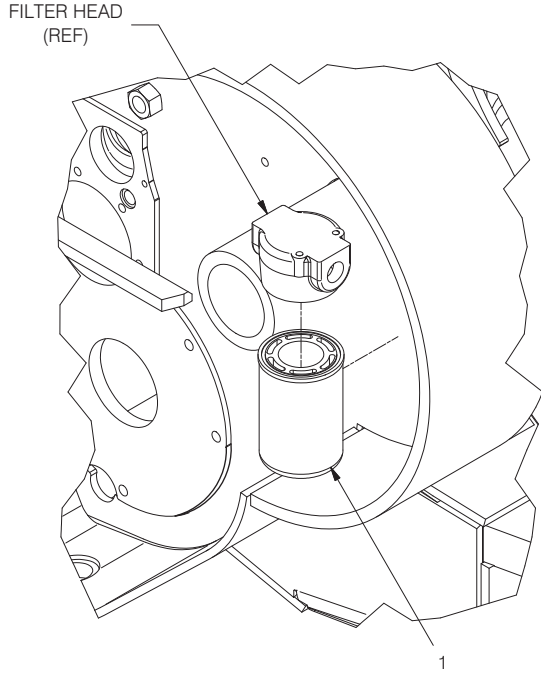
SERVICE KITS FOR W12E WINCHES				
Service Description	Kit Description	Winch Serial Number	Kit Part No. for Winches with Power Controls (P)	Kit Part No. for Winches with Electronic Controls (E)
Filter Change (First 250, then every 500 Hours)	Filter Kit	Last used W12E-1599	2311165	2311376
		First used W12E-1600 and AW12E-1001 thru AW12E-1105	2311166	
		First Used AW12E-1106	2311375	
Complete Oil Change (Every 1000 hours)	-N/A-	ALL	Check our Website for Current Operator's and Service Manuals for Appropriate Oils	
Clutch and Brake Overhaul (Every 5000 hours)	Gasket Kit	ALL	281939W	
	Clutch Shaft Kit*	Gear ratios 1, 3, 4 & 6	2311369	
		Gear ratio 7	2311370	
	Brake Assembly Kit	ALL	2311368	
	Pump Assembly	Last used AW12E-1092	Order quantity 1 of each of the following: 2302963W 2303677W 88297W 271729W	
First used AW12E-1093		2302963W		
Major Overhaul (Every 10000 hours)	Brake Shaft Bearing Kit	ALL	2311371	
	Clutch Shaft Bearing Kit (Gear ratios 1, 3, 4 & 6)	ALL	2311372	
	Clutch Shaft Bearing Kit (Gear ratio 7)	ALL	2311373	
	Drum & Intermediate Shaft Bearing and Seal Kit	ALL	2311374	

* Services both clutches. Includes all parts necessary on the clutch shaft; dropbox and PTO bearings and seals must be ordered separately.

Table 2 Routine Maintenance Kits

Filter Kit: 2311165

For Winches with Power Controls
Last Used on S/N W12E-1599 and AW12E-1000



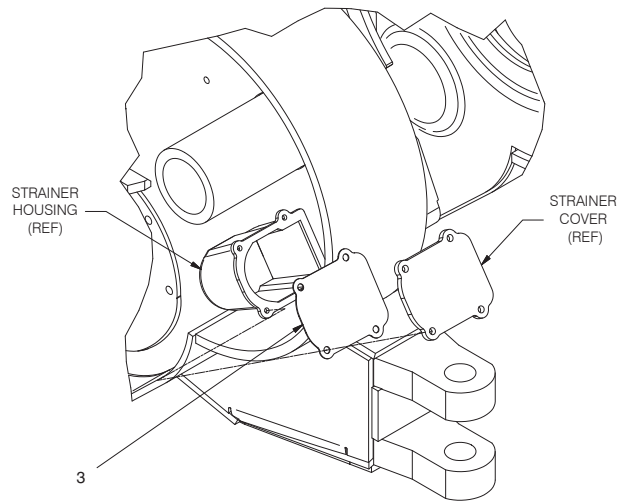
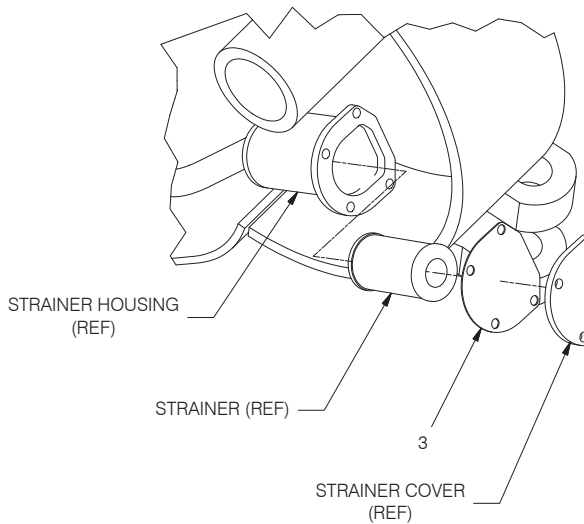
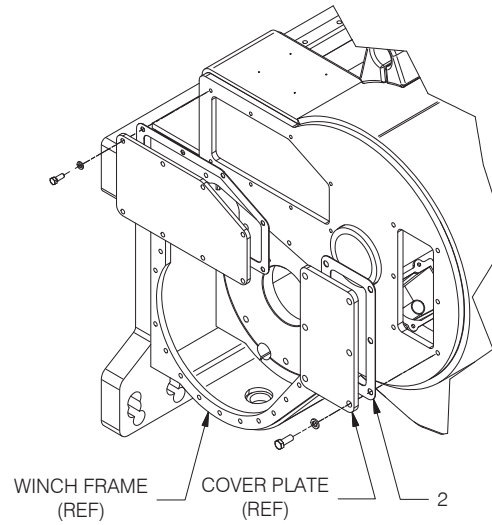
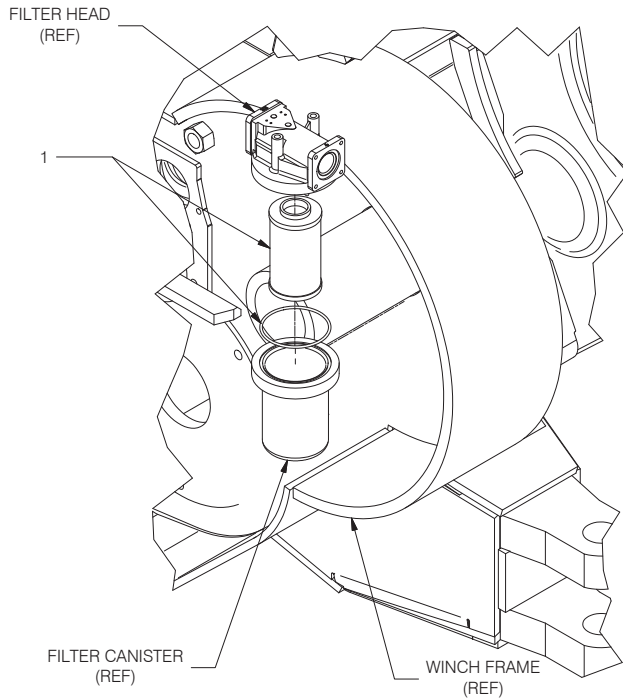
Note: Only parts with item numbers are actually included in this Service Kit. All other parts are shown for reference only.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	277490W	Element	1	3	265332W	Gasket	1
2	186460W	Gasket	1				

Filter Kit: 2311166

For Winches with Power Controls

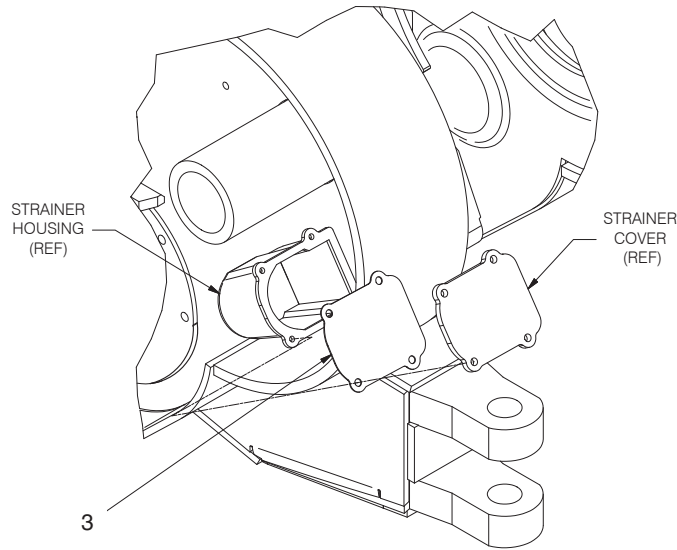
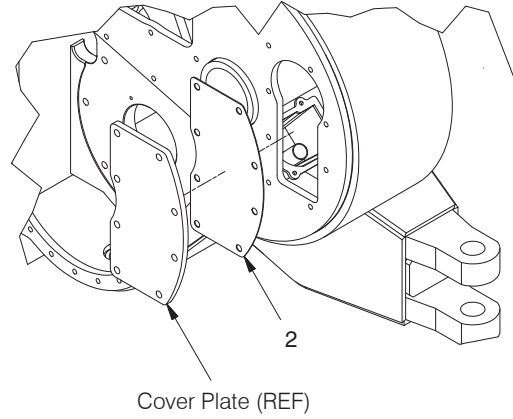
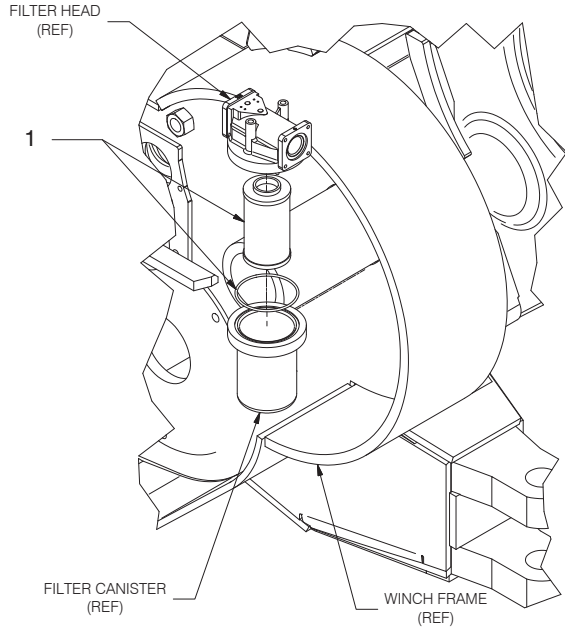
First Used on S/N W12E-1600 and AW12E-1001 thru AW12E-1105



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
1	3001363W	Filter, HYD	1	3	265332W	Gasket	1
2	186460W	Gasket	1	4	2300935W	Gasket	1

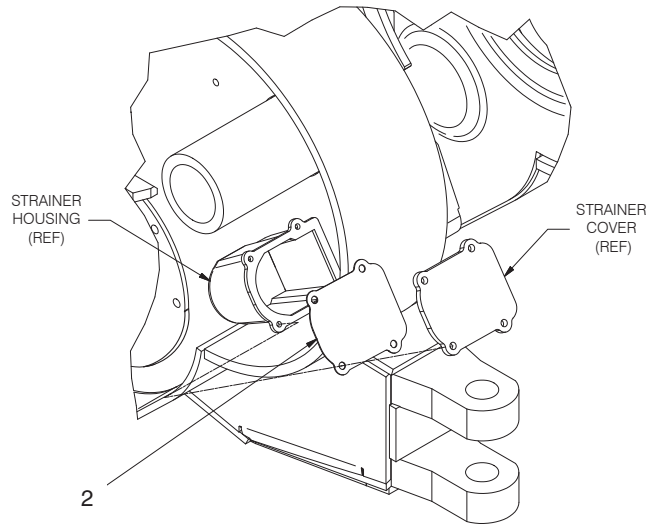
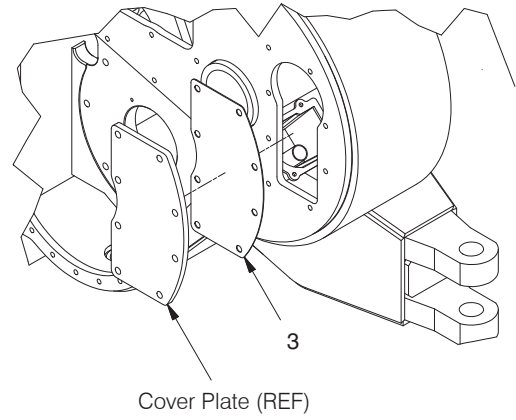
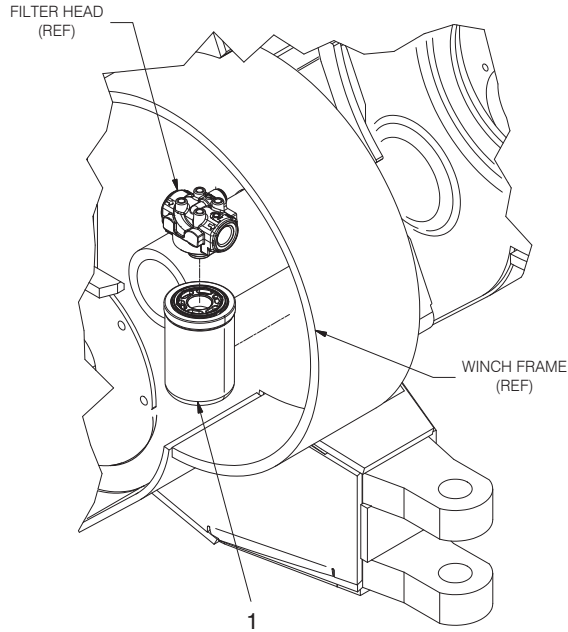
Filter Kit: 2311375
 For Winches with Power Controls
 First Used on S/N AW12E-1106



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
1	3001363W	Filter	1	3	2300935W	Gasket	1
2	2304734W	Gasket, Filter Cover	1				

Filter Kit: 2311376
For Winches with Electronic Controls



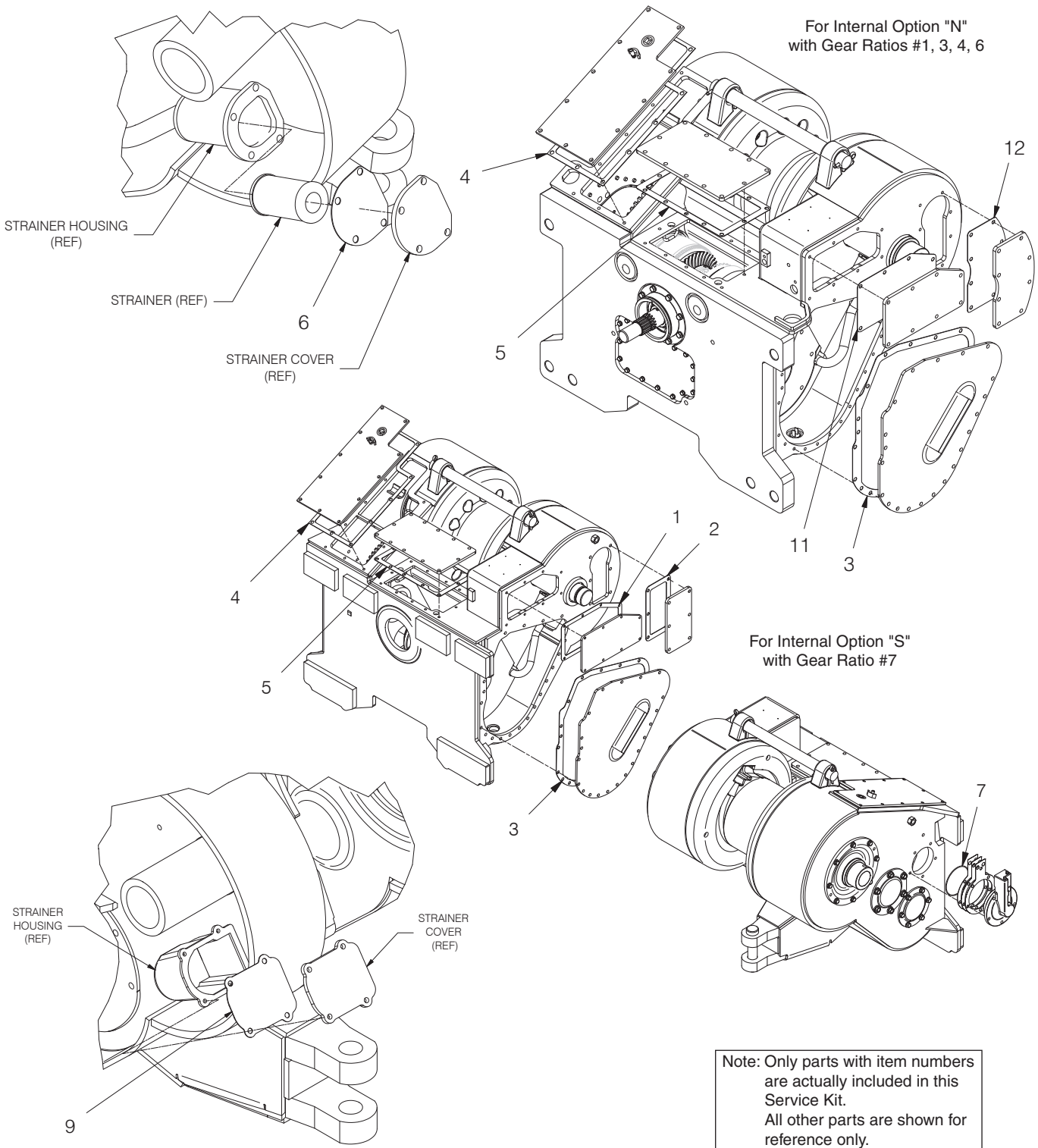
Note: Only parts with item numbers are actually included in this Service Kit.
All other parts are shown for reference only.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2304112W	Element, Filter	1	3	2304734W	Gasket, Filter Cover	1
2	2300935W	Gasket	1				

Gasket Kit: 281939W

For Winches with Power Controls and Electronic Controls

Page 1 of 2



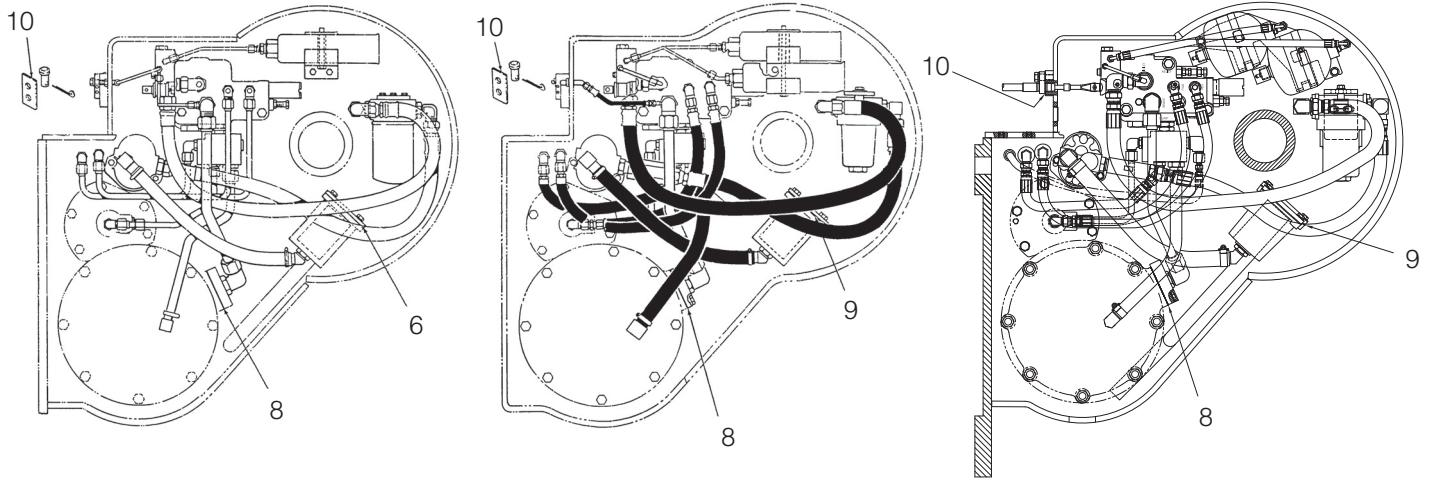
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	164708W	Gasket	1	5	2314838	Gasket, Cover	2
2	186460W	Gasket	1	6	265332W	Gasket	1
3	286046W	Gasket	1	7	15895W	O-Ring	1
4	95455W	Gasket, Cover	1				

(continued on next page)

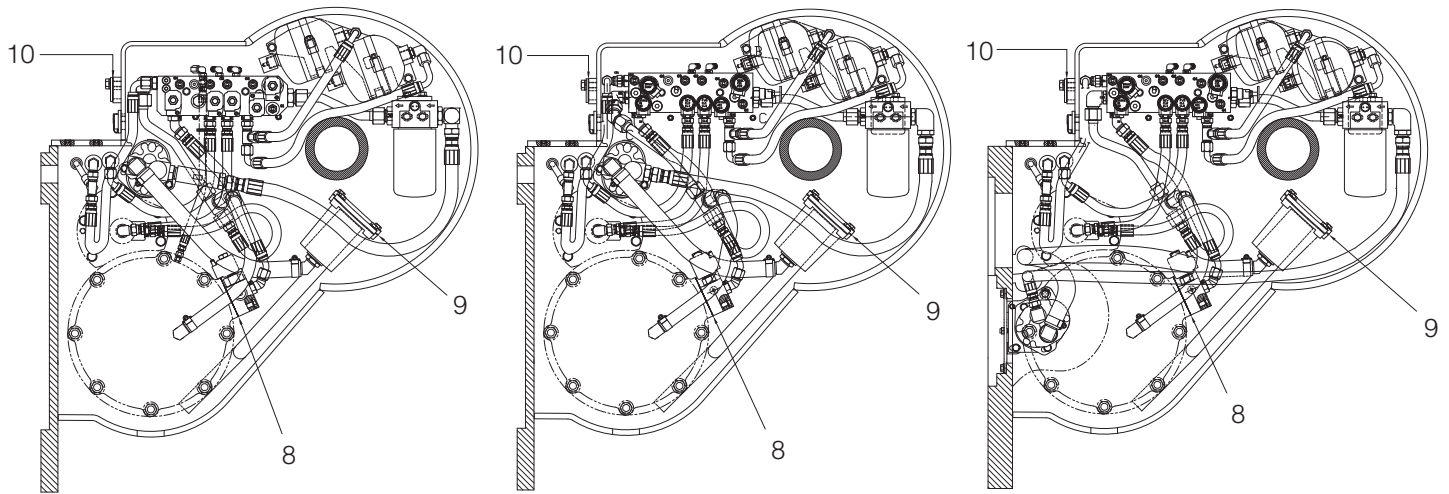
Gasket Kit: 281939W

For Winches with Power Controls and Electronic Controls

Page 2 of 2



Hydraulics, Power Controls



Ratios #1, 3, 4, 6

Ratio #7

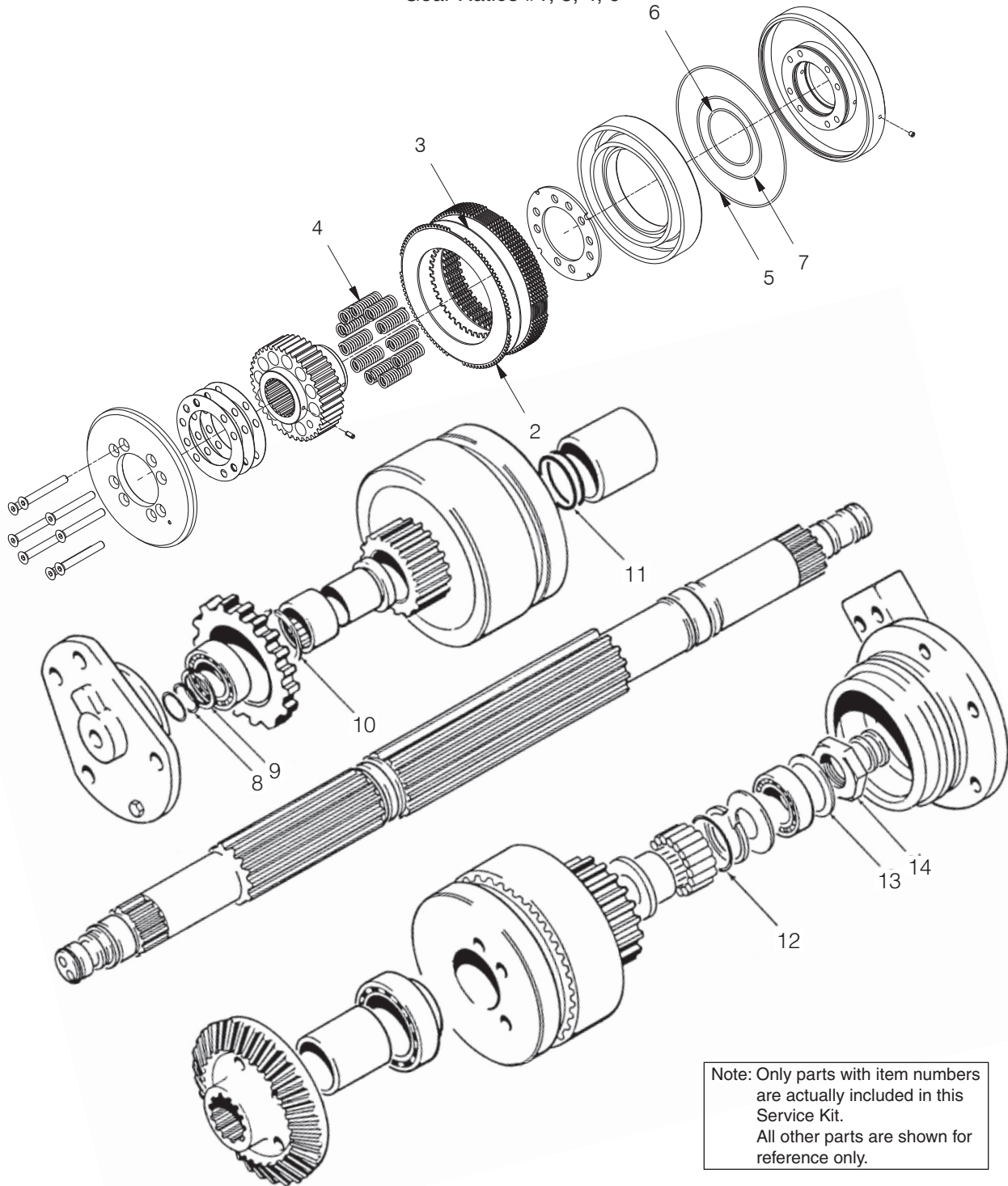
Hydraulics, Electronic Controls

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
8	196022W	Gasket	1	11	2304732W	Gasket, Valve Cover	1
9	2300935W	Gasket	1	12	2304734W	Gasket, Filter Cover	1
10	303946W	Gasket	1				

Clutch Shaft Kit: 2311369

For Winches with Power Controls and Electronic Controls
Gear Ratios #1, 3, 4, 6

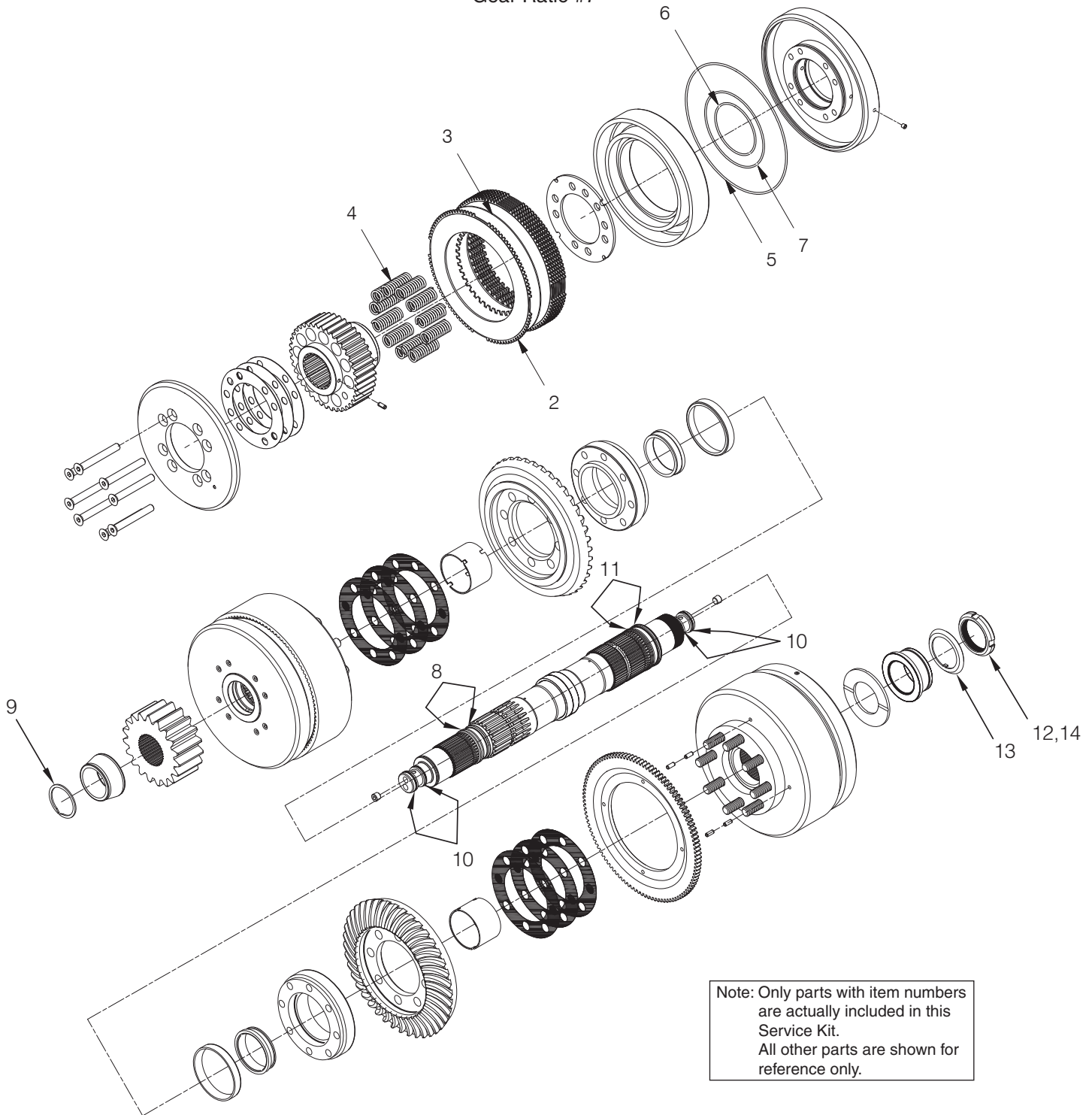


Note: Only parts with item numbers are actually included in this Service Kit.
All other parts are shown for reference only.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2310569	Service Kit, W12E Clutch	2	8	95581W	Ring, Seal	4
2	328716W	. Disc, Friction	8	9	263457W	Snap Ring, EXT	1
3	264062W	. Plate, Separator	8	10	12990W	Snap Ring, INT	2
4	264192W	. Spring	11	11	39678W	O-Ring	4
5	89775W	. O-Ring	1	12	39675W	O-Ring	2
6	79978W	. O-Ring	1	13	175193W	Lockwasher	1
7	89776w	. O-Ring	1	14	32967W	Locknut	1

Clutch Shaft Kit: 2311370

For Winches with Power Controls and Electronic Controls
Gear Ratio #7

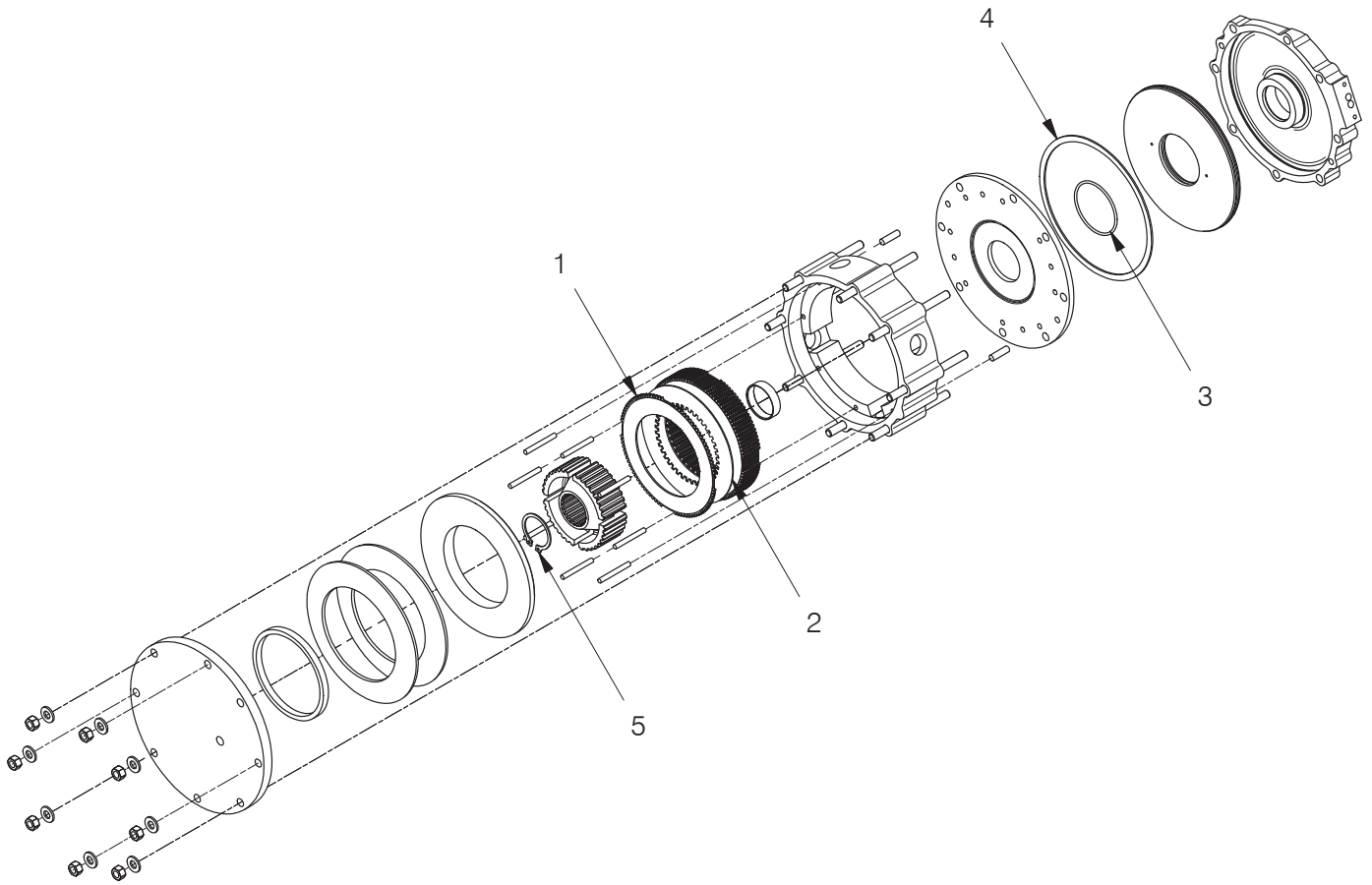


Note: Only parts with item numbers are actually included in this Service Kit. All other parts are shown for reference only.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2310569	Service Kit, W12E Clutch	2	8	39495W	O-Ring	2
2	328716W	. Disc, Friction	8	9	263457W	Snap Ring, EXT	1
3	264062W	. Plate, Separator	8	10	95581W	Seal Ring	4
4	264192W	. Spring	11	11	39678W	O-Ring	2
5	89775W	. O-Ring	1	12	318701W	Adhesive	1
6	79978W	. O-Ring	1	13	175193W	Lockwasher	1
7	89776W	. O-Ring	1	14	32967W	Locknut	1

Brake Assembly Kit: 2311368

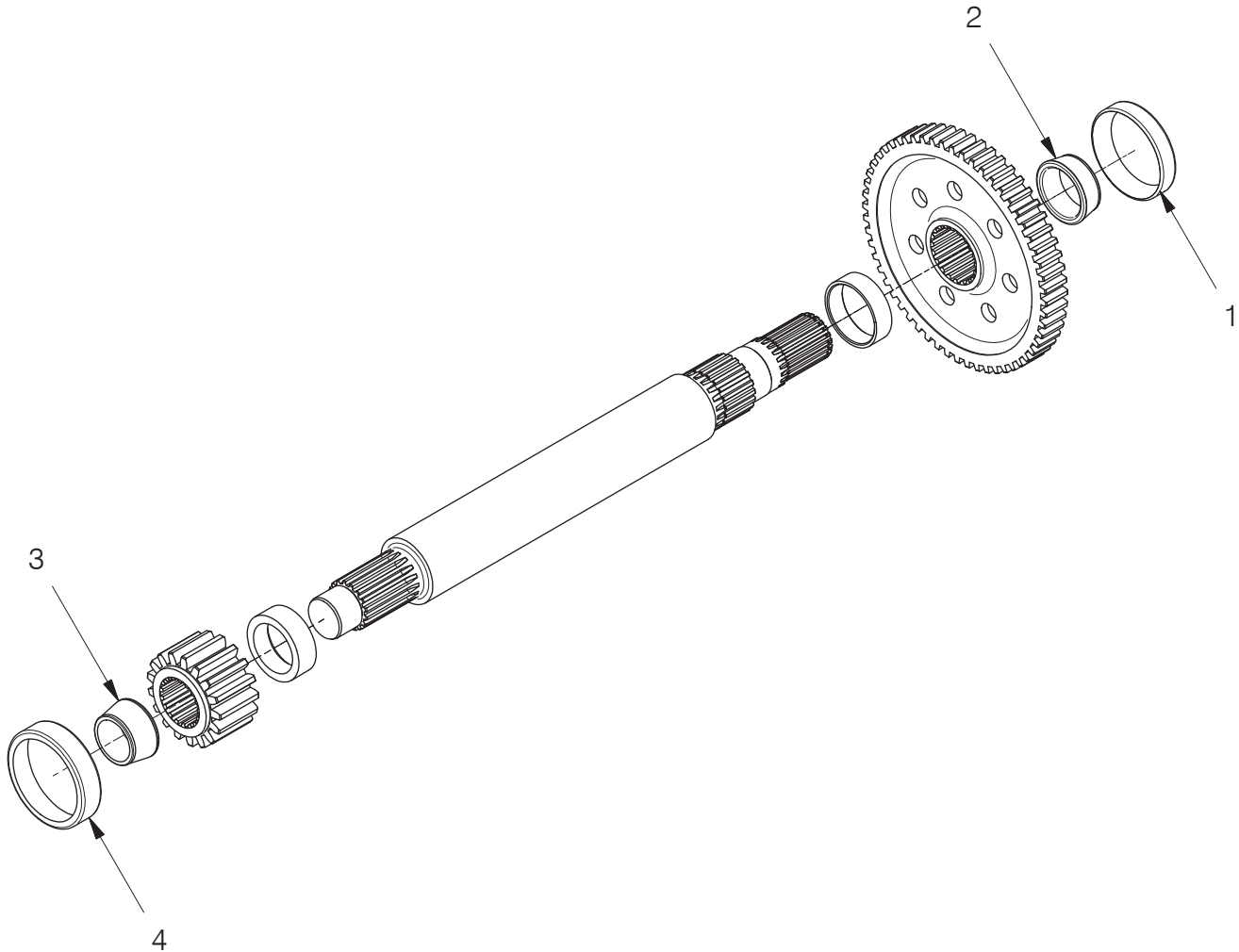
For Winches with Power Controls and Electronic Controls



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
1	328716W	Disc, Friction	10	4	131982W	Ring	1
2	264062W	Plate, Separator	9	5	58905W	Snap Ring, EXT	1
3	131983W	O-Ring	1				

Brake Shaft Bearing Kit: 2311371
 For Winches with Power Controls and Electronic Controls

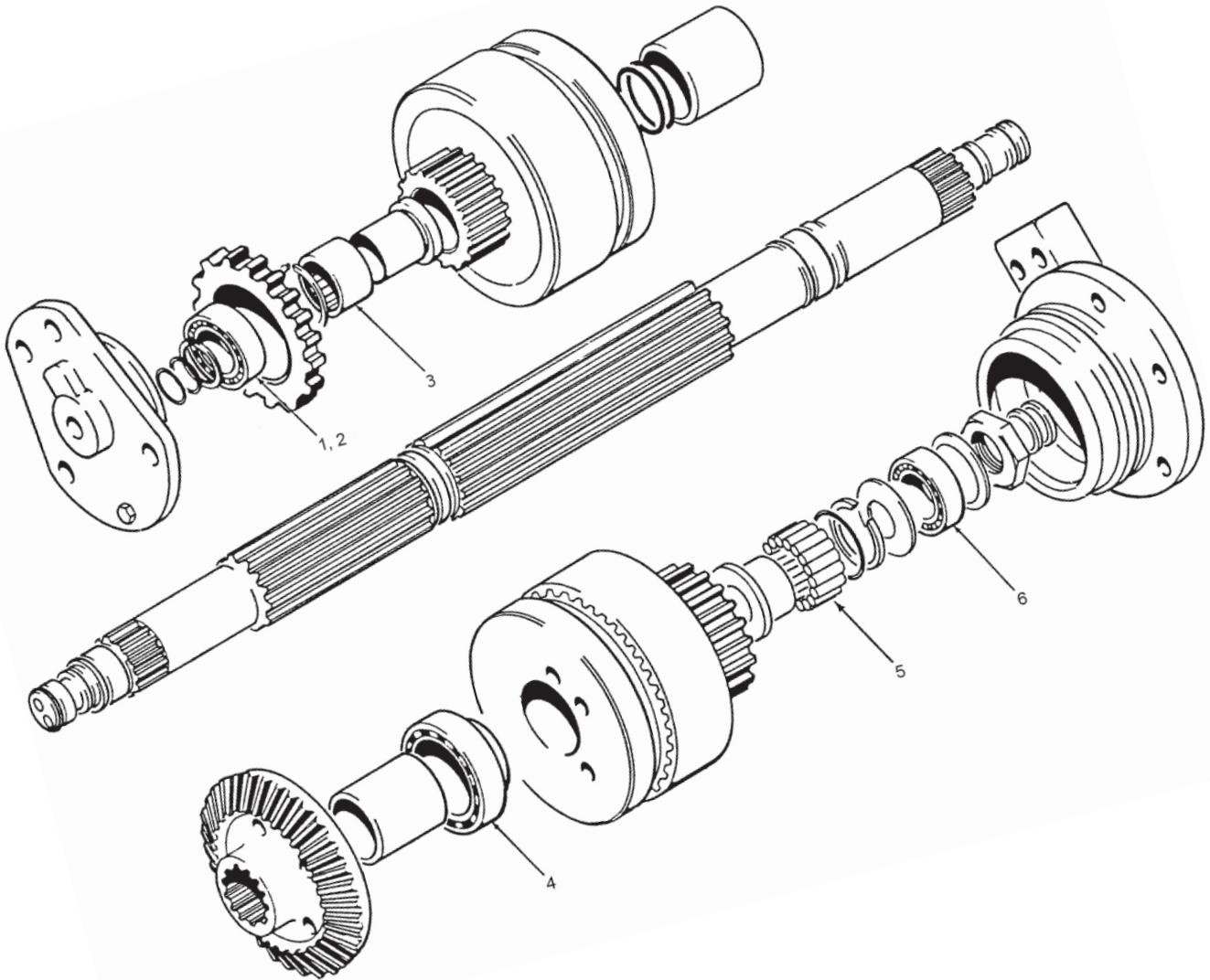


Note: Only parts with item numbers are actually included in this Service Kit.
 All other parts are shown for reference only.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	30101W	Cone	1	3	230326W	Cone	1
2	30100W	Cup	1	4	30104W	Cone	1

Clutch Shaft Bearing Kit: 2311372

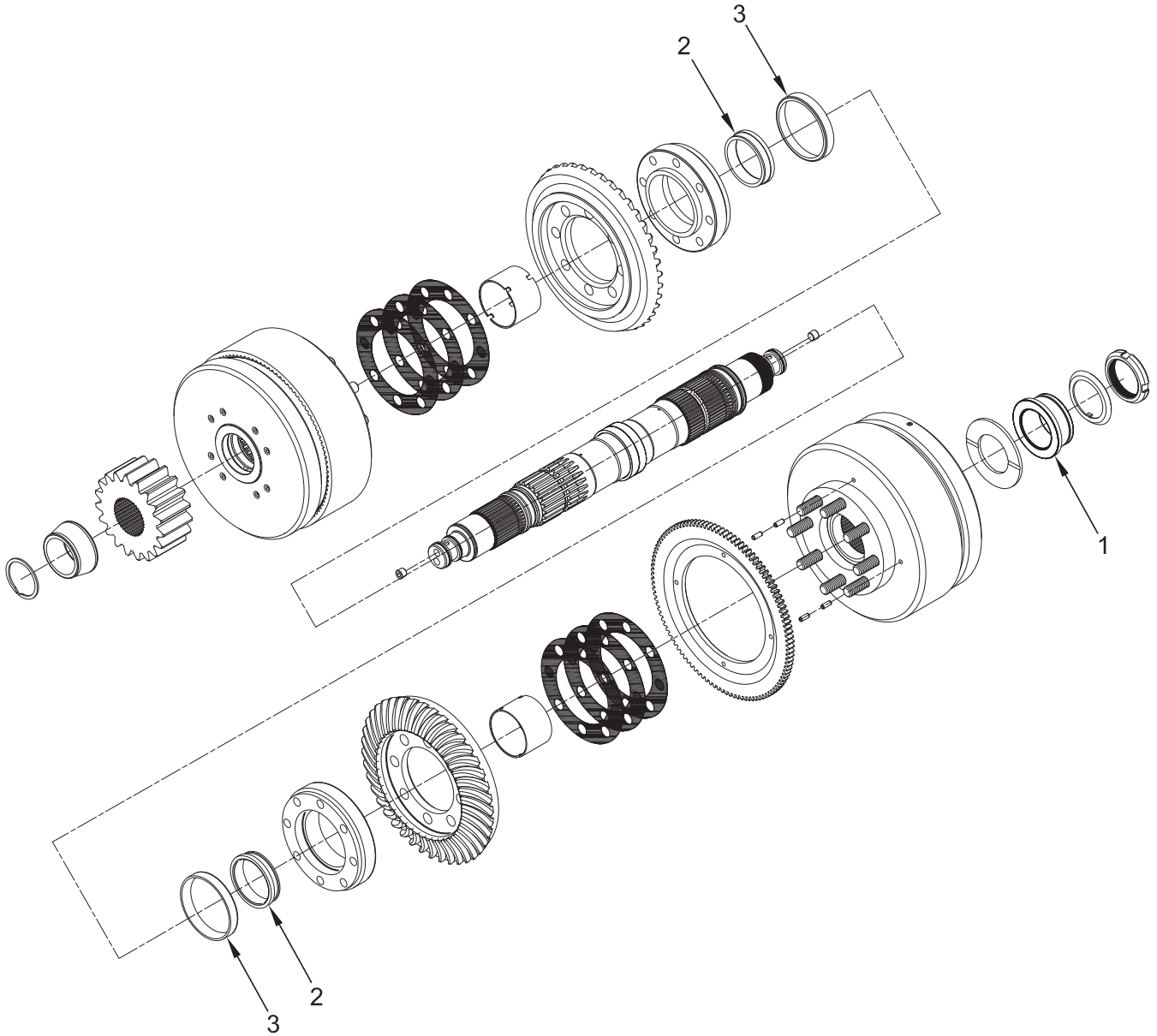
For Winches with Power Controls and Electronic Controls
Gear Ratios #1, 3, 4, 6



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
1	30069W	Cone	1	4	41217W	Bearing, Ball	1
2	30059W	Cup	2	5	230394W	Bearing, Roller	2
3	230393W	Bearing, Roller	1	6	30080W	Cone, Roller Bearing	1

Clutch Shaft Bearing Kit: 2311373
 For Winches with Power Controls and Electronic Controls
 Gear Ratio #7

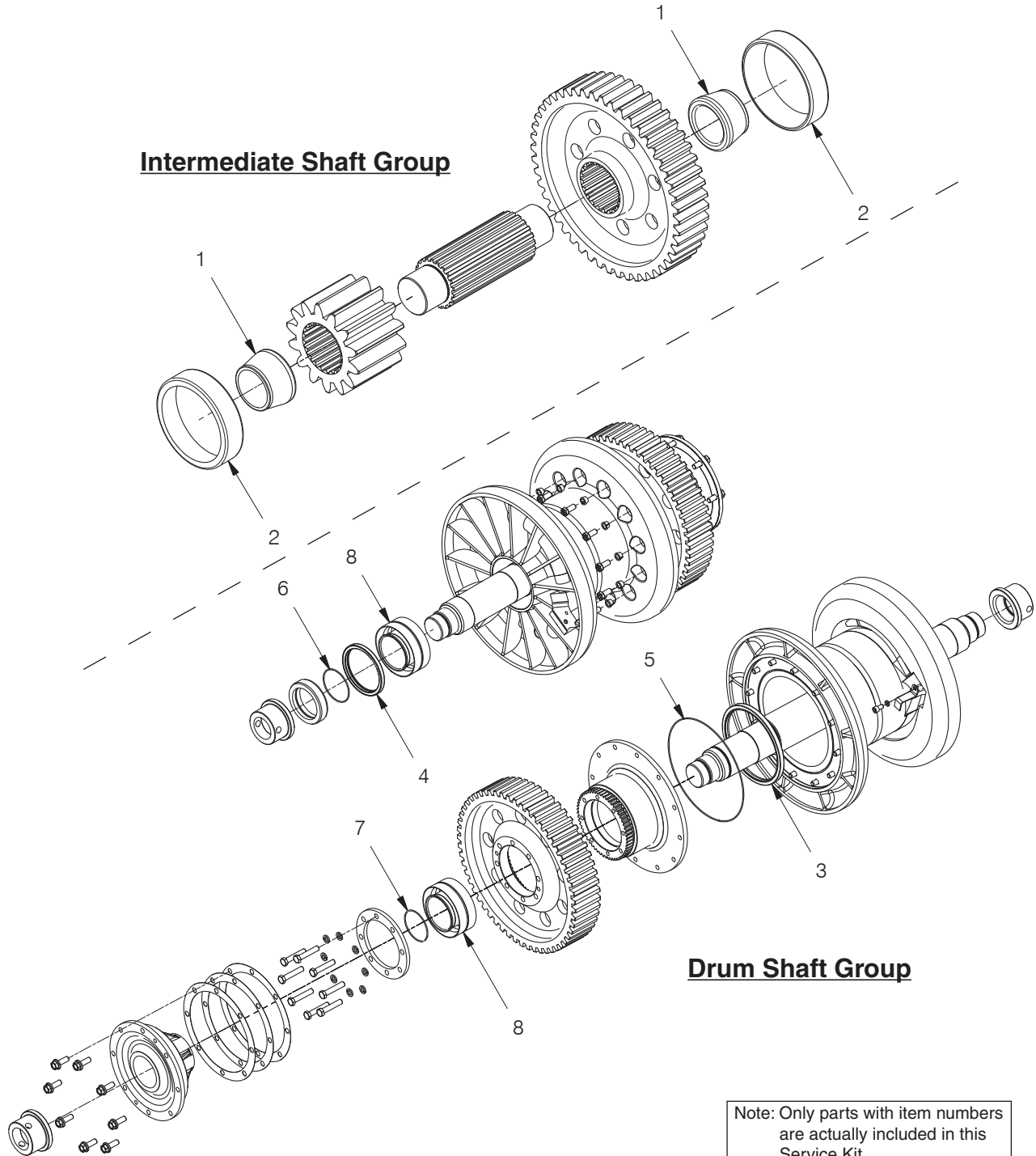


Note: Only parts with item numbers are actually included in this Service Kit. All other parts are shown for reference only.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	30080W	Cone	1	3	2307950W	Cup	4
2	2307949W	Cone	4				

Drum & Intermediate Shaft Bearing & Seal Kit: 2311374

For Winches with Power Controls and Electronic Controls



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
1	231011W	Cone	2	5	39764W	O-Ring	1
2	230327W	Cup	2	6	15888W	O-Ring	1
3	141149W	Seal, Oil	1	7	15886W	O-Ring	1
4	44570W	Seal, Oil	1	8	230329W	Bearing	2

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• Filter Kit, P/N 2311166.....	6-2
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Suggested Spares Guide

W12E Towing Winch

Recommended Service Kits

The following pages list the service kits that are available for your Allied W12E Winch. Each kit includes all parts listed in the table.

Pages 6-2 and 6-3 include Filter Kits and a Gasket Kit. These kits contain all parts necessary to replace the filter element. Select the kit number relevant for your winch, and order a quantity of kits necessary. The filter element should be changed after the first 250 hours, then every 500 hours thereafter. The gasket kit should be changed every 5,000 hours. Keep these kits in stock at all times for regular maintenance.

Page 6-4 and 6-5 contain a Brake Assembly Kit, two Clutch Shaft Kits, a Brake Shaft Bearing Kit, and a Clutch Shaft Bearing Kit. Order these kits in preparation for the 5,000 hour scheduled maintenance.

Pages 6-6 also contains a Clutch Shaft Bearing Kit, a Drum & Intermediate Shaft Bearing and Seal Kit, and a list of Wire Rope Assemblies. Order the kits relevant for your winch in preparation for the regular and 10,000 hour scheduled maintenance.

Page 6-7 contains three Miscellaneous Parts lists. These parts will vary from installation to installation, but we recommend keeping these parts on hand. Refer to your parts manual for specific part numbers.

Page 6-8 contains a list of Tool Kits and a list of Diagnostic Tools, which will help you install and maintain your winch(es).

Note: Allied Winch Parts Manuals are available for no charge and can be downloaded at <http://www.alliedsystems.com/pubs/pubs.htm>.

Filter Kit, P/N: 2311165

Applies to:	Winches equipped with power controls, last used on S/N W12E-1599	See Section 5 in Parts Manual	
Service Interval:	First 250, then every 500 hours		
Allied P/N	Description	Quantity in Kit	Order Quantity
2311165	Kit, Filter		
277490W	. Element, Filter	1	
186460W	. Gasket, Cover Plate	1	
265332W	. Gasket, Strainer Cover	1	

Filter Kit, P/N: 2311166

Applies to:	Winches equipped with power controls, first used on S/N W12E-1600 and AW12E-1001 through AW12E-1105	See Section 5 in Parts Manual	
Service Interval:	First 250, then every 500 hours		
Allied P/N	Description	Quantity in Kit	Order Quantity
2311166	Kit, Filter		
3001363W	. Element, Filter	1	
186460W	. Gasket, Cover Plate	1	
265332W	. Gasket, Strainer Cover	1	
2300935W	. Gasket, Strainer Cover	1	



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Filter Kit, P/N: 2311375			
Applies to:	Winches equipped with power controls, first used on S/N AW12E-1106	See Section 5 in Parts Manual	
Service Interval:	First 250, then every 500 hours		
Allied P/N	Description	Quantity in Kit	Order Quantity
2311375	Kit, Filter		
3001363W	. Element, Filter	1	
2304734W	. Gasket, Filter Cover	1	
2300935W	. Gasket, Strainer Cover	1	

Filter Kit, P/N: 2311376			
Applies to:	Winches equipped with electronic controls	See Section 5 in Parts Manual	
Service Interval:	First 250, then every 500 hours		
Allied P/N	Description	Quantity in Kit	Order Quantity
2311376	Kit, Filter		
2304112W	. Element, Filter	1	
2300935W	. Gasket, Strainer Cover	1	
2304734W	. Gasket, Cover Plate	1	

Gasket Kit, P/N: 281939W			
Applies to:	All W12E winches	See Section 5 in Parts Manual	
Service Interval:	Every 5,000 hours		
Allied P/N	Description	Quantity in Kit	Order Quantity
281939W	Kit, Gasket		
164708W	. Gasket, Valve Cover Plate	1	
186460W	. Gasket, Filter Cover Plate	1	
286046W	. Gasket, Cover Plate	1	
95455W	. Gasket, Cover Plate	1	
2314838	. Gasket, Transmission Cover	2	
265332W	. Gasket, Strainer Cover	1	
15895W	. O-Ring, Bearing Retainer	1	
196022W	. Gasket, Block	1	
2300935W	. Gasket, Strainer Cover	1	
303946W	. Gasket, Cover Plate	1	
2304732W	. Gasket, Valve Cover Plate	1	
2304734W	. Gasket, Filter Cover Plate	1	



Suggested Spares Guide

Brake Assembly Kit, P/N: 2311368

Applies to:	All W12E winches	See Section 5 in Parts Manual	
Service Interval:	Every 5,000 hours		
Allied P/N	Description	Quantity in Kit	Order Quantity
2311368	Kit, Brake Assembly		
328716W	. Disc, Friction	10	
264062W	. Plate, Separator	9	
131983W	. O-Ring	1	
131982W	. Ring	1	
58905W	. Snap Ring, External	1	

Clutch Shaft Kit, P/N: 2311369

Applies to:	W12E winches with gear ratios 1, 3, 4, and 6	See Section 5 in Parts Manual	
Service Interval:	Every 5,000 hours		
Allied P/N	Description	Quantity in Kit	Order Quantity
2311369	Kit, Clutch Shaft		
2310569W	. Service Kit, W12E Clutch	2	
328716W	. . Disc, Friction	8	
264062W	. . Plate, Separator	8	
264192W	. . Spring	11	
89775W	. . O-Ring	1	
79978W	. . O-Ring	1	
89776W	. . O-Ring	1	
95581W	. Ring, Seal	4	
263457W	. Snap Ring, External	1	
12990W	. Snap Ring, Internal	2	
39678W	. O-Ring	4	
39675W	. O-Ring	2	
175193W	. Lockwasher	1	
32967W	. Locknut	1	



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Clutch Shaft Kit, P/N: 2311370			
Applies to:	W12E winches with gear ratio 7	See Section 5 in Parts Manual	
Service Interval:	Every 5,000 hours		
Allied P/N	Description	Quantity in Kit	Order Quantity
2311370	Kit, Clutch Shaft		
2310569W	. Service Kit, W12E Clutch	2	
328716W	.. Disc, Friction	8	
264062W	.. Plate, Separator	8	
264192W	.. Spring	11	
89775W	.. O-Ring	1	
79978W	.. O-Ring	1	
89776W	.. O-Ring	1	
39495W	. O-Ring	2	
263457W	. Snap Ring, External	1	
95581W	. Ring, Seal	4	
39678W	. O-Ring	2	
318701W	. Adhesive	1	
175193W	. Lockwasher	1	
32967W	. Locknut	1	

Note: Inspect all hydraulic hoses during the 5,000 hour overhaul. Replace hoses as required.

Download Allied Winch Parts Manuals at <http://www.alliedsystems.com/pubs/pubs.htm>.

Brake Shaft Bearing Kit, P/N: 2311371			
Applies to:	All W12E winches	See Section 5 in Parts Manual	
Service Interval:	Every 10,000 hours		
Allied P/N	Description	Quantity in Kit	Order Quantity
2311371	Kit, Brake Shaft Bearing		
30101W	. Cone, Bearing	1	
30100W	. Cup, Bearing	1	
230326W	. Cone, Bearing	1	
30104W	. Cone, Bearing	1	

Clutch Shaft Bearing Kit, P/N: 2311372			
Applies to:	W12E winches with gear ratios 1, 3, 4, and 6	See Section 5 in Parts Manual	
Service Interval:	Every 10,000 hours		
Allied P/N	Description	Quantity in Kit	Order Quantity
2311372	Kit, Clutch Shaft Bearing		
30069W	. Cone, Bearing	1	
30059W	. Cup, Bearing	2	
230393W	. Bearing, Roller	1	
41217W	. Bearing, Ball	1	
230394W	. Bearing, Roller	2	
30080W	. Cone, Bearing	1	



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Clutch Shaft Bearing Kit, P/N: 2311373

Applies to:	W12E winches with gear ratio 7	See Section 5 in Parts Manual	
Service Interval:	Every 10,000 hours		
Allied P/N	Description	Quantity in Kit	Order Quantity
2311373	Kit, Clutch Shaft Bearing		
30080W	. Cone, Bearing	1	
2307949W	. Cone, Bearing	4	
2307950W	. Cup, Bearing	4	

Drum & Intermediate Shaft Bearing and Seal Kit, P/N: 2311374

Applies to:	All W12E winches	See Section 5 in Parts Manual	
Service Interval:	Every 10,000 hours		
Allied P/N	Description	Quantity in Kit	Order Quantity
2311374	Kit, Drum & Intermediate Shaft Bearing and Seal		
231011W	. Cone, Bearing	2	
230327W	. Cup, Bearing	2	
141149W	. Seal, Oil	1	
44570W	. Seal, Oil	1	
39764W	. O-Ring	1	
15888W	. O-Ring	1	
15886W	. O-Ring	1	
230329W	. Bearing	1	

Wire Rope Assemblies

Order as Required

Applies to:	All W12E winches			
Allied P/N	Description	Length	Will Fill Drum To:	Order Quantity
WR8-188J	Wire Rope Assembly, 1"	188 FT (57 M)	2/3 Capacity (recommended)	
WR8-285J	Wire Rope Assembly, 1"	285 FT (87 M)	Full Capacity	
WR9-150J	Wire Rope Assembly, 1 1/8"	150 FT (46 M)	2/3 Capacity (recommended)	
WR9-228J	Wire Rope Assembly, 1 1/8"	228 FT (69 M)	Full Capacity	
WR10-119J	Wire Rope Assembly, 1 1/4"	119 FT (36 M)	2/3 Capacity (recommended)	
WR10-181J	Wire Rope Assembly, 1 1/4"	181 FT (55 M)	Full Capacity	
YS10-182JWS	Wire Rope Assembly, 1 1/4"	182 FT (55 M)	Full Capacity	



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Miscellaneous Parts for All W12E Winches

In addition to the kits listed on the previous pages, Allied Systems Company recommends that you stock the following items as applicable to your winch. Check the parts manual to determine the part number for your particular winch in the section indicated.

Allied P/N	Description	Parts Manual Section	Order Quantity
95959W	Drawbar Pin	Section 1	
2303221W	Drawbar Pin, Keeper	Section 1	
Tractor Model Specific	Driveline and/or related components such As U-Joints	Section 1	
Tractor Model Specific	PTO Input Shaft Seal(s)	Section 2	
Tractor Model Specific	PTO Input Bearing(s)	Section 2	
Tractor Model Specific	Input Yoke(s) (if Present)	Section 2	
Gear Ratio/Winch Serial Number Specific	Hydraulic Pump	Section 3	

Miscellaneous Parts for W12E Winches Equipped with Power Controls

In addition to the kits listed on the previous pages, Allied Systems Company recommends that you stock the following items as applicable to your winch. Check the parts manual to determine the part number for your particular winch in the section indicated.

Allied P/N	Description	Parts Manual Section	Order Quantity
Tractor Model Specific	Control Cables	Section 3	
Tractor Model Specific	Handlevers	Section 3	

Miscellaneous Parts for W12E Winches Equipped with Electronic Controls

In addition to the kits listed on the previous pages, Allied Systems Company recommends that you stock the following items as applicable to your winch. Check the parts manual to determine the part number for your particular winch in the section indicated.

Allied P/N	Description	Parts Manual Section	Order Quantity
2304603W	Communication Cable (used for programming and troubleshooting ECM)		
Tractor Model/Gear Ratio/Serial Number Specific	Control Levers	Section 3	
Winch Serial Number Specific	Coils and Valves for Control Manifold	Section 3	
Winch Serial Number Specific	Wire Harnesses	Section 3	
Tractor Model Specific	Joystick Panel Switches	Section 3	
Tractor Model/Gear Ratio/Serial Number Specific	Programmed Control Module, ECM		



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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 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

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254400	3-69	5	127045W	3-30	80	1300785W	3-12	1	133258W	2-10	13
2310252	3-69	3	127045W	3-33	80	1300785W	3-18	1	133258W	2-11	13
2310253	3-69	5	127045W	3-5	85	1300785W	3-60	204	133258W	2-12	8
2310258	3-69	3	127045W	3-7	76	1300785W	3-7	15	133258W	2-13	8
2310260	3-69	2	12897W	3-5	86	1300789W	3-19	1	133258W	2-14	12
2311558	3-69	6	12897W	3-7	72	1302039W	3-25		133258W	2-16	12
2315717	3-69		12919W	3-132	7	1302040W	3-18	28	133258W	2-2	8
2315807	3-69	2	12940W	2-20	8	1302041W	3-25	20	133258W	2-21	12
2315808	3-69	4	12940W	3-133	7	1302042W	3-25	10	133258W	2-22	12
2315811	3-69	7	12944W	2-12	10	1302043W	3-25	9	133258W	2-6	1
109453W	1-11	27	12944W	2-2	10	1302044W	3-25	8	133258W	2-7	13
109453W	1-43	38	12944W	2-23	10	1302045W	3-25	7	133258W	2-9	12
109453W	2-10	10	12944W	2-24	10	1302046W	3-25	6	133274W	2-31	2
109453W	2-11	10	12944W	2-25	10	1302047W	3-25	5	133274W	2-9	13
109453W	2-12	9	12944W	2-26	10	1302048W	3-25	4	133275W	2-31	3
109453W	2-13	10	12946W	2-27	10	1302049W	3-25	3	133275W	2-33	1
109453W	2-14	13	129563W	1-35	11	1303508W	3-25	2	133276W	2-31	4
109453W	2-15	22	129563W	2-12	14	1306001W	3-25	1	133276W	2-33	1
109453W	2-16	13	129563W	2-28	10	1306002W	3-18	29	133469W	2-33	1
109453W	2-17	22	129563W	3-105	9	1306003W	3-25	14	133469W	3-117	17
109453W	2-2	9	129563W	3-106	18	1310819W	1-13	53	134803W	3-105	2
109453W	2-21	13	129563W	3-107	18	1310819W	1-18	4	134803W	3-106	19
109453W	2-22	13	129563W	3-108	18	1310819W	3-25	12	134803W	3-107	19
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109453W	2-4	22	129563W	3-111	11	131460W	1-9	4	134803W	3-109	14
109453W	2-5	22	129563W	3-13	24	131460W	3-51	53	134803W	3-110	14
109453W	3-30	75	129563W	3-21	23	131460W	3-54	53	134803W	3-111	14
111331W	2-7	10	129563W	3-23	27	131460W	3-57	53	134803W	3-112	14
111331W	2-9	10	129563W	3-3	47	131982W	2-29	8	134803W	3-60	31
111331W	3-30	30	129563W	3-5	43	131982W	3-60	53	134803W	3-91	15
111331W	3-33	30	129563W	3-51	80	131982W	5-12	4	134803W	3-93	15
111331W	3-36	30	129563W	3-54	80	131983W	2-29	9	134803W	3-95	15
111331W	3-39	30	129563W	3-57	80	131983W	5-12	3	134821W	1-21	14
111331W	3-42	30	12963W	2-23	18	131983W	6-4		134821W	1-24	1
111331W	3-45	30	12963W	2-24	18	131985W	6-4		134821W	1-29	2
111331W	3-51	30	12963W	2-25	18	131990W	2-29	13	134821W	1-32	1
1151722W	3-54	30	12963W	2-26	18	132009W	2-29	19	134821W	1-34	1
118361W	2-37	46	12963W	3-60	80	132009W	3-3	32	134821W	1-37	4
118361W	3-10	16	12963W	3-7	124	132009W	3-5	32	134821W	1-40	3
118361W	3-57	30	12981W	2-10	4	1321665W	3-7	30	134821W	1-44	6
118365W	3-10	26	12981W	2-11	4	1324880W	1-49	2	134821W	1-47	1
118365W	3-8	13	12981W	2-12	2	133256W	1-43	35	134821W	1-48	3
118365W	3-9	13	12981W	2-13	2	133256W	2-10	11	134821W	3-97	61
123270W	2-23	41	12981W	2-14	2	133256W	2-11	11	136385W	1-21	5
123270W	2-24	41	12981W	2-16	2	133256W	2-12	8	136385W	1-29	3
123270W	3-8	22	12981W	2-2	2	133256W	2-13	6	136385W	1-8	2
123270W	3-9	20	12981W	2-21	2	133256W	2-14	10	136405W	1-29	5
124588W	2-25	61	12981W	2-22	2	133256W	2-16	10	136405W	1-8	3
124588W	2-26	61	12981W	2-27	18	133256W	2-2	8	137852W	1-47	2
124588W	3-3	12	12981W	2-28	18	133256W	2-21	10	137852W	3-100	6
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125402W	2-7	2	1300780W	3-51	15	133257W	2-21	11	137852W	3-45	122
125402W	3-7	10	1300780W	3-54	15	133257W	2-22	11	137852W	3-51	35
127009W	2-8	3	1300780W	3-57	15	133257W	2-6	1	137852W	3-51	122
127009W	2-9	2	1300780W	3-60	15	133257W	2-7	12	137852W	3-54	122
127009W	3-3	85	1300780W	5-10	10	133257W	2-9	11	137852W	3-57	35

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137852W	3-57	122	14563W	3-57	77	15039W	3-107	6	15115W	3-98	27
137852W	3-60	35	14595W	1-5	20	15039W	3-108	6	15127W	3-100	19
137852W	3-60	122	14595W	1-7	20	15039W	3-109	23	15127W	3-101	19
137852W	3-70	6	14595W	3-10	39	15039W	3-111	23	15127W	3-102	19
137852W	3-71	5	146322W	2-12	3	15039W	3-70	9	15127W	3-103	78
137852W	3-72	5	146322W	2-13	16	15039W	3-71	8	15127W	3-104	78
137852W	3-73	5	146322W	2-14	3	15039W	3-72	8	15127W	3-106	14
137852W	3-75	30	146322W	2-16	3	15039W	3-73	8	15127W	3-107	14
137852W	3-81	7	146322W	2-2	3	15039W	3-75	33	15127W	3-108	14
137852W	3-82	6	146322W	2-21	3	15039W	3-91	5	15127W	3-109	34
137852W	3-83	6	146322W	2-22	3	15039W	3-93	5	15127W	3-110	34
137852W	3-84	6	14668W	3-10	1	15039W	3-95	5	15127W	3-111	34
137852W	3-87	15	14668W	3-3	41	15039W	3-99	10	15127W	3-112	34
137852W	3-91	22	14668W	3-30	85	15055W	3-11	20	15127W	3-71	16
137852W	3-93	22	14668W	3-30	121	15055W	3-11	22	15127W	3-72	16
137852W	3-95	22	14668W	3-33	121	15055W	3-17	20	15127W	3-73	16
138750W	3-129	19	14668W	3-7	123	15055W	3-17	22	15127W	3-75	44
138750W	3-130	19	14668W	3-9	35	15055W	3-18	27	15127W	3-77	44
138750W	3-99	7	14669W	3-5	83	15055W	3-20	9	15127W	3-79	44
138908W	3-131	18	14712W	3-11	5	15055W	3-20	19	15127W	3-82	16
139W	2-29	5	14712W	3-17	5	15055W	3-22	20	15127W	3-83	16
139W	3-3	76	14712W	3-22	5	15055W	3-22	22	15127W	3-84	16
139W	3-5	72	14712W	3-3	55	15055W	3-23	12	15127W	3-87	27
140401W	3-7	36	14718W	2-38	4	15055W	3-23	32	15127W	3-89	27
140447W	2-29	7	14718W	2-39	10	15055W	3-24	23	15127W	3-91	17
14066	2-29	11	14723W	3-30	53	15056W	3-11	22	15127W	3-93	17
14066	3-33	75	14723W	3-33	53	15056W	3-13	19	15127W	3-95	17
14066	3-36	75	14723W	3-36	53	15056W	3-17	22	15127W	3-97	44
14066	3-39	75	14723W	3-39	53	15056W	3-20	5	15128W	1-11	14
14066	3-42	75	14723W	3-42	53	15056W	3-21	18	15128W	1-11	28
14066	3-45	75	14723W	3-45	53	15056W	3-22	22	15128W	1-13	54
14066	3-48	20	14723W	3-5	55	15056W	3-23	18	15128W	1-18	5
14066	3-51	75	14723W	3-7	53	15086W	3-132	12	15128W	1-25	14
14066	3-54	75	14761W	3-3	53	15086W	3-133	12	15128W	1-26	14
14066	3-57	75	14761W	3-30	50	15106W	3-13	18	15128W	1-36	1
141149W	2-31	22	14761W	3-33	50	15106W	3-20	15	15128W	1-40	7
141149W	5-16	3	14761W	3-36	50	15106W	3-21	17	15128W	1-41	7
141149W	6-6		14761W	3-39	50	15113W	3-100	20	15128W	1-44	11
141348W	2-38	12	14761W	3-42	50	15113W	3-101	20	15128W	1-45	11
141348W	2-39	9	14761W	3-45	50	15113W	3-102	20	15128W	1-8	5
142682W	3-33	38	14761W	3-5	53	15113W	3-103	79	15128W	1-9	5
142682W	3-36	38	14761W	3-51	50	15113W	3-104	79	15134W	3-117	21
142682W	3-39	38	14761W	3-54	50	15113W	3-106	15	15134W	3-132	9
142682W	3-42	38	14761W	3-57	50	15113W	3-107	15	15134W	3-133	9
142682W	3-45	38	14761W	3-60	50	15113W	3-108	15	15134W	3-30	46
142682W	3-48	11	14761W	3-7	50	15113W	3-109	35	15134W	3-33	46
14345W	3-24	13	15004W	3-25	16	15113W	3-110	35	15134W	3-36	46
14349W	3-3	56	15005W	3-25	18	15113W	3-111	35	15134W	3-39	46
14349W	3-5	56	15024W	3-14	11	15113W	3-112	35	15134W	3-42	46
14349W	3-7	60	15024W	3-16	22	15113W	3-121	13	15134W	3-45	46
14500W	3-3	40	15024W	3-25	15	15113W	3-71	17	15134W	3-51	46
14500W	3-3	52	15027W	3-10	14	15113W	3-72	17	15134W	3-54	46
14500W	3-5	40	15027W	3-8	11	15113W	3-73	17	15134W	3-57	46
14500W	3-5	45	15027W	3-9	10	15113W	3-75	45	15134W	3-60	46
14500W	3-7	44	15030W	3-11	2	15113W	3-77	45	15134W	3-7	46
14501W	3-24	14	15030W	3-13	6	15113W	3-79	45	15135W	3-11	24
14538W	3-5	26	15030W	3-17	2	15113W	3-80	24	15135W	3-13	7
14539W	3-3	38	15030W	3-20	3	15113W	3-82	17	15135W	3-17	24
14539W	3-3	77	15030W	3-21	6	15113W	3-83	17	15135W	3-21	7
14539W	3-5	38	15030W	3-22	2	15113W	3-84	17	15135W	3-22	24
14563W	3-30	77	15030W	3-23	11	15113W	3-87	28	15135W	3-23	5
14563W	3-33	77	15030W	3-24	3	15113W	3-89	28	15135W	3-24	20
14563W	3-36	77	15039W	3-100	9	15113W	3-91	18	15136W	2-20	10
14563W	3-39	77	15039W	3-101	9	15113W	3-93	18	15155W	3-11	15
14563W	3-42	77	15039W	3-102	9	15113W	3-95	18	15155W	3-11	21
14563W	3-45	77	15039W	3-103	68	15113W	3-97	45	15155W	3-13	2
14563W	3-51	77	15039W	3-105	12	15113W	3-98	24	15155W	3-17	15
14563W	3-54	77	15039W	3-106	6	15115W	3-80	27	15155W	3-17	21

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15155W	3-20	10	15158W	3-5	80	15420W	1-40	3	15887W	2-28	53
15155W	3-20	20	15158W	3-51	64	15420W	1-47	1	15887W	2-3	25
15155W	3-21	2	15158W	3-54	64	15483W	1-47	3	15887W	2-4	25
15155W	3-22	15	15158W	3-57	64	15483W	2-20	7	15887W	2-5	25
15155W	3-22	21	15158W	3-60	64	15483W	3-10	5	15888W	2-31	24
15155W	3-23	9	15158W	3-7	80	15483W	3-3	80	15888W	2-33	2
15155W	3-23	23	15160W	1-3	13	15483W	3-5	73	15888W	5-16	6
15155W	3-23	31	15160W	2-31	6	15483W	3-9	37	15888W	6-6	
15155W	3-24	11	15160W	2-33	1	156133W	3-105	3	15895W	1-3	8
15155W	3-3	18	15160W	4-4	7	156133W	3-106	20	15895W	1-5	33
15156W	1-24	6	15166W	4-2	16	156133W	3-107	20	15895W	2-38	5
15156W	1-3	19	15166W	4-3	16	156133W	3-108	20	15895W	2-39	11
15156W	1-32	6	15170W	1-29	5	156133W	3-109	15	15895W	5-8	7
15156W	1-34	6	15170W	1-47	2	156133W	3-110	15	15895W	6-3	
15156W	1-5	26	15170W	1-48	4	156133W	3-111	15	15898W	2-33	2
15156W	1-7	26	15176W	3-5	18	156133W	3-112	15	159179W	2-15	4
15156W	3-10	3	15178W	3-5	18	156133W	3-132	14	159179W	2-17	4
15156W	3-11	21	15179W	2-15	15	156133W	3-133	14	159179W	2-19	4
15156W	3-13	15	15179W	2-17	15	156133W	3-91	16	159179W	2-3	4
15156W	3-17	21	15179W	2-19	15	156133W	3-93	16	159179W	2-4	4
15156W	3-18	31	15179W	2-3	15	156133W	3-95	16	159179W	2-5	4
15156W	3-20	6	15179W	2-4	15	156133W	3-97	62	15923W	3-25	17
15156W	3-20	22	15179W	2-5	15	156689W	3-117	1	15929W	2-12	3
15156W	3-21	15	15212W	3-3	75	156689W	3-3	1	15929W	2-13	15
15156W	3-22	21	15212W	3-5	69	156689W	3-30	1	15929W	2-14	4
15156W	3-23	17	15212W	3-7	37	156689W	3-33	1	15929W	2-16	4
15156W	3-3	5	15225W	3-11	6	156689W	3-36	1	15929W	2-2	3
15156W	3-30	5	15225W	3-17	6	156689W	3-39	1	15929W	2-21	4
15156W	3-33	5	15225W	3-22	6	156689W	3-42	1	15929W	2-22	4
15156W	3-36	5	15225W	3-24	6	156689W	3-45	1	15932W	3-25	19
15156W	3-39	5	15240W	1-21	15	156689W	3-48	29	15962W	3-10	7
15156W	3-42	5	15240W	1-24	2	156689W	3-5	1	15962W	3-9	17
15156W	3-45	5	15240W	1-29	2	156689W	3-51	1	15963W	3-3	48
15156W	3-5	5	15240W	1-32	2	156689W	3-54	1	16001W	4-2	5
15156W	3-5	18	15240W	1-34	2	156689W	3-57	1	16001W	4-3	5
15156W	3-51	5	15240W	1-37	5	156689W	3-60	1	16006W	4-4	3
15156W	3-54	5	15240W	1-44	7	156689W	3-7	1	16020W	2-18	14
15156W	3-57	5	15240W	1-48	3	15859W	2-20	5	16020W	2-20	14
15156W	3-60	5	15240W	1-8	2	15860W	3-10	11	160756W	3-129	12
15156W	3-7	5	15272W	1-3	2	15860W	3-8	9	160758W	3-129	15
15156W	3-9	33	15272W	1-5	17	15860W	3-9	7	16165W	3-3	71
15158W	1-3	7	15272W	1-7	17	15866W	1-36	6	16165W	3-30	42
15158W	1-3	9	15272W	4-2	19	15866W	1-38	4	16165W	3-33	42
15158W	1-3	26	15272W	4-3	19	15866W	1-39	4	16165W	3-5	71
15158W	1-3	28	15273W	1-3	3	15878W	2-29	9	16165W	3-7	75
15158W	1-3	30	15283W	1-38	1	158862W	3-3	73	16205W	3-132	11
15158W	2-10	9	15283W	1-39	1	158862W	3-5	59	16205W	3-133	11
15158W	2-11	9	15283W	1-43	60	158862W	3-7	125	162155W	3-7	17
15158W	2-23	7	152848W	2-18	9	15886W	2-31	23	16321W	2-31	16
15158W	2-24	7	152848W	2-20	9	15886W	2-33	2	16321W	2-33	2
15158W	2-25	7	15304W	1-3	4	15886W	5-16	7	16321W	2-42	2
15158W	2-26	7	15305W	2-23	3	15886W	6-6		16321W	2-42	3
15158W	2-27	7	15305W	2-24	3	15887W	1-11	23	16376W	3-23	16
15158W	2-28	7	15305W	2-25	3	15887W	1-13	16	16379W	3-30	45
15158W	2-35	2	15305W	2-26	3	15887W	1-15	16	16379W	3-33	45
15158W	2-37	42	15305W	2-27	3	15887W	1-17	16	16379W	3-36	45
15158W	2-7	9	15305W	2-28	3	15887W	1-18	1	16379W	3-39	45
15158W	2-9	9	15306W	1-3	22	15887W	1-25	16	16379W	3-42	45
15158W	3-3	58	15307W	1-3	11	15887W	1-26	16	16379W	3-45	45
15158W	3-3	91	15307W	1-5	32	15887W	1-27	24	16379W	3-51	45
15158W	3-30	64	15314W	3-10	34	15887W	1-28	1	16379W	3-54	45
15158W	3-33	64	15314W	3-8	29	15887W	1-35	9	16379W	3-57	45
15158W	3-36	64	15314W	3-9	18	15887W	1-9	1	16445W	3-11	12
15158W	3-39	64	15316W	3-5	48	15887W	2-23	53	16445W	3-17	12
15158W	3-42	64	15316W	3-7	83	15887W	2-24	53	16445W	3-22	12
15158W	3-45	64	15319W	1-3	21	15887W	2-25	53	16463W	3-3	37
15158W	3-5	18	15319W	1-5	14	15887W	2-26	53	16463W	3-5	37

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164703W	3-3	13	16556W	3-36	73	16805W	3-30	4	16923W	3-45	79
164703W	3-5	13	16556W	3-39	73	16805W	3-33	4	16923W	3-51	79
164703W	3-7	24	16556W	3-42	73	16805W	3-36	4	16923W	3-54	79
164708W	1-3	18	16556W	3-45	73	16805W	3-39	4	16923W	3-57	79
164708W	5-8	1	16556W	3-48	19	16805W	3-42	4	16923W	3-60	79
164708W	6-3		16556W	3-51	73	16805W	3-45	4	16923W	3-7	45
16484W	3-10	10	16556W	3-54	73	16805W	3-5	77	16931W	3-30	84
16484W	3-10	37	16556W	3-57	73	16805W	3-51	4	16948W	3-3	68
16484W	3-3	43	16559W	3-3	46	16805W	3-54	4	16948W	3-5	68
16484W	3-3	46	16559W	3-30	17	16805W	3-57	4	16948W	3-7	74
16484W	3-3	65	16559W	3-33	17	16805W	3-60	4	16982W	3-3	50
16484W	3-3	81	16559W	3-36	17	16805W	3-7	4	16982W	3-3	68
16484W	3-5	33	16559W	3-39	17	16815W	3-20	4	16982W	3-5	68
16484W	3-5	46	16559W	3-42	17	16816W	1-24	5	16982W	3-7	74
16484W	3-5	65	16559W	3-45	17	16816W	1-32	5	16987W	3-3	42
16484W	3-66	2	16559W	3-5	46	16816W	1-34	5	16987W	3-30	120
16484W	3-7	31	16559W	3-51	17	16828W	3-11	23	16987W	3-33	120
16484W	3-7	39	16559W	3-54	17	16828W	3-117	20	16987W	3-36	120
16484W	3-8	5	16559W	3-57	17	16828W	3-132	13	16987W	3-39	120
16484W	3-9	8	16559W	3-60	17	16828W	3-133	13	16987W	3-42	120
16485W	3-5	22	16559W	3-60	206	16828W	3-14	7	16987W	3-45	120
16486W	3-3	6	16559W	3-7	39	16828W	3-16	23	16987W	3-5	42
16486W	3-3	10	16561W	3-117	29	16828W	3-17	23	16987W	3-5	89
16486W	3-3	11	16561W	3-3	10	16828W	3-21	14	16987W	3-51	120
16486W	3-3	13	16561W	3-30	13	16828W	3-22	23	16987W	3-54	120
16486W	3-3	22	16561W	3-5	10	16828W	3-3	63	16987W	3-57	120
16486W	3-5	6	16561W	3-60	76	16828W	3-30	35	16987W	3-60	120
16486W	3-5	10	16561W	3-7	13	16828W	3-33	35	16987W	3-7	122
16486W	3-5	11	16568W	3-3	33	16828W	3-36	35	16989W	3-117	23
16486W	3-5	13	16568W	3-5	33	16828W	3-39	35	16989W	3-3	39
16486W	3-5	81	16568W	3-7	31	16828W	3-42	35	16989W	3-30	48
16486W	3-7	6	16569W	3-30	31	16828W	3-45	35	16989W	3-33	48
16486W	3-7	13	16569W	3-33	31	16828W	3-5	63	16989W	3-33	72
16486W	3-7	24	16569W	3-36	31	16828W	3-60	45	16989W	3-36	48
16486W	3-7	27	16569W	3-39	31	16828W	3-7	35	16989W	3-36	72
16486W	3-7	65	16569W	3-42	31	16829W	3-5	17	16989W	3-39	48
16487W	3-3	35	16569W	3-45	31	16830W	2-35	2	16989W	3-39	72
16487W	3-3	49	16569W	3-51	31	16830W	2-37	43	16989W	3-42	48
16487W	3-3	64	16569W	3-54	31	16830W	3-3	88	16989W	3-42	72
16487W	3-5	49	16569W	3-57	31	16830W	3-30	63	16989W	3-45	48
16487W	3-5	50	16569W	3-60	82	16830W	3-33	63	16989W	3-45	72
16487W	3-5	64	16597W	3-13	14	16830W	3-36	63	16989W	3-48	18
16487W	3-7	41	16597W	3-3	4	16830W	3-39	63	16989W	3-5	39
16541W	3-3	43	16597W	3-5	4	16830W	3-42	63	16989W	3-51	48
16541W	3-30	27	16598W	3-5	17	16830W	3-45	63	16989W	3-51	72
16541W	3-33	27	16602W	1-49	6	16830W	3-5	79	16989W	3-54	48
16541W	3-36	27	16602W	3-30	60	16830W	3-51	63	16989W	3-54	72
16541W	3-39	27	16602W	3-33	60	16830W	3-54	63	16989W	3-57	48
16541W	3-42	27	16602W	3-36	60	16830W	3-57	63	16989W	3-57	72
16541W	3-45	27	16602W	3-39	60	16830W	3-60	63	16989W	3-60	48
16541W	3-51	27	16602W	3-42	60	16830W	3-7	77	16989W	3-7	48
16541W	3-54	27	16602W	3-45	60	16836W	3-13	1	17059W	3-3	27
16541W	3-57	27	16602W	3-51	60	16836W	3-21	1	17059W	3-5	27
16541W	3-60	27	16602W	3-54	60	16909W	3-30	36	17059W	3-7	22
16543W	3-30	12	16602W	3-57	60	16909W	3-33	36	17062W	3-117	22
16543W	3-33	12	16602W	3-60	60	16909W	3-36	36	17062W	3-30	47
16543W	3-36	12	16645W	4-4	7	16909W	3-39	36	17062W	3-33	47
16543W	3-39	12	16669W	3-3	26	16909W	3-42	36	17062W	3-36	47
16543W	3-42	12	166905W	3-10	29	16909W	3-45	36	17062W	3-39	47
16543W	3-45	12	166905W	3-8	25	16909W	3-51	36	17062W	3-42	47
16543W	3-51	12	166905W	3-9	24	16909W	3-54	36	17062W	3-45	47
16543W	3-54	12	166911W	3-10	28	16909W	3-57	36	17062W	3-51	47
16543W	3-57	12	166911W	3-8	24	16923W	1-3	24	17062W	3-54	47
16543W	3-60	213	166911W	3-9	23	16923W	3-30	79	17062W	3-57	47
165504W	3-24	19	16691W	3-23	22	16923W	3-33	79	17062W	3-60	47
16550W	3-5	81	16805W	3-18	30	16923W	3-36	79	17062W	3-7	47
16550W	3-7	65	16805W	3-20	21	16923W	3-39	79	17063W	3-117	6

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170987W	3-10	25	178402W	2-10	8	186460W	1-3	16	195990W	3-9	31
170987W	3-8	20	178402W	2-11	8	186460W	5-4	2	195991W	3-8	4
170987W	3-9	21	178402W	2-7	8	186460W	5-5	2	195991W	3-9	4
17118W	2-38	13	178402W	2-9	8	186460W	5-8	2	195992W	3-10	9
17118W	2-39	8	179443W	1-3	19	186460W	6-2		195992W	3-8	7
17258W	3-3	23	179443W	1-5	25	186460W	6-2		195992W	3-9	5
172800W	2-31	12	179443W	1-7	25	186460W	6-3		195993W	3-10	12
172802W	2-31	1	18000W	1-48	5	18670W	4-2	15	195993W	3-8	8
17300W	3-36	42	18001W	3-33	110	18670W	4-3	15	195993W	3-9	6
17300W	3-39	42	18001W	3-36	110	18695W	3-81	8	195995W	3-10	15
17300W	3-42	42	18001W	3-7	110	18695W	3-82	7	195995W	3-8	12
17300W	3-45	42	182178W	2-31	19	18695W	3-83	7	195995W	3-9	11
17300W	3-48	13	182179W	2-31	25	18695W	3-84	7	195997W	3-10	24
17300W	3-51	42	182191W	2-12	1	18695W	3-87	17	195997W	3-8	21
17300W	3-54	42	182191W	2-13	9	18717W	3-14	12	195997W	3-9	30
17300W	3-57	42	182191W	2-16	1	18717W	3-16	22	196000W	3-10	23
17300W	3-60	42	182191W	2-2	1	18717W	3-25	23	196000W	3-8	19
17300W	3-7	83	182191W	2-21	1	18717W	3-26	18	196000W	3-9	28
173048W	1-43	57	182191W	2-22	1	187878W	3-60	21	196002W	3-10	30
173048W	2-15	24	182198W	2-29	20	18849W	1-21	1	196002W	3-8	26
173048W	2-16	16	182209W	1-3	7	18849W	1-23	7	196002W	3-9	25
173048W	2-3	24	182210W	1-3	13	18849W	1-29	4	196003W	3-10	33
173048W	2-4	24	182733W	4-2	1	18849W	1-31	7	196003W	3-8	15
173048W	2-5	24	182733W	4-3	1	18849W	1-36	7	196003W	3-9	15
173608W	4-2	20	18425W	3-20	33	18849W	1-37	9	196004W	3-10	19
173608W	4-3	20	18497W	3-11	23	18849W	1-38	5	196004W	3-8	10
175189W	2-35	22	18497W	3-17	23	18849W	1-39	5	196004W	3-9	9
175193W	2-35	25	18497W	3-22	23	18849W	1-40	4	196006W	3-10	8
175193W	2-37	23	18498W	3-3	17	18849W	1-41	5	196006W	3-8	1
175193W	5-10	13	18508W	3-20	8	18849W	1-43	52	196006W	3-9	16
175193W	5-11	13	18508W	3-20	18	18849W	1-8	4	196009W	3-10	31
175193W	6-4		18513W	3-18	25	18849W	3-33	100	196009W	3-8	27
175193W	6-5		18515W	3-117	15	18849W	3-36	100	196009W	3-9	26
176208W	1-5	23	18515W	3-13	3	18849W	3-7	100	196022W	3-117	18
176208W	1-7	23	18515W	3-19	5	190930W	3-13	9	196022W	3-3	62
17777W	3-30	59	18515W	3-20	11	190930W	3-21	9	196022W	3-30	43
17777W	3-30	79	18515W	3-21	3	191534W	3-19	4	196022W	3-33	43
17777W	3-33	124	18515W	3-23	24	191941W	3-12	25	196022W	3-36	43
17777W	3-36	124	18515W	3-30	29	192407W	3-11	4	196022W	3-39	43
17777W	3-39	124	18515W	3-33	29	192407W	3-17	4	196022W	3-42	43
17777W	3-42	124	18515W	3-36	29	192407W	3-20	28	196022W	3-45	43
17777W	3-45	124	18515W	3-39	29	192407W	3-22	4	196022W	3-48	14
17777W	3-51	124	18515W	3-42	29	192407W	3-24	12	196022W	3-5	62
17777W	3-54	124	18515W	3-45	29	192948W	1-36	1	196022W	3-51	43
17777W	3-57	124	18515W	3-51	29	192948W	1-37	1	196022W	3-54	43
17777W	3-60	124	18515W	3-54	29	192949W	1-40	6	196022W	3-57	43
17777W	3-7	84	18515W	3-57	29	192949W	1-41	4	196022W	3-60	43
177949W	2-31	17	18515W	3-60	29	193590W	2-2	12	196022W	3-7	43
177949W	2-33	2	18518W	3-19	3	193591W	2-35	17	196022W	5-9	8
177949W	2-42	2	18519W	2-20	12	193594W	2-35	27	196022W	6-3	
177949W	2-42	2	18524W	3-30	28	193598W	2-35	27	196114W	3-11	10
177951W	3-3	90	18526W	3-117	14	193601W	2-35	12	196114W	3-17	10
177951W	3-30	51	18526W	3-33	28	193604W	2-29	2	196114W	3-22	10
177951W	3-33	51	18526W	3-36	28	194090W	3-3	24	196128W	3-11	11
177951W	3-36	51	18526W	3-39	28	194090W	3-5	24	196128W	3-13	8
177951W	3-39	51	18526W	3-42	28	195408W	1-3	20	196128W	3-17	11
177951W	3-42	51	18526W	3-45	28	195408W	1-5	8	196128W	3-20	14
177951W	3-45	51	18526W	3-48	8	195408W	1-7	8	196128W	3-21	8
177951W	3-5	87	18526W	3-51	28	195893W	3-3	78	196128W	3-22	11
177951W	3-51	51	18526W	3-54	28	19589W	3-3	54	196128W	3-23	7
177951W	3-54	51	18526W	3-57	28	19589W	3-30	54	196128W	3-24	7
177951W	3-57	51	18526W	3-60	28	19589W	3-33	54	196129W	3-11	13
177951W	3-60	51	18552W	3-5	23	19589W	3-36	54	196129W	3-17	13
177951W	3-7	51	18617W	2-15	1	19589W	3-39	54	196129W	3-22	13
178402W	1-3	9	18617W	2-19	1	19589W	3-42	54	196129W	3-23	8
178402W	1-3	25	18617W	2-3	1	19589W	3-45	54	196129W	3-23	29
178402W	1-3	27	18617W	2-4	1	19589W	3-5	54	196129W	3-24	10

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196130W	3-22	14	199594W	2-29	4	219172W	3-42	1	221729W	1-31	11
196130W	3-23	30	203225W	3-17	19	219172W	3-45	1	221729W	1-33	15
196130W	3-24	9	205006W	3-11	17	219172W	3-48	29	221729W	1-35	6
196132W	3-11	7	205006W	3-17	17	219172W	3-5	1	221729W	1-43	61
196132W	3-17	7	205006W	3-20	27	219172W	3-51	1	221729W	1-44	4
196132W	3-22	7	205006W	3-22	17	219172W	3-54	1	221729W	1-8	1
196132W	3-24	8	207563W	2-33	1	219172W	3-57	1	221743W	2-15	1
196134W	3-11	9	207919W	3-87	6	219172W	3-60	1	221743W	2-19	1
196134W	3-17	9	209155	3-117	24	219172W	3-7	1	221743W	2-20	11
196134W	3-22	9	209155	3-60	81	219246W	3-3	65	221743W	2-3	1
196144W	3-11	3	209639W	3-3	8	219246W	3-5	65	221743W	2-4	1
196144W	3-13	11	209639W	3-30	8	219246W	3-7	61	221743W	2-5	1
196144W	3-17	3	209639W	3-33	8	220153	3-7	38	221763W	3-121	12
196144W	3-20	13	209639W	3-36	8	220190W	2-37	4	221763W	3-14	3
196144W	3-21	11	209639W	3-39	8	2207101W	1-25	5	221763W	3-16	22
196144W	3-22	3	209639W	3-42	8	2207101W	1-33	5	221763W	3-80	23
196144W	3-23	2	209639W	3-45	8	221373W	1-36	1	221763W	3-98	23
196462W	3-11		209639W	3-5	8	221373W	1-48	1	221767W	3-14	8
196462W	3-17		209639W	3-51	8	221377W	1-38	2	221767W	3-16	23
196462W	3-22		209639W	3-54	8	221377W	1-39	2	221767W	3-80	26
196465W	3-11	3	209639W	3-57	8	2214907	3-39	55	221767W	3-98	26
196465W	3-17	3	209639W	3-60	8	221499W	3-80	25	221771W	1-11	12
196465W	3-22	3	209639W	3-7	8	221499W	3-98	25	221771W	1-13	12
196468W	3-11	8	209744	3-10	40	221563W	1-11	11	221771W	1-15	12
196468W	3-17	8	210641W	3-30	69	221563W	1-13	11	221771W	1-17	12
196468W	3-22	8	210641W	3-5	76	221563W	1-15	11	221771W	1-25	12
196469W	3-20	2	210641W	3-7	69	221563W	1-17	11	221771W	1-26	12
197066W	3-100	10	211235W	1-8	5	221563W	1-25	11	221771W	1-27	23
197066W	3-101	10	211504W	2-37	8	221563W	1-26	11	221775W	1-23	15
197066W	3-102	10	211513W	1-21	2	221563W	1-27	22	221775W	1-31	15
197066W	3-103	69	211513W	1-29	1	221569W	2-37	44	221775W	2-29	6
197066W	3-105	13	211513W	1-29	5	221577W	1-46	2	221777W	1-11	2
197066W	3-106	7	211513W	1-8	1	221577W	2-18	15	221777W	1-13	2
197066W	3-107	7	211560	3-117	30	221577W	2-20	15	221777W	1-15	2
197066W	3-108	7	211560	3-60	77	221621W	1-23	14	221777W	1-17	2
197066W	3-109	24	213036W	1-43	50	221621W	1-31	14	221777W	1-25	2
197066W	3-111	24	213037W	1-43	51	221637W	2-31	10	221777W	1-26	2
197066W	3-70	10	213039W	1-43	30	221637W	2-33	1	221777W	1-27	2
197066W	3-71	9	213039W	2-16	14	221662W	1-11	1	221777W	1-33	2
197066W	3-72	9	213146W	1-43	55	221662W	1-13	1	221786W	1-11	4
197066W	3-73	9	213146W	2-16	17	221662W	1-15	1	221786W	1-13	4
197066W	3-75	34	21420W	1-3	23	221662W	1-17	1	221786W	1-15	4
197066W	3-81	10	21420W	1-5	12	221662W	1-25	1	221786W	1-17	4
197066W	3-82	8	21420W	1-7	12	221662W	1-26	1	221786W	1-21	11
197066W	3-83	8	214219	3-45	22	221662W	1-27	1	221786W	1-23	10
197066W	3-84	8	214219	3-48	7	221662W	1-33	1	221786W	1-24	10
197066W	3-87	19	214219W	3-33	22	221724W	1-45	6	221786W	1-25	4
197066W	3-91	6	214219W	3-36	22	221725W	1-11	15	221786W	1-26	4
197066W	3-93	6	214219W	3-39	22	221725W	1-11	26	221786W	1-27	4
197066W	3-95	6	214219W	3-42	22	221725W	1-13	52	221786W	1-29	1
197066W	3-99	11	216224W	1-40	7	221725W	1-18	3	221786W	1-31	10
198048W	2-12	12	216224W	1-41	8	221725W	1-25	15	221786W	1-32	10
198051W	1-38	1	217623W	2-14	1	221725W	1-26	15	221786W	1-33	4
198051W	1-39	1	217624W	1-40	3	221725W	1-40	7	221786W	1-33	14
198052W	2-12	15	217624W	1-41	9	221725W	1-8	5	221786W	1-34	10
198053W	2-12	13	217625W	1-40	5	221725W	1-9	3	221786W	1-35	4
198063W	3-3	81	217626W	1-40	2	221728W	1-11	3	221786W	1-36	2
198385W	3-3	57	217754W	3-3	28	221728W	1-13	3	221786W	1-37	7
198385W	3-5	57	217754W	3-3	31	221728W	1-15	3	221786W	1-43	62
198385W	3-7	79	217754W	3-5	28	221728W	1-17	3	221786W	1-44	5
19899W	2-38	1	217754W	3-5	31	221728W	1-25	3	221786W	1-45	5
199040W	3-129	14	218068W	2-37	19	221728W	1-26	3	221786W	1-8	1
19932W	2-15	23	219172W	3-117	1	221728W	1-27	3	221867W	3-25	13
19932W	2-3	23	219172W	3-3	1	221728W	1-33	3	222262W	1-3	5
19932W	2-4	23	219172W	3-30	1	221728W	1-45	7	222262W	1-5	21
19932W	2-5	23	219172W	3-33	1	221729W	1-21	10	222262W	1-7	21

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222402W	3-60	14	225851	1-23	13	2301487W	3-23	13	2303677W	3-33	34
222442W	3-33	71	225851	1-31	13	2301785W	1-25	13	2303677W	3-36	34
222442W	3-36	71	226405W	3-7	26	2301785W	1-26	13	2303677W	3-39	34
222442W	3-39	71	226441W	2-22	14	2301853W	1-21	3	2303677W	3-42	34
222442W	3-42	71	226445W	3-10	13	2301853W	1-29	2	2303677W	3-45	34
222442W	3-45	71	226445W	3-9	32	2301853W	1-8	2	2303677W	3-5	35
222442W	3-48	17	226450W	3-3	64	2302109W	3-30	20	2303677W	3-7	34
222442W	3-51	71	226450W	3-5	64	2302109W	3-33	20	2303848W	1-3	19
222442W	3-54	71	226904	3-117	8	2302109W	3-36	20	2303848W	1-5	3
222442W	3-57	71	226904	3-60	18	2302109W	3-39	20	2303848W	1-7	3
222442W	3-66	8	2300010W	1-49	1	2302109W	3-42	20	2303889W	3-30	81
222443W	3-42	40	2300059W	1-24	9	2302109W	3-45	20	2303889W	3-66	
222443W	3-45	40	2300059W	1-32	9	2302109W	3-51	20	2303898W	1-5	22
222443W	3-48	34	2300059W	1-34	9	2302109W	3-54	20	2303898W	1-7	22
222443W	3-54	40	2300135W	1-34	8	2302109W	3-57	20	2303900W	3-105	8
222443W	3-57	40	2300136W	1-34	7	2302109W	3-60	209	2303900W	3-70	5
222443W	3-66	9	2300183W	3-5	15	2302109W	3-7	20	2303900W	3-81	6
222505W	3-3	11	2300183W	3-7	11	2302110W	3-30	18	2303900W	3-99	6
222505W	3-5	11	2300202W	3-12	23	2302110W	3-7	18	2303901W	3-36	67
222505W	3-7	27	2300300W	2-33	1	2302363W	2-33	1	2303901W	3-42	67
222711W	2-39	16	2300301W	3-10	36	2302694W	2-23	24	2303901W	3-62	1
222720W	3-60	214	2300308W	3-10	36	2302694W	2-24	24	2303901W	3-63	1
223453W	1-40	1	2300308W	3-66	2	2302694W	2-25	24	2303902W	1-5	15
224025W	1-43	49	2300347W	1-44	10	2302694W	2-26	24	2303902W	1-7	15
224191	3-121	10	2300369W	3-19	9	2302694W	2-27	24	2303905W	1-5	34
224191	3-127	6	2300507W	1-3	16	2302694W	2-28	24	2303905W	1-7	33
224798W	1-25	10	2300513W	1-49	5	2302706W	1-37	6	2303905W	2-31	5
224798W	1-26	10	2300935W	3-117	2	2302963W	3-130		2303905W	2-33	1
224798W	1-27	21	2300935W	3-30	3	2302963W	3-30	33	2303912W	3-100	12
224978W	1-11	10	2300935W	3-33	3	2302963W	3-33	33	2303912W	3-101	12
224978W	1-13	10	2300935W	3-36	3	2302963W	3-36	33	2303912W	3-102	12
224978W	1-15	10	2300935W	3-39	3	2302963W	3-39	33	2303912W	3-103	70
224978W	1-17	10	2300935W	3-42	3	2302963W	3-42	33	2303912W	3-105	14
225094W	3-33	121	2300935W	3-45	3	2302963W	3-45	33	2303912W	3-106	9
225094W	3-36	121	2300935W	3-5	3	2302989W	3-131		2303912W	3-107	9
225094W	3-39	121	2300935W	3-51	3	2302989W	3-132	1	2303912W	3-108	9
225094W	3-42	121	2300935W	3-54	3	2302989W	3-133	1	2303912W	3-109	26
225094W	3-45	121	2300935W	3-57	3	2302999W	1-44	1	2303912W	3-111	26
225094W	3-48	24	2300935W	3-60	3	2302999W	1-45	1	2303912W	3-121	4
225094W	3-51	121	2300935W	3-7	3	2302999W	1-46	4	2303912W	3-70	12
225094W	3-54	121	2300935W	5-5	4	2303029W	1-46	1	2303912W	3-71	11
225094W	3-57	121	2300935W	5-6	3	2303029W	2-18	13	2303912W	3-72	11
225094W	3-60	121	2300935W	5-7	2	2303105W	3-11	1	2303912W	3-73	11
225094W	3-7	123	2300935W	5-9	9	2303105W	3-13	5	2303912W	3-75	36
225232W	3-3	49	2300935W	6-2	2	2303105W	3-17	1	2303912W	3-81	11
225232W	3-5	49	2300935W	6-3	3	2303105W	3-21	5	2303912W	3-82	10
225232W	3-7	40	2300935W	6-3	3	2303105W	3-22	1	2303912W	3-83	10
225233W	3-3	84	2300935W	6-3		2303105W	3-23	10	2303912W	3-84	10
225233W	3-30	49	2300936W	3-30	2	2303105W	3-24	4	2303912W	3-87	21
225233W	3-33	49	2300936W	3-33	2	2303221W	1-3	3	2303912W	3-91	9
225233W	3-36	49	2300936W	3-36	2	2303221W	1-5	19	2303912W	3-93	9
225233W	3-39	49	2300936W	3-39	2	2303221W	1-7	19	2303912W	3-95	9
225233W	3-42	49	2300936W	3-42	2	2303221W	6-7		2303912W	3-99	12
225233W	3-45	49	2300936W	3-45	2	230326W	2-40	8	2303922W	1-45	10
225233W	3-5	84	2300936W	3-5	2	230326W	5-13	3	230393W	2-35	8
225233W	3-51	49	2300936W	3-51	2	230326W	6-5		230393W	5-14	3
225233W	3-54	49	2300936W	3-54	2	230327W	2-41	4	230393W	6-5	
225233W	3-57	49	2300936W	3-57	2	230327W	5-16	2	2303941W	1-45	3
225233W	3-60	49	2300936W	3-60	2	230327W	6-6		230394W	2-35	21
225233W	3-7	49	2300936W	3-7	2	230329W	2-31	15	230394W	5-14	5
225264W	1-3	10	2300962W	1-5	13	230329W	2-33	1	230394W	6-5	
225264W	1-5	31	2300962W	1-7	13	230329W	5-16	8	2303975W	1-11	5
225701W	3-3	51	2300995W	3-23	28	230329W	6-6		2303975W	1-13	5
225701W	3-5	51	2301140W	1-11	13	230353W	4-2	13	2303975W	1-15	5
225701W	3-7	58	2301140W	1-11	24	230353W	4-3	13	2303975W	1-17	5
225712W	3-3	50	2301140W	1-13	50	2303541W	3-131	17	2303975W	1-25	5
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2303975W	1-45	2	2304504W	3-99	4	2304702W	2-26	21	2304734W	1-3	16
2303982W	3-26		2304603W	6-7		2304702W	2-27	21	2304734W	1-5	7
2303984W	3-12	1	2304627W	2-10	1	2304702W	2-28	21	2304734W	1-7	7
2303984W	3-19	1	2304627W	2-11	1	2304703W	2-23	40	2304734W	5-6	2
2303984W	3-26		2304627W	2-7	1	2304703W	2-24	40	2304734W	5-7	3
2303991W	3-122	11	2304627W	2-9	1	2304703W	2-25	60	2304734W	5-9	12
2303991W	3-123	11	230464W	1-38	2	2304703W	2-26	60	2304734W	6-3	
2303991W	3-124	12	230464W	1-39	2	2304706W	2-23	13	2304734W	6-3	
2303991W	3-125	10	230464W	1-44	2	2304706W	2-24	13	2304734W	6-3	
2303992W	3-122	12	230464W	1-47	2	2304706W	2-25	13	2304735W	1-3	16
2303992W	3-123	12	230465W	1-36	6	2304706W	2-26	13	2304735W	1-5	6
2303992W	3-124	13	230465W	1-38	4	2304706W	2-27	13	2304735W	1-7	6
2303992W	3-125	11	230465W	1-39	4	2304706W	2-28	13	2304735W	2-28	30
2304111W	3-30	11	2304604W	3-26	20	2304707W	2-23	51	2304736W	3-130	19
2304111W	3-33	11	2304660W	2-23	17	2304707W	2-24	51	2304736W	3-132	16
2304111W	3-36	11	2304660W	2-24	17	2304707W	2-25	51	2304736W	3-133	16
2304111W	3-39	11	2304660W	2-25	17	2304707W	2-26	51	2304737W	3-30	19
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2304111W	3-57	11	2304661W	2-24	50	2304711W	2-25	14	2304764W	1-13	15
2304111W	3-60	201	2304662W	2-23	4	2304711W	2-26	14	2304764W	1-15	15
2304112W	3-117	25	2304664W	2-23	52	2304711W	2-27	14	2304764W	1-17	15
2304112W	3-121	11	2304664W	2-24	52	2304711W	2-28	14	2304776W	3-15	5
2304112W	3-30	11	2304670W	2-23	5	2304712W	2-23	15	2304779W	3-100	7
2304112W	3-33	11	2304670W	2-24	5	2304712W	2-24	15	2304779W	3-101	7
2304112W	3-36	11	2304670W	2-25	5	2304712W	2-25	15	2304779W	3-102	7
2304112W	3-39	11	2304670W	2-26	5	2304712W	2-26	15	2304779W	3-103	66
2304112W	3-42	11	2304670W	2-27	5	2304712W	2-27	15	2304779W	3-105	10
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2304112W	3-48	28	2304671W	2-23	6	2304713W	2-23	16	2304779W	3-107	4
2304112W	3-51	11	2304671W	2-24	6	2304713W	2-24	16	2304779W	3-108	4
2304112W	3-54	11	2304671W	2-25	6	2304713W	2-25	16	2304779W	3-109	21
2304112W	3-57	11A	2304671W	2-26	6	2304713W	2-26	16	2304779W	3-111	21
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2304340W	3-26	4	2304698W	3-30	70	2304714W	2-7	3	2304779W	3-75	31
2304341W	3-26	5	2304698W	3-33	70	2304714W	2-9	3	2304779W	3-91	3
2304342W	3-26	6	2304698W	3-36	70	2304715W	2-23	23	2304779W	3-93	3
2304343W	3-26	7	2304698W	3-39	70	2304715W	2-24	42	2304779W	3-95	3
2304349W	3-61	1	2304698W	3-42	70	2304715W	2-25	62	2304779W	3-99	8
2304366W	3-30	65	2304698W	3-45	70	2304715W	2-26	62	2304780W	3-100	1
2304366W	3-33	65	2304698W	3-51	70	2304715W	2-27	42	2304780W	3-105	5
2304366W	3-36	65	2304698W	3-54	70	2304716W	1-11	9	2304780W	3-106	1
2304366W	3-39	65	2304698W	3-57	70	2304716W	1-13	9	2304780W	3-122	
2304366W	3-42	65	2304698W	3-60	212	2304716W	1-15	9	2304780W	3-70	2
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2304366W	3-51	65	2304699W	3-30	14	2304716W	1-25	9	2304780W	3-81	1
2304366W	3-54	65	2304699W	3-33	14	2304716W	1-26	9	2304780W	3-82	1
2304366W	3-57	65	2304699W	3-36	14	2304716W	1-27	20	2304780W	3-99	1
2304366W	3-60	65	2304699W	3-39	14	2304725W	3-30	44	2304782W	3-122	14
2304380W	3-12	24	2304699W	3-42	14	2304729W	3-130	18	2304796W	3-100	13
2304380W	3-15	2	2304699W	3-45	14	2304730W	2-35	28	2304796W	3-101	13
2304380W	3-19	3	2304699W	3-51	14	2304731W	2-25	52	2304796W	3-102	13
2304386W	3-12	23	2304699W	3-54	14	2304731W	2-26	52	2304796W	3-105	15
2304387W	3-19	9	2304699W	3-57	14	2304731W	2-27	52	2304796W	3-106	10
2304503W	3-30	61	2304699W	3-60	203	2304731W	2-28	52	2304796W	3-121	1
2304503W	3-33	61	2304699W	3-7	14	2304732W	1-3	18	2304796W	3-48	40
2304503W	3-36	61	2304700W	2-25	50	2304732W	1-5	5	2304796W	3-70	13
2304503W	3-42	61	2304700W	2-26	50	2304732W	1-7	5	2304796W	3-81	12
2304503W	3-51	61	2304700W	2-27	50	2304732W	5-9	11	2304796W	3-82	11
2304503W	3-54	61	2304700W	2-28	50	2304732W	6-3		2304796W	3-83	11
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2304804W	3-26		2304854W	3-36	78	2305050W	3-42	74	2305411W	3-83	2
2304815W	3-100	2	2304854W	3-39	78	2305050W	3-62	2	2305411W	3-84	2
2304815W	3-101	2	2304854W	3-42	78	2305050W	3-63	3	2305411W	3-87	10
2304815W	3-102	2	2304854W	3-45	78	2305051W	3-30	39	2305412W	3-81	13
2304815W	3-103	61	2304854W	3-51	78	2305051W	3-33	39	2305412W	3-82	12
2304815W	3-104	61	2304854W	3-54	78	2305052W	3-30	87	2305412W	3-83	12
2304815W	3-99	2	2304854W	3-57	78	2305053W	2-29		2305412W	3-84	12
2304816W	1-33	13	2304854W	3-60	22	2305056W	3-33	44	2305412W	3-87	23
2304817W	1-33	16	2304855W	3-30	37	2305056W	3-51	44	2305412W	3-89	23
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2304825W	3-30	24	2304858W	3-30	9	2305101W	1-3	4	2305428W	3-125	16
2304825W	3-33	24	2304859W	3-30	58	2305132W	3-30	11	2305986W	3-7	21
2304825W	3-36	24	2304859W	3-30	123	2305132W	3-33	11	2305987W	3-30	25
2304825W	3-39	24	2304859W	3-33	123	2305132W	3-36	11	2305987W	3-33	25
2304825W	3-42	24	2304859W	3-36	123	2305132W	3-39	11	2305987W	3-36	25
2304825W	3-45	24	2304859W	3-39	123	2305132W	3-42	11	2305987W	3-39	25
2304825W	3-51	24	2304859W	3-42	123	2305132W	3-45	11	2305987W	3-42	25
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2304825W	3-57	24	2304862W	3-30	11	2305132W	3-54	11	2305987W	3-51	25
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2304826W	1-25	6	2304862W	3-36	11	2305132W	3-60	201C	2305987W	3-57	25
2304826W	1-26	6	2304862W	3-39	11	2305211W	1-35	1	2305987W	3-60	25
2304826W	1-33	6	2304862W	3-42	11	2305212W	1-35	2	2305987W	3-7	25
2304827W	1-11	18	2304862W	3-45	11	2305215W	1-35	3	2306411W	3-70	1
2304827W	1-25	17	2304862W	3-51	11	2305216W	1-35	7	2306435W	2-37	12
2304827W	1-33	18	2304862W	3-54	11	2305217W	1-35	8	2306436W	2-39	1
2304832W	3-122	6	2304862W	3-57	11B	2305218W	1-35	10	2306437W	2-37	18
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2304837W	3-122	8	2304877W	3-36	68	2305227W	3-118	4	2306438W	2-39	1
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2304845W	3-51	57	2304892W	3-102	8	2305250W	3-100	3	2306475W	2-8	1
2304845W	3-66	12	2304892W	3-103	67	2305250W	3-101	3	2306541W	2-37	47
2304850W	2-23	25	2304892W	3-105	11	2305250W	3-102	3	2306547W	3-33	81
2304850W	2-24	25	2304892W	3-106	5	2305250W	3-103	62	2306547W	3-36	81
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2304852W	2-25	27	2304892W	3-99	9	2305250W	3-82	3	2306629W	3-132	2
2304852W	2-26	27	2304933W	2-24	4	2305250W	3-83	3	2306629W	3-133	2
2304852W	2-27	27	2304933W	2-25	4	2305250W	3-84	3	2306635W	3-132	3
2304852W	2-28	27	2304933W	2-26	4	2305250W	3-87	11	2306635W	3-133	3
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2306738W	3-45	19	2307770W	3-67	4	2307925W	3-71	20	2307950W	5-15	3
2306738W	3-48	5	2307841W	3-111	45	2307925W	3-72	20	2307950W	6-6	
2306738W	3-51	19	2307841W	3-112	61	2307925W	3-73	20	2307951W	2-37	9
2306738W	3-54	19	2307841W	3-91	14	2307925W	3-75	21	2307952W	2-37	7
2306738W	3-57	19	2307841W	3-93	14	2307925W	3-82	21	2307953W	2-37	20
2306738W	3-60	208	2307841W	3-95	14	2307925W	3-83	21	2307954W	2-37	24
2306928W	1-35	62	2307841W	3-97	63	2307925W	3-84	21	2307955W	2-37	26
2307101W	1-11	5	2307842W	1-11	25	2307925W	3-87	30	2307956W	2-37	27
2307143W	1-13	6	2307842W	3-71	19	2307925W	3-91	13	2307957W	2-37	25
2307143W	1-15	6	2307842W	3-72	19	2307925W	3-93	13	2307971W	2-38	3
2307143W	1-17	6	2307842W	3-73	19	2307925W	3-95	13	2307971W	2-39	6
2307143W	1-27	6	2307842W	3-75	51	2307935W	3-51	7	2310015	3-33	69
2307354W	3-14	2	2307842W	3-77	51	2307935W	3-54	7	2310015	3-36	69
2307354W	3-16	22	2307849W	3-100	17	2307935W	3-57	7	2310015	3-39	69
2307354W	3-26		2307849W	3-101	17	2307935W	3-60	7	2310015	3-42	69
2307389W	3-71	12	2307849W	3-102	17	2307937W	3-51	52	2310015	3-45	69
2307576W	3-100	5	2307849W	3-103	76	2307937W	3-54	52	2310015	3-48	16
2307576W	3-101	5	2307849W	3-106	12	2307937W	3-57	52	2310015	3-51	69
2307576W	3-106	3	2307849W	3-107	12	2307937W	3-60	52	2310015	3-54	69
2307576W	3-107	3	2307849W	3-108	12	2307938W	3-45	123	2310015	3-57	69
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2307576W	3-72	4	2307849W	3-111	32	2307938W	3-54	123	2310016	3-51	26
2307576W	3-82	5	2307849W	3-121	3	2307938W	3-57	123	2310016	3-54	26
2307576W	3-83	5	2307849W	3-71	14	2307938W	3-60	123	2310016	3-57	26
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2307643W	3-101	18	2307849W	3-73	14	2307942W	3-100	15	2310036	2-37	28
2307643W	3-102	18	2307849W	3-75	42	2307942W	3-101	15	2310037	2-37	29
2307643W	3-103	77	2307849W	3-82	14	2307942W	3-102	15	2310038	2-37	30
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2307643W	3-107	13	2307849W	3-84	14	2307942W	3-106	23	2310040	2-37	32
2307643W	3-108	13	2307849W	3-87	25	2307942W	3-107	23	2310041	2-37	33
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2307643W	3-82	15	2307886W	3-124	1	2307942W	3-87	31	2310079	3-93	21
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2307643W	3-84	15	2307886W	3-73	1	2307944W	3-101	4	2310111	3-33	16
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2307643W	3-89	26	2307886W	3-84	1	2307944W	3-103	63	2310111	3-39	16
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2307643W	3-93	12	2307919W	1-13	38	2307944W	3-107	2	2310111	3-45	16
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2307710W	3-7	69	2307919W	1-26	17	2307944W	3-121	7	2310111	3-57	16
2307740W	3-33	13	2307919W	1-27	28	2307944W	3-71	3	2310112	3-33	21
2307740W	3-36	13	2307919W	1-28	7	2307944W	3-72	3	2310112	3-36	21
2307740W	3-39	13	2307919W	1-31	28	2307944W	3-73	3	2310112	3-39	21
2307740W	3-42	13	2307919W	1-35	28	2307944W	3-75	28	2310112	3-42	21
2307740W	3-45	13	2307919W	3-75	38	2307944W	3-82	4	2310112	3-45	21
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2310112	3-57	21	2310552	3-84	1	2311369	6-4		2313699	3-61	4
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231011W	5-16	1	2310552	3-91	1	2311370	6-5		2314134	3-91	27
231011W	6-6		2310552	3-93	1	2311371	5-13		2314134	3-93	27
2310121	3-33	76	2310552	3-95	1	2311371	6-5		2314134	3-95	27
2310121	3-36	76	2310569	5-10	1	2311372	5-14		2314134	3-97	69
2310121	3-39	76	2310569	5-11	1	2311372	6-5		2314668	3-79	64
2310121	3-42	76	2310569W	6-4		2311373	5-15		2314668	3-97	64
2310121	3-45	76	2310569W	6-5		2311373	6-6		2314838	1-3	17
2310121	3-51	76	2310577	2-37	18	2311374	5-16		2314838	1-5	2
2310121	3-54	76	2310577	2-39		2311374	6-6		2314838	1-7	2
2310121	3-57	76	2310578	2-37	10	2311375	5-6		2314838	5-8	5
2310122	3-33	9	2310578	2-39		2311375	6-3		2314838	6-3	
2310122	3-36	9	2310585	3-125	17	2311376	5-7		2314839	3-117	34
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2310122	3-42	9	2310713	3-39	37	2311443	3-117	41	2314854	3-127	1
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2310122	3-48	1	2310713	3-45	37	2311443	3-45	67	2314864	3-127	2
2310122	3-51	9	2310713	3-48	10	2311443	3-48	35	2314907	3-45	55
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2310122	3-57	9	2310713	3-54	37	2311443	3-60	67	2314908	3-68	7
2310162	3-123	15	2310713	3-57	37	2311443	3-64	67	2314999	3-104	83
2310162	3-124	16	2310774	3-36	39	2311443	3-65	67	2314999	3-110	39
2310162	3-125	14	2310774	3-39	39	2311444	3-103	64	2314999	3-112	39
2310214	3-124		2310774	3-42	39	2311444	3-109	20	2314999	3-127	
2310252	3-67	3	2310774	3-45	39	2311444	3-111	20	2314999	3-77	47
2310252	3-68	3	2310774	3-48	12	2311444	3-117	43	2314999	3-79	47
2310253	3-67	5	2310774	3-51	39	2311444	3-121	1	2314999	3-80	19
2310253	3-68	5	2310774	3-54	39	2311444	3-48	36	2314999	3-89	32
2310254	3-67	6	2310774	3-57	39	2311444	3-75	29	2314999	3-97	47
2310254	3-68	6	2310781	2-37	16	2311444	3-87	14	2314999	3-98	19
2310255	3-67	2	2310800	1-26	13	2311444	3-95	21	2315067	2-33	1
2310255	3-68	2	2310800	1-27	25	2311481	1-49	3	2315071	2-33	1
2310256	3-36	55	2310880	1-15	90	2311558	3-68	4	2315073	2-33	1
2310256	3-42	55	2310880	1-17	90	2311559	3-48	26	2315078	3-89	10
2310256	3-54	55	2310880	1-28	2	2311807	3-117	40	2315080	2-33	1
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2310259	3-67	4	2310950	2-33	1	2311807	3-60	61	2315139	1-23	3
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2310260	3-48	25	2310951	2-33	1	2311887	3-45	81	2315250	3-118	1
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2310260	3-68	2	2311029	3-133	6	2311887	3-57	81	2315252	3-118	3
2310261	3-67	6	2311031	3-133	5	2311887	3-68		2315253	3-118	
2310356	2-39	15	2311099	3-36	44	2311900	3-39	74	2315261	2-33	1
2310465	3-33	32	2311099	3-39	44	2311900	3-45	74	2315268	2-33	1
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2310465	3-39	32	2311099	3-45	44	2311900	3-57	74	2315290	1-23	1
2310465	3-42	32	2311099	3-48	15	2311900	3-64	74	2315290	1-31	1
2310465	3-45	32	2311099	3-54	44	2312150	3-121	1	2315299	1-23	8
2310465	3-48	9	2311099	3-57	44	2312150	3-48	39	2315299	1-31	8
2310490	3-132	17	2311111	3-36	56	2312259	3-117	42	2315319	1-21	20
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2310491	3-132	5	2311111	3-42	56	2312259	3-45	68	2315343	3-98	18
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2310528	2-39	18	2311111	3-54	56	2312259	3-64	68	2315354	2-33	1
2310533	2-39	20	2311111	3-57	56	2312259	3-65	68	2315717	3-117	5
2310552	3-103	60	2311165	5-4		2312313	3-121	1	2315717	3-60	12
2310552	3-107	1	2311165	6-2		2313082	2-29	8	2315760	3-117	13
2310552	3-108	1	2311166	5-5		2313206	3-14	1	2315760	3-60	24
2310552	3-109	17	2311166	6-2		2313206	3-16	22	2315761	3-117	10
2310552	3-111	17	2311330	1-49	4	2313404	3-39	84	2315761	3-60	20
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2315822	3-60	30	260618W	3-24	2	265332W	5-5	3	277234W	3-30	7
2315910	3-117	3	260702W	2-21	14	265332W	5-8	6	277234W	3-33	7
2315910	3-60	9	261127W	3-24	1	265332W	6-2		277234W	3-36	7
2315953	3-117		261131W	3-24		265332W	6-2		277234W	3-39	7
2316297	3-117	37	261557W	2-38	2	265332W	6-3		277234W	3-42	7
232619	3-124	20	261557W	2-39	19	265400W	2-29	14	277234W	3-45	7
233693W	3-33	83	261561W	1-3	17	265409W	3-24	15	277234W	3-5	7
233693W	3-36	83	261561W	1-5	1	265787W	3-10	38	277234W	3-7	7
233693W	3-39	83	261561W	1-7	1	265787W	3-66	2	277235W	3-3	16
233693W	3-42	83	261567W	3-23	14	267018W	3-10	4	277235W	3-5	16
233693W	3-45	83	261570W	3-11	19	267018W	3-3	69	277235W	3-7	9
233693W	3-48	23	262088W	3-10	20	267018W	3-9	36	277237W	3-3	67
233693W	3-51	83	262088W	3-8	16	267487W	3-3	20	277237W	3-5	67
233693W	3-54	83	262088W	3-9	19	267487W	3-5	20	277237W	3-7	73
233693W	3-57	83	262543W	3-5	29	267488W	3-3	21	277276W	3-11	18
233693W	3-66	11	262543W	3-7	28	267488W	3-5	21	277276W	3-12	27
235691W	3-33	82	263060W	2-35	1	267489W	3-5	44	277276W	3-13	16
235691W	3-36	82	263060W	2-37	38	267521W	2-29	15	277276W	3-14	9
235691W	3-39	82	263070W	1-3	8	268492W	2-37	22	277276W	3-15	4
235691W	3-42	82	263070W	1-5	27	271729W	3-30	69	277276W	3-16	23
235691W	3-45	82	263070W	2-35	26	271729W	3-5	76	277276W	3-17	18
235691W	3-48	22	263454W	2-35	1	271729W	3-7	69	277276W	3-18	32
235691W	3-51	82	263454W	2-37	39	271731W	1-43	64	277276W	3-19	6
235691W	3-54	82	263455W	2-35	1	271747W	3-23	6	277276W	3-20	29
235691W	3-57	82	263455W	2-37	40	271748W	3-11	26	277276W	3-21	16
235691W	3-66	10	263456W	2-35	1	271748W	3-17	26	277276W	3-22	18
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236417W	3-5	78	263457W	2-35	6	271748W	3-24	21	277276W	3-24	22
236713	3-61	3	263457W	2-37	14	27338W	3-117	31	277480W	3-20	24
238992W	3-10	27	263457W	5-10	9	274804W	2-23	12	277481W	3-20	12
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241778W	3-10	2	263458W	2-35	7	274908W	2-42	1	277488W	3-20	1
241778W	3-3	66	263460W	2-35	13	274911W	3-129	18	277490W	3-3	15
241778W	3-5	66	263461W	2-35	14	274911W	3-130	18	277490W	5-4	1
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242833W	2-33	1	263464W	2-35	26	275508W	3-8	3	277495W	2-14	14
242840W	2-31	7	263465W	1-3	8	276031W	3-23	1	277496W	2-40	3
243503	3-79	65	263465W	1-5	29	276036W	3-13	10	277661W	3-3	14
243505	3-79	66	263465W	2-35	26	276036W	3-21	10	277661W	3-5	14
244437W	1-23	9	263466W	1-3	8	276036W	3-24	2	277663W	3-3	30
244437W	1-31	9	263466W	1-5	30	276041W	3-24	5	277663W	3-5	30
244437W	1-48	4	263466W	2-35	26	276041W	3-24	7	277663W	3-7	29
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246970	3-117	26	263471W	2-35	29	276043W	3-21	12	278792W	3-20	13
246970	3-60	205	264051W	3-23		276043W	3-23	3	279388W	3-5	15
247723	3-117	11	264062W	2-29	17	276043W	3-24	2	279392W	3-117	19
249955	3-91	24	264062W	2-38	8	276081W	3-23	4	279392W	3-3	61
249955	3-93	24	264062W	2-39	4	276090W	3-3	6	279392W	3-5	61
249955	3-95	24	264062W	5-10	3	276090W	3-30	6	279392W	3-60	44
249956	3-91	25	264062W	5-11	3	276090W	3-33	6	279392W	3-7	68
249956	3-93	25	264062W	5-12	2	276090W	3-36	6	279394W	3-9	
249956	3-95	25	264062W	6-4		276090W	3-39	6	279397W	3-10	35
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253817W	1-37	2	264062W	6-5		276090W	3-45	6	279397W	3-9	34
253817W	1-44	3	264192W	2-38	9	276090W	3-5	6	280256W	3-3	34
253817W	1-47	1	264192W	2-39	13	276090W	3-51	6	280256W	3-5	34
255059W	3-11	17	264192W	5-10	4	276090W	3-54	6	281939W	5-8	
255059W	3-17	17	264192W	5-11	4	276090W	3-57	6	281939W	5-9	
255059W	3-22	17	264192W	6-4		276090W	3-60	6	281939W	6-3	
258217W	3-10	21	264192W	6-5		276090W	3-7	6	286045W	1-3	14
258217W	3-8	17	265331W	3-3	2	276091W	3-3	35	286045W	1-5	10
258217W	3-9	29	265331W	3-5	2	276091W	3-5	35	286045W	1-7	10
258220W	3-10	22	265332W	3-3	3	276098W	3-8		286046W	1-3	14

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286046W	1-7	11	30080W	6-6		303946W	3-42	66	332820W	3-21	
286046W	3-117	36	30100W	2-40	2	303946W	3-45	66	332822W	3-13	4
286046W	5-8	3	30100W	5-13	2	303946W	3-5	60	332822W	3-21	4
286046W	6-3		30100W	6-5		303946W	3-51	66	332823W	3-13	13
287816W	3-81	15	30101W	2-40	1	303946W	3-54	66	332823W	3-21	13
287816W	3-82	20	30101W	5-13	1	303946W	3-57	66	333990W	3-13	17
287816W	3-83	20	30101W	6-5		303946W	3-60	66	339275W	1-24	7
287816W	3-84	20	30104W	2-40	9	303946W	3-7	66	339275W	1-32	7
287816W	3-87	8	30104W	5-13	4	303946W	5-9	10	339286W	2-3	20
287816W	3-89	8	30104W	6-5		303946W	6-3		339286W	2-4	20
287930W	2-29	18	302090W	3-122	15	304381W	1-24	4	339286W	2-5	20
292543W	3-3	29	302090W	3-123	14	304381W	1-32	4	339287W	2-3	21
292661W	1-15	91	302090W	3-124	15	304381W	1-34	4	339287W	2-4	21
292661W	1-17	91	302090W	3-125	13	304381W	1-48	3	339287W	2-5	21
292661W	1-26	15	303875W	2-15	17	306469W	2-20	1	339289W	1-24	8
292661W	1-27	27	303875W	2-17	17	306470W	2-15	5	339289W	1-32	8
292661W	1-28	3	303875W	2-19	17	306470W	2-19	5	339490W	2-15	3
292680W	3-81	14	303875W	2-3	17	306470W	2-3	5	339490W	2-15	16
292680W	3-82	19	303875W	2-4	17	306470W	2-4	5	339490W	2-17	3
292680W	3-83	19	303875W	2-5	17	306470W	2-5	5	339490W	2-17	16
292680W	3-84	19	303877W	2-15	18	306472W	2-20	13	339490W	2-19	3
292680W	3-87	7	303877W	2-17	18	306472W	2-20	19	339490W	2-19	16
292680W	3-89	7	303877W	2-3	18	306473W	3-23	20	339490W	2-3	3
296438W	1-15	93	303877W	2-4	18	306473W	3-7	200	339490W	2-3	16
296438W	1-17	93	303877W	2-5	18	308410W	2-12	12	339490W	2-4	3
296438W	1-26	14	303896W	2-15	10	308410W	2-13	1	339490W	2-4	16
296438W	1-27	26	303896W	2-17	10	308412W	1-48	1	339490W	2-5	3
296438W	1-28	5	303896W	2-19	10	308413W	2-40	5	339490W	2-5	16
296857W	1-36	5	303896W	2-3	10	314833W	3-129		339492W	2-15	13
296857W	1-37	10	303896W	2-4	10	314847W	2-35	3	339492W	2-17	13
296858W	1-36	10	303896W	2-5	10	316820W	3-129	13	339492W	2-19	13
296858W	1-37	11	303897W	2-15	9	316821W	3-129	3	339492W	2-3	13
296859W	1-36	9	303897W	2-17	9	316823W	3-129	1	339492W	2-4	13
296859W	1-37	8	303897W	2-19	9	316823W	3-130	5	339492W	2-5	13
296860W	1-36	8	303897W	2-3	9	316823W	3-131	5	339509W	3-3	72
296860W	1-37	12	303897W	2-4	9	317764W	2-38	1	339509W	3-5	47
296863W	1-36	11	303897W	2-5	9	317766W	2-38	1	34055W	1-43	33
296863W	2-13	13	303898W	2-15	8	317773W	2-38		34055W	2-10	6
296868W	1-35	5	303898W	2-17	8	317774W	2-38		34055W	2-11	6
296868W	1-36	2	303898W	2-19	8	318701W	5-11	12	34055W	2-12	7
29758W	2-23	20	303898W	2-3	8	318701W	6-5		34055W	2-13	11
29758W	2-24	20	303898W	2-4	8	318702W	1-28	6	34055W	2-14	9
29758W	2-25	20	303898W	2-5	8	318702W	3-117	33	34055W	2-16	9
29758W	2-26	20	303899W	2-15	7	322679W	3-5	81	34055W	2-2	7
29758W	2-27	20	303899W	2-17	7	322679W	3-7	64	34055W	2-21	9
29758W	2-28	20	303899W	2-19	7	322759W	3-23	21	34055W	2-22	9
3001363W	3-5	15	303899W	2-3	7	327610W	3-3	19	34055W	2-6	2
3001363W	3-5	15	303899W	2-4	7	327610W	3-5	19	34055W	2-7	6
3001363W	3-7	11	303899W	2-5	7	327611W	3-3	45	34055W	2-8	5
3001363W	5-5	1	303941W	3-20	26	327611W	3-5	41	34055W	2-9	6
3001363W	5-6	1	303942W	3-7	200	328708W	3-22	19	34056W	1-43	32
3001363W	6-2		303944W	3-15	3	328712W	2-21	14	34056W	2-10	7
3001363W	6-3		303944W	3-18	22	328716W	2-29	16	34056W	2-11	7
3003079W	3-12	24	303944W	3-19	7	328716W	2-38	7	34056W	2-12	7
30059W	2-35	4	303944W	3-24	17	328716W	2-39	5	34056W	2-13	12
30059W	2-35	23	303944W	3-7	200	328716W	5-10	2	34056W	2-14	8
30059W	2-37	45	303945W	3-11	16	328716W	5-11	2	34056W	2-15	12
30059W	5-14	2	303945W	3-12	38	328716W	5-12	1	34056W	2-16	8
30059W	6-5		303945W	3-13	20	328716W	6-4		34056W	2-17	12
30069W	2-35	4	303945W	3-17	16	328716W	6-4		34056W	2-19	12
30069W	2-37	13	303945W	3-21	19	328716W	6-5		34056W	2-2	7
30069W	5-14	1	303945W	3-22	16	32967W	2-35	24	34056W	2-21	8
30069W	6-5		303945W	3-7	200	32967W	2-37	2	34056W	2-22	8
30080W	2-35	23	303946W	3-3	74	32967W	5-10	14	34056W	2-3	12
30080W	2-37	3	303946W	3-30	66	32967W	5-11	14	34056W	2-4	12
30080W	5-14	6	303946W	3-33	66	32967W	6-4		34056W	2-5	12
30080W	5-15	1	303946W	3-36	66	32967W	6-5		34056W	2-6	2

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34056W	2-8	6	39495W	5-11	8	55434W	1-38	1	87355W	2-13	5
34056W	2-9	7	39495W	6-5		55434W	1-39	1	87355W	2-14	6
344836W	2-15	11	39675W	2-35	19	55434W	1-40	3	87355W	2-16	6
344836W	2-17	11	39675W	5-10	12	55434W	1-44	8	87355W	2-2	5
344836W	2-19	11	39675W	6-4		55434W	1-45	8	87355W	2-21	6
344836W	2-3	11	39678W	2-35	11	55434W	1-47	1	87355W	2-22	6
344836W	2-4	11	39678W	2-37	17	55434W	1-48	2	88297W	3-3	36
344836W	2-5	11	39678W	5-10	11	55434W	1-48	3	88297W	3-30	76
344839W	3-3	44	39678W	5-11	11	55434W	1-8	2	88297W	3-5	36
35135W	4-4	4	39678W	6-4		55468W	3-5	15	88297W	3-7	32
354125W	3-3	15	39678W	6-5		55468W	3-5	15	89669W	3-3	22
35504W	2-23	2	39747W	2-20	4	55468W	3-7	11	89669W	3-30	38
35504W	2-24	2	39764W	2-31	18	57597W	1-36	12	89669W	3-5	22
35504W	2-25	2	39764W	2-33	1	57597W	2-13	14	89669W	3-7	38
35504W	2-26	2	39764W	5-16	5	588466	6-8		89775W	2-38	4
35504W	2-27	2	39764W	6-6		588467	6-8		89775W	2-39	10
35504W	2-28	2	39765W	2-33	1	588468	6-8		89775W	5-10	5
374803W	2-23	11	398817W	1-11	19	588469	6-8		89775W	5-11	5
374803W	2-24	11	398817W	1-11	30	588526	6-8		89775W	6-4	
374803W	2-25	11	398817W	1-13	39	588527	6-8		89775W	6-5	
374803W	2-26	11	398817W	1-15	39	588528	6-8		89776W	2-38	5
374803W	2-27	11	398817W	1-17	39	588529	6-8		89776W	2-39	11
374803W	2-28	11	398817W	1-23	29	588530	6-8		89776w	5-10	7
374804W	2-24	12	398817W	1-25	18	58905W	2-29	12	89776W	5-11	7
374804W	2-25	12	398817W	1-26	18	58905W	5-12	5	89776W	6-4	
374804W	2-26	12	398817W	1-27	29	58905W	6-4		89776W	6-5	
374804W	2-27	12	398817W	1-28	8	591242	3-117	27	90202W	1-21	9
374804W	2-28	12	398817W	1-31	29	591242	3-60	210	90202W	1-23	6
374811W	2-20	2	398817W	1-33	19	59419W	4-2	10	90202W	1-31	6
374812W	2-20	17	398817W	1-35	29	59419W	4-3	10	90202W	2-14	16
374815W	2-20	6	398817W	3-75	39	6327W	1-21	7	90202W	2-2	14
374816W	1-46	3	398817W	3-87	18	6327W	1-23	4	9059W	1-38	1
374816W	2-18	16	398817W	4-2	4	6327W	1-31	4	9059W	1-39	1
374816W	2-20	16	398817W	4-3	4	6327W	2-14	17	9059W	1-43	59
374817W	1-47	5	41212W	2-23	8	6327W	2-2	15	906122	3-97	67
377700W	1-47	4	41212W	2-24	8	68370W	3-10	35	906601	6-8	
377712W	3-23	15	41212W	2-25	8	68370W	3-3	60	90937W	1-11	22
383881W	3-14	10	41212W	2-26	8	68370W	3-9	34	90937W	1-13	8
383881W	3-16	22	41212W	2-27	8	68964W	2-39	17	90937W	1-15	8
383881W	3-25	24	41212W	2-28	8	69778	6-8		90937W	1-17	8
383881W	3-26	19	41217W	2-35	15	69782	6-8		90937W	1-21	16
383892W	3-5	52	41217W	5-14	4	69815W	3-3	25	90937W	1-23	2
383915W	2-15	19	41217W	6-5		69815W	3-5	25	90937W	1-25	8
383917W	1-41	6	44459W	2-15	6	70381	6-8		90937W	1-26	8
383920W	1-41	1	44459W	2-17	6	76227W	3-33	10	90937W	1-27	8
383921W	1-41	2	44459W	2-19	6	76227W	3-36	10	90937W	1-31	2
383922W	1-41	3	44459W	2-3	6	76227W	3-39	10	90937W	1-33	22
383975W	2-18	16	44459W	2-4	6	76227W	3-42	10	90937W	2-6	1
383975W	2-20	16	44459W	2-5	6	76227W	3-45	10	92212W	4-2	9
38672W	4-2	6	44570W	2-31	11	76227W	3-48	2	92212W	4-3	9
38672W	4-3	6	44570W	5-16	4	76227W	3-7	10	92606W	1-3	2
387316W	1-21	18	44570W	6-6		77124W	3-23	25	92606W	1-5	16
390288W	3-12	26	45733W	2-23	19	7882W	3-20	7	92606W	1-7	16
391016W	3-11	25	45733W	2-24	19	79978W	2-38	15	92606W	4-2	18
391016W	3-17	25	45733W	2-25	19	79978W	2-39	12	92606W	4-3	18
391016W	3-22	25	45733W	2-26	19	79978W	5-10	6	92720W	4-2	11
391016W	3-24	18	45733W	2-27	19	79978W	5-11	6	92720W	4-3	11
39362W	3-122	7	45733W	2-28	19	79978W	6-4		92867W	2-29	10
39366W	2-15	14	53559W	2-31	21	79978W	6-5		93166W	4-2	3
39366W	2-17	14	53559W	2-33	1	83857W	3-117	4	93166W	4-3	3
39366W	2-19	14	55287W	1-36	3	83857W	3-3	82	93284W	1-3	12
39366W	2-3	14	55287W	1-43	54	83857W	3-5	82	93284W	1-5	35
39366W	2-4	14	55434W	1-21	6	83857W	3-60	11	93284W	1-7	30
39366W	2-5	14	55434W	1-24	3	83857W	3-7	12	93285W	1-3	12
39376W	3-10	32	55434W	1-29	2	87242W	1-36	4	93285W	1-5	36
39376W	3-8	28	55434W	1-32	3	87242W	1-38	3	93285W	1-7	31
39376W	3-9	14	55434W	1-34	3	87242W	1-39	3	93286W	1-3	12

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93287W	1-3	12	95813W	2-11	5	WR8-285J	6-6				
93287W	1-5	38	95813W	2-12	6	WR8-286J	4-5				
93287W	1-7	29	95813W	2-13	4	WR9-150J	4-5				
93658W	4-2	14	95813W	2-14	7	WR9-150J	6-6				
93658W	4-3	14	95813W	2-16	7	WR9-228J	6-6				
93979W	4-2	8	95813W	2-2	6	WR9-229J	4-5				
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93980W	4-2	7	95813W	2-22	7	Y01C-0432	3-16	22			
93980W	4-3	7	95813W	2-6	2	Y02F-1212	2-37	46			
93981W	4-2	12	95813W	2-7	5	Y09G-0510	2-37	19			
93981W	4-3	12	95813W	2-9	5	Y19C-M30120	1-15	92			
94447W	2-40	6	95816W	2-40	3	Y19C-M30120	1-17	92			
9450W	1-21	8	95824W	2-2	12	Y19C-M30120	1-27	30			
9450W	1-23	5	95824W	2-6	2	Y19C-M30120	1-28	4			
9450W	1-31	5	95825W	2-2	12	Y25G-(1024)16	3-121	8			
9450W	2-14	15	95888W	4-4	6	Y25G-(1024)16	3-127	4			
9450W	2-2	13	95959W	1-3	3	Y25G-0416	3-100	21			
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95033W	1-5	40	95959W	1-7	18	Y25G-0416	3-102	21			
95033W	1-7	35	95959W	6-7		Y25G-0416	3-103	80			
95034W	1-3	6	96480W	3-3	89	Y25G-0416	3-104	80			
95034W	1-5	42	96480W	3-5	88	Y25G-0416	3-106	16			
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95478W	2-35	20	L0281939W	3-48	30	Y25G-0416	3-83	18			
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95489W	2-40	7	R13802782	2-38	15	Y25G-0416	3-87	29			
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95581W	6-5		R16271	3-36	18						
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95601W	2-15	2	R16271	3-42	18						
95601W	2-19	2	R16271	3-45	18						
95601W	2-2	11	R16271	3-51	18						
95601W	2-3	2	R16271	3-54	18						
95601W	2-4	2	R16271	3-57	18						
95601W	2-5	2	R16271	3-60	207						
95666W	4-4	4	R16271	3-7	18						
95668W	4-4	1	WR10-119J	4-5							
95669W	4-4	2	WR10-119J	6-6							
95801W	4-2	2	WR10-181J	6-6							
95801W	4-3	2	WR10-182J	4-5							



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The logo for Allied Systems Company, featuring the words "Allied Systems" in a large, bold, sans-serif font, with the word "COMPANY" in a smaller, all-caps, sans-serif font directly below it. The text is set against a dark blue background with a light blue circular glow behind the words "Allied Systems".

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