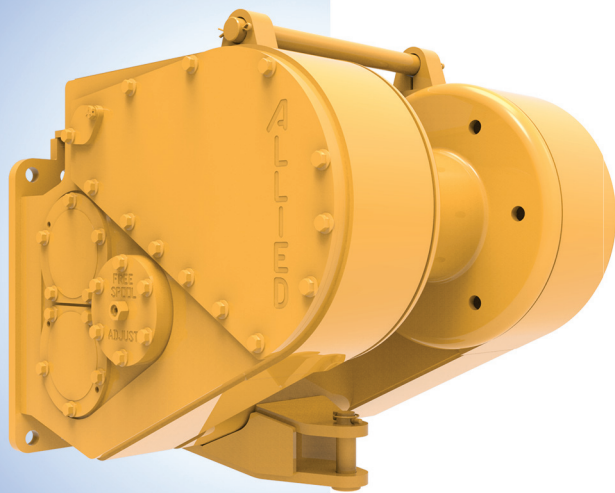




Parts Manual

Allied W5C

Power Controlled & Electronic Controlled Towing Winch



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

CUSTOMER EDITION

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COMPANY

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Safety Precautions

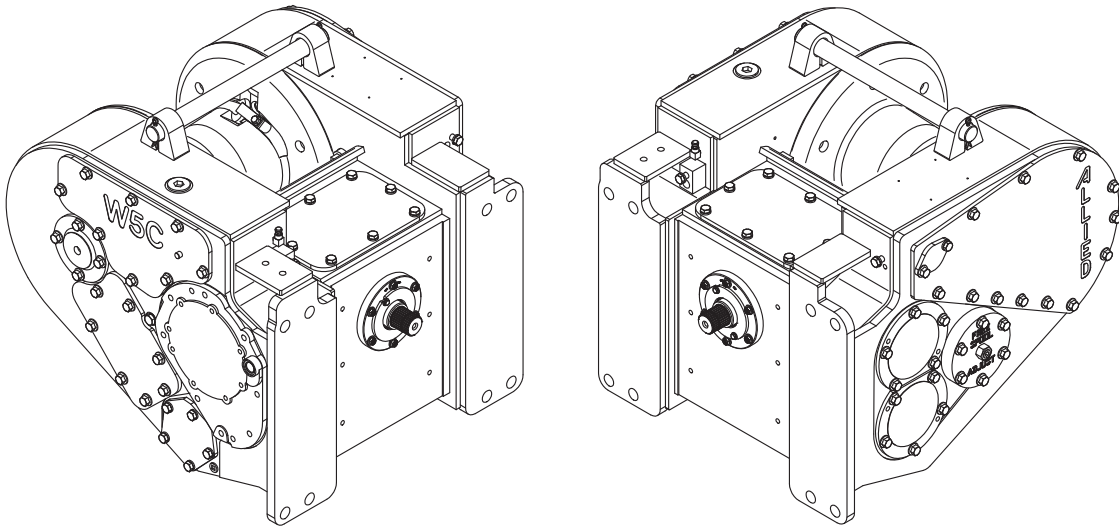
**Read, understand and observe the Safety Summary
on pages 0-3 through 0-5
to prevent injury to personnel and damage to equipment.**

Winch serial number _____

Date put into service _____

**NOTE: This publication may be translated to different languages for sole purpose
of easy reference in non-English speaking locations.
Should there be differences in interpretations to the text,
please refer to the English language edition published by Allied Systems Company
as the controlling document.**

Index - Illustrated



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



Index - Master

Description	Page No.
Arch Assembly	4-7
Arch Installation	4-2
Brake	2-30
Brake/Clutch Shaft	2-28
Control Lever, Electronic Controls.....	3-96
Control Lever, Power Controls.....	3-88
Clutch.....	2-31
Extended Heavy Duty Drawbar.....	4-10
Fairlead Assembly.....	4-8
Frame/Covers*	1-2
Fuel/Water Separator Relocation.....	3-16
Handling Gear, Power Controls*	3-30
Handling Gear, Electronic Controls.....	3-58
Hydraulic, Electronic Controls.....	3-10
Hydraulics, Power Controls*.....	3-2
Internal Wiring, Electronic Controls.....	3-20
Mounting Parts*	1-4
Nameplate & Decals	1-38
Numerical Index	7-1
Optional Equipment	4-1
PTO Group.....	2-2
Pump - Hydraulic.....	3-28
Recommended Service Kits.....	5-1
Repair Kit - External Wiring Harness, Electronic Controls	3-23
Shaft - Drum.....	2-32
Shaft - Idler	2-33
Shaft - Intermediate/Freespool, Power Controls	2-34
Shaft - Intermediate/Freespool, Electronic Controls	2-38
Suggested Spares Guide.....	6-1
Tractor Filter Relocation	3-19
Tractor Filter Relocation, Non Winch Ready	3-18
Tractor Filter Relocation, Winch Ready.....	3-17
Valve, Control - Power Controls	3-24
Valve Assembly, Electronic Controls.....	3-25
Wire Rope Assemblies.....	4-11

* For Installation Parts, Control Levers and any other information concerning Hydraulics and Plumbing in the Ranger H67C, please refer to the H67 Skidder Parts Manual.

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.

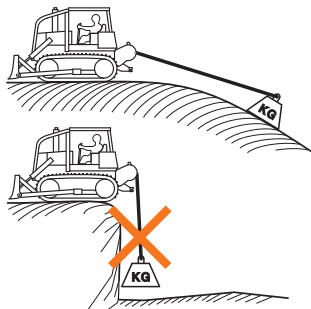
Operation, Inspection, and Maintenance Warnings

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 oils listed on page 0-13.
- 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.



Identification - Unit

Allied Winch S/N Nameplate Data For Tractor Mountings

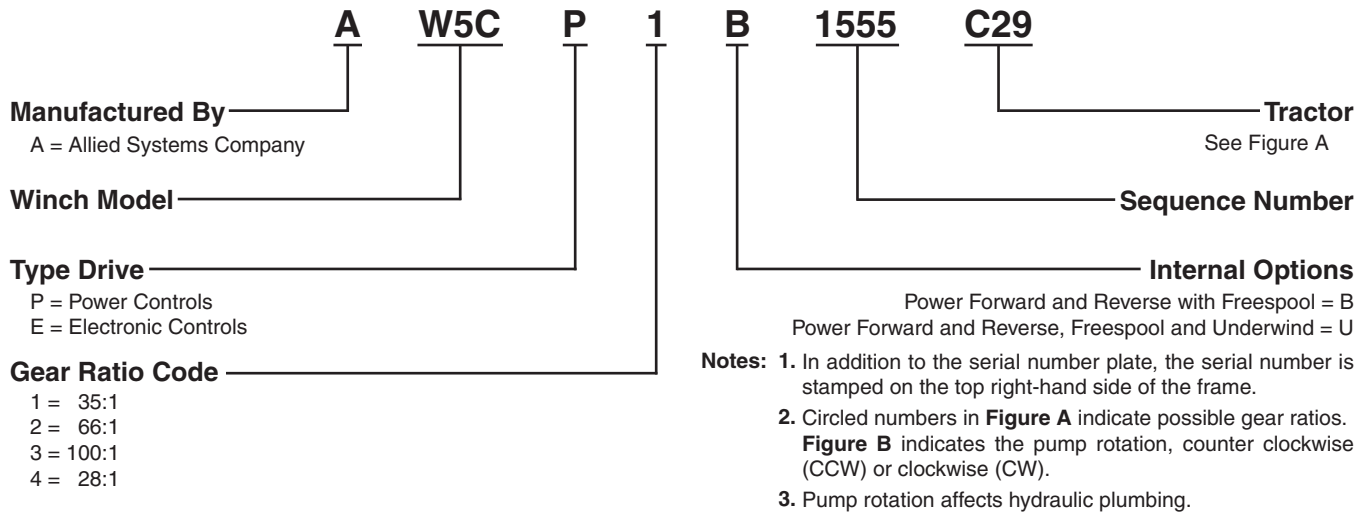


Figure A - Tractor Identification and Gear Ratio

Tractor Make Model and Starting Tractor Serial Number Where Applicable							
C O D E	A Fiat-Hitachi/ New Holland	C Caterpillar	E John Deere	H Dresser/ Dressta	K Komatsu	R Case*	V Ranger
27					D41E-6 ②③		
28		D5N** (Mechanical Tractor Controls) ②③					
29		D5M, D6M PS ②③					
31							H67C ④
35				TD12B/C ②③		1150D/E/G ②③	
36					D53, D58, D63 ②③	1150H ②③	
360		D4H Series I & II ②③					

(Continued on next page)

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

Figure A - Tractor 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	E John Deere	H Dresser/ Dressta	K Komatsu	R Case*	V Ranger
37	New Holland DC130 ②③					1150K ②③	
370		D4H III, D5H PS, XL, LGP; 517 ②③					
38	New Holland DC150 PS ②③			TD14M ②③		1650K ②③	
381		D6H/R W/ ESCO Grapple ②③					
39	Fiat/Hitachi FD/FL10E, FD/DX145 ②③		700J ②③				
390		Challenger 65 - 69 ②③					
40	New Holland DC150 ②③		700H ②③			1650L ②③	
45			750C I & II ②③				
47		D6N** (Mechanical Tractor Controls) ②③			D61EX-12 ②③		
77		D5N*** (Pilot Hydr. Tractor Controls) ②③					

(Continued on next page)

Identification - Unit

Allied Winch S/N Nameplate Data For Tractor Mountings

Figure A - Tractor Identification and Gear Ratio (continued)

Tractor Make Model and Starting Tractor Serial Number Where Applicable							
C O D E	A Fiat-Hitachi/ New Holland	C Caterpillar	E John Deere	H Dresser/ Dressta	K Komatsu	R Case*	V Ranger
78		D6N*** (Pilot Hydr. Tractor Controls) ②③					
81		D6N**** (Diff-Steer after Sep. 2005) ②③					
810		D6N Tier 4i ②③					

- * Tractors (C28 & C47) with mechanical controls,
 ** Tractors (C77 & C78) with pilot hydraulic controls, and
 *** Tractors (C81 & C810) with pilot hydraulic controls were effective with the following tractor serial numbers:

Tractor Model	Tractor Serial Number	Tractor Code
D5N	AGG00000 to AGG01334	C28
	AKD00000 to AKD01134	
	AGG01335 and higher	C77
	AKD01135 and higher	
D6N	CBJ00000 to CBJ00399	C47
	ALH00000 to ALH00734	
	CCK00000 to CCK00499	
	ALR00000 to ALR00634	
	AKM00000 to AKM01234	
	ALY00000 to ALY01334	
	CBJ00400 and higher	C78
	ALH00735 and higher	
	CCK00500 and higher	
	ALR00635 and higher	
	AKM01235 to AKM01793	
	ALY01335 to ALY02065	
	AKM01794 and higher	C81
	ALY02066 and higher	
	Prefixes DJA, DJY, GHS, MLW & LJR	
Prefixes PBA & PER	C810	

Identification - Unit

Allied Winch S/N Nameplate Data For Tractor Mountings

Figure B - Pump Rotation

Tactor	Vehicle Code	Pump Rotation*
Case 1150D/E/G 1150H 1150K 1650K 1650L	R35 R36 R37 R38 R40	CW CW CCW CW CCW
Caterpillar D5/6M PS D5N (Mech. Ctrl.) D6N (Mech. Ctrl.) D5N (Pilot Hyd.) D6N (Pilot Hyd.) D6N (Diff-Steer after Sep. 2005) D4H Series I & II D5H PS & D4H PS Series III, XL, LGP D6H/R w/ ESCO Grapple Challenger 65-95	C29 C28 C47 C77 C78 C81 C360 C370 C381 C390	CCW CCW CCW CCW CCW CCW CCW CCW CCW CCW
Desser TD12B/C	H35	CCW
Fiat & Hitachi FL10E, FD10E, FD145, DX145	A39	CW
John Deere 700J 700H 750C, 750C Ser. II	E39 E40 E45	CCW CCW CCW
Komatsu D41E-6 D53, D58, D63 D61EX-12	K27 K36 K47	CCW CCW CCW
New Holland DC150/DC150 PS; DC-130	A40/A38	CW
Ranger H67C	V31	CCW
* Viewing pump looking at the pump shaft.		

Figure C - List of Installation Drawings by Tractor

W5C INSTALLATION DRAWINGS BY TRACTORS

Winch Serial Number	Description	Installation Drawing Part Number
Electronic Controls		
W5CE*B----C28	W5C CAT D5N	2310655
W5CE*B----C29	W5C CAT D5/6M	2310651
W5CE*B----C370	W5C CAT D5H	2310651
W5CE*B----C47	W5C CAT D6N	2310655
W5CE*B----C77	W5C CAT D5N	2310655
W5CE*B----C78	W5C CAT D6N PILOT HYD CNTLS	2310655
W5CE*B----C81	W5C D6N	2310663
W5CE*B----E45	W5C JD 750C I & II	2310653
W5CE*B----K27	W5C KOMATSU D41E	2310652
W5CE*B----K47	W5C KOM D61EX-12 & -15	2310654
W5CE*B----R37	W5C CASE 1150K	2310662
W5CE*B----R38	W5C CASE 1650K	2304863W
W5CE*B----R40	W5C CASE 1650L	2310664
Push Pull Cable Controls		
W5CP*B----A37	W5C NH DC 130	2306364W
W5CP*B----A38	W5C NH DC 150 PS	2304863W
W5CP*B----A39	W5C F/H FD10E/FD145	2303225W
W5CP*B----A40	W5C NEW HOLLAND DC-150	2304863W
W5CP*B----C28	W5C CAT D5N	2305621W
W5CP*B----C29	W5C CAT D5M, D6M PS	2302783W
W5CP2B----C360	W5C CAT D4H SERIES I & II	2311659
W5CP*B----C370	W5C CAT D5H	2302783W
W5CP*B----C381	W5C CAT D6H/R WITH ESCO GRAPPLE	2303465W
W5CP*B----C390	W5C CAT CHALLENGER 65-95	2304346W
W5CP*B----C47	W5C CAT D6N	2305621W
W5CP*B----C77	W5C CAT D5N	2305621W
W5CP*B----C78	W5C CAT D6N PILOT HYD CNTLS	2305621W
W5CP*B----C81	W5C CAT D6N	2310160
W5CP2B----E39	W5C JD 700J	2303735W
W5CP*B----E40	W5C JD 700H	2303735W
W5CP*B----E45	W5C JD 750C I & II	2303035W
W5CP*B----H35	W5C DRESSER TD12B/C	2302968W
W5CP*B----H38	W5C DRESSER TD14M	2313653
W5CP*B----K27	W5C KOMATSU D41E	2303000W
W5CP*B----K47	W5C KOM D61EX-12 & -15	2303811W
W5CP*B----R35	W5C CASE 1150E/G	2302887W
W5CP*B----R36	W5C CASE 1150H	2302887W
W5CP*B----R37	W5C CASE 1150K	2307362W
W5CP*B----R38	W5C CASE 1650K	2304863W
W5CP*B----R40	W5C CASE 1650L	2310442
W5CP4B----V31	W5C RANGER H67C	2303490W

- 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.

How to use the Illustrated Parts manual

5-2

Numerical Index

Part No.	Page	Item	Description	Part No.
108877W	2-8	23	O-Ring	1305093W
109453W	1-9	9	O-Ring	1306001W
109453W	2-2	10	O-Ring	1306002W
110322W	3-12	9	Clamp	1306003W
110322W	3-27	11	Shim, .005	1306003W
110931W	2-5	23	Shim, .020	1308400W
110932W	2-5	23	Shim, .020	1308401W
110933W	2-5	23	Clamp, Strap	1308402W
114312W	3-10	24	O-Ring	1308403W
118361W	3-7	13	O-Ring	1308406W
118361W	3-8	16	O-Ring	1308436W
118361W	3-9	21	O-Ring	1308437W
118365W	3-9	26	O-Ring	1308438W
119491W	2-6	17	Seal, Oil	1308439W
12327W	2-5	3	Capscrew	1308440W
12447W	2-11	9	Bearing	1308441W
125399W	2-2	8	Clamp	1308442W
127045W	3-5	14	Clamp	1308443W
127045W	3-5	14	Snap-Ring	1310110W
127045W	2-10	3	Snap-Ring	1310111W

0-2

Index-Master

Description	Page No.
Arch	4-3
Box-Gear	2-5 thru 2-7
Brake	2-10
	2-9
	2-9
	1-4
	4-3 & 4-4

2-2

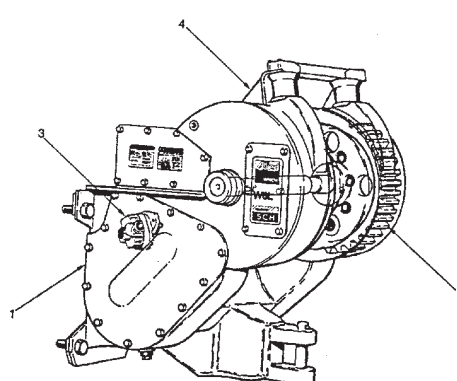
Shaft-PTO

Last Used on S/N WBLP-2099 & AWBL-1000

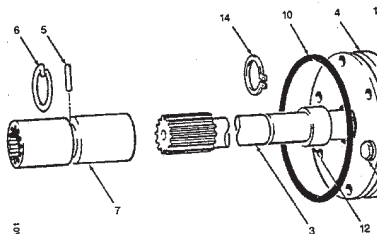
Tractor Model	Shaft-PTO (Item 3)		Bearing Carrier (Item 4)	Pin (Item 5)	Lo Pin (Item 6)
	49.8:1	71.6:1			
Caterpillar D7DD	132909W	98362W	19929W	96	
Caterpillar D7FS	259770W	132909W	98362W	19929W	
Caterpillar 572	259770W	129209W	98362W	9583W	
Flat-Allis 16B	253737W		216222W	19929W	
Flat-Allis 20		132909W	216222W	9583W	
Dresser TD-20E	258766W		98362W	19929W	
Komatsu D65A-12E-16	213032W		98362W	213139W	
Deere D65E-16	258954W	253030W	98362W		
John Deere D700A					

0-1

Index-Illustrated



Ref	Item	Page
1	Frame/Covers/Decals/Parts-Mounting	1-1
2	Gear Train/Shaft	2-1
3	Hydraulics/Controls	3-1
4	Optional	4-1
5	Numerical Index	5-1



A - 49.8:1 Gear Ratio
 B - 71.6:1 Gear Ratio

Item	Part No.	Description	A	B	Item
1	134078W	Shim, .005	A/R	A/R	11
1	134079W	Shim, .007	A/R	A/R	11
2	79383W	Seal, Oil	1	1	12
3	"a	Shaft, PTO	1	1	13
4	"a	Bearing, Carrier	1	1	14
5	"a	Pin	1	1	15
6	"a	Ring, Lock	1	1	16
7	"a	Coupler	1	1	1
8	36573W	Ring, Snap	1	1	1
9	125399W	Bearing	1	1	1
10	109453W	O-Ring	1	1	1

F77

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4-97

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

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

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

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

When the part number is known:

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

General:

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

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

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

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

Serial numbers are shown to allow for the most current parts information to be incorporated into the parts manual. See page 0-3 for serial number information.

Ordering Parts:

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

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

Allied Systems Company
21433 SW Oregon Street
Sherwood, OR 97140 USA

Phone: 503-625-2560
Fax: 503-625-5132
E-Mail: parts@alliedsystems.com

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

NOTE: This publication may be translated to different languages for sole purpose of easy reference in non-English speaking locations. Should there be differences in interpretations to the text, please refer to the English language edition published by Allied Systems Company as the controlling document.

Oil Specifications

The following oils are the only ones approved for best inching operation:

- Exxon Co.** – Torque Fluid 56
- John Deere** – Hy-Gard Transmission & Hydraulic Oil
- Amoco Oil Co.** – Amoco 1000 Fluid
- Sun Oil Co.** – Sunfleet TH Universal Tractor Fluid

The operating temperature range for these oils is -13 °F to 176 °F (-25 °C to 80 °C). For temperatures below 32 °F (0 °C), the winch must be operated at low RPM until the oil has warmed. Running in **BRAKE-OFF** will warm the oil faster than **BRAKE-ON**.

For colder temperatures we recommend John Deere "Low Viscosity Hy-Gard" (formerly known as "Winter Grade Hy-Gard"). Its temperature Range is -40 °F to 150 °F (-40 °C to 66 °C). For temperatures below 0 °F (-18 °C), the winch must be operated at low RPM until the oil has warmed.

If the above brands are not readily available, choose oils using the following oil specifications. They are similar to factory fill and should guide your selection. Allied Winches require an oil that has similar "Static to Dynamic" properties for proper clutch and brake performance, and good pressure properties for gear lubrication. Make sure the oil you choose is approved for both Power Shift Transmission and Hydraulic system usage.

Fluid	ISO GRADE	SAE GRADE
Factory Fill (Exxon 56)	55 (46-68)	15W-30
Low Temp Hy-Gard	32	5W-20

For Caterpillar tractors, the Cat TO-4 or TDTO oils are most similar to the factory winch oil and will provide generally acceptable performance. However, these are not as good as the factory fill recommended oils.

Using engine oil is **NOT** recommended, as it does not have the properties necessary for either the clutches or the gears. However, the winch will still work, although geartrain service life will be considerably shortened.

The oil capacities for the W5C winch are as follows:

- W5C without Gearbox.....17 Gal. (65L)
- W5C with Gearbox.....17.5 Gal. (66L)

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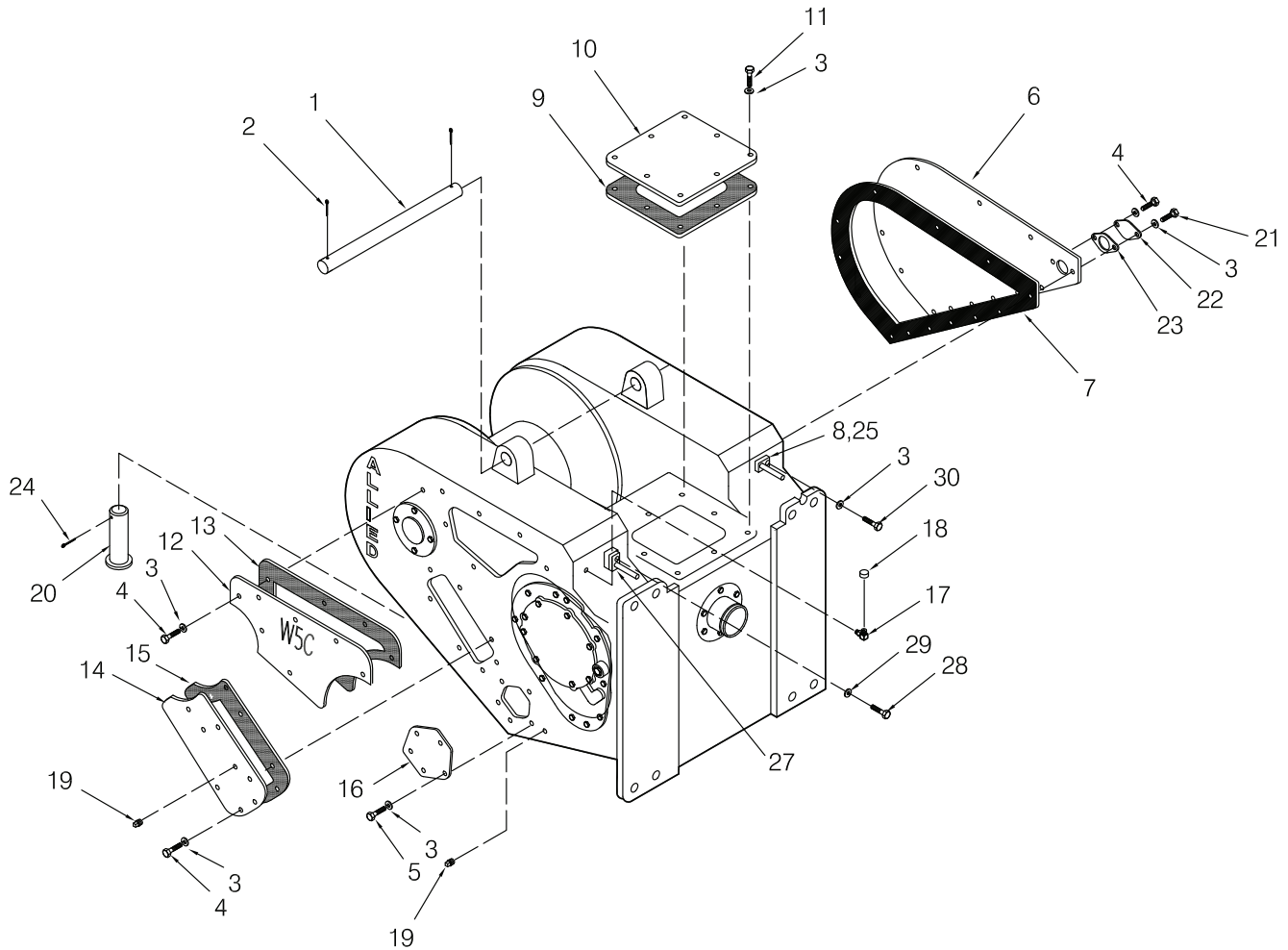


Frame & Covers/Mounting Parts/Decals

Frame and Covers	1-2 & 1-3
Mounting Parts	1-4 thru 1-37
Nameplate & Decals	1-38

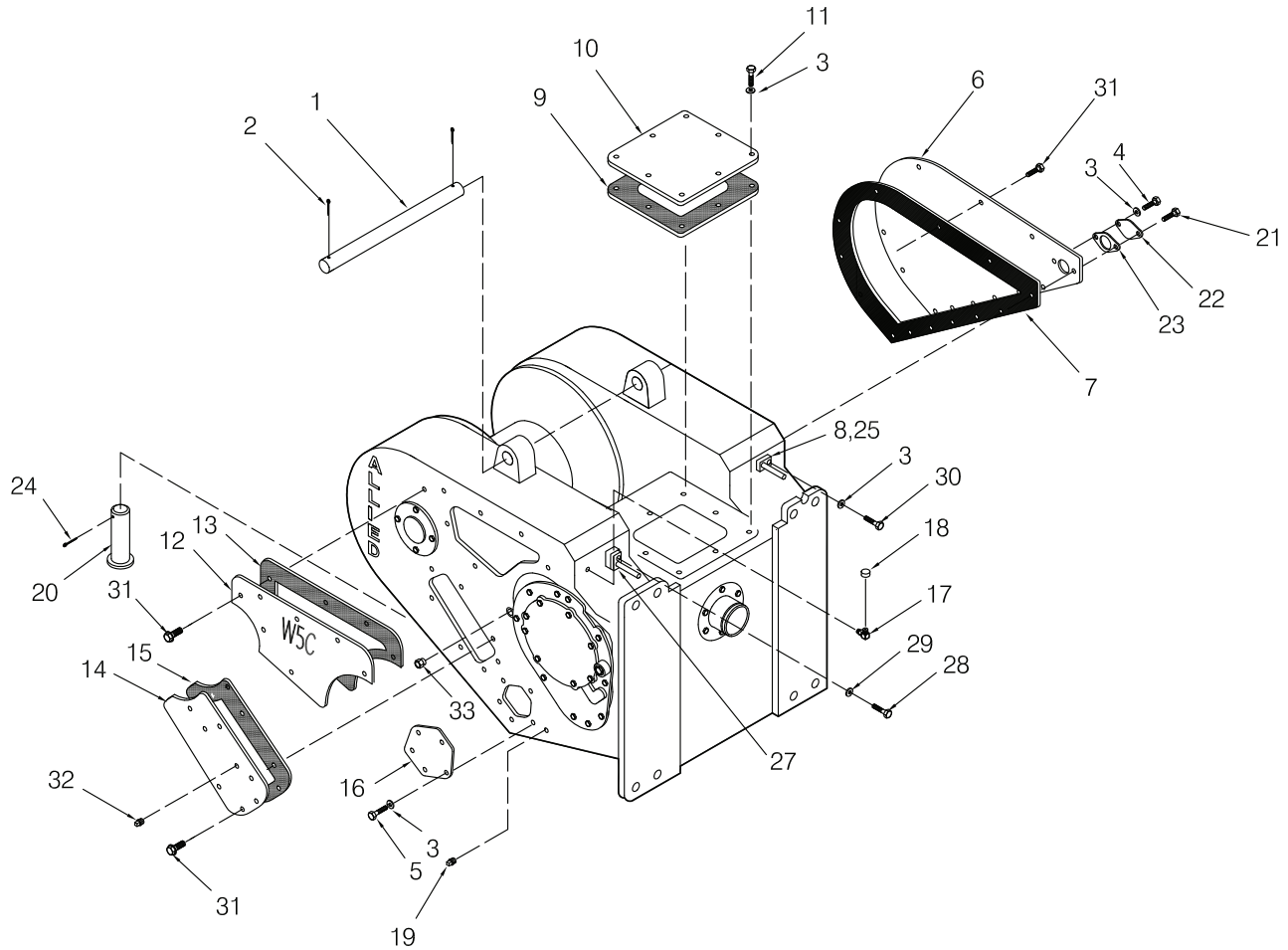
Frame and Covers

Last Used on S/N AW5C-1287



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*f 93927W	Tie Rod	1	23	*a 151646W	Gasket	1
2	15256W	Pin, Cotter	2	24	*e*g 15273W	Pin, Cotter	1
3	15158W	Washer	42	24	*h 2303221W	Pin, Retaining	1
4	178402W	Capscrew	28	25	*i 2304366W	Cover	1
5	178403W	Capscrew	5	27	*a,*j 303946W	Gasket	1
6	2302407W	Cover, Left	1	28	*j 16830W	Capscrew	1
7	*a 2302417W	Gasket	1	29	*j 15158W	Washer	1
8	*a 303946W	Gasket	1	30	*j 178402W	Capscrew	1
9	*a 2302512W	Gasket	1	30	*i 16830W	Capscrew	1
10	2302513W	Cover, Top	1				
11	16830W	Capscrew	8		*a	Included in 2302983W Gasket Kit	
12	2302387W	Cover, Valve	1		*b	Uses 313022W Adhesive	
13	*a 2302405W	Gasket	1		*c	Uses 273338W Pipe Thread Sealant	
14	2302406W	Cover, Filter	1		*d	See Section 4 for Extended Heavy Duty Drawbar Option	
15	*a 219194W	Gasket	1		*e	Used on All Units except Ranger H67C	
16	*b 2302386W	Cover, Strainer	1		*f	Used on All Units except Caterpillar D6H & D6R With Esco Grapple and Ranger H67C	
17	*c 16151W	Fitting	1		*g	Last Used on S/N AW5C-1833	
18	*c 21420W	Breather	1		*h	Not Illustrated	
19	*c 15303W	Fitting	2		*i	Used on Units with electronic controls only	
20	*d,*e 1314656W	Pin, Drawbar	1		*j	Used on Units with power controls only	
21	182209W	Capscrew	1				
22	151589W	Cover	1				

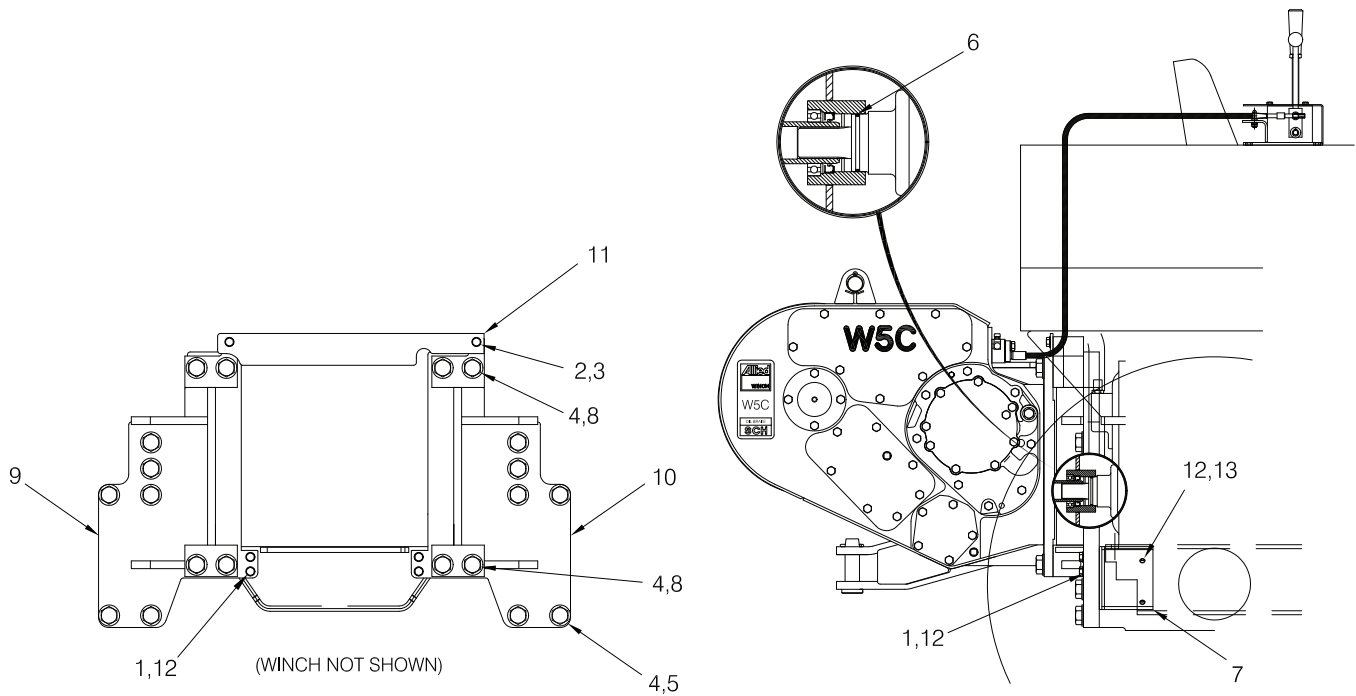
Frame and Covers
First Used on S/N AW5C-1288



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*f 93927W	Tie Rod	1	25	*i 2304366W	Cover	1
2	15256W	Pin, Cotter	2	27	*a,*j 303946W	Gasket	1
3	15158W	Washer	14	28	*j 16830W	Capscrew	1
4	178402W	Capscrew	1	29	*j 15158W	Washer	1
5	178403W	Capscrew	5	30	*j 178402W	Capscrew	1
6	2302407W	Cover, Left	1	30	*i 16830W	Capscrew	1
7	*a 2302417W	Gasket	1	31	2303848W	Screw, Flange	27
8	*a 303946W	Gasket	1	32	*k 15315W	Fitting	1
9	*a 2314778	Gasket	1	33	*l 2305101W	Gauge, Sight	1
10	2302513W	Cover, Top	1				
11	16830W	Capscrew	8		*a	Included in 2302983W Gasket Kit	
12	2302387W	Cover, Valve	1		*b	Uses 313022W Adhesive	
13	*a 2314779	Gasket	1		*c	Uses 273338W Pipe Thread Sealant	
14	*k 2302406W	Cover, Filter	1		*d	See Section 4 for Extended Heavy Duty Drawbar Option	
	*l 2305441W	Cover, Filter	1		*e	Used on All Units except Ranger H67C	
15	*a,*m,*n 2314780	Gasket	1		*f	Used on All Units except Caterpillar D6H & D6R With Esco Grapple and Ranger H67C	
16	*b 2302386W	Cover, Strainer	1		*h	Not Illustrated	
17	*c 16151W	Fitting	1		*i	Used on Units with Electronic Controls Only	
18	*c 21420W	Breather	1		*j	Used on Units with Cable Controls Only	
19	*c 15315W	Fitting	1		*k	Last Used on S/N AW5C-1301	
20	*d,*e 1314656W	Pin, Drawbar	1		*l	First Used on S/N AW5C-1302	
21	2303898W	Screw, Flange	1		*m	Included in 2311728 Filter Kit	
22	151589W	Cover	1		*n	Included in 2311729 Filter Kit	
23	*a 151646W	Gasket	1				
24	*h 2303221W	Pin, Retaining	1				

Mounting Parts

Case 1150D, 1150E, 1150G (R35), and 1150H (R36)



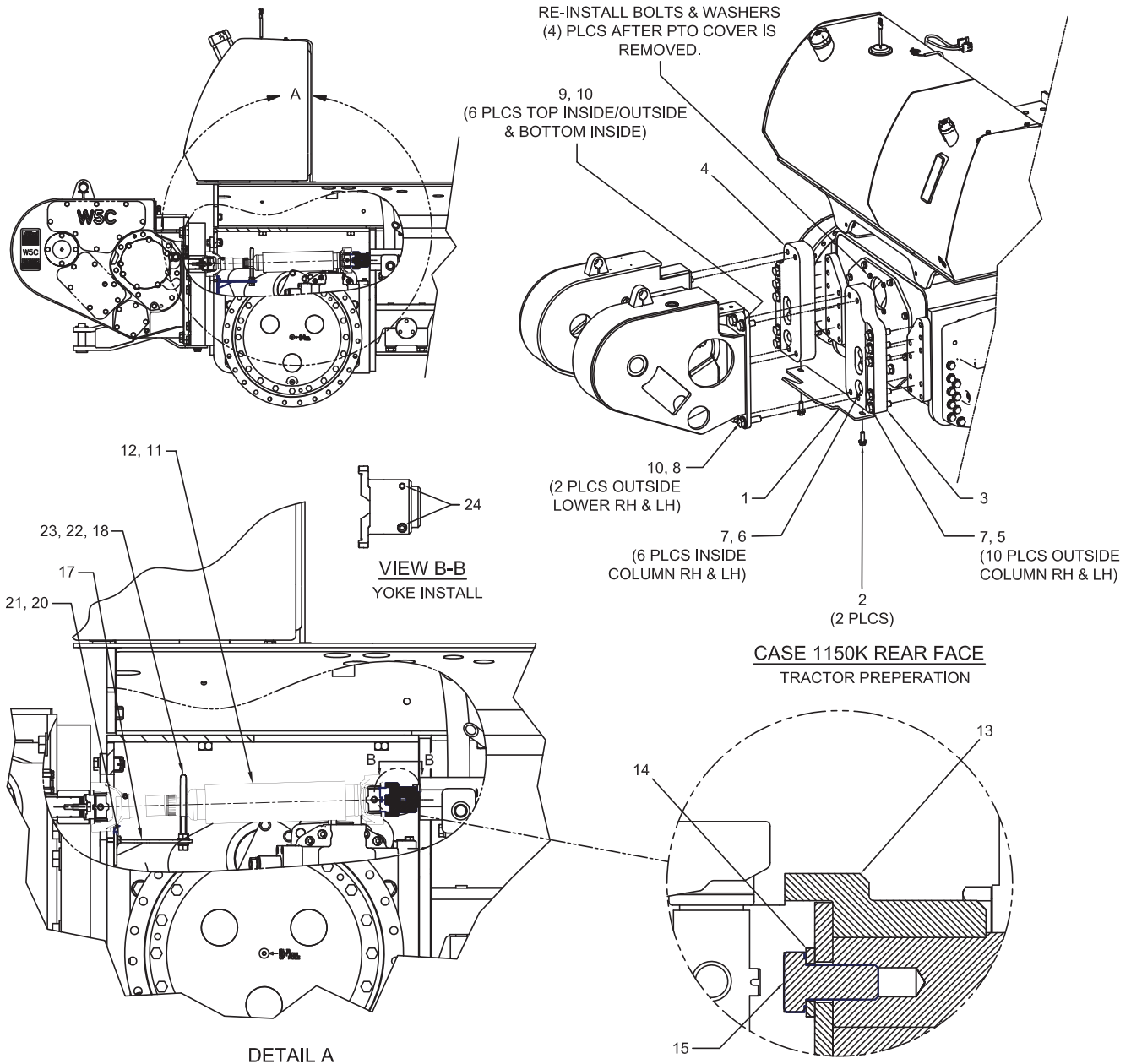
Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 221574W	Capscrew	4	9	2302888W	Mounting Bracket, LH	1
2	*b 15135W	Washer	2	10	2302889W	Mounting Bracket, RH	1
3	*a, *b 221563W	Capscrew	2	11	*b 2302901W	Plate, Guard	1
4	15133W	Washer	20	12	15135W	Washer	8
5	*a 221698W	Capscrew	12	13	*a 221563W	Capscrew	6
6	46388W	O-ring	1				
7	2302903W	Bracket, Support	1		*a	Use 318702W Thread Lock	
8	*a 221690W	Capscrew	8		*b	Last Used on S/N AW5C-1184	

Mounting Parts

Case 1150K (R37)

Push/Pull Controls (P-Control) and Electronic Controls (E-Control)

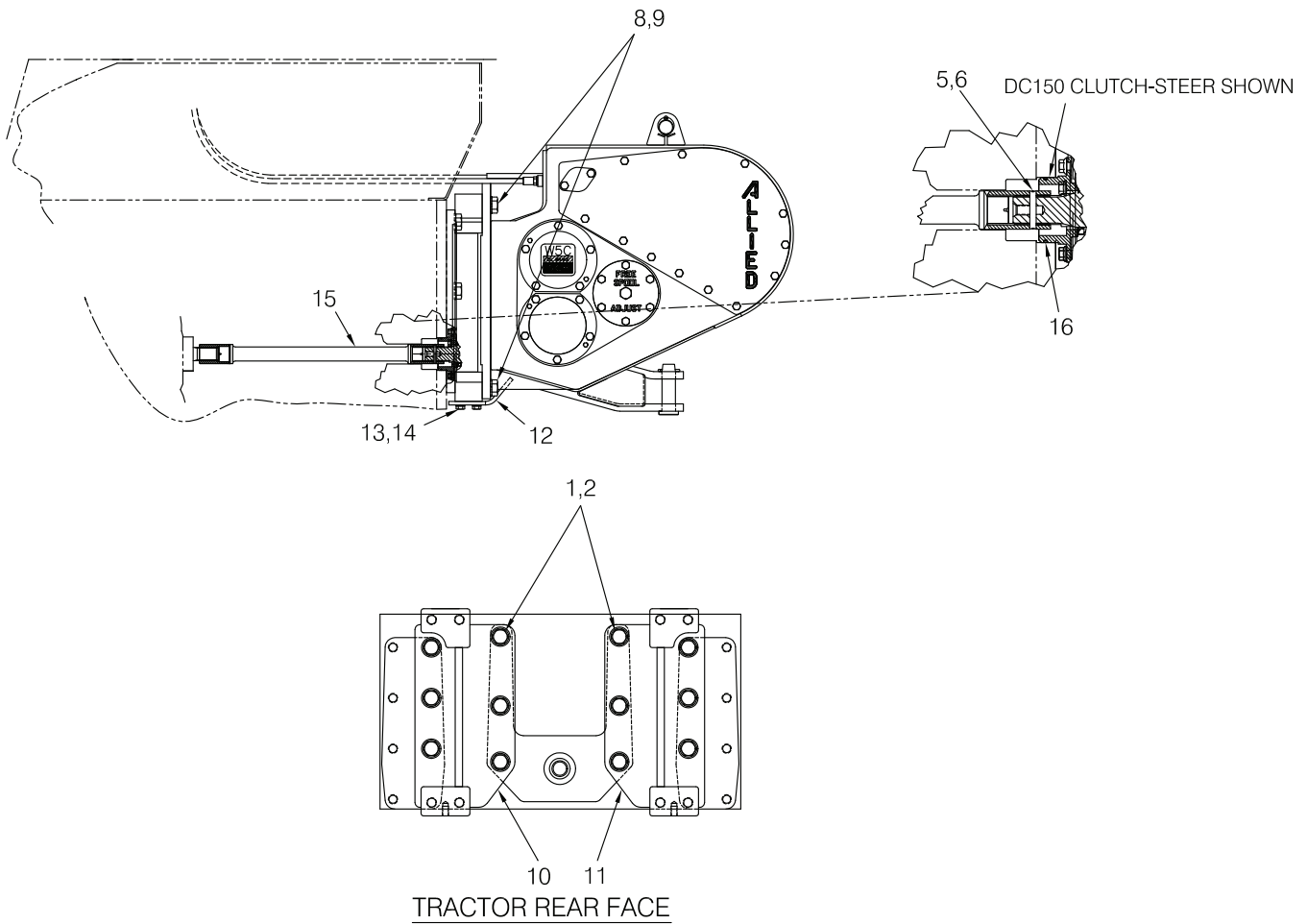


Note: This winch includes a drop box, See drop box page in Section 2 for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2307364W	Guard	1	14	296422W	Washer	1
2	*a 2303905W	Screw	2	15	Y09C-M1225	Capscrew	1
3	2307219W	Mounting Braket, RH	1	17	2314034	Bracket, Guard	1
4	2307220W	Mounting Braket, LH	1	18	2304350W	Assembly, U-Bolt	1
5	*a 293730W	Capscrew	10	20	293628W	Capscrew	2
6	*a 274044W	Capscrew	6	21	296420W	Washer	2
7	296434W	Washer	16	22	15135W	Washer	4
8	*a 221698W	Capscrew	2	23	15158W	Washer	2
9	*a 221690W	Capscrew	6	24	*a 16328W	Capscrew	2
10	221780W	Washer	8				
11	2303856W	Driveshaft, Damped 4C	1		*a	Use 318702W Thread Lock	
12	*a 221466W	Capscrew	8		*b	Refer to Allied Winch Parts Service Bulletin A1-B-23 R1 for Details	
13	*b 2314418	Yoke	1				

Mounting Parts

Case 1650K (R38)



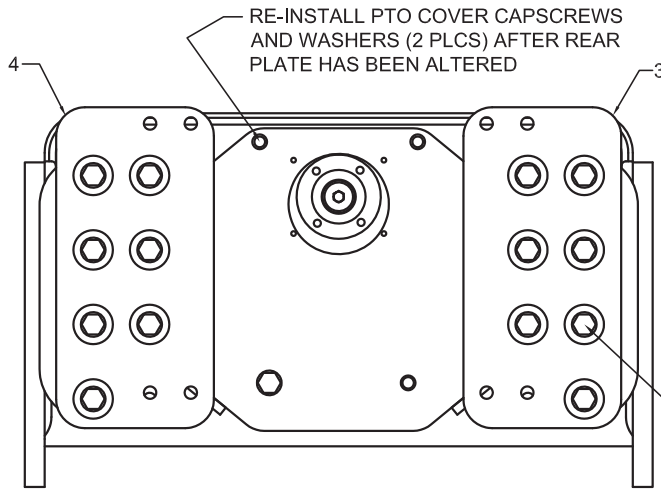
Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 2301477W	Capscrew	12	12	2303235W	Plate, Guard	1
2	296434W	Washer	12	13	221775W	Washer	4
5	19928W	Pin	1	14	*a 221616W	Capscrew	4
6	9554W	Lock Ring	1	15	2305429W	Shaft	1
8	*a 221690W	Capscrew	8	16	90263W	O-Ring	1
9	221780W	Washer, Hardened	8		*a Use 230064W	Loctite Kit	
10	2303211W	Mounting Bracket, LH	1				
11	2303212W	Mounting Bracket, RH	1				

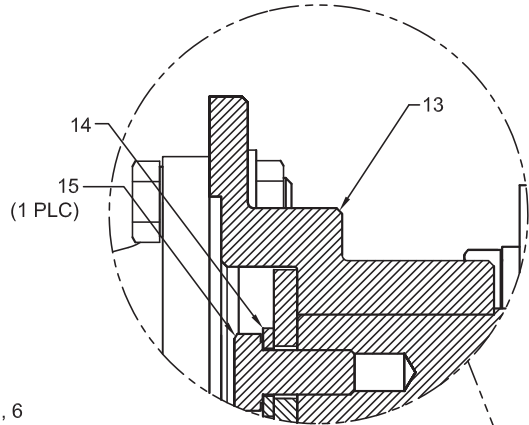
Mounting Parts

Case 1650L (R40)

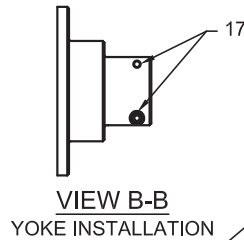
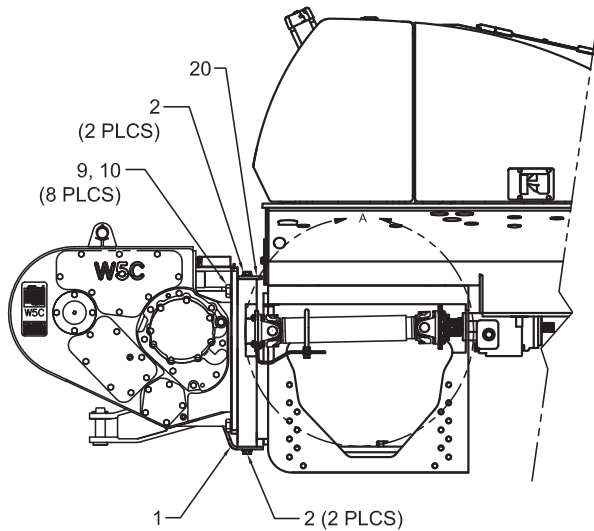
Push/Pull Controls (P-Control) and Electronic Controls (E-Control)



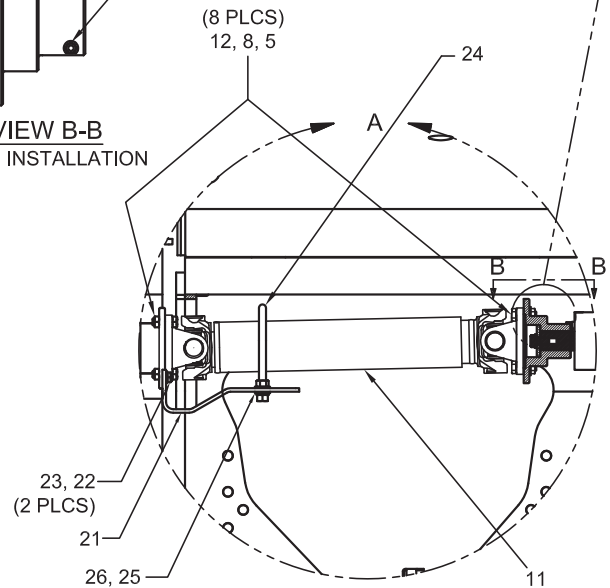
CASE 1650L REAR FACE
TRACTOR PREPERATION



CROSS SECTIONAL VIEW
OF PART SHOWN FOR
ILLUSTRATIVE PURPOSES



VIEW B-B
YOKE INSTALLATION

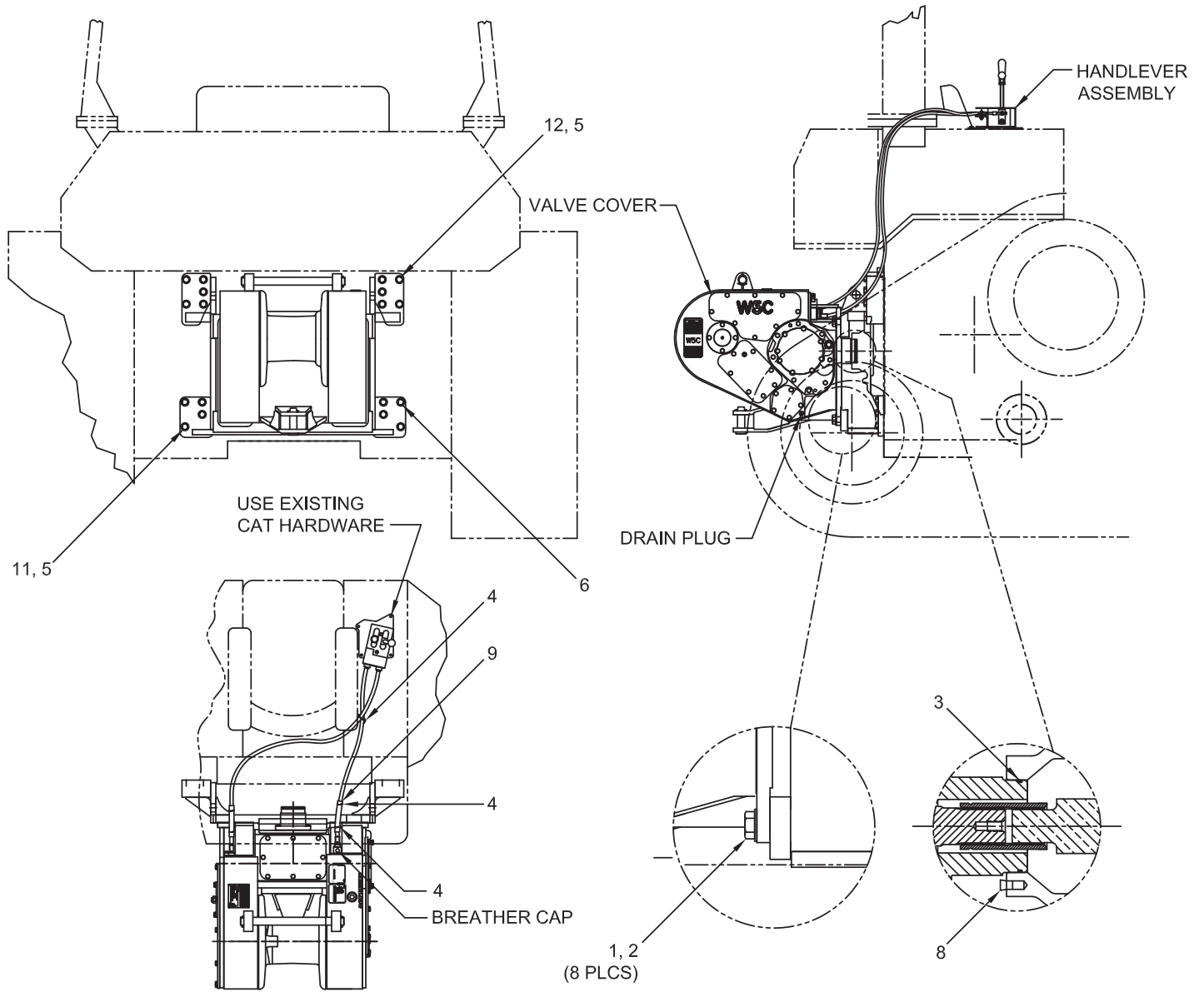


DETAIL A

Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2310445	Guard	1	15	Y09C-M1225	Capscrew	1
2	*a 2303905W	Screw	4	17	*a 16328W	Capscrew	2
3	2310520	Mounting Braket, RH	1	20	2310522	Guard, Top	1
4	2310521	Mounting Braket, LH	1	21	2314043	Bracket, Guard	1
5	221771W	Washer	8	22	293628W	Capscrew	2
6	*a 274044W	Capscrew	14	23	296420W	Washer	2
7	296434W	Washer	14	24	2304350W	Assembly, U-Bolt	1
8	*a 221712W	Nut	8	25	15158W	Washer	2
9	*a 221690W	Capscrew	8	26	15135W	Washer	4
10	221780W	Washer	8				
11	2310449	Driveshaft, Damped	1				
12	*a 2310470	Bolt, Flange	8				
13	*b 2313958	Flange, Yoke	1				
14	296422W	Washer	1				
				*a	Use 318702W Thread Lock		
				*b	Refer to Allied Winch Parts Service Bulletin A1-B-23 R1 for Details		

Mounting Parts
Caterpillar D4H Series I & II (C360)
Push/Pull Controls (P-Control)

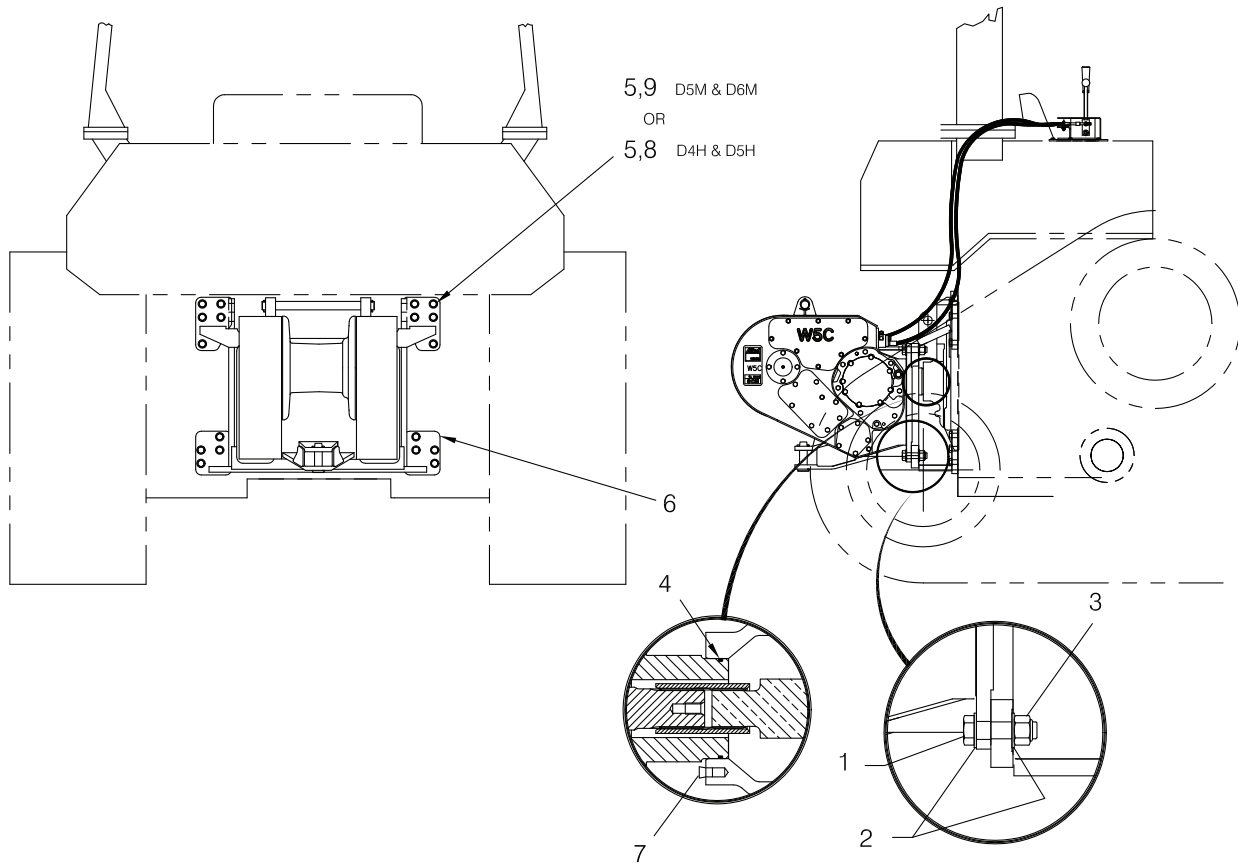


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 221690W	Capscrew	8	8	56995W	Plug	6
2	221780W	Washer	8	9	2303039W	Guard, Cable	1
3	15887W	O-Ring	1	11	*a Y17C-1236	Capscrew	8
4	137852W	Clamp, Strap	4	12	*a Y17C-1272	Capscrew	10
5	221777W	Washer	18				
6	2311621	Bracket, Mounting	1		*a Use 318702W Thread Lock		

Mounting Parts

Caterpillar

Last Used on S/N AW5C-1018: D5M and D6M (C29),
 Last Used on S/N AW5C-1097 and 1100: D4H Series III/XL/LGP PS and D5H PS (C370)



A - D4H Series III/XL/LGP PS and D5H PS
 B - D5M and D6M

Note: This winch includes a drop box,
 See drop box page in Section 2
 for related drop box parts.

Item	Part No.	Description	Qty		Item	Part No.	Description	Qty	
			A	B				A	B
1	221696W	Capscrew	8	8	7	56995W	Plug	6	6
2	221780W	Washer	16	16	8	*a 142270W	Capscrew	18	--
3	127156W	Nut	8	8	9	*a 293708W	Capscrew	--	18
4	15887W	O-Ring	1	1		*a	Use 318702W Thread Lock		
5	221777W	Washer	18	18					
6	2302397W	Mounting Bracket	1	1					

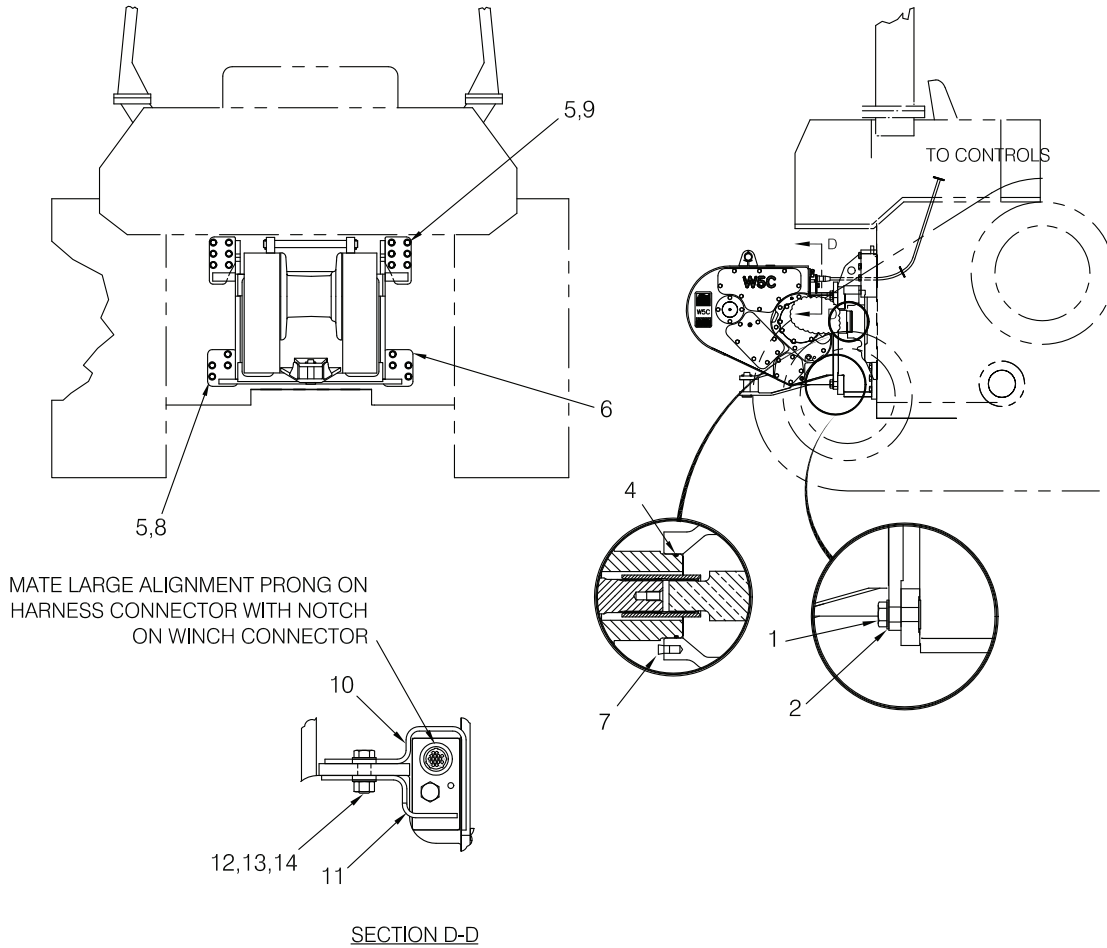
Mounting Parts

Caterpillar

First Used on S/N AW5C-1020: D5M and D6M (C29)

First Used on S/N AW5C-1098, 1099, 1101 & Up: D4H Series III/XL/LGP PS and D5H PS (C370)

Caterpillar Challenger D65/76/85/95 (C390): Mounting Parts & Hardware Provided by Tractor Dealer



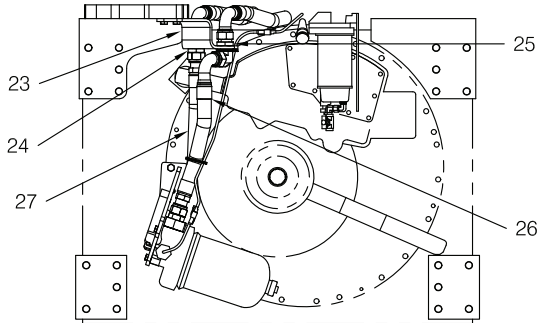
Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

A - D4H Series III/XL/LGP PS and D5H PS
B - D5M and D6M

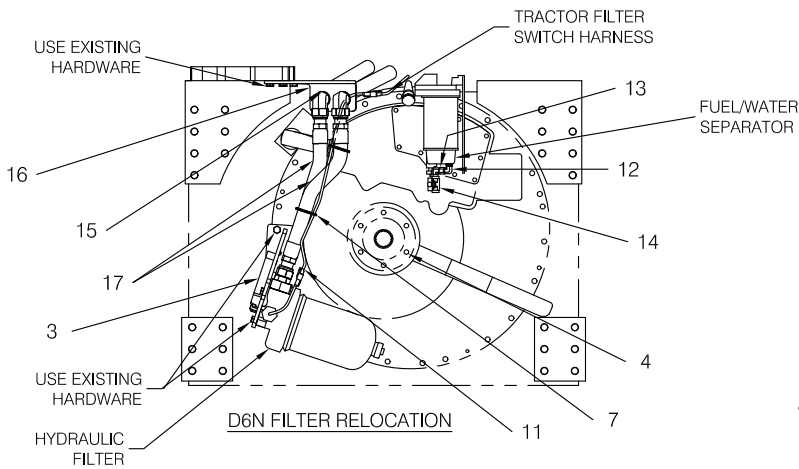
Item	Part No.	Description	Qty		Item	Part No.	Description	Qty	
			A	B				A	B
1	*a 221690W	Capscrew	8	8	10	*c 2304629W	Harness Guard, Upper	--	1
2	221780W	Washer	8	8	11	*c 2304630W	Harness Guard, Lower	--	1
4	15887W	O-Ring	1	1	12	*a, *c 200454W	Capscrew	--	2
5	221777W	Washer	20	20	13	*a, *c 221771W	Washer	--	4
6	2303118W	Mounting Bracket	1	1	14	*a, *c 15058W	Nut	--	2
7	56995W	Plug	6	6					
8	*a 142270W	Capscrew	8	--		*a	Use 318702W Thread Lock		
8	*a 293708W	Capscrew	--	8		*b	D4H and D5M only use 10 Capscrews		
9	*a, *b 221668W	Capscrew	12	--		*c	Used only on winches with electronic controls		
9	*a, *b 293716W	Capscrew	--	12					

Mounting Parts

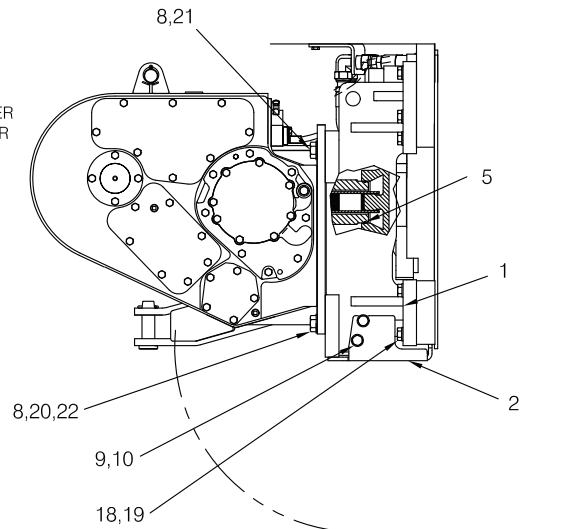
Caterpillar D5N XL/LGP PS (C28) and D6N XL (C47)



D5N FILTER RELOCATION



D6N FILTER RELOCATION



D6N SHOWN

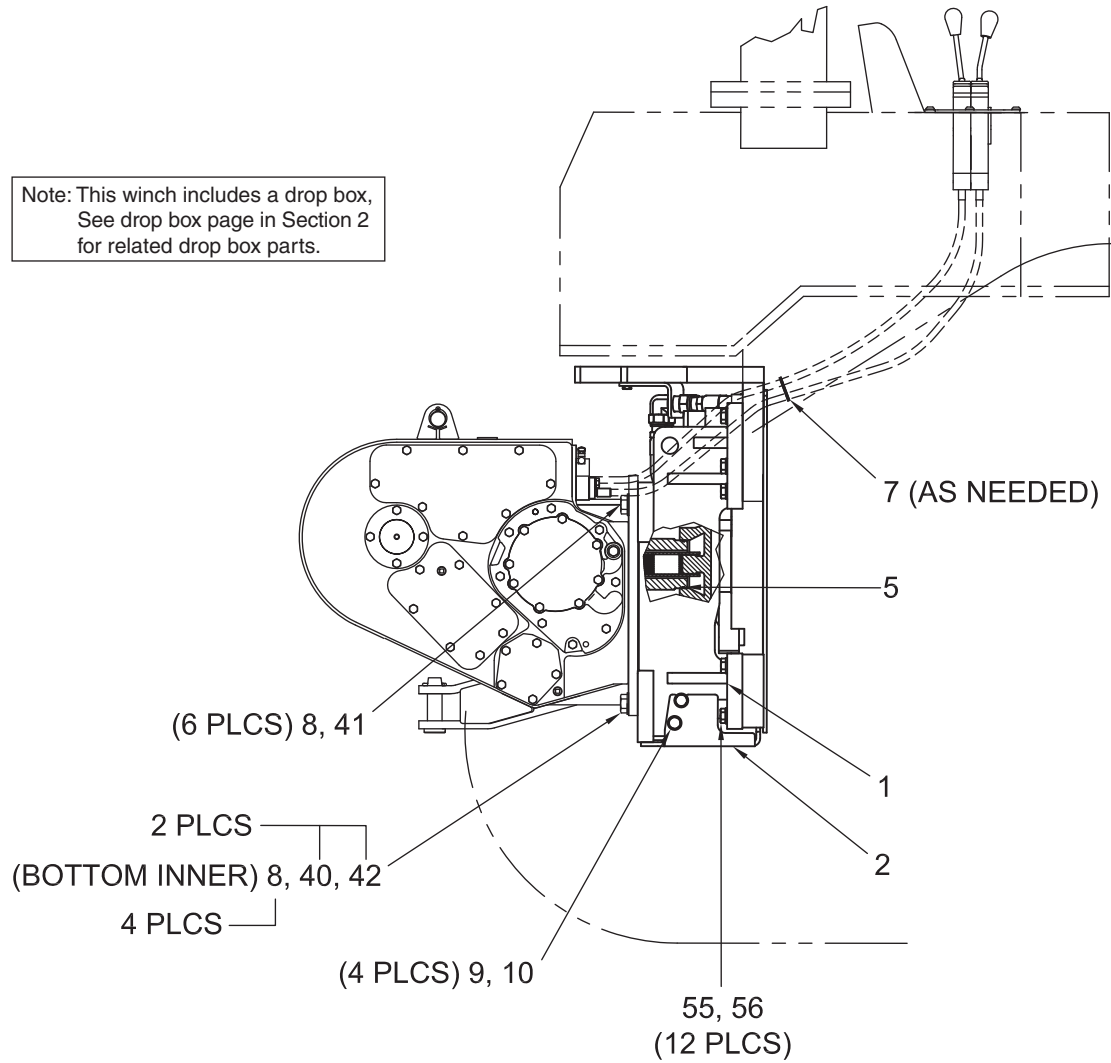
Note: This winch includes a drop box, See drop box page in Section 2 for related drop box parts.

A - D5N
B - D6N

Item	Part No.	Description	Qty		Item	Part No.	Description	Qty	
			A	B				A	B
1	2305516W	Bracket, Mounting	1	1	16	2305588W	Bracket	--	1
2	2305541W	Guard, Bottom	1	1	17	2305613W	Assembly, Hose	--	2
3	2305528W	Bracket, Filter	1	1	18	293710W	Capscrew	12	16
4	56995W	Plug	6	6	19	221777W	Washer	12	16
5	15887W	O-Ring	1	1	20	221700W	Capscrew	2	2
7	137852W	Clamp Strap	AR	AR	21	221692W	Capscrew	6	6
8	221780W	Washer	10	10	22	221720W	Nut	2	2
9	166425W	Capscrew	4	4	23	2305595W	Bracket	1	--
10	221775W	Washer	4	4	24	R834107	Fitting	1	--
11	2305617W	Harness, Filter - Ext.	1	1	25	2305620W	Fitting	1	--
12	16557W	Fitting	1	1	26	2305614W	Assembly, Hose	1	--
13	2305616W	Fitting	1	1	27	2305615W	Assembly, Hose	1	--
14	211556W	Valve, Needle	1	1					
15	2305620W	Fitting	--	2					
					*a	Use 318702W Thread Lock			

Mounting Parts
 Caterpillar D5N (C28, C77)
 Push/Pull Controls (P-Control)

Note: This winch includes a drop box,
 See drop box page in Section 2
 for related drop box parts.

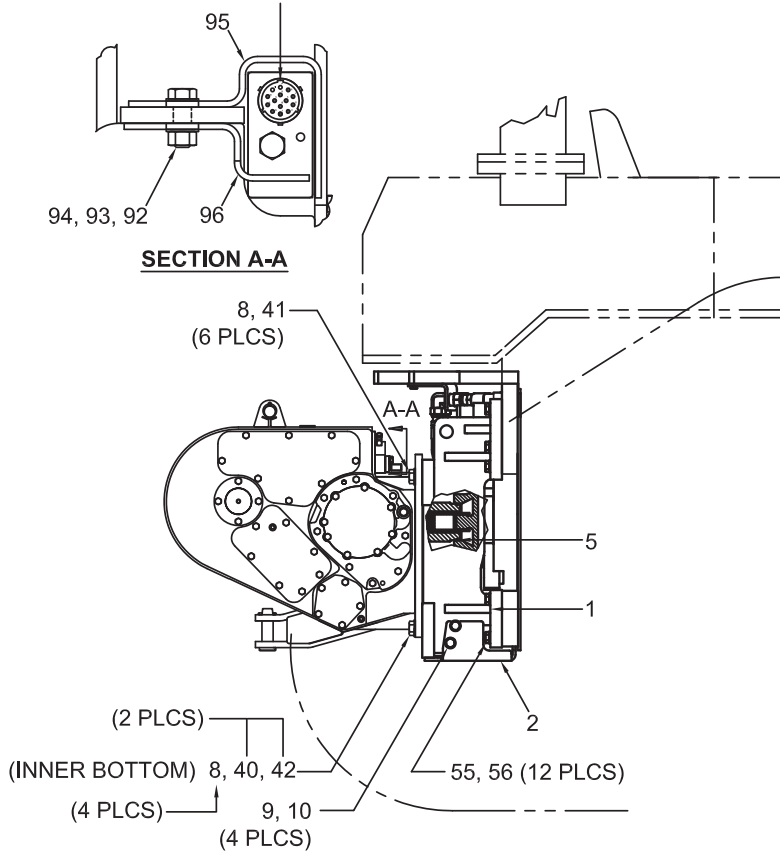


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305516W	Bracket, Mounting	1	40	*a Y17C-1664	Capscrew	2
2	2305541W	Guard, Bottom	1	41	*a 221692W	Capscrew	6
5	15887W	O-Ring	1	42	221720W	Nut	2
7	137852W	Clamp, Strap	6	55	*a 293710W	Capscrew	12
8	221780W	Washer	10	56	221777W	Washer	12
9	*a Y17C-1024	Capscrew	4				
10	221775W	Washer	4		*a Use 318702W Thread Lock		

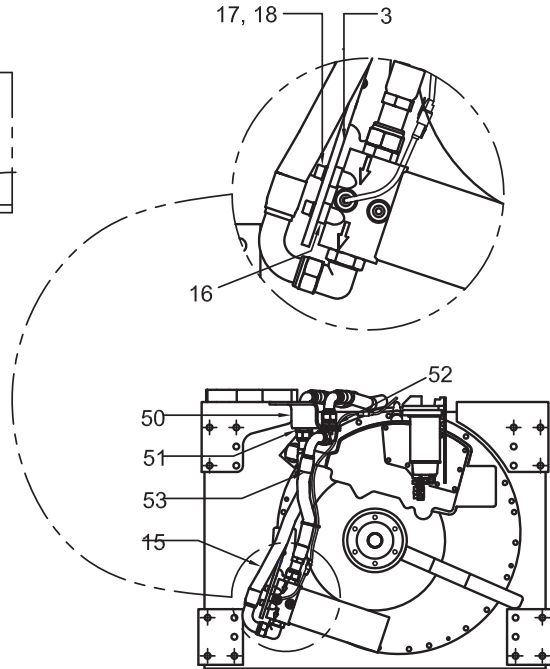
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Mounting Parts
 Caterpillar D5N (C28, C77)
 Electronic Controls (E-Control)
 Page 1 of 2

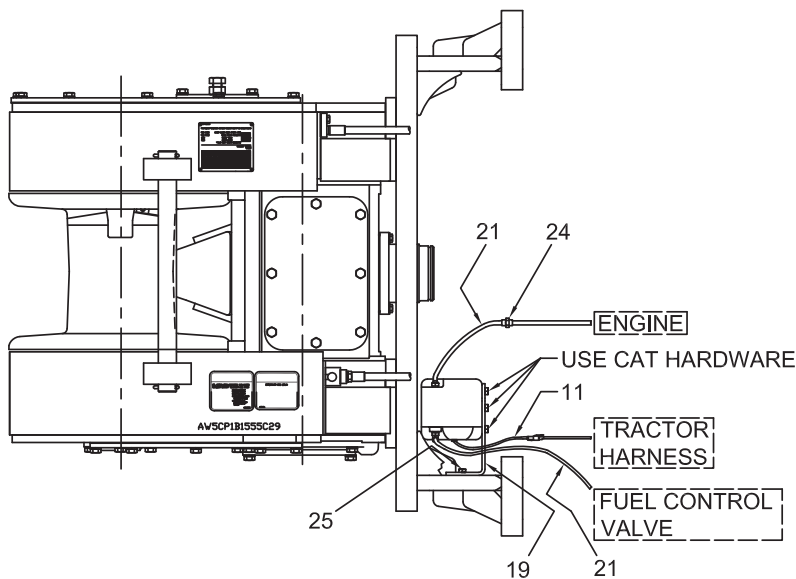
MATE LARGE ALIGNMENT PRONG
 ON HARNESS CONNECTOR WITH
 NOTCH ON WINCH CONNECTOR



**WINCH, MOUNTING BRACKET & GUARDING
 INSTALLATION**

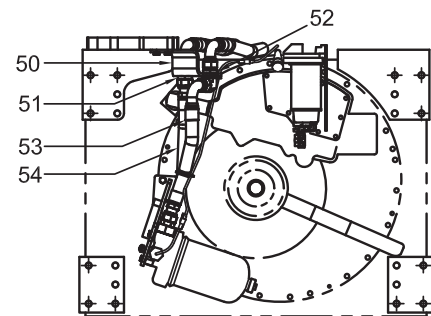


**NON WINCH READY TRACTOR FILTER RELOCATION
 SPIN-ON FILTER**



**FUEL/WATER SEPARATOR RELOCATION
 FOR TRACTORS WITH ELECTRIC PRIMER PUMP**

Note: This winch includes a drop box,
 See drop box page in Section 2
 for related drop box parts.



**WINCH READY TRACTOR FILTER RELOCATION
 NON SPIN-ON FILTER**

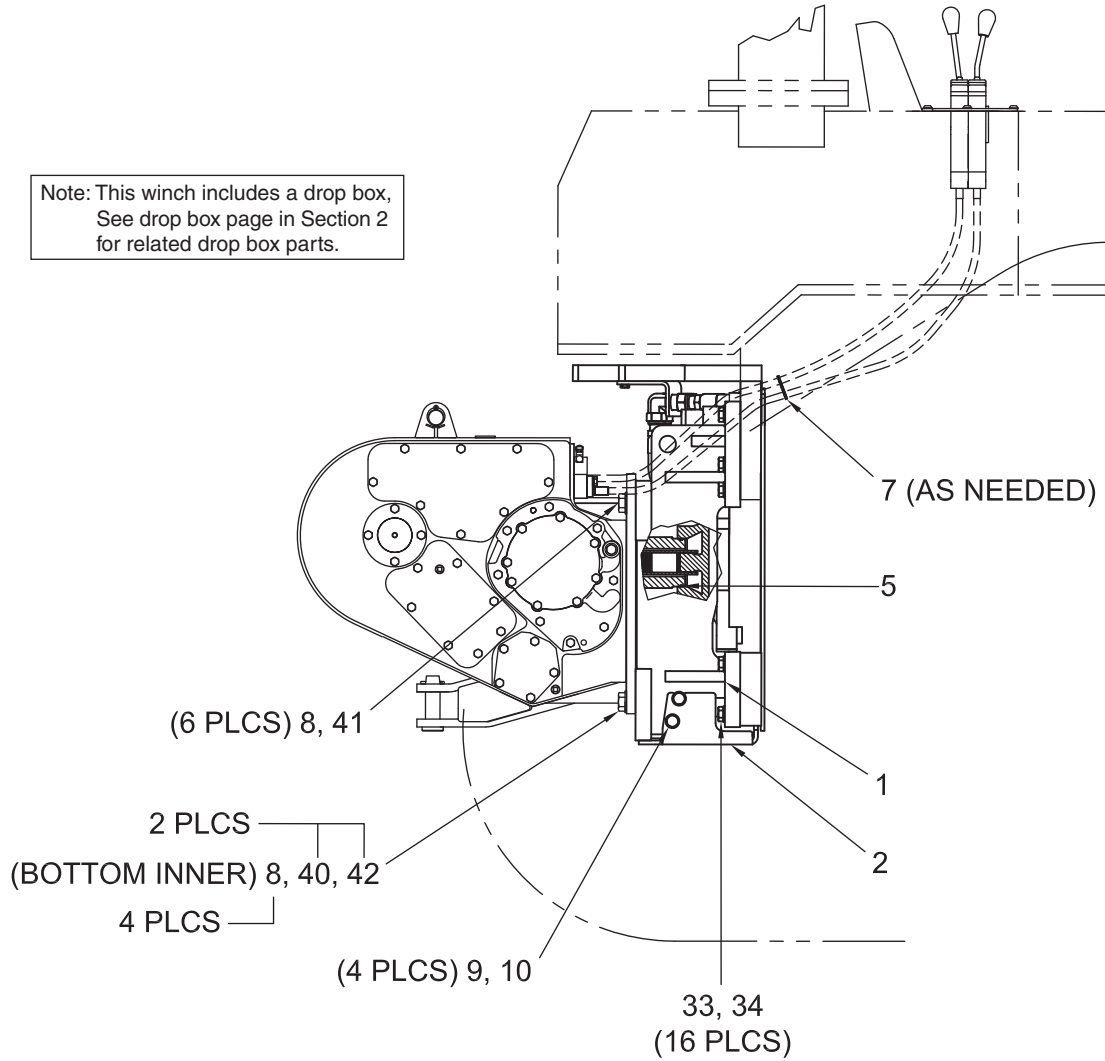
Mounting Parts
Caterpillar D5N (C28, C77)
Electronic Controls (E-Control)
Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305516W	Bracket, Mounting	1	41	*a 221692W	Capscrew	6
2	2305541W	Guard, Bottom	1	42	221720W	Nut	2
3	2306315W	Bracket, Filter	1	50	2305595W	Bracket	1
5	15887W	O-Ring	1	51	R834107	Fitting	1
8	221780W	Washer	10	52	2305620W	Fitting	1
9	*a Y17C-1024	Capscrew	4	53	2305614W	Assembly, Hose	1
10	221775W	Washer	4	54	2305615W	Assembly, Hose	1
11	2305617W	Harness, Filter - EXT.	2	55	*a 293710W	Capscrew	12
15	2306313W	Assembly, Hose	1	56	221777W	Washer	12
16	2306312W	Spacer	4	92	*a 200454W	Capscrew	2
17	296027W	Capscrew	4	93	221771W	Washer	2
18	292682W	Washer	4	94	15058W	Nut	2
19	2306836W	Bracket, Mounting	1	95	2304629W	Harness Guard, Upper	1
21	*b 2306857W	Hose, Fuel	1	96	2304630W	Harness Guard, Lower	1
24	2306858W	Fitting	1				
25	18738W	Capscrew	2		*a Use 318702W Thread Lock		
40	*a Y17C-1664	Capscrew	2		*b Cut Hose As Required		

Mounting Parts

Caterpillar D6N (C47, C78)
Push/Pull Controls (P-Control)

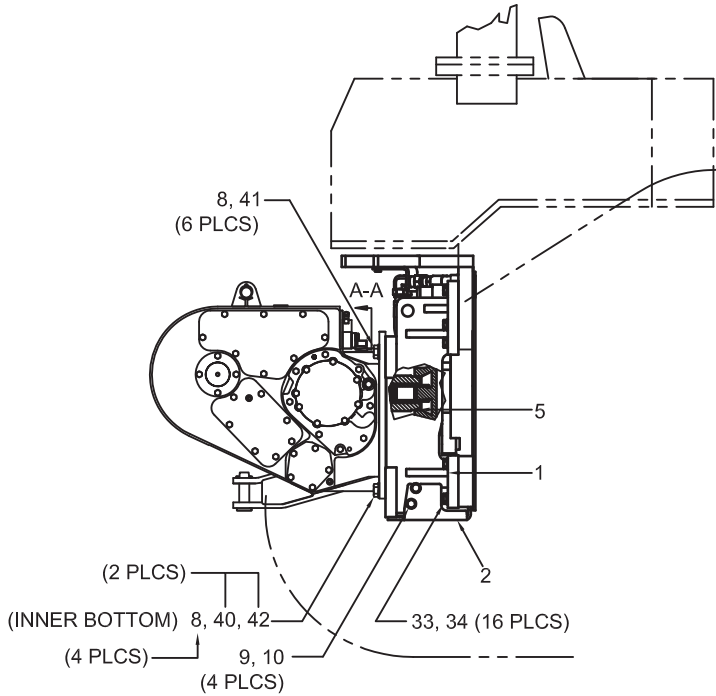
Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.



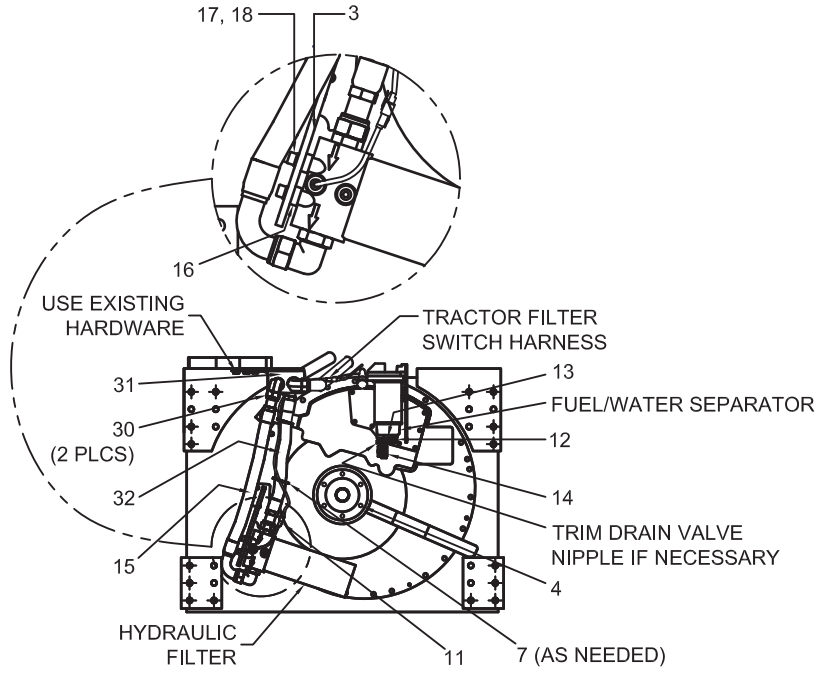
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305516W	Bracket, Mounting	1	33	*a 293710W	Capscrew	16
2	2305541W	Guard, Bottom	1	34	221777W	Washer	16
5	15887W	O-Ring	1	40	*a Y17C-1664	Capscrew	2
7	137852W	Clamp, Strap	6	41	*a 221692W	Capscrew	6
8	221780W	Washer	10	42	221720W	Nut	2
9	*a Y17C-1024	Capscrew	4				
10	221775W	Washer	4		*a Use 318702W Thread Lock		

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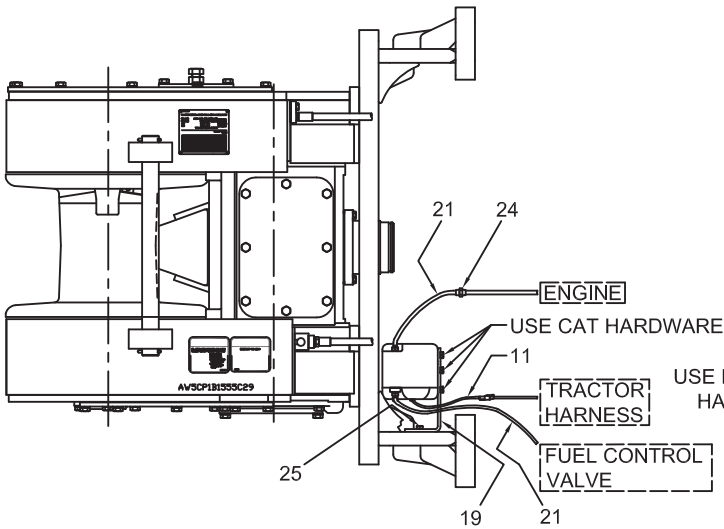
Mounting Parts
 Caterpillar D6N (C47, C78)
 Electronic Controls (E-Control)
 Page 1 of 2



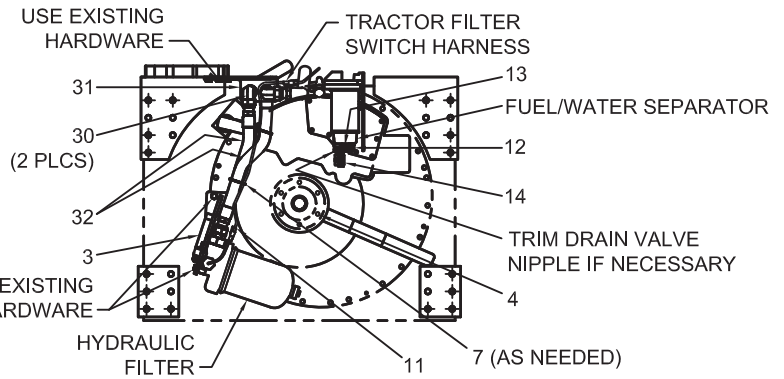
WINCH, MOUNTING BRACKET & GUARDING INSTALLATION



NON WINCH READY TRACTOR FILTER RELOCATION SPIN-ON FILTER



FUEL/WATER SEPARATOR RELOCATION FOR TRACTORS WITH ELECTRIC PRIMER PUMP



WINCH READY TRACTOR FILTER RELOCATION NON SPIN-ON FILTER

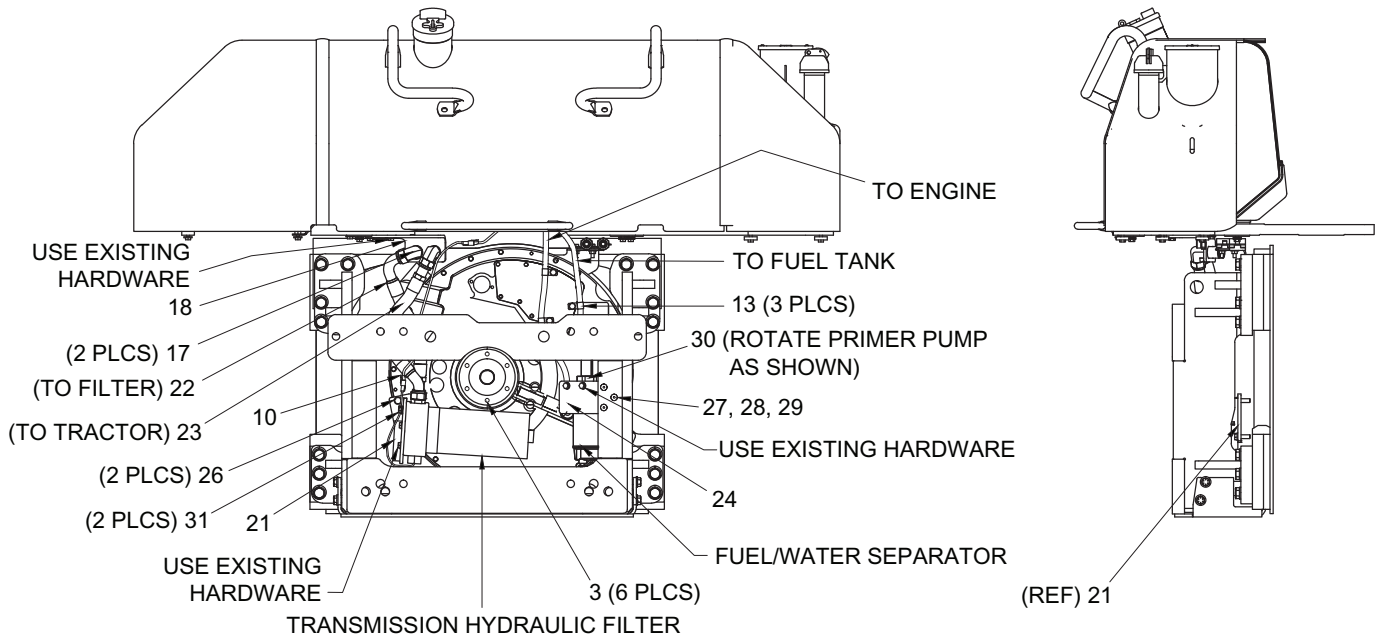
Note: This winch includes a drop box, See drop box page in Section 2 for related drop box parts.

Mounting Parts
Caterpillar D6N (C47, C78)
Electronic Controls (E-Control)
Page 2 of 2

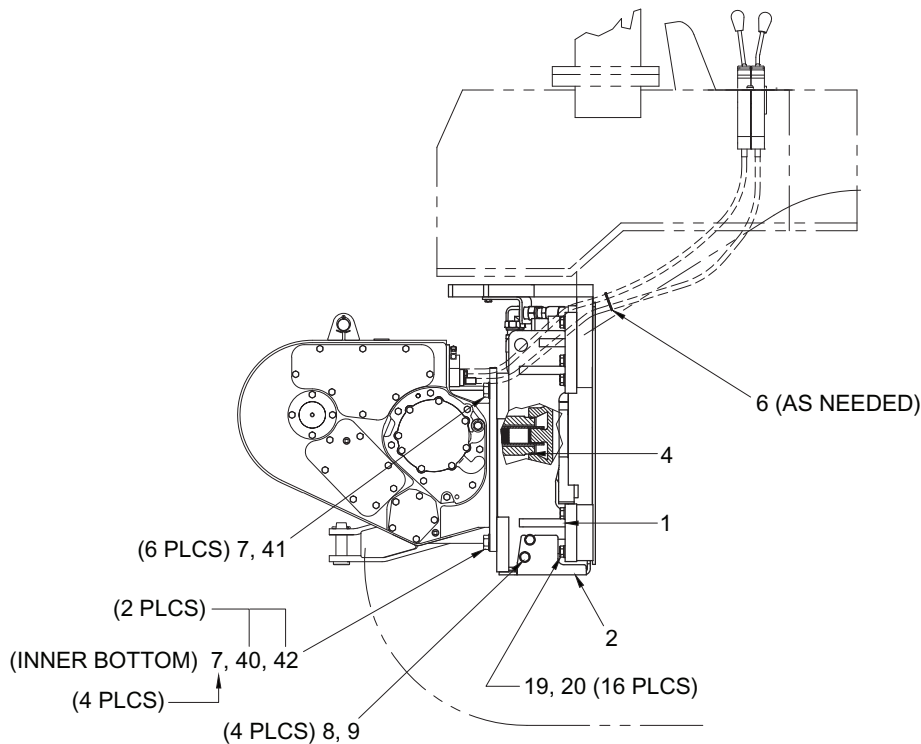
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305516W	Bracket, Mounting	1	24	2306858W	Fitting	1
2	2305541W	Guard, Bottom	1	25	18738W	Capscrew	2
3	2306315W	Bracket, Filter	1	30	2305620W	Fitting	2
4	56995W	Plug	6	31	2305588W	Bracket, Fitting	1
5	15887W	O-Ring	1	32	2305613W	Assembly, Hose	2
8	221780W	Washer	10	33	*a 293710W	Capscrew	16
9	*a Y17C-1024	Capscrew	4	34	221777W	Washer	16
10	221775W	Washer	4	40	*a Y17C-1664	Capscrew	2
11	2305617W	Harness, Filter - Ext.	2	41	*a 221692W	Capscrew	6
12	16557W	Fitting, O-Ring	1	42	221720W	Nut	2
13	2305616W	Fitting	1	92	*a 200454W	Capscrew	2
14	211556	Valve, Needle	1	93	221771W	Washer	2
15	2306313W	Assembly, Hose	1	94	15058W	Nut	2
16	2306312W	Spacer	4	95	2304629W	Harness Guard, Upper	1
17	296027W	Capscrew	4	96	2304630W	Harness Guard, Lower	1
18	292682W	Washer	4				
19	2306836W	Bracket, Mounting	1		*a Use 318702W Thread Lock		
21	*b 2306857W	Hose, Fuel	1		*b Cut Hose As Required		

Mounting Parts

Caterpillar D6N (C81)
 Push/Pull Controls (P-Controls)
 Page 1 of 2



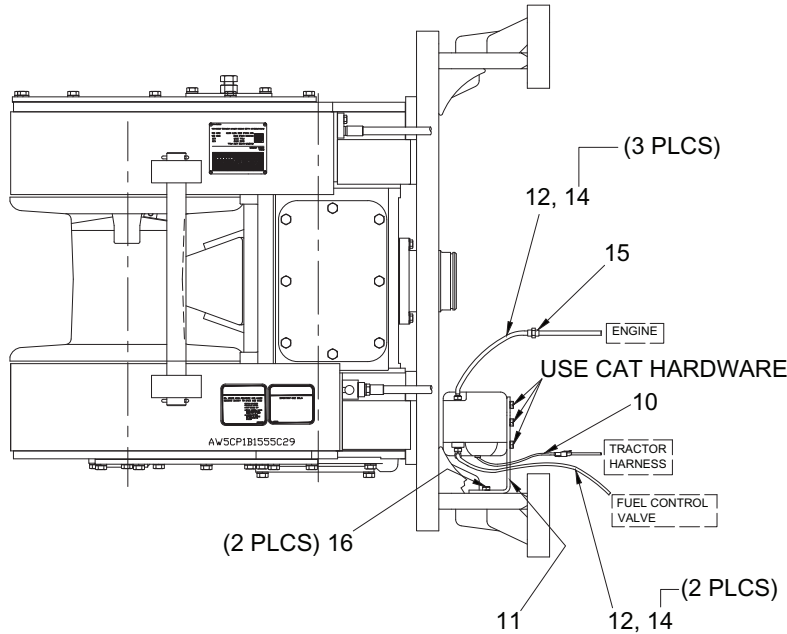
TRACTOR FILTER RELOCATION



Note: This winch includes a drop box,
 See drop box page in Section 2
 for related drop box parts.

WINCH, MOUNTING BRACKET, & GUARD INSTALLATION

Mounting Parts
 Caterpillar D6N (C81)
 Push/Pull Controls (P-Controls)
 Page 2 of 2

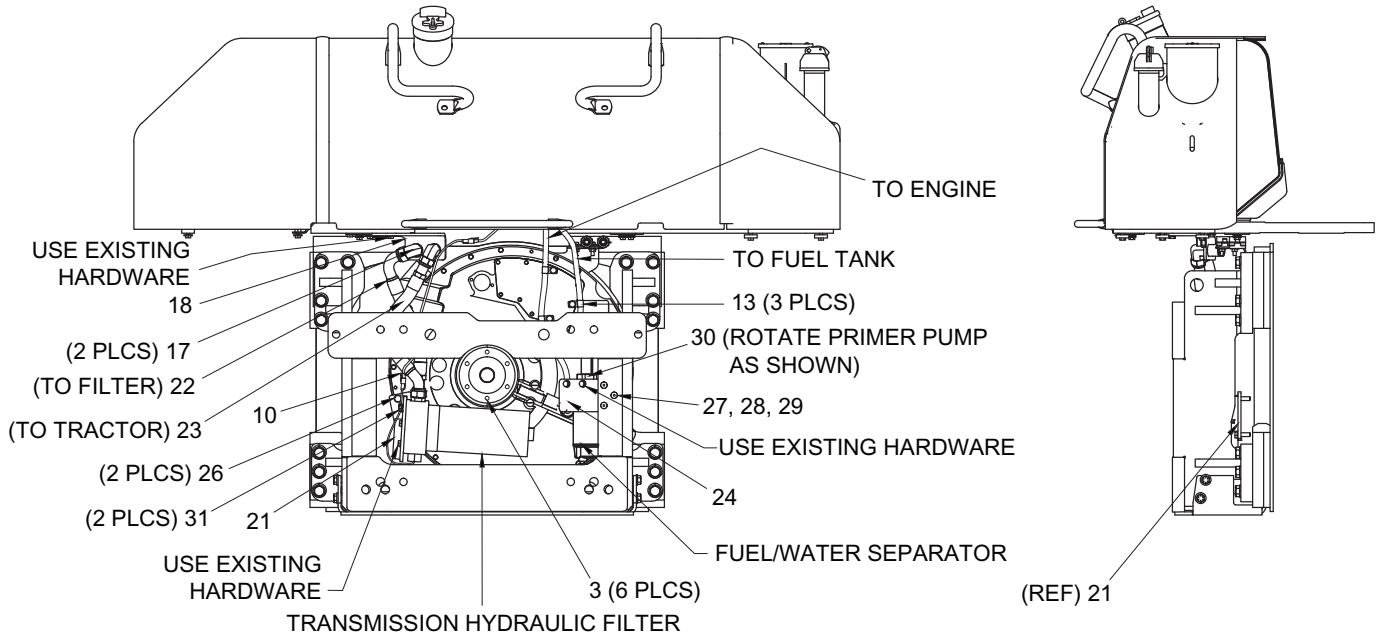


**FUEL/WATER SEPARATOR RELOCATION
 FOR TRACTORS WITH OPTIONAL ELECTRIC PRIMER PUMP**

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305516W	Bracket, Mounting	1	19	*a 293710W	Capscrew	16
2	2305541W	Guard, Bottom	1	20	221777W	Washer	16
3	56995W	Plug	6	21	2307890W	Bracket, Filter	1
4	15887W	O-Ring	1	22	2307895W	Assembly, Hose	1
6	137852W	Clamp, Strap	AR	23	2307896W	Assembly, Hose	1
7	221780W	Washer	10	24	2307894W	Plate, Mounting	1
8	*a Y17C-1024	Capscrew	4	26	293647W	Capscrew	2
9	221775W	Washer	4	27	Y09G-0616	Capscrew	3
10	2305617W	Harness, Filter - Ext.	2	28	15134W	Washer	3
11	2306836W	Bracket, Mounting	1	29	15056W	Nut	3
12	2306857W	Hose, Fuel	1	30	2307911W	Gasket, Fuel Primer	1
13	387316W	Clamp, Insulated Hose	3	31	243057	Clamp	2
14	166857W	Clamp	5	40	*a Y17C-1664	Capscrew	2
15	2306858W	Fitting	1	41	*a 221692W	Capscrew	6
16	18738W	Capscrew	2	42	221720W	Nut	2
17	2305620W	Fitting	2				
18	2305588W	Bracket, Fitting	1		*a Use 318702W Thread Lock		

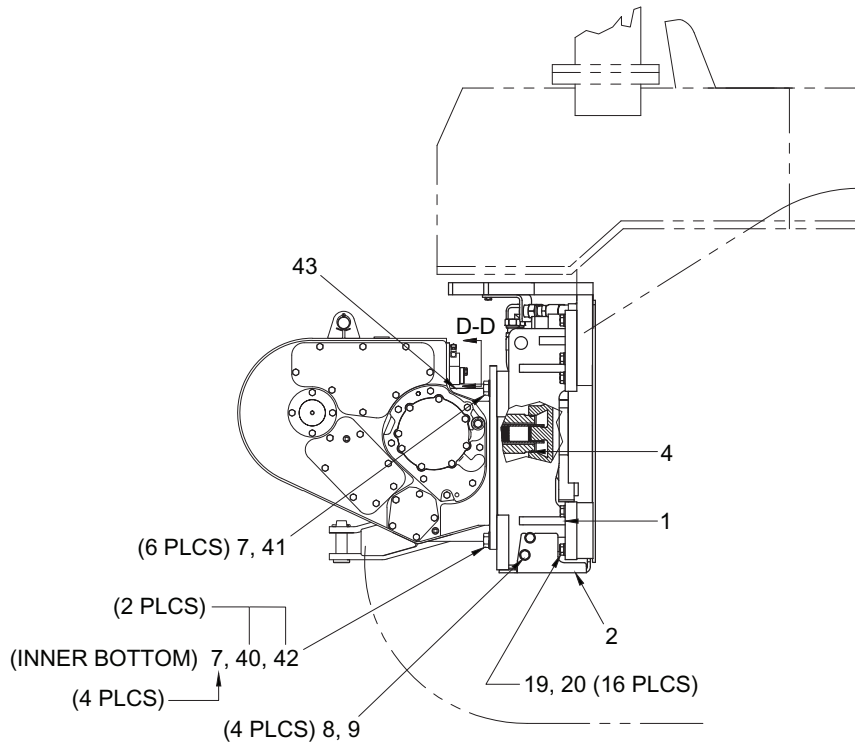
Mounting Parts

Caterpillar D6N (C81)
Electronic Controls (E-Controls)
Page 1 of 2



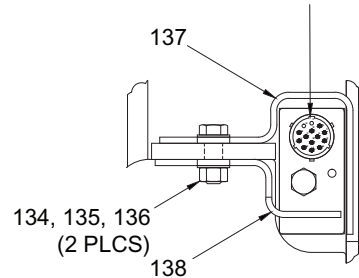
TRACTOR FILTER RELOCATION

Note: This winch includes a drop box, See drop box page in Section 2 for related drop box parts.



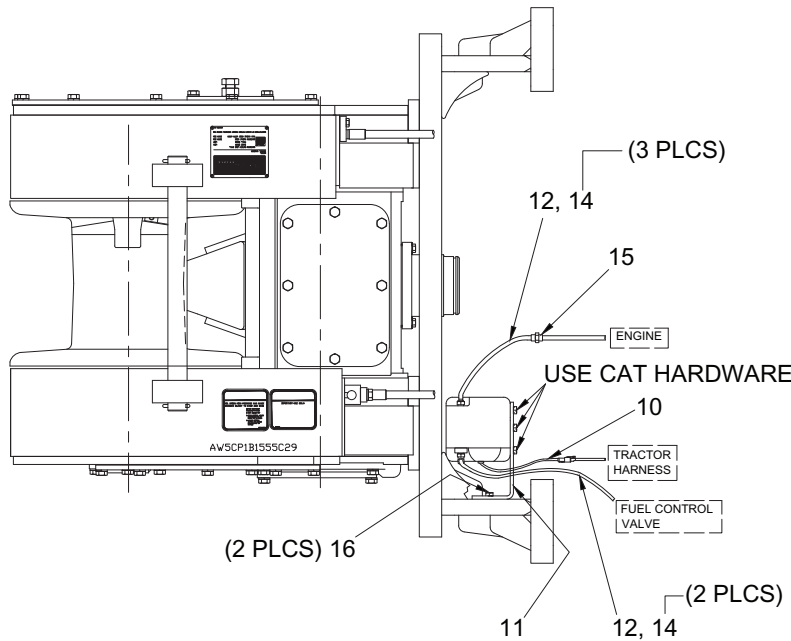
WINCH, MOUNTING BRACKET, & GUARD INSTALLATION

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



SECTION D-D

Mounting Parts
 Caterpillar D6N (C81)
 Electronic Controls (E-Controls)
 Page 2 of 2



**FUEL/WATER SEPARATOR RELOCATION
 FOR TRACTORS WITH OPTIONAL ELECTRIC PRIMER PUMP**

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305516W	Bracket, Mounting	1	22	2307895W	Assembly, Hose	1
2	2305541W	Guard, Bottom	1	23	2307896W	Assembly, Hose	1
3	56995W	Plug	6	24	2307894W	Plate, Mounting	1
4	15887W	O-Ring	1	26	293647W	Capscrew	2
6	137852W	Clamp, Strap (Not Shown)	AR	27	Y09G-0616	Capscrew	3
7	221780W	Washer	10	28	15134W	Washer	3
8	*a Y17C-1024	Capscrew	4	29	15056W	Nut	3
9	221775W	Washer	4	30	2307911W	Gasket, Fuel Primer	1
10	2305617W	Harness, Filter - Ext.	2	31	243057	Clamp	2
11	2306836W	Bracket, Mounting	1	40	*a Y17C-1664	Capscrew	2
12	2306857W	Hose, Fuel	1	41	*a 221692W	Capscrew	6
13	387316W	Clamp, Insulated Hose	3	42	221720W	Nut	2
14	166857W	Clamp	5	43	2302512W	Gasket, Top	1
15	2306858W	Fitting	1	134	*a 200454W	Capscrew	2
16	18738W	Capscrew	2	135	221771W	Washer	2
17	2305620W	Fitting	2	136	15058W	Nut	2
18	2305588W	Bracket, Fitting	1	137	2304629W	Harness Guard, Upper	1
19	*a 293710W	Capscrew	16	138	2304630W	Harness Guard, Lower	1
20	221777W	Washer	16				
21	2307890W	Bracket, Filter	1		*a Use 318702W Thread Lock		

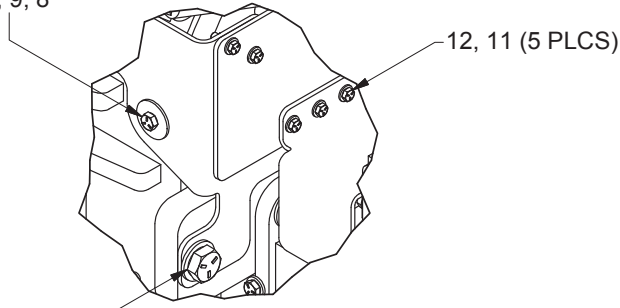
Mounting Parts

Guards Installation

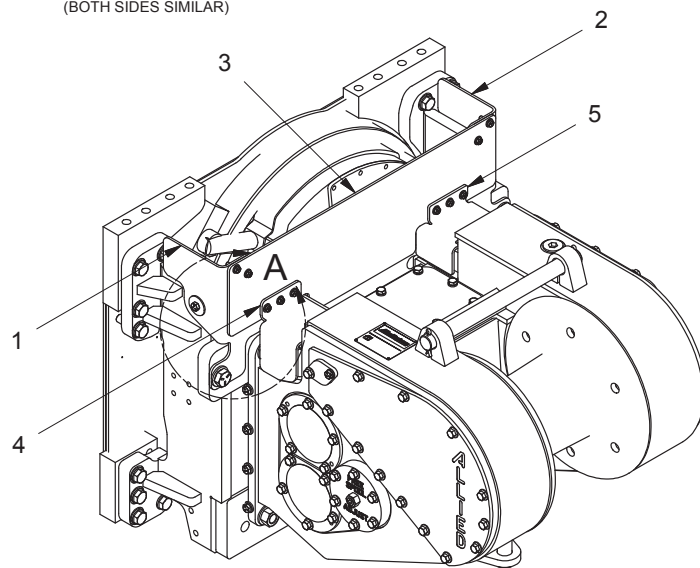
Caterpillar D5N (C28, C77), D6N (C47, C78, C81)

Page 1 of 2

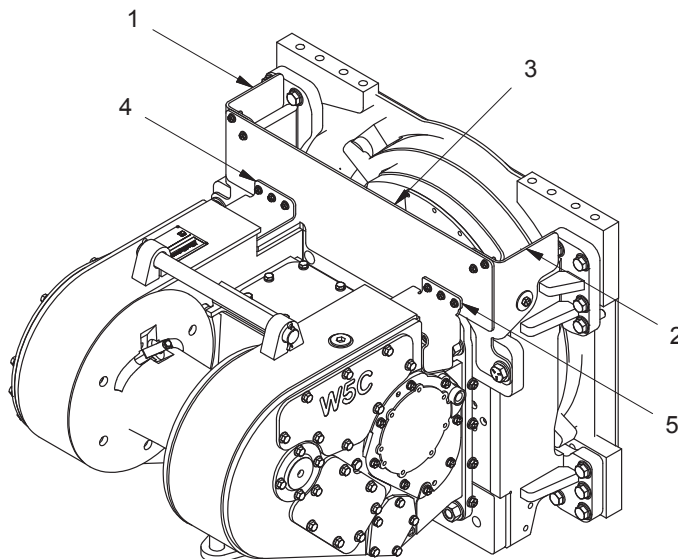
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10, 9, 8



DETAIL A
(BOTH SIDES SIMILAR)



LEFT REAR VIEW



RIGHT REAR VIEW

Mounting Parts

Guards Installation

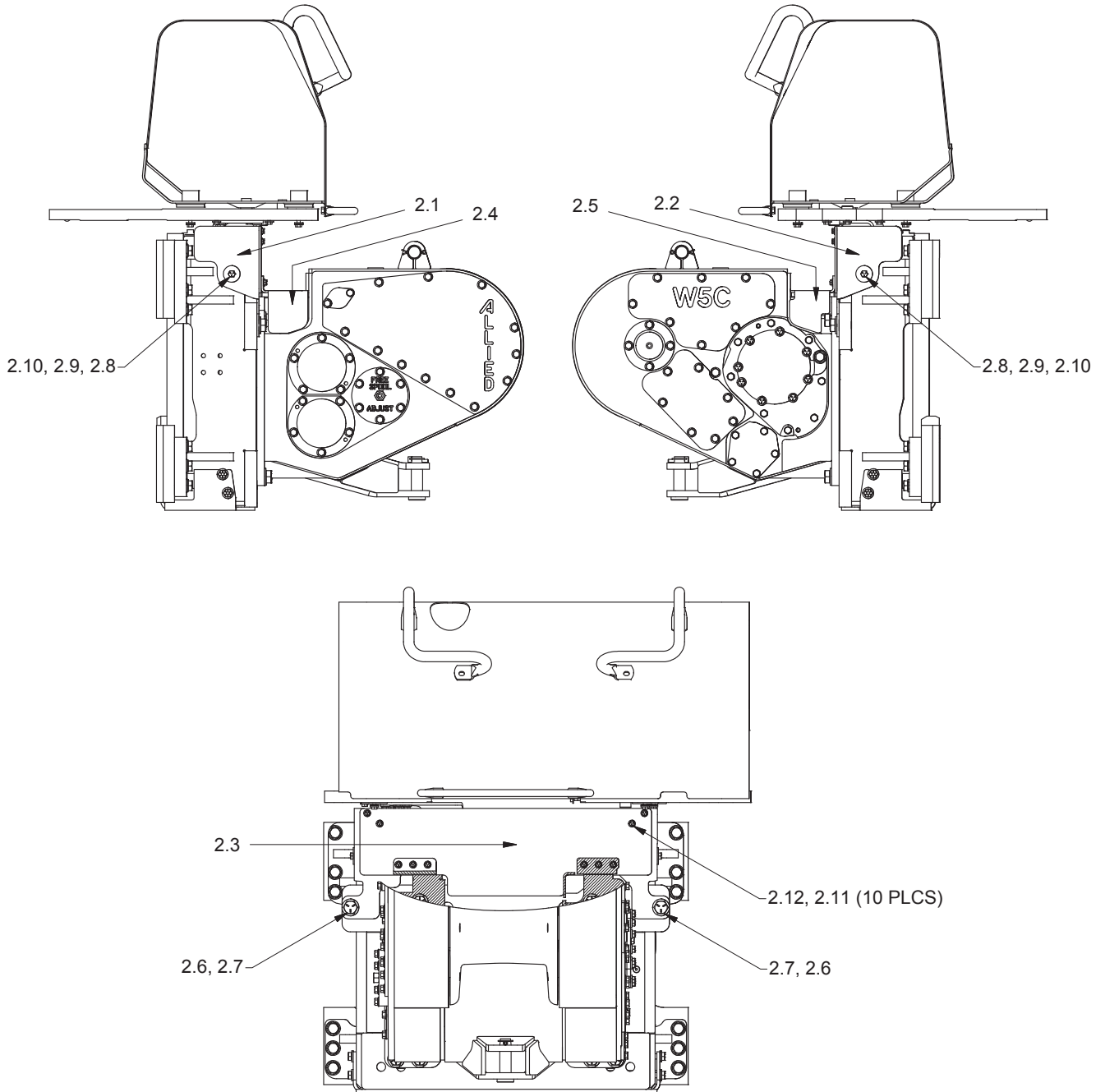
Caterpillar D5N (C28, C77), D6N (C47, C78, C81)

Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2314246	Guard, LH	1	7	18662W	Capscrew	2
2	2314247	Guard, RH	1	8	307788W	Capscrew	2
3	2314240	Plate, Guard Center	1	9	2305715W	Washer	4
4	2314244	Plate, Guard LH Cable	1	10	221711W	Nut	2
5	2314245	Plate, Guard RH Cable	1	11	221767W	Washer	10
6	221780W	Washer	2	12	16828W	Capscrew	10

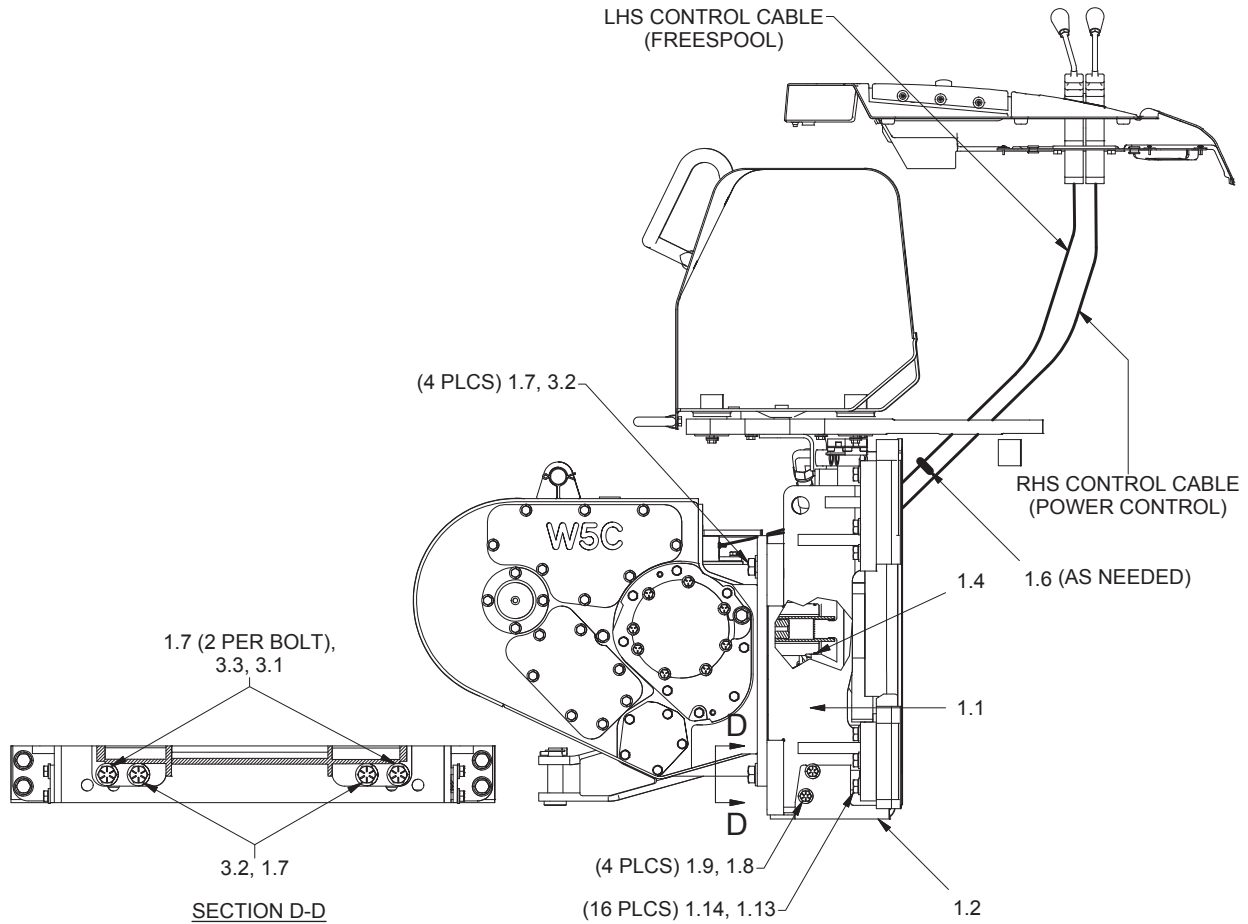
Mounting Parts

Caterpillar D6N Tier 4i (C810)
Push/Pull Controls (P-Controls)
Page 1 of 2



TOP GUARD INSTALLATION

Mounting Parts
 Caterpillar D6N Tier 4i (C810)
 Push/Pull Controls (P-Controls)
 Page 2 of 2

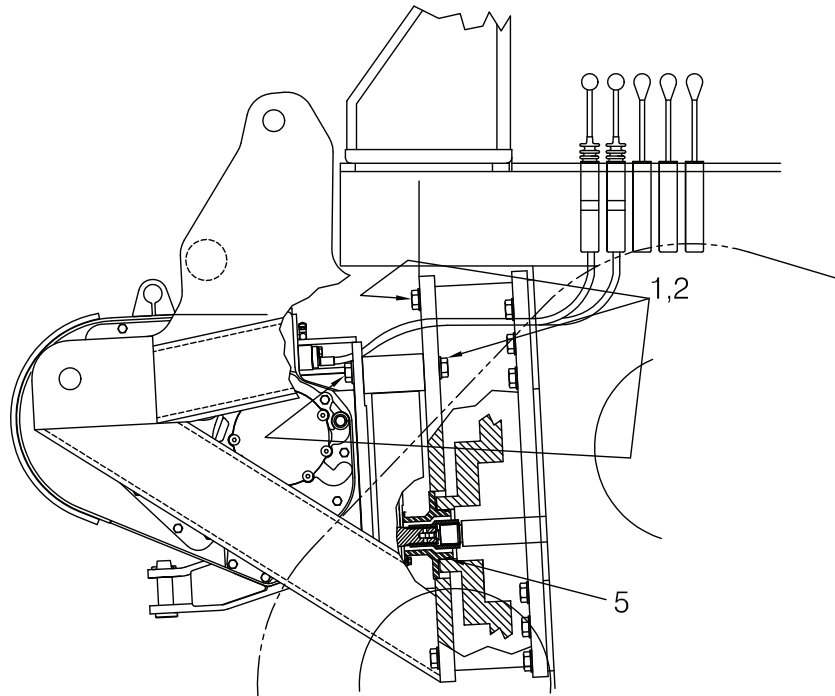
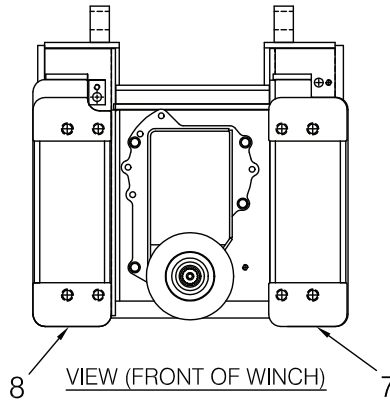


WINCH, MOUNTING BRACKET & BOTTOM GUARD INSTALLATION

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1.1	2305516W	Bracket, Mounting	1	2.5	2314245	Plate, RH Cable Guard	1
1.2	2305541W	Guard, Bottom	1	2.6	221780W	Washer	2
1.4	15887W	O-Ring	1	2.7	18662W	Capscrew	2
1.6	137852W	Clamp, Strap	AR	2.8	307788W	Capscrew	2
1.7	221780W	Washer	10	2.9	2305715W	Washer	4
1.8	*a Y17C-1024	Capscrew	4	2.10	221711W	Nut	2
1.9	R13811435	Washer	4	2.11	221767W	Washer	10
1.13	*a 293710W	Capscrew	16	2.12	16828W	Capscrew	10
1.14	221777W	Washer	16				
2.1	2314246	Guard, LH	1	3.1	Y17C-1664	Capscrew	2
2.2	2314247	Guard, RH	1	3.2	*a 221692W	Capscrew	6
2.3	2314240	Plate, Center Guard	1	3.3	221720W	Nut	2
2.4	2314244	Plate, LH Cable Guard	1				
					*a	Use 318702W Thread Lock	

Mounting Parts

Caterpillar D6H and D6R With Esco Grapple (C381)

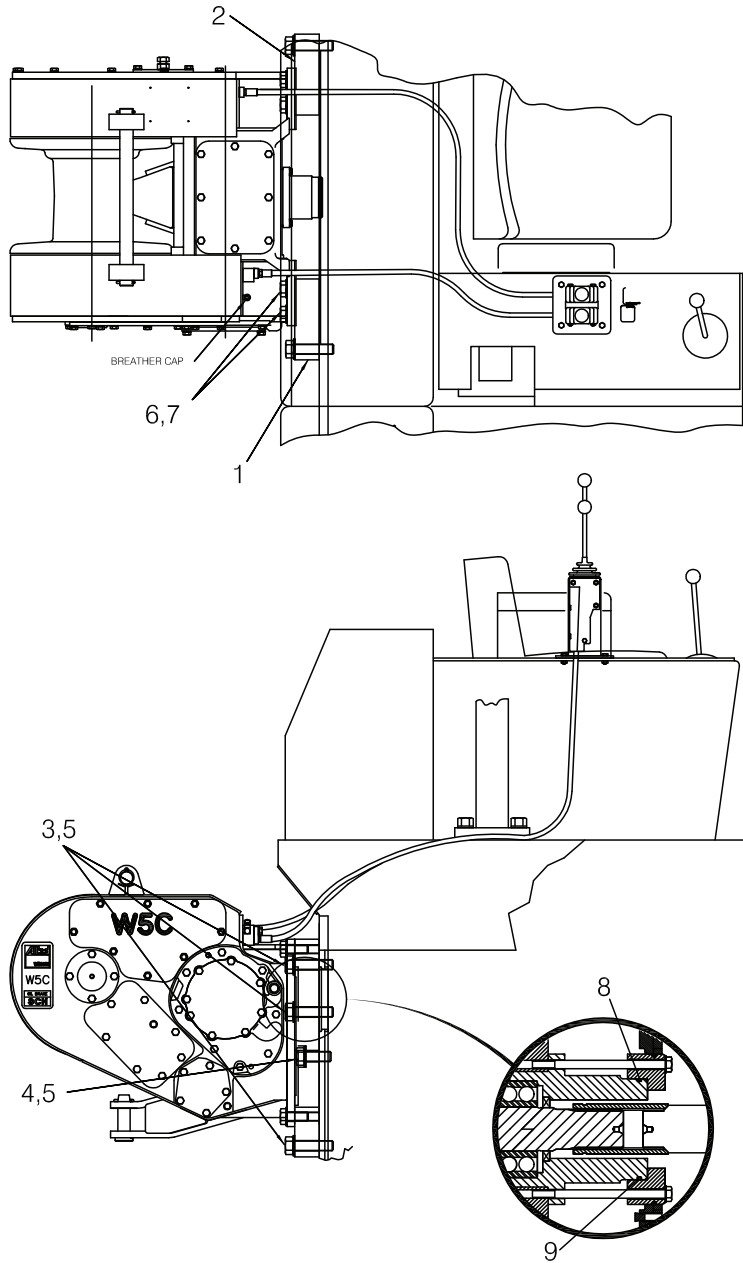


Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 221690W	Capscrew	8	8	2303527W	Bracket, Mounting - LH	1
2	221780W	Washer	8				
5	15887W	O-Ring	1		*a	Use 230064W Loctite Kit	
7	2303462W	Bracket, Mounting - RH	1				

Mounting Parts

Dresser/Dressta TD12B and TD12C (H35)

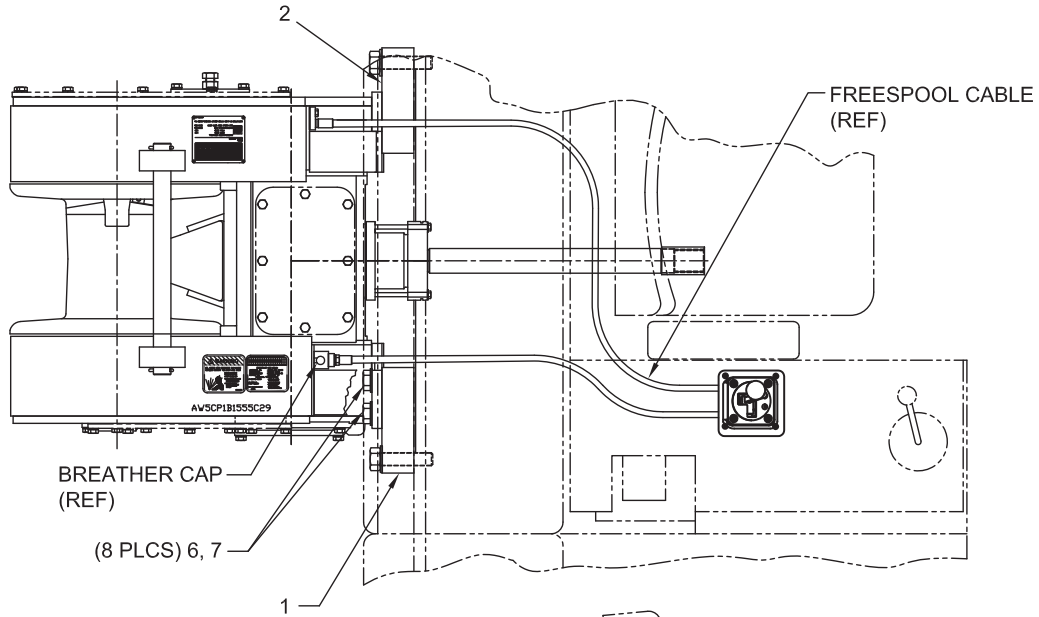


Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

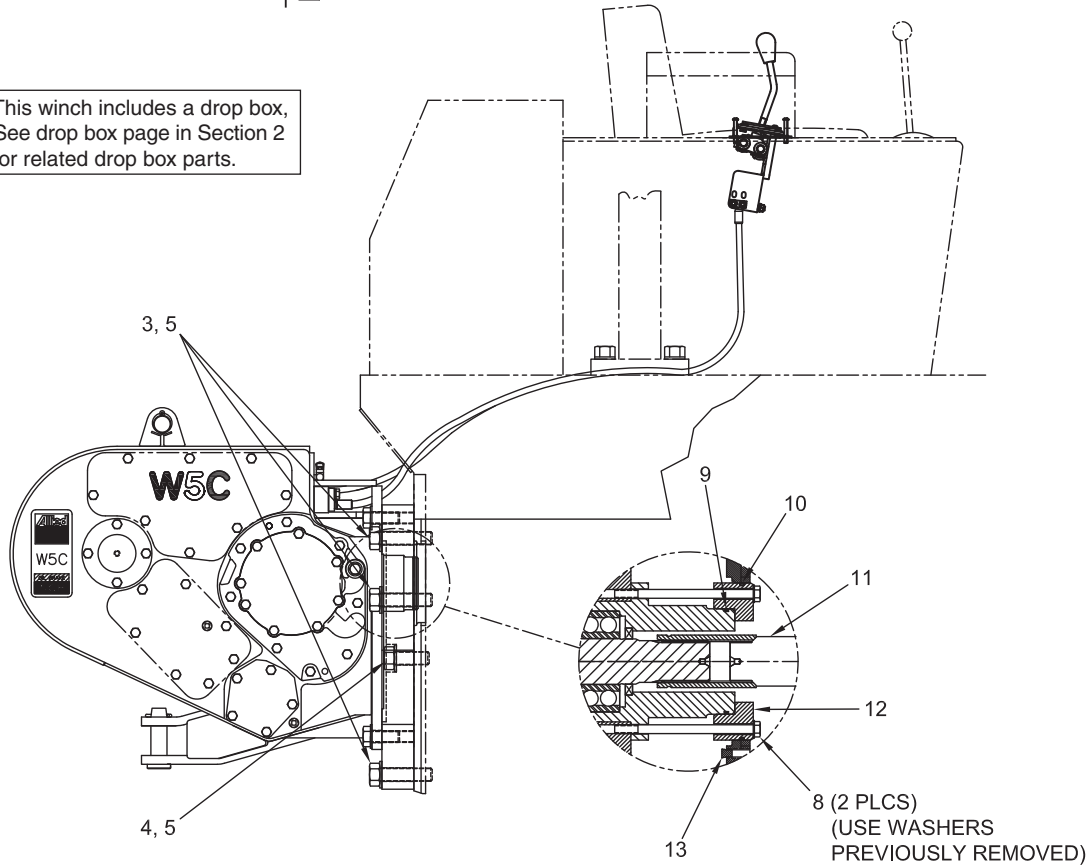
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2302908W	Bracket, Mounting - RH	1	7	221780W	Washer	8
2	2302909W	Bracket, Mounting - LH	1	8	90937W	O-Ring	1
3	*a 2302969W	Capscrew	6	9	18000W	Plug	5
4	*a 1314687W	Capscrew	2				
5	15137W	Washer	8				
6	*a 221690W	Capscrew	8				
				*a	Use 318702W Thread Lock		

Mounting Parts

Dresser TD14M (H38)



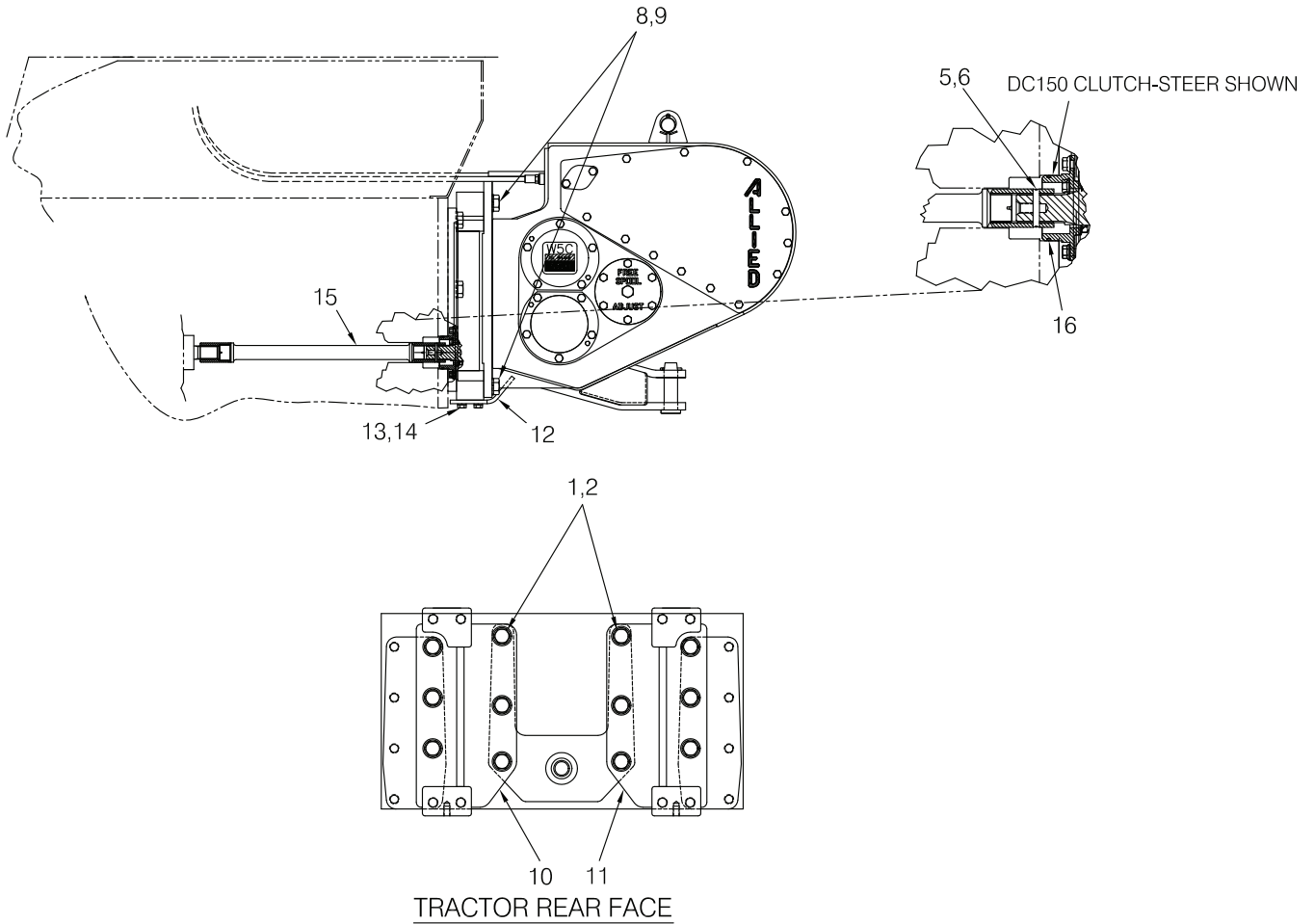
Note: This winch includes a drop box, See drop box page in Section 2 for related drop box parts.



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2302908W	Bracket, Mounting - RH	1	9	15887W	O-Ring	1
2	2302909W	Bracket, Mounting - LH	1	10	90937W	O-Ring	1
3	*a 2302969W	Capscrew	8	11	2302955W	Shaft, Coupling	1
4	*a 1314687W	Capscrew	2	12	2302933W	Adapter, Carrier	1
5	15137W	Washer	10	13	18000W	Plug	5
6	*a 221690W	Capscrew	8				
7	221780W	Washer	8				
8	218589w	Capscrew	2				
				*a	Use 318702W Thread Lock		

Mounting Parts

Fiat-Hitachi/New Holland FD10E, FD145 (A39), DC150 (A40), DC150 PS (A38)

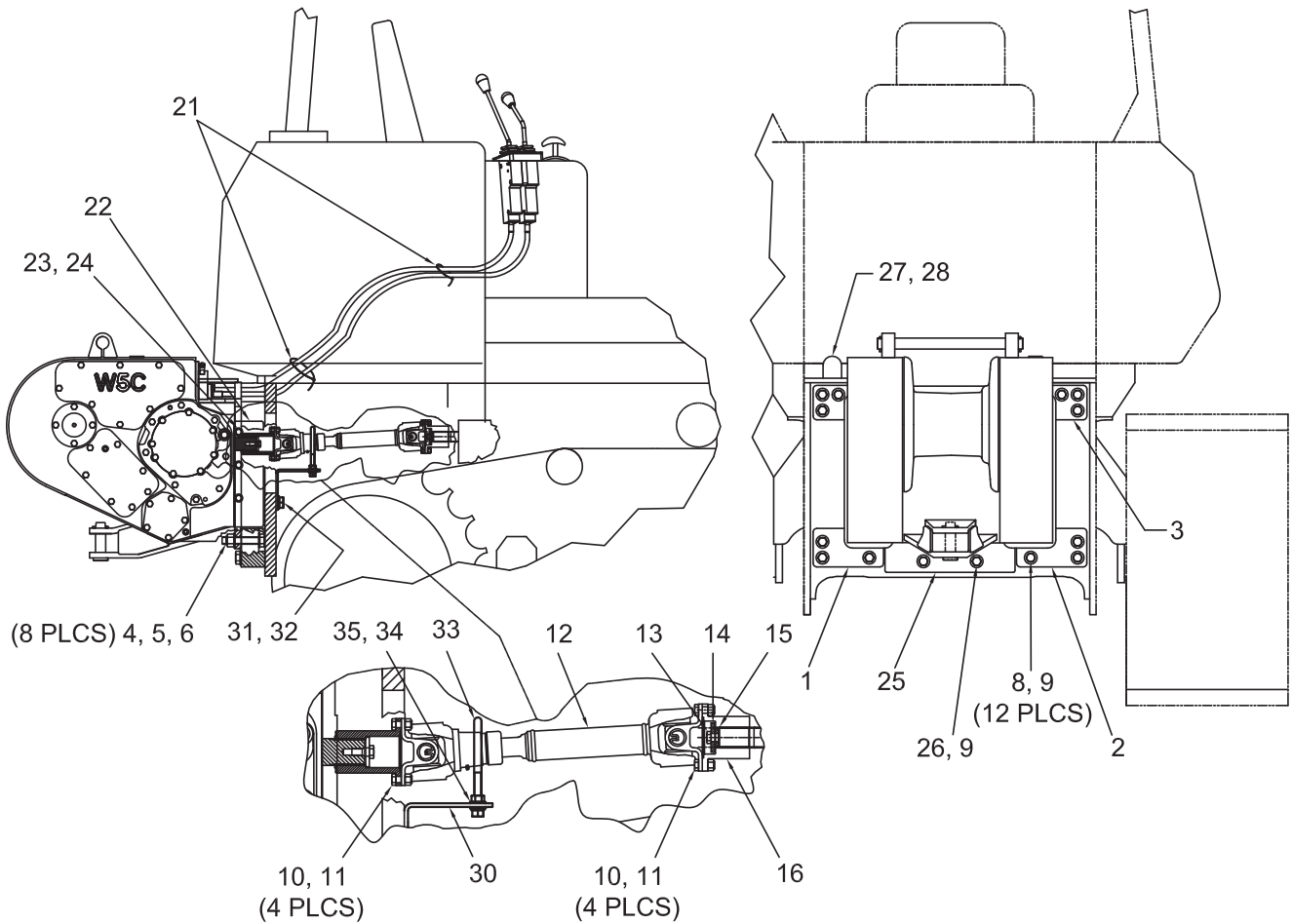


Note: This winch includes a drop box, See drop box page in Section 2 for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 2301477W	Capscrew	12	13	221775W	Washer	4
2	296434W	Washer	12	14	*a 221616W	Capscrew	4
5	19928W	Pin	1	15	2303232W	Shaft	1
6	9554W	Lock Ring	1	*b 2305429W	Shaft	1	
8	*a 221690W	Capscrew	8	16	15880W	O-Ring	1
9	221780W	Washer, Hardened	8	*b 90263W	O-Ring	1	
10	2303211W	Bracket, Mounting - LH	1				
11	2303212W	Bracket, Mounting - RH	1	*a	Use 230064W Loctite Kit		
12	2303235W	Plate, Guard	1	*b	Used only on New Holland DC150 PS (A38)		

Mounting Parts

John Deere 700H (E40), 700J (E39)

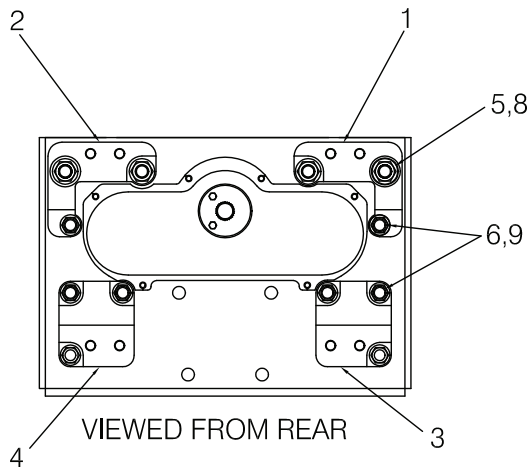
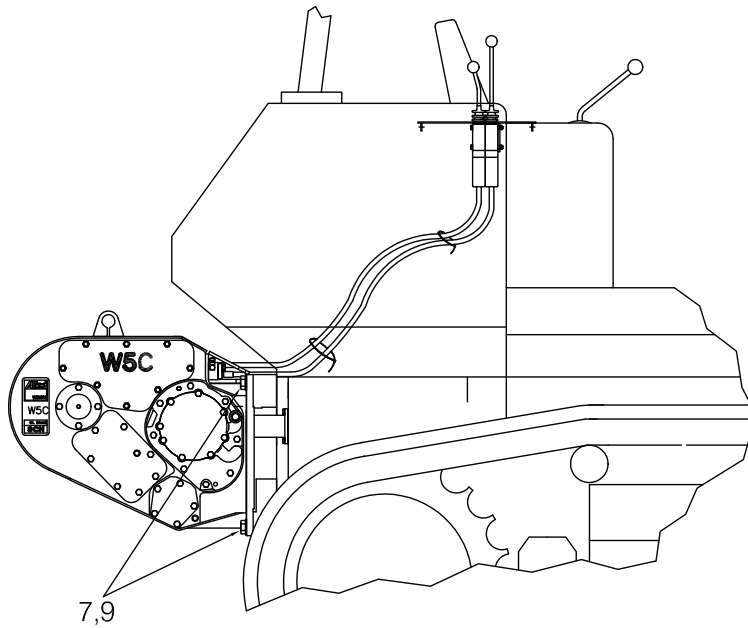


Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303732W	Bracket, Mounting - LH Bottom	1	22	2304611W	Guard, Side	2
2	2303731W	Bracket, Mounting - RH Bottom	1	23	221771W	Washer	6
3	2303730W	Bracket, Mounting - Top	1	24	*a 18586W	Capscrew	6
4	221720W	Nut	8	25	2304612W	Guard, Bottom	9
5	*a 230687W	Capscrew	8	26	*a 2304613W	Capscrew	2
6	221780W	Washer	16	27	2303039W	Guard Cable	2
8	*a 293732W	Capscrew	12	28	137852W	Clamp, Strap	4
9	296434W	Washer	14	30	2314016	Guard, Bracket	1
10	2301540W	Capscrew	8	31	*a Y19C-M2440	Capscrew	2
11	221710W	Nut	8	32	296434W	Washer	2
12	2303734W	Driveshaft	1	33	2304350W	Assembly, U-Bolt	1
13	*a 292527W	Capcrew	1	34	15135W	Washer	4
14	2307311W	Washer	1	35	15158W	Washer	2
15	58916W	Ring, Snap	1				
16	2303733W	Flange	1				
21	129563W	Clamp, Strap	4				
				*a	Use 230064W Loctite Kit		

Mounting Parts

John Deere 750C Series I (E45)
Last Used on S/N AW5C-1248

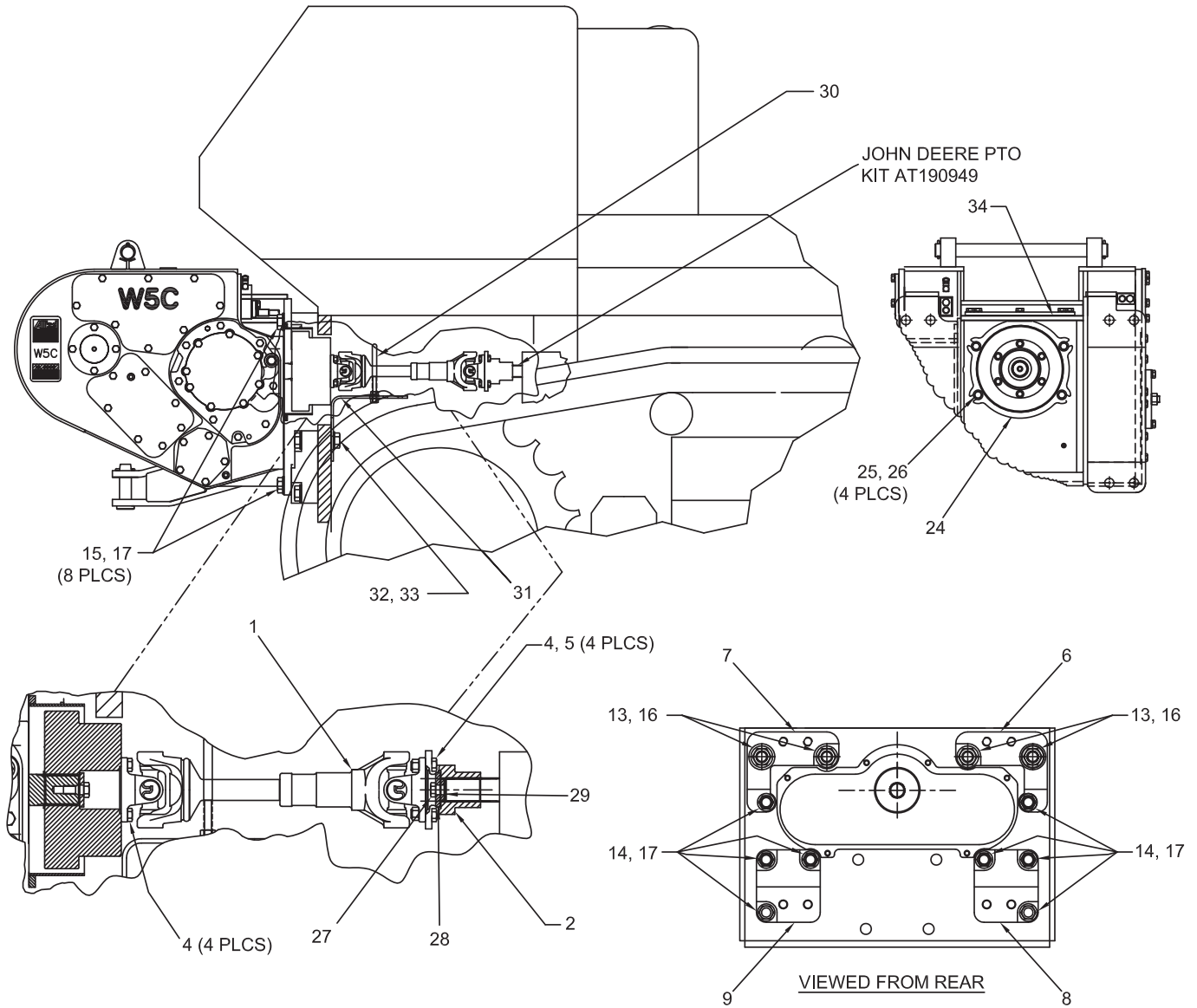


Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2302923W	Bracket, Mounting - RH - Upper	1	7	*a 221692W	Capscrew	8
2	2302924W	Bracket, Mounting - LH - Upper	1	8	15128W	Washer	4
3	2302925W	Bracket, Mounting - RH - Lower	1	9	221780W	Washer	8
4	2302926W	Bracket, Mounting - LH - Lower	1				
5	*a 17384W	Capscrew	4		*a	Use 318702W Thread Lock	
6	*a 18672W	Capscrew	8				

Mounting Parts

John Deere 750C Series I (E45) - First Used on S/N AW5C-1249
750C Series II (E45)

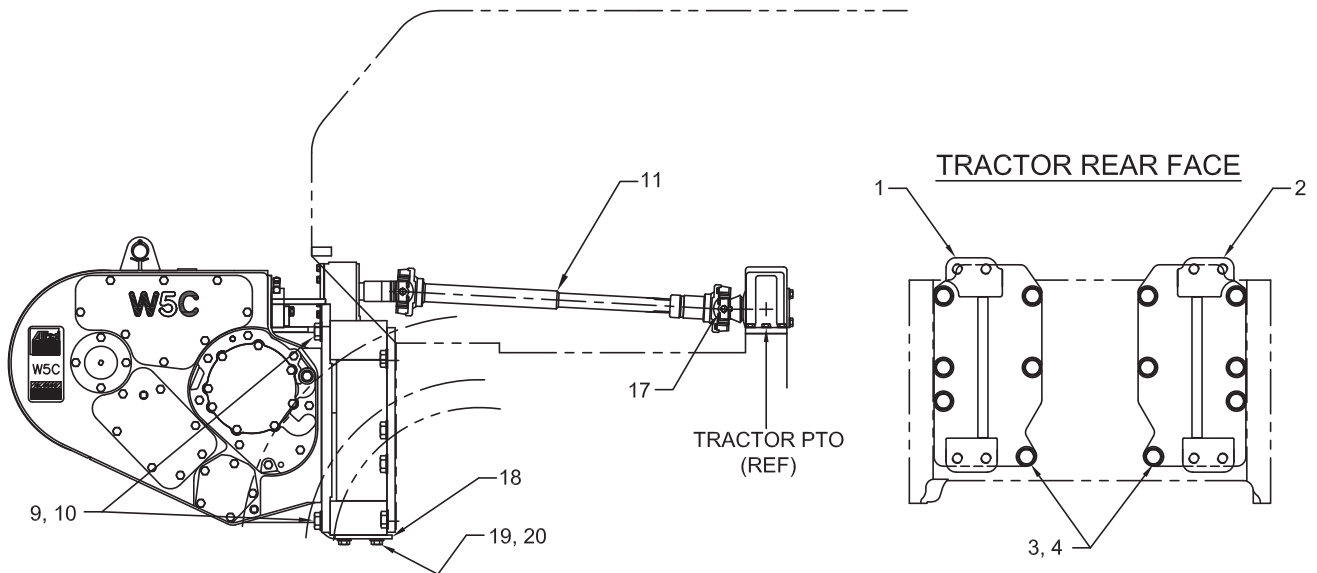
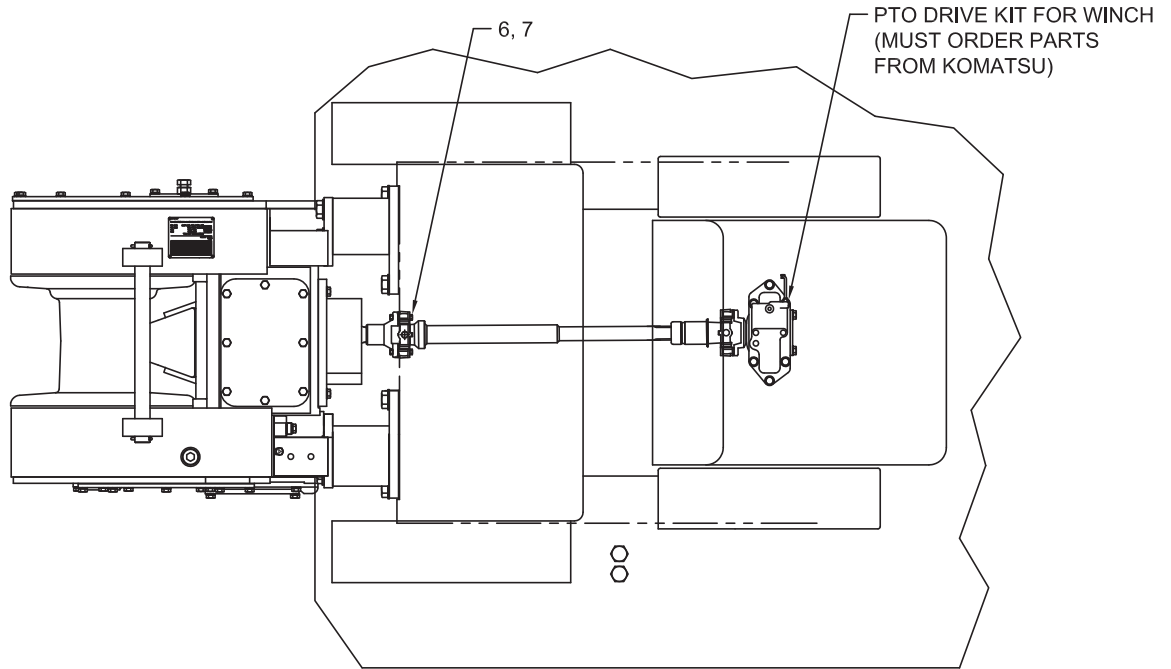


Note: This winch includes a drop box.
See drop box page in Section 2
for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303952W	Driveshaft, Slip	1	24	2303265W	Guard, Flange	1
2	2303733W	Flange, Tractor End	1	25	*a 16829W	Capscrew	4
4	2301540W	Capscrew	8	26	221771W	Washer	4
5	221710W	Nut	4	27	292527W	Capscrew	1
6	2302923W	Bracket, Mounting - RH - Upper	1	28	2307311W	Washer	1
7	2302924W	Bracket, Mounting - LH - Upper	1	29	58916W	Snap Ring	1
8	2302925W	Bracket, Mounting - RH - Lower	1	30	2304350W	U-Bolt	1
9	2302926W	Bracket, Mounting - LH - Lower	1	31	2303981W	Guard, Driveline	1
13	*a 17384W	Capscrew	4	32	18662W	Capscrew	2
14	*a 18672W	Capscrew	8	33	15166W	Washer	2
15	*a 221692W	Capscrew	8	34	2302512W	Gasket, Top	1
16	15128W	Washer	4				
17	221780W	Washer	16				
					*a Use 3180702W Thread Lock		

Mounting Parts

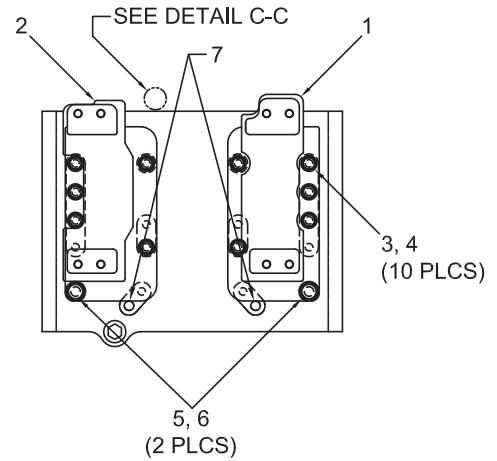
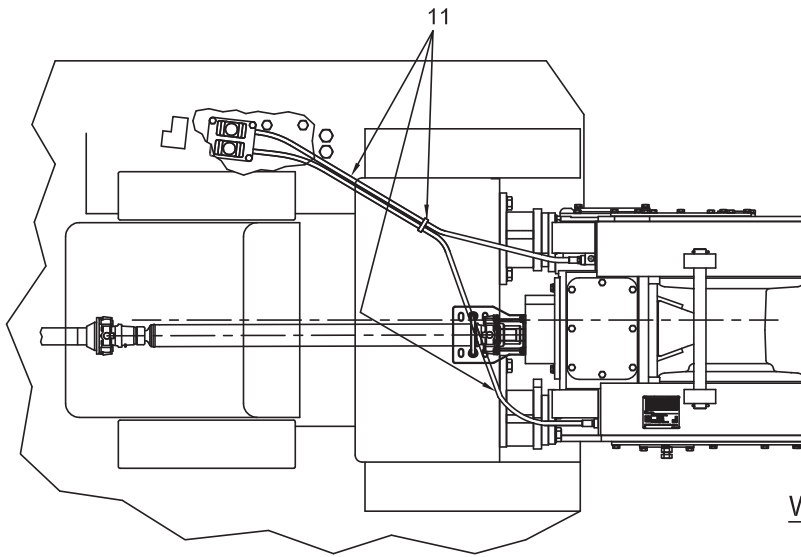
Komatsu D41E-6 (K27)



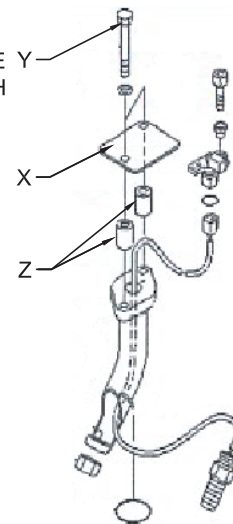
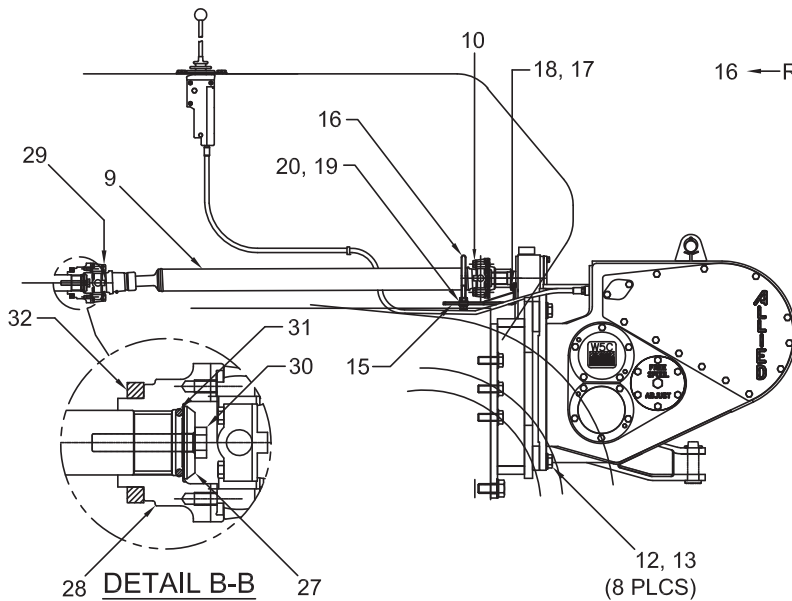
Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2302978W	Bracket, Mounting - LH	1		221466W	. Capscrew	8
2	2302979W	Bracket, Mounting - RH	1		NSS	. Propshaft	1
3	*a 225065W	Capscrew	12		NSS	. Assembly, Slip Yoke	1
4	296434W	Washer	12	17	293617W	Capscrew	4
6	221475W	Capscrew	4	18	2303102W	Plate, Guard	1
7	221351W	Nut	4	19	221775W	Washer	4
9	*a 221690W	Capscrew	8	20	*a 221616W	Capscrew	4
10	221780W	Washer	8				
11	2301680W	Assembly, Drive Shaft	1		*a	Use 230064W Loctite Kit	
	2300041W	. U-Joint	2				

Mounting Parts
 Komatsu D61EX-12 (K47)
 Push/Pull Controls (P-Controls)



**REAR FACE
 WITH WINCH MOUNTING BRACKET**

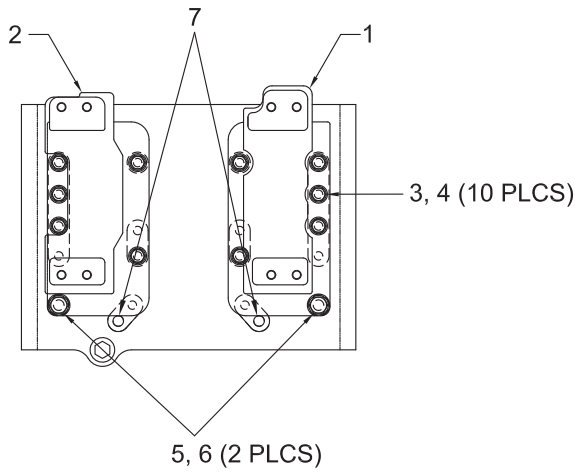


DETAIL C-C

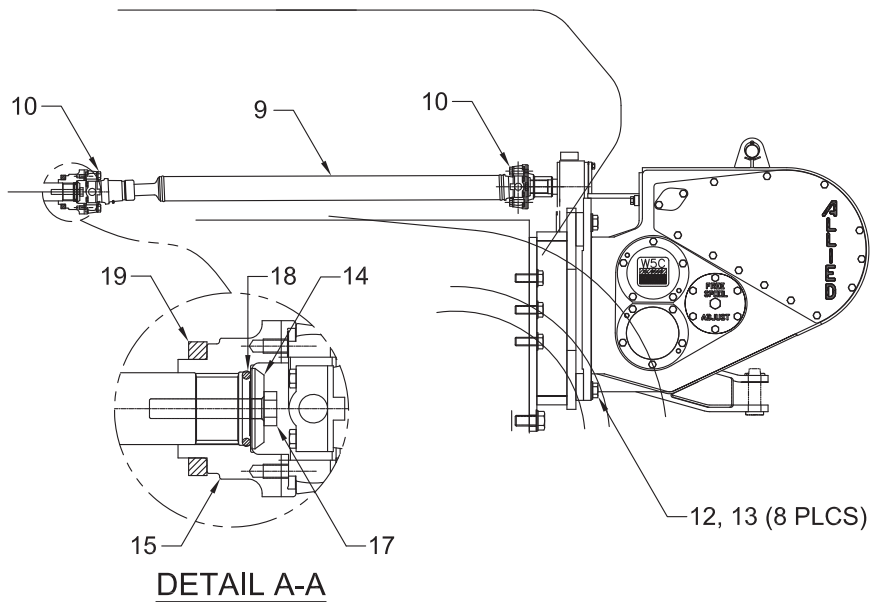
Note: This winch includes a drop box,
 See drop box page in Section 2
 for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303800W	Bracket, Mounting - RH	1	16	2304350	Assembly, U-Bolt	1
2	2303801W	Bracket, Mounting - LH	1	17	Y17C-0616	Capscrew	2
3	*a 225065W	Capscrew	10	18	221767W	Washer	2
4	296434W	Washer	10	19	15158W	Washer	2
5	*a 2303817W	Capscrew	2	20	15135W	Washer	4
6	296438W	Washer	2	27	2300422W	Washer	1
7	18001W	Plug	2	28	2300423W	Yoke, PTO	1
9	2303674W	Drive Shaft	1	29	*a 293632W	Capscrew	4
10	*a 293632W	Capscrew	4	30	*a 2301643W	Capscrew	1
11	137852W	Clamp, Strap	3	31	2304641W	O-Ring	1
12	*a 221690W	Capscrew	8	32	2301642W	Oil Seal	1
13	221780W	Washer	8				
14	293629W	Capscrew	2				
15	2314036	Bracket, Guard	1				
					*a	Use 230064W Loctite Kit	

Mounting Parts
 Komatsu D61EX-12 (K47)
 Electronic Controls (E-Controls)



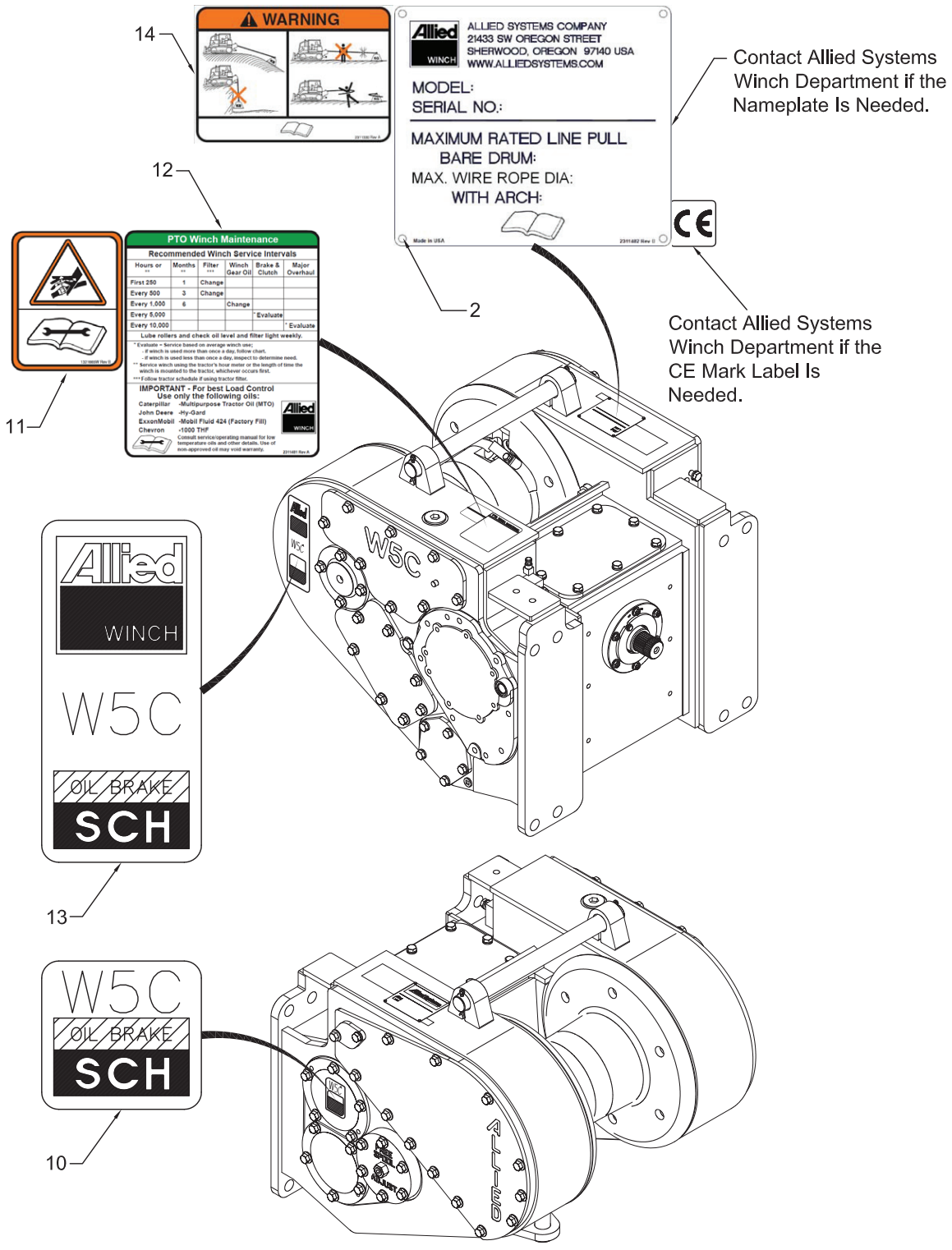
**REAR FACE
 WITH WINCH MOUNTING BRACKETS**



Note: This winch includes a drop box,
 See drop box page in Section 2
 for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303800W	Bracket, Mounting - RH	1	12	*a 221690W	Capscrew	8
2	2303801W	Bracket, Mounting - LH	1	13	221780W	Washer	8
3	*a 225065W	Capscrew	10	14	2300422W	Washer	1
4	296434W	Washer	10	15	2300423W	Yoke, PTO	1
5	*a 2303817W	Capscrew	2	17	*a 2301643W	Capscrew	1
6	296438W	Washer	2	18	2304641W	O-Ring	1
7	18001W	Plug	2	19	2301642W	Seal, Oil	1
9	2303674W	Shaft, Drive	1				
10	*a 293632W	Capscrew	4		*a Use 230064W	Loctite Kit	

Nameplate & Decals



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
2	16602W	Screw	4	12	2311481	Decal, PTO Winch Maintenance	1
10	2302843W	Decal, W5C	1	13	2302844W	Decal, Winch Model	1
11	1321665W	Decal, Warning	1	14	2311330	Decal, Load & Wire Rope Safety	1

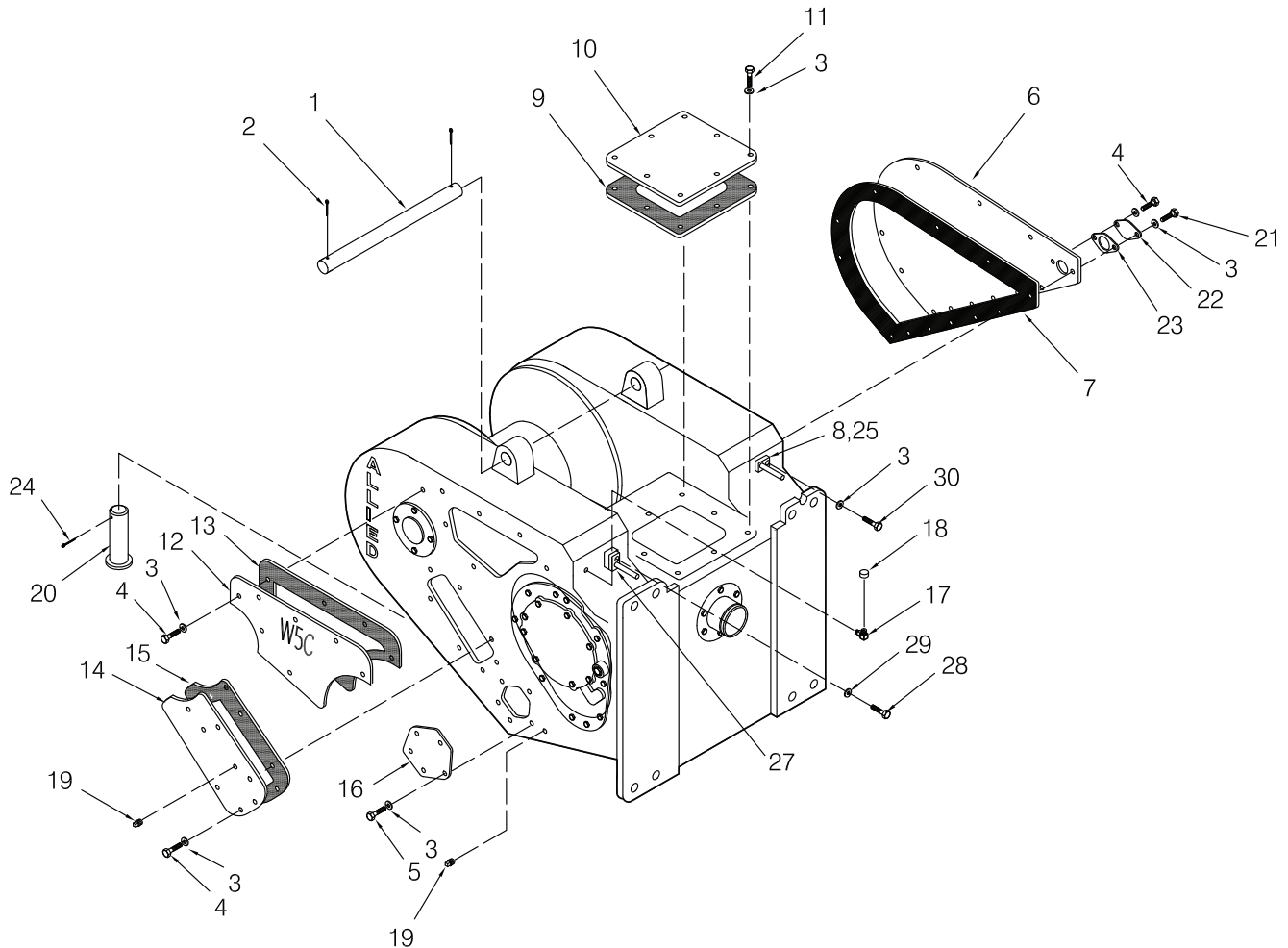


Frame & Covers/Mounting Parts/Decals

Frame and Covers	1-2 & 1-3
Mounting Parts	1-4 thru 1-37
Nameplate & Decals	1-38

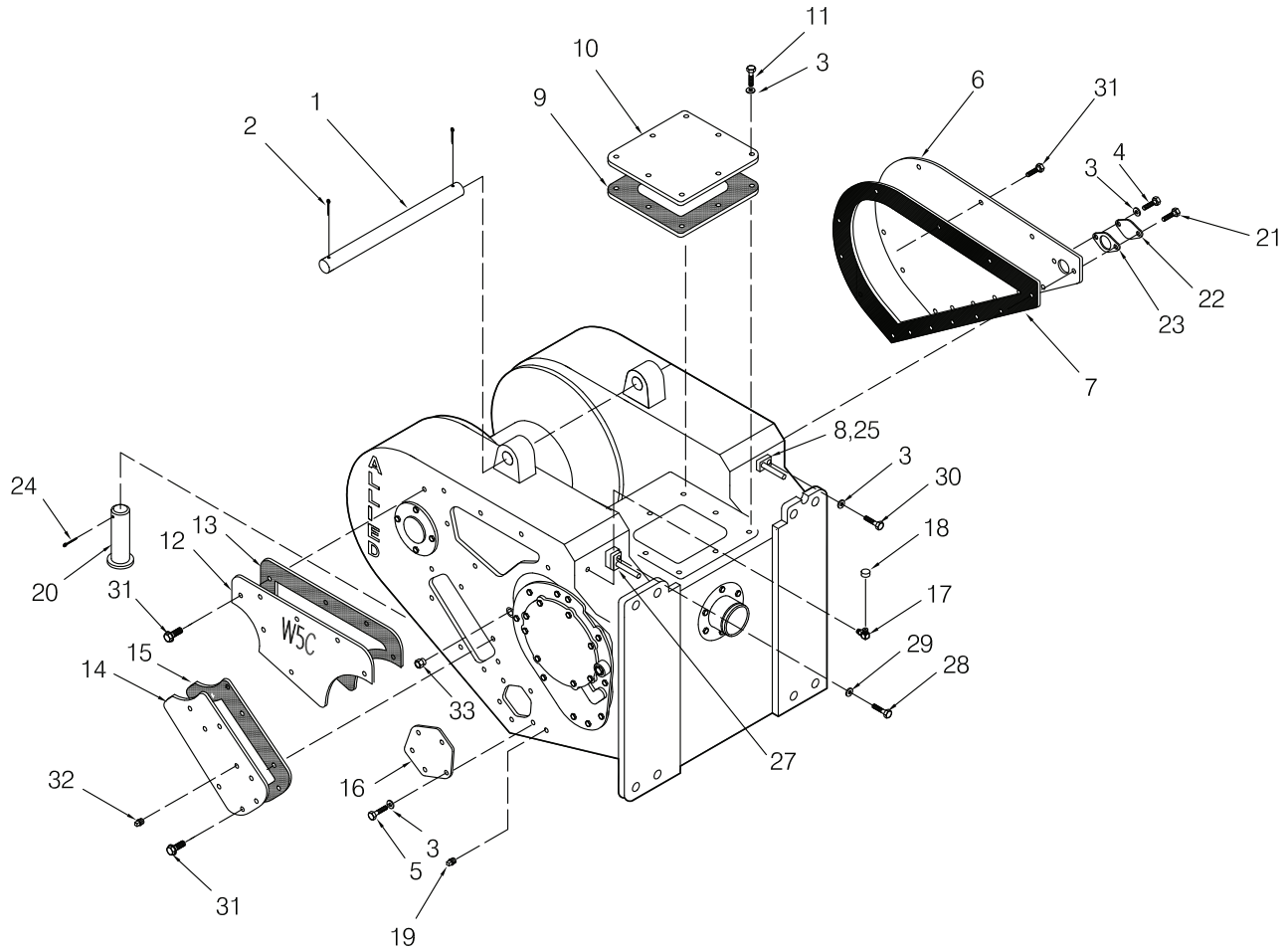
Frame and Covers

Last Used on S/N AW5C-1287



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*f 93927W	Tie Rod	1	23	*a 151646W	Gasket	1
2	15256W	Pin, Cotter	2	24	*e*g 15273W	Pin, Cotter	1
3	15158W	Washer	42	24	*h 2303221W	Pin, Retaining	1
4	178402W	Capscrew	28	25	*i 2304366W	Cover	1
5	178403W	Capscrew	5	27	*a,*j 303946W	Gasket	1
6	2302407W	Cover, Left	1	28	*j 16830W	Capscrew	1
7	*a 2302417W	Gasket	1	29	*j 15158W	Washer	1
8	*a 303946W	Gasket	1	30	*j 178402W	Capscrew	1
9	*a 2302512W	Gasket	1	30	*i 16830W	Capscrew	1
10	2302513W	Cover, Top	1				
11	16830W	Capscrew	8		*a	Included in 2302983W Gasket Kit	
12	2302387W	Cover, Valve	1		*b	Uses 313022W Adhesive	
13	*a 2302405W	Gasket	1		*c	Uses 273338W Pipe Thread Sealant	
14	2302406W	Cover, Filter	1		*d	See Section 4 for Extended Heavy Duty Drawbar Option	
15	*a 219194W	Gasket	1		*e	Used on All Units except Ranger H67C	
16	*b 2302386W	Cover, Strainer	1		*f	Used on All Units except Caterpillar D6H & D6R With Esco Grapple and Ranger H67C	
17	*c 16151W	Fitting	1		*g	Last Used on S/N AW5C-1833	
18	*c 21420W	Breather	1		*h	Not Illustrated	
19	*c 15303W	Fitting	2		*i	Used on Units with electronic controls only	
20	*d,*e 1314656W	Pin, Drawbar	1		*j	Used on Units with power controls only	
21	182209W	Capscrew	1				
22	151589W	Cover	1				

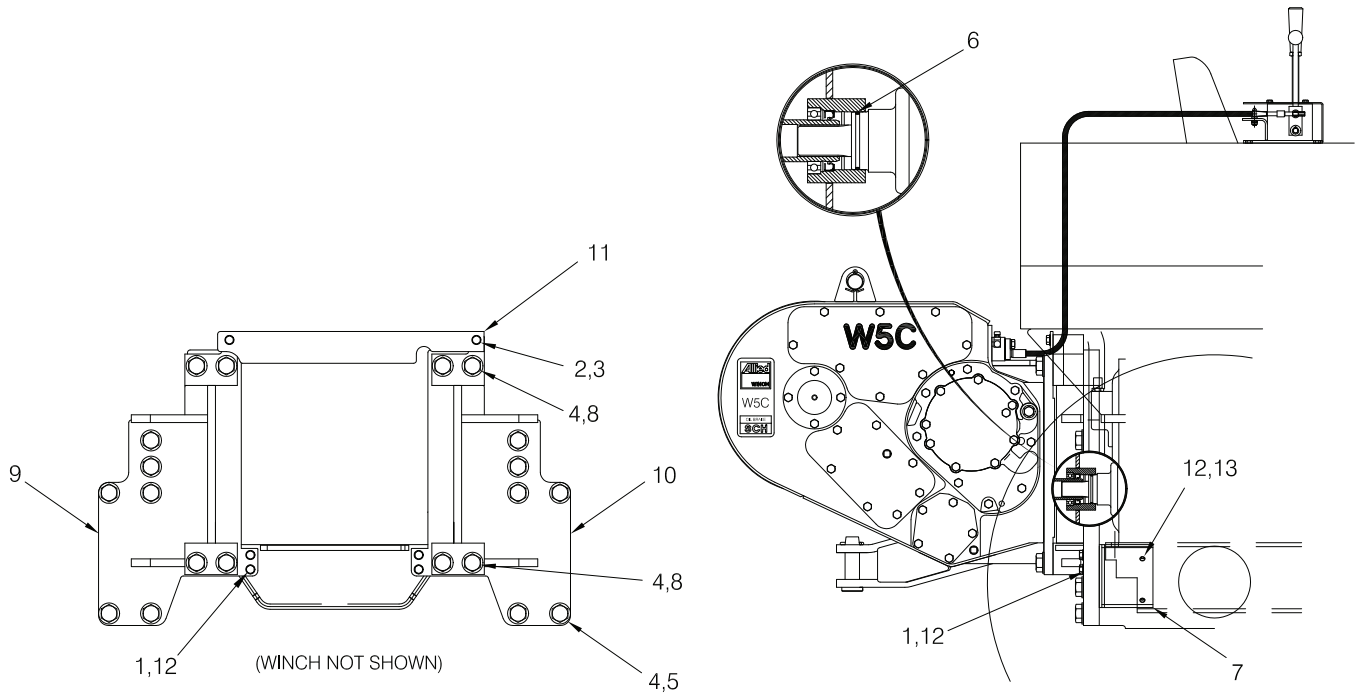
Frame and Covers
First Used on S/N AW5C-1288



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*f 93927W	Tie Rod	1	25	*i 2304366W	Cover	1
2	15256W	Pin, Cotter	2	27	*a,*j 303946W	Gasket	1
3	15158W	Washer	14	28	*j 16830W	Capscrew	1
4	178402W	Capscrew	1	29	*j 15158W	Washer	1
5	178403W	Capscrew	5	30	*j 178402W	Capscrew	1
6	2302407W	Cover, Left	1	30	*i 16830W	Capscrew	1
7	*a 2302417W	Gasket	1	31	2303848W	Screw, Flange	27
8	*a 303946W	Gasket	1	32	*k 15315W	Fitting	1
9	*a 2314778	Gasket	1	33	*l 2305101W	Gauge, Sight	1
10	2302513W	Cover, Top	1				
11	16830W	Capscrew	8		*a	Included in 2302983W Gasket Kit	
12	2302387W	Cover, Valve	1		*b	Uses 313022W Adhesive	
13	*a 2314779	Gasket	1		*c	Uses 273338W Pipe Thread Sealant	
14	*k 2302406W	Cover, Filter	1		*d	See Section 4 for Extended Heavy Duty Drawbar Option	
	*l 2305441W	Cover, Filter	1		*e	Used on All Units except Ranger H67C	
15	*a,*m,*n 2314780	Gasket	1		*f	Used on All Units except Caterpillar D6H & D6R With Esco Grapple and Ranger H67C	
16	*b 2302386W	Cover, Strainer	1		*h	Not Illustrated	
17	*c 16151W	Fitting	1		*i	Used on Units with Electronic Controls Only	
18	*c 21420W	Breather	1		*j	Used on Units with Cable Controls Only	
19	*c 15315W	Fitting	1		*k	Last Used on S/N AW5C-1301	
20	*d,*e 1314656W	Pin, Drawbar	1		*l	First Used on S/N AW5C-1302	
21	2303898W	Screw, Flange	1		*m	Included in 2311728 Filter Kit	
22	151589W	Cover	1		*n	Included in 2311729 Filter Kit	
23	*a 151646W	Gasket	1				
24	*h 2303221W	Pin, Retaining	1				

Mounting Parts

Case 1150D, 1150E, 1150G (R35), and 1150H (R36)



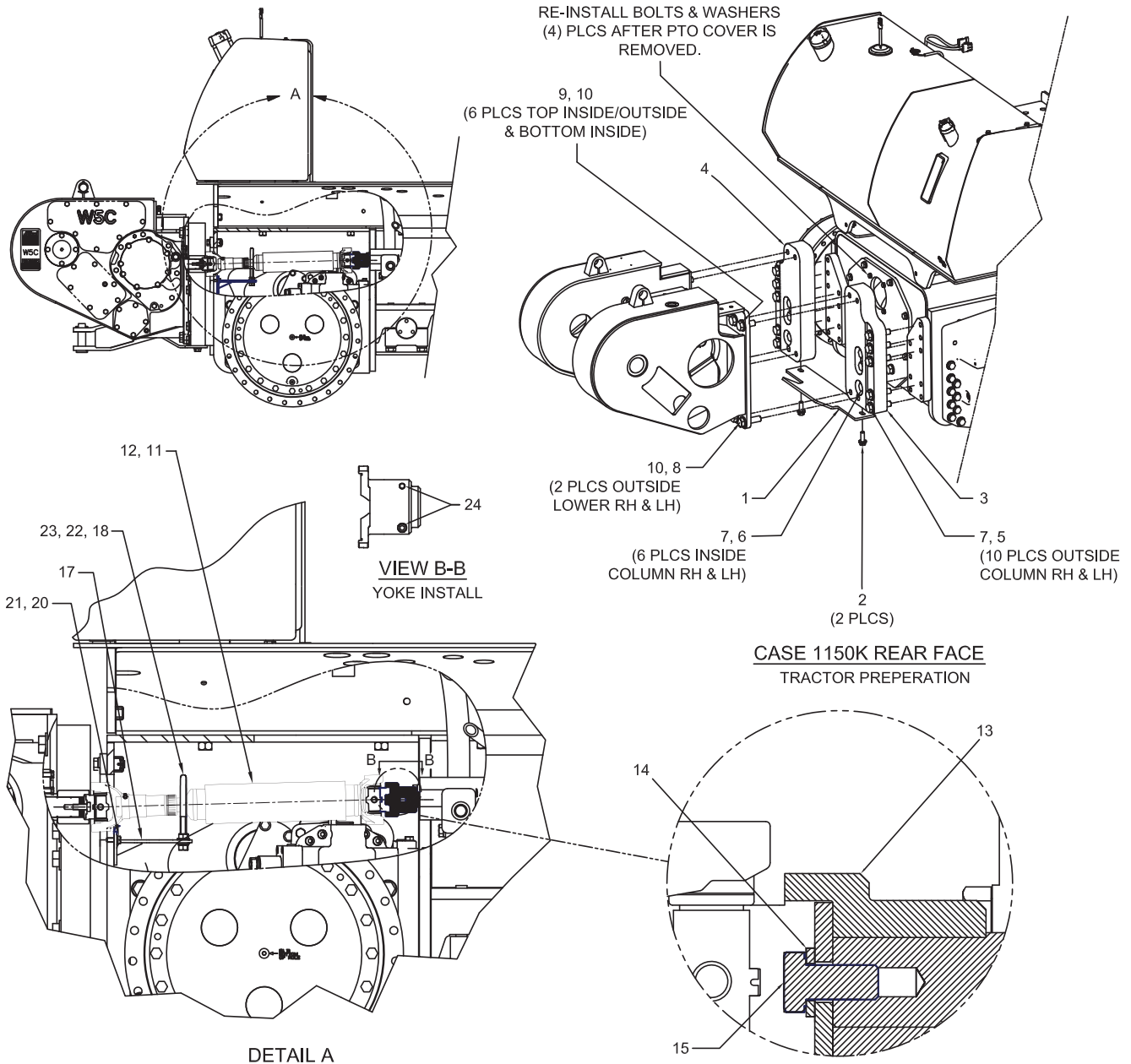
Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 221574W	Capscrew	4	9	2302888W	Mounting Bracket, LH	1
2	*b 15135W	Washer	2	10	2302889W	Mounting Bracket, RH	1
3	*a, *b 221563W	Capscrew	2	11	*b 2302901W	Plate, Guard	1
4	15133W	Washer	20	12	15135W	Washer	8
5	*a 221698W	Capscrew	12	13	*a 221563W	Capscrew	6
6	46388W	O-ring	1				
7	2302903W	Bracket, Support	1		*a	Use 318702W Thread Lock	
8	*a 221690W	Capscrew	8		*b	Last Used on S/N AW5C-1184	

Mounting Parts

Case 1150K (R37)

Push/Pull Controls (P-Control) and Electronic Controls (E-Control)

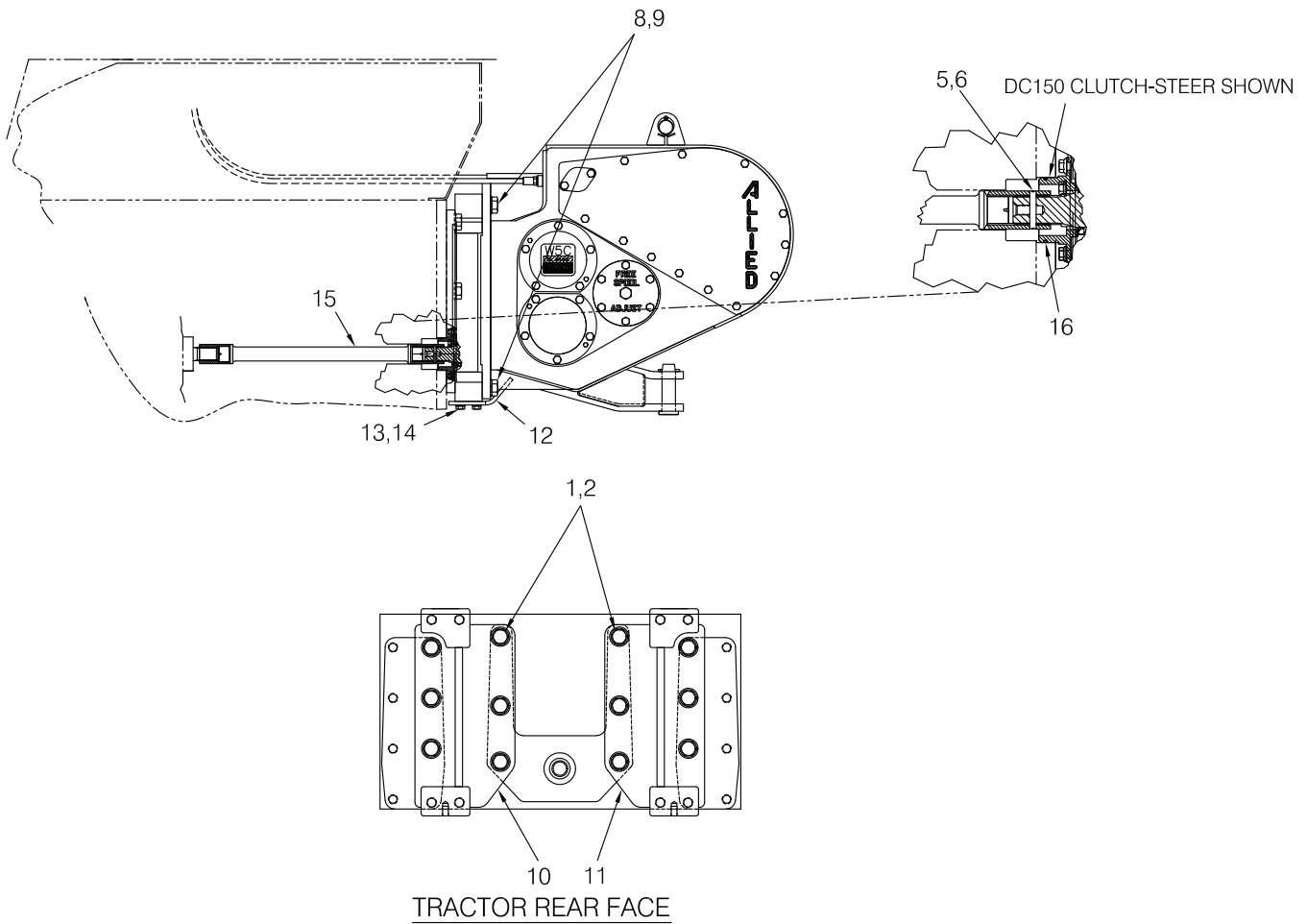


Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2307364W	Guard	1	14	296422W	Washer	1
2	*a 2303905W	Screw	2	15	Y09C-M1225	Capscrew	1
3	2307219W	Mounting Braket, RH	1	17	2314034	Bracket, Guard	1
4	2307220W	Mounting Braket, LH	1	18	2304350W	Assembly, U-Bolt	1
5	*a 293730W	Capscrew	10	20	293628W	Capscrew	2
6	*a 274044W	Capscrew	6	21	296420W	Washer	2
7	296434W	Washer	16	22	15135W	Washer	4
8	*a 221698W	Capscrew	2	23	15158W	Washer	2
9	*a 221690W	Capscrew	6	24	*a 16328W	Capscrew	2
10	221780W	Washer	8				
11	2303856W	Driveshaft, Damped 4C	1		*a	Use 318702W Thread Lock	
12	*a 221466W	Capscrew	8		*b	Refer to Allied Winch Parts Service Bulletin A1-B-23 R1 for Details	
13	*b 2314418	Yoke	1				

Mounting Parts

Case 1650K (R38)



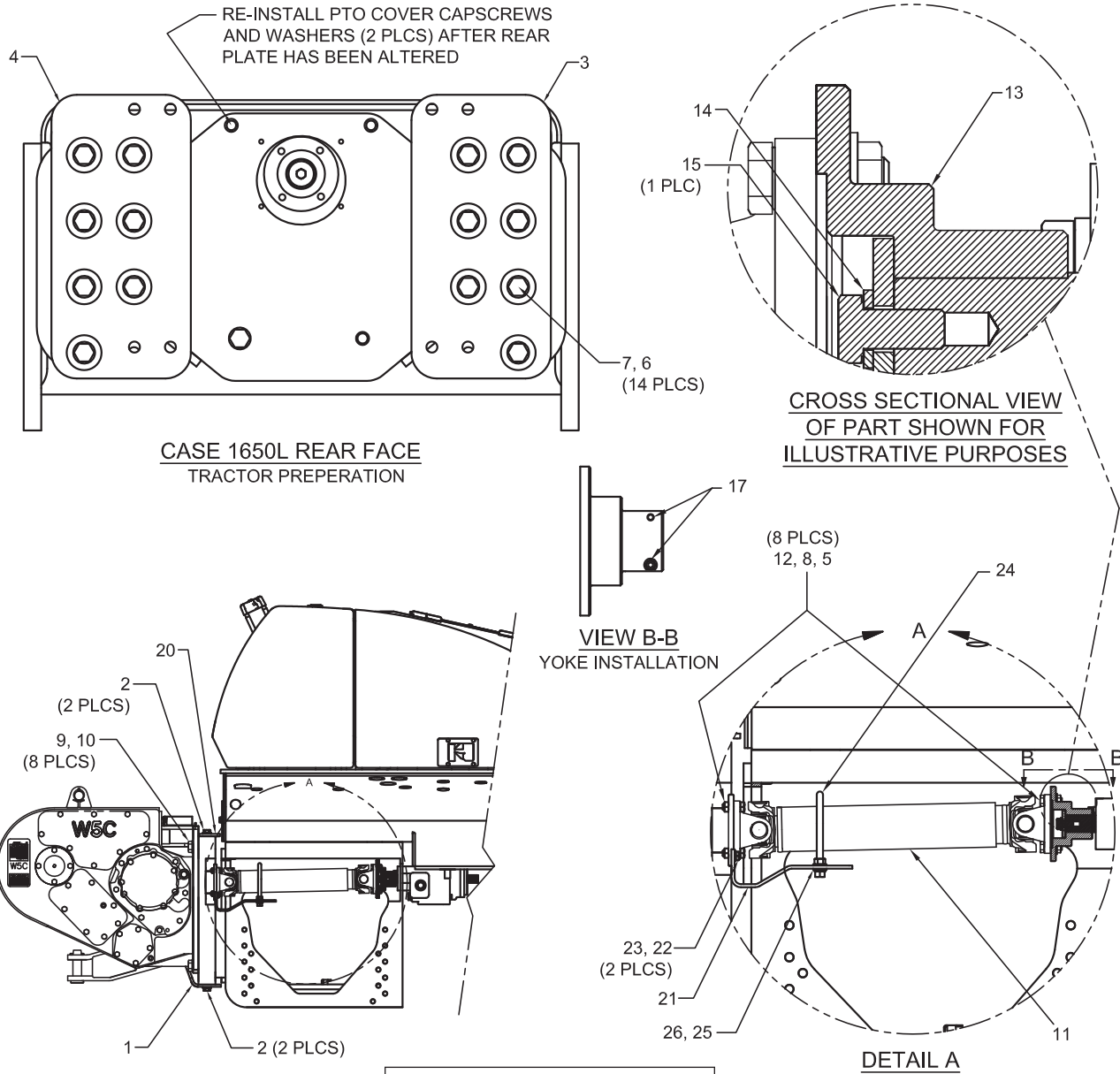
Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 2301477W	Capscrew	12	12	2303235W	Plate, Guard	1
2	296434W	Washer	12	13	221775W	Washer	4
5	19928W	Pin	1	14	*a 221616W	Capscrew	4
6	9554W	Lock Ring	1	15	2305429W	Shaft	1
8	*a 221690W	Capscrew	8	16	90263W	O-Ring	1
9	221780W	Washer, Hardened	8				
10	2303211W	Mounting Bracket, LH	1		*a Use 230064W	Loctite Kit	
11	2303212W	Mounting Bracket, RH	1				

Mounting Parts

Case 1650L (R40)

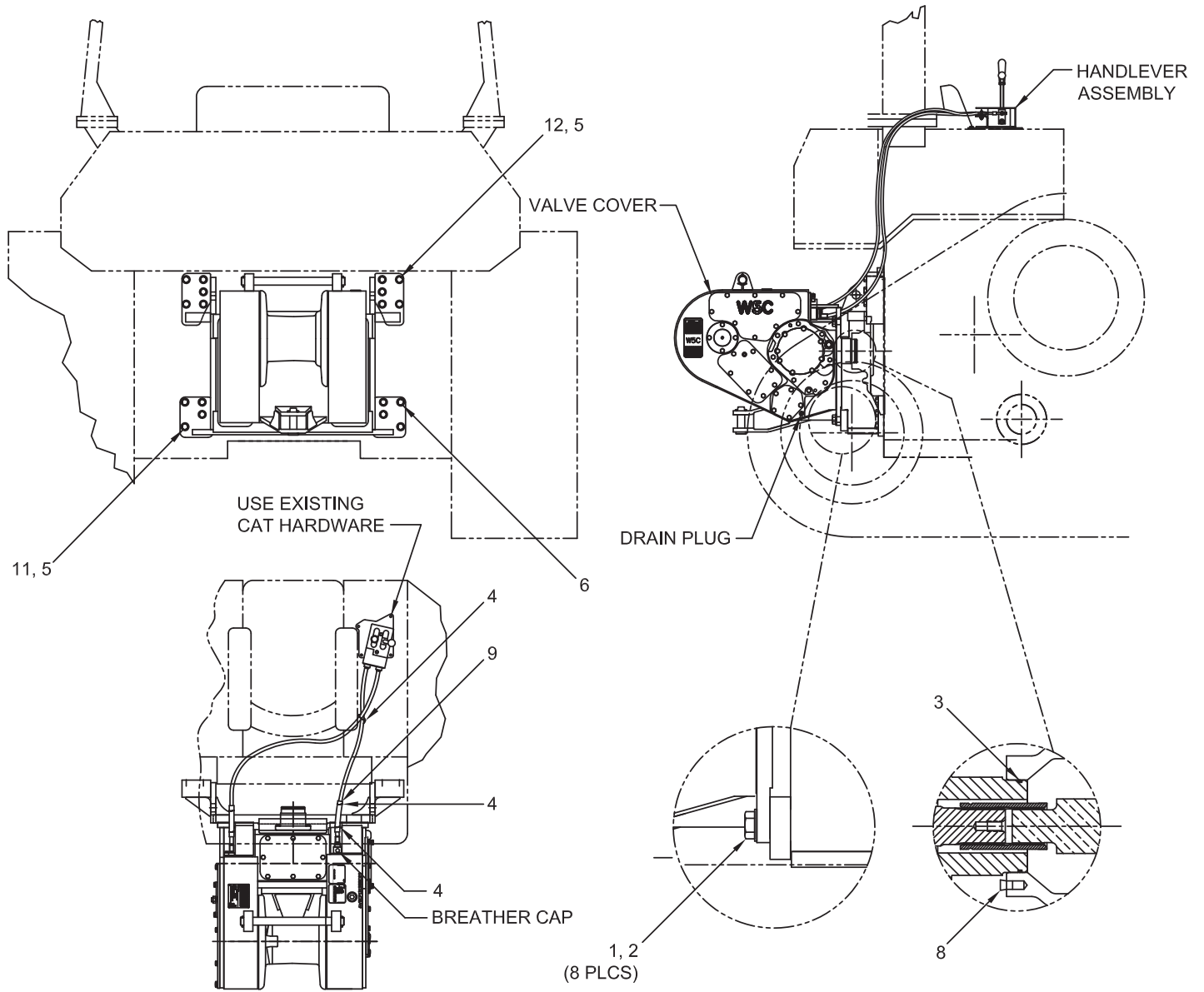
Push/Pull Controls (P-Control) and Electronic Controls (E-Control)



Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2310445	Guard	1	15	Y09C-M1225	Capscrew	1
2	*a 2303905W	Screw	4	17	*a 16328W	Capscrew	2
3	2310520	Mounting Braket, RH	1	20	2310522	Guard, Top	1
4	2310521	Mounting Braket, LH	1	21	2314043	Bracket, Guard	1
5	221771W	Washer	8	22	293628W	Capscrew	2
6	*a 274044W	Capscrew	14	23	296420W	Washer	2
7	296434W	Washer	14	24	2304350W	Assembly, U-Bolt	1
8	*a 221712W	Nut	8	25	15158W	Washer	2
9	*a 221690W	Capscrew	8	26	15135W	Washer	4
10	221780W	Washer	8				
11	2310449	Driveshaft, Damped	1				
12	*a 2310470	Bolt, Flange	8				
13	*b 2313958	Flange, Yoke	1				
14	296422W	Washer	1				
				*a	Use 318702W Thread Lock		
				*b	Refer to Allied Winch Parts Service Bulletin A1-B-23 R1 for Details		

Mounting Parts
Caterpillar D4H Series I & II (C360)
Push/Pull Controls (P-Control)

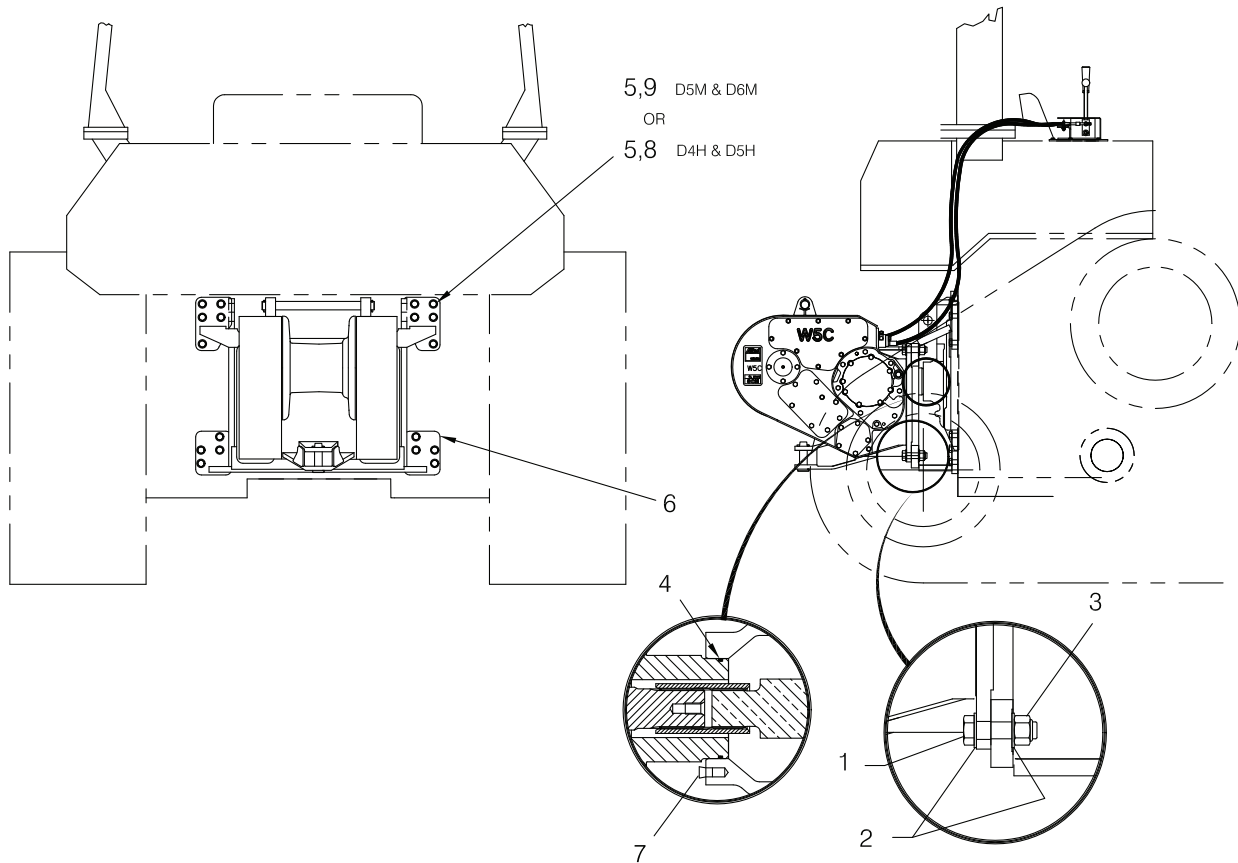


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 221690W	Capscrew	8	8	56995W	Plug	6
2	221780W	Washer	8	9	2303039W	Guard, Cable	1
3	15887W	O-Ring	1	11	*a Y17C-1236	Capscrew	8
4	137852W	Clamp, Strap	4	12	*a Y17C-1272	Capscrew	10
5	221777W	Washer	18				
6	2311621	Bracket, Mounting	1		*a Use 318702W Thread Lock		

Mounting Parts

Caterpillar

Last Used on S/N AW5C-1018: D5M and D6M (C29),
 Last Used on S/N AW5C-1097 and 1100: D4H Series III/XL/LGP PS and D5H PS (C370)



A - D4H Series III/XL/LGP PS and D5H PS
 B - D5M and D6M

Note: This winch includes a drop box,
 See drop box page in Section 2
 for related drop box parts.

Item	Part No.	Description	Qty		Item	Part No.	Description	Qty	
			A	B				A	B
1	221696W	Capscrew	8	8	7	56995W	Plug	6	6
2	221780W	Washer	16	16	8	*a 142270W	Capscrew	18	--
3	127156W	Nut	8	8	9	*a 293708W	Capscrew	--	18
4	15887W	O-Ring	1	1					
5	221777W	Washer	18	18		*a	Use 318702W Thread Lock		
6	2302397W	Mounting Bracket	1	1					

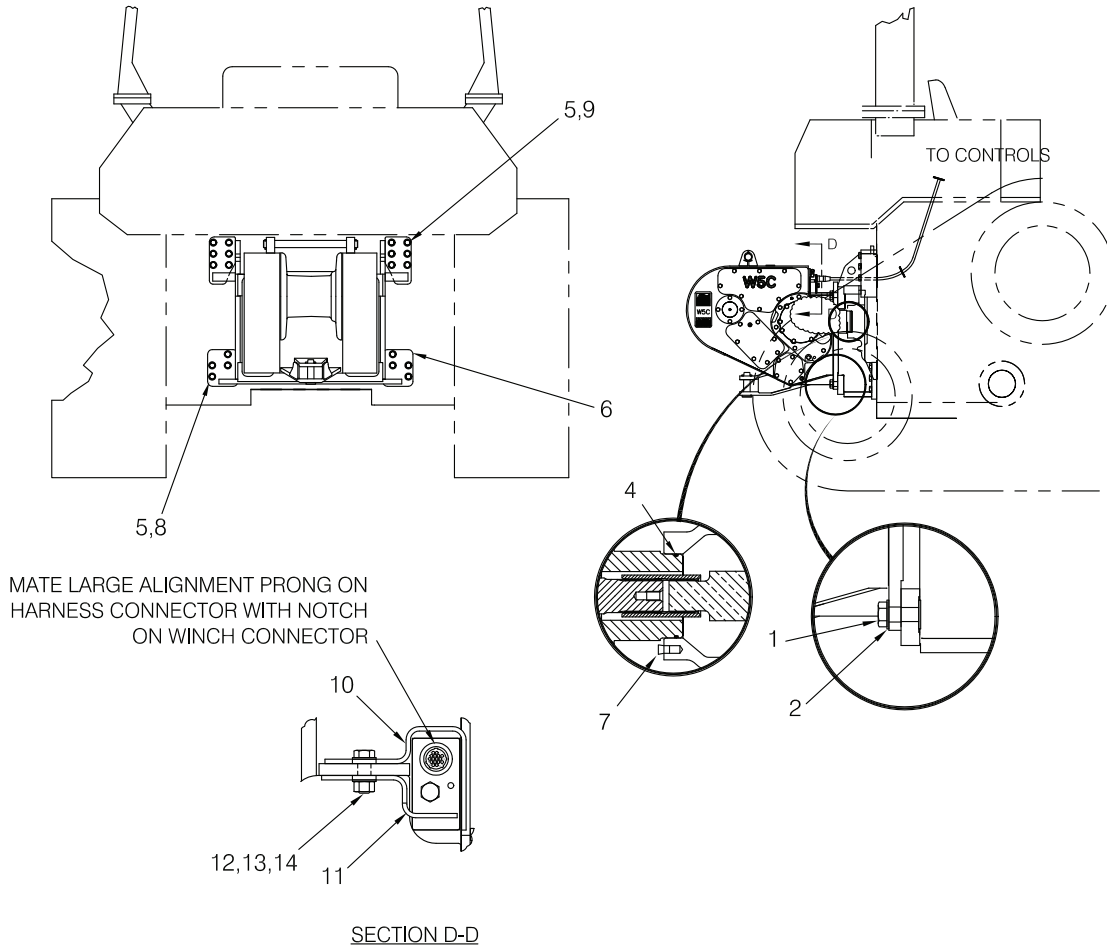
Mounting Parts

Caterpillar

First Used on S/N AW5C-1020: D5M and D6M (C29)

First Used on S/N AW5C-1098, 1099, 1101 & Up: D4H Series III/XL/LGP PS and D5H PS (C370)

Caterpillar Challenger D65/76/85/95 (C390): Mounting Parts & Hardware Provided by Tractor Dealer



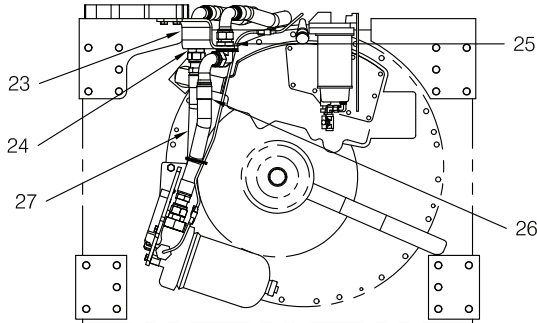
Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

A - D4H Series III/XL/LGP PS and D5H PS
B - D5M and D6M

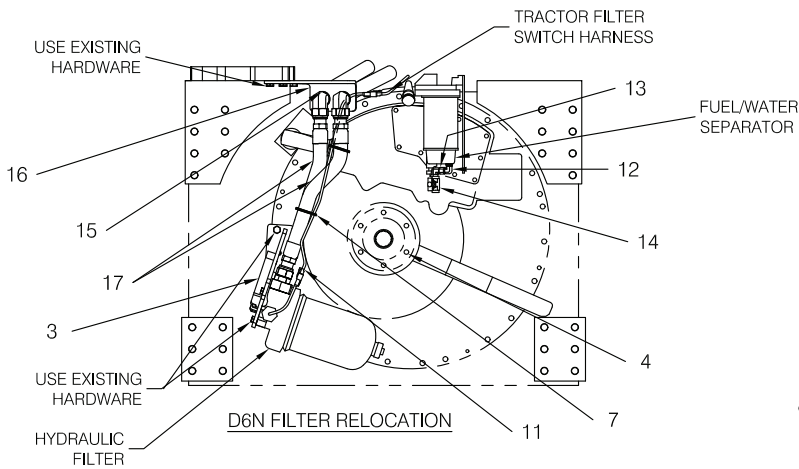
Item	Part No.	Description	Qty		Item	Part No.	Description	Qty	
			A	B				A	B
1	*a 221690W	Capscrew	8	8	10	*c 2304629W	Harness Guard, Upper	--	1
2	221780W	Washer	8	8	11	*c 2304630W	Harness Guard, Lower	--	1
4	15887W	O-Ring	1	1	12	*a, *c 200454W	Capscrew	--	2
5	221777W	Washer	20	20	13	*a, *c 221771W	Washer	--	4
6	2303118W	Mounting Bracket	1	1	14	*a, *c 15058W	Nut	--	2
7	56995W	Plug	6	6					
8	*a 142270W	Capscrew	8	--		*a	Use 318702W Thread Lock		
8	*a 293708W	Capscrew	--	8		*b	D4H and D5M only use 10 Capscrews		
9	*a, *b 221668W	Capscrew	12	--		*c	Used only on winches with electronic controls		
9	*a, *b 293716W	Capscrew	--	12					

Mounting Parts

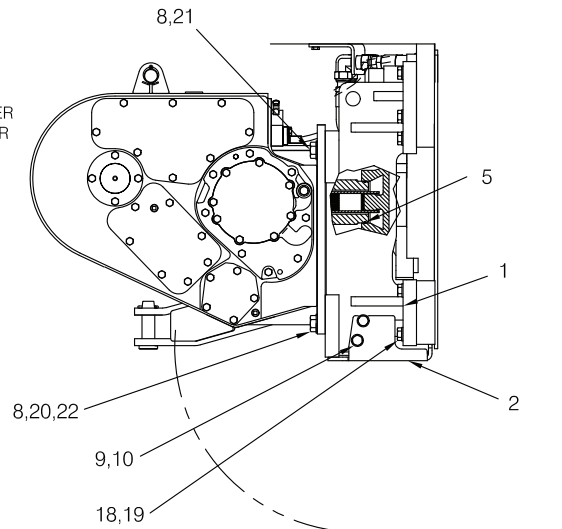
Caterpillar D5N XL/LGP PS (C28) and D6N XL (C47)



D5N FILTER RELOCATION



D6N FILTER RELOCATION



D6N SHOWN

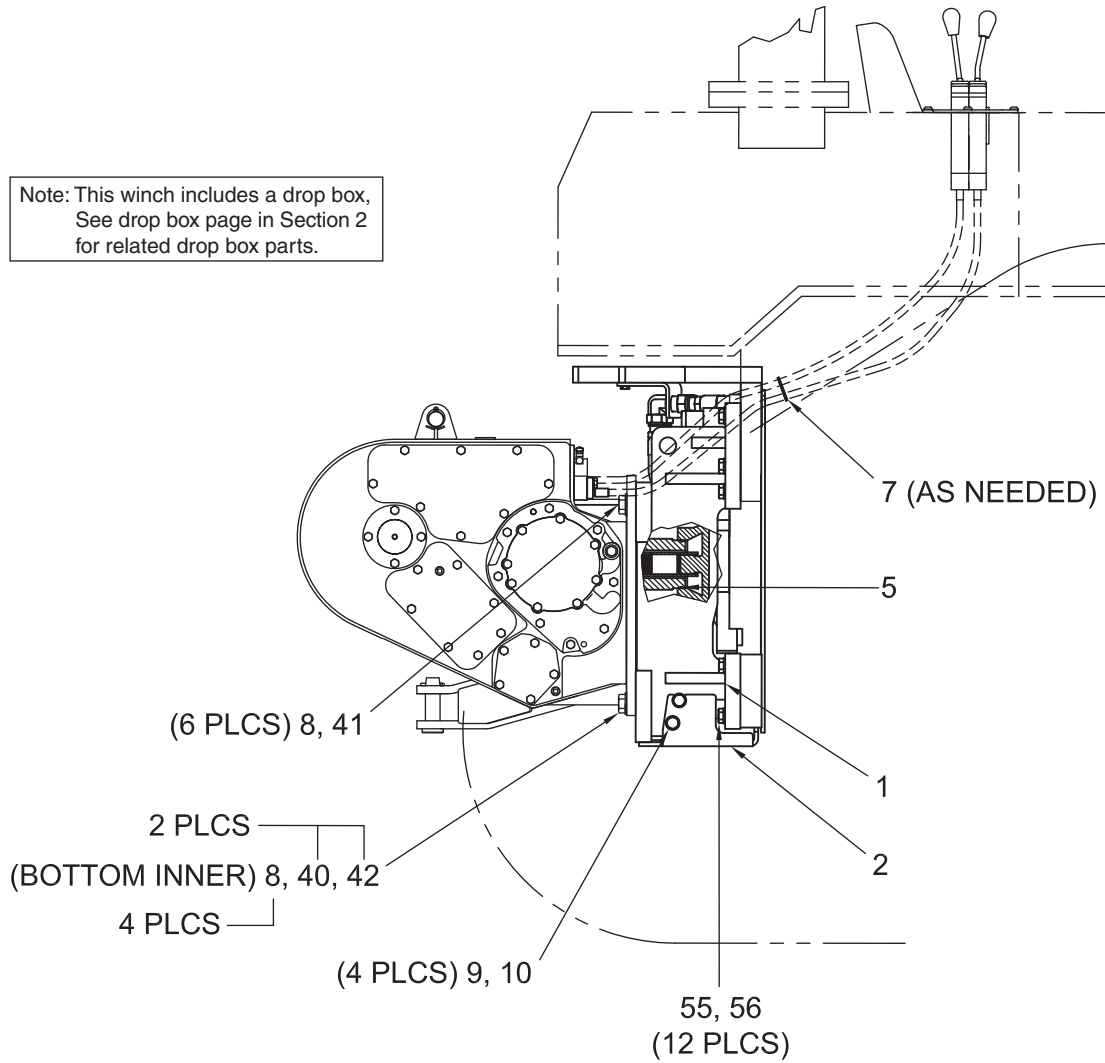
Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

A - D5N
B - D6N

Item	Part No.	Description	Qty		Item	Part No.	Description	Qty	
			A	B				A	B
1	2305516W	Bracket, Mounting	1	1	16	2305588W	Bracket	--	1
2	2305541W	Guard, Bottom	1	1	17	2305613W	Assembly, Hose	--	2
3	2305528W	Bracket, Filter	1	1	18	293710W	Capscrew	12	16
4	56995W	Plug	6	6	19	221777W	Washer	12	16
5	15887W	O-Ring	1	1	20	221700W	Capscrew	2	2
7	137852W	Clamp Strap	AR	AR	21	221692W	Capscrew	6	6
8	221780W	Washer	10	10	22	221720W	Nut	2	2
9	166425W	Capscrew	4	4	23	2305595W	Bracket	1	--
10	221775W	Washer	4	4	24	R834107	Fitting	1	--
11	2305617W	Harness, Filter - Ext.	1	1	25	2305620W	Fitting	1	--
12	16557W	Fitting	1	1	26	2305614W	Assembly, Hose	1	--
13	2305616W	Fitting	1	1	27	2305615W	Assembly, Hose	1	--
14	211556W	Valve, Needle	1	1					
15	2305620W	Fitting	--	2					
					*a	Use 318702W Thread Lock			

Mounting Parts
 Caterpillar D5N (C28, C77)
 Push/Pull Controls (P-Control)

Note: This winch includes a drop box,
 See drop box page in Section 2
 for related drop box parts.

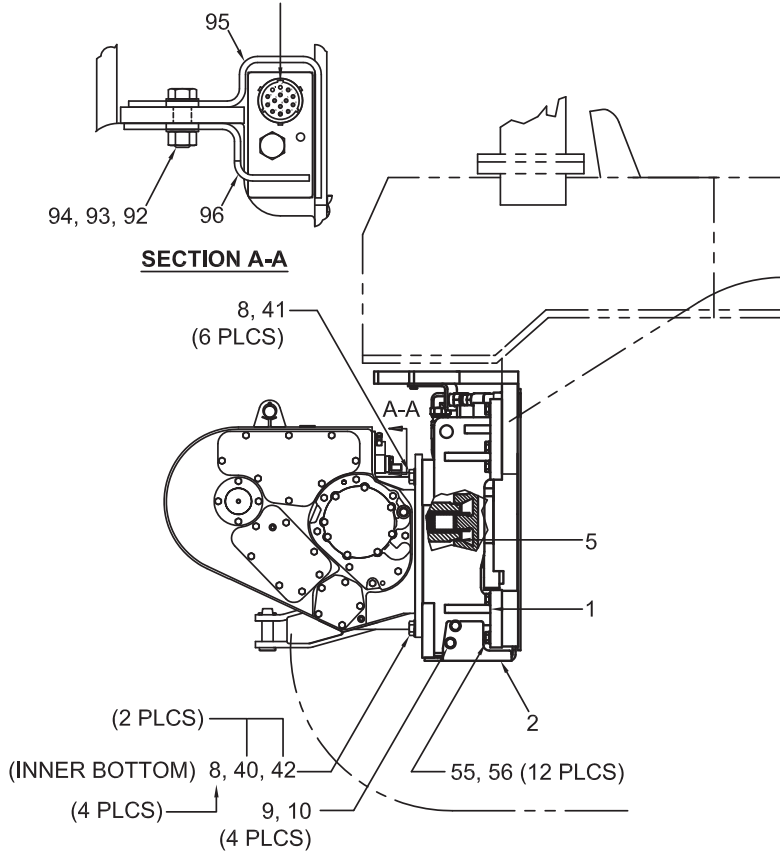


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305516W	Bracket, Mounting	1	40	*a Y17C-1664	Capscrew	2
2	2305541W	Guard, Bottom	1	41	*a 221692W	Capscrew	6
5	15887W	O-Ring	1	42	221720W	Nut	2
7	137852W	Clamp, Strap	6	55	*a 293710W	Capscrew	12
8	221780W	Washer	10	56	221777W	Washer	12
9	*a Y17C-1024	Capscrew	4				
10	221775W	Washer	4		*a Use 318702W Thread Lock		

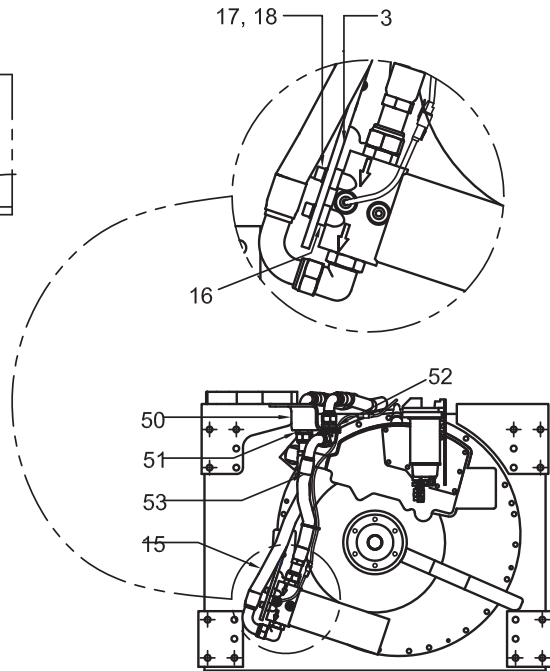
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Mounting Parts
 Caterpillar D5N (C28, C77)
 Electronic Controls (E-Control)
 Page 1 of 2

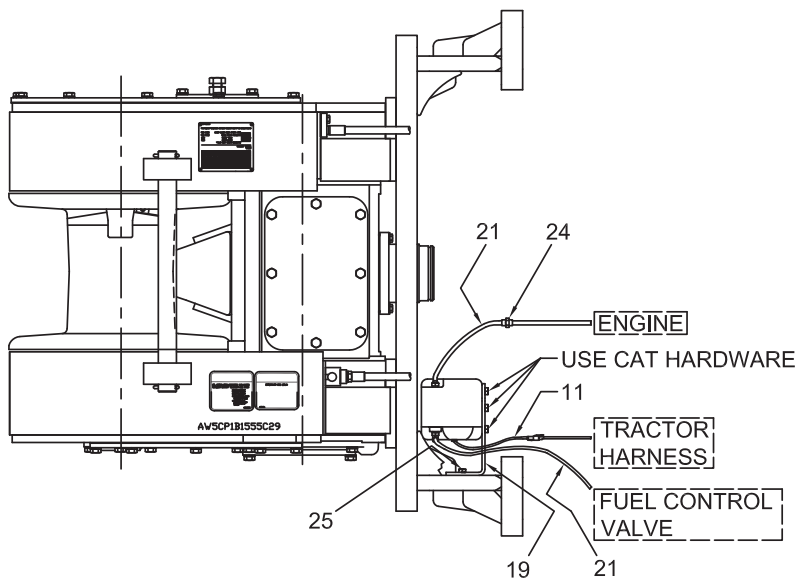
MATE LARGE ALIGNMENT PRONG
 ON HARNESS CONNECTOR WITH
 NOTCH ON WINCH CONNECTOR



**WINCH, MOUNTING BRACKET & GUARDING
 INSTALLATION**

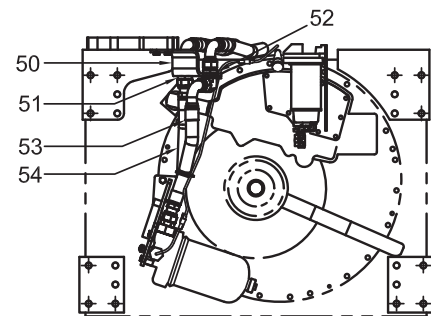


**NON WINCH READY TRACTOR FILTER RELOCATION
 SPIN-ON FILTER**



**FUEL/WATER SEPARATOR RELOCATION
 FOR TRACTORS WITH ELECTRIC PRIMER PUMP**

Note: This winch includes a drop box,
 See drop box page in Section 2
 for related drop box parts.



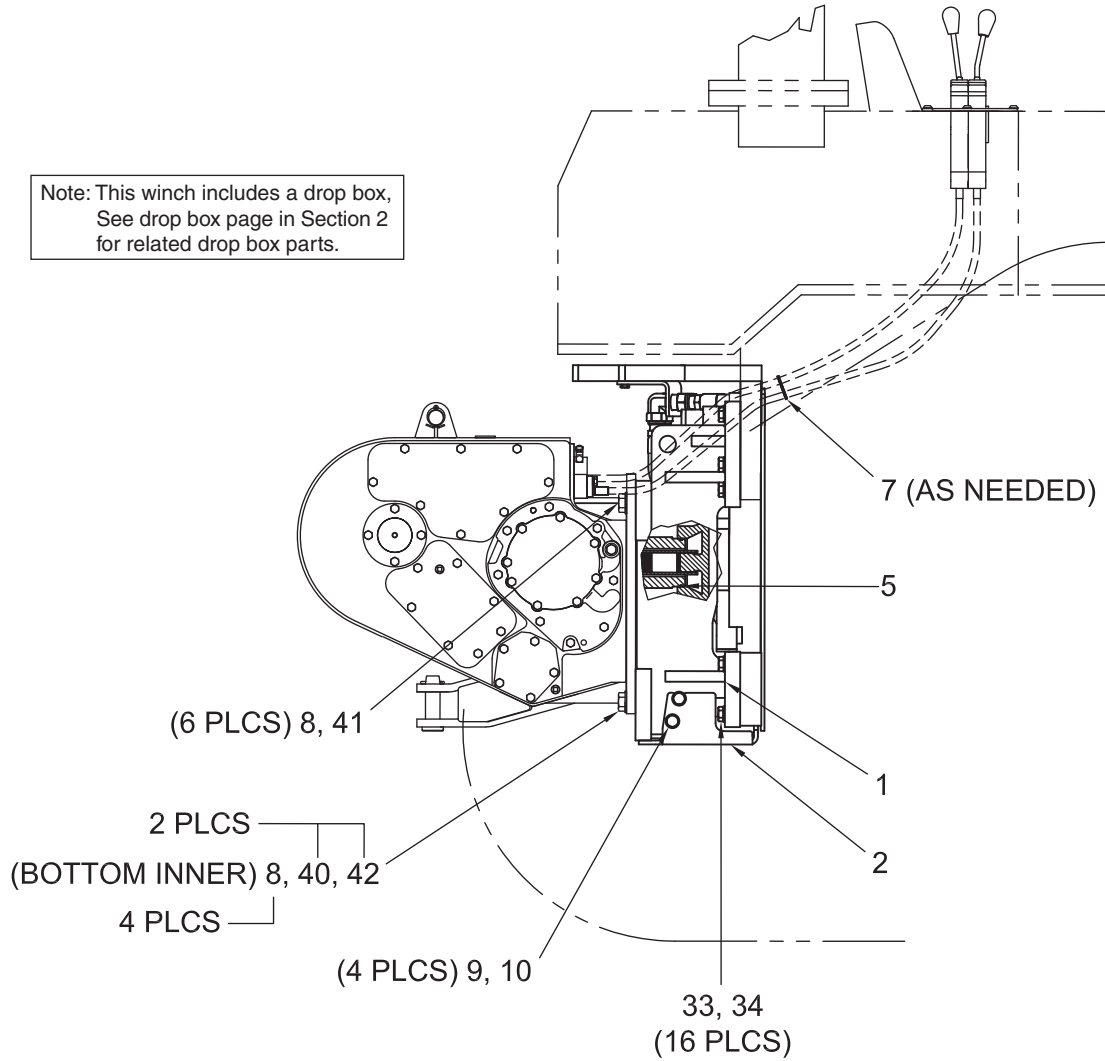
**WINCH READY TRACTOR FILTER RELOCATION
 NON SPIN-ON FILTER**

Mounting Parts
Caterpillar D5N (C28, C77)
Electronic Controls (E-Control)
Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305516W	Bracket, Mounting	1	41	*a 221692W	Capscrew	6
2	2305541W	Guard, Bottom	1	42	221720W	Nut	2
3	2306315W	Bracket, Filter	1	50	2305595W	Bracket	1
5	15887W	O-Ring	1	51	R834107	Fitting	1
8	221780W	Washer	10	52	2305620W	Fitting	1
9	*a Y17C-1024	Capscrew	4	53	2305614W	Assembly, Hose	1
10	221775W	Washer	4	54	2305615W	Assembly, Hose	1
11	2305617W	Harness, Filter - EXT.	2	55	*a 293710W	Capscrew	12
15	2306313W	Assembly, Hose	1	56	221777W	Washer	12
16	2306312W	Spacer	4	92	*a 200454W	Capscrew	2
17	296027W	Capscrew	4	93	221771W	Washer	2
18	292682W	Washer	4	94	15058W	Nut	2
19	2306836W	Bracket, Mounting	1	95	2304629W	Harness Guard, Upper	1
21	*b 2306857W	Hose, Fuel	1	96	2304630W	Harness Guard, Lower	1
24	2306858W	Fitting	1				
25	18738W	Capscrew	2		*a Use 318702W Thread Lock		
40	*a Y17C-1664	Capscrew	2		*b Cut Hose As Required		

Mounting Parts
 Caterpillar D6N (C47, C78)
 Push/Pull Controls (P-Control)

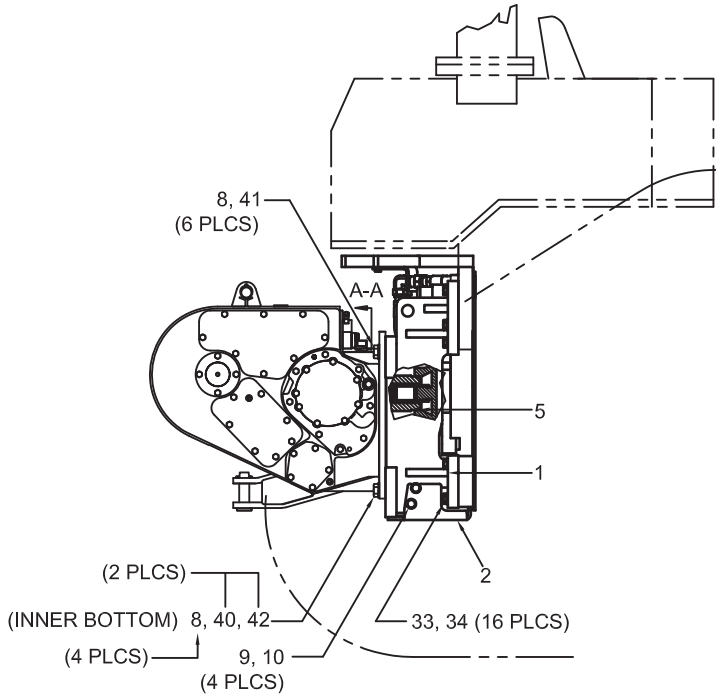
Note: This winch includes a drop box,
 See drop box page in Section 2
 for related drop box parts.



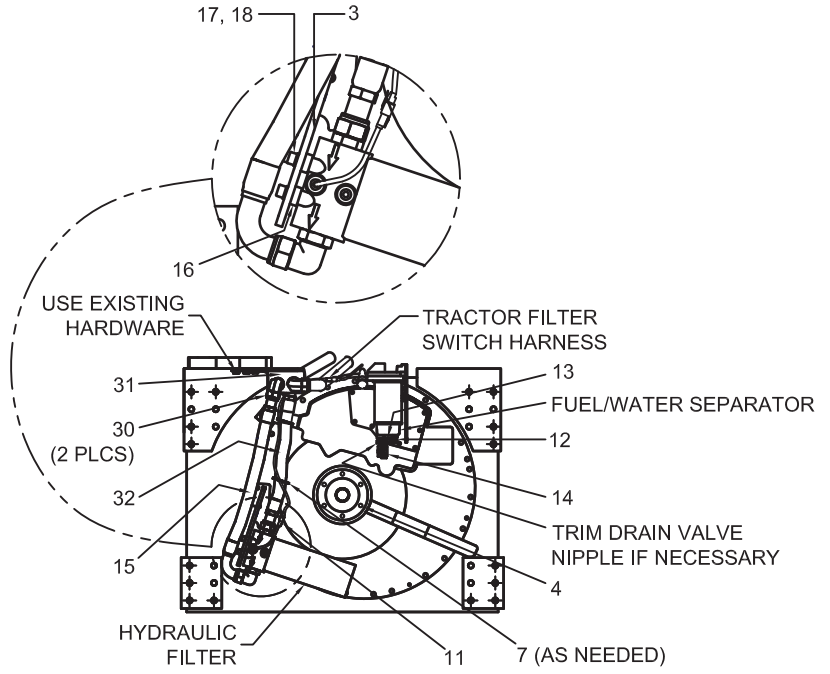
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305516W	Bracket, Mounting	1	33	*a 293710W	Capscrew	16
2	2305541W	Guard, Bottom	1	34	221777W	Washer	16
5	15887W	O-Ring	1	40	*a Y17C-1664	Capscrew	2
7	137852W	Clamp, Strap	6	41	*a 221692W	Capscrew	6
8	221780W	Washer	10	42	221720W	Nut	2
9	*a Y17C-1024	Capscrew	4				
10	221775W	Washer	4		*a Use 318702W Thread Lock		

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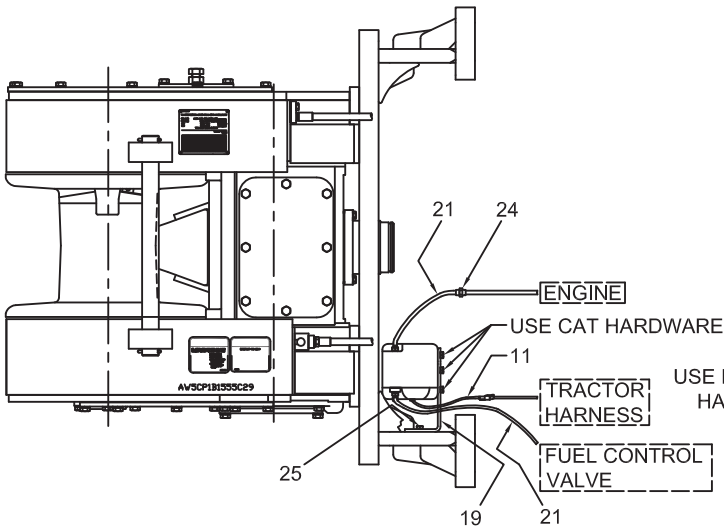
Mounting Parts
 Caterpillar D6N (C47, C78)
 Electronic Controls (E-Control)
 Page 1 of 2



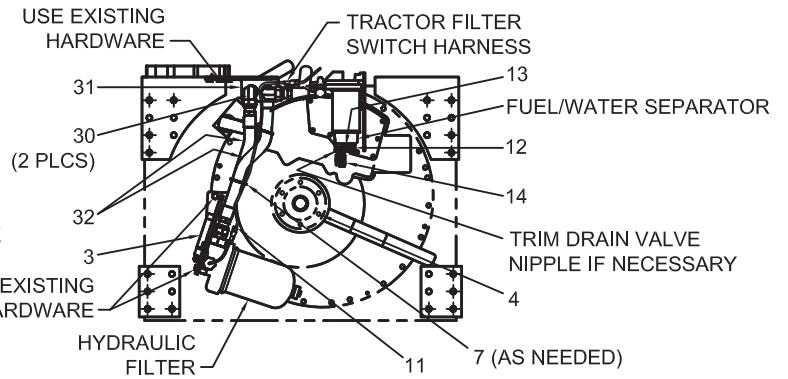
WINCH, MOUNTING BRACKET & GUARDING INSTALLATION



NON WINCH READY TRACTOR FILTER RELOCATION SPIN-ON FILTER



FUEL/WATER SEPARATOR RELOCATION FOR TRACTORS WITH ELECTRIC PRIMER PUMP



WINCH READY TRACTOR FILTER RELOCATION NON SPIN-ON FILTER

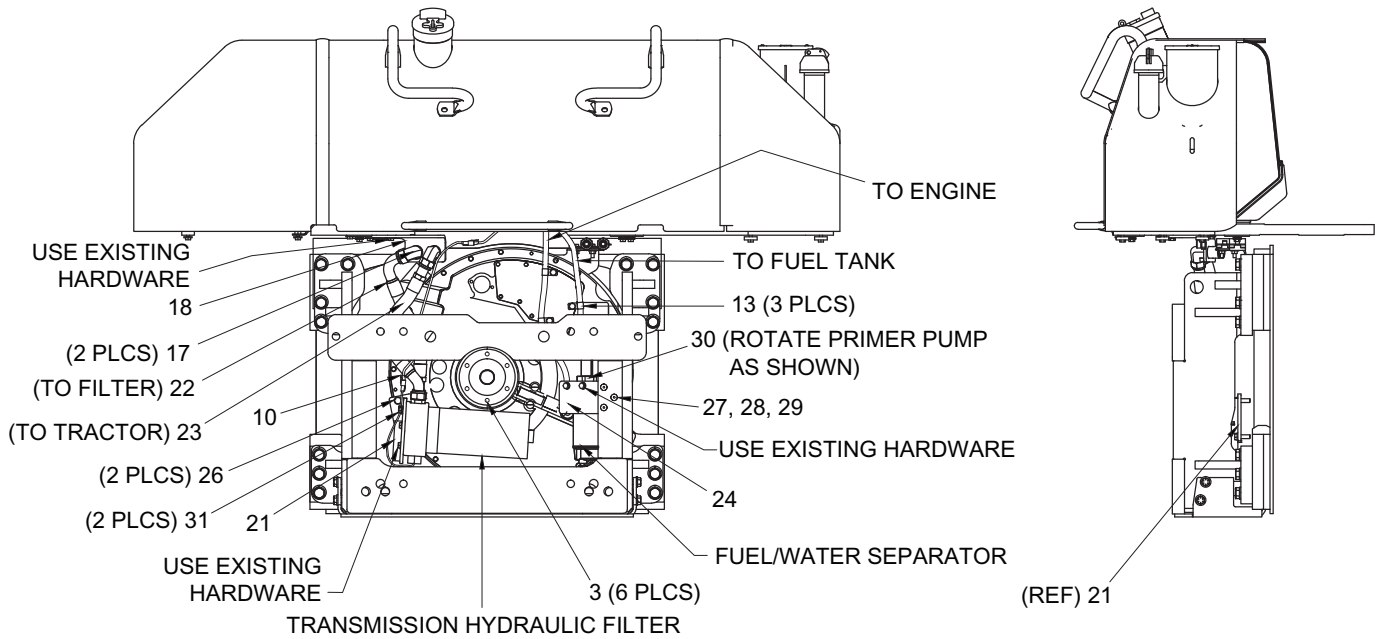
Note: This winch includes a drop box, See drop box page in Section 2 for related drop box parts.

Mounting Parts
Caterpillar D6N (C47, C78)
Electronic Controls (E-Control)
Page 2 of 2

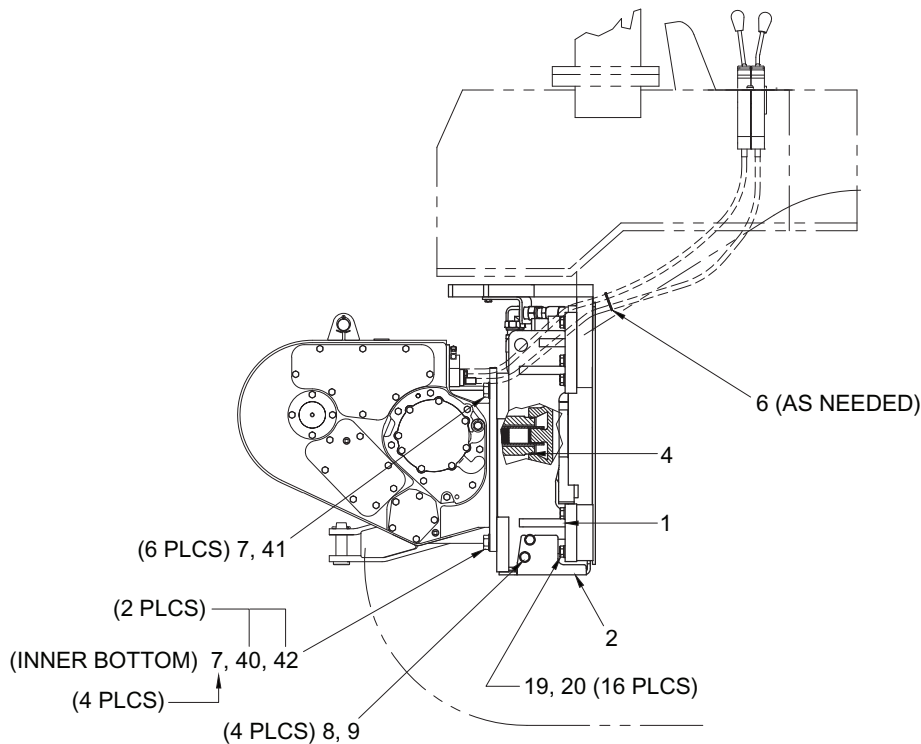
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305516W	Bracket, Mounting	1	24	2306858W	Fitting	1
2	2305541W	Guard, Bottom	1	25	18738W	Capscrew	2
3	2306315W	Bracket, Filter	1	30	2305620W	Fitting	2
4	56995W	Plug	6	31	2305588W	Bracket, Fitting	1
5	15887W	O-Ring	1	32	2305613W	Assembly, Hose	2
8	221780W	Washer	10	33	*a 293710W	Capscrew	16
9	*a Y17C-1024	Capscrew	4	34	221777W	Washer	16
10	221775W	Washer	4	40	*a Y17C-1664	Capscrew	2
11	2305617W	Harness, Filter - Ext.	2	41	*a 221692W	Capscrew	6
12	16557W	Fitting, O-Ring	1	42	221720W	Nut	2
13	2305616W	Fitting	1	92	*a 200454W	Capscrew	2
14	211556	Valve, Needle	1	93	221771W	Washer	2
15	2306313W	Assembly, Hose	1	94	15058W	Nut	2
16	2306312W	Spacer	4	95	2304629W	Harness Guard, Upper	1
17	296027W	Capscrew	4	96	2304630W	Harness Guard, Lower	1
18	292682W	Washer	4				
19	2306836W	Bracket, Mounting	1		*a Use 318702W Thread Lock		
21	*b 2306857W	Hose, Fuel	1		*b Cut Hose As Required		

Mounting Parts

Caterpillar D6N (C81)
 Push/Pull Controls (P-Controls)
 Page 1 of 2



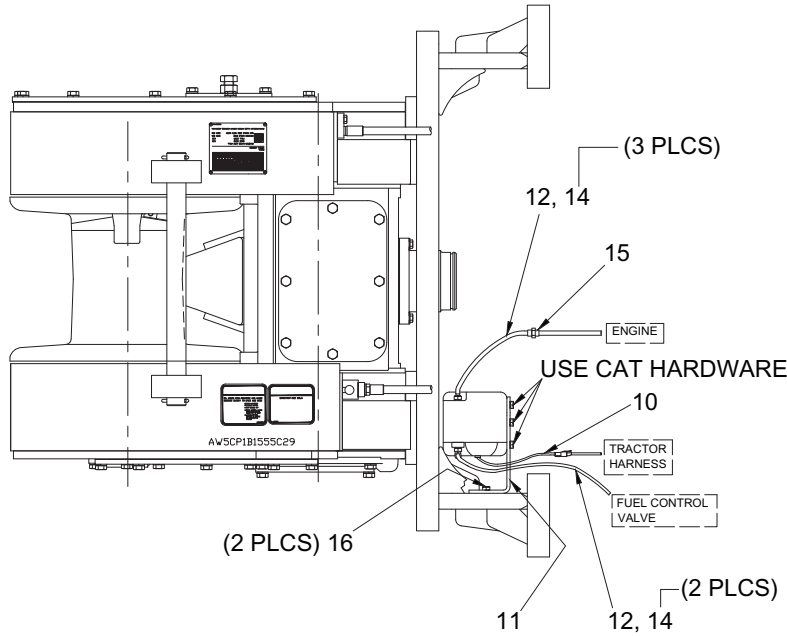
TRACTOR FILTER RELOCATION



Note: This winch includes a drop box,
 See drop box page in Section 2
 for related drop box parts.

WINCH, MOUNTING BRACKET, & GUARD INSTALLATION

Mounting Parts
 Caterpillar D6N (C81)
 Push/Pull Controls (P-Controls)
 Page 2 of 2

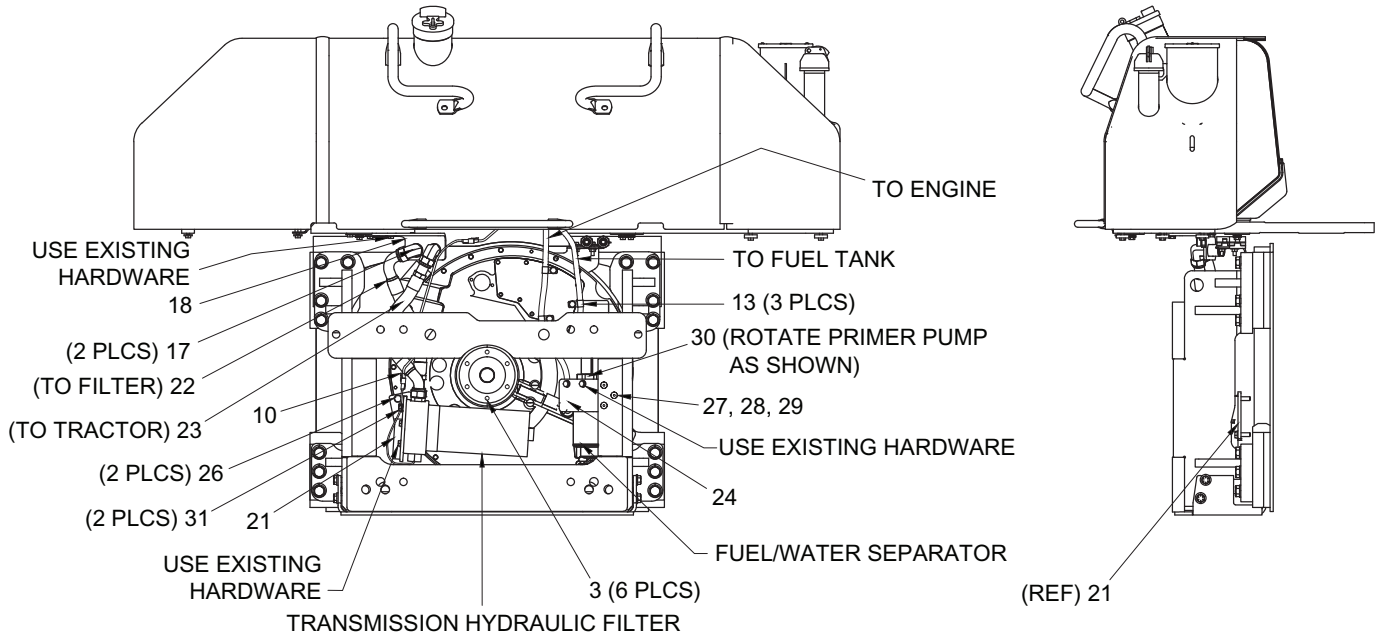


**FUEL/WATER SEPARATOR RELOCATION
 FOR TRACTORS WITH OPTIONAL ELECTRIC PRIMER PUMP**

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305516W	Bracket, Mounting	1	19	*a 293710W	Capscrew	16
2	2305541W	Guard, Bottom	1	20	221777W	Washer	16
3	56995W	Plug	6	21	2307890W	Bracket, Filter	1
4	15887W	O-Ring	1	22	2307895W	Assembly, Hose	1
6	137852W	Clamp, Strap	AR	23	2307896W	Assembly, Hose	1
7	221780W	Washer	10	24	2307894W	Plate, Mounting	1
8	*a Y17C-1024	Capscrew	4	26	293647W	Capscrew	2
9	221775W	Washer	4	27	Y09G-0616	Capscrew	3
10	2305617W	Harness, Filter - Ext.	2	28	15134W	Washer	3
11	2306836W	Bracket, Mounting	1	29	15056W	Nut	3
12	2306857W	Hose, Fuel	1	30	2307911W	Gasket, Fuel Primer	1
13	387316W	Clamp, Insulated Hose	3	31	243057	Clamp	2
14	166857W	Clamp	5	40	*a Y17C-1664	Capscrew	2
15	2306858W	Fitting	1	41	*a 221692W	Capscrew	6
16	18738W	Capscrew	2	42	221720W	Nut	2
17	2305620W	Fitting	2				
18	2305588W	Bracket, Fitting	1		*a Use 318702W Thread Lock		

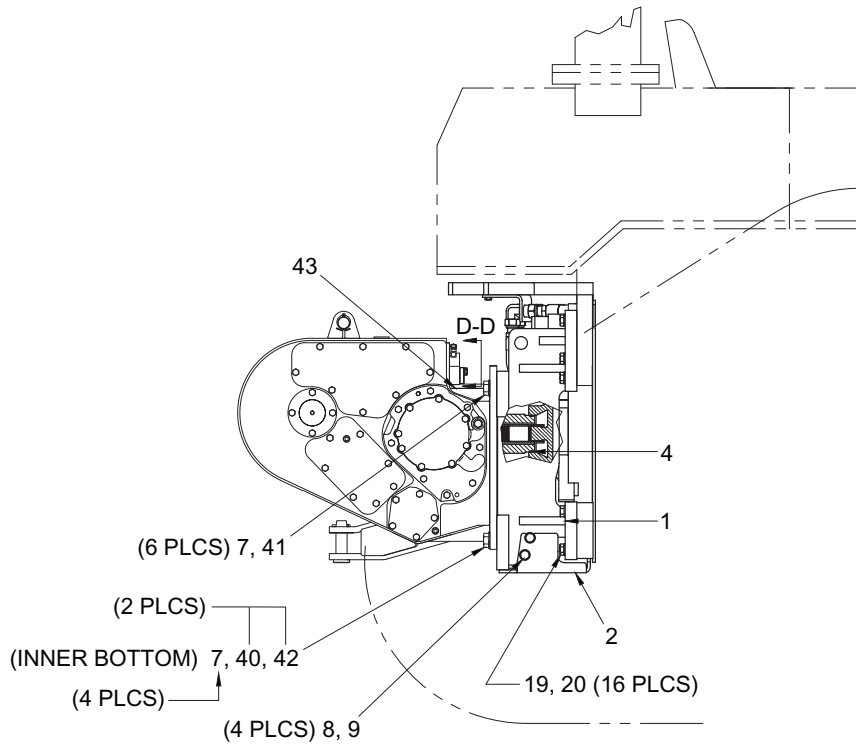
Mounting Parts

Caterpillar D6N (C81)
 Electronic Controls (E-Controls)
 Page 1 of 2



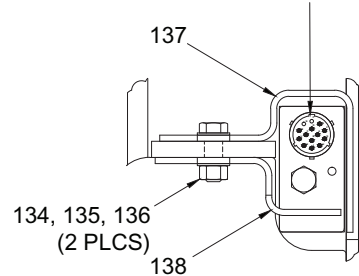
TRACTOR FILTER RELOCATION

Note: This winch includes a drop box,
 See drop box page in Section 2
 for related drop box parts.



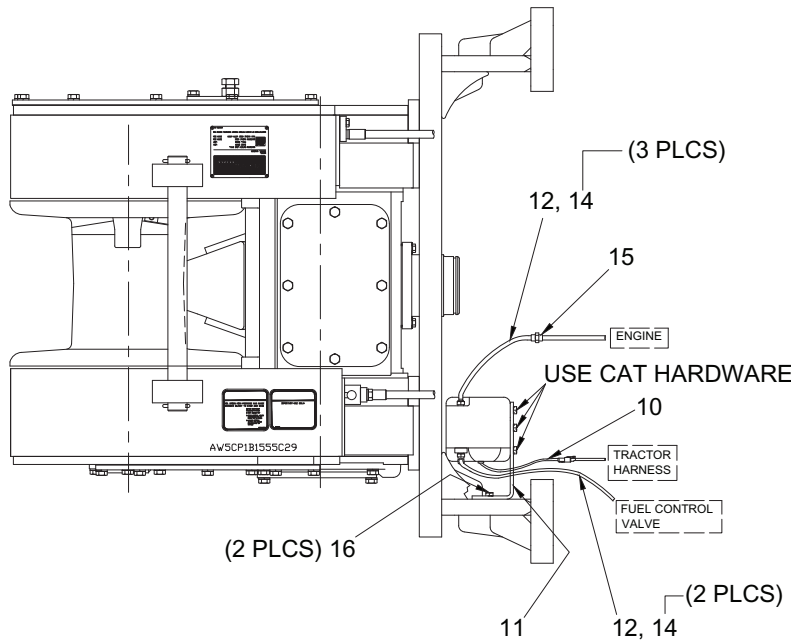
WINCH, MOUNTING BRACKET, & GUARD INSTALLATION

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



SECTION D-D

Mounting Parts
 Caterpillar D6N (C81)
 Electronic Controls (E-Controls)
 Page 2 of 2



**FUEL/WATER SEPARATOR RELOCATION
 FOR TRACTORS WITH OPTIONAL ELECTRIC PRIMER PUMP**

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305516W	Bracket, Mounting	1	22	2307895W	Assembly, Hose	1
2	2305541W	Guard, Bottom	1	23	2307896W	Assembly, Hose	1
3	56995W	Plug	6	24	2307894W	Plate, Mounting	1
4	15887W	O-Ring	1	26	293647W	Capscrew	2
6	137852W	Clamp, Strap (Not Shown)	AR	27	Y09G-0616	Capscrew	3
7	221780W	Washer	10	28	15134W	Washer	3
8	*a Y17C-1024	Capscrew	4	29	15056W	Nut	3
9	221775W	Washer	4	30	2307911W	Gasket, Fuel Primer	1
10	2305617W	Harness, Filter - Ext.	2	31	243057	Clamp	2
11	2306836W	Bracket, Mounting	1	40	*a Y17C-1664	Capscrew	2
12	2306857W	Hose, Fuel	1	41	*a 221692W	Capscrew	6
13	387316W	Clamp, Insulated Hose	3	42	221720W	Nut	2
14	166857W	Clamp	5	43	2302512W	Gasket, Top	1
15	2306858W	Fitting	1	134	*a 200454W	Capscrew	2
16	18738W	Capscrew	2	135	221771W	Washer	2
17	2305620W	Fitting	2	136	15058W	Nut	2
18	2305588W	Bracket, Fitting	1	137	2304629W	Harness Guard, Upper	1
19	*a 293710W	Capscrew	16	138	2304630W	Harness Guard, Lower	1
20	221777W	Washer	16				
21	2307890W	Bracket, Filter	1	*a	Use 318702W Thread Lock		

Mounting Parts

Guards Installation

Caterpillar D5N (C28, C77), D6N (C47, C78, C81)

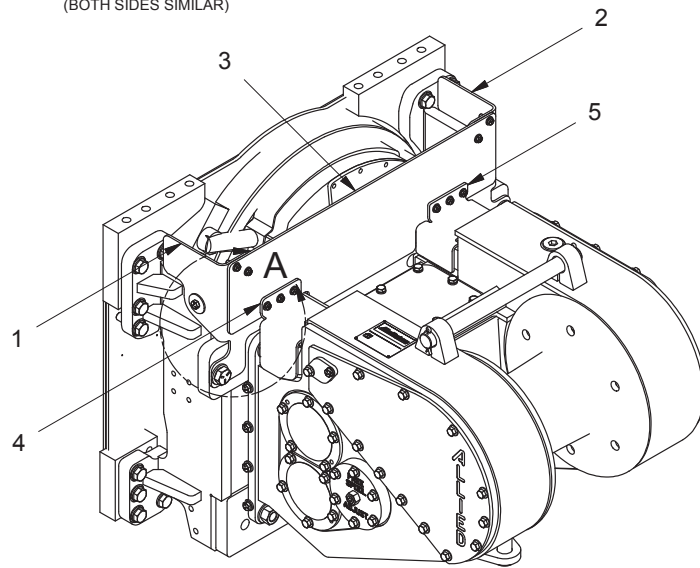
Page 1 of 2

(NO ARCH ONLY)
10, 9, 8

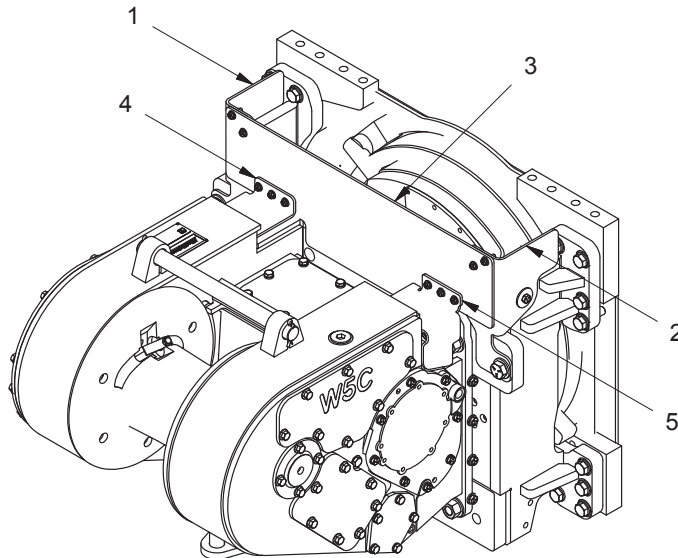
12, 11 (5 PLCS)

6, 7

DETAIL A
(BOTH SIDES SIMILAR)



LEFT REAR VIEW



RIGHT REAR VIEW

Mounting Parts

Guards Installation

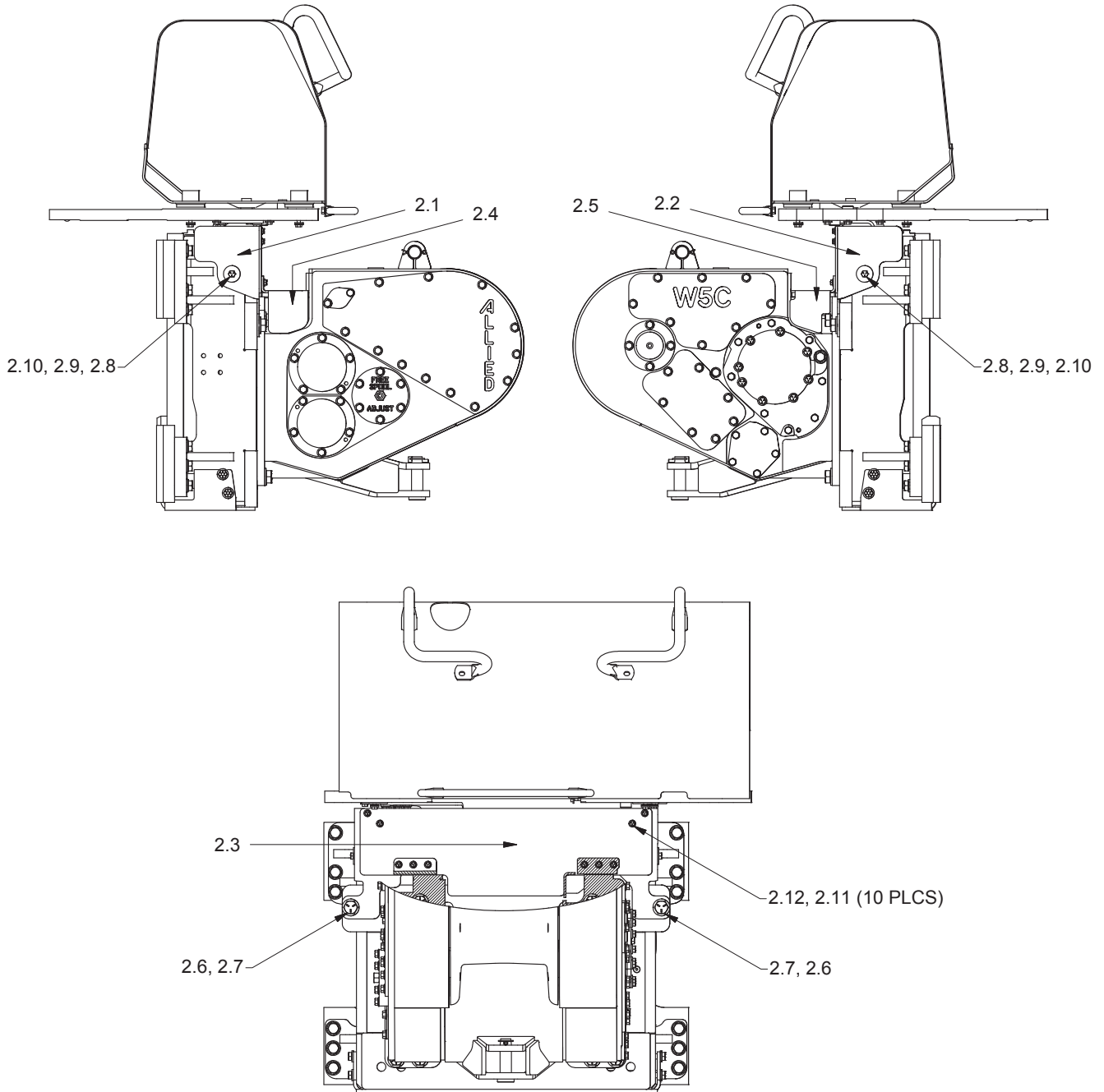
Caterpillar D5N (C28, C77), D6N (C47, C78, C81)

Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2314246	Guard, LH	1	7	18662W	Capscrew	2
2	2314247	Guard, RH	1	8	307788W	Capscrew	2
3	2314240	Plate, Guard Center	1	9	2305715W	Washer	4
4	2314244	Plate, Guard LH Cable	1	10	221711W	Nut	2
5	2314245	Plate, Guard RH Cable	1	11	221767W	Washer	10
6	221780W	Washer	2	12	16828W	Capscrew	10

Mounting Parts

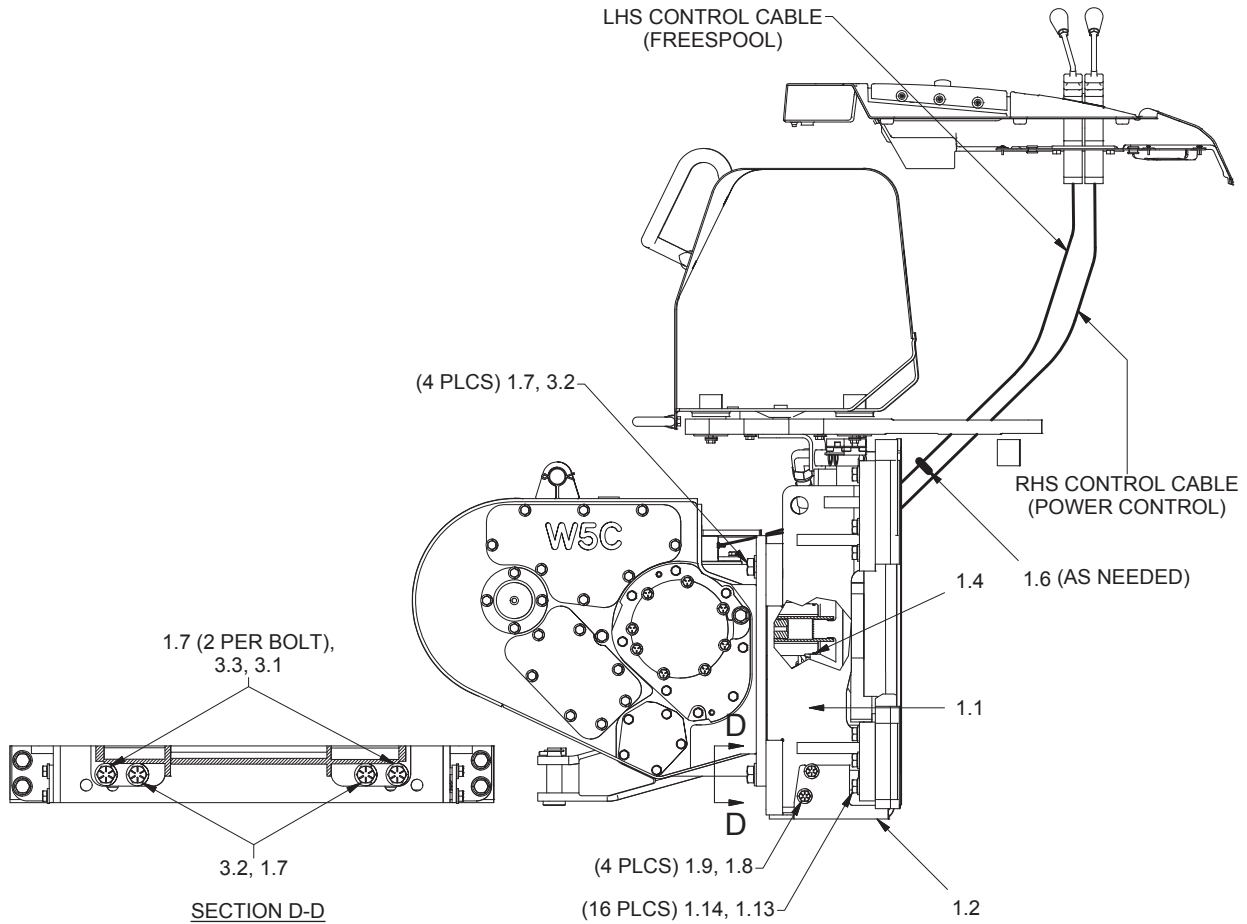
Caterpillar D6N Tier 4i (C810)
Push/Pull Controls (P-Controls)
Page 1 of 2



TOP GUARD INSTALLATION

Mounting Parts

Caterpillar D6N Tier 4i (C810)
 Push/Pull Controls (P-Controls)
 Page 2 of 2

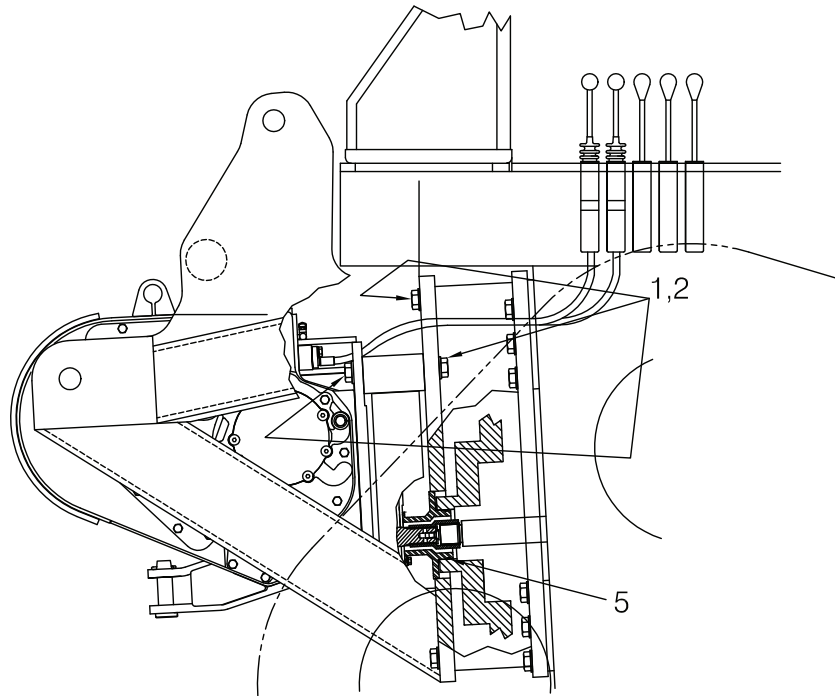
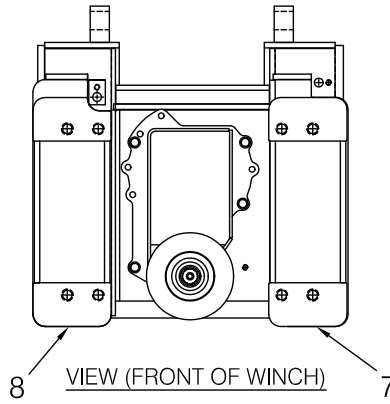


WINCH, MOUNTING BRACKET & BOTTOM GUARD INSTALLATION

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1.1	2305516W	Bracket, Mounting	1	2.5	2314245	Plate, RH Cable Guard	1
1.2	2305541W	Guard, Bottom	1	2.6	221780W	Washer	2
1.4	15887W	O-Ring	1	2.7	18662W	Capscrew	2
1.6	137852W	Clamp, Strap	AR	2.8	307788W	Capscrew	2
1.7	221780W	Washer	10	2.9	2305715W	Washer	4
1.8	*a Y17C-1024	Capscrew	4	2.10	221711W	Nut	2
1.9	R13811435	Washer	4	2.11	221767W	Washer	10
1.13	*a 293710W	Capscrew	16	2.12	16828W	Capscrew	10
1.14	221777W	Washer	16				
2.1	2314246	Guard, LH	1	3.1	Y17C-1664	Capscrew	2
2.2	2314247	Guard, RH	1	3.2	*a 221692W	Capscrew	6
2.3	2314240	Plate, Center Guard	1	3.3	221720W	Nut	2
2.4	2314244	Plate, LH Cable Guard	1				
				*a	Use 318702W Thread Lock		

Mounting Parts

Caterpillar D6H and D6R With Esco Grapple (C381)

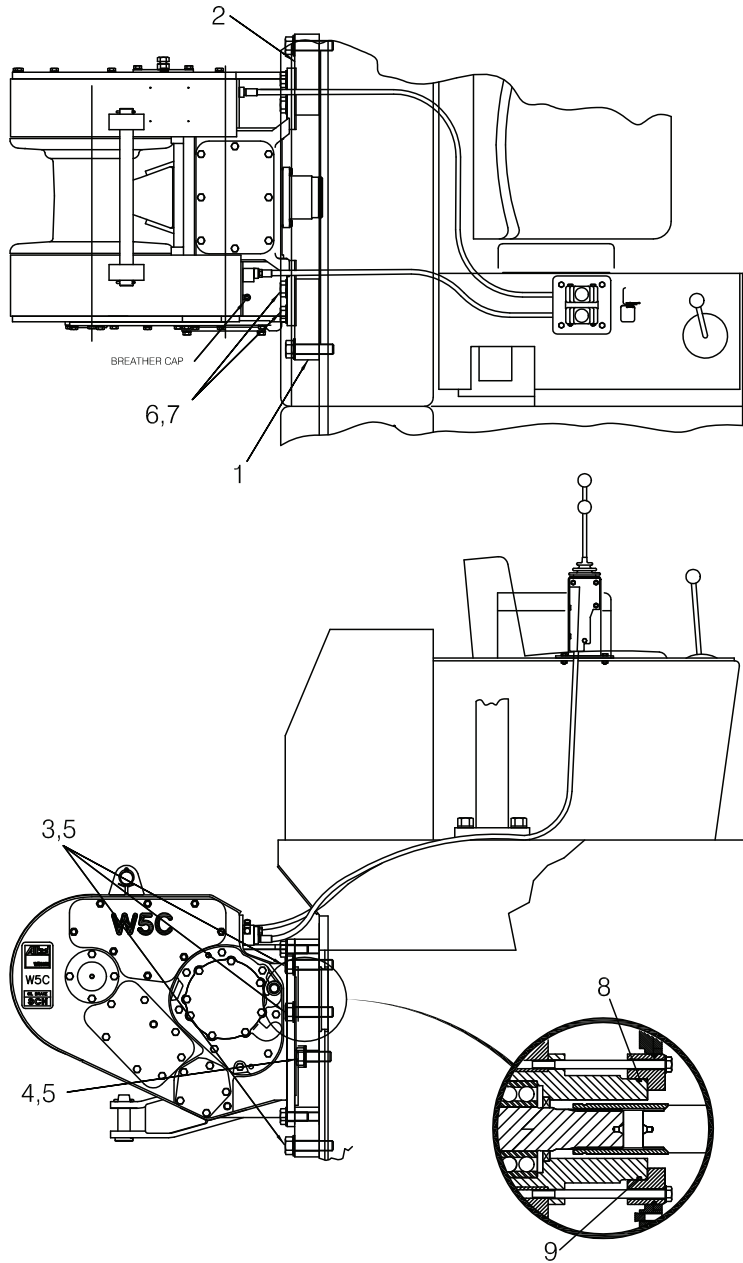


Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 221690W	Capscrew	8	8	2303527W	Bracket, Mounting - LH	1
2	221780W	Washer	8				
5	15887W	O-Ring	1		*a	Use 230064W Loctite Kit	
7	2303462W	Bracket, Mounting - RH	1				

Mounting Parts

Dresser/Dressta TD12B and TD12C (H35)

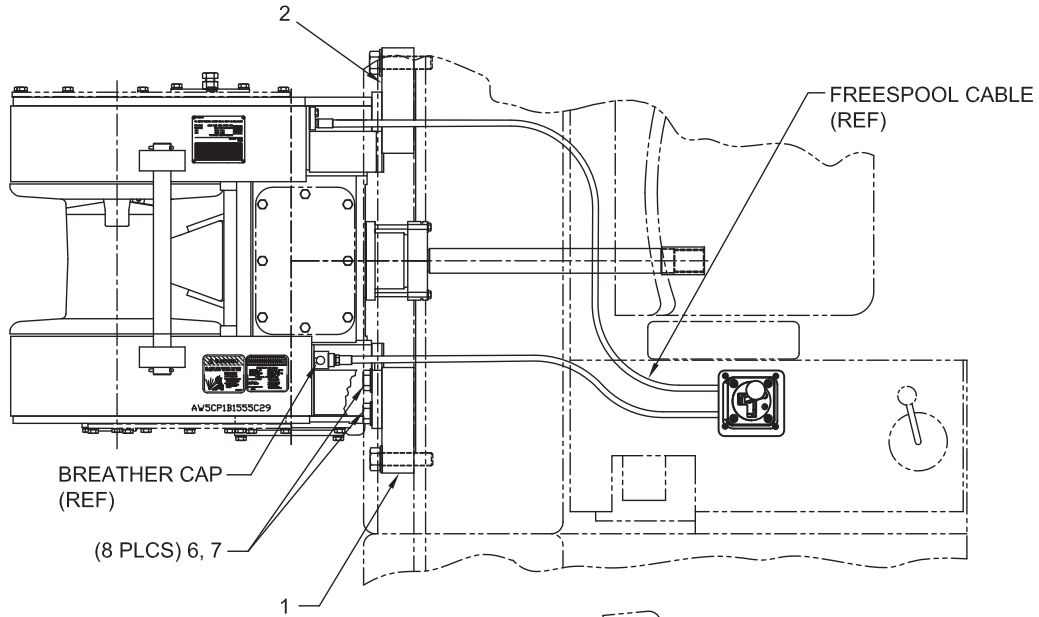


Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

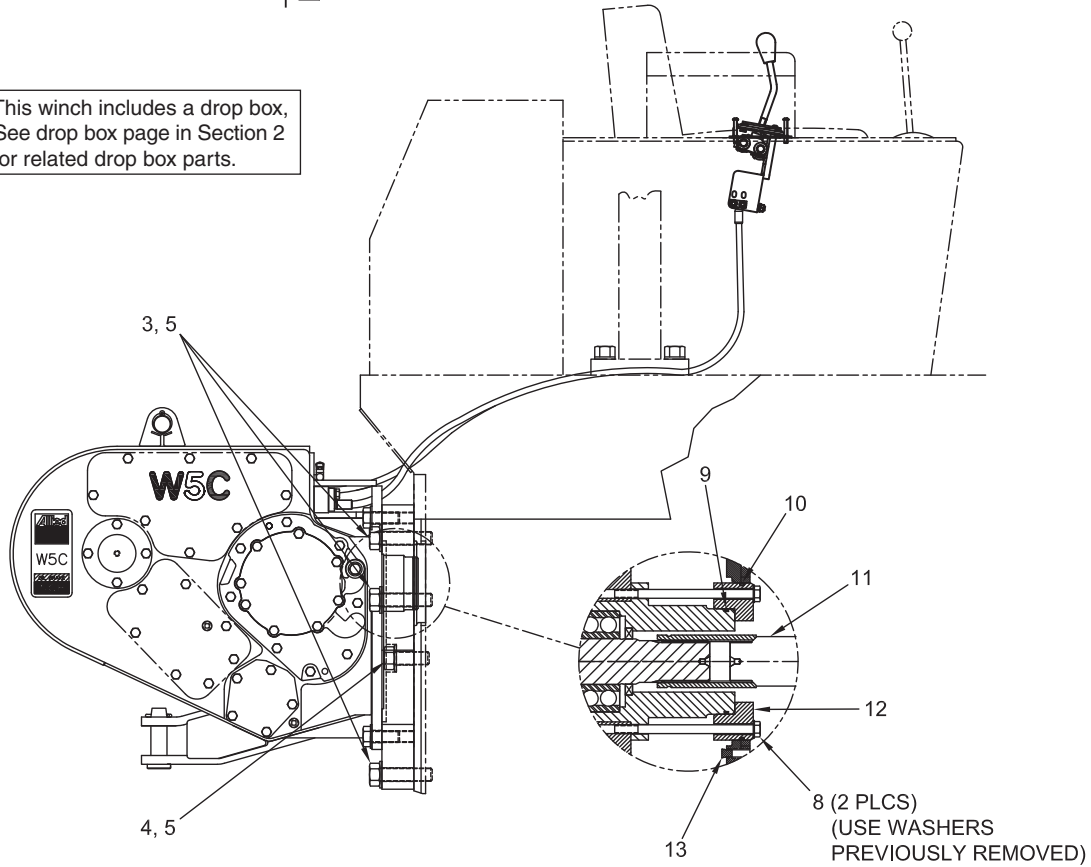
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2302908W	Bracket, Mounting - RH	1	7	221780W	Washer	8
2	2302909W	Bracket, Mounting - LH	1	8	90937W	O-Ring	1
3	*a 2302969W	Capscrew	6	9	18000W	Plug	5
4	*a 1314687W	Capscrew	2				
5	15137W	Washer	8				
6	*a 221690W	Capscrew	8				
					*a	Use 318702W Thread Lock	

Mounting Parts

Dresser TD14M (H38)



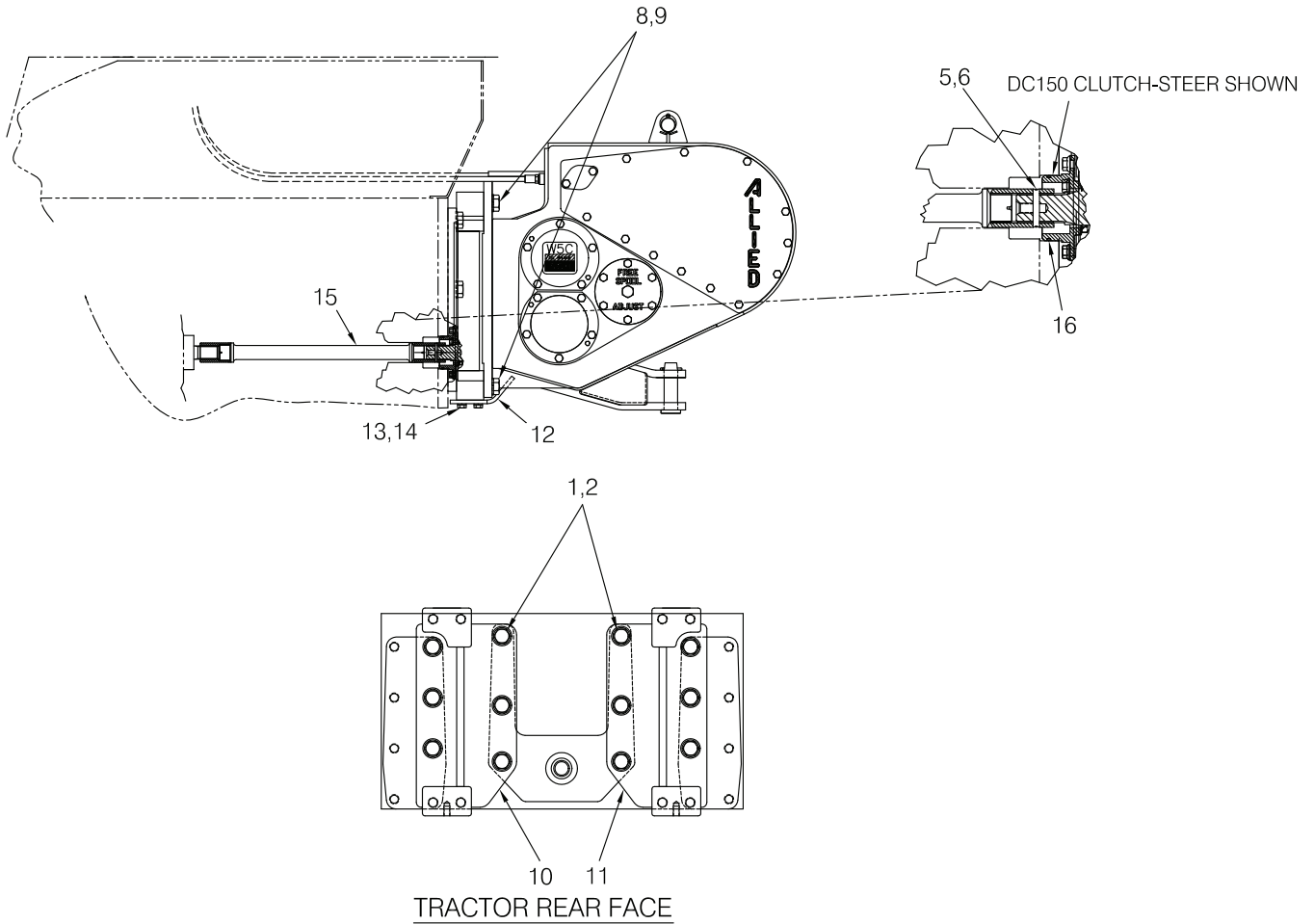
Note: This winch includes a drop box, See drop box page in Section 2 for related drop box parts.



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2302908W	Bracket, Mounting - RH	1	9	15887W	O-Ring	1
2	2302909W	Bracket, Mounting - LH	1	10	90937W	O-Ring	1
3	*a 2302969W	Capscrew	8	11	2302955W	Shaft, Coupling	1
4	*a 1314687W	Capscrew	2	12	2302933W	Adapter, Carrier	1
5	15137W	Washer	10	13	18000W	Plug	5
6	*a 221690W	Capscrew	8				
7	221780W	Washer	8				
8	218589w	Capscrew	2				
				*a	Use 318702W Thread Lock		

Mounting Parts

Fiat-Hitachi/New Holland FD10E, FD145 (A39), DC150 (A40), DC150 PS (A38)

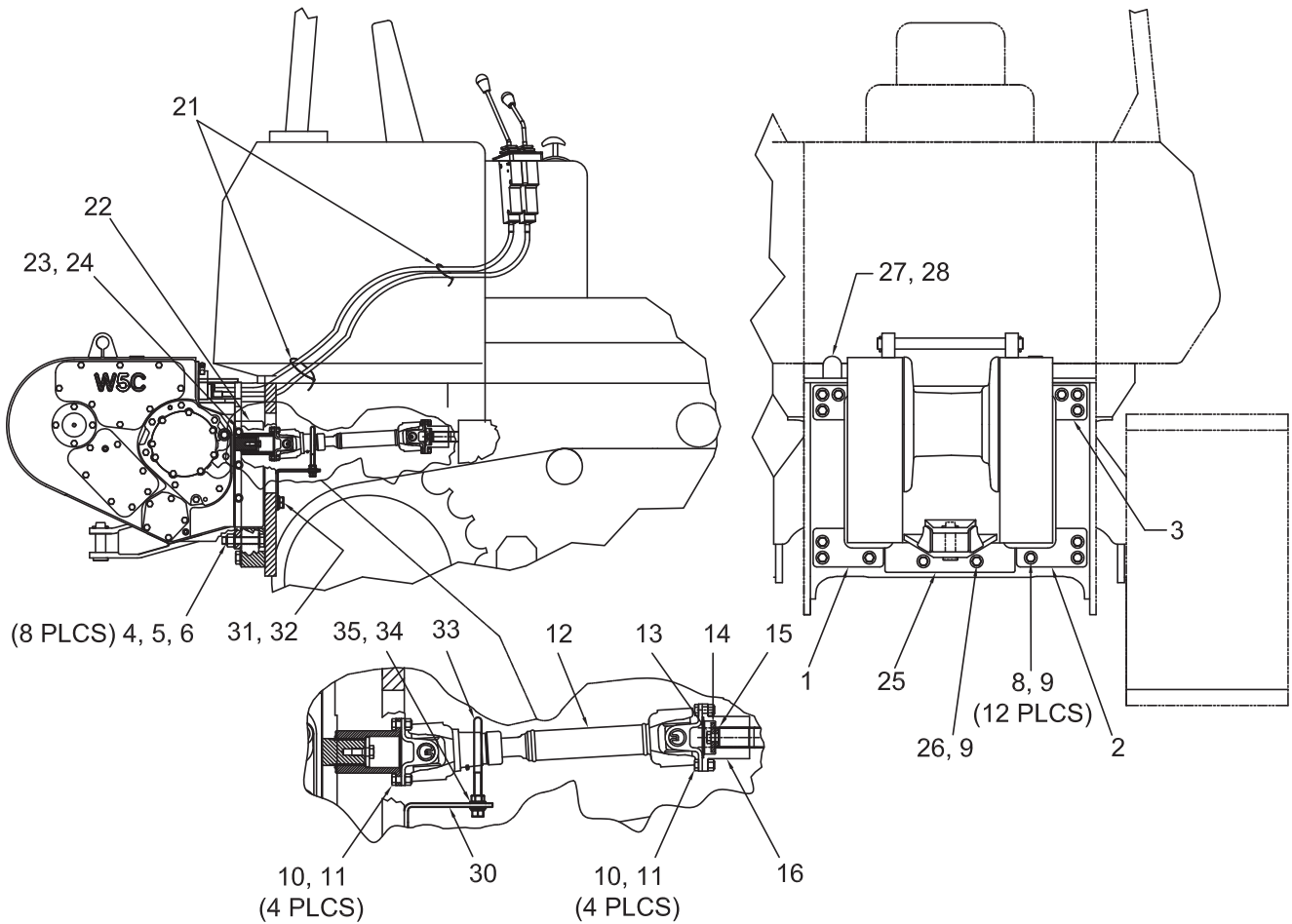


Note: This winch includes a drop box, See drop box page in Section 2 for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 2301477W	Capscrew	12	13	221775W	Washer	4
2	296434W	Washer	12	14	*a 221616W	Capscrew	4
5	19928W	Pin	1	15	2303232W	Shaft	1
6	9554W	Lock Ring	1		*b 2305429W	Shaft	1
8	*a 221690W	Capscrew	8	16	15880W	O-Ring	1
9	221780W	Washer, Hardened	8		*b 90263W	O-Ring	1
10	2303211W	Bracket, Mounting - LH	1				
11	2303212W	Bracket, Mounting - RH	1		*a	Use 230064W Loctite Kit	
12	2303235W	Plate, Guard	1		*b	Used only on New Holland DC150 PS (A38)	

Mounting Parts

John Deere 700H (E40), 700J (E39)

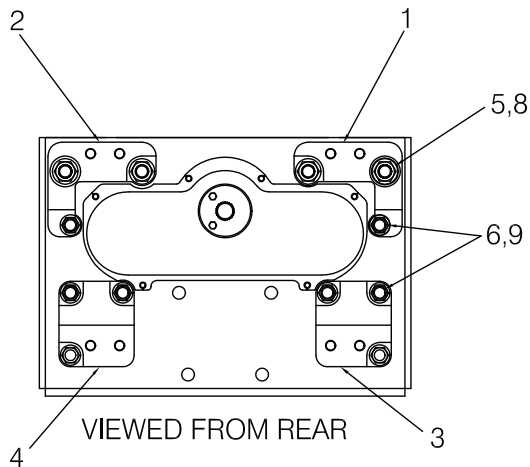
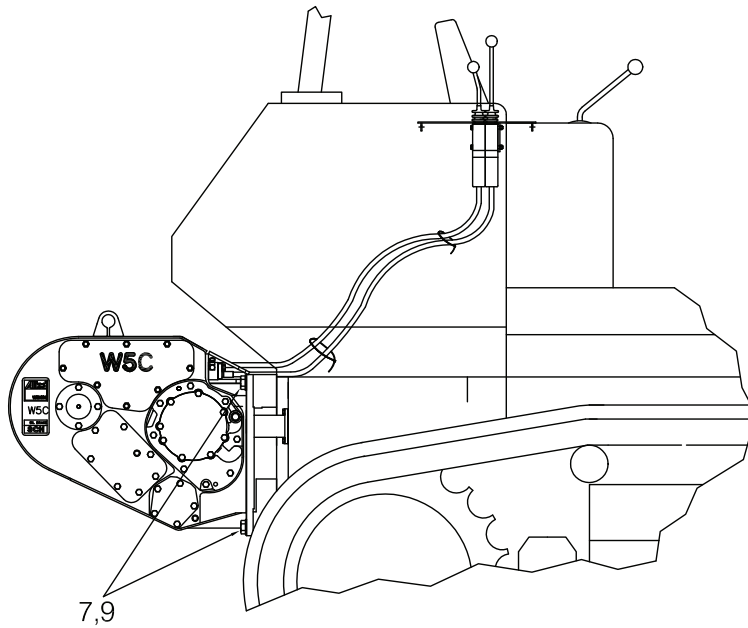


Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303732W	Bracket, Mounting - LH Bottom	1	22	2304611W	Guard, Side	2
2	2303731W	Bracket, Mounting - RH Bottom	1	23	221771W	Washer	6
3	2303730W	Bracket, Mounting - Top	1	24	*a 18586W	Capscrew	6
4	221720W	Nut	8	25	2304612W	Guard, Bottom	9
5	*a 230687W	Capscrew	8	26	*a 2304613W	Capscrew	2
6	221780W	Washer	16	27	2303039W	Guard Cable	2
8	*a 293732W	Capscrew	12	28	137852W	Clamp, Strap	4
9	296434W	Washer	14	30	2314016	Guard, Bracket	1
10	2301540W	Capscrew	8	31	*a Y19C-M2440	Capscrew	2
11	221710W	Nut	8	32	296434W	Washer	2
12	2303734W	Driveshaft	1	33	2304350W	Assembly, U-Bolt	1
13	*a 292527W	Capcrew	1	34	15135W	Washer	4
14	2307311W	Washer	1	35	15158W	Washer	2
15	58916W	Ring, Snap	1				
16	2303733W	Flange	1				
21	129563W	Clamp, Strap	4				
				*a	Use 230064W Loctite Kit		

Mounting Parts

John Deere 750C Series I (E45)
Last Used on S/N AW5C-1248

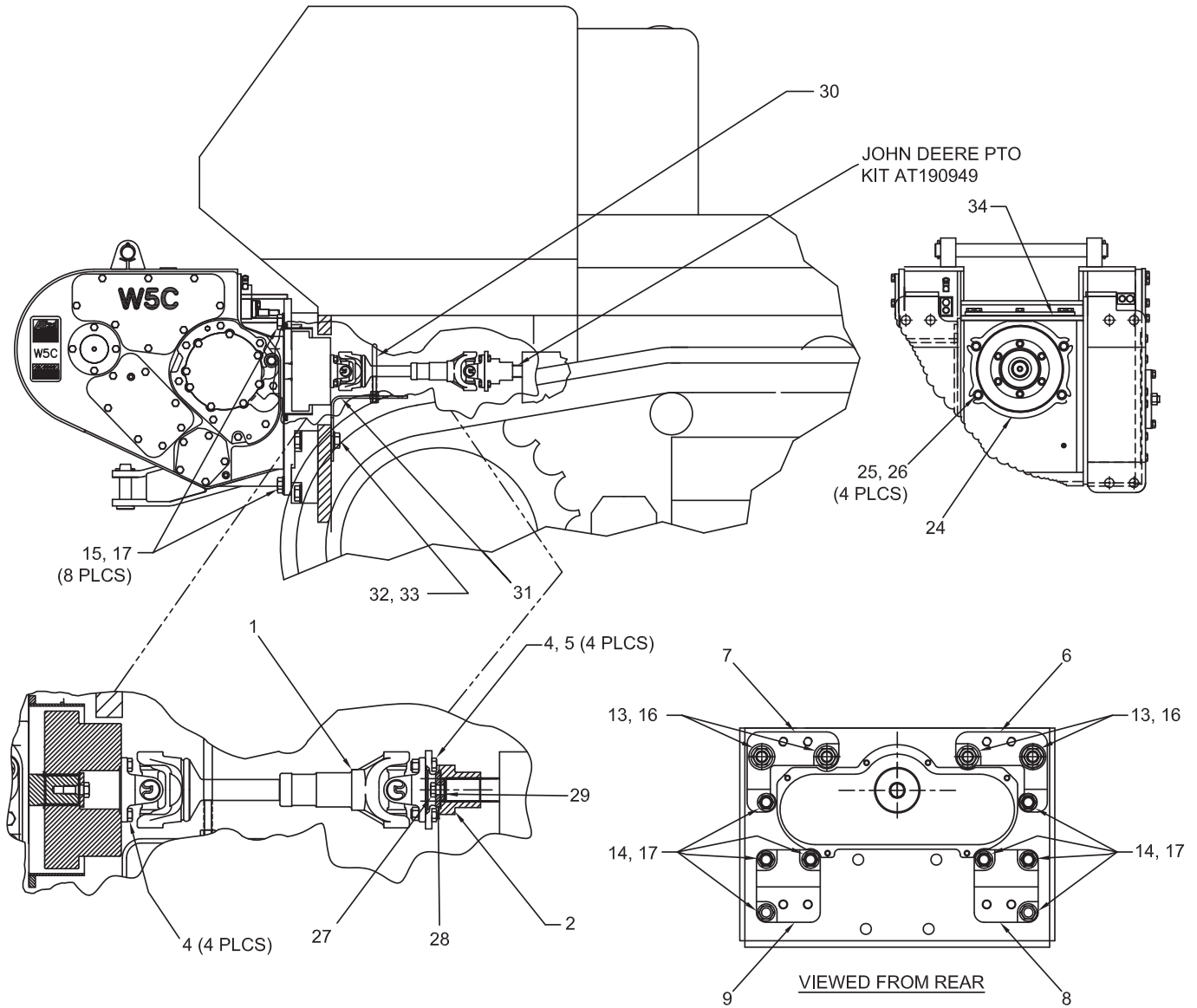


Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2302923W	Bracket, Mounting - RH - Upper	1	7	*a 221692W	Capscrew	8
2	2302924W	Bracket, Mounting - LH - Upper	1	8	15128W	Washer	4
3	2302925W	Bracket, Mounting - RH - Lower	1	9	221780W	Washer	8
4	2302926W	Bracket, Mounting - LH - Lower	1				
5	*a 17384W	Capscrew	4		*a Use 318702W	Thread Lock	
6	*a 18672W	Capscrew	8				

Mounting Parts

John Deere 750C Series I (E45) - First Used on S/N AW5C-1249
750C Series II (E45)

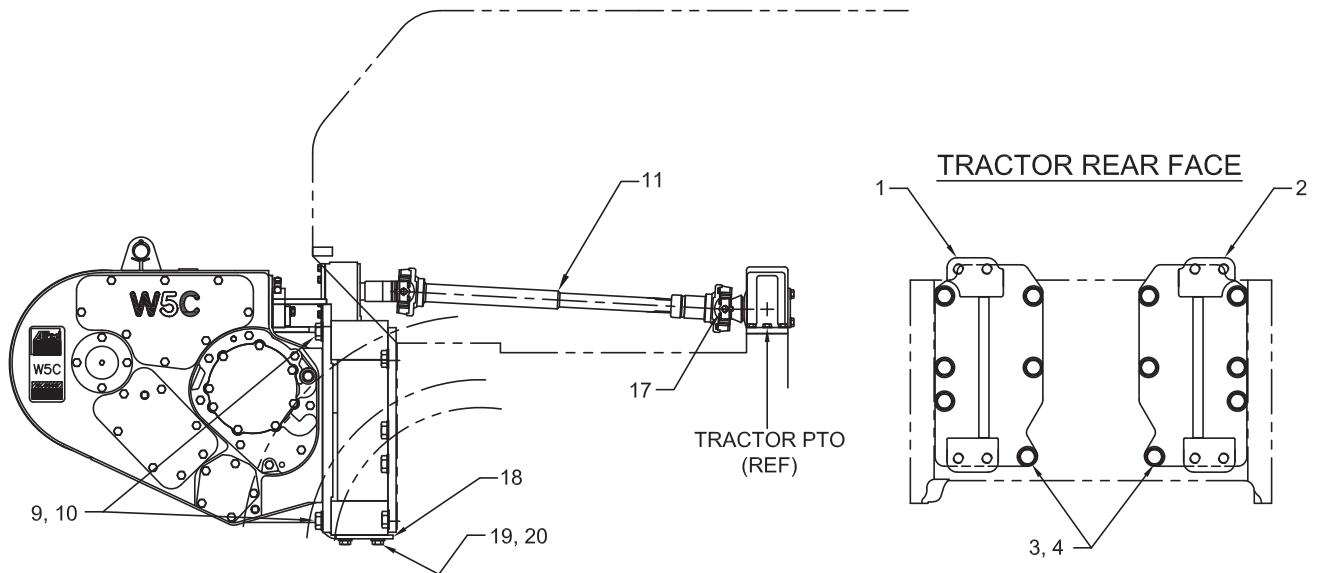
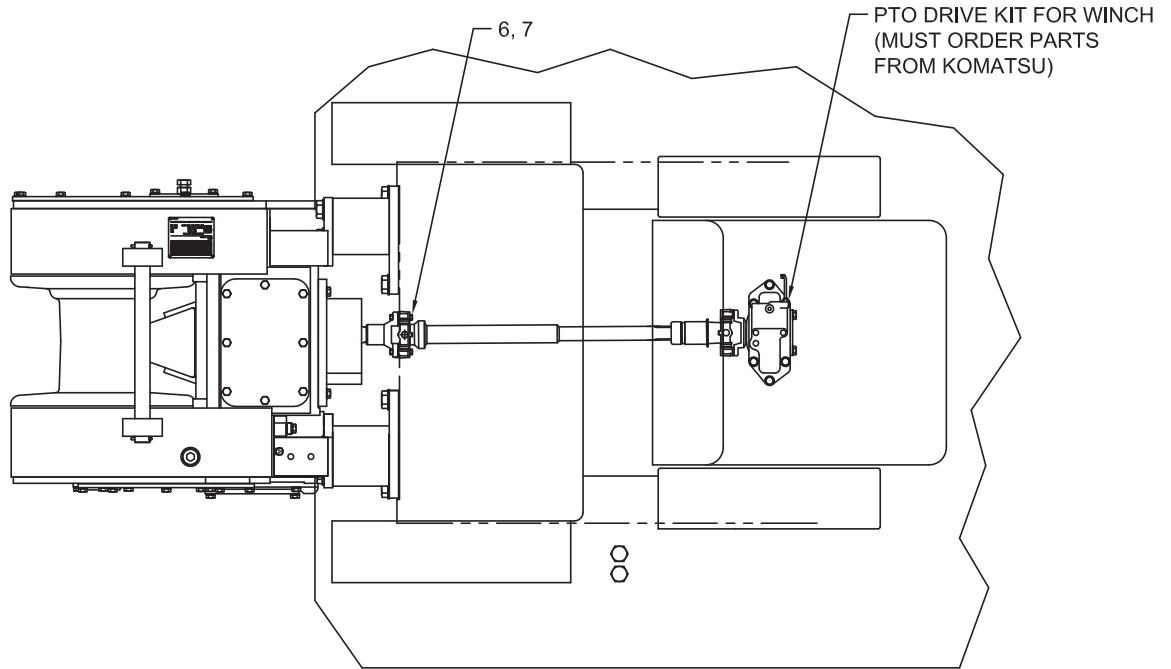


Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303952W	Driveshaft, Slip	1	24	2303265W	Guard, Flange	1
2	2303733W	Flange, Tractor End	1	25	*a 16829W	Capscrew	4
4	2301540W	Capscrew	8	26	221771W	Washer	4
5	221710W	Nut	4	27	292527W	Capscrew	1
6	2302923W	Bracket, Mounting - RH - Upper	1	28	2307311W	Washer	1
7	2302924W	Bracket, Mounting - LH - Upper	1	29	58916W	Snap Ring	1
8	2302925W	Bracket, Mounting - RH - Lower	1	30	2304350W	U-Bolt	1
9	2302926W	Bracket, Mounting - LH - Lower	1	31	2303981W	Guard, Driveline	1
13	*a 17384W	Capscrew	4	32	18662W	Capscrew	2
14	*a 18672W	Capscrew	8	33	15166W	Washer	2
15	*a 221692W	Capscrew	8	34	2302512W	Gasket, Top	1
16	15128W	Washer	4				
17	221780W	Washer	16				
					*a Use 3180702W Thread Lock		

Mounting Parts

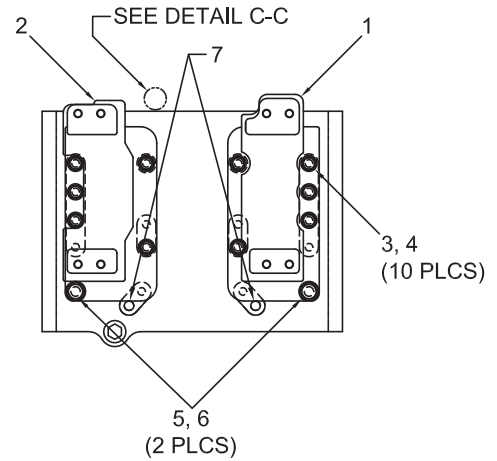
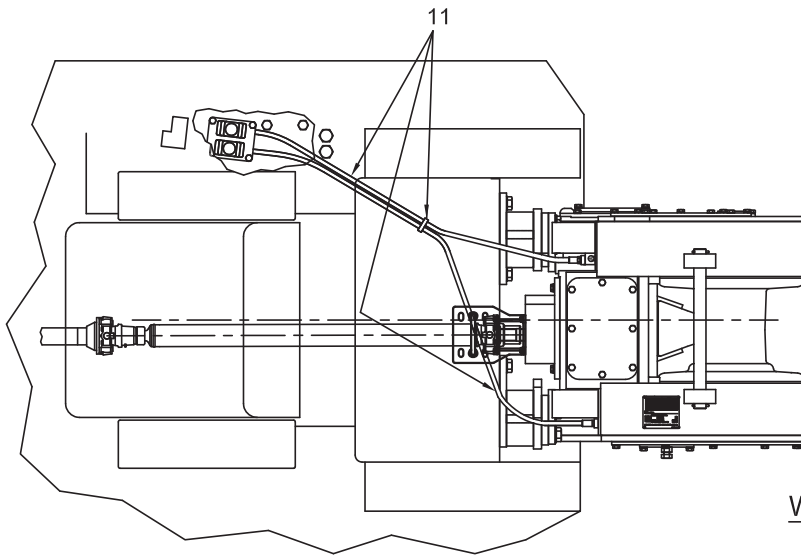
Komatsu D41E-6 (K27)



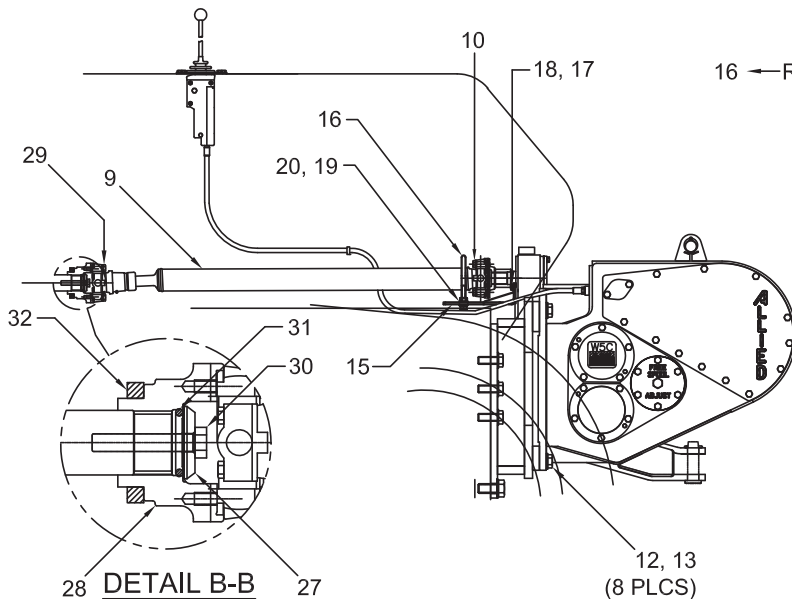
Note: This winch includes a drop box,
See drop box page in Section 2
for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2302978W	Bracket, Mounting - LH	1		221466W	. Capscrew	8
2	2302979W	Bracket, Mounting - RH	1		NSS	. Propshaft	1
3	*a 225065W	Capscrew	12		NSS	. Assembly, Slip Yoke	1
4	296434W	Washer	12	17	293617W	Capscrew	4
6	221475W	Capscrew	4	18	2303102W	Plate, Guard	1
7	221351W	Nut	4	19	221775W	Washer	4
9	*a 221690W	Capscrew	8	20	*a 221616W	Capscrew	4
10	221780W	Washer	8				
11	2301680W	Assembly, Drive Shaft	1		*a	Use 230064W Loctite Kit	
	2300041W	. U-Joint	2				

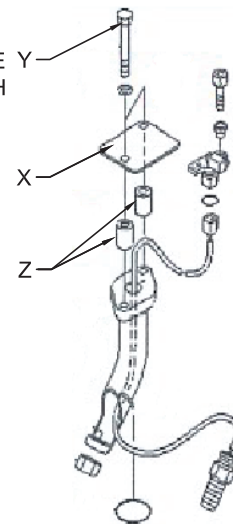
Mounting Parts
 Komatsu D61EX-12 (K47)
 Push/Pull Controls (P-Controls)



**REAR FACE
 WITH WINCH MOUNTING BRACKET**



DETAIL B-B

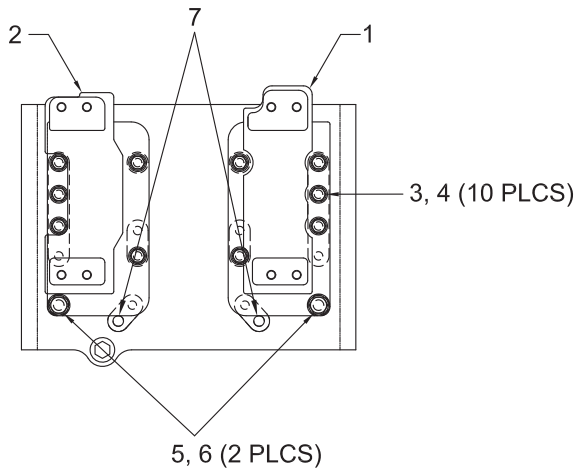


DETAIL C-C

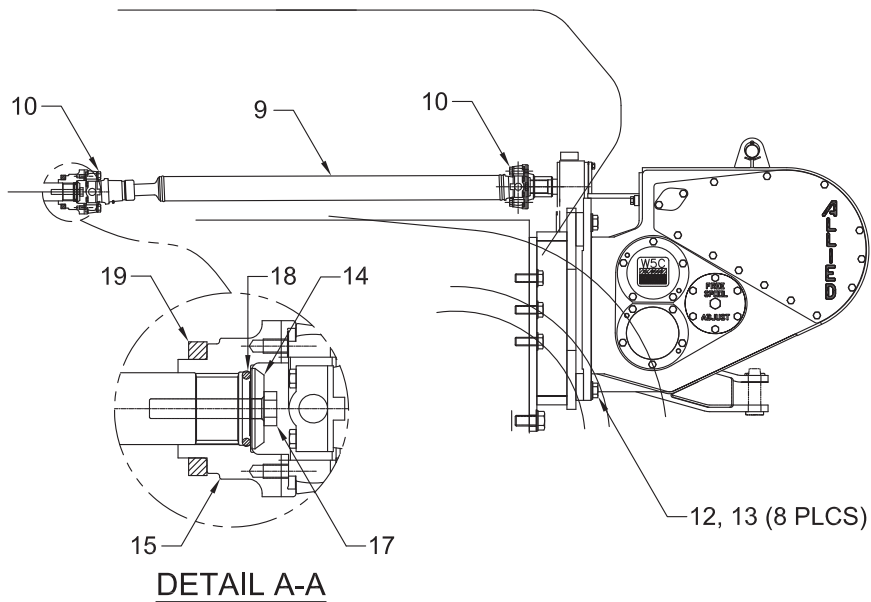
Note: This winch includes a drop box,
 See drop box page in Section 2
 for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303800W	Bracket, Mounting - RH	1	16	2304350	Assembly, U-Bolt	1
2	2303801W	Bracket, Mounting - LH	1	17	Y17C-0616	Cap screw	2
3	*a 225065W	Cap screw	10	18	221767W	Washer	2
4	296434W	Washer	10	19	15158W	Washer	2
5	*a 2303817W	Cap screw	2	20	15135W	Washer	4
6	296438W	Washer	2	27	2300422W	Washer	1
7	18001W	Plug	2	28	2300423W	Yoke, PTO	1
9	2303674W	Drive Shaft	1	29	*a 293632W	Cap screw	4
10	*a 293632W	Cap screw	4	30	*a 2301643W	Cap screw	1
11	137852W	Clamp, Strap	3	31	2304641W	O-Ring	1
12	*a 221690W	Cap screw	8	32	2301642W	Oil Seal	1
13	221780W	Washer	8				
14	293629W	Cap screw	2				
15	2314036	Bracket, Guard	1				
				*a	Use 230064W	Loctite Kit	

Mounting Parts
 Komatsu D61EX-12 (K47)
 Electronic Controls (E-Controls)



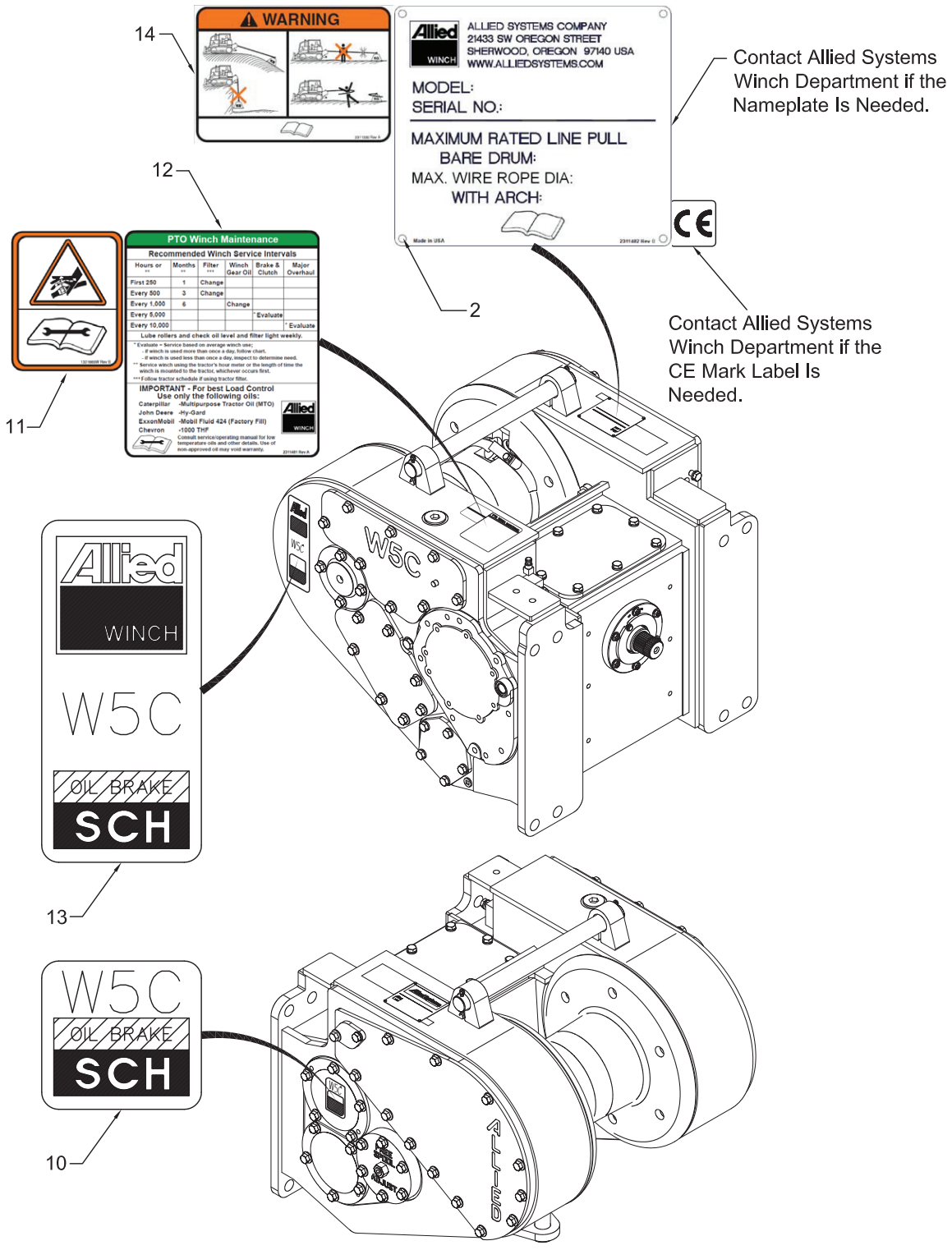
**REAR FACE
 WITH WINCH MOUNTING BRACKETS**



Note: This winch includes a drop box,
 See drop box page in Section 2
 for related drop box parts.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303800W	Bracket, Mounting - RH	1	12	*a 221690W	Capscrew	8
2	2303801W	Bracket, Mounting - LH	1	13	221780W	Washer	8
3	*a 225065W	Capscrew	10	14	2300422W	Washer	1
4	296434W	Washer	10	15	2300423W	Yoke, PTO	1
5	*a 2303817W	Capscrew	2	17	*a 2301643W	Capscrew	1
6	296438W	Washer	2	18	2304641W	O-Ring	1
7	18001W	Plug	2	19	2301642W	Seal, Oil	1
9	2303674W	Shaft, Drive	1				
10	*a 293632W	Capscrew	4		*a Use 230064W	Loctite Kit	

Nameplate & Decals



Contact Allied Systems Winch Department if the Nameplate Is Needed.

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

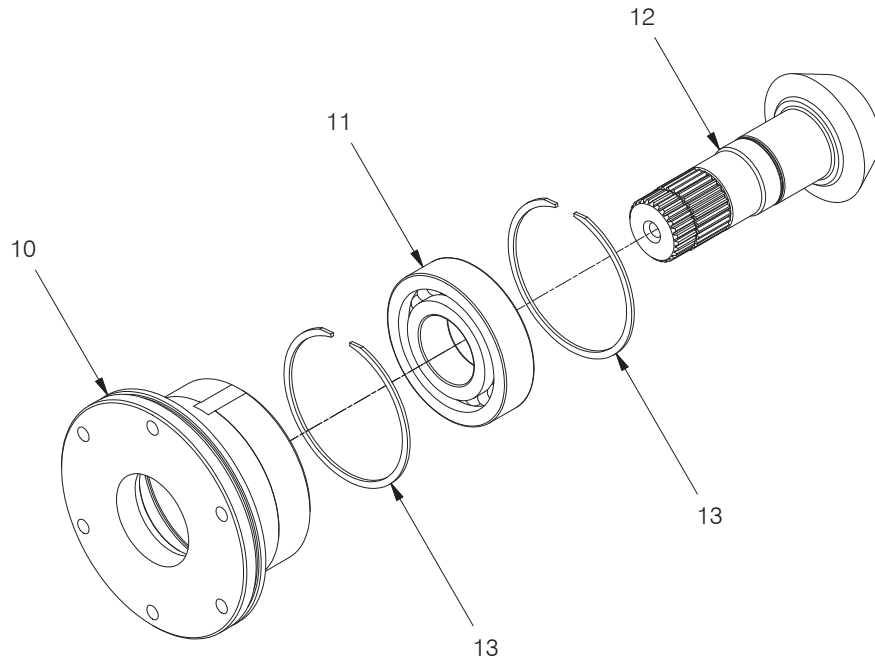
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
2	16602W	Screw	4	12	2311481	Decal, PTO Winch Maintenance	1
10	2302843W	Decal, W5C	1	13	2302844W	Decal, Winch Model	1
11	1321665W	Decal, Warning	1	14	2311330	Decal, Load & Wire Rope Safety	1

Gear Train

Brake	2-30
Brake/Clutch Shaft.	2-28 & 2-29
Clutch	2-31
Drum Shaft	2-32
Idler Shaft	2-33
Intermediate Shaft & Freespool - Power Controls	2-34 thru 2-37
Intermediate Shaft & Freespool - Electronic Controls	2-38 thru 2-41
PTO Group	2-2 thru 2-27

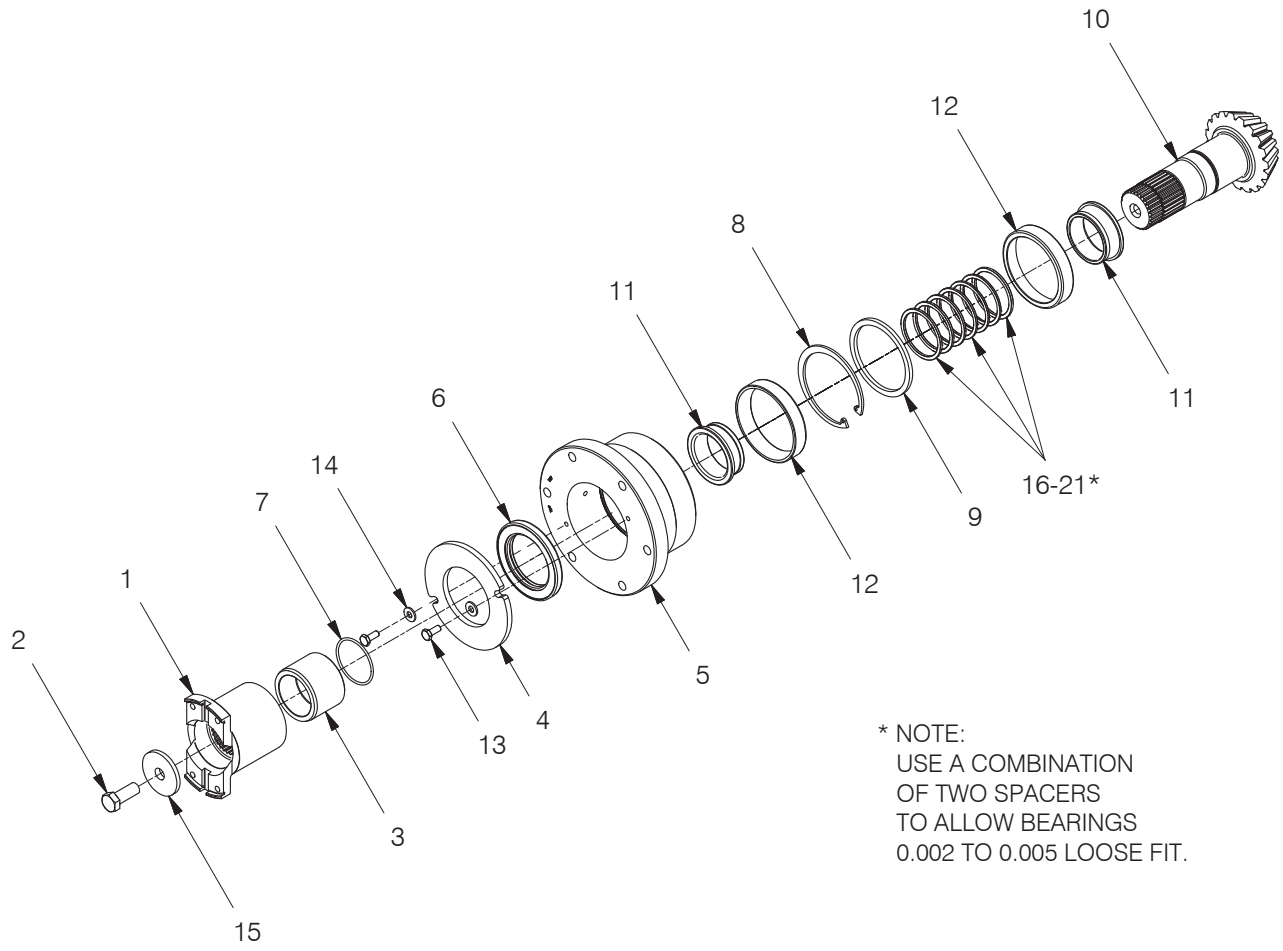
PTO Group

Case 1150E/G (R35), 1150H (R36) and 1650K (R38)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
10	2302930W	Carrier, PTO	1	12	2302855W	Pinion, Bevel	1
11	41310W	Bearing	1	13	35573W	Ring, Snap	2

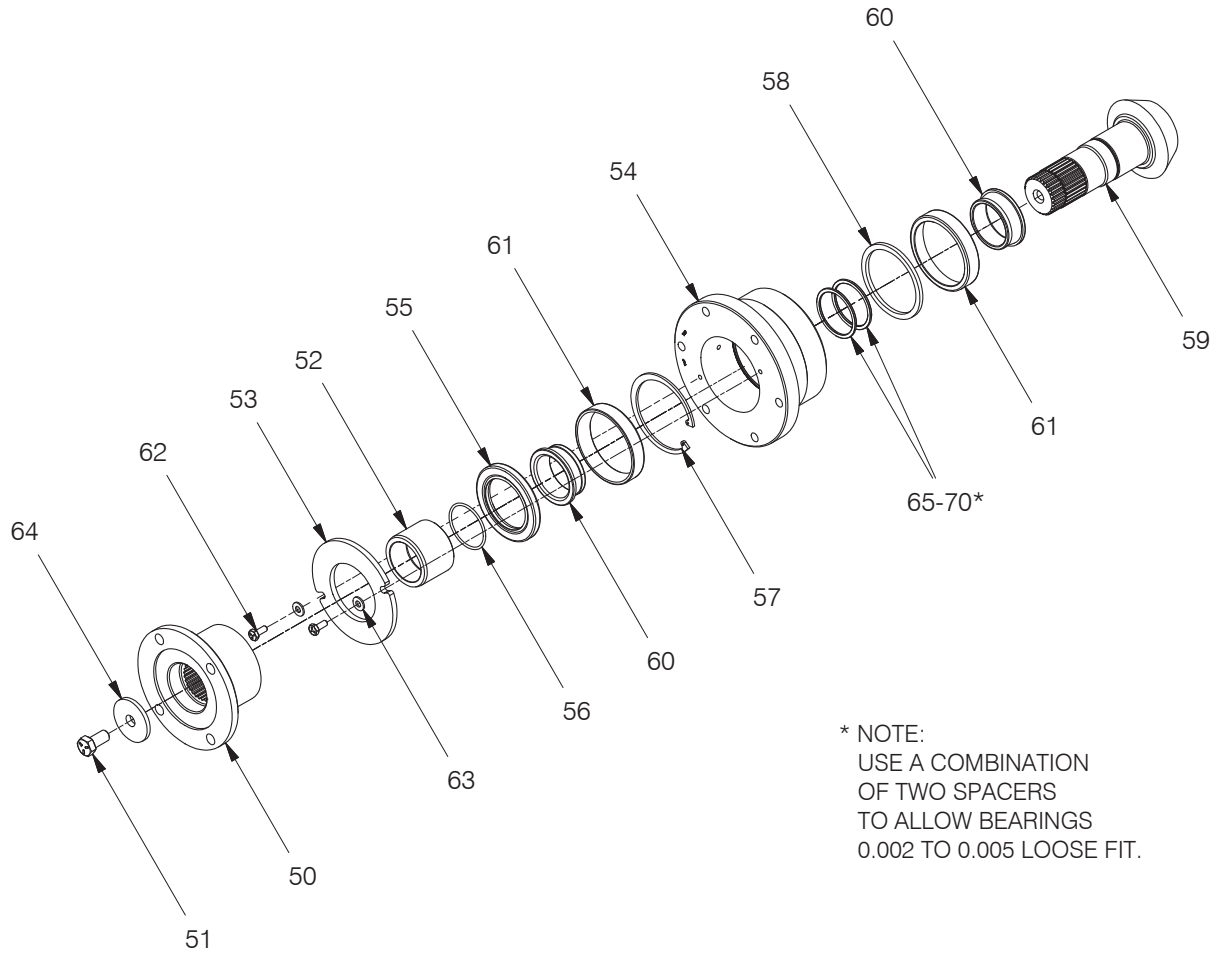
PTO Group
Case 1150K (R37)



* NOTE:
USE A COMBINATION
OF TWO SPACERS
TO ALLOW BEARINGS
0.002 TO 0.005 LOOSE FIT.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2307252W	Yoke	1	12	2304793W	Cup, Roller Bearing	2
2	16829W	Capscrew	1	13	16378W	Capscrew	2
3	2304792W	Spacer	1	14	15127W	Washer	2
4	2304790W	Seal, Cover	1	15	2303737W	Washer	1
5	2304789W	Carrier, Bearing	1	16	2304784W	Spacer .077"	AR
6	79389W	Seal, Oil	1	17	2304785W	Spacer .082"	AR
7	39389W	O-Ring	1	18	2304786W	Spacer .087"	AR
8	12896W	Ring, Snap	1	19	2304787W	Spacer .092"	AR
9	2304788W	Spacer	1	20	2304871W	Spacer .097"	AR
10	2302855W	Shaft, Pinion	1	21	2304942W	Spacer .102"	AR
11	2304794W	Cone, Roller Bearing	2				

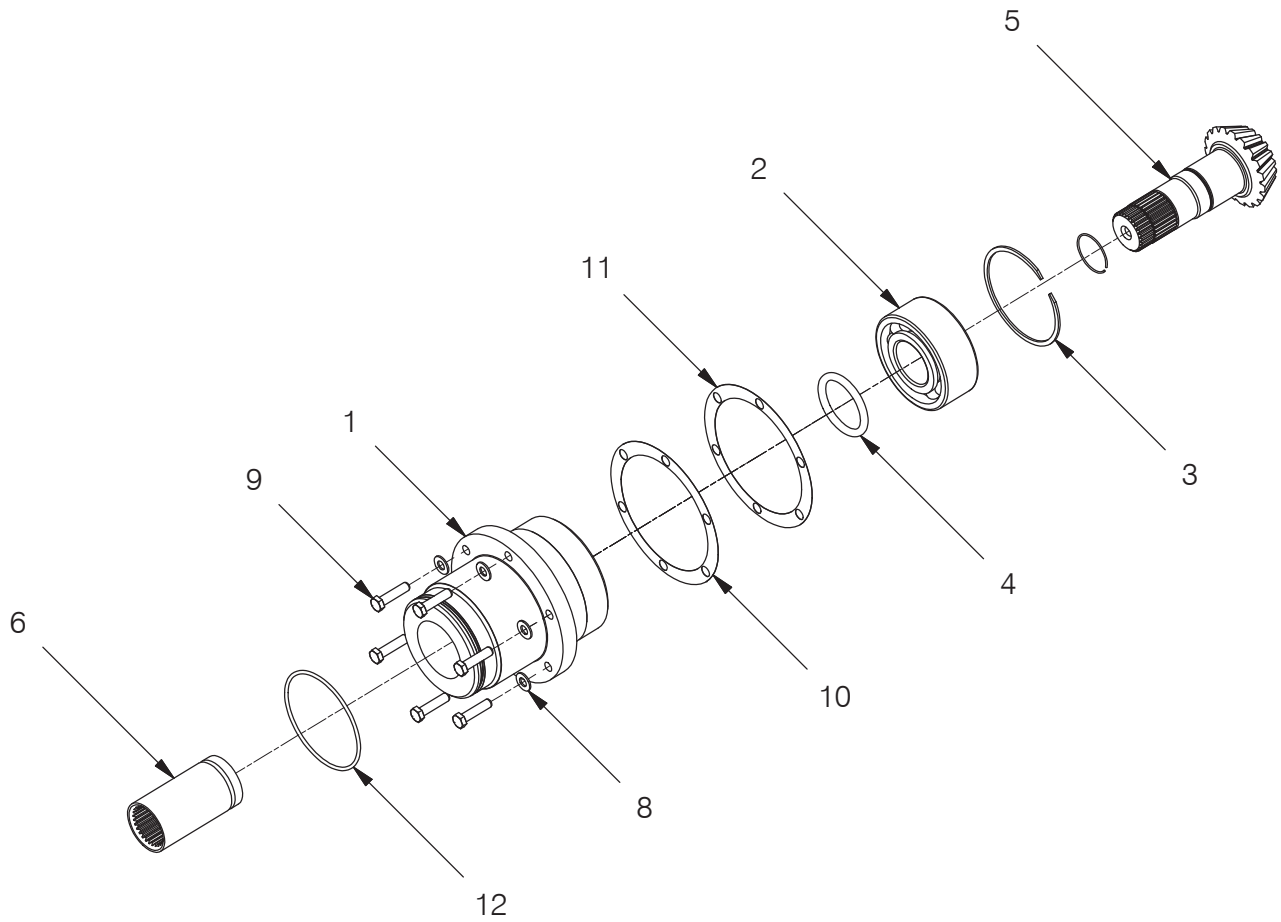
PTO Group
Case 1650L (R40)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
50	2310448	Yoke	1	61	2304793W	Cup, Bearing	2
51	16829W	Capscrew	1	62	16378W	Capscrew	2
52	2304792W	Spacer	1	63	15127W	Washer	2
53	2304790W	Cover, Seal	1	64	2303737W	Washer	1
54	2304789W	Carrier, Bearing	1	65	2304784W	Spacer, .077	AR
55	79389W	Seal	1	66	2304785W	Spacer, .082	AR
56	39389W	O-Ring	1	67	2304786W	Spacer, .087	AR
57	12896W	Ring, Snap	1	68	2304787W	Spacer, .092	AR
58	2304788W	Spacer	1	69	2304871W	Spacer, .097	AR
59	2302855W	Pinion, Bevel	1	70	2304942W	Spacer, .102	AR
60	2304794W	Cone, Bearing	2				

PTO Group

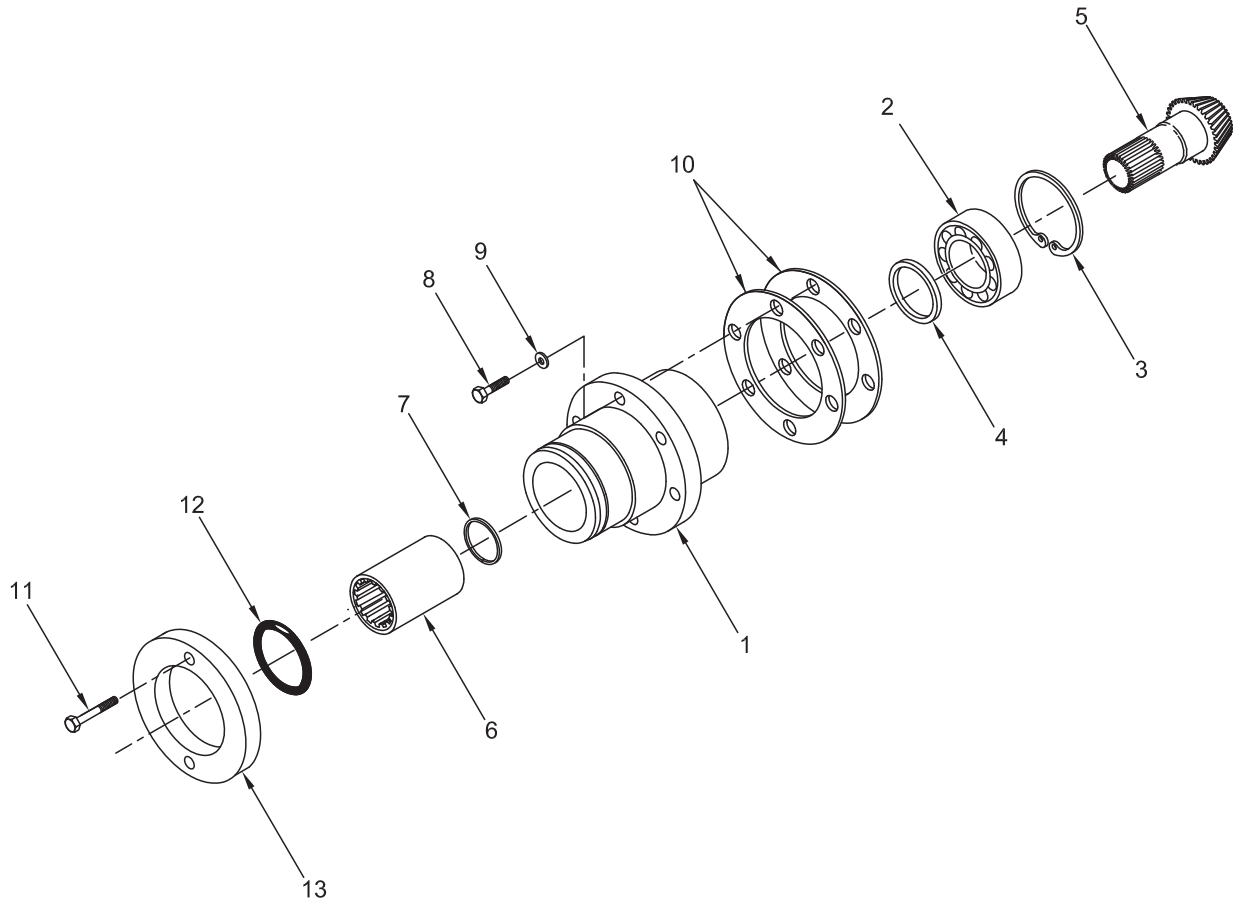
Caterpillar D4H (C360), D5H XL/LGP PS (C370), D5M (C29), & D6M (C29)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2302863W	Assembly, PTO	1				
1	*a 2302418W	.Carrier, Bearing	1	8	221767W	Washer	6
2	45310W	.Bearing	1	9	177461W	Capscrew	6
3	35573W	.Ring, Snap	1	10	*a 134078W	Shim .005"	AR
4	44495W	.Seal, Oil	1	11	*a 134079W	Shim .007"	AR
5	2302855W	.Shaft, Pinion	1	12	15887W	O-Ring	1
6	2302327W	.Coupler	1				
7	2302328W	.Ring, Retaining	1		*a	Uses 264159W Adhesive	

PTO Group

Caterpillar D5N (C28) & D6N (C47, C78)



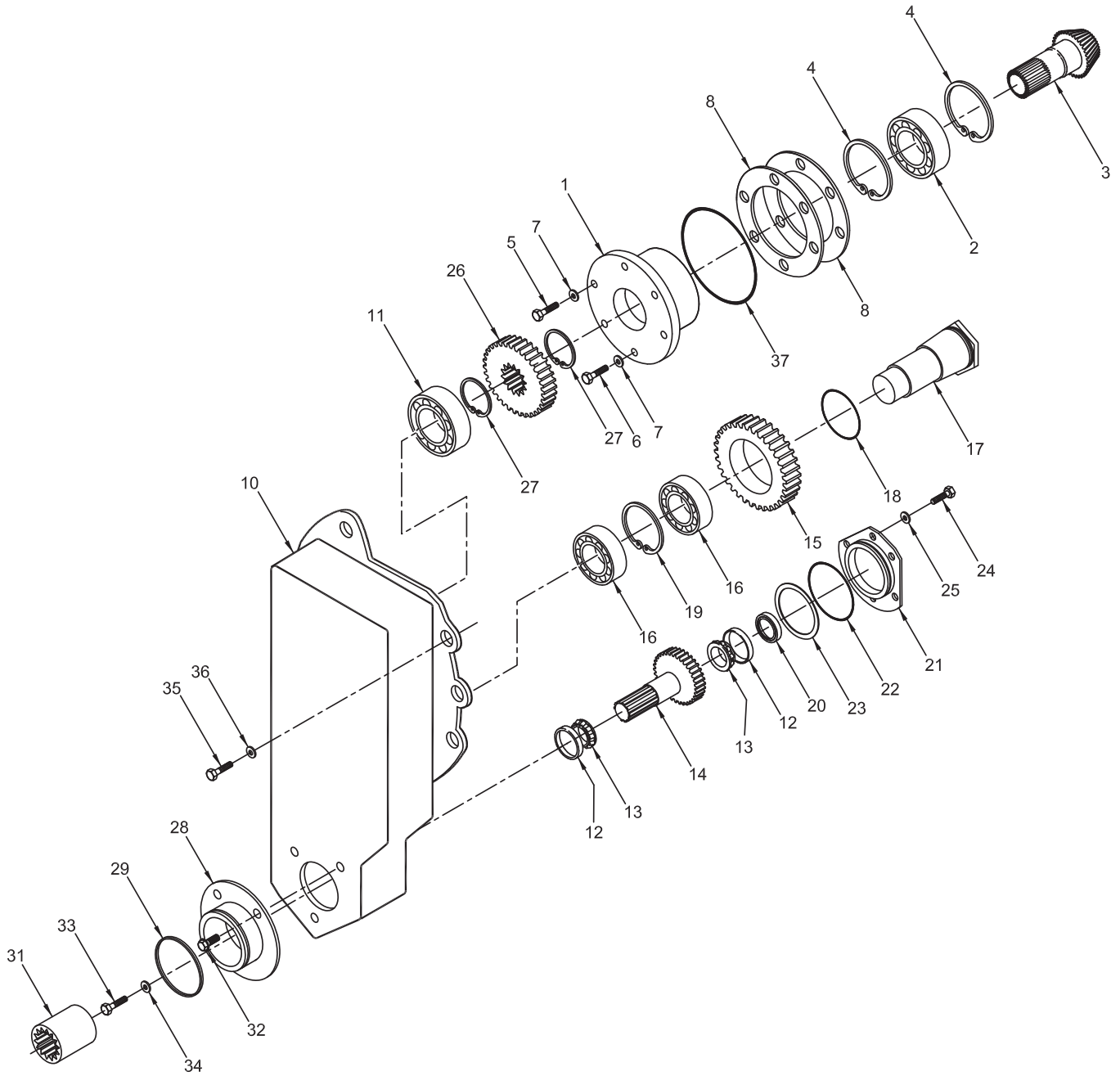
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305495W	Carrier, Bearing	1	9	221767W	Washer	6
2	45310W	Bearing	1	10	*a 134078W	Shim .005"	AR
3	35573W	Ring, Snap	1		*a 134079W	Shim .007"	AR
4	44495W	Seal, Oil	1	11	218589W	Capscrew	1
5	2302855W	Shaft, Pinion	1	12	15887W	O-Ring	1
6	2305496W	Coupler	1	13	2302933W	Adapter, Carrier	1
7	2302328W	Ring, Retaining	1				
8	177461W	Capscrew	6		*a	Uses 313022W Adhesive	

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PTO Group

Caterpillar D6H and D6R With Esco Grapple (C381)

Page 1 of 2



PTO Group

Caterpillar D6H and D6R With Esco Grapple (C381)

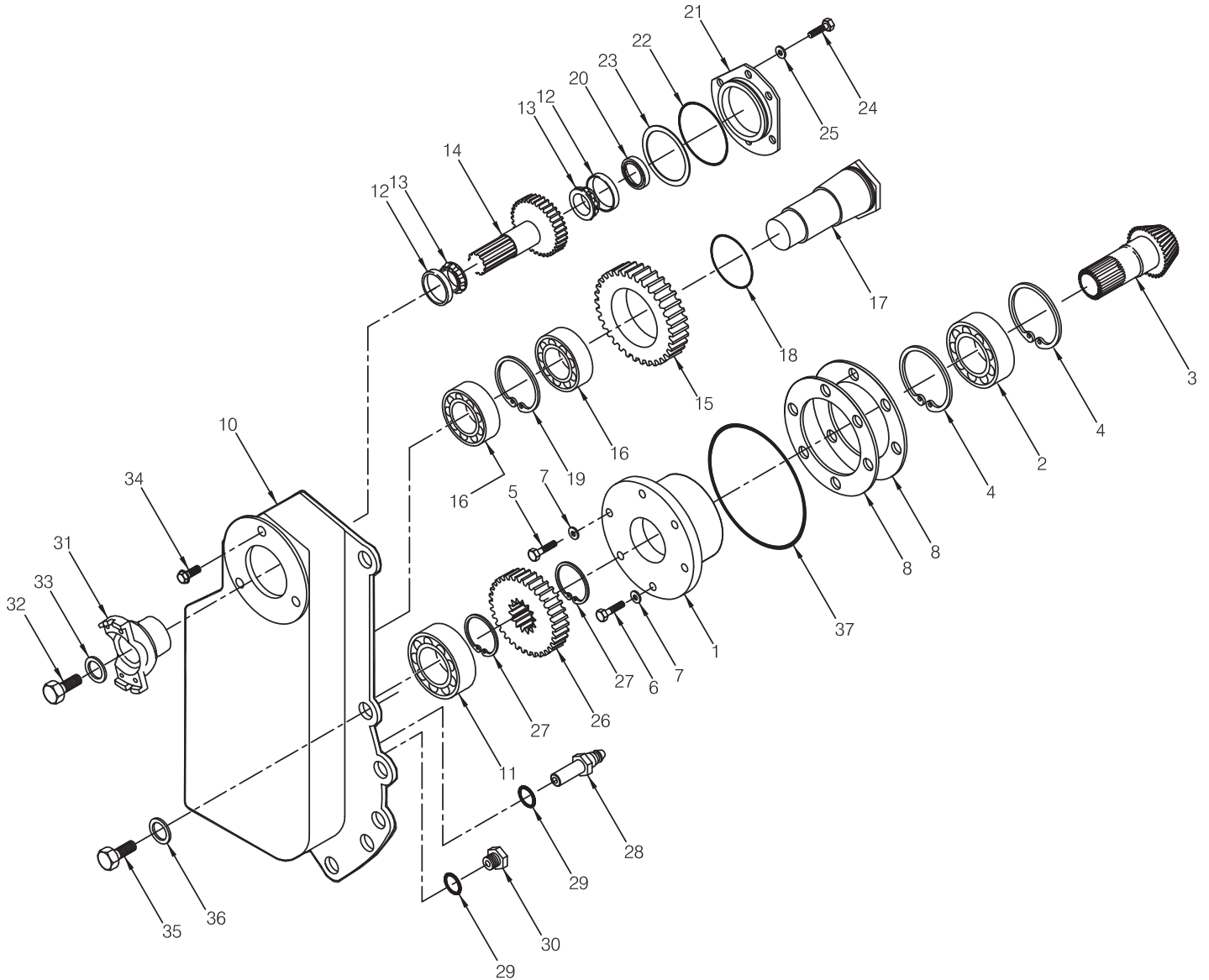
Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2302930W	Carrier, PTO	1	23	295756W	. Shim .005"	AR
2	41310W	Bearing	1		295757W	. Shim .007"	AR
3	2302855W	Shaft, Pinion	1		295758W	. Shim .020"	AR
4	35573W	Ring, Snap	2	24	179443W	. Capscrew	6
5	177461W	Capscrew	5	25	15156W	. Washer	6
6	2302785W	Capscrew, Special	1	26	2302846W	Gear, 21T	1
7	221767W	Washer	6	27	*c 12922W	Ring, Snap	2
8	*a 134078W	Shim .005"	AR		*d 58939W	Ring, Snap	2
	*a 134079W	Shim .007"	AR	28	2303461W	Pilot, PTO	1
9	2302808W	Assembly, Drop Box	1	29	15887W	O-Ring	1
10	2302807W	. Box, Drop	1	31	2303460W	Coupler, PTO	1
11	41209W	. Bearing	1	32	174413W	Capscrew	3
12	2301336W	. Cup, Bearing	2	33	192673W	Capscrew	1
13	2301337W	. Cone, Bearing	2	34	2303464W	Washer	1
14	2303234W	. Shaft, Input	1	35	*b 221563W	Capscrew	4
15	2302815W	. Gear, 37T	1	36	15135W	Washer	4
16	43208W	. Bearing	2	37	90937W	O-Ring	1
17	2302816W	. Shaft, Idler	1				
18	39383W	. O-Ring	1		*a	Uses 313022W Adhesive	
19	58947W	. Ring, Snap	1		*b	Uses 273338W Pipe Thread Sealant	
20	44503W	. Seal	1		*c	Last Used on S/N AW5C-1281	
21	2302817W	. Carrier, Bearing	1		*d	First Used on S/N AW5C-1282	
22	15883W	. O-Ring	1				

PTO Group

Caterpillar Challenger 65/75/85/95 (C390)

Page 1 of 2



PTO Group

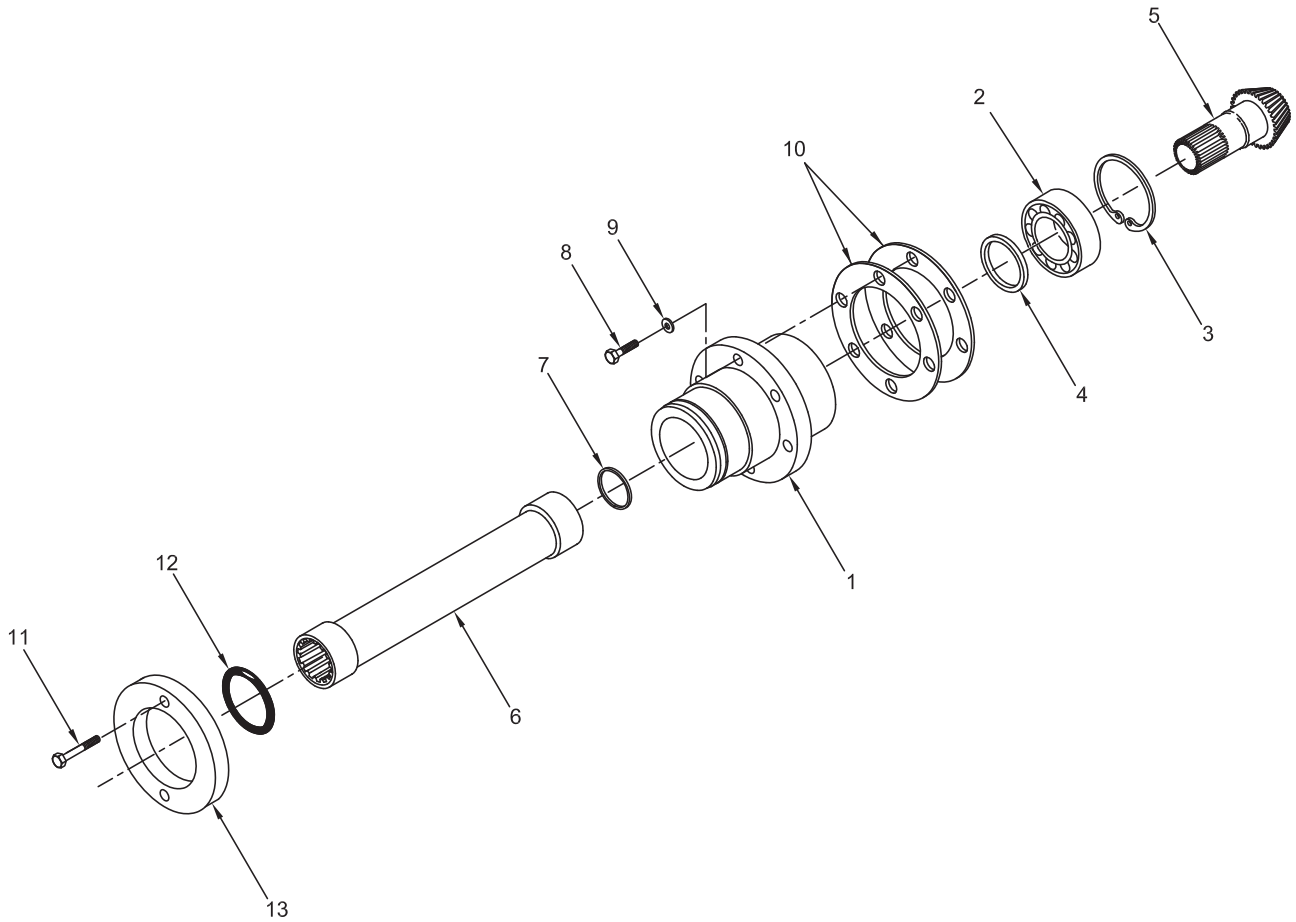
Caterpillar Challenger 65/75/85/95 (C390)

Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2302930W	Carrier, PTO	1	23	295757W	. Shim .007"	AR
2	41310W	Bearing	1		295758W	. Shim .020"	AR
3	2302855W	Shaft, Pinion	1	24	179443W	. Capscrew	6
4	35573W	Ring, Snap	2	25	15156W	. Washer	6
5	177461W	Capscrew	5	26	2302846W	Gear, 21T	1
6	2302785W	Capscrew	1	27	*d 12922W	Ring, Snap	2
7	221767W	Washer	6		*e 58939W	Ring, Snap	2
8	*a 134078W	Shim .005"	AR	28	*b 2302847W	Fitting	1
	*a 134079W	Shim .007"	AR	29	15860W	O-Ring	2
9	2302808W	Assembly, Drop Box	1	30	2302848W	Plug	1
10	2302807W	. Box, Drop	1	31	2302819W	Yoke	1
11	41209W	. Bearing	1	32	*c 16829W	Capscrew	1
12	2301336W	. Cup, Bearing	2	33	2301627W	Washer	1
13	2301337W	. Cone, Bearing	2	34	194090W	Capscrew	3
14	2303234W	. Shaft, Input	1	35	221563W	Capscrew	4
15	2302815W	. Gear, 37T	1	36	15135W	Washer	4
16	43208W	. Bearing	2	37	90937W	O-Ring	1
17	2302816W	. Shaft, Idler	1				
18	39383W	. O-Ring	1		*a	Uses 313022W Adhesive	
19	58947W	. Ring, Snap	1		*b	Uses 273338W Pipe Thread Sealant	
20	44503W	. Seal	1		*c	Uses 230064W Sealant	
21	2302817W	. Carrier, Bearing	1		*d	Last Used on S/N AW5C-1281	
22	15883W	. O-Ring	1		*e	First used on S/N AW5C-1282	
23	295756W	. Shim .005"	AR				

PTO Group

Dresser TD12B/C (H35) and TD14M (H38)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 2302418W	Carrier, PTO	1	9	221767W	Washer	6
2	45310W	Bearing	1	10	*a 134078W	Shim .005"	AR
3	35573W	Ring, Snap	1		*a 134079W	Shim .007"	AR
4	44495W	Seal, Oil	1	11	218589W	Capscrew	2
5	2302855W	Shaft, Pinion	1	12	15887W	O-Ring	1
6	2302955W	Shaft, Coupling	1	13	2302933W	Adapter, Carrier	1
7	2302328W	Ring, Retaining	1				
8	177461W	Capscrew	6		*a	Uses 313022W Adhesive	

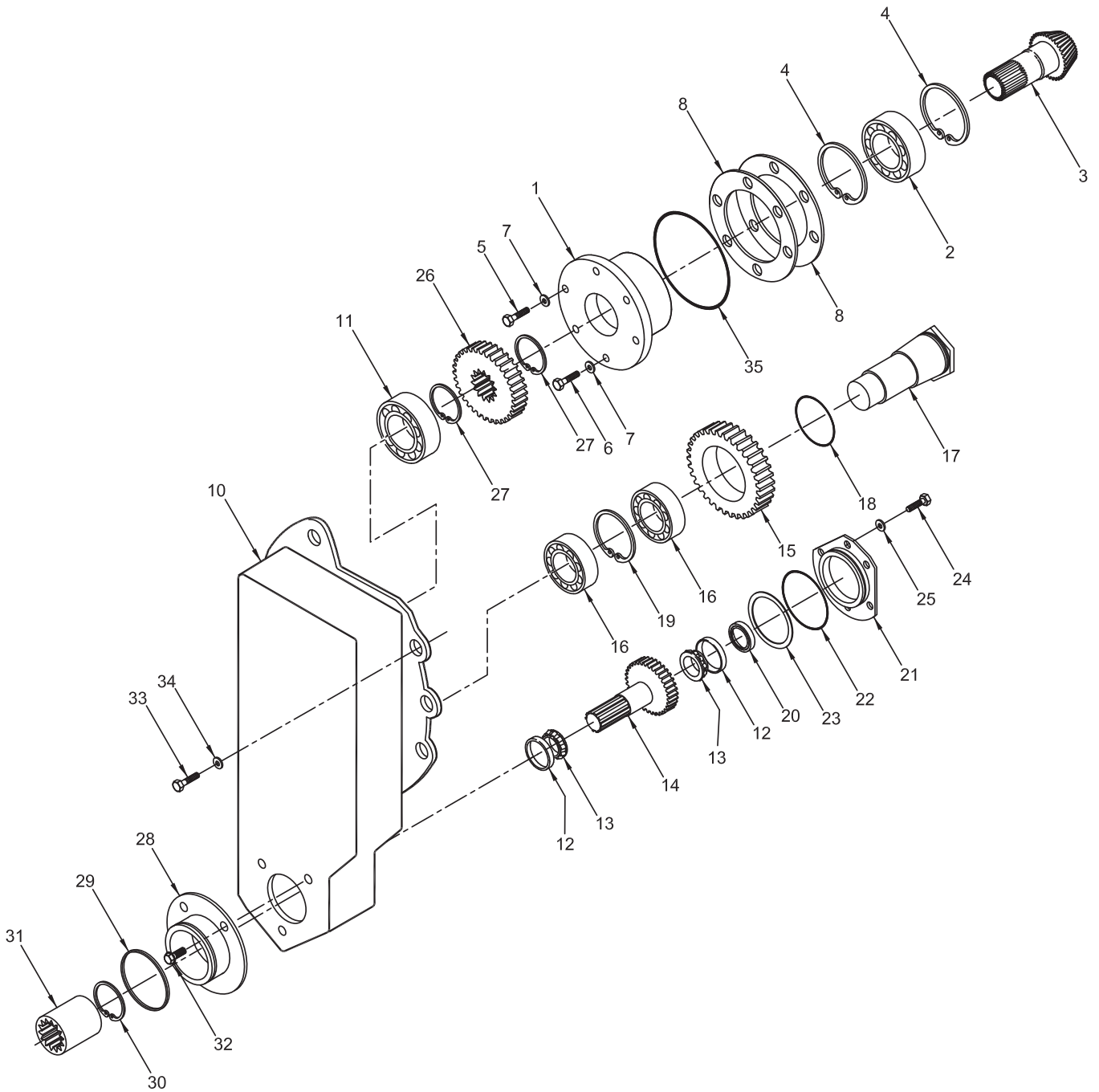
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PTO Group

Fiat-Hitachi/New Holland

DC130 (A37), DC150PS (A38), FD/FL10E (A39), FD/DX145 (A39), DC150 (A40)

Page 1 of 2



PTO Group

Fiat-Hitachi/New Holland

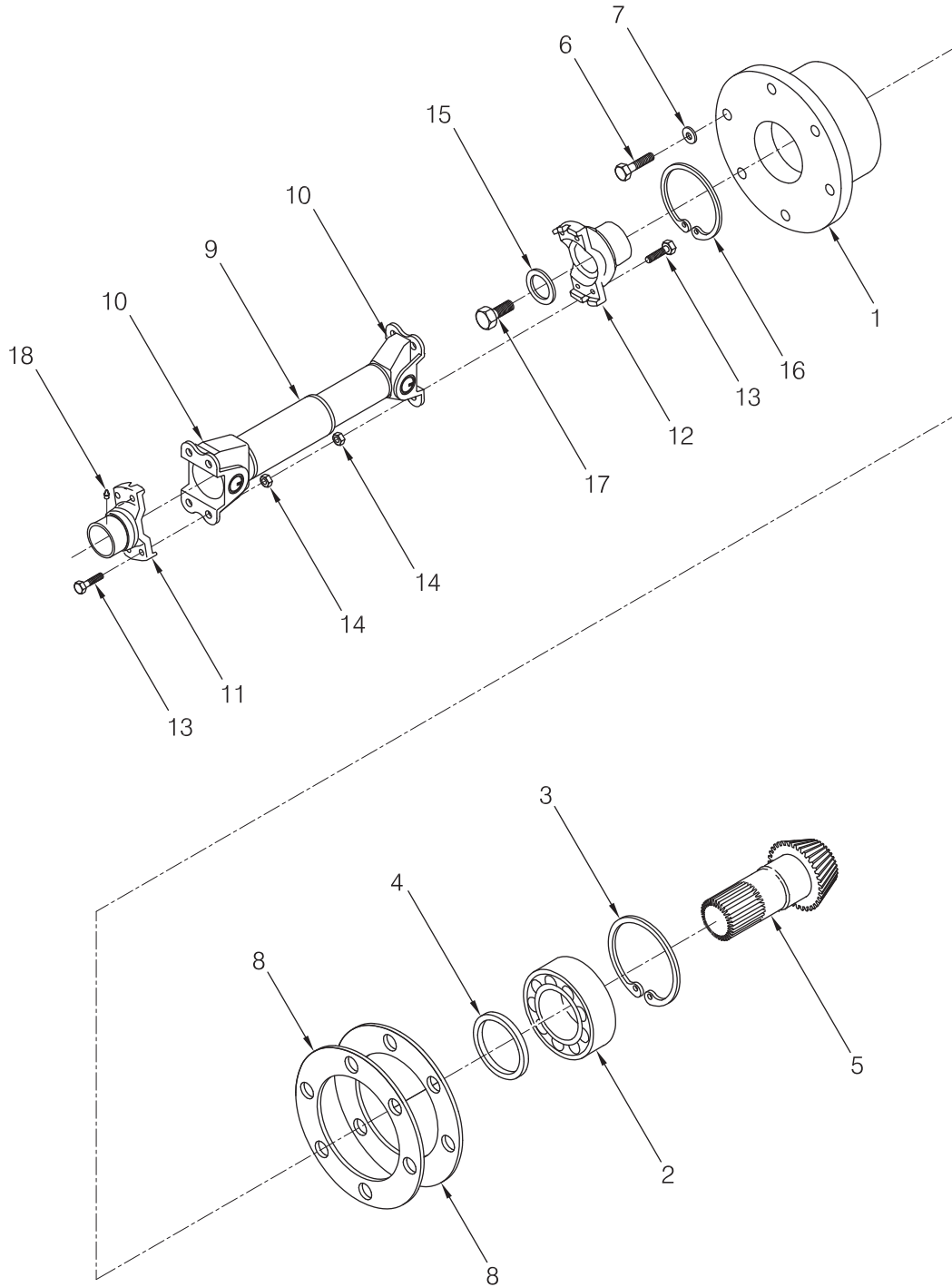
DC130 (A37), DC150PS (A38), FD/FL10E (A39), FD/DX145 (A39), DC150 (A40)

Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2302930W	Carrier, PTO	1	23	295756W	. Shim .005"	AR
2	41310W	Bearing	1		295757W	. Shim .007"	AR
3	2302855W	Shaft, Pinion	1		295758W	. Shim .020"	AR
4	35573W	Ring, Snap	2	24	179443W	. Capscrew	6
5	177461W	Capscrew	5	25	15156W	. Washer	6
6	2302785W	Capscrew, Special	1	26	2302846W	Gear, 21T	1
7	221767W	Washer	6	27	*d 12922W	Ring, Snap	2
8	*a 134078W	Shim .005"	AR		*e 58939W	Ring, Snap	2
	*a 134079W	Shim .007"	AR	28	2303226W	Pilot, PTO	1
9	2302808W	Assembly, Drop Box	1		*c 2305430W	Pilot, PTO	1
10	2302807W	. Box, Drop	1	29	15880W	O-Ring	1
11	41209W	. Bearing	1	30	2302813W	Ring, Retaining	1
12	2301336W	. Cup, Bearing	2	31	2302851W	Coupler, PTO	1
13	2301337W	. Cone, Bearing	2	32	174413W	Capscrew	3
14	2303234W	. Shaft, Input	1	33	*b 221563W	Capscrew	4
15	2302815W	. Gear, 37T	1	34	15135W	Washer	4
16	43208W	. Bearing	2	35	90937W	O-Ring	1
17	2302816W	. Shaft, Idler	1				
18	39383W	. O-Ring	1		*a	Uses 313022W Adhesive	
19	58947W	. Ring, Snap	1		*b	Uses 273338W Pipe Thread Sealant	
20	44503W	. Seal	1		*c	Used only on New Holland DC150 PS	
21	2302817W	. Carrier, Bearing	1		*d	Last Used on S/N AW5C-1281	
22	15883W	. O-Ring	1		*e	First used on S/N AW5C-1282	

PTO Group

John Deere 750C (E45)
Last Used on S/N AW5C-1206
Page 1 of 2



PTO Group

John Deere 750C (E45)
 Last Used on S/N AW5C-1206
 Page 2 of 2

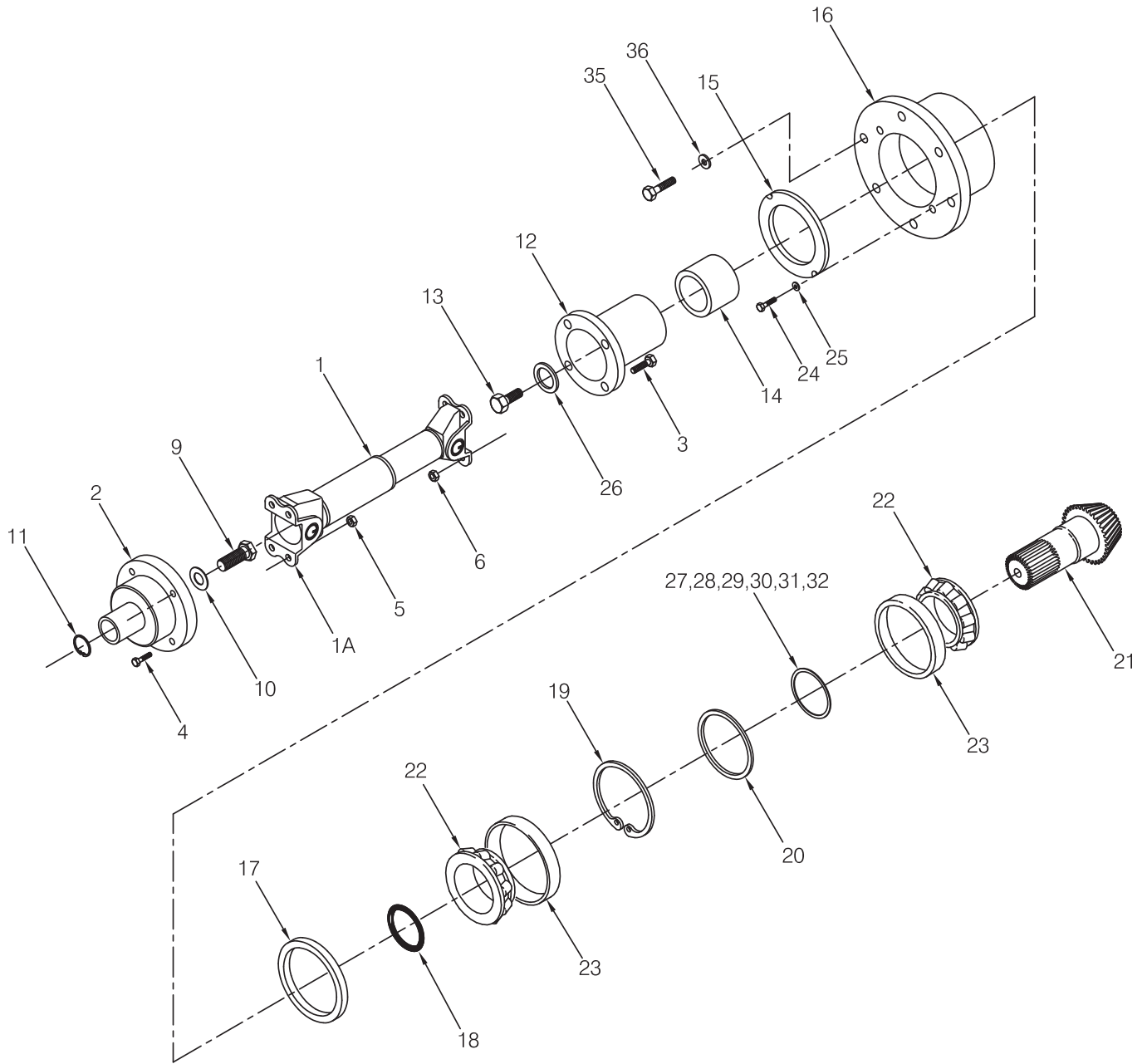
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2302930W	Carrier, PTO	1	11	2301531W	Flange, Tractor End	1
2	45310W	Bearing	1	12	2302927W	Flange, Winch End	1
3	35573W	Ring, Snap	1	13	2301540W	Capscrew	8
4	44495W	Seal, Oil	1	14	2301541W	Nut	8
5	2302855W	Shaft, Pinion	1	15	2303036W	Washer	1
6	177461W	Capscrew	6	16	12922W	Ring, Snap	1
7	221767W	Washer	6	17	*a 16829W	Capscrew	1
8	*a 134078W	Shim .005"	AR	18	16001W	Fitting, Lube	1
	*a 134079W	Shim .007"	AR				
9	2303030W	Driveshaft	1		*a Uses 313022W Adhesive		
10	2303033W	. Assembly, Cross & Bearing	1				

PTO Group

John Deere 750C (E45) - Used on S/N AW5C-1207 thru 1248

John Deere 700H (E40)

Page 1 of 2



PTO Group

John Deere 750C (E45) - Used on S/N AW5C-1207 thru 1248

John Deere 700H (E40)

Page 2 of 2

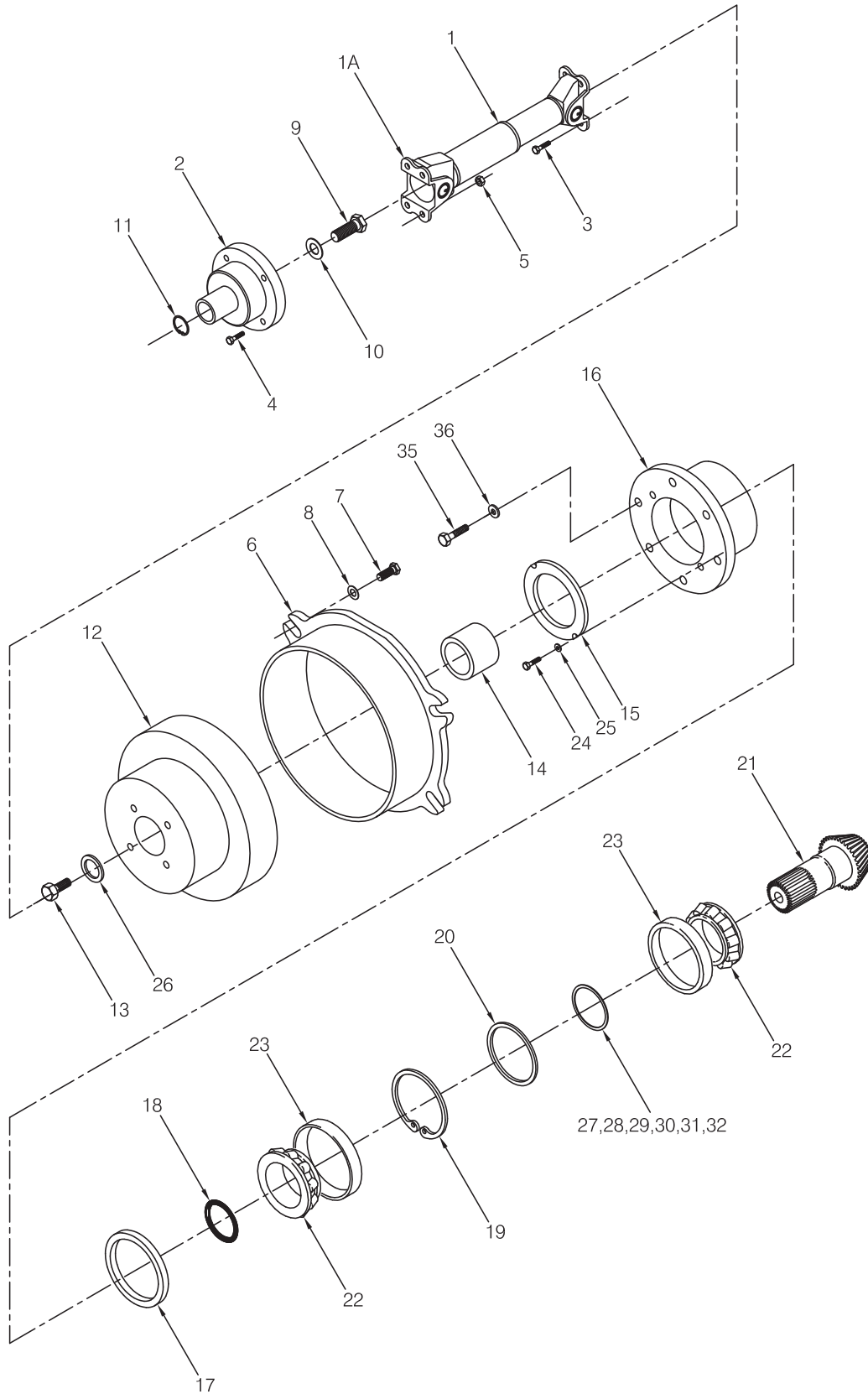
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303734W	Driveshaft	1	20	2304788W	Spacer	1
1A	2302798W	. Kit, Cross & Bearing	1	21	2302855W	Gear, Pinion	1
2	2303733W	Flange, Tractor End	1	22	2304794W	Cone, Bearing	2
3	2301540W	Capscrew	4	23	2304793W	Cup, Bearing	2
4	2301540W	Capscrew	4	24	*a 16378W	Capscrew	2
5	221710W	Nut	4	25	15127W	Washer	2
6	221710W	Nut	4	26	2303036W	Washer	1
9	292527W	Capscrew	1	27	2304784W	Shim .077	AR
10	2303737W	Washer	1	28	2304785W	Shim .082	AR
11	58916W	Ring, Snap	1	29	2304786W	Shim .087	AR
12	2303264W	Flange, Damped	1	30	2304787W	Shim .092	AR
13	*a 16829W	Capscrew	1	31	2304871W	Shim .097	AR
14	2304792W	Spacer	1	32	2304942W	Shim .102	AR
15	2304790W	Cover, Seal	1	33	221767W	Washer	6
16	2304789W	Carrier, Bearing	1	34	177461W	Capscrew	6
17	79389W	Seal	1				
18	39389W	O-Ring	1		*a Use 318702W Thread Lock		
19	12896W	Ring, Snap	1				

PTO Group

John Deere 750C (E45) - First Used on S/N AW5C-1249

John Deere 750C Series II (E45)

Page 1 of 2



PTO Group

John Deere 750C (E45) - First Used on S/N AW5C-1249

John Deere 750C Series II (E45)

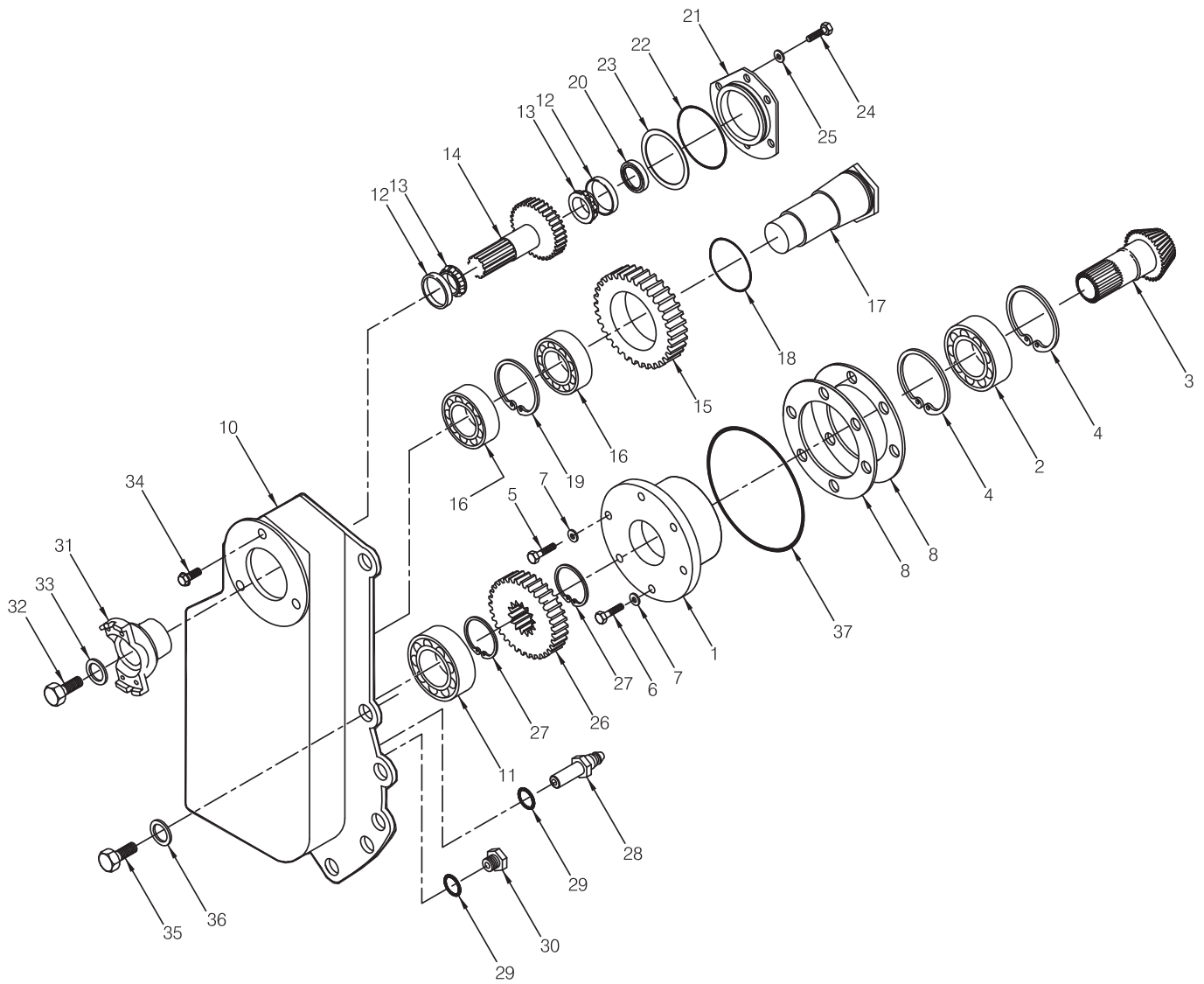
Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303952W	Driveshaft	1	19	12896W	Ring, Snap	1
1A	2302790W	. Kit, Cross & Bearing	1	20	2304788W	Spacer	1
2	2303733W	Flange, Tractor End	1	21	2302855W	Gear, Pinion	1
3	2301540W	Capscrew	4	22	2304794W	Cone, Bearing	2
4	2301540W	Capscrew	4	23	2304793W	Cup, Bearing	2
5	221710W	Nut	4	24	*a 16378W	Capscrew	2
6	2303265W	Guard, Flange	1	25	15127W	Washer	2
7	16829W	Capscrew	4	26	2303036W	Washer	1
8	15158W	Washer	4	27	2304784W	Shim .077	AR
9	292527W	Capscrew	1	28	2304785W	Shim .082	AR
10	2303737W	Washer	1	29	2304786W	Shim .087	AR
11	58916W	Ring, Snap	1	30	2304787W	Shim .092	AR
12	2303264W	Flange, Damped	1	31	2304871W	Shim .097	AR
13	*a 16829W	Capscrew	1	32	2304942W	Shim .102	AR
14	2304792W	Spacer	1	33	221767W	Washer	6
15	2304790W	Cover, Seal	1	34	177461W	Capscrew	6
16	2304789W	Carrier, Bearing	1				
17	79389W	Seal	1		*a Use 318702W Thread Lock		
18	39389W	O-Ring	1				

PTO Group

All Komatsu D41E-6 (K27), D53/D58/D63 (K36), Except D61EX-12 (K47)

Page 1 of 2



PTO Group

All Komatsu D41E-6 (K27), D53/D58/D63 (K36), Except D61EX-12 (K47)

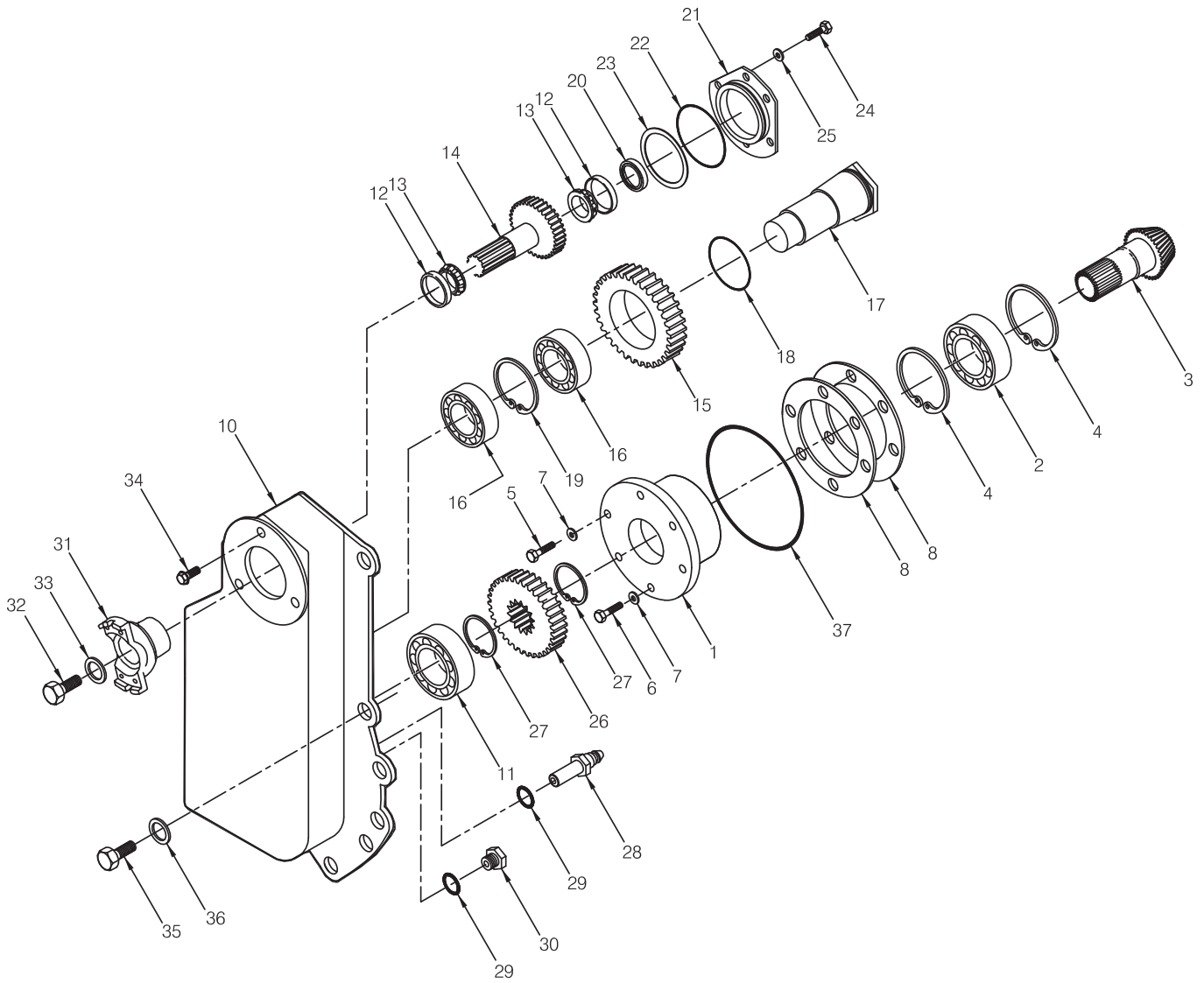
Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2302930W	Carrier, PTO	1	24	179443W	. Capscrew	6
2	41310W	Bearing	1	25	15156W	. Washer	6
3	2302855W	Shaft, Pinion	1	26	2302846W	Gear, 21T	1
4	35573W	Ring, Snap	2	27	*f 12922W	Ring, Snap	2
5	177461W	Capscrew	5		*g 58939W	Ring, Snap	2
6	2302785W	Capscrew, Special	1	28	*b 2302847W	Fitting	1
7	221767W	Washer	6	29	15860W	O-Ring	2
8	*a 134078W	Shim .005"	AR	30	2302848W	Plug	1
	*a 134079W	Shim .007"	AR	31	*d 2302828W	Yoke	1
9	2302808W	Assembly, Drop Box	1		*e 2302819W	Yoke	1
10	2302807W	. Box, Drop	1	32	*e,*c 16829W	Capscrew	1
11	41209W	. Bearing	1	33	*e 2301627W	Washer	1
12	2301336W	. Cup, Bearing	2	34	194090W	Capscrew	3
13	2301337W	. Cone, Bearing	2	35	221563W	Capscrew	4
14	2303234W	. Shaft, Input	1	36	15135W	Washer	4
15	2302815W	. Gear, 37T	1	37	90937W	O-Ring	1
16	43208W	. Bearing	2				
17	2302816W	. Shaft, Idler	1		*a	Uses 313022W Adhesive	
18	39383W	. O-Ring	1		*b	Uses 273338W Pipe Thread Sealant	
19	58947W	. Ring, Snap	1		*c	Uses 230064W Sealant	
20	44503W	. Seal	1		*d	Komatsu D53, D58 & D63	
21	2302817W	. Carrier, Bearing	1		*e	Komatsu D41E-6	
22	15883W	. O-Ring	1		*f	Last Used on S/N AW5C-1281	
23	295756W	. Shim .005"	AR		*g	First used on S/N AW5C-1282	
	295757W	. Shim .007"	AR				
	295758W	. Shim .020"	AR				

PTO Group

Komatsu D61EX-12 (K47)

Page 1 of 2



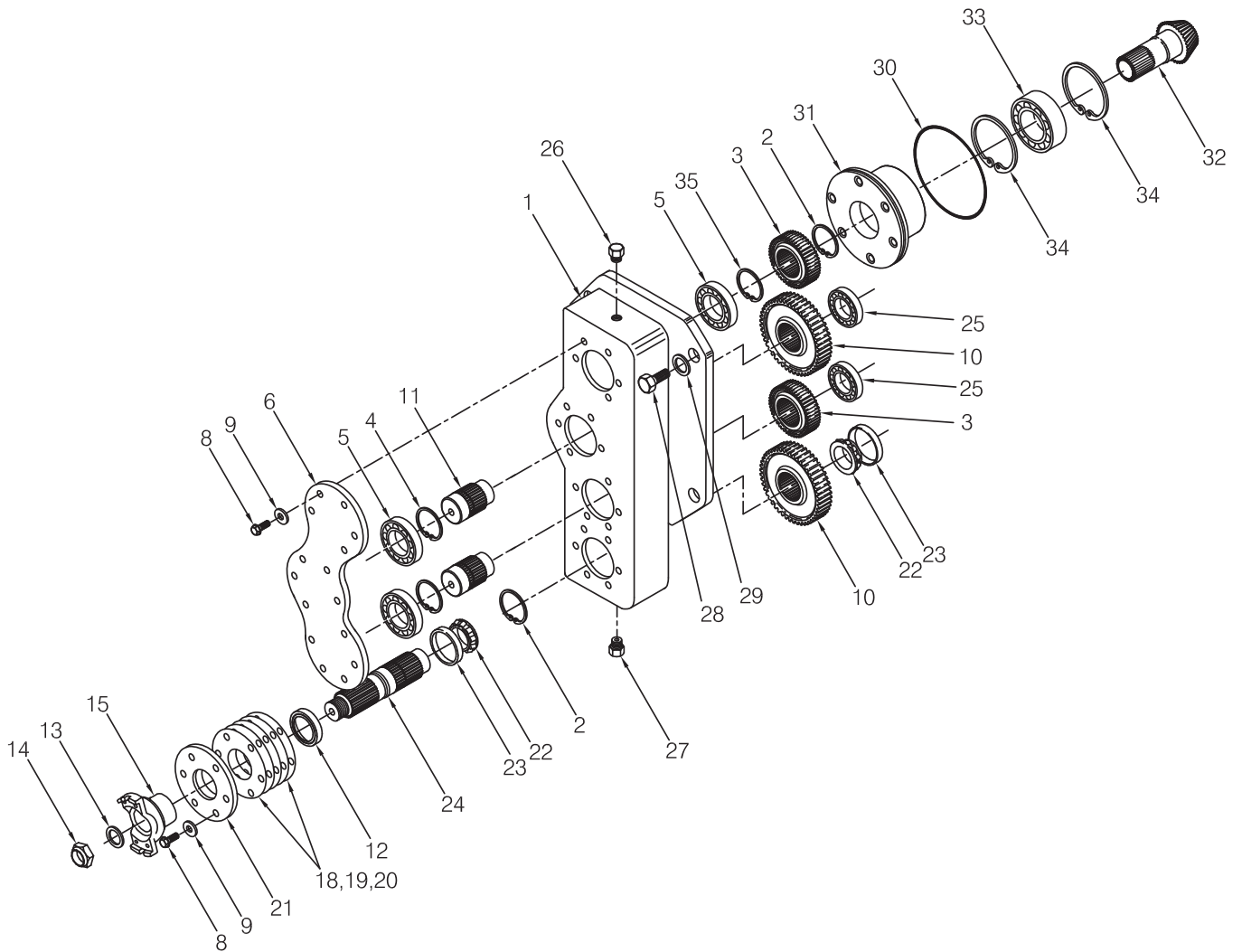
PTO Group

Komatsu D61EX-12 (K47)

Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2302930W	PTO Carrier	1	22	15883W	. O-Ring	1
2	41310W	Bearing	1	23	295756W	. Shim .005"	AR
3	2302855W	Pinion Shaft	1		295757W	. Shim .007"	AR
4	35573W	Ring, Snap	2		295758W	. Shim .020"	AR
5	177461W	Capscrew	5	24	179443W	. Capscrew	6
6	2302785W	Capscrew, Special	1	25	15156W	. Washer	6
7	221767W	Washer	6	26	2302846W	Gear, 21T	1
8	*a 134078W	Shim .005"	AR	27	12922W	Ring, Snap	2
	*a 134079W	Shim .007"	AR	28	*b 2302847W	Fitting	1
9	2303831W	Assembly, Drop Box	1	29	15860W	O-Ring	2
10	2303797W	. Box, Drop	1	30	2302848W	Plug	1
11	41209W	. Bearing	1	31	2303794W	Yoke	1
12	2301336W	. Cup, Bearing	2	32	*e 16829W	Capscrew	1
13	2301337W	. Cone, Bearing	2	33	2301627W	Washer	1
14	2303234W	. Shaft, Input	1	34	194090W	Capscrew	3
15	2302815W	. Gear, 37T	1	35	221563W	Capscrew	3
16	43208W	. Bearing	2	36	15135W	Washer	3
17	2302816W	. Shaft, Idler	1	37	90937W	O-Ring	1
18	39383W	. O-Ring	1				
19	58947W	. Ring, Snap	1		*a	Uses 313022W Adhesive	
20	44503W	. Seal	1		*b	Uses 273338W Pipe Thread Sealant	
21	2302817W	. Carrier, Bearing	1		*e	Uses 230064W Sealant	

PTO Group
Ranger H67C (V31)
Page 1 of 2

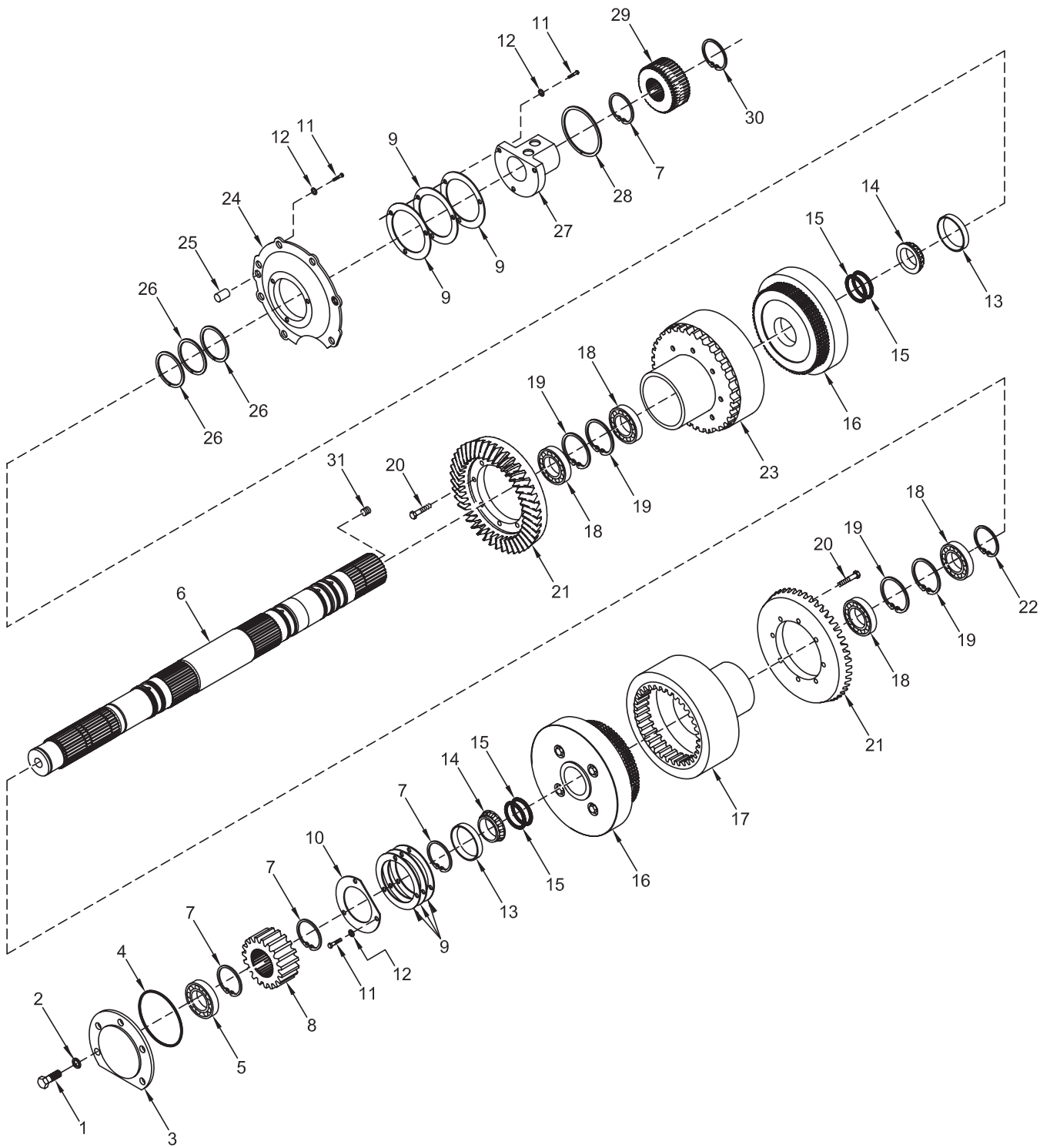


PTO Group
 Ranger H67C (V31)
 Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303390W	Housing	1	21	2303389W	Retainer	1
2	*b 58906W	Ring, Snap	2	22	2301339W	Cone, Bearing	1
	*c 58939W	Ring, Snap	2	23	2301338W	Cup, Bearing	1
3	2303373W	Gear	2	24	2303382W	Shaft	1
4	12944W	Ring, Snap	2	25	43208W	Bearing	2
5	41209W	Bearing	3	26	15316W	Fitting	1
6	*a 2303383W	Cover	1	27	10389W	Fitting	1
8	179443W	Capscrew	21	28	178402W	Capscrew	4
9	15156W	Washer	21	29	221771W	Washer	4
10	2303374W	Gear	2	30	90937W	O-Ring	1
11	2303388W	Shaft	2	31	2303387W	Carrier, PTO	1
12	44495W	Seal, Oil	1	32	2302855W	Shaft, Pinion	1
13	221780W	Washer	1	33	41310W	Bearing	1
14	R216058	Nut	1	34	35573W	Ring, Snap	2
15	R231553	Flange, Input	1	35	*b 12944W	Ring, Snap	1
16	2303379W	Cone, Bearing	1		*c 58989W	Ring, Snap	1
17	2303380W	Cup, Bearing	1				
18	2303384W	Shim 0.005"	AR		*a	Uses 313022W Adhesive	
19	2303385W	Shim 0.007"	AR		*b	Last Used on S/N AW5C-1281	
20	2303386W	Shim 0.020"	AR		*c	First used on S/N AW5C-1282	

Brake/Clutch Shaft

Page 1 of 2

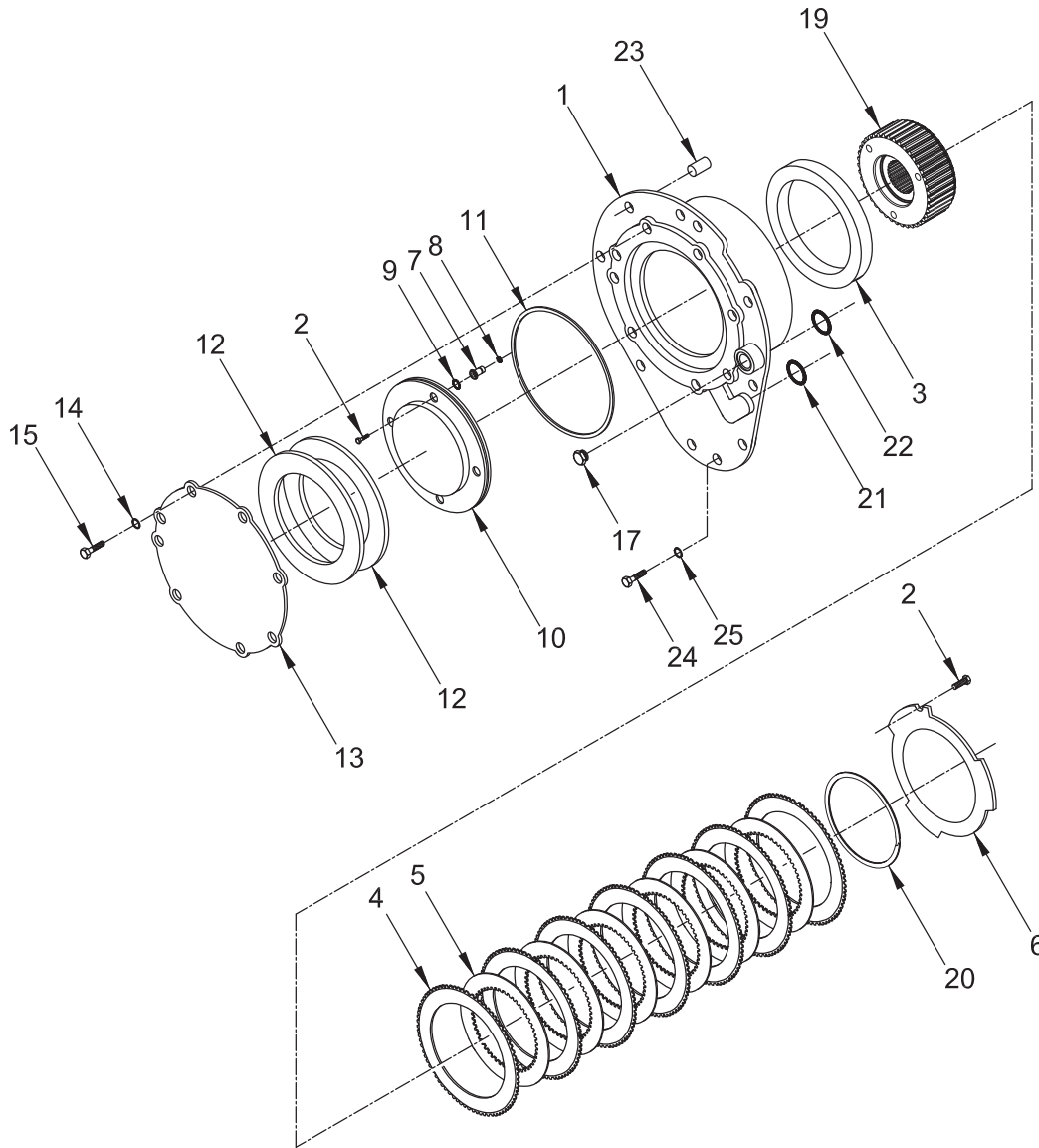


Brake/Clutch Shaft

Page 2 of 2

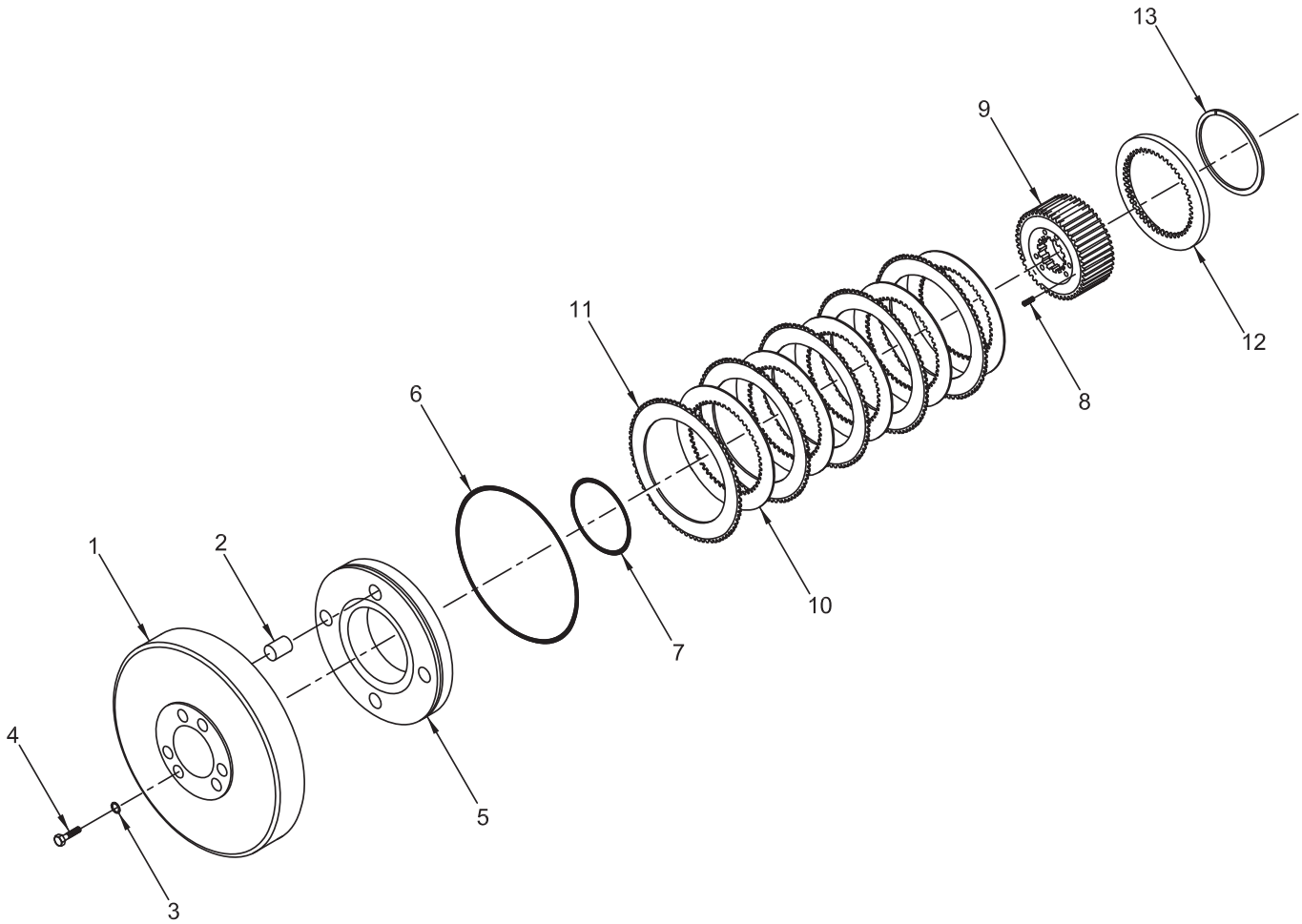
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*c 178402W	Capscrew	5	21	2302854W	Gear, Bevel	2
	*d 2303848W	Screw, Flange	5	22	58918W	Spacer .125"	AR
2	*c 15158W	Washer	5		2303434W	Spacer .118"	AR
3	2302374W	Carrier, Bearing	1		2303435W	Spacer .132"	AR
4	*e, *f, *g 15895W	O-Ring	1		2303458W	Spacer .139"	AR
5	*f, *g 41207W	Bearing	1	23	2302354W	Housing, Clutch w/ Gear	1
6	2302352W	Shaft, Clutch	1	24	2302377W	Carrier, Bearing	1
7	*e 12916W	Ring, Snap	4	25	176208W	Pin	2
8	*a 219066W	Gear, 14T	1	26	*e 219070W	Ring, Seal	3
	*b 2302343W	Gear, 28T	1	27	2302366W	Manifold	1
9	219087W	Shim .005"	AR	28	*e 2302363W	Ring, Retaining	1
	219088W	Shim .007"	AR	29	2302358W	Hub, Brake	1
	219089W	Shim .020"	AR	30	*e 58939W	Ring, Snap	1
10	219090W	Retainer, Bearing	1	31	15483W	Fitting	2
11	16830W	Capscrew	6		*a	35:1 and 100:1 Gear Ratios	
12	15158W	Washer	6		*b	67:1 Gear Ratio	
13	*f, *g 30055W	Cup, Bearing	2		*c	Last Used on S/N AW5C-1287	
14	*f, *g 184484W	Cone, Bearing	2		*d	First Used on S/N AW5C-1288	
15	*e 39384W	O-Ring	4		*e	Included in 2311724 Clutch & Brake Bearing Kit	
16	2302356W	Assembly, Clutch (See 2-15)	2		*f	Included in 2311725 Brake, Clutch & Idler Shaft Bearing Kit	
17	2302355W	Housing, Clutch	1		*g	Included in 2311726 Brake, Clutch & Idler Shaft Bearing Kit	
18	*f, *g 44312W	Bearing	4				
19	*e 46441W	Ring, Snap	4				
20	246769W	Capscrew	16				

Brake



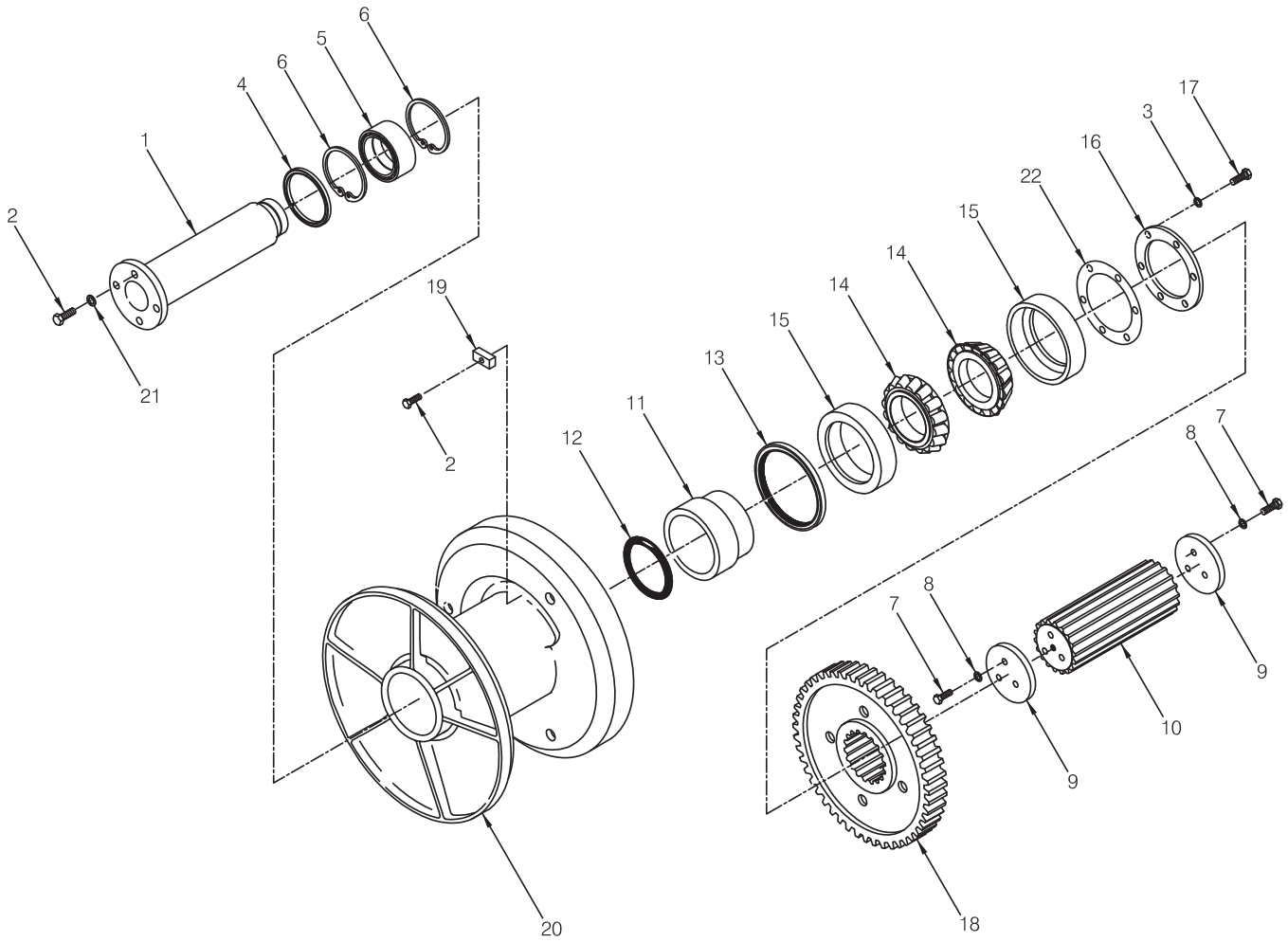
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2302661W	Assembly, Brake	1				
1	*a 2302351W	. Housing, Brake	1	15	16830W	. Capscrew	8
2	*b 18720W	. Caprscrew	5	17	216590W	. Fitting	1
3	219081W	. Ring	1		16485W	. . O-Ring	1
4	*c 328714W	. Disc, Friction	7	19	2302358W	. Hub, Brake	1
5	*c 282704W	. Plate, Separator	6	20	2302363W	. Ring, Snap	1
6	2302357W	. Plate, Pressure	1	21	*c 217897	O-Ring	1
7	2300043W	. Plunger	4	22	*c 39377W	O-Ring	1
8	*c 15860W	. O-Ring	4	23	176208W	Pin	2
9	*c 63105W	. O-Ring	4	24	178402W	Capscrew	9
10	2300042W	. Piston, Brake	1	25	15158W	Washer	9
11	*c 219096W	. Seal, Ring	1				
12	219084W	. Spring	2				
13	*a 2302362W	. Cover, Brake	1				
14	221771W	. Washer	8				
					*a	Uses 264159W Adhesive	
					*b	Uses 383789W Adhesive, Sealant	
					*c	Includes in 2311723 Brake Assembly Kit	

Clutch



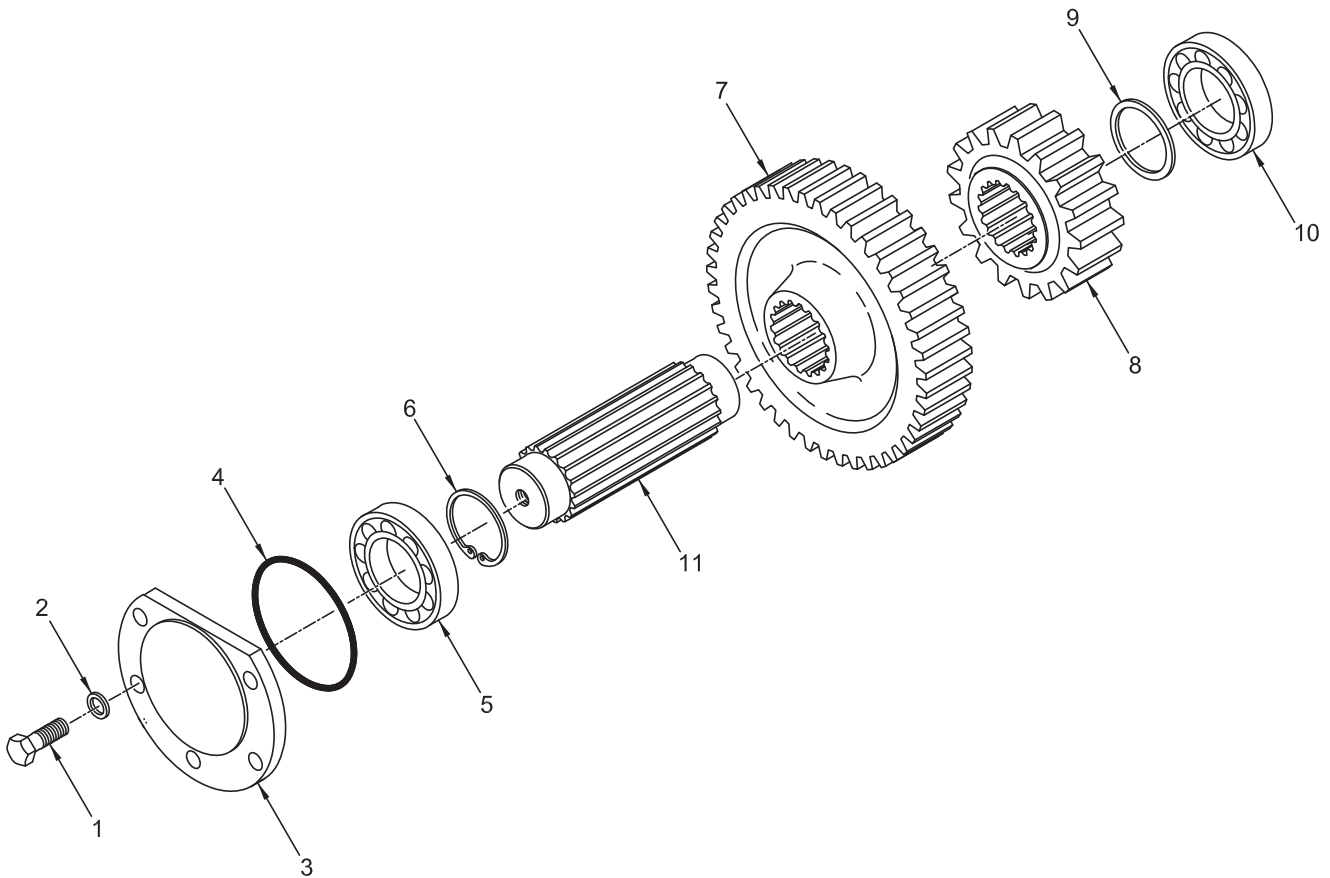
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2302356W	Assembly, Clutch	1				
1	2302359W	. Housing, Clutch	1	9	2302353W	. Hub, Clutch	1
2	176208W	. Pin	4	10	*a 282704W	. Plate, Separator	5
3	177946W	. Washer	6	11	*a 328714W	. Disc, Friction	5
4	246770W	. Capscrew	6	12	282706W	. Ring	1
5	2302364W	. Piston, Clutch	1	13	219060W	. Ring, Snap	1
6	*a 87287W	. O-Ring	1				
7	*a 15883W	. O-Ring	1		*a	Included in 2302982W Service Kit	
8	*a 282707W	. Spring	18				

Drum Shaft



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2302379W	Shaft, Drum - RH	1	16	*c 219106W	Retainer	1
2	*a 174803W	Capscrew	4		*d 2303256W	Retainer	1
	*b 2303848W	Screw, Flange	4	17	16830W	Capscrew	6
3	15158W	Washer	6	18	2302333W	Gear, Drum	1
4	*e 133523W	Seal, Oil	1	19	1314503W	Keeper	1
5	*e 219095W	Bearing	1	20	2302338W	Drum, Overwind	1
6	*e 12956W	Ring, Snap	2		2303247W	Drum, Underwind	1
7	166425W	Capscrew	6	21	*a 15158W	Lockwasher	4
8	221775W	Washer	6	22	*b 2303257W	Shim .005"	AR
9	2302336W	Retainer	2				
10	2302334W	Shaft, Drum - LH	1				
11	2302335W	Spacer	1		*a	Last Used on S/N AW5C-1287	
12	*e 15885W	O-Ring	1		*b	First Used on S/N AW5C-1288	
13	*e 339681W	Seal, Oil	1		*c	Last Used on S/N AW5C-1135	
14	*e 219093W	Cone, Bearing	2		*d	First Used on S/N AW5C-1136	
15	*e 219094W	Cup, Bearing	2		*e	Included in 2311727 Drum/Freespool Shaft Bearing Kit	

Idler Shaft



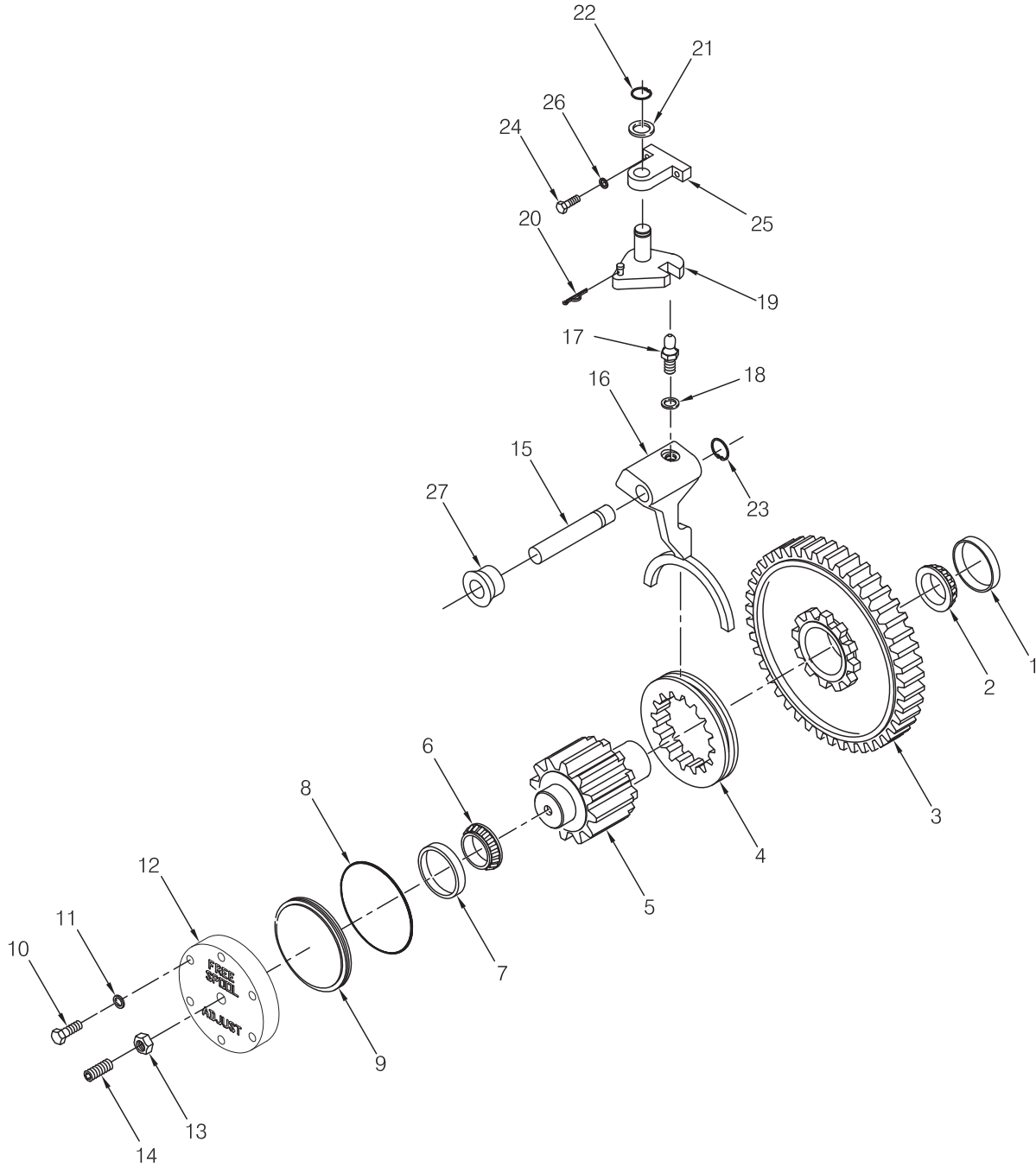
A - 100:1 Gear Ratio
 B - 66:1 Gear Ratio
 C - 35:1 Gear Ratio

Item	Part No.	Description	Qty			Item	Part No.	Description	Qty		
			A	B	C				A	B	C
1	*a 178402W	Capscrew	5	5	5	8	219066W	Gear - 14T	1	1	--
	*b 2303848W	Screw, Flange	5	5	5	9	2300842W	Spacer	1	1	--
2	*a 15158W	Washer	5	5	5	10	*c 2304580W	Bearing	1	1	--
3	2302374W	Carrier, Bearing	1	1	1	11	2302360W	Shaft, Idler	1	1	--
4	15895W	O-Ring	1	1	1						
5	*c 41207W	Bearing	1	1	--						
6	*c 12916W	Ring, Snap	1	1	--						
7	2302340W	Gear - 40T	1	--	--						
	2302342W	Gear - 53T	--	1	--						
							*a	Last Used on S/N AW5C-1287			
							*b	First Used on S/N AW5C-1288			
							*c	Included in 2311726 Brake, Clutch & Idler Shaft Bearing Kit			

Intermediate/Freespool Shaft - Power Controls

Last Used on S/N AW5C-1287

Page 1 of 2



Intermediate/Freespool Shaft - Power Controls

Last Used on S/N AW5C-1287

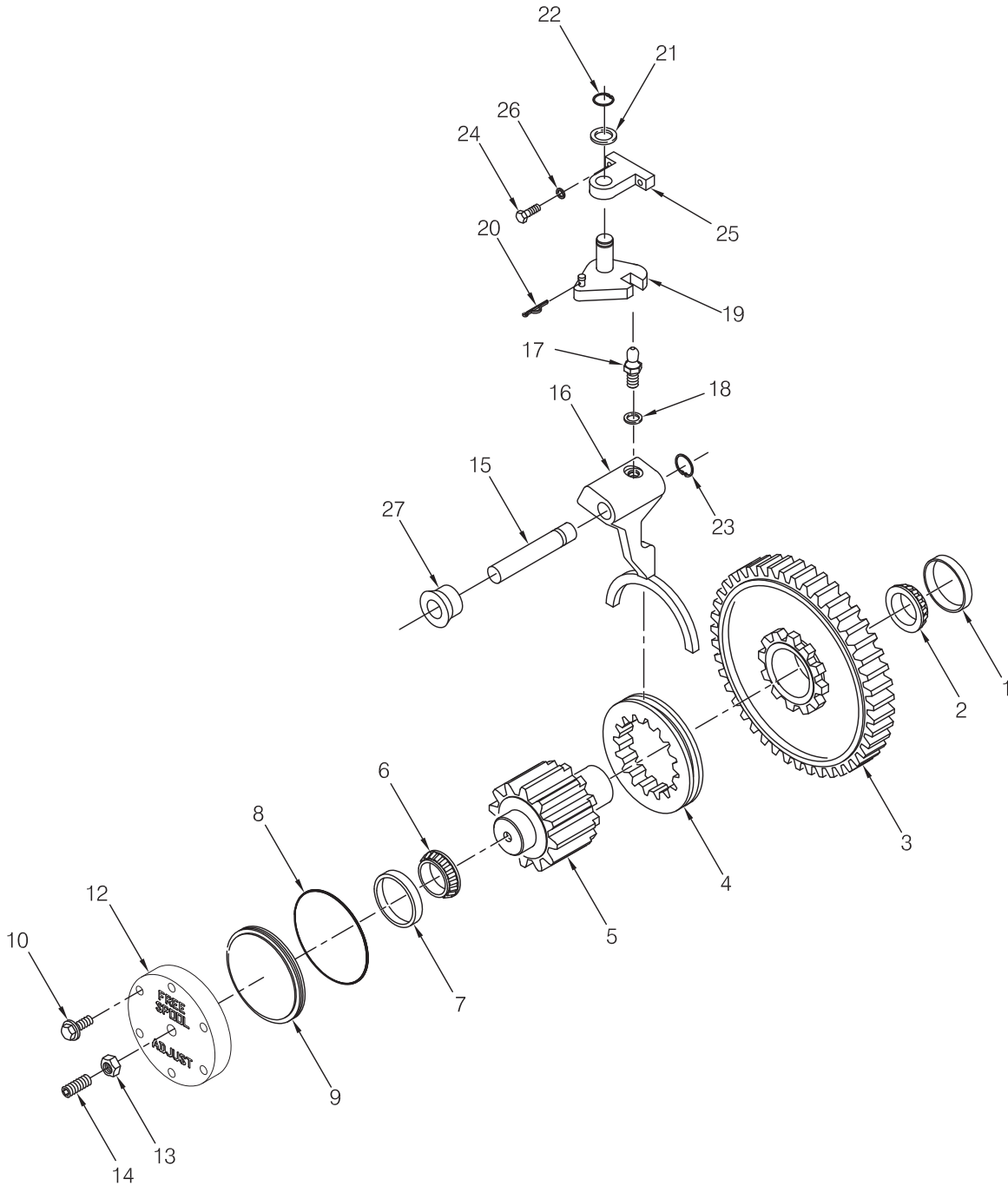
Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	45733W	Cup, Bearing	1	16	2302368W	Fork, Shifter	1
2	29758W	Cone, Bearing	1	17	151583W	Stud, Ball	1
3	224111W	Gear	1	18	15906W	Washer	1
4	224108W	Clutch, Dental (Overwind Winch)	1	19	2302845W	Crank	1
	2302842W	Clutch, Dental (Underwind Winch)	1	20	2303025W	Pin, Hitch	1
5	*d 2302339W	Gear, Pinion	1	21	221780W	Washer, Flat	1
	*e 2303918W	Gear, Pinion	1	22	58933W	Ring, Snap	1
6	219114W	Cone, Bearing	1	23	2302367W	Ring, Snap	1
7	2302515W	Cup, Bearing	1	24	178402W	Capscrew	2
8	159940W	O-Ring	1	25	2302365W	Bracket, Pivot	1
9	2302624W	Piston, Freespool/Adjust	1	26	15158W	Lockwasher	2
10	2302694W	Capscrew	6	27	*e 2304821W	Bushing	1
11	15158W	Lockwasher	6				
12	*a 2302625W	Retainer, Freespool/Adjust	1		*a	Uses 313022W Adhesive	
13	221717W	Nut	1		*b	Last Used on S/N AW5C-1202	
14	*b 221650W	Capscrew	1		*c	First Used on S/N AW5C-1203	
	*c 2304803W	Screw, Set	1		*d	Last Used on S/N AW5C-1261	
15	2302373W	Shaft	1		*e	First Used on S/N AW5C-1262	

Intermediate/Freespool Shaft - Power Controls

First Used on S/N AW5C-1288

Page 1 of 2



Intermediate/Freespool Shaft - Power Controls

First Used on S/N AW5C-1288

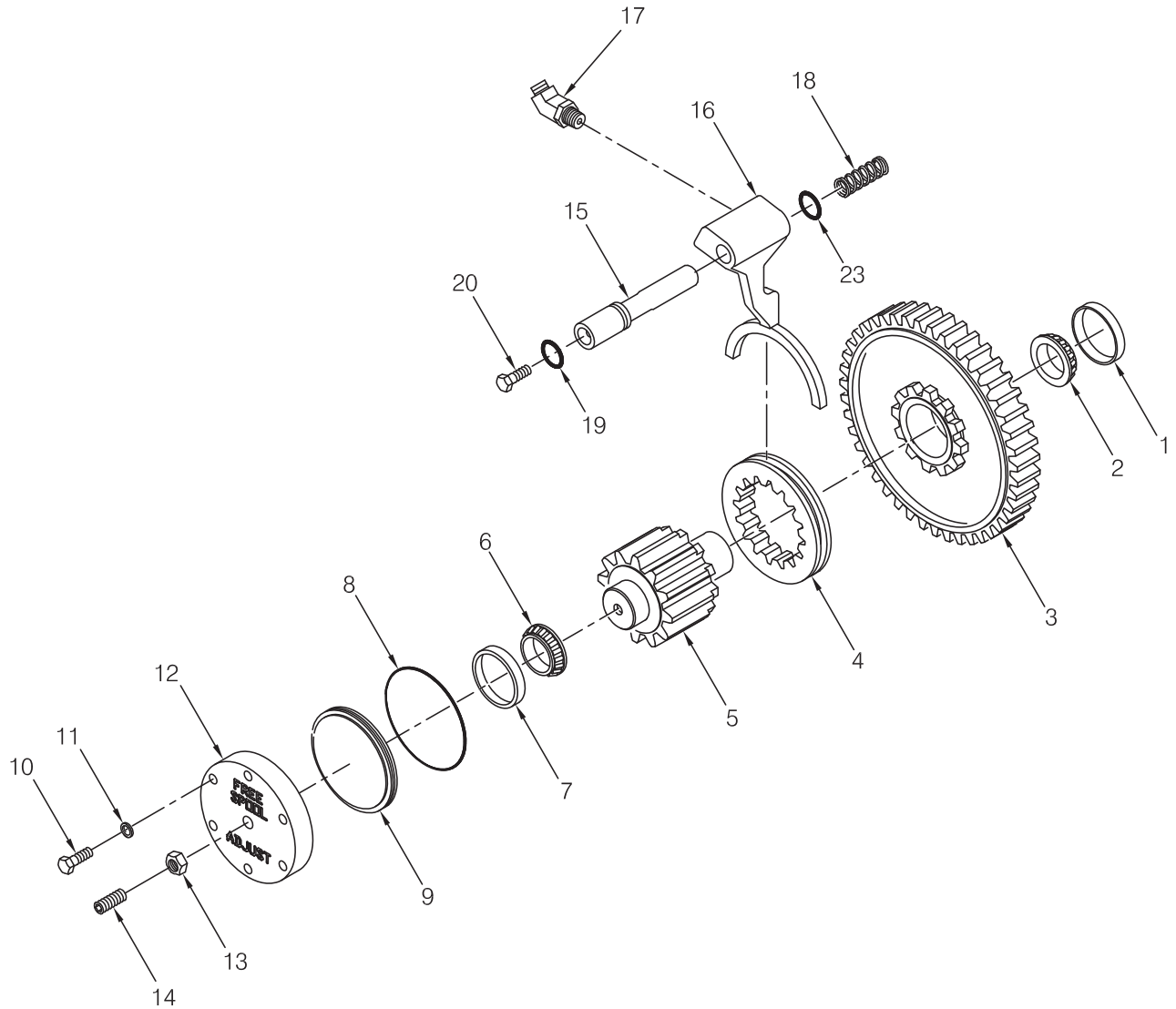
Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*d 45733W	Cup, Bearing	1	16	2302368W	Fork, Shifter	1
2	*b, *d 29758W	Cone, Bearing	1	17	151583W	Stud, Ball	1
	*c, *d 2305923W	Cone, Bearing	1	18	15906W	Washer	1
3	*b 224111W	Gear	1	19	2302845W	Crank	1
	*c 225050W	Gear	1	20	2303025W	Pin, Hitch	1
4	224108W	Clutch, Dental (Overwind Winch)	1	21	221780W	Washer, Flat	1
	2302842W	Clutch, Dental (Underwind Winch)	1	22	*d 58933W	Ring, Snap	1
5	*b 2303918W	Gear, Pinion	1	23	*d 2302367W	Ring, Snap	1
	*c 2305915W	Gear, Pinion	1	24	178402W	Capscrew	2
6	*d 219114W	Cone, Bearing	1	25	2302365W	Bracket, Pivot	1
7	*d 2302515W	Cup, Bearing	1	26	15158W	Lockwasher	2
8	*d 159940W	O-Ring	1	27	2304821W	Bushing	1
9	2302624W	Piston, Freespool/Adjust	1				
10	2305415W	Flangescrew	6		*a	Uses 264159W Adhesive	
12	*a 2302625W	Retainer, Freespool/Adjust	1		*b	Last Used on S/N AW5C-1314	
13	221717W	Nut	1		*c	First Used on S/N AW5C-1315	
14	221650W	Capscrew	1		*d	Included in 2311727 Drum/Freespool Shaft Bearing Kit	
	2304803W	Screw, Set	1				
15	2302373W	Shaft	1				

Intermediate/Freespool Shaft - Electronic Controls

Last Used on S/N AW5C-1287

Page 1 of 2



Intermediate/Freespool Shaft - Electronic Controls

Last Used on S/N AW5C-1287

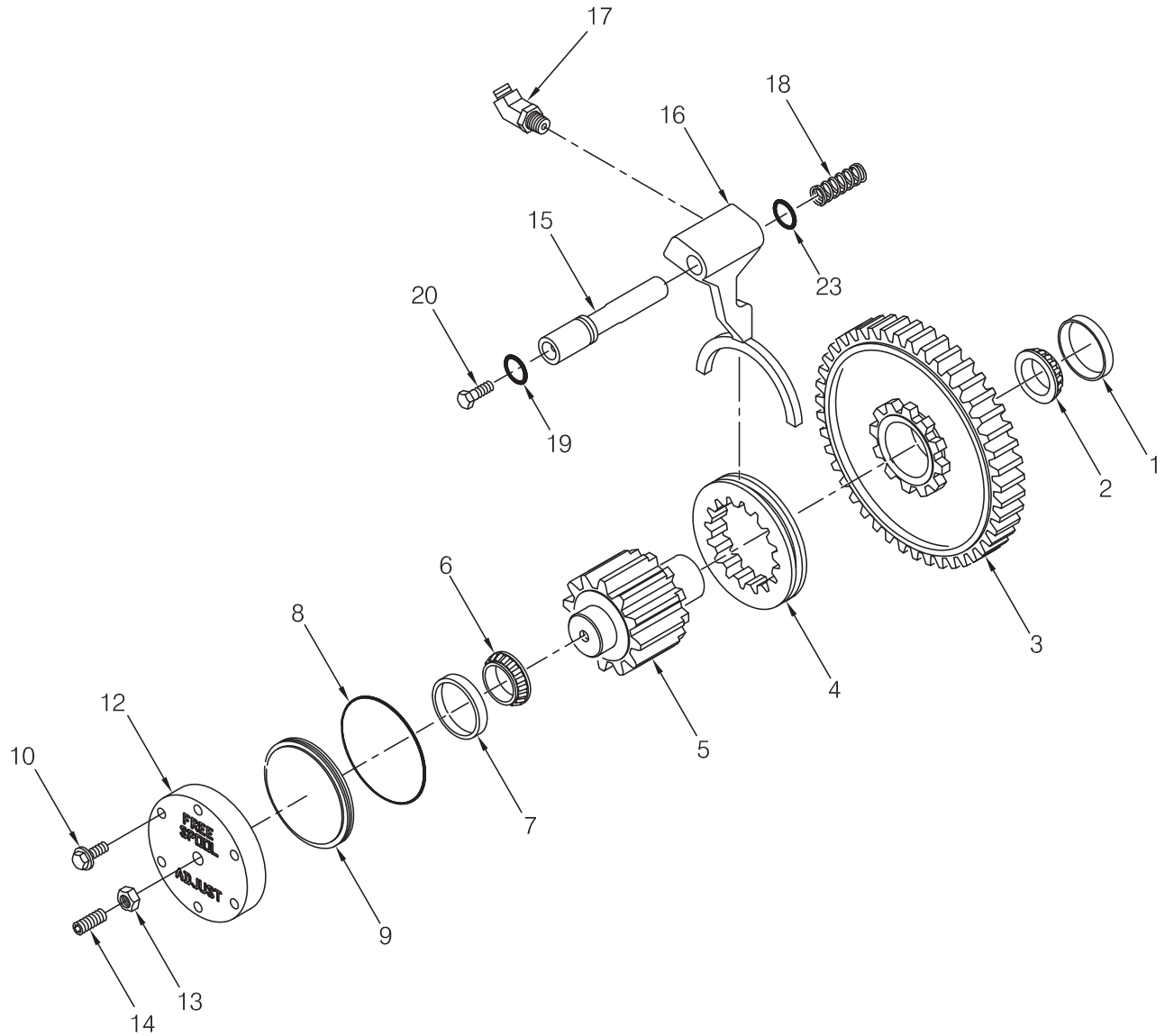
Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	45733W	Cup, Bearing	1	12	*a 2302625W	Retainer, Freespool/Adjust	1
2	29758W	Cone, Bearing	1	13	221717W	Nut	1
3	224111W	Gear	1	14	2304803W	Screw, Set	1
4	224108W	Clutch, Dental (Overwind Winch)	1	15	2303907W	Shaft	1
	2302842W	Clutch, Dental (Underwind Winch)	1	16	2303908W	Fork, Shifter	1
5	2303918W	Gear, Pinion	1	17	16565W	Fitting	1
6	219114W	Cone, Bearing	1	18	2303906W	Spring	1
7	2302515W	Cup, Bearing	1	19	61056W	O-Ring	1
8	159940W	O-Ring	1	20	17151W	Capscrew	1
9	2302624W	Piston, Freespool/Adjust	1	23	61142W	O-Ring	1
10	2302694W	Capscrew	6				
11	15158W	Lockwasher	6		*a Uses 313022W Adhesive		

Intermediate/Freespool Shaft - Electronic Controls

First Used on S/N AW5C-1288

Page 1 of 2



Intermediate/Freespool Shaft - Electronic Controls

First Used on S/N AW5C-1288

Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	45733W	Cup, Bearing	1	14	221650W	Capscrew	1
2	*b, *d 29758W	Cone, Bearing	1		2304803W	Screw, Set	1
	*c, *d 2305923W	Cone, Bearing	1	15	2303907W	Shaft	1
3	*b 224111W	Gear	1	16	2303908W	Fork, Shifter	1
	*c 225050W	Gear	1	17	16565W	Fitting	1
4	224108W	Clutch, Dental (Overwind Winch)	1	18	2303906W	Spring	1
	2302842W	Clutch, Dental (Underwind Winch)	1	19	*d 212380	O-Ring	1
5	*b 2303918W	Gear, Pinion	1	20	17151W	Capscrew	1
	*c 2305915W	Gear, Pinion	1	23	*d 218214	O-Ring	1
6	*d 219114W	Cone, Bearing	1		*a	Uses 264159W Adhesive	
7	*d 2302515W	Cup, Bearing	1		*b	Last Used on S/N AW5C-1314	
8	*d 159940W	O-Ring	1		*c	First Used on S/N AW5C-1315	
9	2302624W	Piston, Freespool/Adjust	1		*d	Included in 2311727 Drum/Freespool Shaft Bearing Kit	
10	2305415W	Screw, Flange	6				
12	*a 2302625W	Retainer, Freespool/Adjust	1				
13	221717W	Nut	1				

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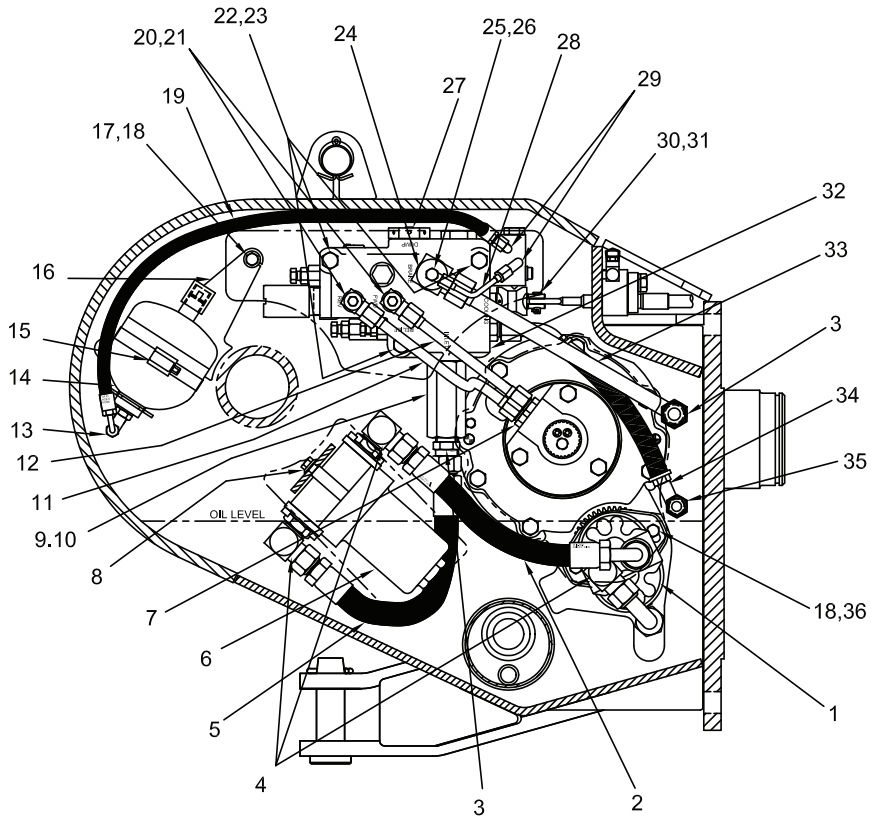
Hydraulics/Controls

Control Lever, Electronic Controls	3-96 thru 3-99
Control Lever, Power Controls	3-88 thru 3-95
Fuel/Water Separator Relocation	3-16
Handling Gear, Power Controls	3-30 thru 3-56
Handling Gear, Electronic Controls	3-58 thru 3-87
Hydraulics, Power Controls	3-2 thru 3-9
Hydraulics, Electronic Controls	3-10 thru 3-15
Internal Wiring, Electronic Controls	3-20 & 3-22
Pump, Hydraulic	3-28 & 3-29
Repair Kit - External Wiring Harness, Electronic Controls	3-23
Tractor Filter Relocation.	3-19
Tractor Filter Relocation, Non Winch Ready	3-18
Tractor Filter Relocation, Winch Ready	3-17
Valve Assembly, Power Controls	3-24
Valve Assembly, Electronic Controls	3-25 thru 3-27

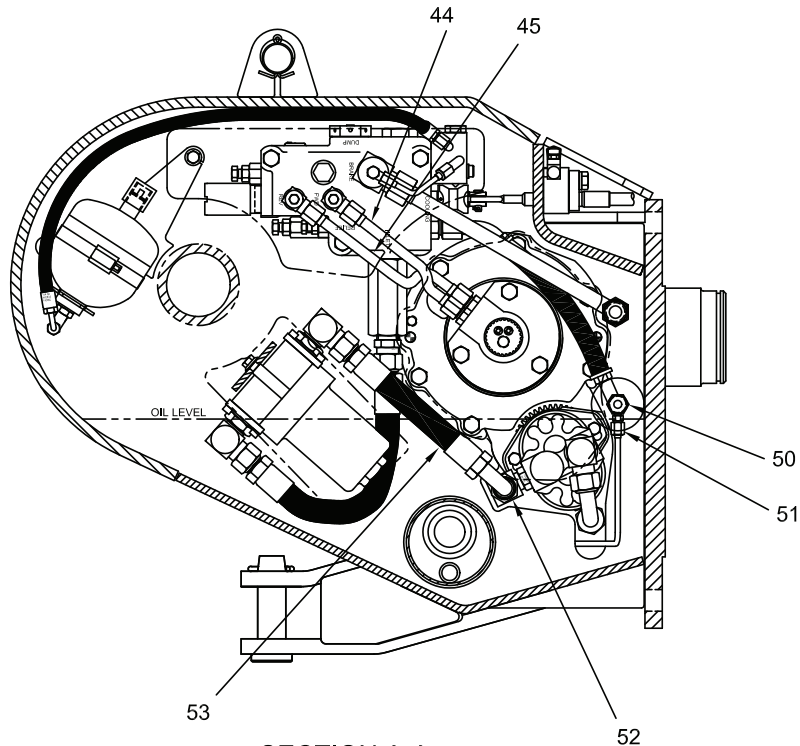
Hydraulics, Power Controls

Last Used on AW5C-1261

Page 1 of 2



SECTION A-A
COUNTER CLOCKWISE ROTATION

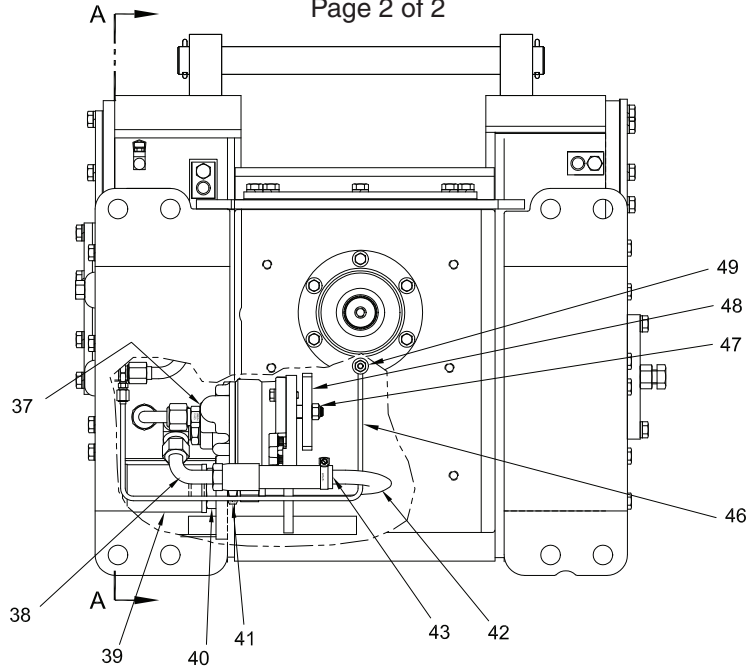


SECTION A-A
CLOCKWISE ROTATION

Hydraulics, Power Controls

Last Used on S/N AW5C-1261

Page 2 of 2

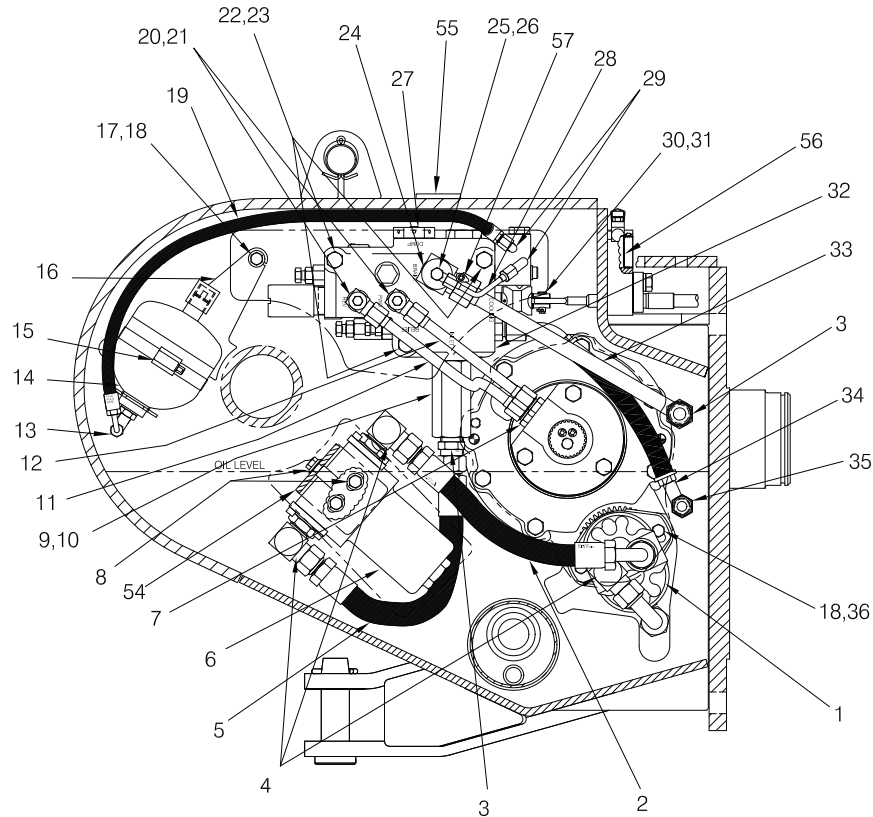


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	-----	Assembly, Pump (3-28 & 3-29)	1	37	16485W	. O-Ring	1
2	*c 2302347W	Assembly, Hose	1	38	2302344W	Assembly, Hose	1
3	*e 17346W	Fitting	2	39	219172W	Strainer	1
4	16561W	Fitting	3	40	1310821W	Fitting	1
5	139718W	Assembly, Hose	1	41	83846W	Fitting	1
6	2300183W	Assembly, Filter	1	41	16486W	. O-Ring	1
	*j 3001363W	. Element, Filter	1	42	2302345W	Tube, Suction	1
	55468W	. . O-Ring	1	43	127045W	Clamp	1
7	16451W	Fitting	2	44	*b 2302369W	Assembly, Tube	1
8	134803W	Capscrew	3	45	*b 2302370W	Assembly, Tube	1
9	16486W	O-Ring	1	46	*h 2302772W	Assembly, Tube	1
10	271729W	Valve, Check	1	47	221355W	Nut	1
11	*a 2302371W	Assembly, Tube	1	48	2302361W	Gear, 48T	1
12	*a 2302372W	Assembly, Tube	1	49	*g,*h 2302787W	Fitting	1
13	162155W	Fitting	1	50	*g,*h 2302913W	Fitting	1
13	16484W	. O-Ring	1	51	*g,*h 14668W	Fitting	1
14	2302110W	Accumulator	1	52	*d 11133W	Fitting	1
15	2302109W	Clamp	1	53	*d 2302348W	Assembly, Hose	1
16	2302349W	Bracket	1				
17	194090W	Capscrew	1				
18	15156W	Washer	3				
19	2302346W	Assembly, Hose	1				
20	*e 2303064W	Fitting	2				
21	14349W	Fitting	2				
22	15158W	Washer	3				
23	198385W	Capscrew	3				
24	219240W	Fitting	1				
25	*e 14581W	Fitting	1				
26	*e 16923W	Fitting	1				
27	226450W	Valve, Cooling Relief	1				
28	2302724W	Assembly, Tube	1				
29	*e 14538W	Fitting	1				
30	2303025W	Pin, Cotter	1				
31	139W	Pin	1				
32	2302247W	Valve, Control (See 3-24)	1				
33	2302376W	Assembly, Tube	1				
34	2302375W	Assembly, Hose	1				
35	*e*f 14681W	Fitting	1				
36	16828W	Capscrew	2				
37	*c 16542W	Fitting	1				
				*a		Used in the following Overwind Applications: 35:1 Gear Ratio and CCW Pump Rotation 66:1 & 100:1 Gear Ratios and CW Pump Rotation Used in the following Underwind Applications: 35:1 Gear Ratio and CW Pump Rotation 66:1 & 100:1 Gear Ratios and CCW Pump Rotation	
				*b		Used in the following Overwind Applications: 35:1 Gear Ratio and CW Pump Rotation 66:1 & 100:1 Gear Ratios and CCW Pump Rotation Used in the following Underwind Applications: 35:1 Gear Ratio and CCW Pump Rotation 66:1 & 100:1 Gear Ratios and CW Pump Rotation	
				*c		Used in CCW Pump Rotation Applications Only	
				*d		Used in CW Pump Rotation Applications Only	
				*e		Uses 246108W Sealant	
				*f		Used on Caterpillar, Dresser/Dressta and John Deere Only	
				*g		Used on Case, Caterpillar D6H D6R with Esco Grapple, Fiat-Hitachi/New Holland and Komatsu only	
				*h		Used on Ranger H67C only	
				*j		Included in 2311728 Filter Kit	

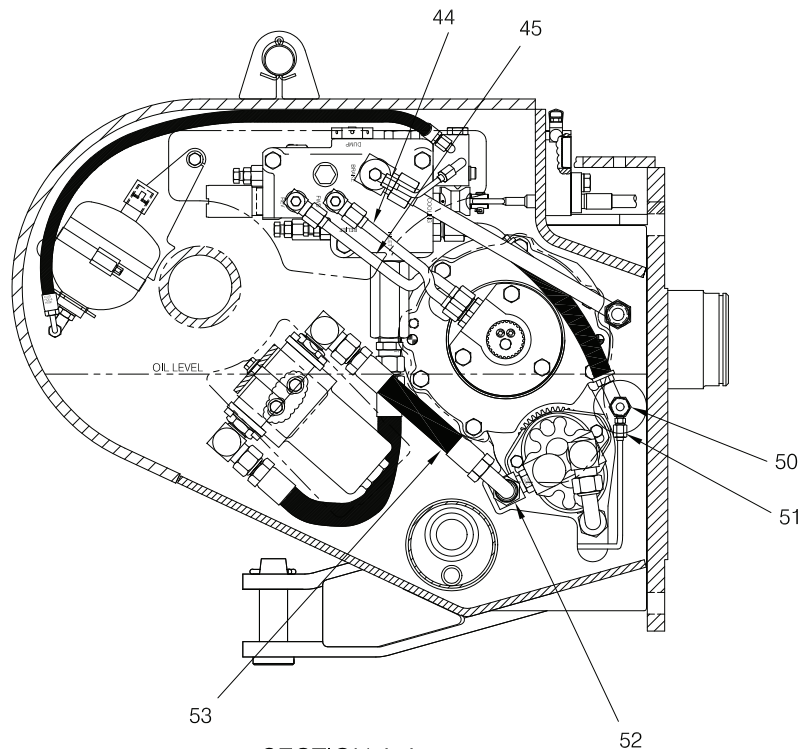
Hydraulics, Power Controls

Used on AW5C-1262 thru AW5C-1594

Page 1 of 2



SECTION A-A
COUNTER CLOCKWISE ROTATION

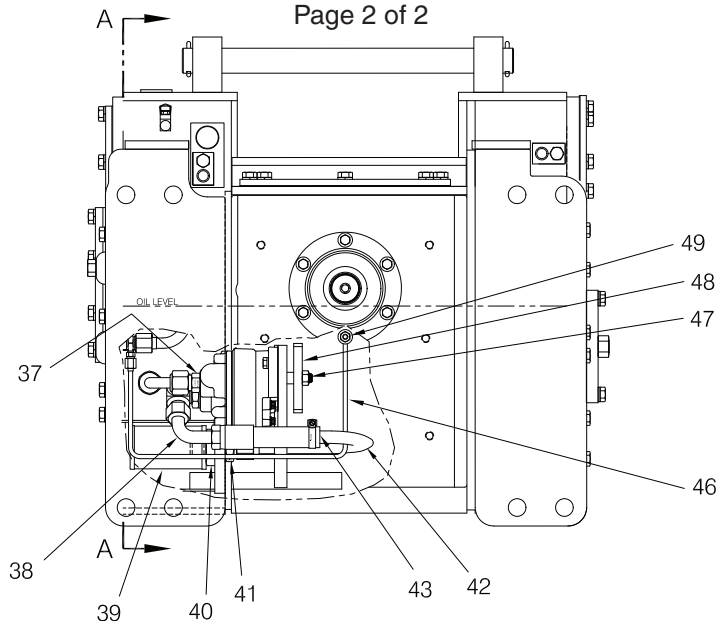


SECTION A-A
CLOCKWISE ROTATION

Hydraulics, Power Controls

Used on AW5C-1262 thru AW5C-1594

Page 2 of 2

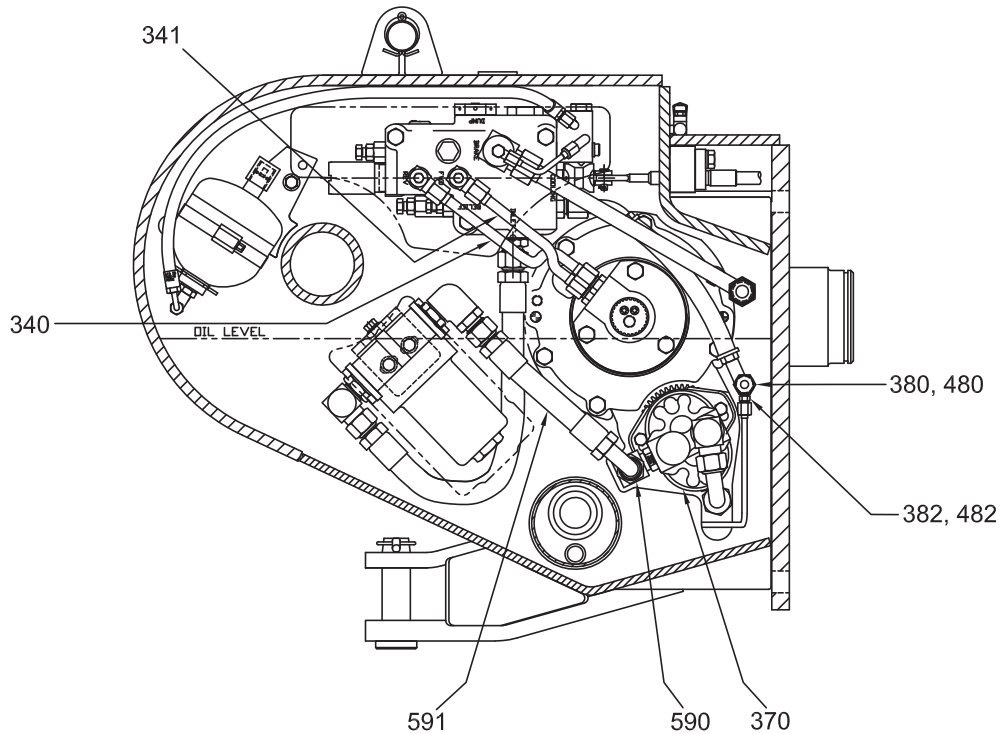
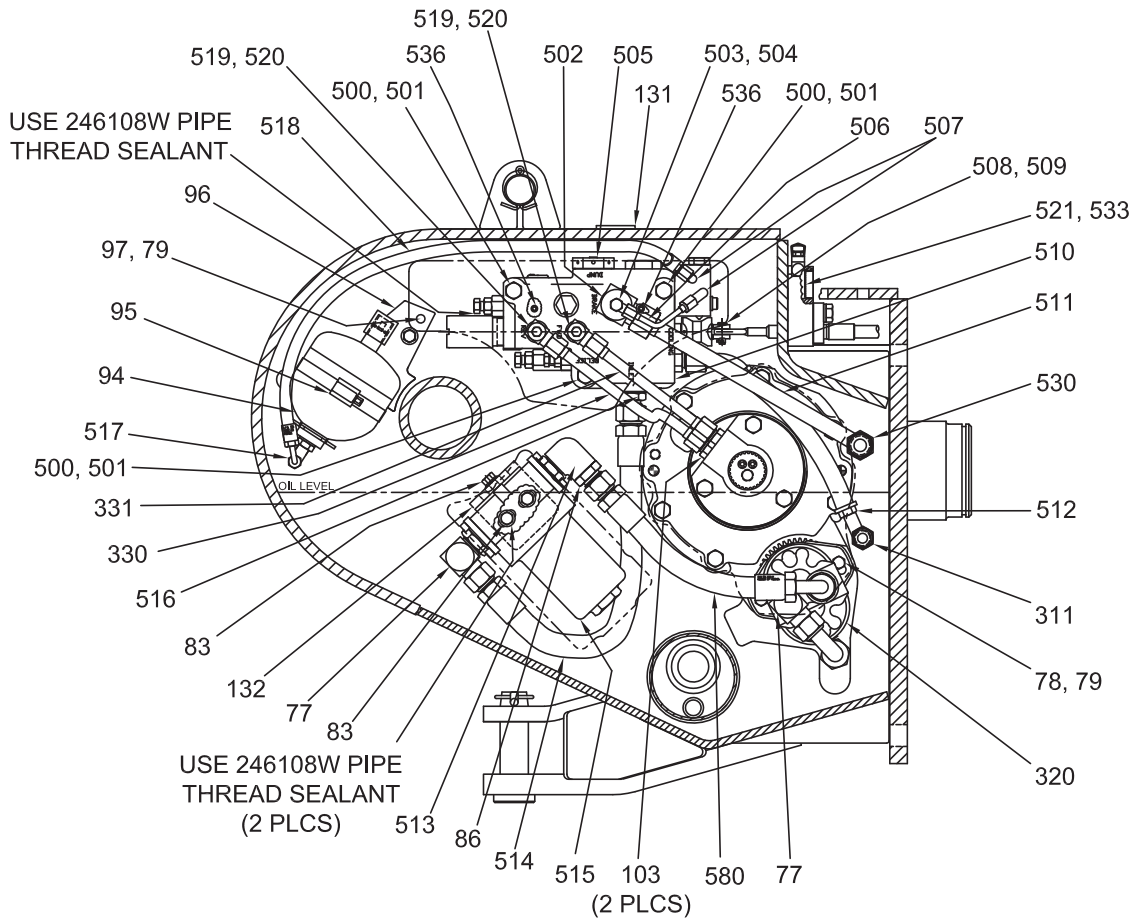


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	-----	Assembly, Pump (3-28 & 3-29)	1	40	1310821W	Fitting	1
2	*c 2302347W	Assembly, Hose	1	41	83846W	Fitting	1
3	*e 17346W	Fitting	2	41	16486W	O-Ring	1
4	16561W	Fitting	3	42	2302345W	Tube, Suction	1
5	139718W	Assembly, Hose	1	43	127045W	Clamp	1
6	2300183W	Assembly, Filter	1	44	*b 2302369W	Assembly, Tube	1
	*l 3001363W	Element, Filter	1	45	*b 2302370W	Assembly, Tube	1
	55468W	O-Ring	1	46	*h 2302772W	Assembly, Tube	1
7	16451W	Fitting	2	47	221355W	Nut	1
8	*e 1300780W	Cap screw	5	48	2302361W	Gear, 48T	1
9	16486W	O-Ring	1	49	*g,*h 2302787W	Fitting	1
10	271729W	Valve, Check	1	50	*g,*h 2302913W	Fitting	1
11	*a 2302371W	Assembly, Tube	1	51	*g,*h 14668W	Fitting	1
12	*a 2302372W	Assembly, Tube	1	52	*d 11133W	Fitting	1
13	162155W	Fitting	1	53	*d 2302348W	Assembly, Hose	1
13	16484W	O-Ring	1	54	*k 2304699W	Bracket, Filter Mounting	1
14	2302110W	Accumulator	1	55	*k 188210W	Fitting	1
15	2302109W	Clamp	1	56	*j 2304823W	Plug	1
16	2304363W	Bracket	1	57	*e,*k 16247W	Screw	2
17	194090W	Cap screw	1				
18	15156W	Washer	3		*a	Used in the following Overwind Applications: 35:1 Gear Ratio and CCW Pump Rotation 66:1 & 100:1 Gear Ratios and CW Pump Rotation	
19	2302346W	Assembly, Hose	1			Used in the following Underwind Applications: 35:1 Gear Ratio and CW Pump Rotation 66:1 & 100:1 Gear Ratios and CCW Pump Rotation	
20	*e 2303064W	Fitting	2		*b	Used in the following Overwind Applications: 35:1 Gear Ratio and CW Pump Rotation 66:1 & 100:1 Gear Ratios and CCW Pump Rotation	
21	14349W	Fitting	2			Used in the following Underwind Applications: 35:1 Gear Ratio and CW Pump Rotation 66:1 & 100:1 Gear Ratios and CCW Pump Rotation	
22	15158W	Washer	3		*c	Used in CCW Pump Rotation Applications Only	
23	198385W	Cap screw	3		*d	Used in CW Pump Rotation Applications Only	
24	219240W	Fitting	1		*e	Uses 246108W Sealant	
25	*e 14581W	Fitting	1		*f	Used on Caterpillar, Dresser/Dressa and John Deere Only	
26	*e 16923W	Fitting	1		*g	Used on Case, Caterpillar D6H D6R with Esco Grapple, Fiat-Hitachi/New Holland and Komatsu only	
27	226450W	Valve, Cooling Relief	1		*h	Used on Ranger H67C only	
28	2302724W	Assembly, Tube	1		*j	Uses 318701W Adhesive	
29	*e 14538W	Fitting	1		*k	First used on S/N AW5C-1281	
30	2303025W	Pin, Cotter	1		*l	Included in 2311728 Filter Kit	
31	139W	Pin	1				
32	2302247W	Valve, Control (See 3-24)	1				
33	2302376W	Assembly, Tube	1				
34	2302375W	Assembly, Hose	1				
35	*e, *f 14681W	Fitting	1				
36	16828W	Cap screw	2				
37	*c 16542W	Fitting	1				
37	16485W	O-Ring	1				
38	2302344W	Assembly, Hose	1				
39	219172W	Strainer	1				

Hydraulics, Power Controls

First Used on AW5C-1595

Page 1 of 4

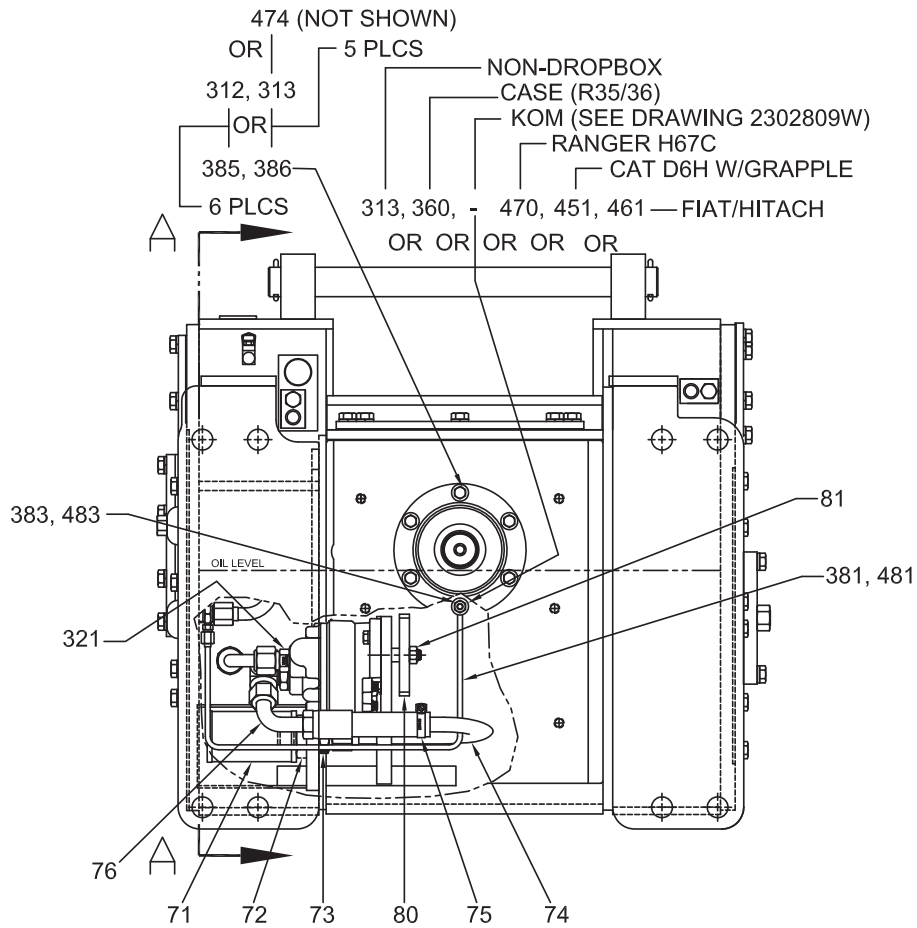


SECTION A-A

Hydraulics, Power Controls

First Used on AW5C-1595

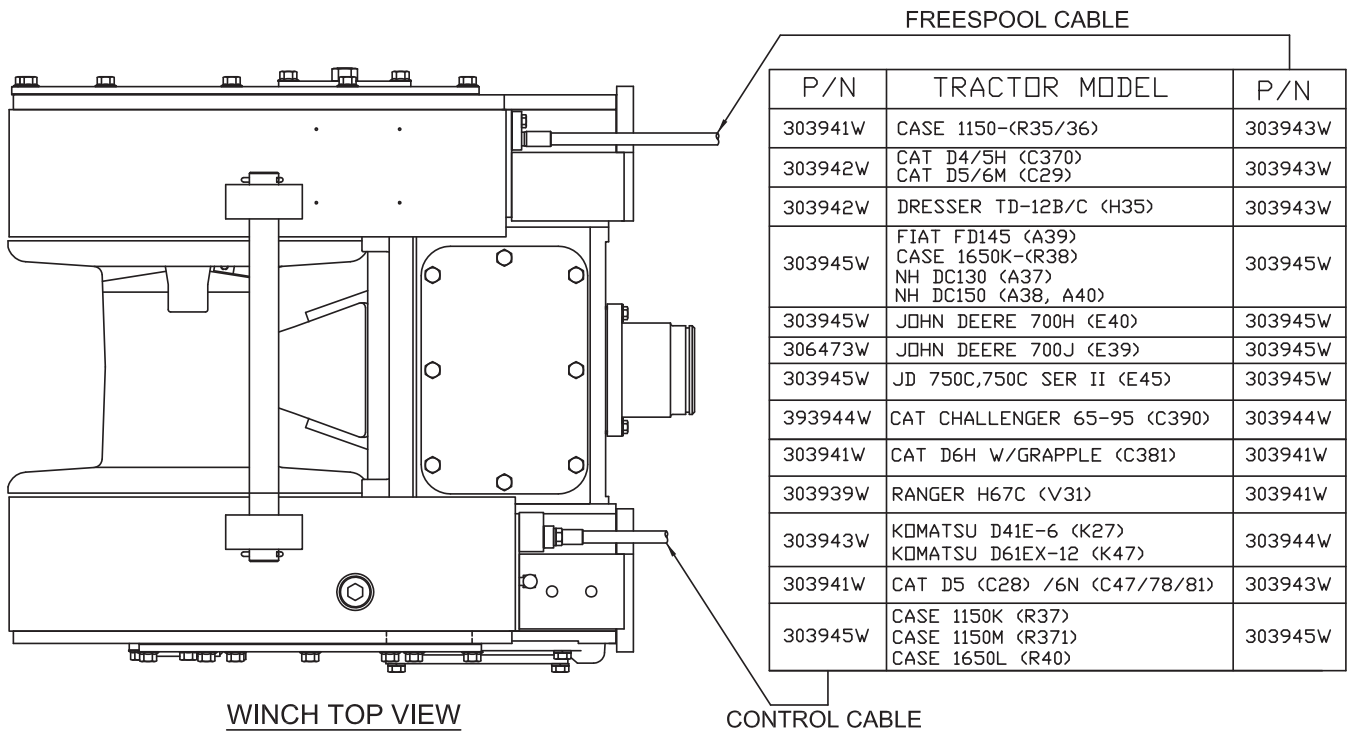
Page 2 of 4



Hydraulics, Power Controls

First Used on AW5C-1595

Page 3 of 4



Hydraulics, Power Controls

First Used on S/N AW5C-1595

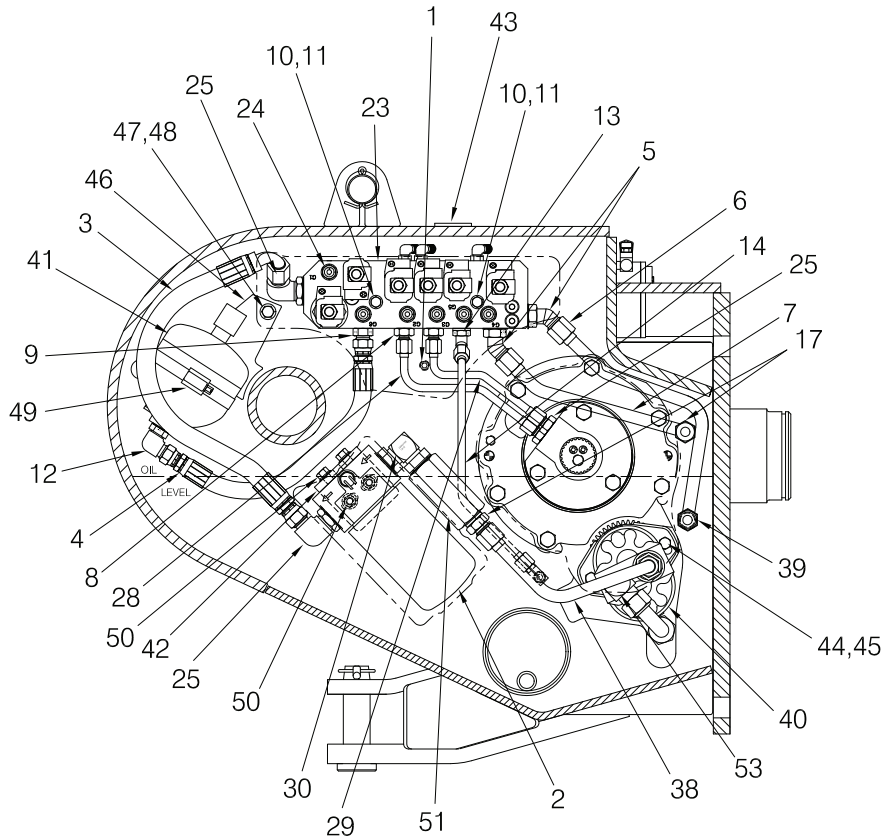
Page 4 of 4

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
71	219172W	Strainer	1	502	*a 219240W	Fitting, Special	1
72	1310821W	Fitting, Special	1	503	16923W	Fitting	1
73	83846W	Fitting, O-Ring	1	504	14581W	Fitting	1
74	2302345W	Assembly, Suction Tube	1	505	226450W	Assembly, Valve	1
75	127045W	Clamp	1	506	2302724W	Assembly, Accumulator Tube	1
76	2302344W	Assembly, Hose	1	507	*a 14538W	Fitting	2
77	16561W	Fitting, O-Ring	2	508	2303025W	Pin, Hair Cotter	2
78	16828W	Capscrew	2	509	139W	Pin, Rod End	1
79	15156W	Washer	4	510	2302247W	Valve, Control (See 3-24)	1
80	2302361W	Gear, Pump	1	511	2302376W	Assembly, Brake Tube	1
81	221355W	Nut	1	512	2302375W	Assembly, Hose	1
83	*a 1300780W	Flangescrew	5	513	2307740W	Fitting	1
86	2310015	Valve, Check	1	514	2310440	Assembly, Hose	1
94	2302110W	Accumulator	1	515	2300183W	Assembly, Filter	1
95	2302109W	Clamp	1		*p 3001363W	. Element, Filter	1
96	2304363W	Bracket	1		55468W	. . O-Ring	1
97	194090W	Capscrew	2	516	16543W	Fitting, O-Ring	1
103	16541W	Fitting, O-Ring	2	517	162155W	Fitting, O-Ring	1
131	188210W	Fitting, O-Ring	1	518	2302346W	Assembly, Hose	1
132	2304699W	Bracket, Filter Mounting	1	519	*a 2303064W	Assembly, Special Fitting	2
311	*a 14681W	Fitting	1	520	14349W	Fitting	2
312	221767W	Washer	6	521	*b 2304823W	Plug	1
313	Y17C-0624	Capscrew	6	530	*a 17346W	Fitting	1
320	*c 2302989W	Pump, CCW (See 3-28 & 3-29)	1	536	2305986W	Setscrew	2
321	*c 16542W	Fitting, O-Ring	1	580	*m 2310438	Assembly, Hose	1
330	*d 2302371W	Assembly, Clutch Tube	1	590	111331W	Fitting, O-Ring	1
331	*d 2302372W	Assembly, Clutch Tube	1	591	*n 2310439	Assembly, Hose	1
340	*e 2302369W	Assembly, Clutch Tube	1				
341	*e 2302370W	Assembly, Clutch Tube	1		*a	Uses 246108W Pipe Thread Sealant	
360	2302785W	Capscrew	1		*b	Uses 257291W Adhesive	
370	*f 2302963W	Pump, CW (See 3-28 & 3-29)	1		*c	Used on CAT, JD, KOM, H67C, CNH 1150K (R37)/ 1650L (R40)	
380	*g 2302913W	Fitting	1		*d	Used on CAT, JD, DR, KOM 66/1 & 100/1, Case, FH 35/1	
381	*g 2302772W	Assembly, Tube	1		*e	Used on CAT, H67, JD, DR, KOM 35/1, Case, FH 66/1 & 100/1	
382	*g 14668W	Fitting	1		*f	Used on CASE (R35/R36), FH, NEW HOLLAND	
383	*g 2302787W	Fitting, Special	1		*g	Used on Dropbox Winches (Except H67)	
385	*g 221767W	Washer	6		*h	Used on Ranger H67	
386	*g Y17C-0624	Capscrew	5		*j	Used on CAT D6H/R with ESCO Grapple (C381)	
451	*j 2302785W	Capscrew	1		*k	Used on NH DC150 PS (A38), Case 1650K (R38), NH DC150 (A40), FD10E/FD145 (A39)	
461	*k 2302785W	Capscrew	1		*l	Used on Ranger H67C (V31)	
470	*l 2303397W	Capscrew	1		*m	Used on CCW Pump on CAT, JD, DR, KOM, H67, Case (R37)/(R40)	
474	*l 18452W	Capscrew	5		*n	Used on CW Pump on Case (R35)/(R36), FH, NH	
480	*h 2302913W	Fitting, Special	1		*p	Included in 2311728 Filter Kit	
481	*h 2302772W	Assembly, Tube	1				
482	*h 14668W	Fitting	1				
483	*h 2302787W	Fitting, Special	1				
500	15158W	Washer	5				
501	198385W	Capscrew	3				

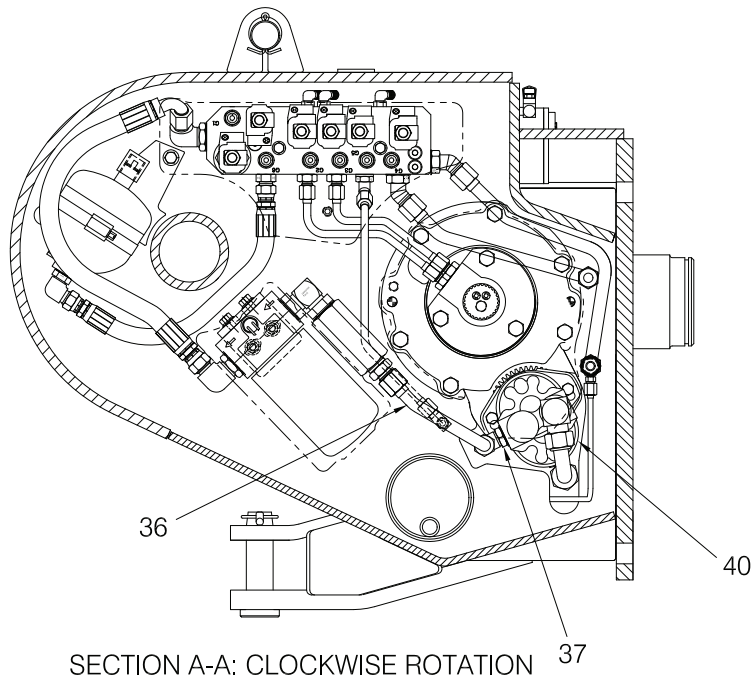
Hydraulics, Electronic Controls

Last Used on AW5C-1594

Page 1 of 2



SECTION A-A: COUNTERCLOCKWISE ROTATION



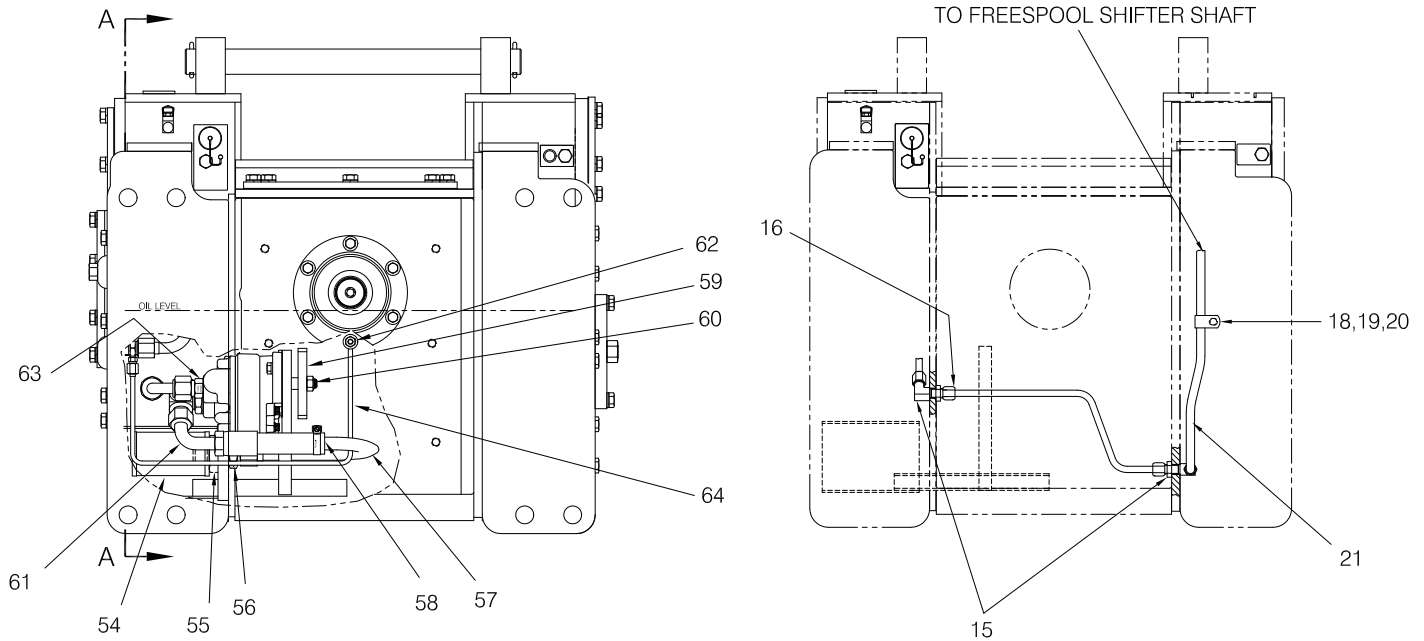
SECTION A-A: CLOCKWISE ROTATION

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

Hydraulics, Electronic Controls

Last Used on AW5C-1594

Page 2 of 2

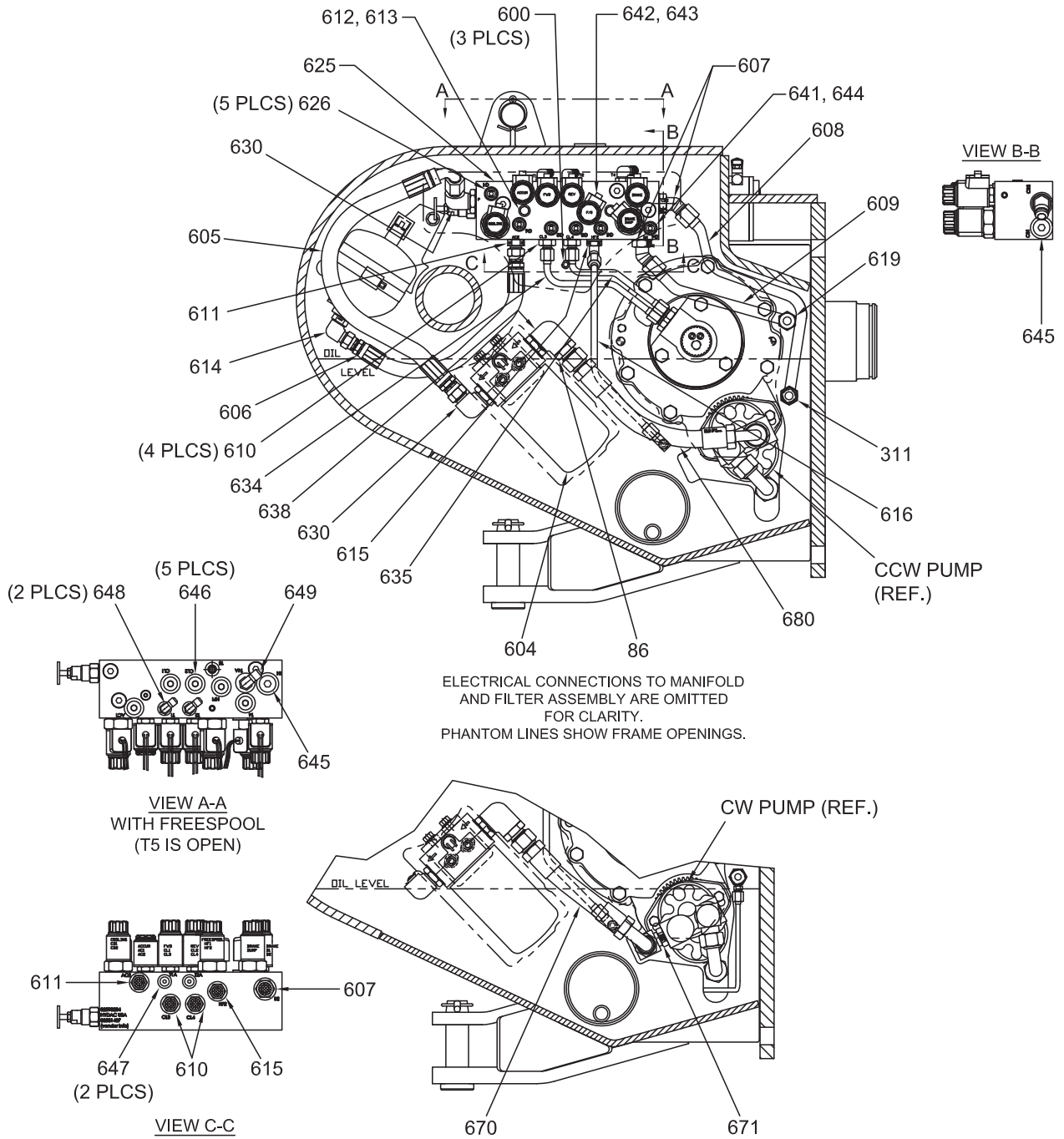


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 222648W	Setscrew	5	40	-----	Assembly, Pump (See 3-28 & 3-29)	1
2	2304111W	Assembly, Filter	1	41	2302110W	Accumulator	1
	*h 2304112W	. Filter Element	1	42	2304699W	Mounting Bracket, Filter	1
	2304862W	. Pressure Switch	1	43	188210W	Plug	1
	2305132W	. Filter Head	1	44	16828W	Capscrew	2
3	2304607W	Assembly, Hose	1	45	15156W	Washer	2
4	2304606W	Assembly, Hose	1	46	2304363W	Mounting Bracket, Accumulator	1
5	16569W	Fitting	2	47	194090W	Capscrew	2
6	2304529W	Cooling Tube	1	48	15156W	Washer	2
7	2304530W	Brake Tube	1	49	2302109W	Clamp	1
8	16745W	Fitting	4	50	1300780W	Capscrew	5
9	16541W	Fitting	1	51	271729W	Valve, Check	1
10	*a 18515W	Washer	2	52	16541W	Fitting	2
11	18524W	Capscrew	2	53	16561W	Fitting	2
12	16559W	Fitting	1	54	219172W	Strainer	1
13	17196W	Fitting	1	55	1310821W	Fitting, Special	1
14	2304532W	Tube	1	56	83846W	Fitting	1
15	16457W	Fitting	2	57	2302345W	Assembly, Suction Tube	1
16	2304370W	Tube	1	58	127045W	Clamp	1
17	*a 14682W	Fitting	2	59	2302361W	Gear, Pump	1
18	209578W	Clamp	1	60	221355W	Nut	1
19	15156W	Washer	1	61	2302344W	Assembly, Hose	1
20	15056W	Nut	1	62	*d 177461W	Capscrew	1
21	2304605W	Assembly, Hose	1	62	*e 2302785W	Capscrew	1
22	16565W	Fitting	1	63	*c 16542W	Fitting	1
23	*f 2303889W	Assembly, Valve (See 3-25)	1	64	*e 2302772W	Assembly, Tube	1
	*g 2306547W	Assembly, Valve (See 3-26)	1				
24	2304825W	Fitting	6		*a	Uses 273338W Sealant	
25	201784W	Fitting	2		*b	Used in CW pump rotation applications only	
28	2304527W	Tube, Forward Clutch	1		*c	Used in CCW pump rotation applications only	
29	2304528W	Tube, Reverse Clutch	1		*d	Used on non-dropbox winches only	
30	2304375W	Fitting	1		*e	Used on dropbox winches only	
36	*b 2305204W	Tube	1		*f	Last Used on S/N AW5C-1555	
37	*b 16560W	Fitting	1		*g	First Used on S/N AW5C-1556	
38	*c 2304531W	Tube	1		*h	Included in 2311729 Filter Kit	
39	*a 14681W	Fitting	1				

Hydraulics, Electronic Controls

Used on AW5C-1595 thru AW5C-1665

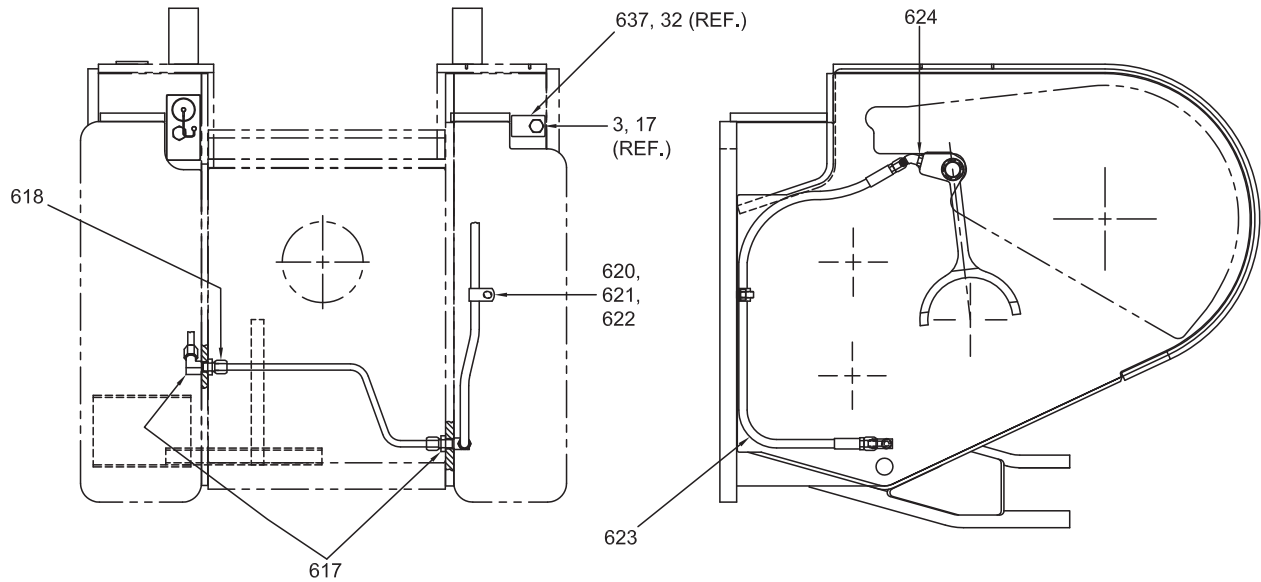
Page 1 of 2



Hydraulics, Electronic Controls

Used on AW5C-1595 thru AW5C-1665

Page 2 of 2



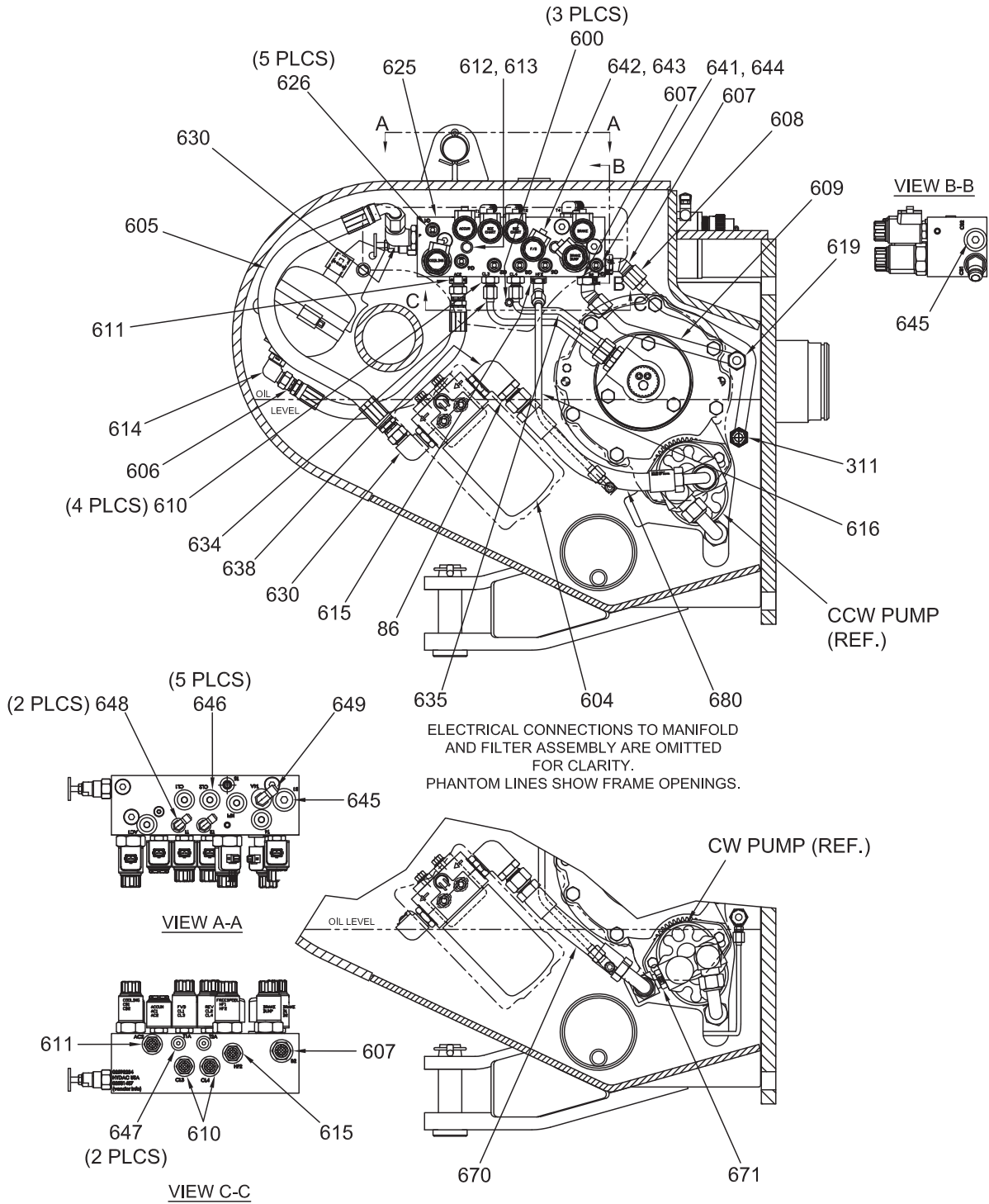
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty		
3	15158W	Washer	1	624	16565W	Fitting, O-Ring	1		
17	16830W	Capscrew	1	625	2306547W	Assembly, Valve (See 3-26)	1		
32	303946W	Gasket	1	626	2304825W	Fitting, QC Test	5		
86	2310015	Valve, Check	1	630	201784W	Fitting, O-Ring	2		
311	*a, *b	14681W	Fitting	1	634	2306740W	Assembly, Tube - LH Clutch	1	
600	2305987W	Setscrew	5	635	2306741W	Assembly, Tube - RH Clutch	1		
604	2304111W	Assembly, Filter	1	637	2304366W	Plate, Cover	1		
	*e	2304112W	. Element, Filter	1	638	2307740W	Fitting	1	
		2304862W	. Switch, Pressure	1	641	R330325	Coupler, Male	1	
		2305132W	. Head, Filter	1	642	2307769W	Valve, Cartridge	1	
605	2304607W	Assembly, Hose	1	643	2307770W	Coil, 24V	1		
606	2304606W	Assembly, Hose	1	644	16565W	Fitting, O-Ring	1		
607	16569W	Fitting, O-Ring	2	645	233693W	Fitting, O-Ring	2		
608	2307649W	Tube, Cooling	1	646	235691W	Fitting, O-Ring	5		
609	2306743W	Tube, Brake	1	647	222442W	Fitting, O-Ring	2		
610	16745W	Fitting, O-Ring	4	648	16556W	Fitting, O-Ring	2		
611	16541W	Fitting, O-Ring	1	649	162155W	Fitting, O-Ring	1		
612	18515W	Washer	2	670	*c	2310439	Assembly, Hose	1	
613	*a	18526W	Capscrew	2	671	*c	111331W	Fitting, O-Ring	1
614	16559W	Fitting, O-Ring	1	680	*d	2310438	Assembly, Hose	1	
615	17196W	Fitting, O-Ring	1						
616	2306742W	Tube, Freespool Valve	1						
617	16457W	Fitting	2						
618	2304370W	Tube, Freespool Center	1						
619	*a	14682W	Fitting	1					
620	209578W	Clamp	1						
621	15156W	Washer	1						
622	15056W	Nut	1						
623	2304605W	Assembly, Hose - Freespool	1						

*a Uses 246108W Pipe Thread Sealant
 *b Used on Non-Dropbox Winches only
 *c Used in CW pump rotation applications: Case (R36), FH, NH only
 *d Used in CCW pump rotation applications: Case (R37), JD, DR, KOM only
 *e Included in 2311729 Filter Kit

Hydraulics, Electronic Controls

First Used on AW5C-1666

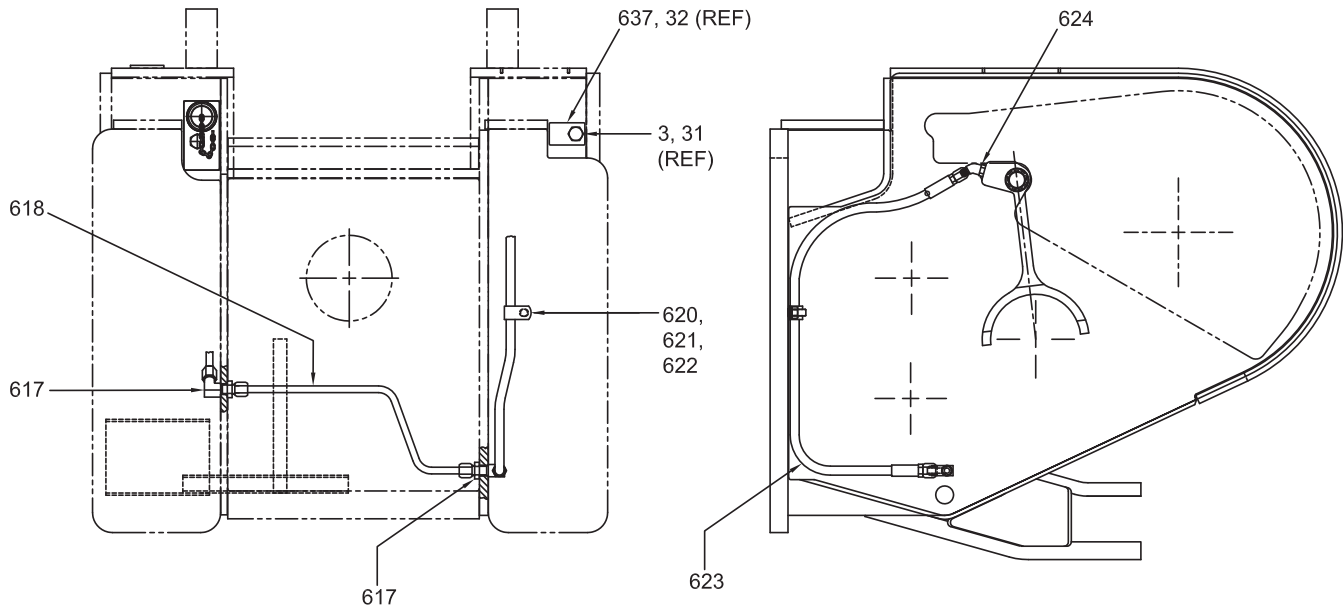
Page 1 of 2



Hydraulics, Electronic Controls

First Used on AW5C-1666

Page 2 of 2

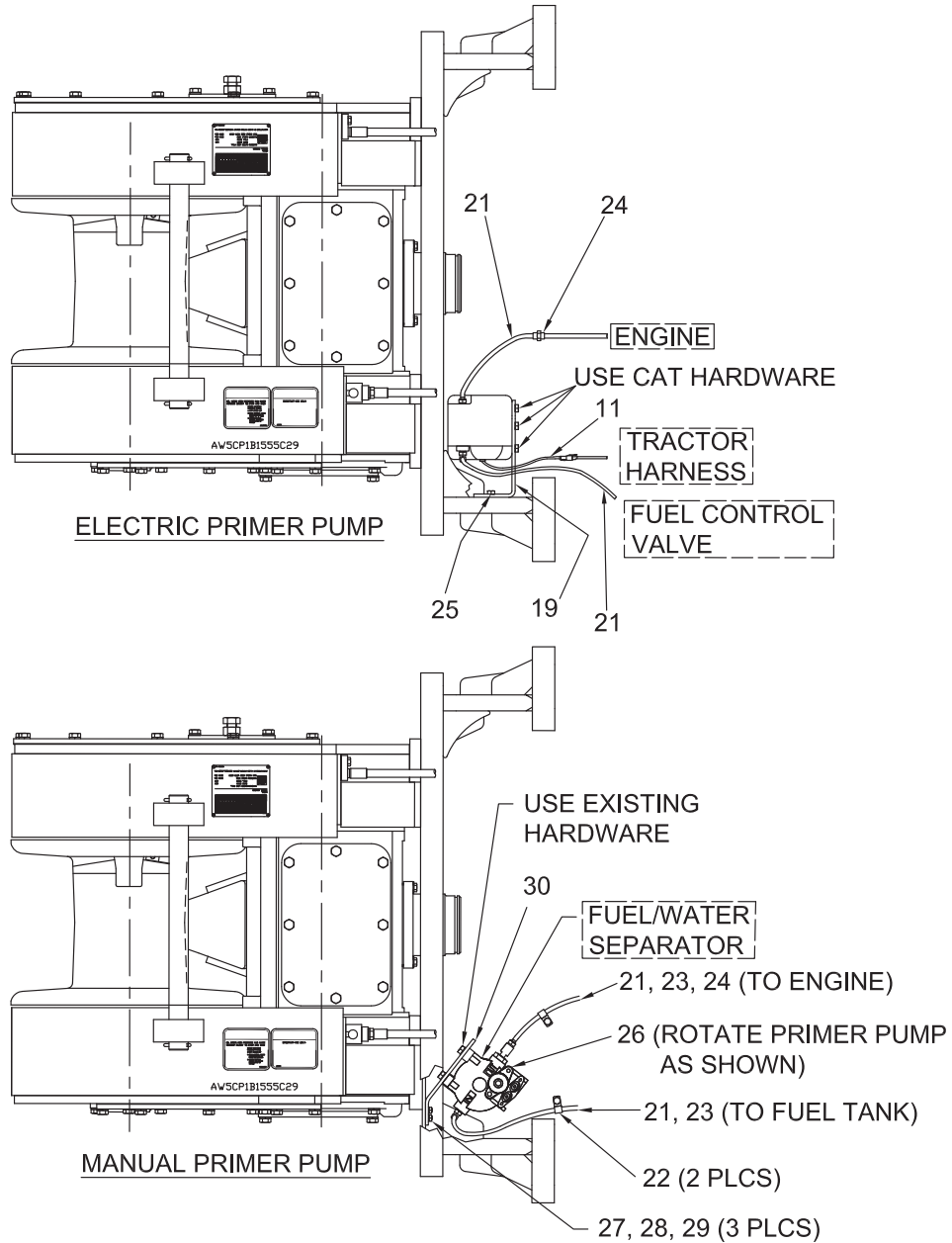


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
3	15158W	Washer	1	624	16565W	Fitting, O-Ring	1
31	178402W	Capscrew	1	625	2311887	Assembly, Valve (See 3-27)	1
32	303946W	Gasket	1	626	2304825W	Fitting, QC Test	5
86	2310015	Valve, Check	1	630	201784W	Fitting, O-Ring	2
311	*a, *b 14681W	Fitting	1	634	2306740W	Tube, LH Clutch	1
600	2305987W	Setscrew	5	635	2306741W	Tube, RH Clutch	1
604	2304111W	Assembly, Filter	1	637	2304366W	Plate, Cover	1
	*e 2304112W	. Element, Filter	1	638	2307740W	Fitting	1
	2304862W	. Switch, Pressure	1	641	R330325	Fitting, Test	1
	2305132W	. Head, Filter	1	642	2307769W	Valve, Cartridge	1
605	2304607W	Assembly, Hose	1	643	2311558	Coil, 24V	1
606	2304606W	Assembly, Hose	1	644	16565W	Fitting, O-Ring	1
607	16569W	Fitting, O-Ring	2	645	233693W	Fitting, O-Ring	2
608	2307649W	Tube, Cooling	1	646	235691W	Fitting, O-Ring	5
609	2306743W	Tube, Brake	1	647	222442W	Fitting, O-Ring	2
610	16745W	Fitting, O-Ring	4	648	16556W	Fitting, O-Ring	2
611	16541W	Fitting, O-Ring	1	649	162155W	Fitting, O-Ring	1
612	18515W	Washer	2	670	*c 2310439	Assembly, Hose	1
613	*a 18526W	Capscrew	2	671	*c 111331W	Fitting, O-Ring	1
614	16559W	Fitting, O-Ring	1	680	*d 2310438	Assembly, Hose	1
615	17196W	Fitting, O-Ring	1				
616	2306742W	Tube, Freespool Valve	1				
617	16457W	Fitting	2				
618	2304370W	Tube, Freespool Center	1				
619	*a 14682W	Fitting	1				
620	209578	Clamp	1				
621	15156W	Washer	1				
622	15056W	Nut	1				
623	2304605W	Assembly, Hose - Freespool	1				

*a Uses 246108W Pipe Thread Sealant
 *b Used on Non-Dropbox Winches only
 *c Used in CW pump rotation applications: Case (R36), FH, NH only
 *d Used in CCW pump rotation applications: Case (R37), JD, DR, KOM only
 *e Included in 2311729 Filter Kit

Fuel/Water Separator Relocation

For Tractors with Electric or Manual Primer Pump
Caterpillar D5N (C28, C77); D6N (C47, C78)

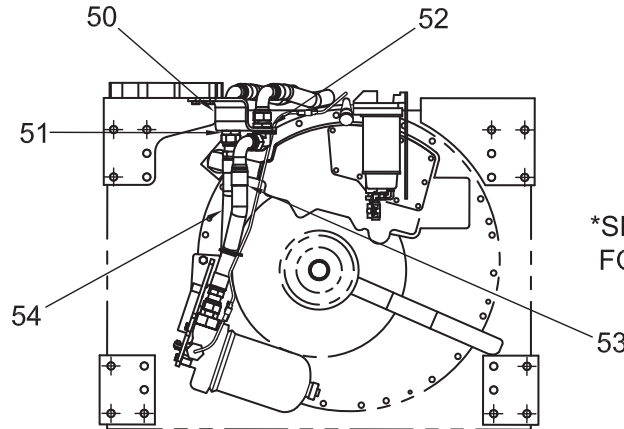


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
19	2306836W	Bracket, Mounting	1	26	2307911W	Gasket, Fuel Primer	1
21	2306857W	Hose, Fuel	1	27	Y09C-M1030	Cap screw	3
22	387316W	Clamp, Insulated Hose	2	28	296420W	Washer	3
23	166857W	Clamp	5	29	292655W	Nut	3
24	2306858W	Fitting	1	30	2307894W	Plate, Mounting	1
25	18738W	Capscrew	2				

Winch Ready Tractor Filter Relocation

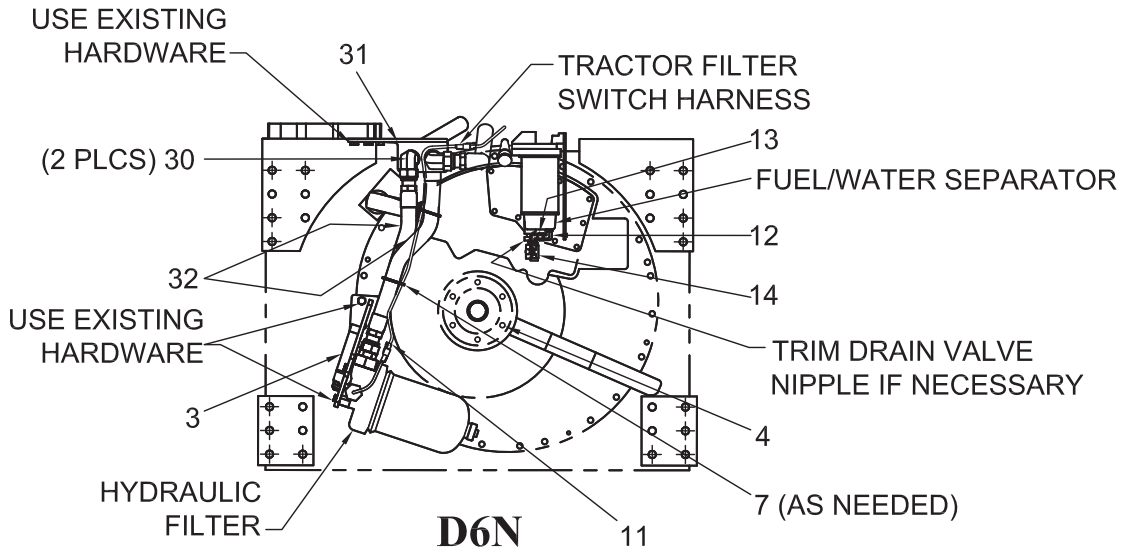
Non Spin-On Filter

Caterpillar D5N (C28, C77); D6N (C47, C78)



*SEE D6N FILTER RELOCATION FOR COMMON PARTS

D5N

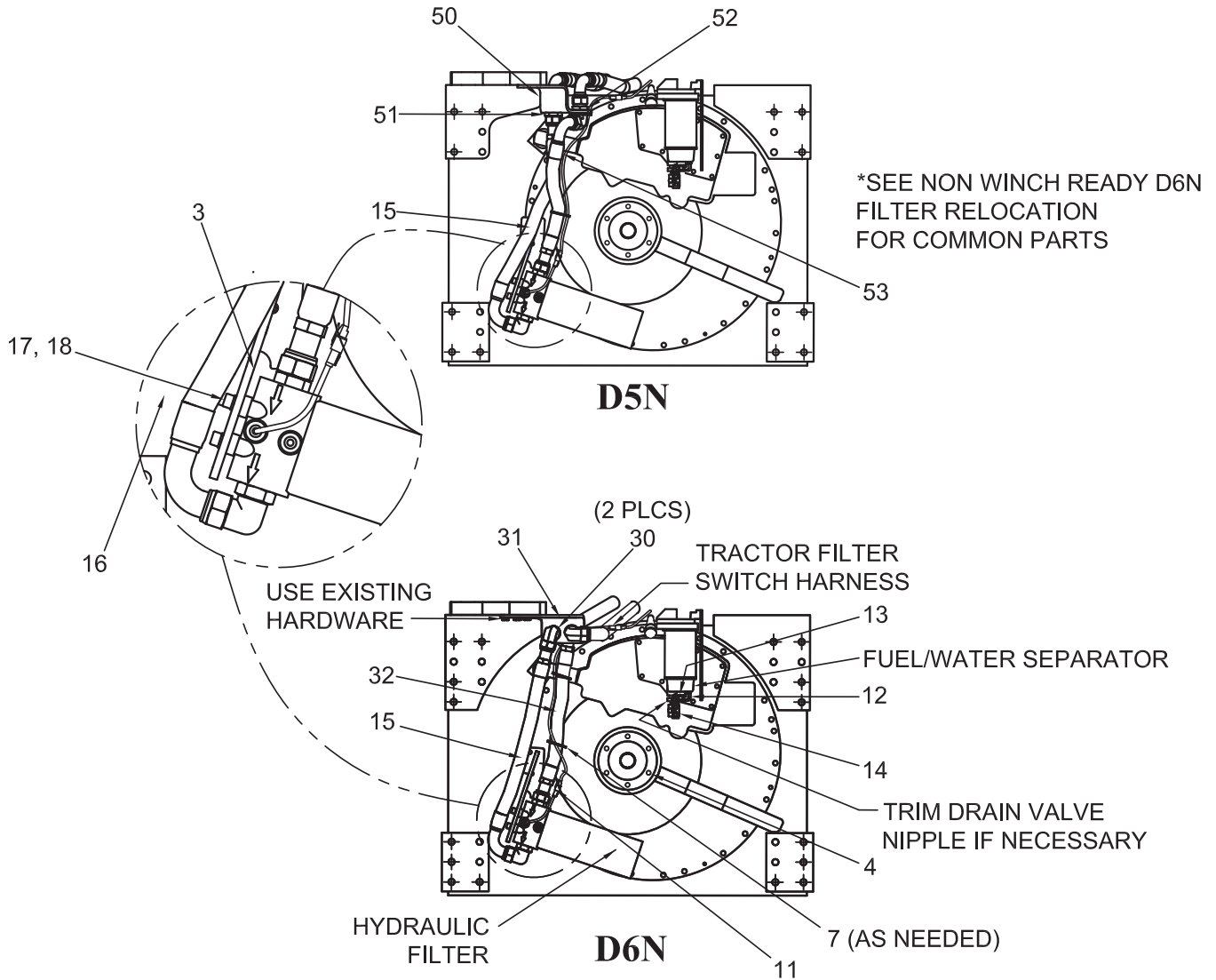


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
3	2306315W	Bracket, Filter	1	31	2305588W	Bracket, Fitting	1
4	56995W	Plug	6	32	2305613W	Assembly, Hose	2
7	137852W	Clamp, Strap	6	50	2305595W	Bracket, Fitting	2
11	2305617W	Harness, External Filter	2	51	R834107	Fitting	1
12	16557W	Fitting	1	52	2305620W	Fitting	1
13	2305616W	Fitting	1	53	2305614W	Assembly, Hose	1
14	211556	Valve, Needle	1	54	2305615W	Assembly, Hose	1
30	2305620W	Fitting	2				

Non Winch Ready Tractor Filter Relocation

Spin-On Filter

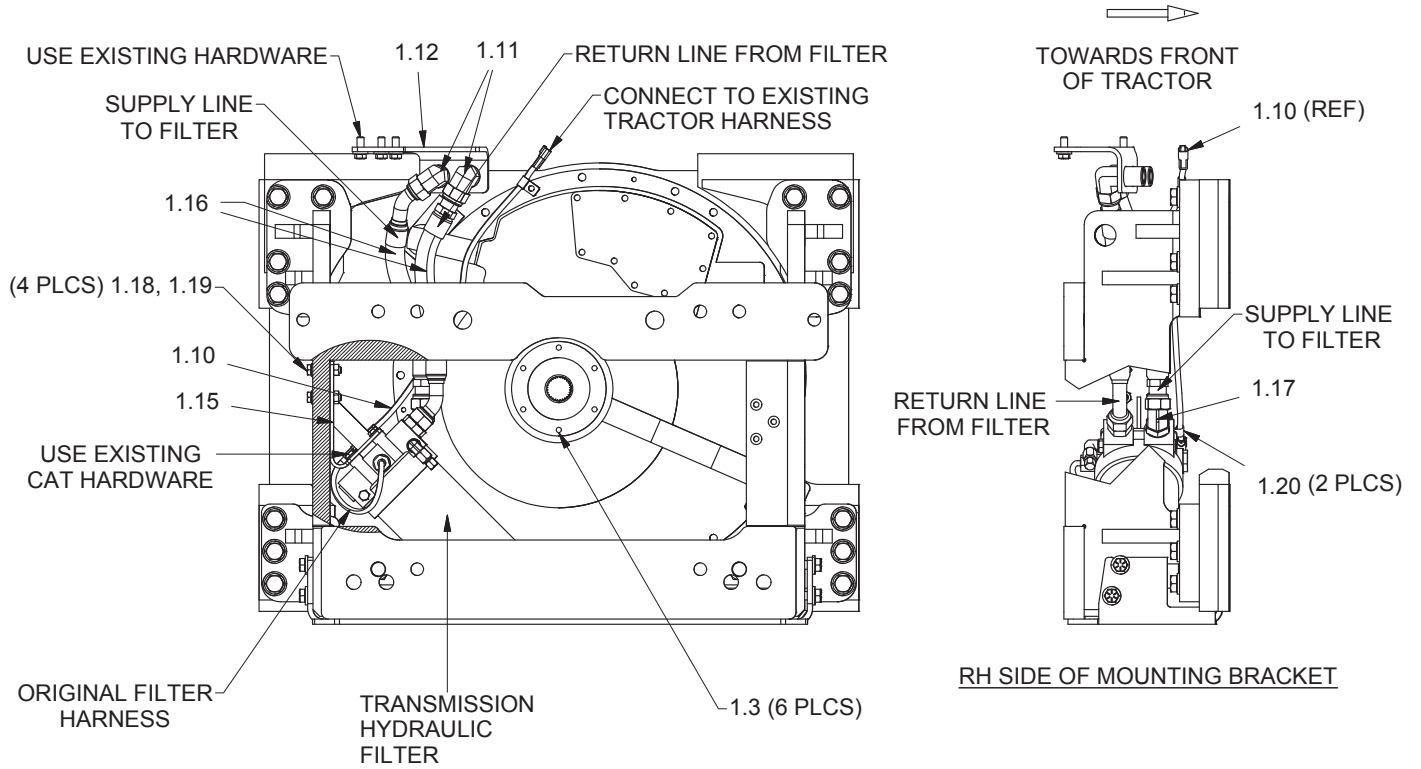
Caterpillar D5N (C28, C77); D6N (C47, C78)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
3	2306315W	Bracket, Filter	1	17	296027W	Capacrew	4
4	56995W	Plug	6	18	292682W	Washer	4
7	137852W	Clamp, Strap	6	30	2305620W	Fitting	2
11	2305617W	Harness, External Filter	2	31	2305588W	Bracket, Fitting	1
12	16557W	Fitting	1	32	2305613W	Assembly, Hose	2
13	2305616W	Fitting	1	50	2305595W	Bracket, Fitting	2
14	211556	Valve, Needle	1	51	R834107	Fitting	1
15	2306313W	Assembly, Hose	1	52	2305620W	Fitting	1
16	2306312W	Spacer	4	53	2305614W	Assembly, Hose	1

Tractor Filter Relocation

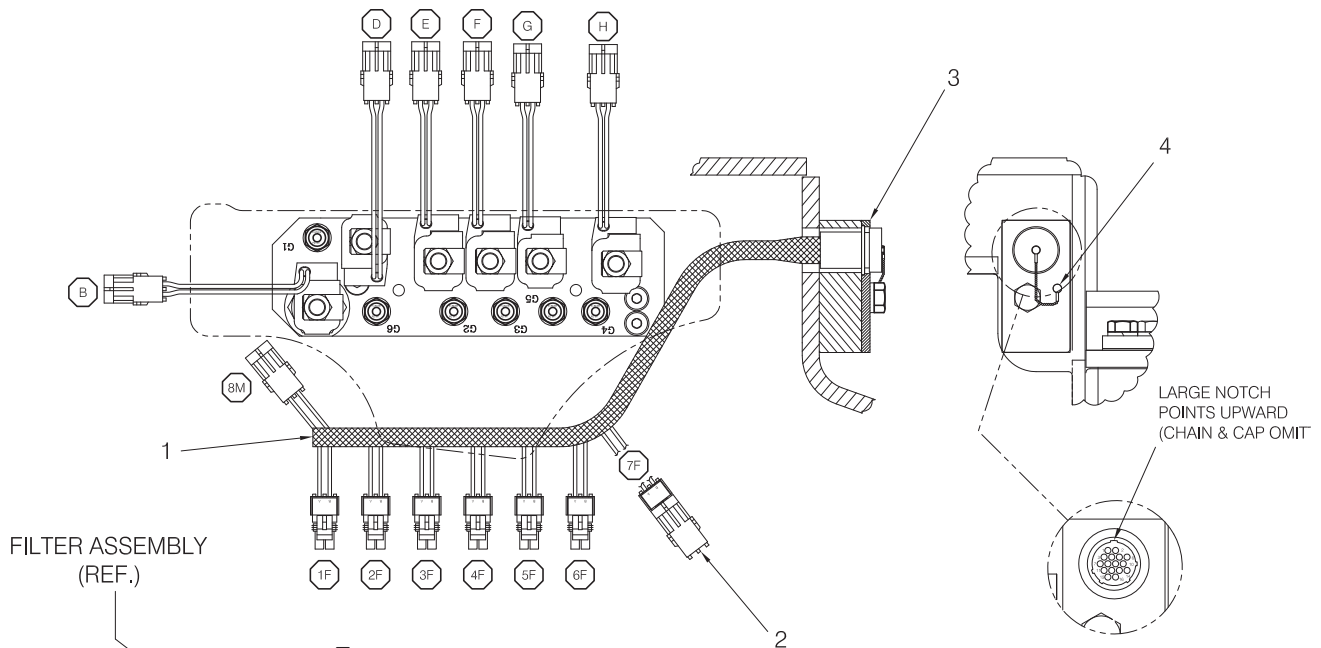
Caterpillar D6N Tier 4i (C810)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1.3	56995W	Plug	6	1.16	2314742	Assembly, Hose	2
1.10	2305617W	Harness, External Filter	1	1.17	R833217	Fitting	1
1.11	2305620W	Fitting	2	1.18	296422W	Washer	4
1.12	2305588W	Bracket, Fitting	1	1.19	Y09C-M1255	Capscrew	4
1.15	2314735	Bracket, Filter Assembly Mounting	1	1.20	243057	Clamp	2

Internal Wiring, Electronic Controls

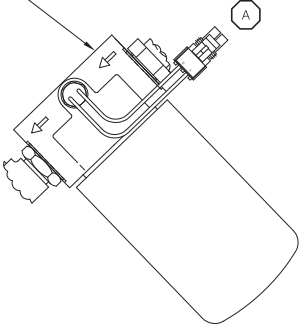
Last Used on AW5C-1577



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

VEHICLE CODE	GEAR CODE	INTERNAL OPTIONS
R35,A39	1	
C29,C370,E45,K27,K36	2,3	B
R35,A39	2,3	
C29,C370,E45,	1	B
R35,A39	1	
C29,C370,E45,K27,K36	2,3	U
	2,3	
C29,C370,E45,	1	U

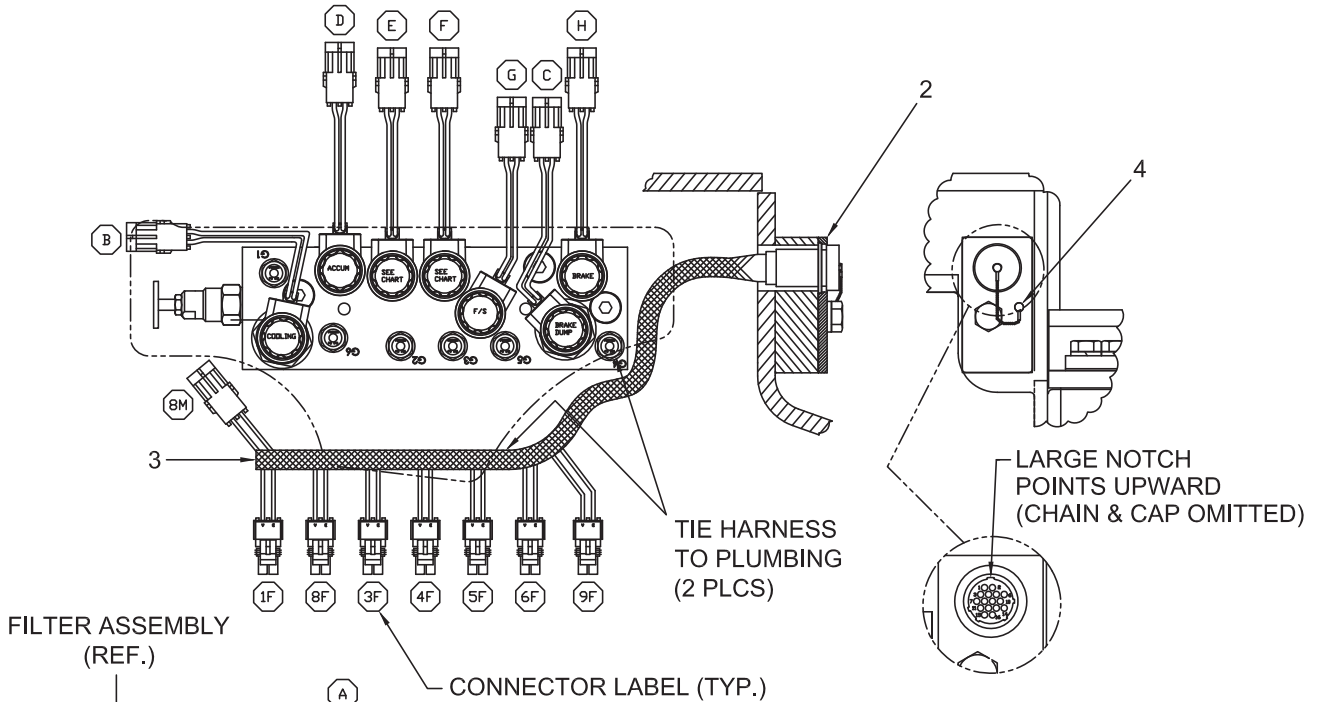
FILTER ASSEMBLY (REF.)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303901W	Internal Harness	1	4	16602W	Screw	1
2	2304877W	Plug, 2-Term	1				
3	*a 2304503W	Connector Retainer	1		*a	Uses 236308 Loctite Ultra Blue Sealant	

Internal Wiring, Electronic Controls

Used on AW5C-1578 thru AW5C-1665



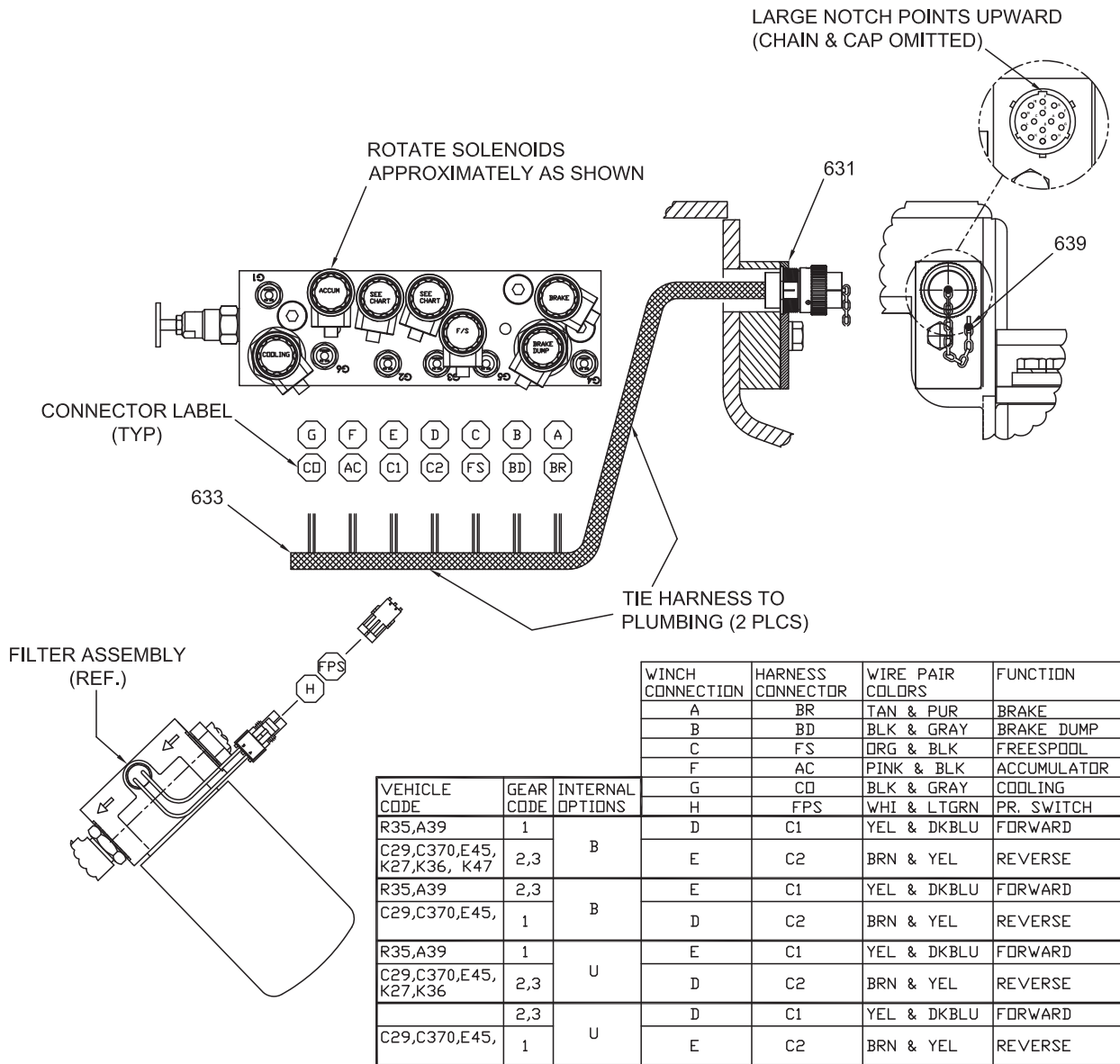
VEHICLE CODE	GEAR CODE	INTERNAL OPTIONS	WINCH CONNECTION	HARNESS CONNECTOR	WIRE PAIR COLORS	FUNCTION
			A	8M	WHI & LTGRN	PR. SWITCH
			B	1F	BLK & GRAY	COOLING
			C	8F	BLK & GRAY	BRAKE DUMP
			G	5F	DRG & BLK	FREESPOOL
			H	6F	TAN & PUR	BRAKE
			D	9F	PINK & BLK	ACCUMULATOR
R35,A39	1	B	F	3F	YEL & DKBLU	FORWARD
C29,C370,E45, K27,K36, K47	2,3		E	4F	BRN & YEL	REVERSE
R35,A39	2,3	B	E	3F	YEL & DKBLU	FORWARD
C29,C370,E45,	1		F	4F	BRN & YEL	REVERSE
R35,A39	1	U	E	3F	YEL & DKBLU	FORWARD
C29,C370,E45, K27,K36	2,3		F	4F	BRN & YEL	REVERSE
	2,3		F	3F	YEL & DKBLU	FORWARD
C29,C370,E45,	1	U	E	4F	BRN & YEL	REVERSE

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
2	*a 2304503W	Connector Retainer	1	4	16602W	Screw	1
3	2310627	Internal Harness	1				

*a Uses 236308 Loctite Ultra Blue Sealant

Internal Wiring, Electronic Controls

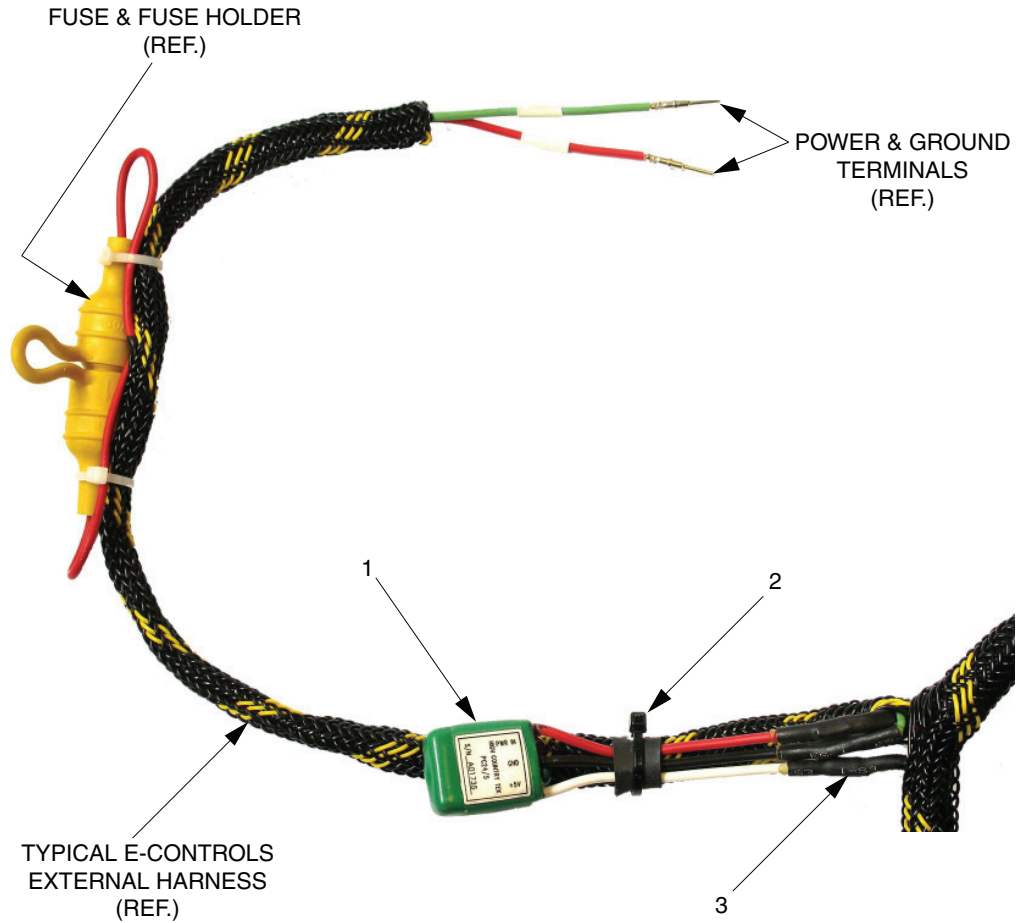
First Used on AW5C-1666



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
631	*a 2311807	Retainer, Connector	1	639	16602W	Screw	1
633	2311443	Harness, Internal	1				

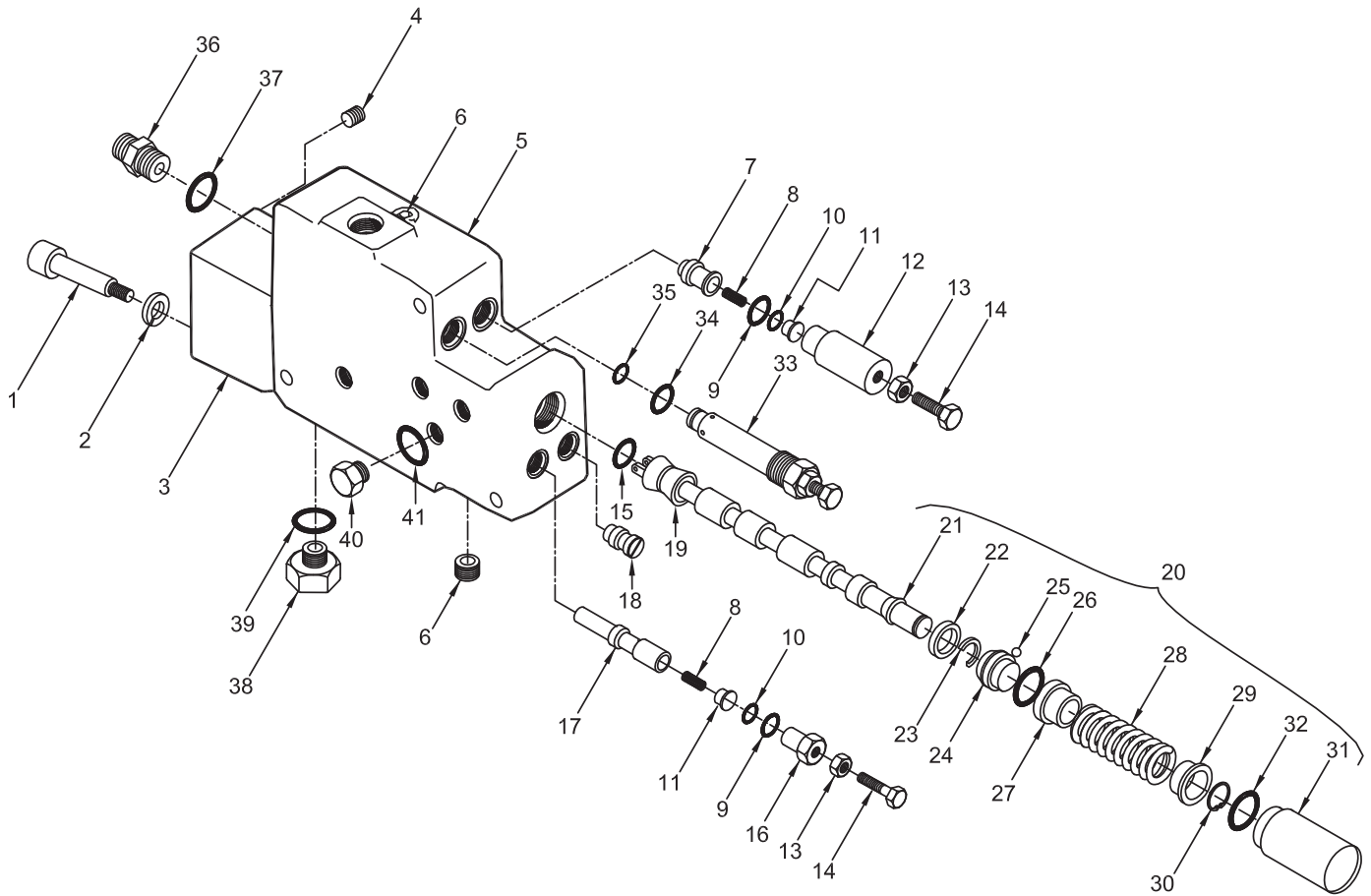
*a Uses 236308 Loctite Ultra Blue Sealant

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

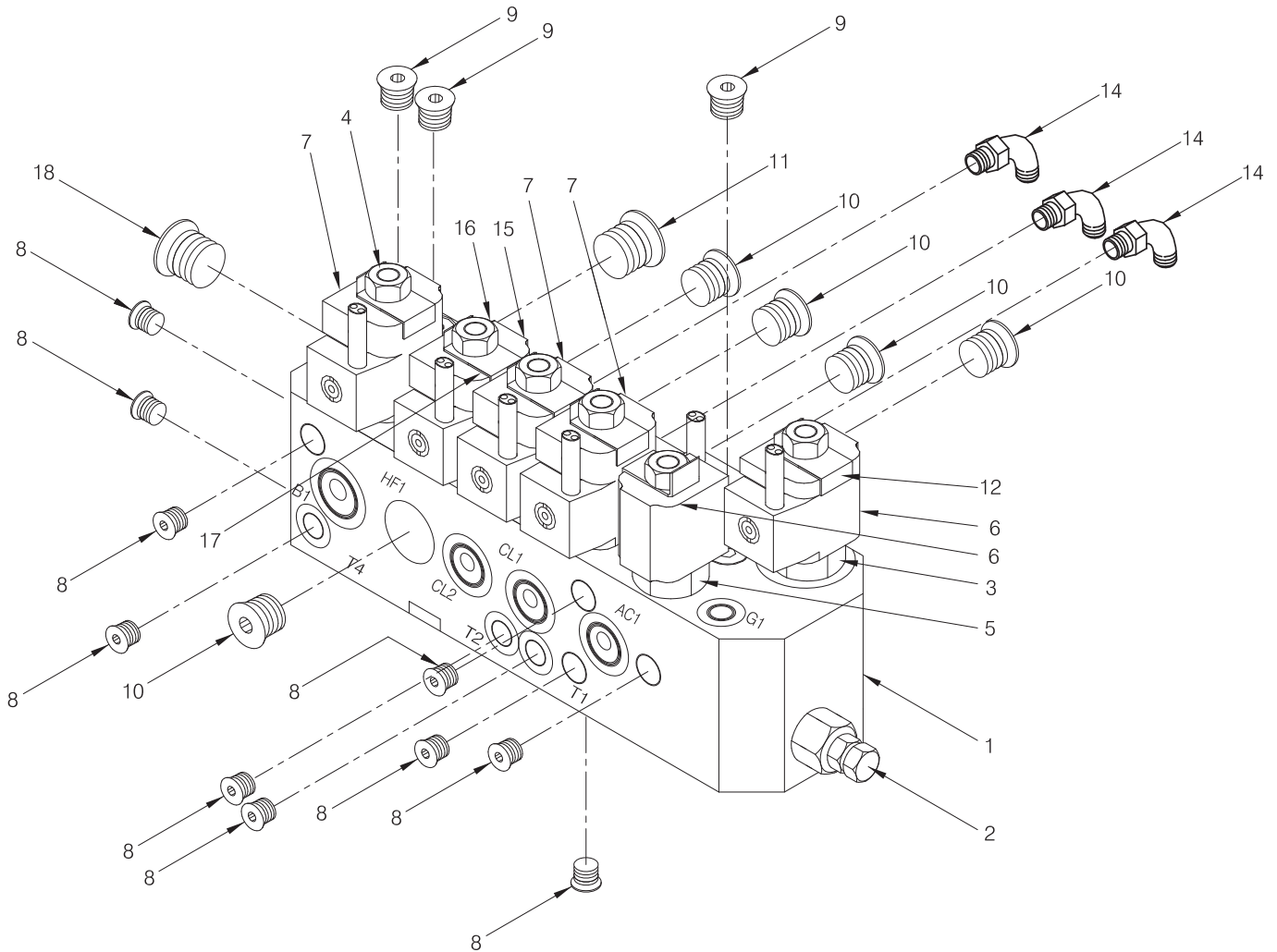
Control Valve, Power Controls



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2302247W	Valve, Control	1				
1	241778W	. Screw	2	21	258217W	.. Spool	1
2	15156W	. Lockwasher	2	22	258220W	.. Ring	1
3	267018W	. Valve	1	23	196000W	.. Ring	1
4	15483W	. Fitting	2	24	195997W	.. Retainer, Detent	1
5	NSS	. Body, Valve	1	25	170987W	.. Ball	8
6	15962W	. Fitting	2	26	118365W	.. O-Ring	1
7	196006W	. Spool, Forward Mod	1	27	238992W	.. Spacer	1
8	195992W	. Spring, Relief	2	28	2303923W	.. Spring, Spool	1
9	16484W	. O-Ring	2	29	166905W	.. Retainer, Spring	1
10	15860W	. O-Ring	2	30	196002W	.. Ring, Snap	1
11	195993W	. Plug	2	31	196009W	.. Cap, Spool	1
12	226445W	. Fitting	1	32	39376W	. O-Ring	1
13	15027W	. Nut, Jam	2	33	2300308W	. Relief	1
14	195995W	. Capscrew	2	34	16484W	.. O-Ring	1
15	118361W	. O-Ring	1	35	265787W	.. O-Ring	1
16	196004W	. Fitting	1	36	16542W	. Fitting	1
17	196003W	. Spool, Reverse Mod	1	37	16485W	.. O-Ring	1
18	15314W	. Fitting	1	38	14604W	. Fitting	1
19	279397W	. Cam	1	39	16487W	.. O-Ring	1
19	68370W	. Pin (Not Illustrated)	1	40	14595W	. Fitting	1
20	262088W	. Spool Assembly	1	41	209744	.. O-Ring	1

Valve Assembly, Electronic Controls

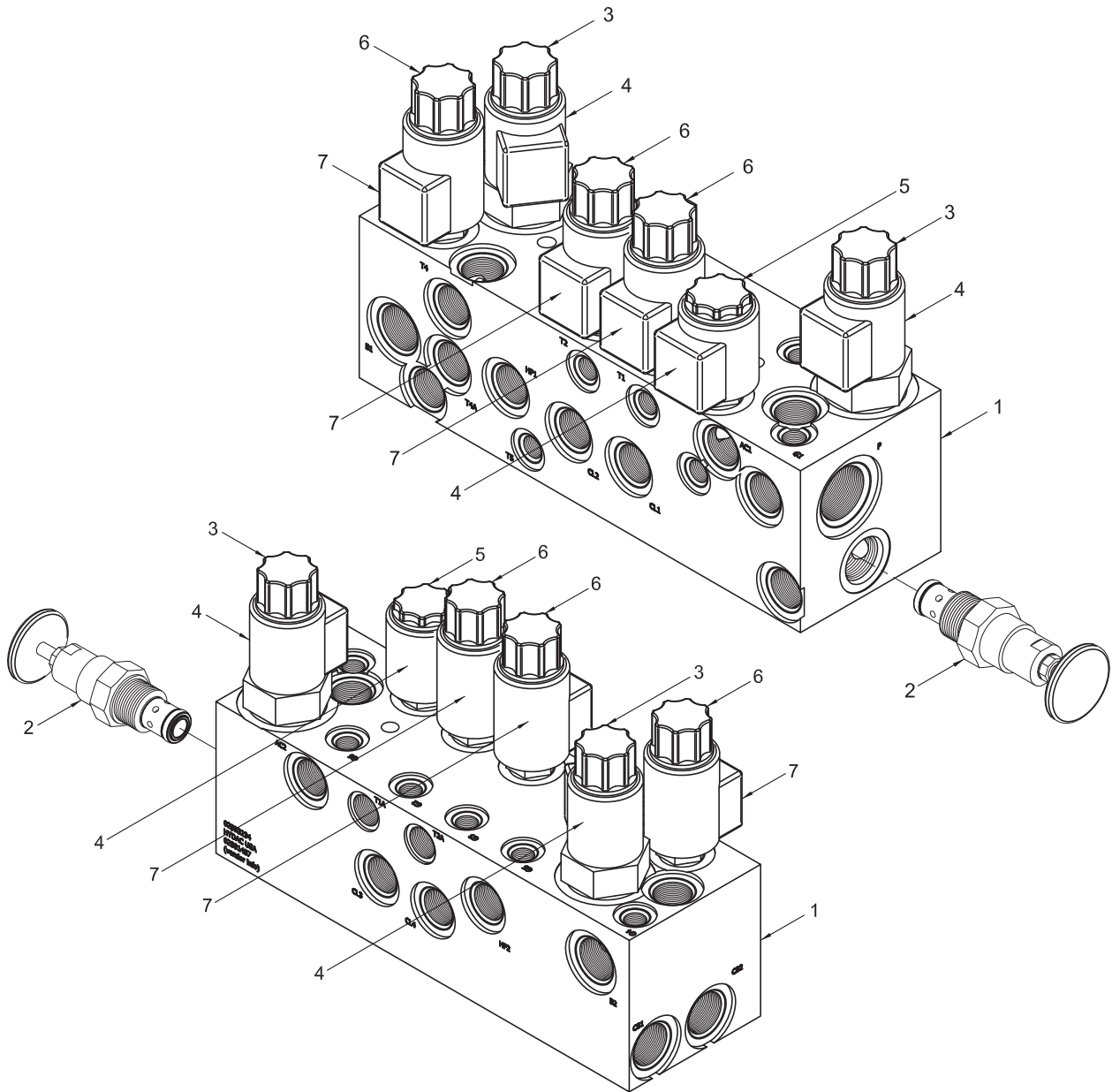
Last Used on S/N AW5C-1555



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2303889W	Assembly, Valve	1				
1	NSS	.Block	1	8	222442W	. Fitting, Plug	10
2	2300308W	. Valve, Relief	1	9	222443W	. Fitting, Plug	3
	2304971W	. . Kit, Seal	1	10	235691W	. Fitting, Plug	5
3	2304840W	. Valve, Solenoid	1	11	233693W	. Fitting, Plug	1
	2304972W	. . Kit, Seal	1	12	2304845W	. Washer, Tab	5
4	2304841W	. Valve, Proportional	3	14	16556W	Fitting	3
	R15012	. . Kit, Seal	1	15	R15006	Coil, 24V	1
5	2304842W	. Valve, Solenoid	1	16	2304846W	Valve, Solenoid	1
6	R15006	. Coil, 24V	2	17	2304845W	. Washer, Tab	5
7	R15005	. Coil, 24V	3	18	223693W	Fitting, Plug	1

Valve Assembly, Electronic Controls

Used on S/N AW5C-1556 thru AW5C-1665

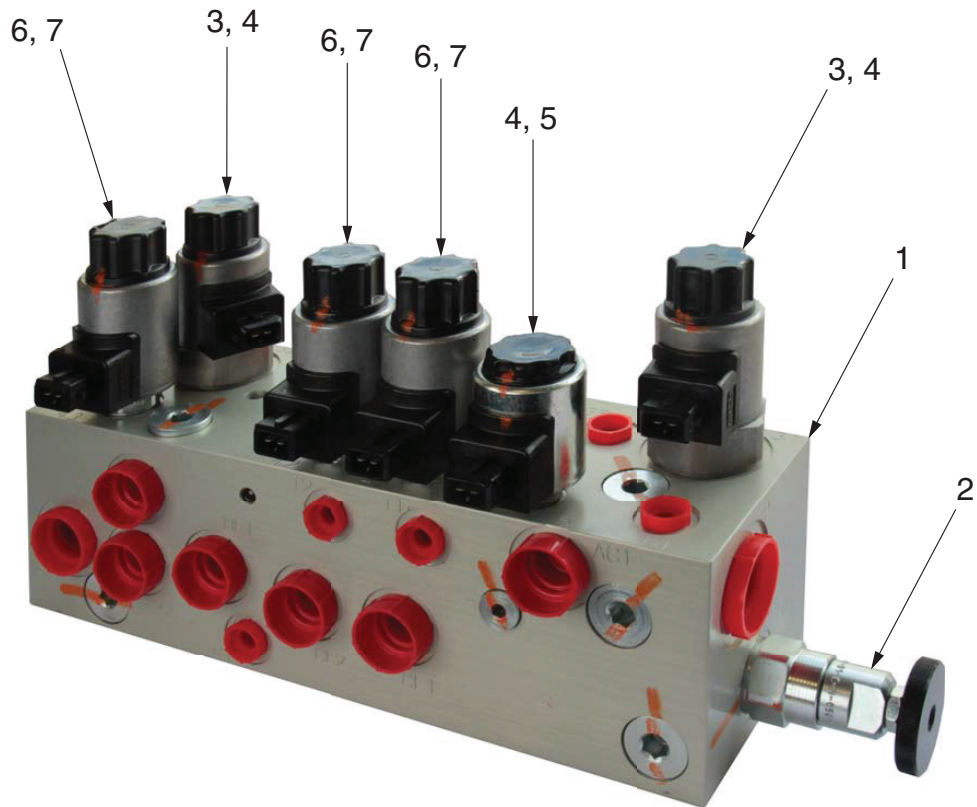


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2306547W	Assembly, Valve	1				
1	NSS	. Block	1	5	2310253	. Valve, Cartridge	1
2	2310255	. Valve, Relief	1	6	2310254	. Valve, Proportional	3
	2310260	. . Kit, Seal	1	7	2310256	. Coil, Proportional Valve, 24 VDC	3
3	2310252	. Valve, Cartridge	2	8	*a 2307769W	. Valve, Cartridge (Not Shown)	1
	2310258	. . Kit, Seal	1				
4	2307770W	. Coil, Valve, 24 VDC	3				

*a When Freespool Cartridge Valve is Used

Valve Assembly, Electronic Controls

First Used on S/N AW5C-1666

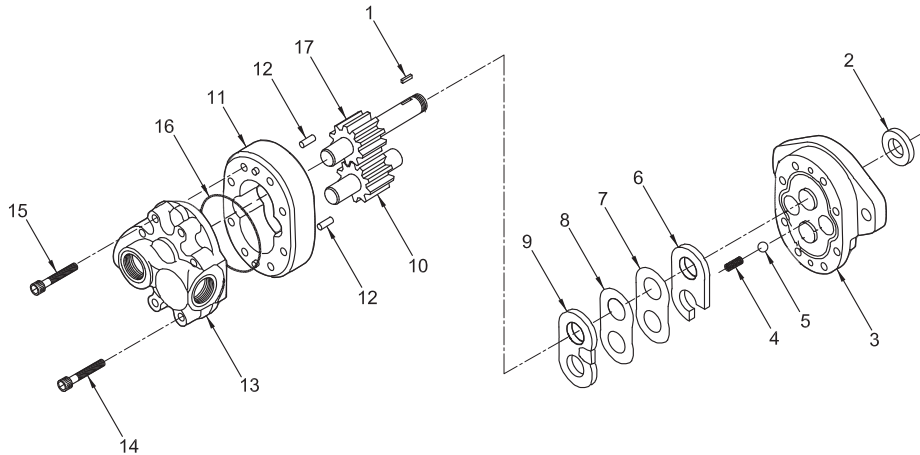


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2311887	Assembly, Valve	1				
1	NSS	. Block	1	4	2311558	. Coil, Valve, 24 VDC	3
2	2310255	. Valve, Relief	1	5	2310253	. Valve, Cartridge	1
	2310260	.. Kit, Seal	1	6	2310254	. Valve, Proportional	3
3	2310252	. Valve, Cartridge	2	7	2314908	.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

Hydraulic Pump

CW Rotation

Last Used on S/N AW5C-1005

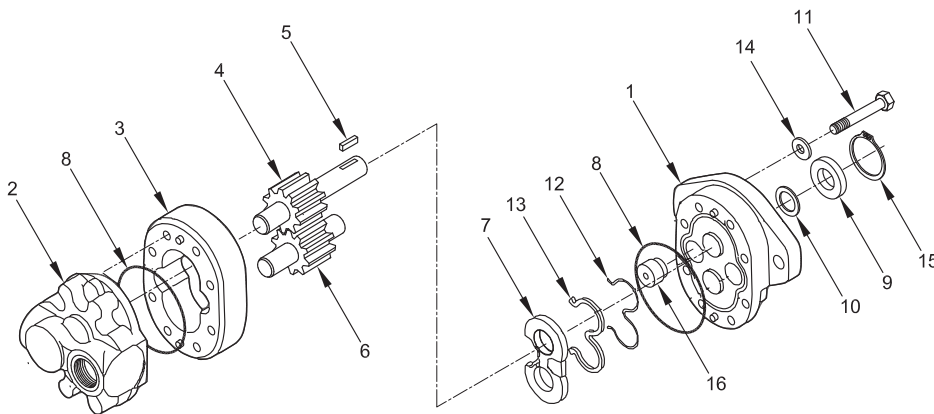


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	314833W	Pump, Hydraulic	1				
1	316823W	. Key	1	11	NSS	. Body	1
2	*a	NSS . Seal	1	12	NSS	. Pin, Dowel	2
3	NSS	. Plate, Front	1	13	NSS	. Plate, Back	1
4	*a	NSS . Spring	2	14	NSS	. Capscrew	4
5	*a	NSS . Ball	2	15	NSS	. Capscrew	4
6	*a	NSS . Seal,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

Hydraulic Pump

CW Rotation

First Used on S/N AW5C-1006

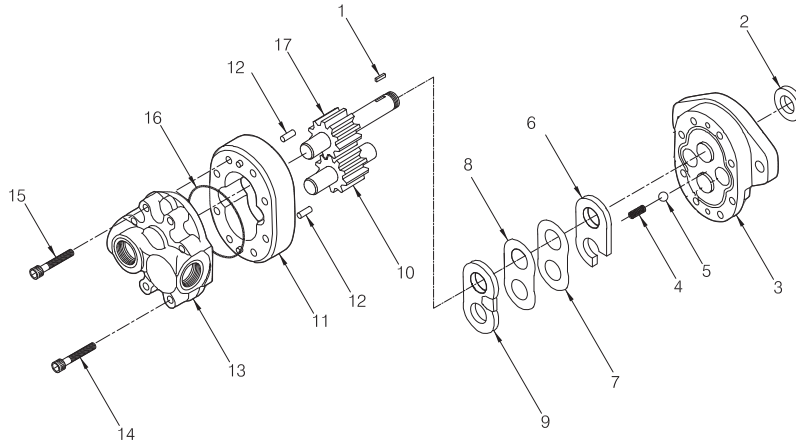


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2302963W	Pump, Hydraulic	1				
1	NSS	. Plate, Front	1	10	*a	NSS . Washer	1
2	NSS	. Plate, Back	1	11	NSS	. Capscrew	4
3	NSS	. Body	1	12	*a	NSS . Gasket	1
4	NSS	. Gear, Drive	1	13	*a	NSS . Seal	1
5	316823W	. Key	1	14	NSS	. Washer	4
6	NSS	. Gear, Idler	1	15	NSS	. Ring, Retaining	1
7	*a	NSS . Plate, Wear	1	16	NSS	. Plug	1
8	*a	NSS . O-Ring	1				
9	*a	NSS . Seal	1				
					*a	Included in Repair Kit 2302937W	

Hydraulic Pump

CCW Rotation

Last Used on S/N AW5C-1008

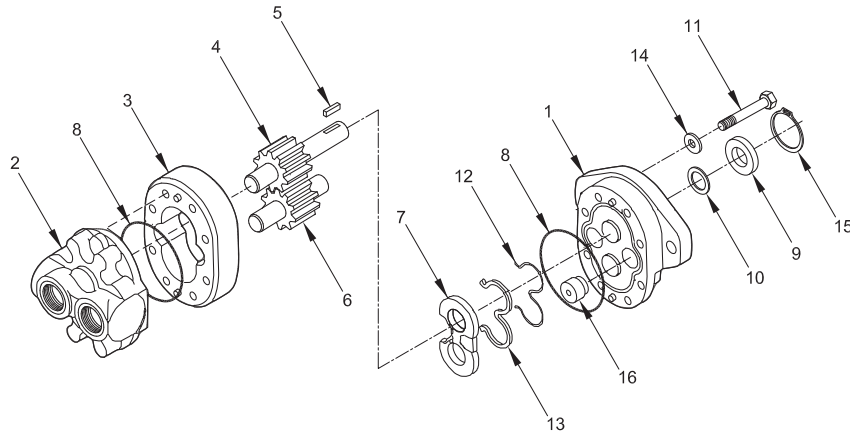


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2301426W	Pump, Hydraulic	1				
1	316823W	. Key	1	11	NSS	. Body	1
2	*a	NSS . Seal	1	12	NSS	. Pin, Dowel	2
3	NSS	. Plate, Front	1	13	NSS	. Plate, Back	1
4	*a	NSS . Spring	2	14	NSS	. Capscrew	4
5	*a	NSS . Ball	2	15	NSS	. Capscrew	4
6	*a	NSS . Seal, Diaphragm	1	16	*a	NSS . O-Ring	1
7	*a	NSS . Gasket	1	17	NSS	. Gear, Drive	1
8	*a	NSS . Gasket, Backup	1				
9	*a	NSS . Diaphragm	1		*a	Included in 171252W Repair Kit	
10	NSS	. Gear, Idler	1				

Hydraulic Pump

CCW Rotation

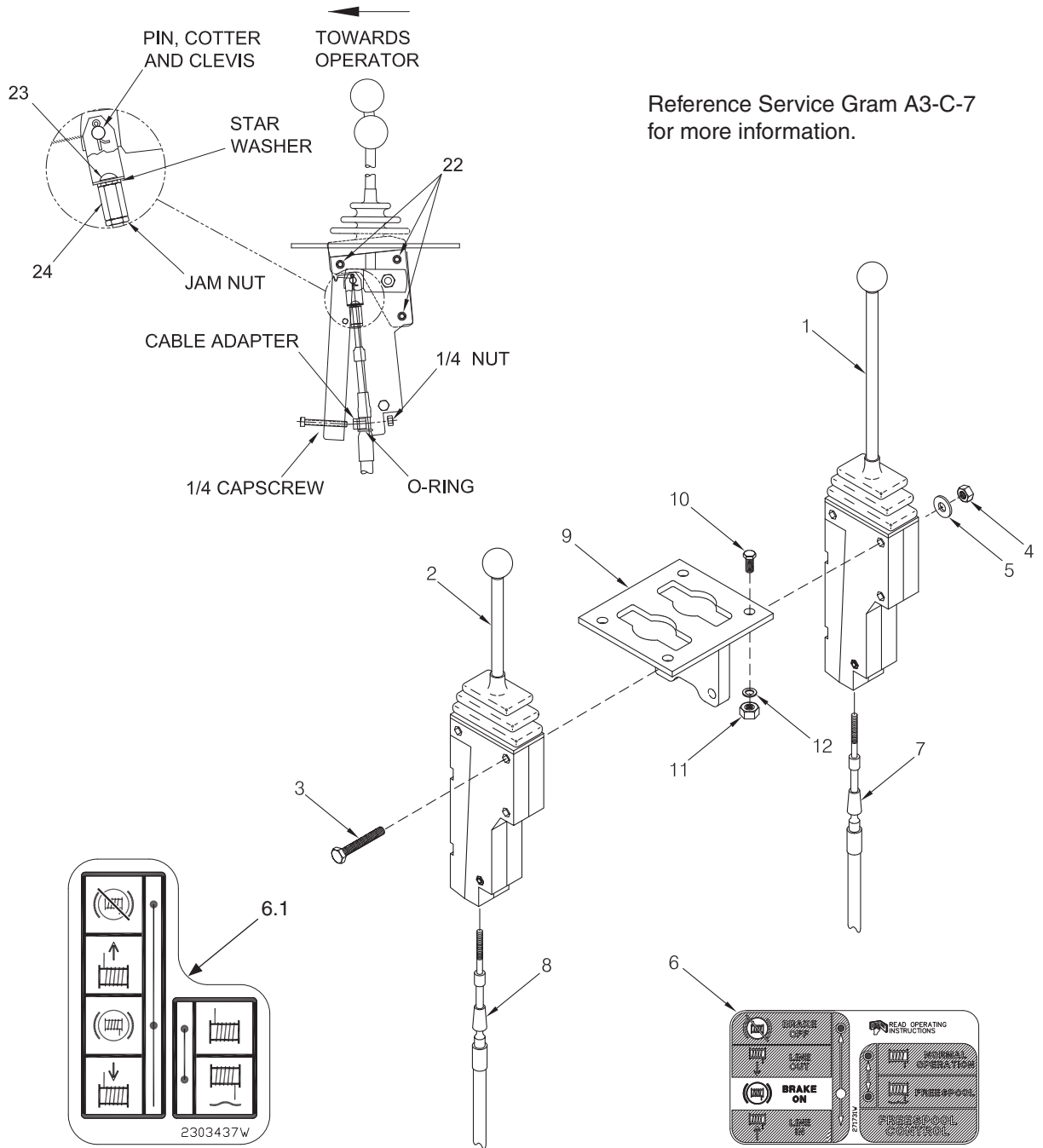
First Used on S/N AW5C-1009



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

Handling Gear, Power Controls

Case 1150 D/E/G (R35)
Last Used on S/N AW5C-1184



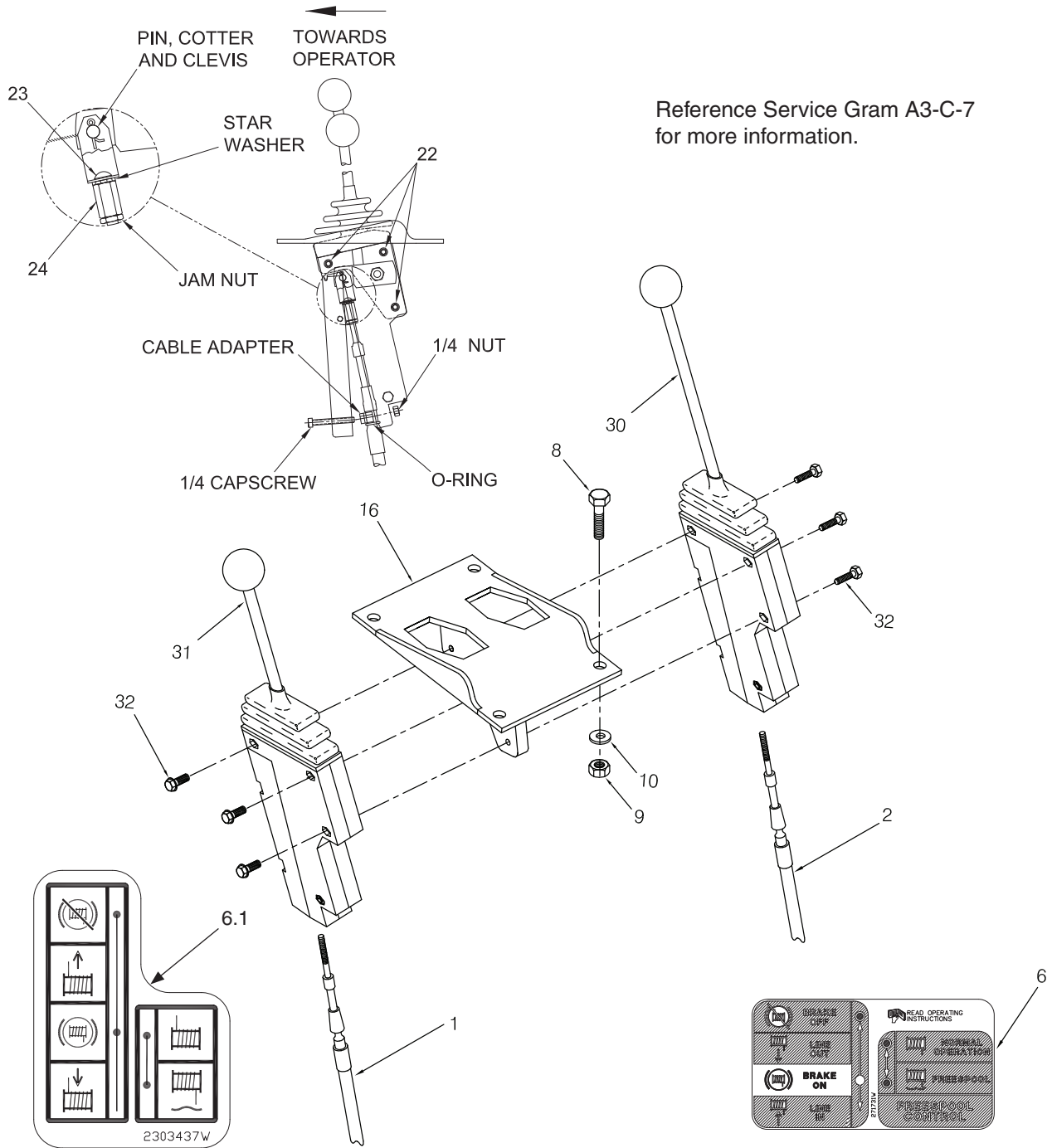
Reference Service Gram A3-C-7 for more information.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	1300785W	Lever, Control (See 3-90)	1	9	2303021W	Bracket	1
2	383880W	Lever, Freespool (See 3-88)	1	10	16805W	Capscrew	3
3	18528W	Capscrew	3	11	15056W	Nut	3
4	191534W	Nut	3	12	15156W	Washer	3
5	18515W	Washer	3	22	2304380W	Capscrew	6
6	271731W	Decal	1	23	*a 18717W	Capscrew	2
6.1	2303437W	Decal, ISO Standard	1	24	383881W	Nut, Tall	2
7	303941W	Cable, Control	1				
8	303943W	Cable, Freespool	1				

*a Used 318702W Thread Lock

Handling Gear, Power Controls

Case 1150 D/E/G (R35), 1150H (R36)
First Used on S/N AW5C-1185

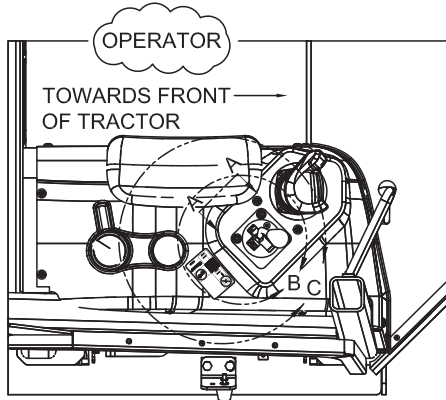


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	303943W	Cable, Freespool	1	22	2304380W	Capscrew	6
2	303941W	Cable, Control	1	23	*b 18717W	Capscrew	2
6	271731W	Decal	1	24	383881W	Nut, Tall	2
6.1	2303437W	Decal, ISO Standard	1	30	2303984W	Lever, Control (See 3-93)	1
8	16805W	Capscrew	3	31	2303982W	Lever, Freespool (See 3-93)	1
9	15056W	Nut	3	32	2304380W	Capscrew	6
10	15156W	Washer	3				
16	2304305W	Bracket	1				
16	*a 2304304W	Bracket	1				
				*a	Used on Case 1150H (R36) Only		
				*b	Used 318702W Thread Lock		

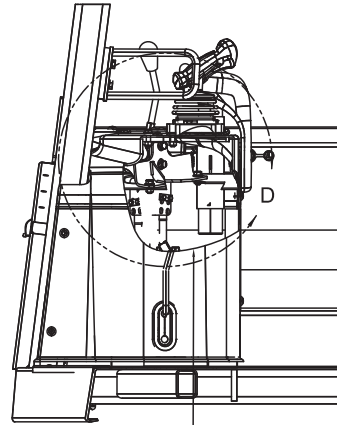
Handling Gear, Power Controls

Case 1150K (R37), 1150M (R371), 1650L (R40),

Reference Service Gram A3-C-7
for more information.

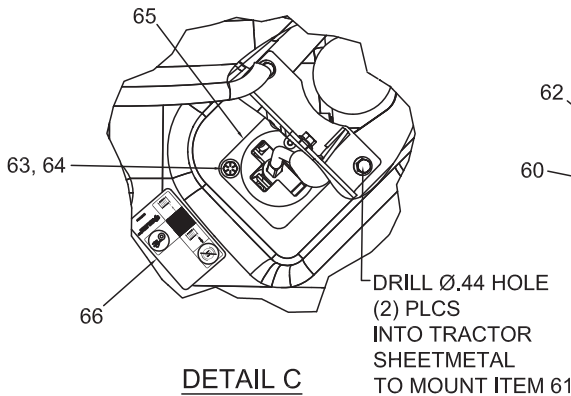


RIGHT HAND SIDE OF CONSOLE
POWER CONTROLS
CONTROL LEVER INSTALLATION

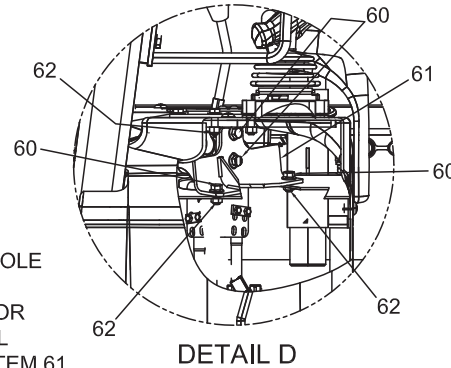


CUTOUT VIEW OF CONSOLE
TO SHOW REINFORCEMENT
BRACKET & CONTROL LEVER

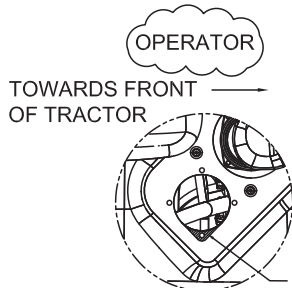
RIGHT HAND SIDE OF CONSOLE
LOOKING TOWARD
BACK OF TRACTOR



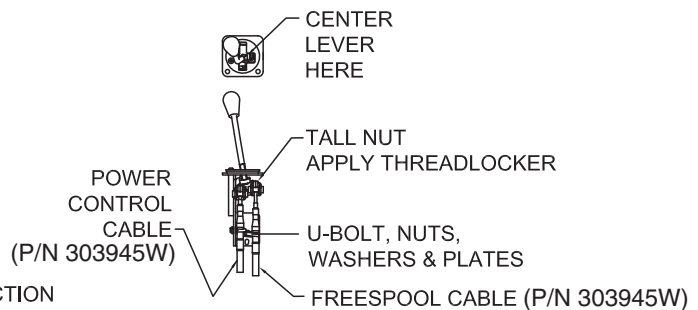
DETAIL C
CUTOUT VIEW TO SHOW
CONTROL LEVER
REINFORCEMENT BRACKET



DETAIL D



DETAIL B
PLASTIC CONSOLE
MODIFICATION

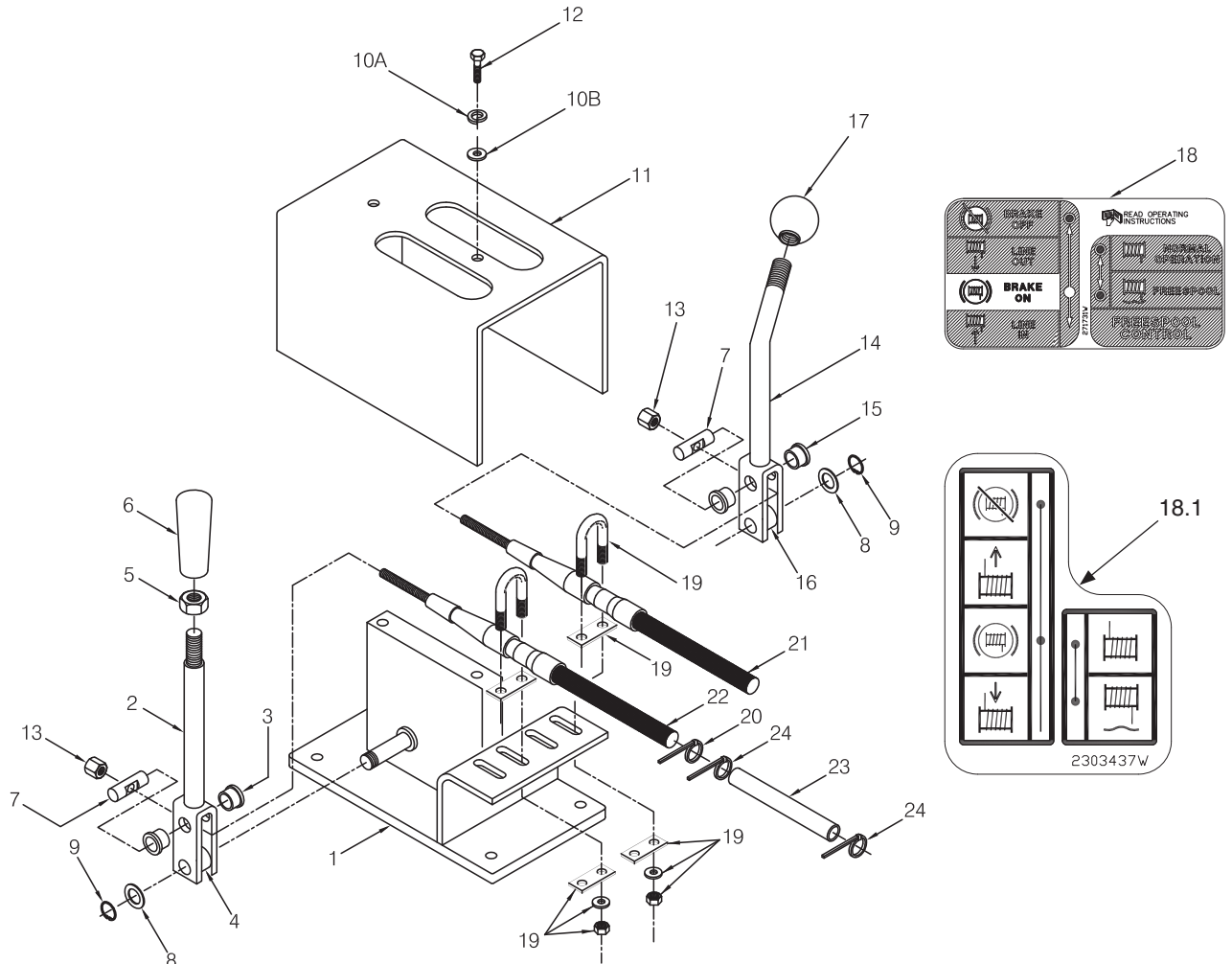


SECTION A-A
DETAIL VIEW OF
CONTROL LEVER & CABLES

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
60	134803W	Screw, Flange	4	64	15134W	Washer	3
61	2310108	Bracket	1	65	2310105	Assembly, Control Lever (See 3-94)	1
62	221707W	Nut	5	66	2306362W	Decal	1
63	221499W	Capscrew	3				

Handling Gear, Power Controls

Caterpillar D4H Series I & II (C360), III and D5H /XL/LGP (C370)

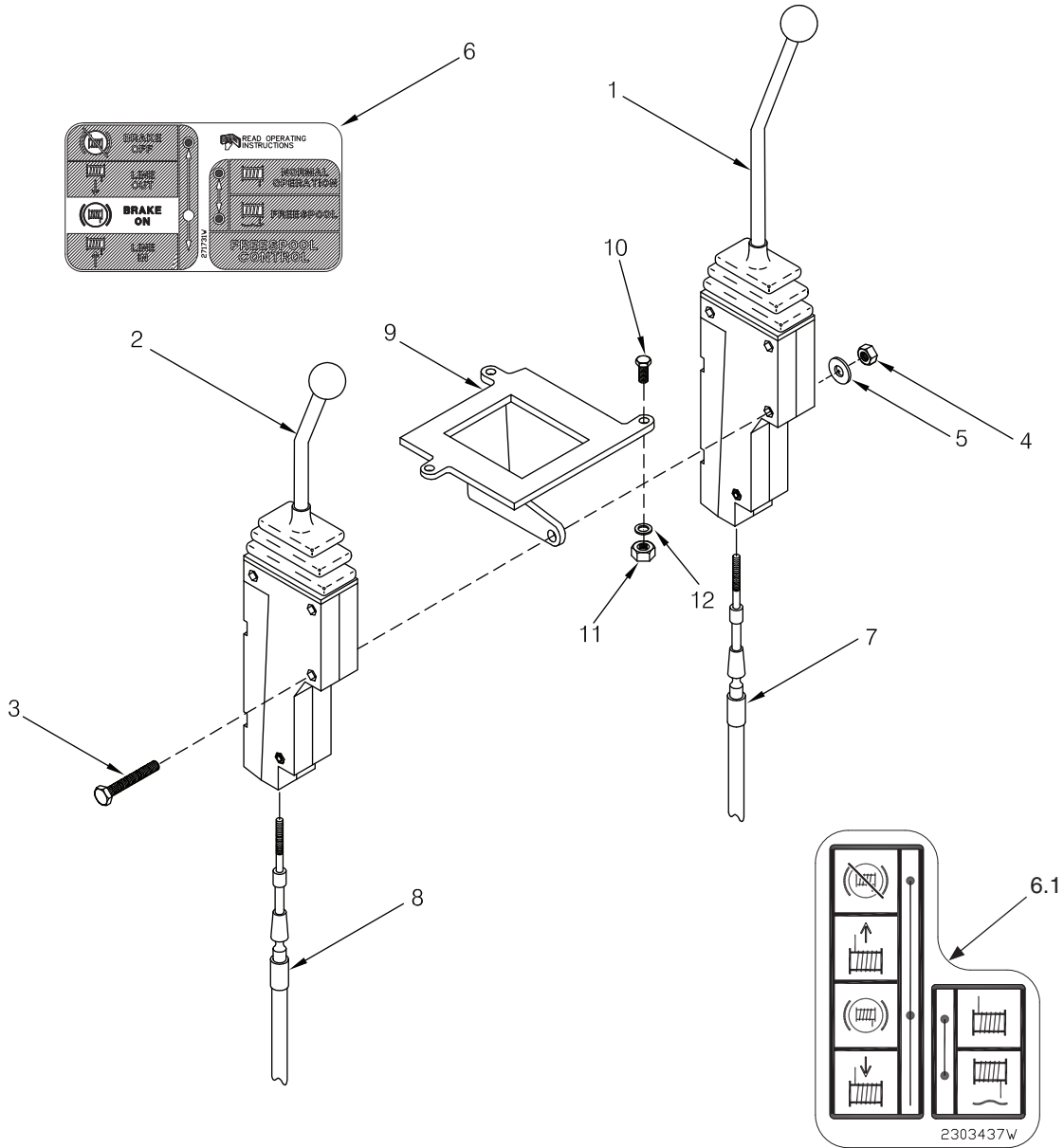


Reference Service Gram A3-C-7
for more information.

Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
	381194W	Assembly, Control Lever	1				
1	381193W	. Bracket	1	13	2301487W	. Nut, Tall	2
2	276036W	. Lever, Control	1	14	276037W	. Lever, Freespool	1
3	196144W	. Bushing, Nylon	2	15	196144W	. Bushing, Nylon	2
4	276043W	. Bushing, Brass	1	16	276043W	. Bushing, Brass	1
5	15030W	. Nut	1	17	243189W	. Knob	1
6	2303105W	. Knob	1	18	271731W	. Decal	1
7	196128W	. Pin	2	18.1	2303437W	. Decal, ISO Standard	1
8	15135W	. Washer	2	19	2300995W	. U-Bolt Kit	2
9	190930W	. Snap Ring	2	20	137852W	. Clamp Strap	1
10A	15155W	. Lockwasher	2	21	303943W	. Cable, Freespool	1
10B	18515W	. Washer	2	22	303942W	. Cable, Control	1
11	332882W	. Cover	1	23	2303039W	. Cable Guard	1
12	16836W	. Capscrew	2	24	137852W	. Clamp Strap	2

Handling Gear, Power Controls

Caterpillar D5M and D6M (C29)
Last Used on S/N AW5C-1192

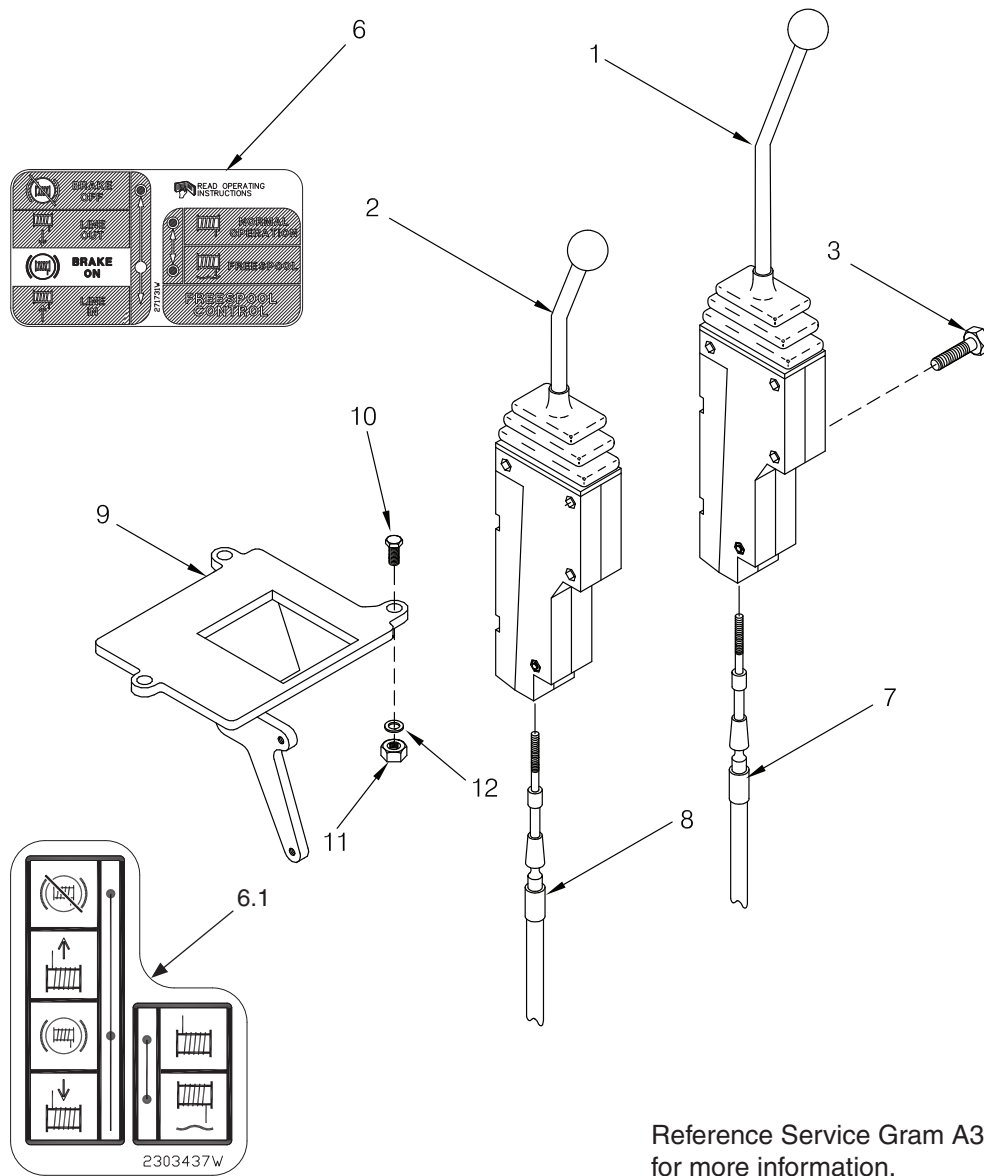


Reference Service Gram A3-C-7
for more information.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303120W	Lever, Control (See 3-89)	1	8	303943W	Cable, Freespool	1
2	388634W	Lever, Freespool (See 3-92)	1	9	2303071W	Bracket, Control Lever	1
3	18526W	Capscrew	3	10	*a	-----	3
4	15055W	Nut	3	11	*a	-----	3
5	18515W	Washer	3	12	*a	-----	3
6	271731W	Decal	1				
6.1	2303437W	Decal, ISO Standard	1		*a	Use Existing Hardware	
7	303942W	Cable, Control	1				

Handling Gear, Power Controls

Caterpillar D5M and D6M (C29)
 First Used on S/N AW5C-1193

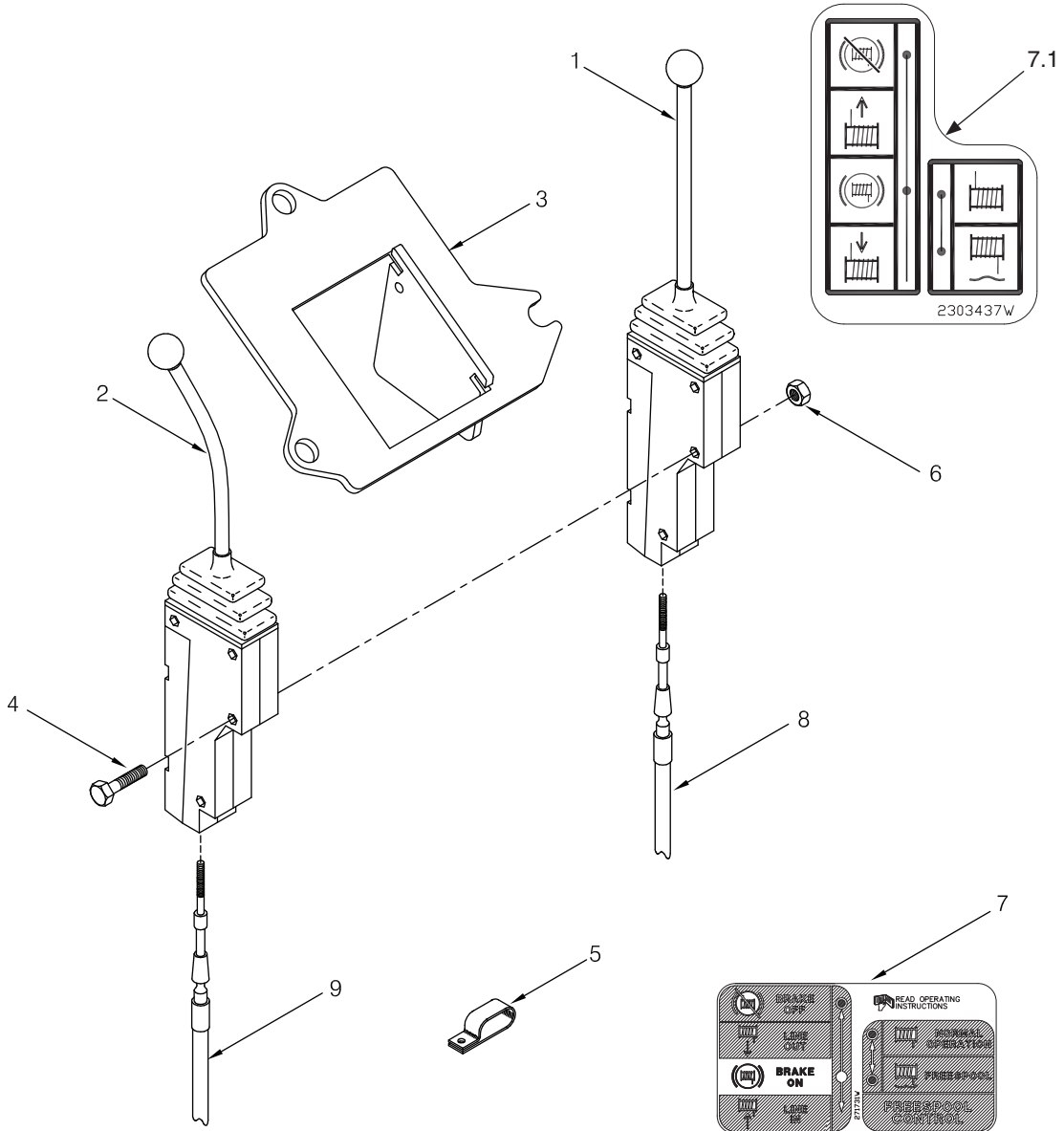


Reference Service Gram A3-C-7
 for more information.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303987W	Lever, Control (See 3-93)	1	9	2304389W	Bracket, Control Lever	1
2	2303983W	Lever, Freespool (See 3-93)	1	10	*a	-----	3
3	2304381W	Capscrew	3	11	*a	-----	3
6	271731W	Decal	1	12	*a	-----	3
6.1	2303437W	Decal, ISO Standard	1				
7	303942W	Cable, Control	1		*a	Use Existing Hardware	
8	303943W	Cable, Freespool	1				

Handling Gear, Power Controls

Caterpillar D5N XL/LGP PS (C28) and D6N XL (C47)



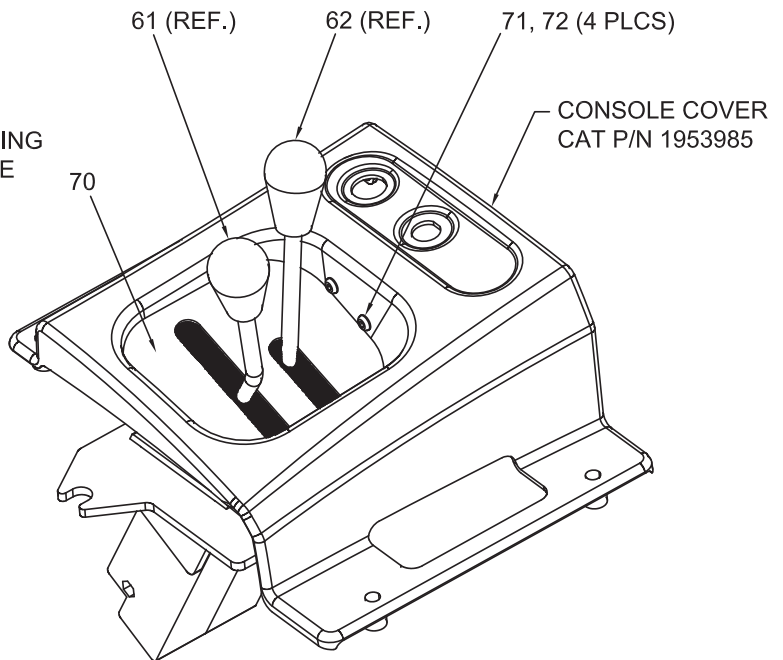
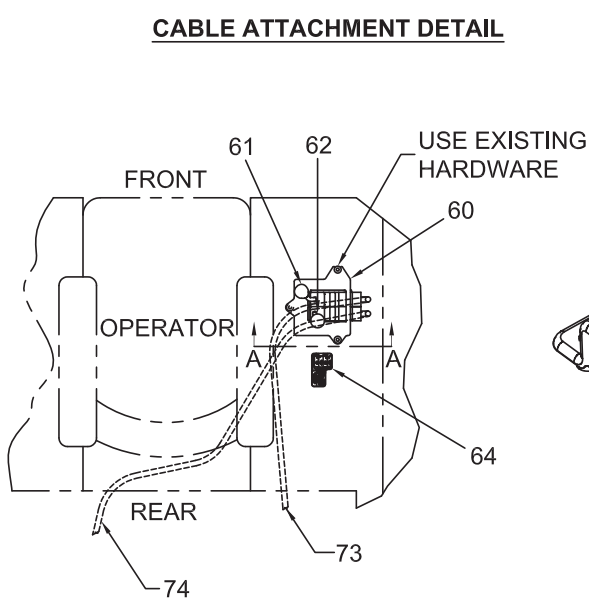
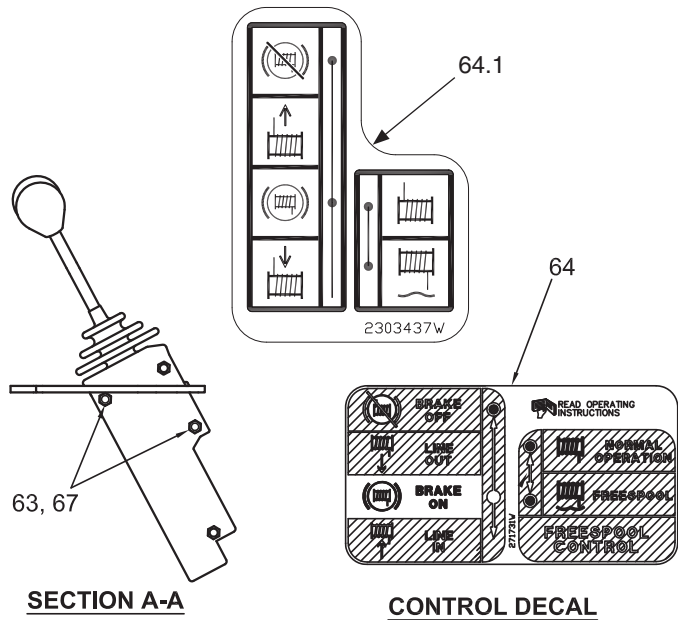
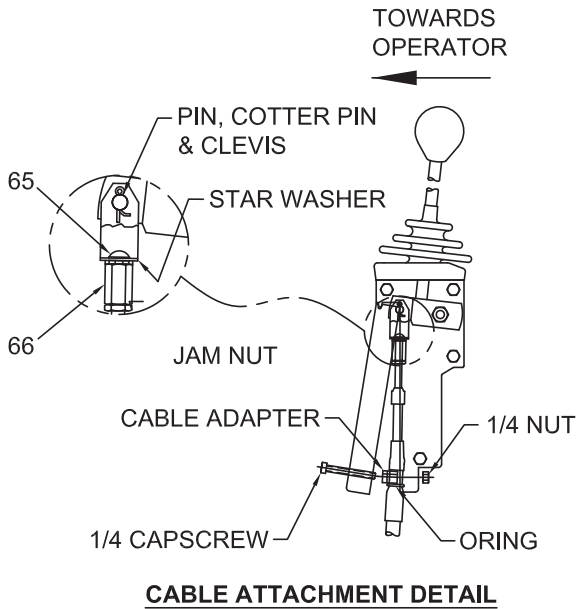
Reference Service Gram A3-C-7
for more information.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2303982W	Lever, Control (See 3-93)	1	7	271731W	Decal	1
2	2303986W	Lever, Freespool (See 3-93)	1	7.1	2303437W	Decal, ISO Standard	1
3	2305612W	Bracket, Control Lever	1	8	303939W	Cable, Control	1
4	*a 2301054W	Capscrew	2	9	303942W	Cable, Freespool	1
5	15054W	Nut	2				
6	137852W	Clamp, Strap	AR				
				*a	Use 318702W Thread Lock		

Handling Gear, Power Controls

Caterpillar D5N (C28, C77) and D6N (C47, C78)
For Tractors with *Mechanical Controls*[†]

[†] See Figure A in Section 0 for details.



Reference Service Gram A3-C-7 for more information.

Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
60	2305612W	Bracket, Control Lever	1	67	15054W	Nut	2
61	2305979W	Lever, Control	1	70	2305977W	Plate, Control Lever Cover	1
62	2305978W	Lever, Freespool	1	71	*a 18717W	Capscrew	4
63	*a 2301054W	Capscrew	2	72	15004W	Nut	4
64	271731W	Decal	1	73	303941W	Cable, Control	1
64.1	2303437W	Decal, ISO Standard	1	74	303943W	Cable, Freespool	1
65	*a 18717W	Capscrew	2				
66	383881W	Nut, Tall	2		*a Use 318702W Thread Lock		

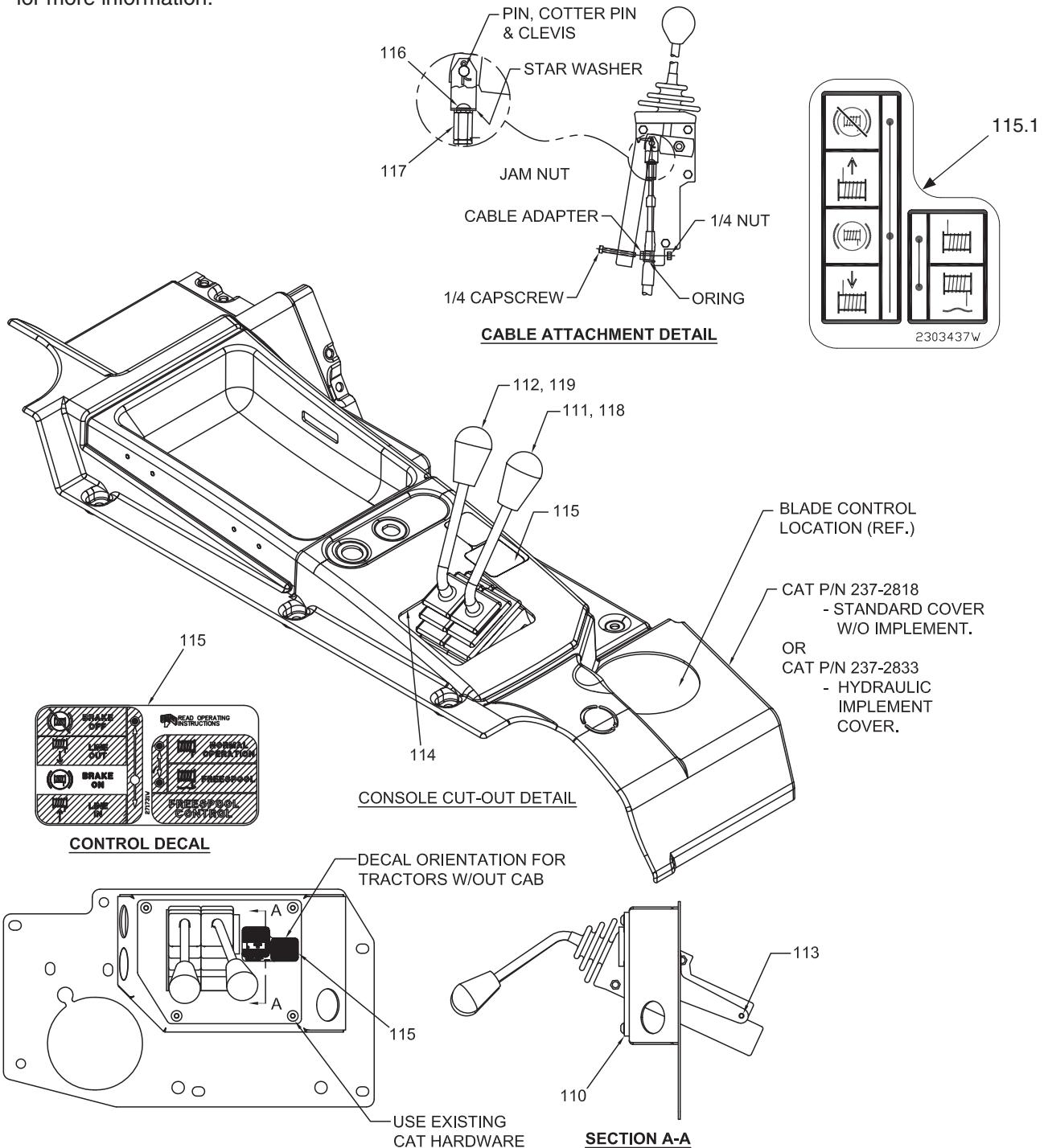
Handling Gear, Power Controls

Caterpillar D5N (C28, C77) and D6N (C47, C78)
For Tractors with *Pilot Hydraulic Controls*†

Reference Service Gram A3-C-7 for more information.

TOWARDS OPERATOR
←

† See Figure A in Section 0 for details.

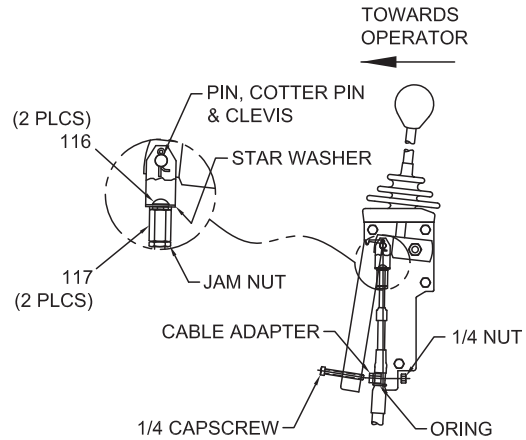
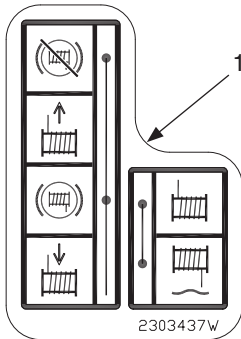


Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
110	2306661W	Bracket, Control Lever	1	116	*a 18717W	Capscrew	2
111	2306703W	Lever, Control	1	117	383881W	Nut, Tall	2
112	2306704W	Lever, Freespool	1	118	303941W	Cable, Control	1
113	2304381W	Capscrew	2	119	303943W	Cable, Freespool	1
114	225871	Trim, Edge	2 FT				
115	271731W	Decal	1		*a	Use 318702W Thread Lock	
115.1	2303437W	Decal, ISO Standard	1				

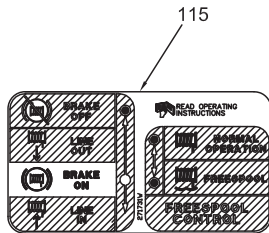
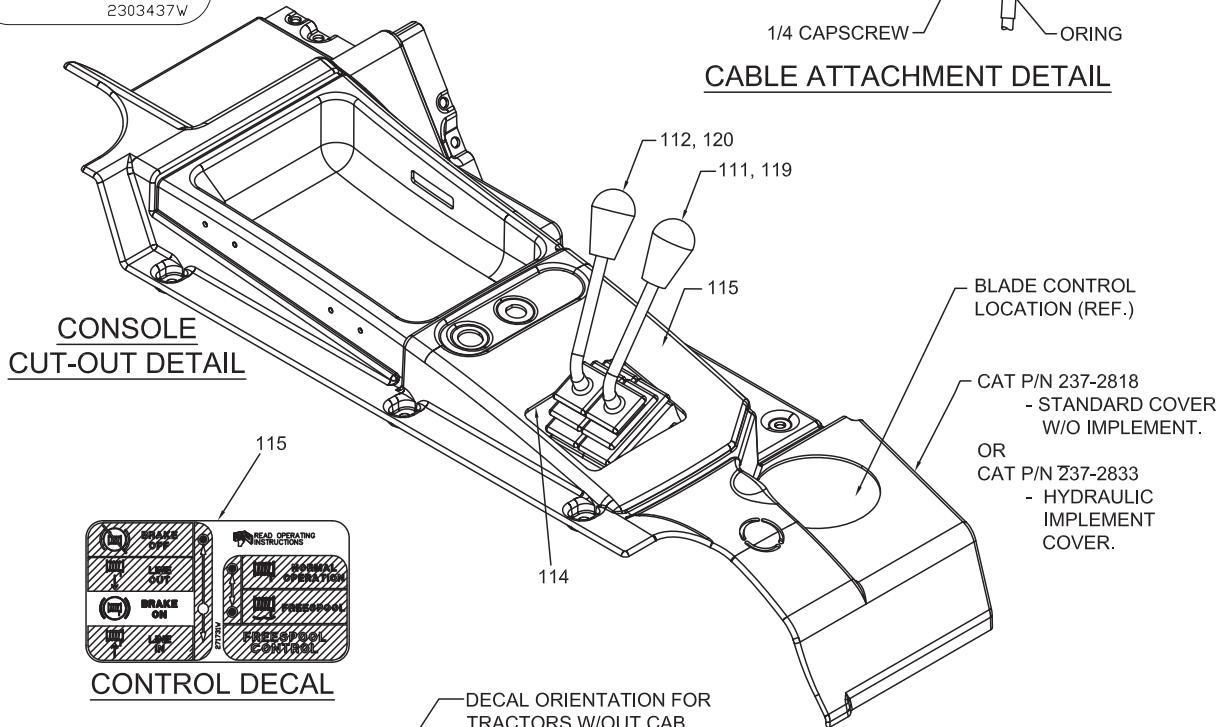
Handling Gear, Power Controls

Caterpillar D6N (C81)

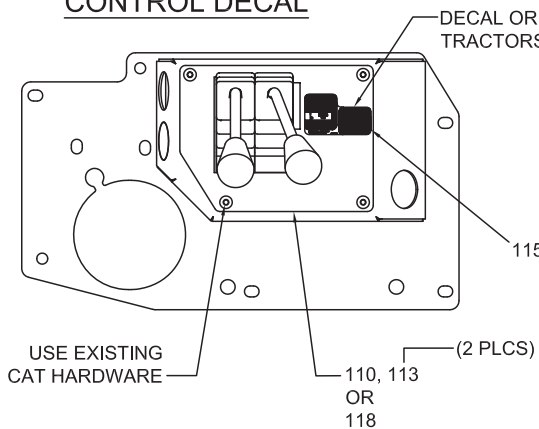
Reference Service Gram A3-C-7 for more information.



CABLE ATTACHMENT DETAIL



CONTROL DECAL



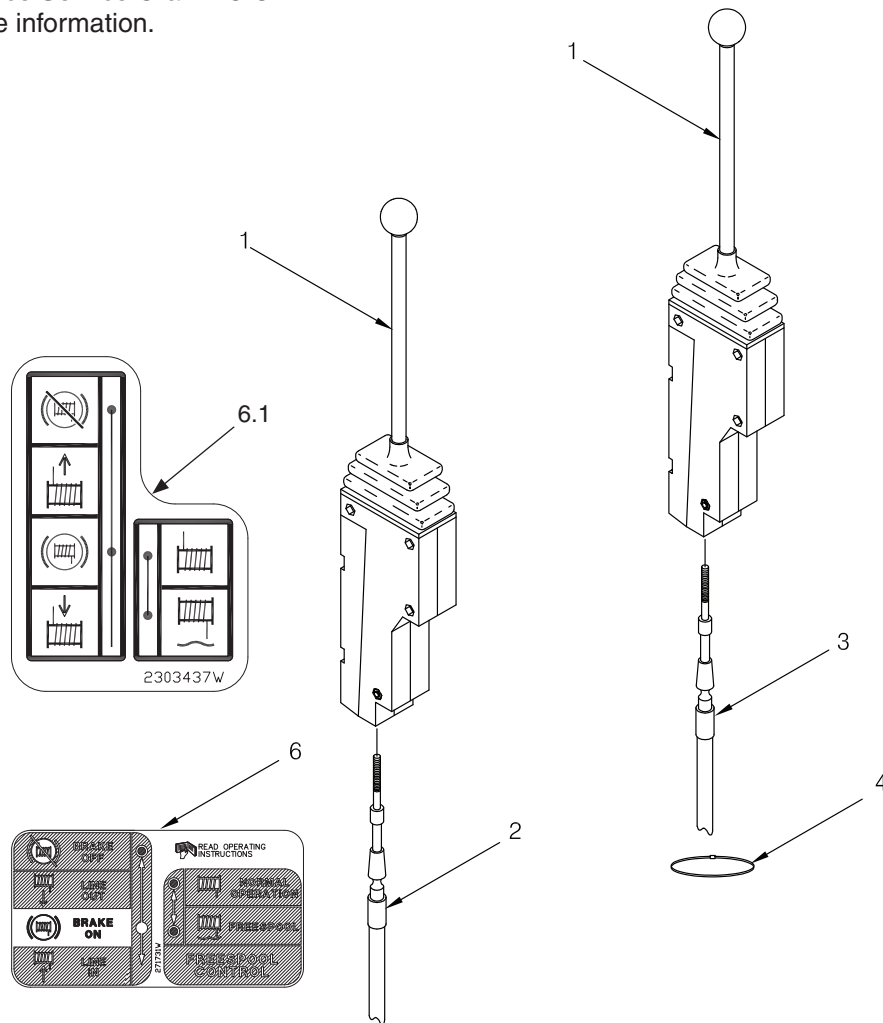
NOTE:
IF TRACTOR USES OPERATOR CONSOLE P/N 237-7283 FOR ALTERNATE WINCH, THE RH CONSOLE MUST BE REPLACED WITH CAT P/N 239-2833 OR P/N 237-2818 PRIOR TO CONTROL LEVER INSTALLATION FOR ALLIED WINCH.

Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
110	2306661W	Bracket, Control Lever	1	116	*a 18717W	Capscrew	2
111	2306703W	Lever, Control	1	117	383881W	Nut ,Tall	2
112	2306704W	Lever, Freespool	1	118	2314138	Bracket, Control Lever	1
113	2304381W	Capscrew	2	119	303941W	Cable, Control	1
114	225871	Trim, Edge	2 FT	120	303943W	Cable, Freespool	1
115	271731W	Decal	1				
115.1	2303437W	Decal, ISO Standard	1		*a	Use 318702W Thread Lock	

Handling Gear, Power Controls

Caterpillar D6H and D6R (C381)

Reference Service Gram A3-C-7
for more information.

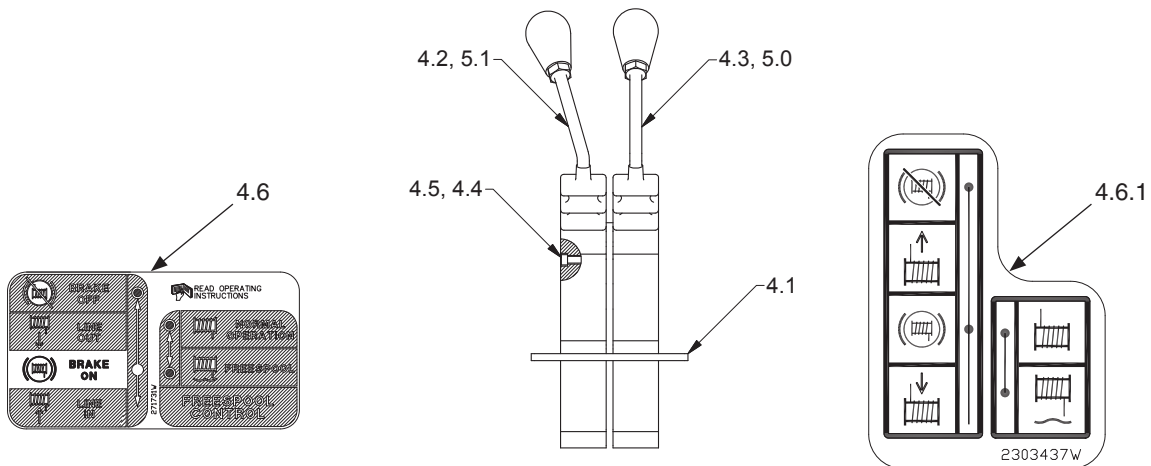
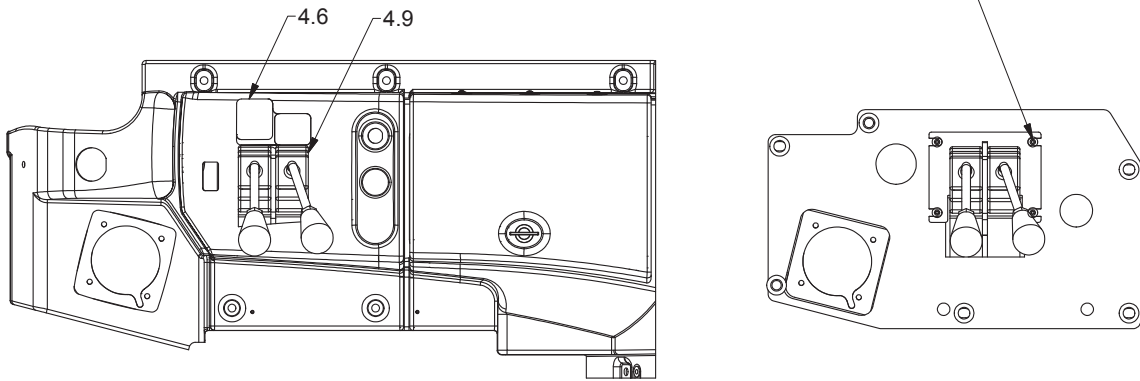


Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1	*a 388634W	Lever, Control/Freespool (See 3-92)	2	6	271731W	Decal	1
	*b 2303983W	Lever, Control/Freespool (See 3-93)	2	6.1	2303437W	Decal, ISO Standard	1
2	303941W	Cable, Freespool	1				
3	303941W	Cable, Control	1				
4	129563W	Clamp, Strap	1				
					*a	Last Used on S/N AW5C-1192	
					*b	First Used on S/N AW5C-1193	

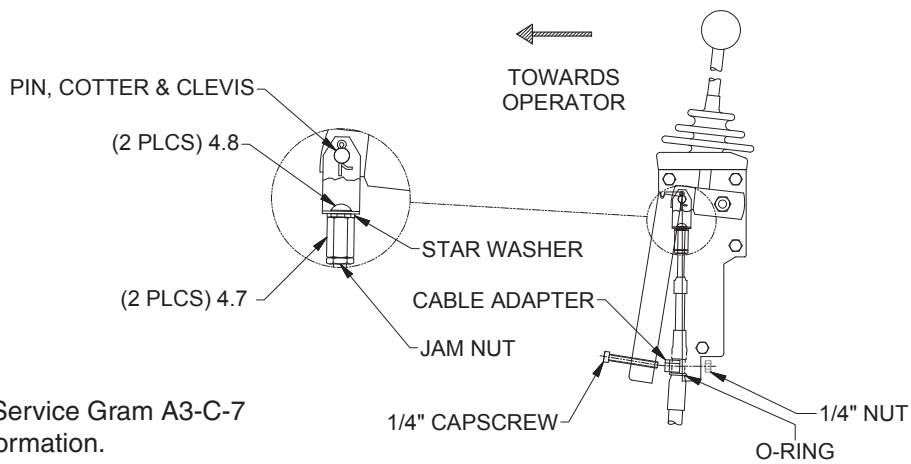
Handling Gear, Power Controls

Caterpillar D6N Tier 4i (C810)

USE EXISTING CAT HARDWARE



P-CONTROLS ASSEMBLY



Reference Service Gram A3-C-7 for more information.

CABLE ATTACHMENT DETAIL*

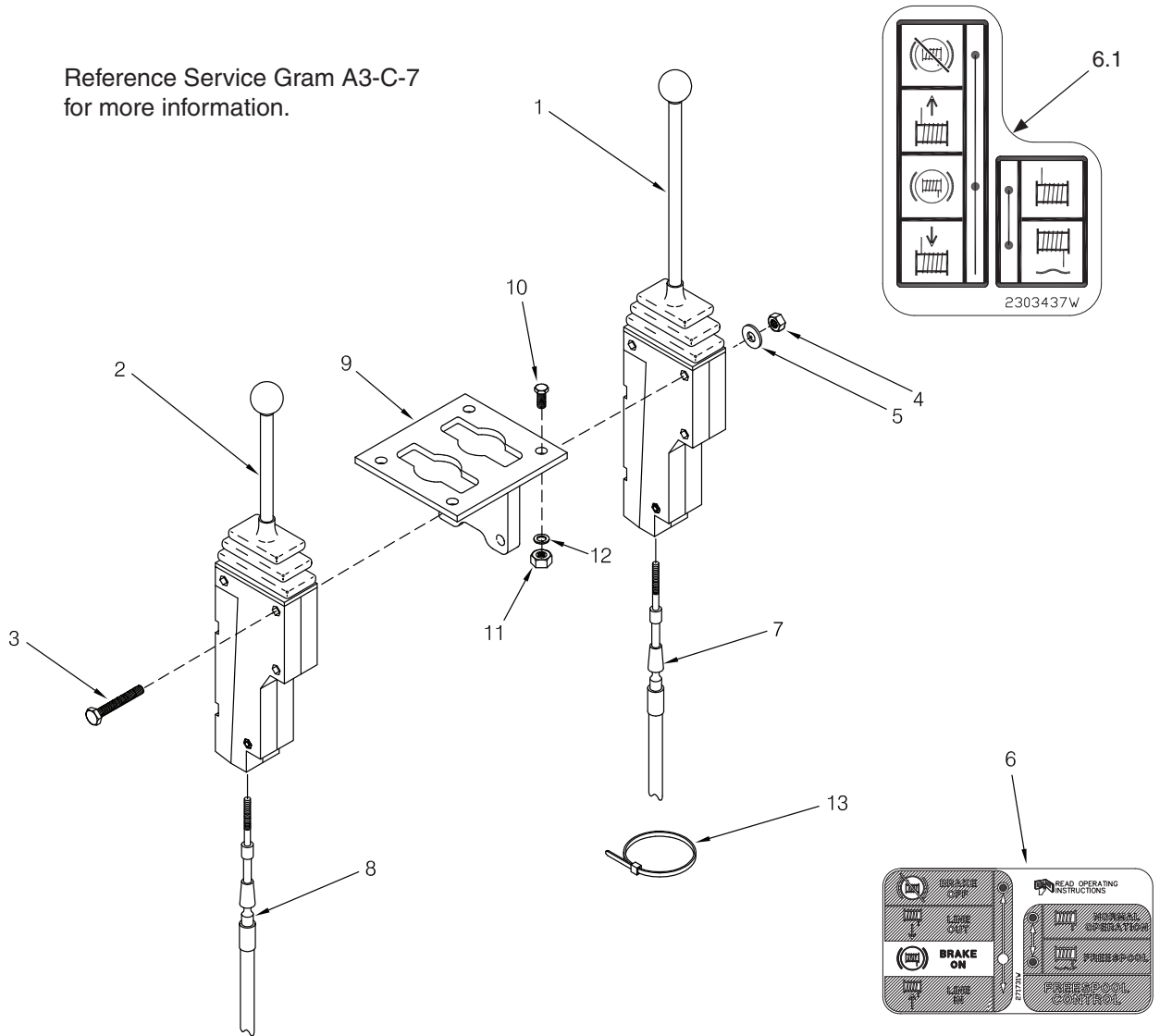
Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
4.1	2314643	Mount, Control Lever	1	4.7	383881W	Nut, Tall	2
4.2	2306704W	Lever, Freespool	1	4.8	*a 18717W	Capscrew	2
4.3	2306703W	Lever, Control	1	4.9	225871	Trim, Edge	2 Ft
4.4	2304878W	Capscrew	3	5.0	303941W	Cable, Control	1
4.5	221703W	Nut	3	5.1	303943W	Cable, Freespool	1
4.6	271731W	Decal	1				
4.6.1	2303437W	Decal, ISO Standard	1		*a	Use 318702W Thread Lock	

Handling Gear, Power Controls

Caterpillar Challenger D65/75/85/95 (C390)

Last Used on S/N AW5C-1184

Reference Service Gram A3-C-7
for more information.

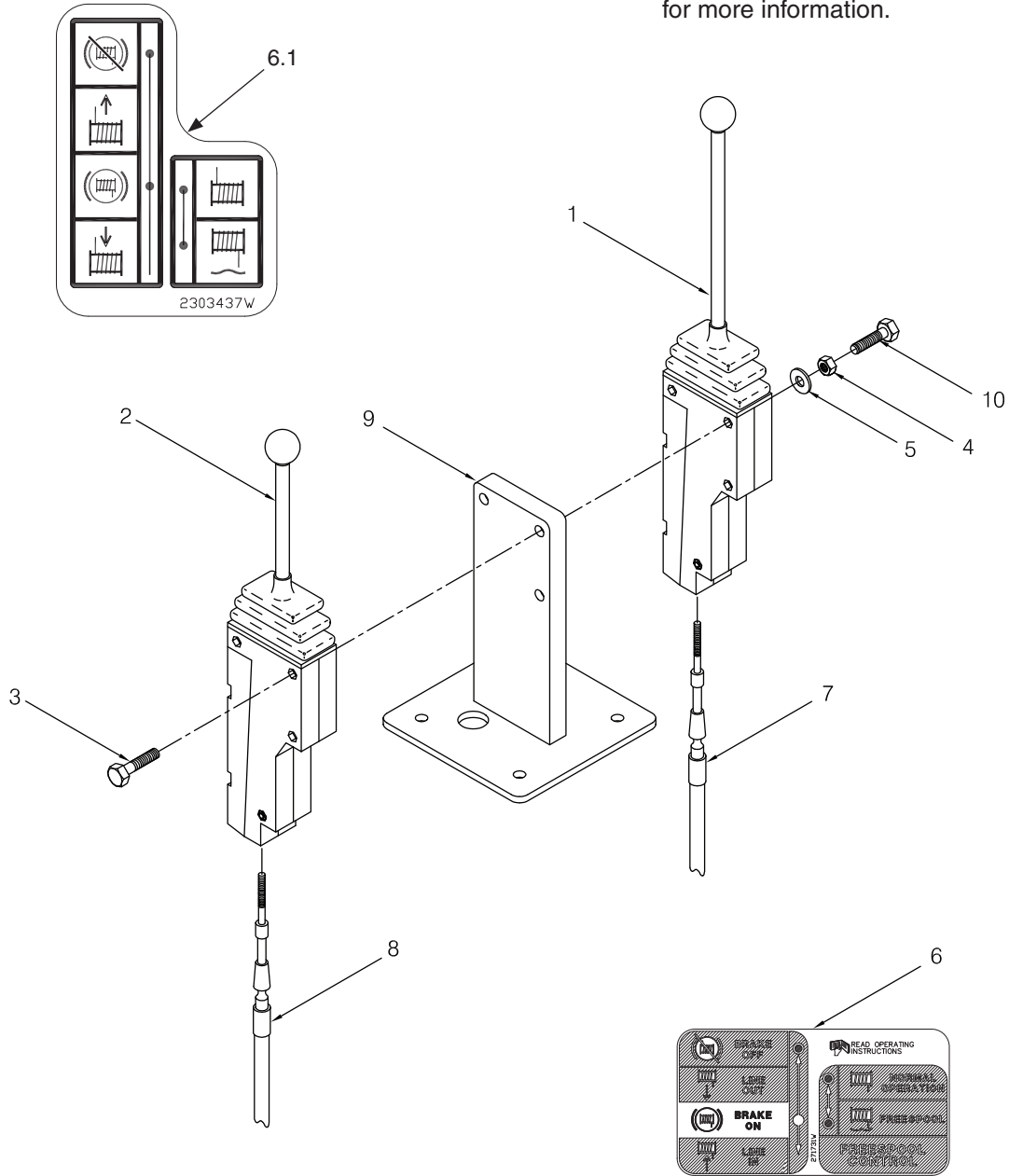


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	1300785W	Lever, Control (See 3-90)	1	8	303944W	Cable, Freespool	1
2	383880W	Lever, Freespool (See 3-88)	1	9	2301030W	Bracket	1
3	18528W	Capscrew	3	10	16828W	Capscrew	4
4	191534W	Nut	3	11	221707W	Nut	4
5	18515W	Washer	3	12	15134W	Washer	8
6	271731W	Decal	1	13	114312W	Clamp, Strap	5
6.1	2303437W	Decal, ISO Standard	1	14	2301055W	Trim (Not Illustrated)	AR
7	303944W	Cable, Control	1				

Handling Gear, Power Controls

Dresser/Dressta TD12B and TD12C (H35)

Reference Service Gram A3-C-7
for more information.

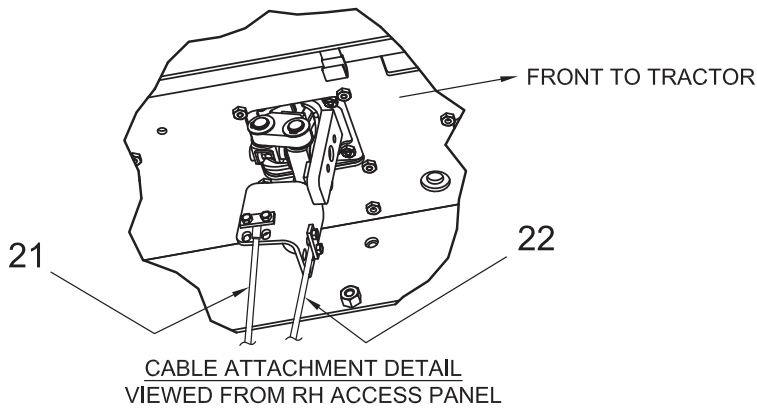
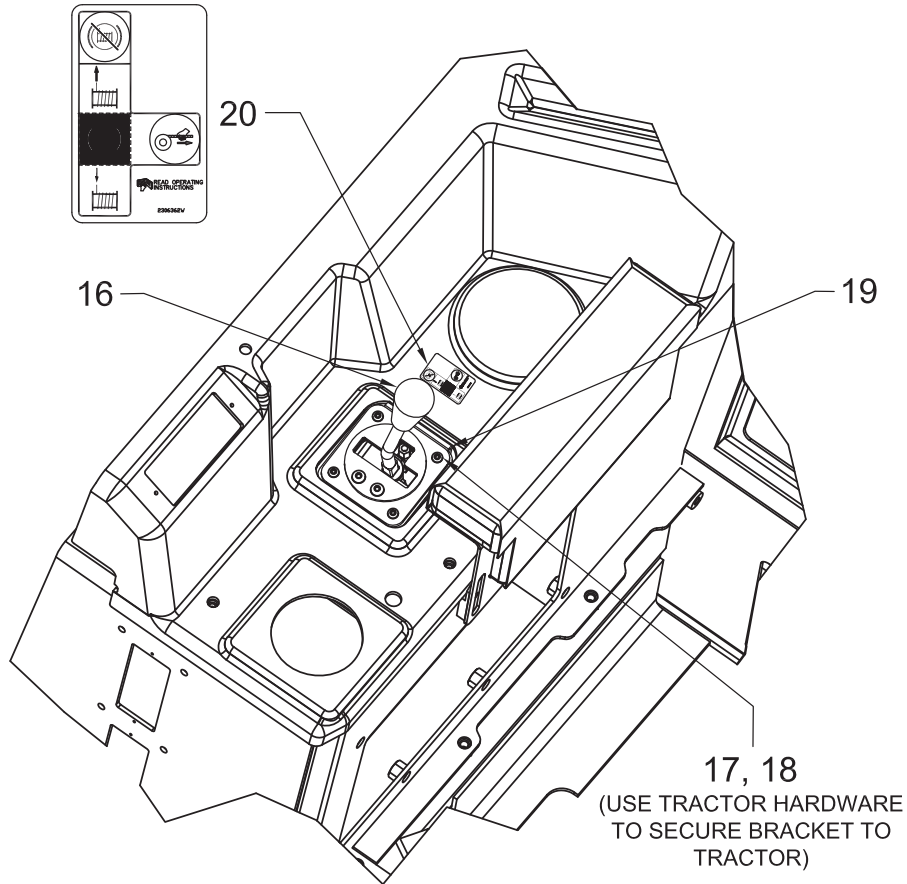


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*a 1300785W	Lever, Control (See 3-90)	1	6.1	2303437W	Decal, ISO Standard	1
	*b 2303984W	Lever, Control (See 3-93)	1	7	303942W	Cable, Control	1
2	*a 383880W	Lever, Freespool (See 3-88)	1	8	303943W	Cable, Freespool	1
	*b 2303982W	Lever, Freespool (See 3-93)	1	9	*a 2300369W	Bracket	1
3	*a 18528W	Capscrew	3		*b 2304387W	Bracket	1
	*b 2304308W	Capscrew	3	10	*b 2304308W	Capscrew	3
4	*a 191534W	Nut	3		*a	Last Used on S/N AW5C-1191	
5	*a 18515W	Washer	3		*b	First Used on S/N AW5C-1192	
6	271731W	Decal	1				

Handling Gear, Power Controls

Dresser TD14M (H38)

Reference Service Gram A3-C-7
for more information.

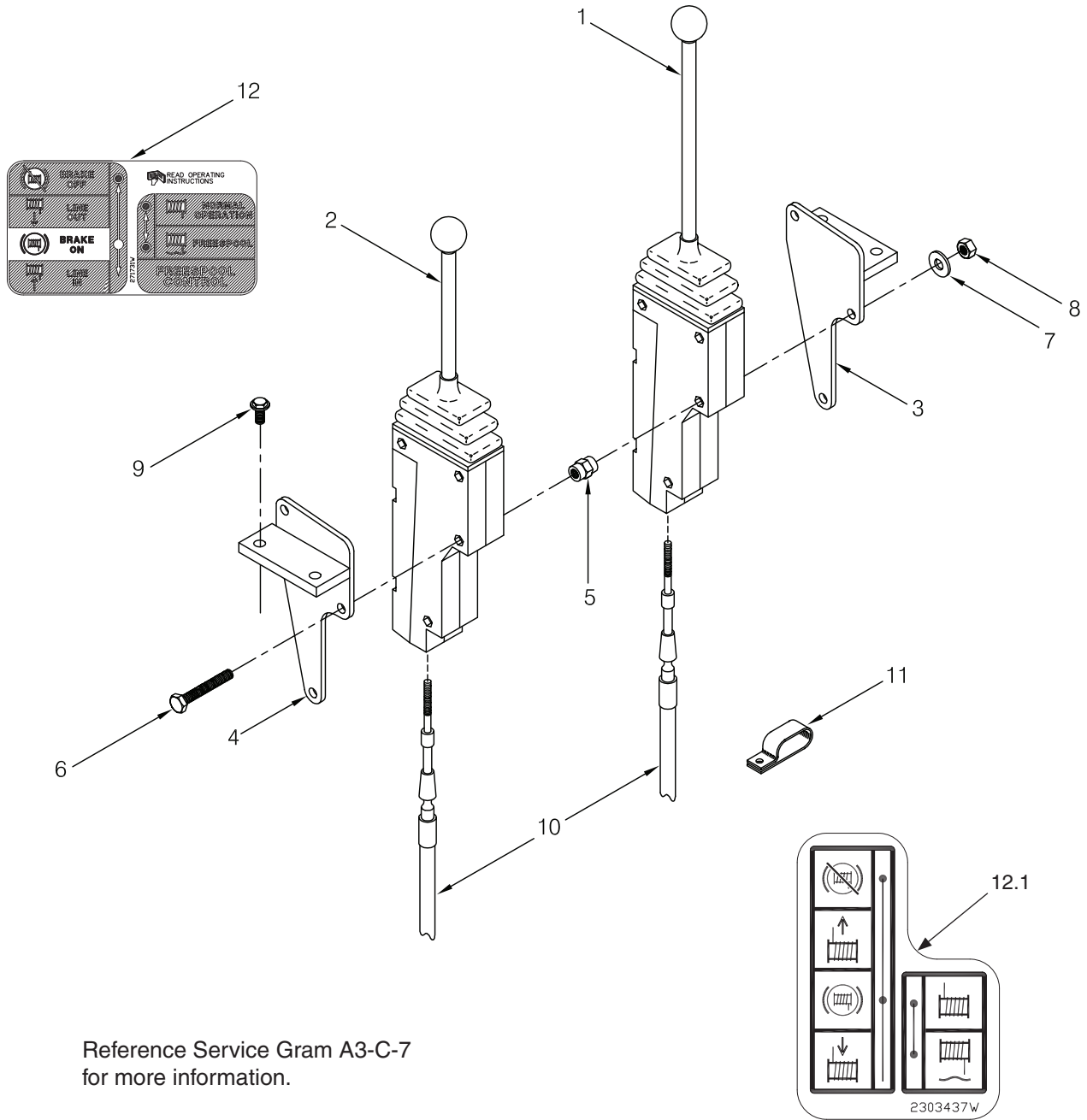


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
16	2310118	Lever, Control (See 3-95)	1	20	2306362W	Decal	1
17	Y25G-0408	Capscrew	4	21	303943W	Cable, Freespool	1
18	15127W	Washer	4	22	303942W	Cable, Control	1
19	2310116	Bracket	1				

Handling Gear, Power Controls

Fiat-Hitachi/New Holland FD/FH 14E (A48)

Last Used on S/N AW5C-1191

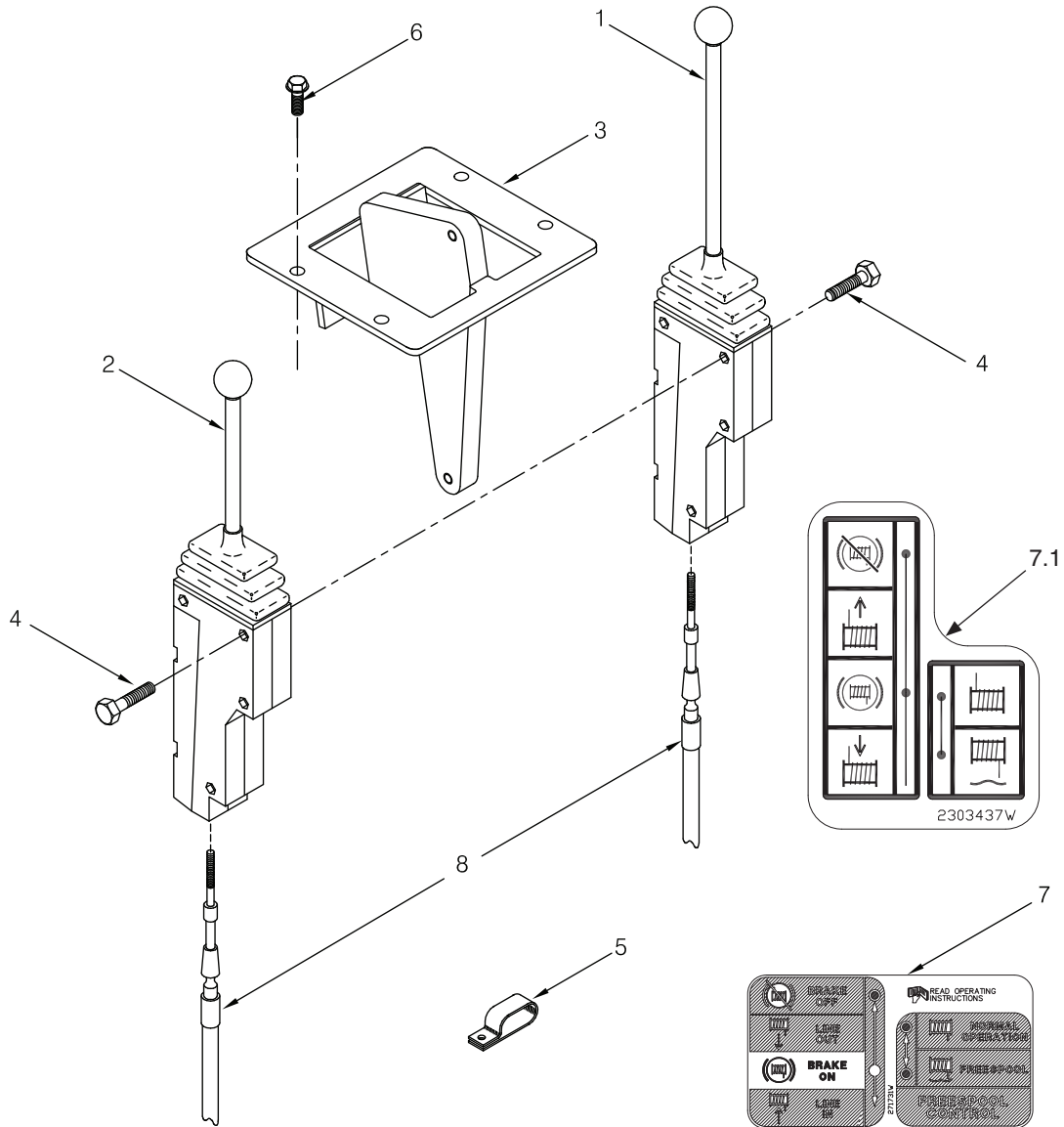


Reference Service Gram A3-C-7
for more information.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	1321651W	Assembly, Control Lever	1	7	15155W	. Washer	3
1	1300785W	. Lever, Control (3-90)	1	8	15055W	. Nut	3
2	383880W	. Lever, Freespool (3-88)	1	9	397161W	Capscrow	4
3	1308437W	. Bracket, RH	1	10	303945W	Cable, Control & Freespool	2
4	1308436W	. Bracket, LH	1	11	110322W	Clamp, Strap	2
5	16168W	. Spacer	3	12	271731W	Decal	1
6	18530W	. Capscrew	3	12.1	2303437W	Decal, ISO Standard	1

Handling Gear, Power Controls

Fiat-Hitachi/New Holland FD/FH 14E (A48)
First Used on S/N AW5C-1192



Reference Service Gram A3-C-7
for more information.

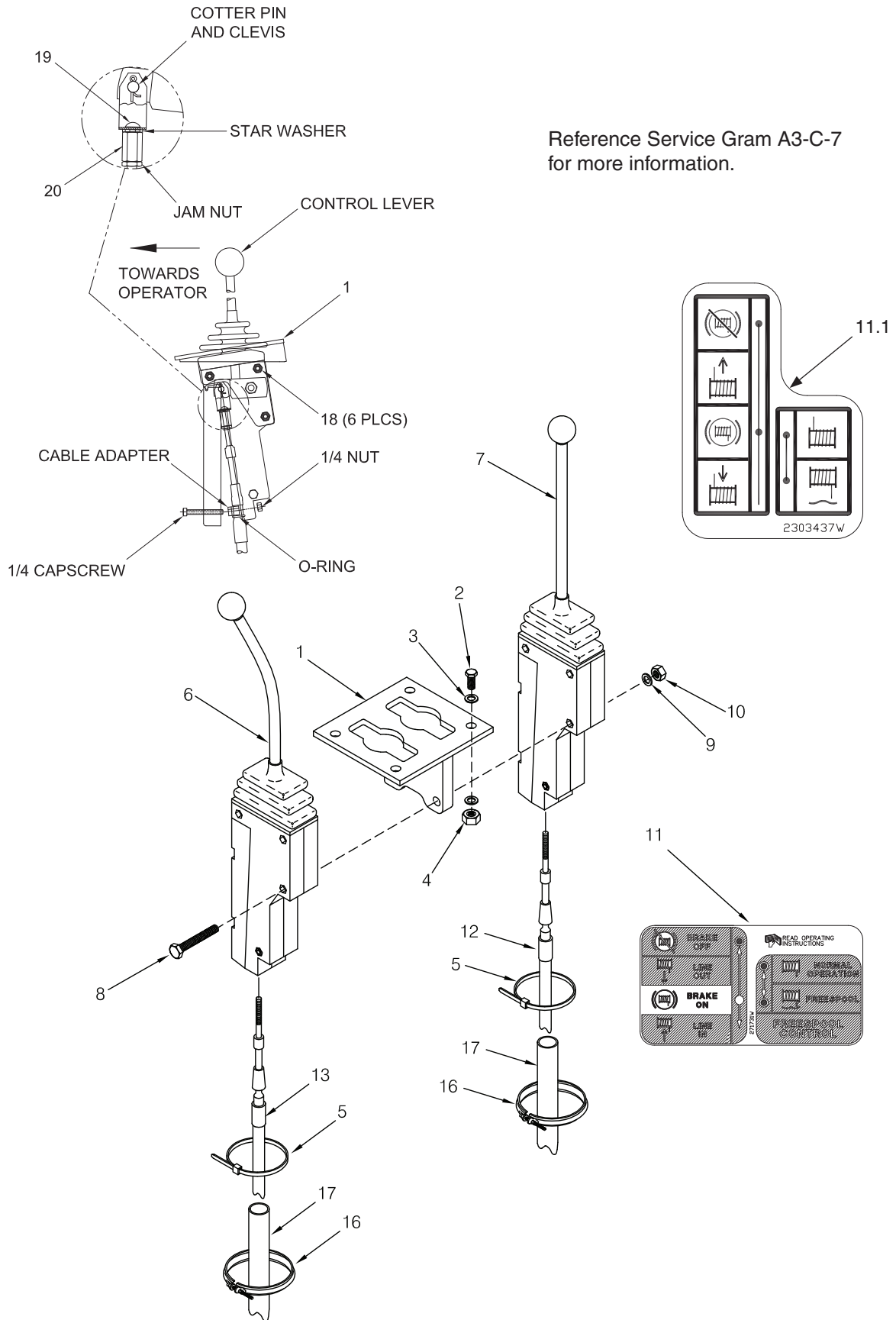
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2304329W	Assembly, Control Lever	1				
1	2303984W	. Lever, Control (3-93)	1	6	397161W	Screw, Flange	4
2	2303982W	. Lever, Freespool (3-93)	1	7	271731W	Decal	1
3	2304394W	. Bracket, Control Lever	1	7.1	2303437W	Decal, ISO Standard	1
4	2304380W	. Capscrew	6	8	303945W	Cable, Control & Freespool	2
5	110322W	Clamp, Strap	2				

Intentionally Blank

Handling Gear, Power Controls

John Deere 700H (E40)

Page 1 of 2

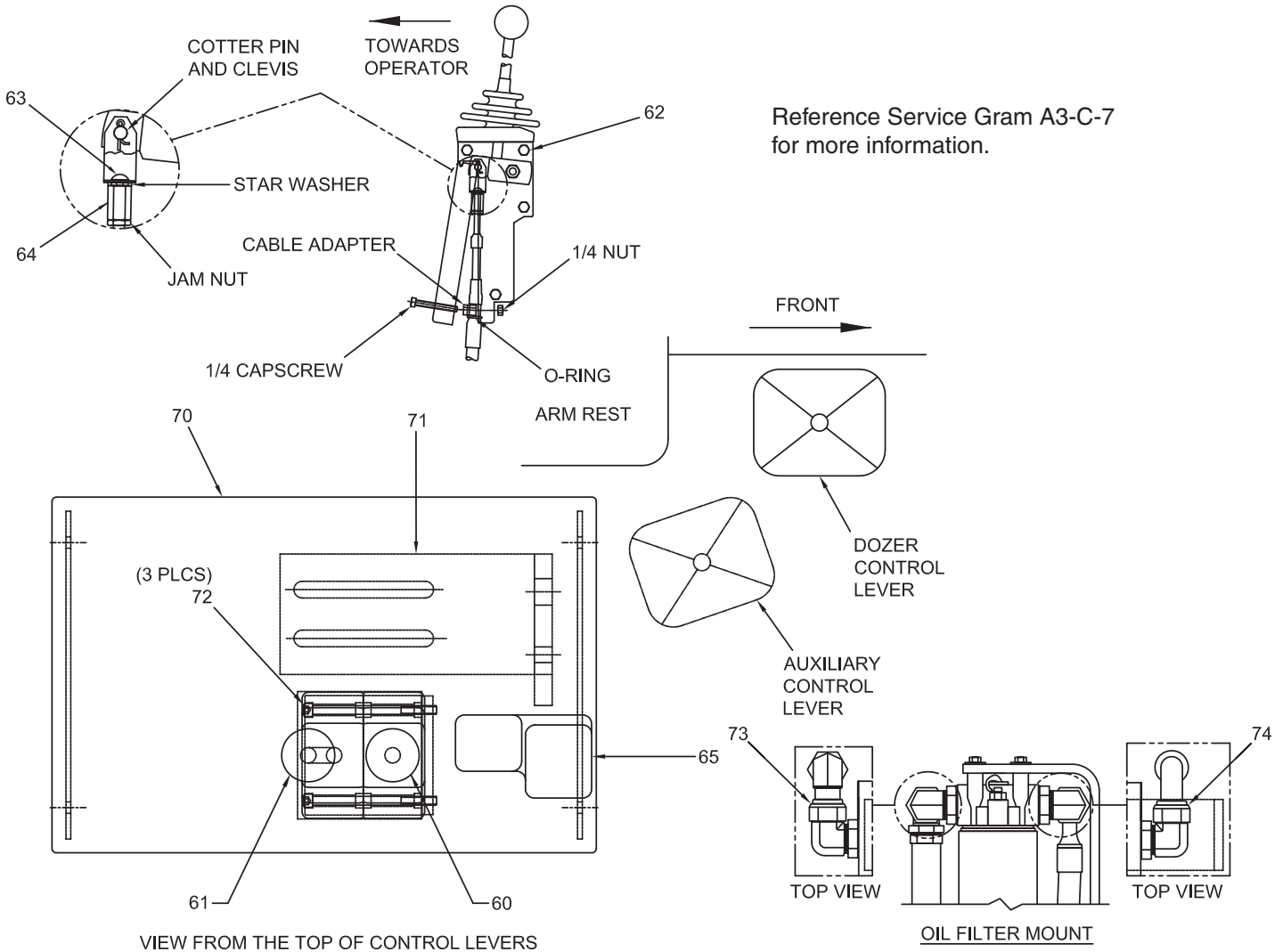


Reference Service Gram A3-C-7 for more information.

Handling Gear, Power Controls

John Deere 700H (E40)

Page 2 of 2

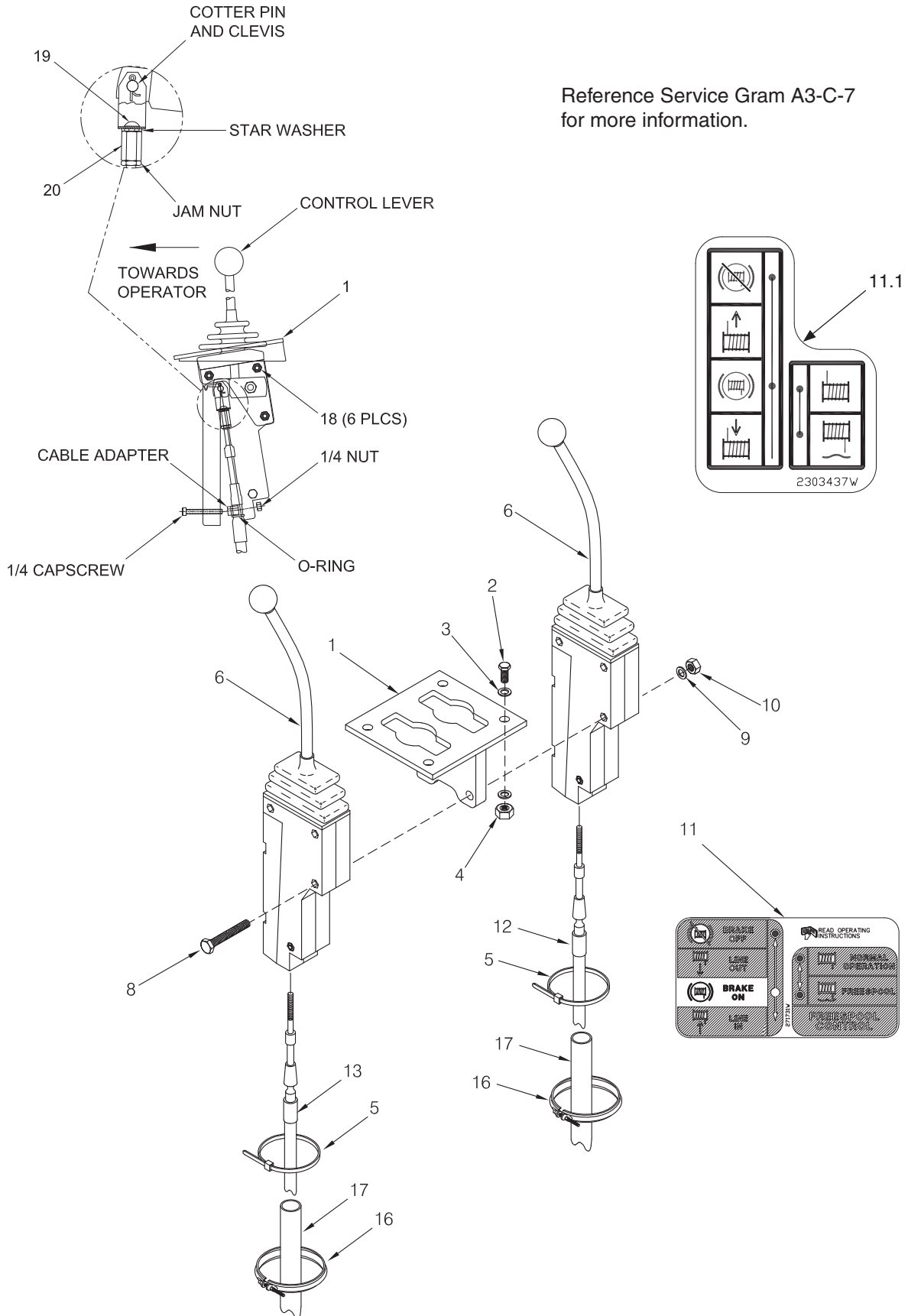


OPTIONAL CONTROL LEVER INSTALLATION (ALTERNATE LOCATION FROM EXISTING CONTROL LEVERS) MUST BE ORDERED SEPARATELY ASK FOR ALLIED P/N C121610W

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2306790W	Bracket, Control Lever	1	18	2304380W	Capscrew, Sealing	6
2	16828W	Capscrew	4	19	*a 18717W	Capscrew	2
3	15134W	Washer	8	20	383881W	Nut, Tall	2
4	221707W	Nut	4	60	2303984W	Lever, Control (3-93)	1
5	129563W	Strap, Tie	2	61	2303986W	Lever, Control (3-93)	1
6	2303986W	Lever, Freespool (See 3-93)	1	62	2304380W	Capscrew	6
7	2304820W	Lever, Control (See 3-93)	1	63	*a 18717W	Capscrew	2
8	2304380W	Capscrew	6	64	283881W	Nut, Tall	2
9	191534W	Nut	3	65	271731W	Decal, Control Lever	1
10	18515W	Washer	3	70	2304508W	Bracket, Control Lever	1
11	271731W	Decal	1	71	2303040W	Bracket, Filter	1
11.1	2303437W	Decal, ISO Standard	1	72	2304381W	Capscrew	3
12	303945W	Cable, Control	1	73	R833276W	Fitting	1
13	303945W	Cable, Freespool	1	74	R833806W	Fitting	1
16	137852W	Clamp, Strap	4				
17	2303039W	Guard, Cable	2		*a Use 230064W Loctite Kit		

Handling Gear, Power Controls

John Deere 700J (E39)
Page 1 of 2



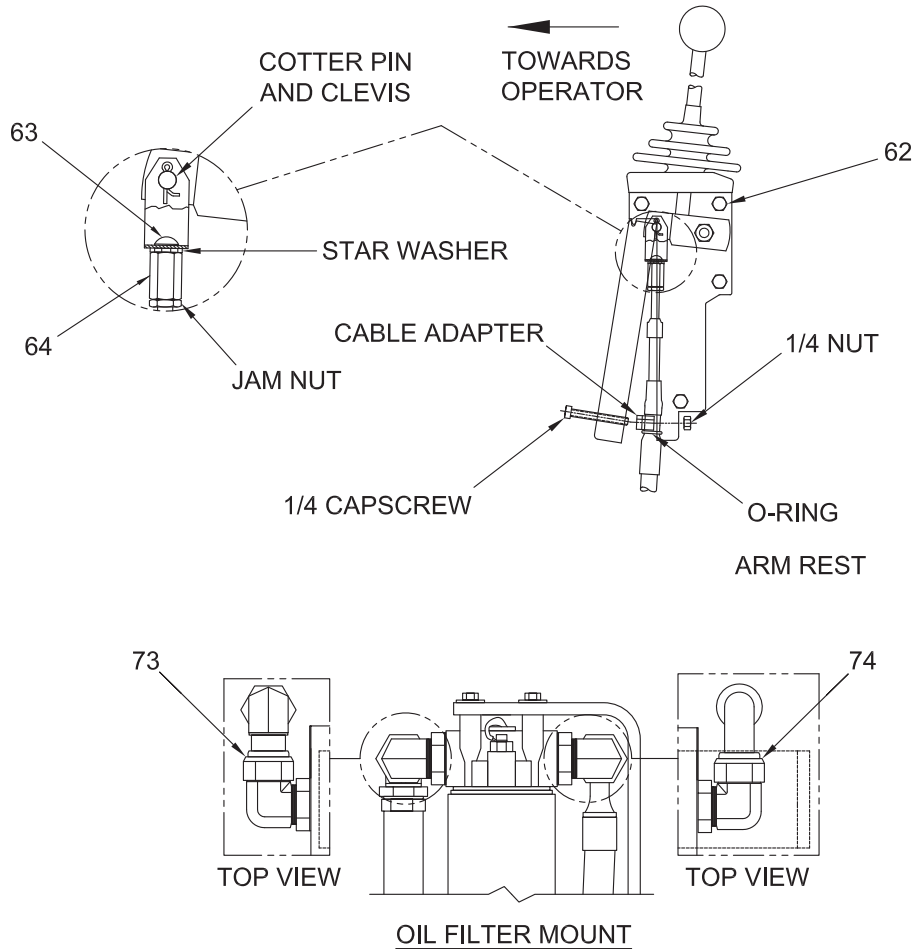
Reference Service Gram A3-C-7 for more information.

Handling Gear, Power Controls

John Deere 700J (E39)

Page 2 of 2

Reference Service Gram A3-C-7
for more information.



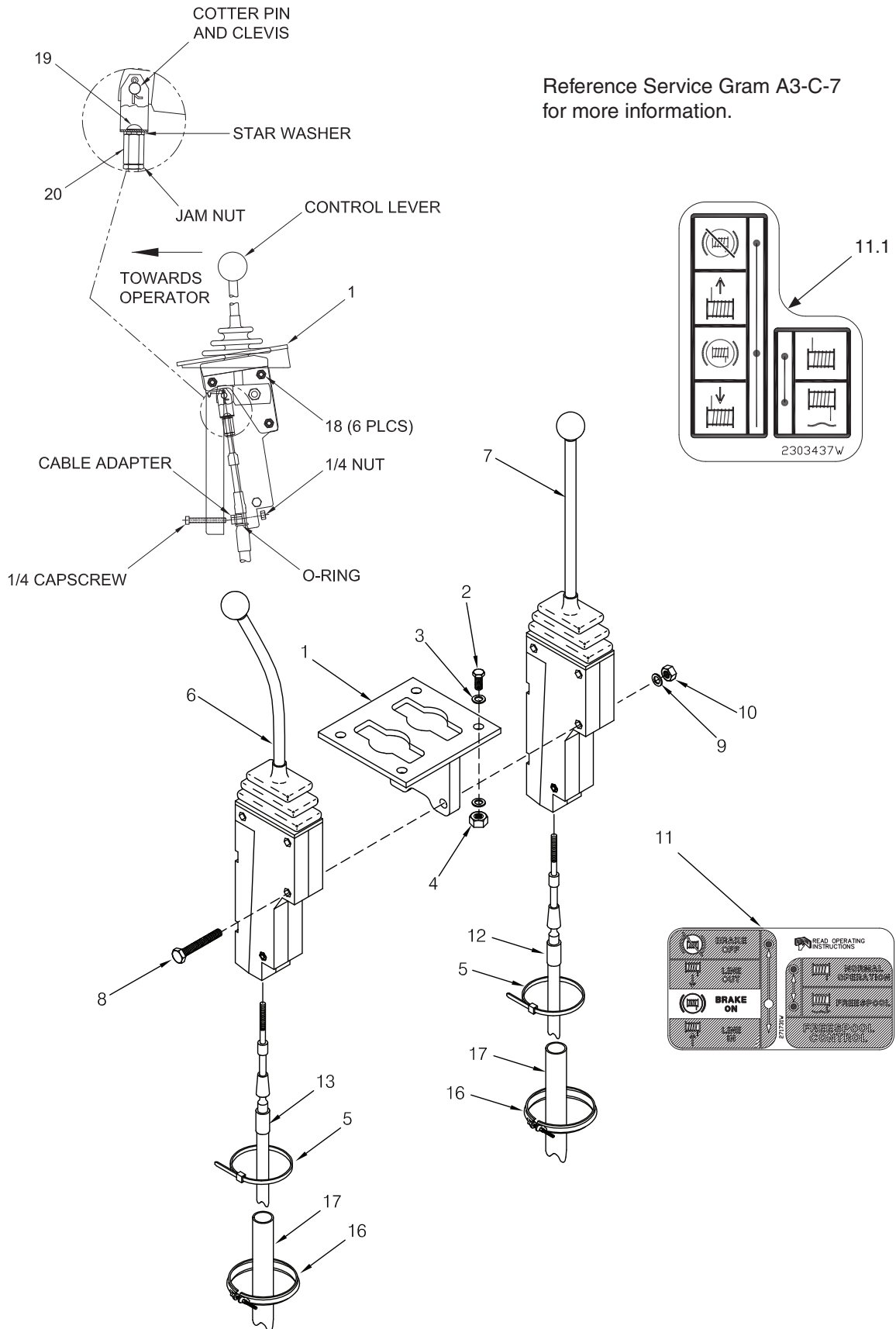
OPTIONAL CONTROL LEVER INSTALLATION

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2306790W	Bracket, Control Lever	1	16	137852W	Clamp, Strap	4
2	16828W	Capscrew	4	17	2303039W	Guard, Cable	2
3	15134W	Washer	8	18	2304380W	Capscrew, Sealing	6
4	221707W	Nut	4	19	*a 18717W	Capscrew	2
5	129563W	Tie Strap	2	20	383881W	Nut, Tall	2
6	2303986W	Lever, Control & Freespool (See 3-93)	2	62	2304380W	Capscrew	6
8	2304380W	Capscrew	6	63	*a 18717W	Capscrew	2
9	191534W	Nut	3	64	283881W	Nut, Tall	2
10	18515W	Washer	3	73	R833276W	Fitting	1
11	271731W	Decal	1	74	R833806W	Fitting	1
11.1	2303437W	Decal, ISO Standard	1				
12	303945W	Cable, Control	1				
13	303945W	Cable, Freespool	1				
					*a	Use 230064W Loctite Kit	

Handling Gear, Power Controls

John Deere 750C Series I & 750C Series II (E45)

Page 1 of 2

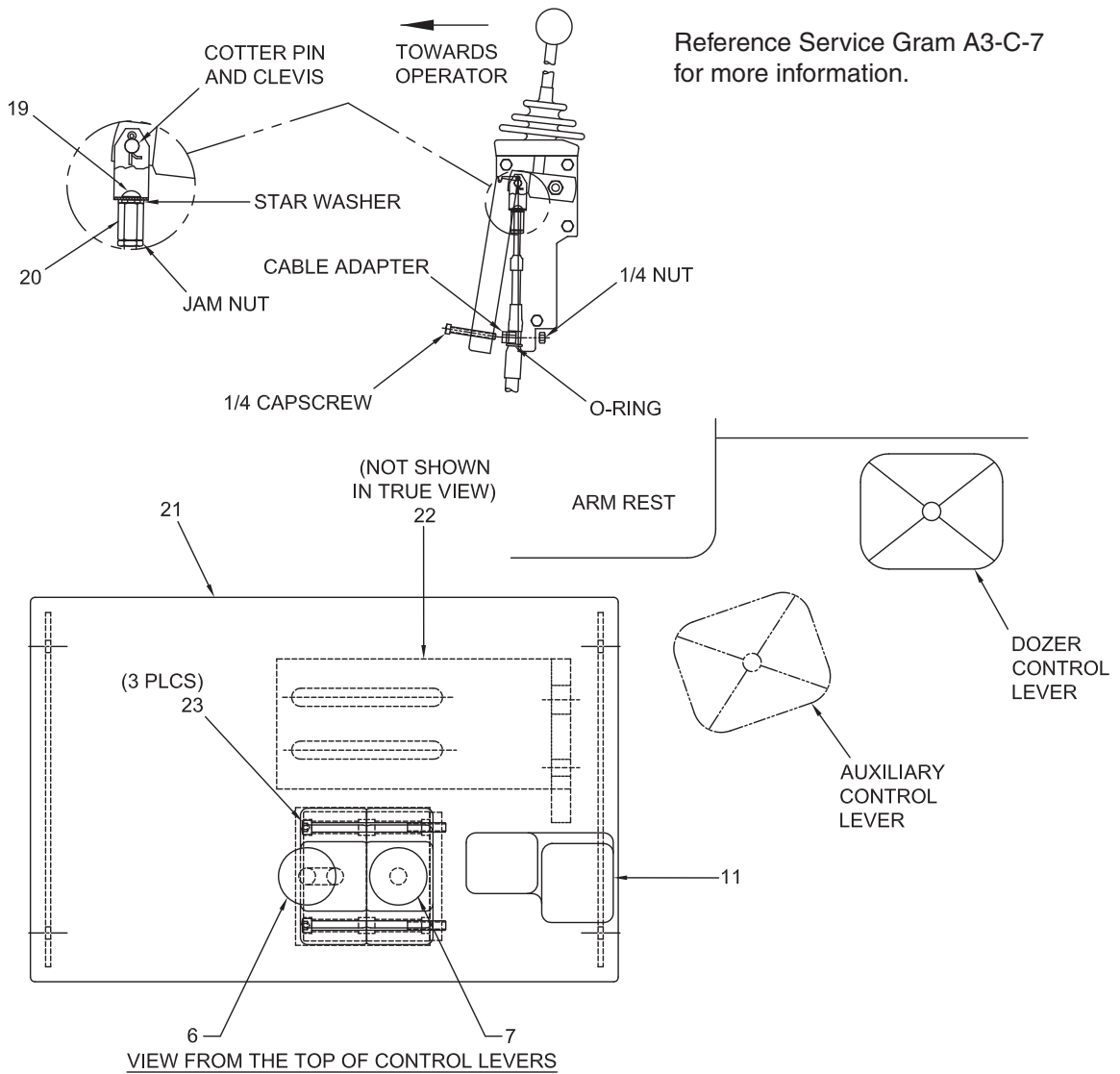


Reference Service Gram A3-C-7 for more information.

Handling Gear, Power Controls

John Deere 750C Series I & 750C Series II (E45)

Page 2 of 2



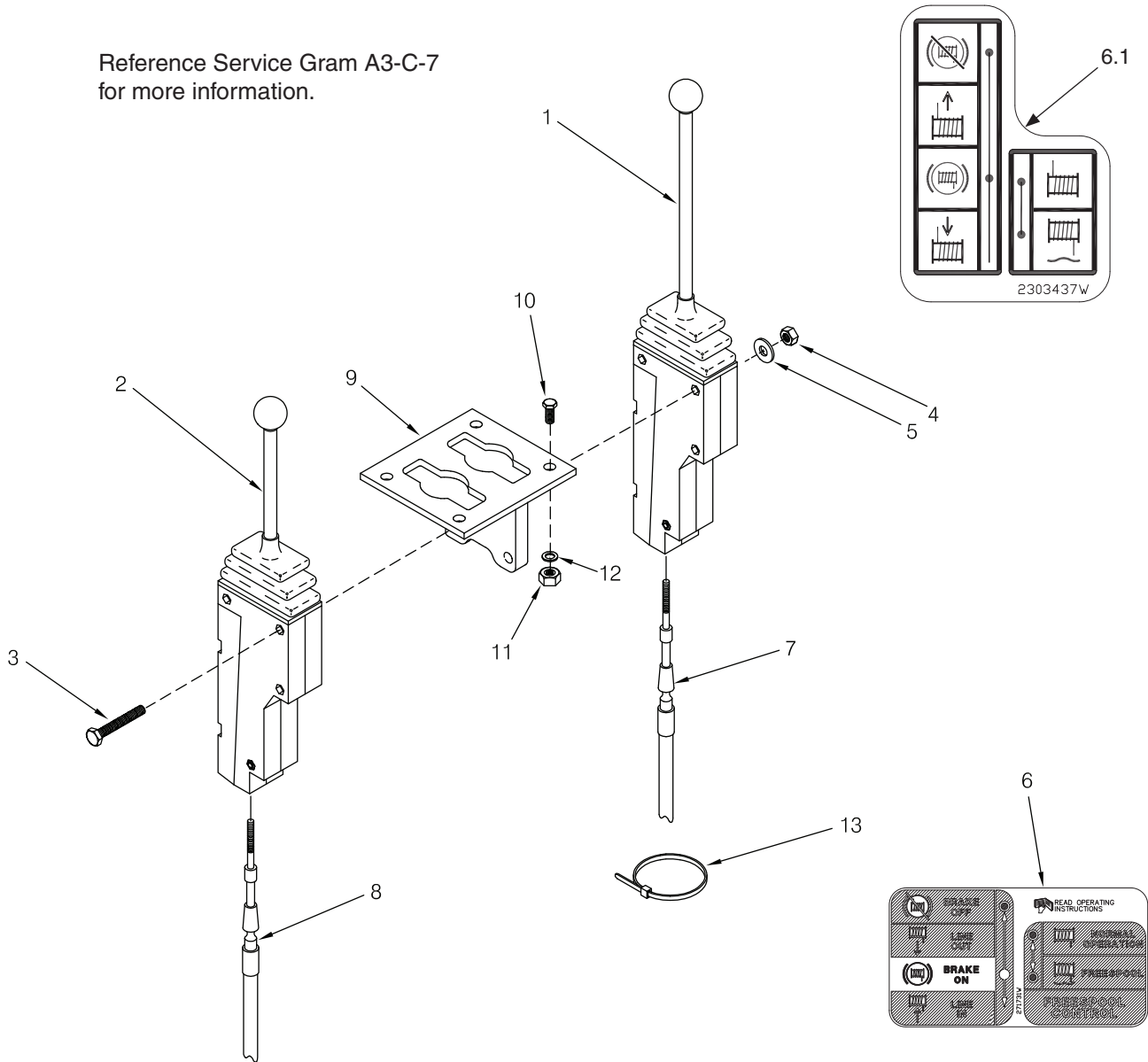
OPTIONAL CONTROL LEVER INSTALLATION

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	*b 2301030W	Bracket, Control Lever	1	11.1	2303437W	Decal, ISO Standard	1
	*c 2304304W	Bracket, Control Lever	1	12	303945W	Cable, Control	1
2	16828W	CapscREW	4	13	303945W	Cable, Freespool	1
3	15134W	Washer	8	18	2304380W	CapscREW, Sealing	6
4	221707W	Nut	4	19	*a 18717W	CapscREW	2
5	129563W	Tie Strap	2	20	383881W	Nut, Tall	2
6	*b 1300785W	Lever, Control (See 3-90)	1	21	2304508W	Bracket, Control Lever	1
	*c 2303986W	Lever, Control (See 3-93)	1	22	2303040W	Bracket, Filter	1
7	*b 2301845W	Lever, Freespool (See 3-91)	1	23	2304381W	CapscREW	3
	*c 2303984W	Lever, Freespool (See 3-93)	1				
8	*b 18526W	CapscREW	3		*a	Use 230064W Loctite Kit	
	*c 2304380W	CapscREW	6		*b	Last Used on S/N AW5C-1219	
11	271731W	Decal	1		*c	First Used on S/N AW5C-1220	

Handling Gear, Power Controls

Komatsu D41E-6 (K27)
Last Used On S/N AW5C-1196

Reference Service Gram A3-C-7
for more information.



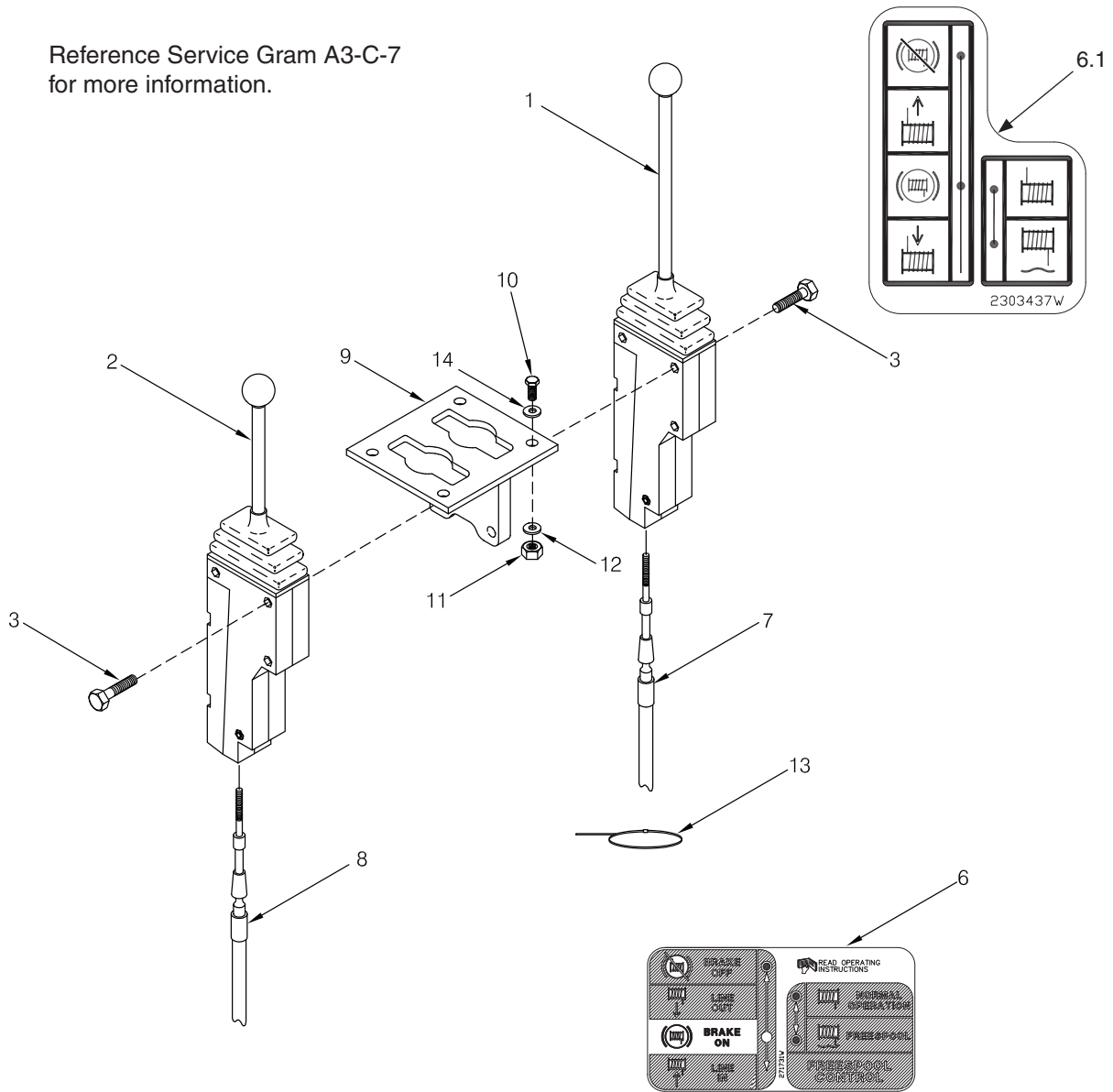
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	1300785W	Lever, Control (See 3-90)	1	8	303944W	Cable, Freespool	1
2	383880W	Lever, Freespool (See 3-88)	1	9	2303021W	Bracket	1
3	18528W	Capscrew	3	10	16828W	Capscrew	4
4	191534W	Nut	3	11	221707W	Nut	4
5	18515W	Washer	3	12	15134W	Washer	8
6	271731W	Decal	1	13	114312W	Clamp, Strap	5
6.1	2303437W	Decal, ISO Standard	1	14	2301055W	Trim (Not Illustrated)	2 Ft
7	303943W	Cable, Control	1				

Handling Gear, Power Controls

Komatsu D61EX-12 (K47)

First Used on S/N AW5C-1197: D41E-6 (K27)

Reference Service Gram A3-C-7 for more information.

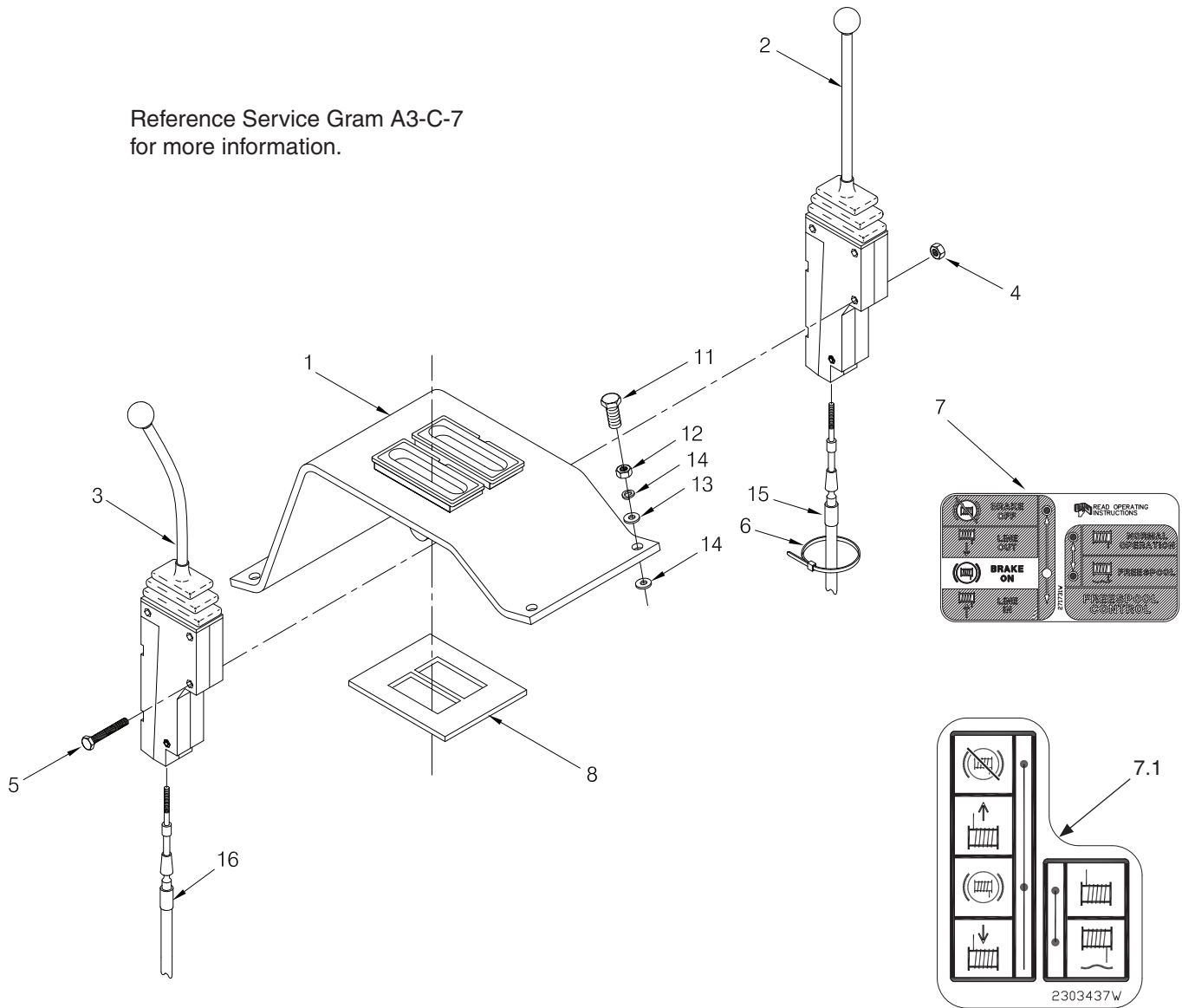


Item	Part No.	Description	Qty	Item	Part No.	Description	Qty	
1	2303984W	Lever, Control (See 3-93)	1	*a	156133W	Flangnut	4	
2	2303982W	Lever, Freespools (See 3-93)	1	12	*c	15134W	Washer	4
3	2304380W	Capscrew	3	13	*c	137852W	Clamp, Strap	5
6	271731W	Decal	1	*a	114312W	Clamp, Strap	5	
6.1	2303437W	Decal, ISO Standard	1	14	*a, *c	15134W	Washer	4
7	303943W	Cable, Control	1	*b	15156W	Lockwasher	4	
8	303944W	Cable, Freespools	1	15	2301055W	Trim (Not Illustrated)	2 Ft	
9	2304304W	Bracket	1					
10	*c	16828W	Capscrew					
	*a	398599W	Flangnut					
11	*c	221707W	Nut					
				*a		Used Only on D41E-6 (K27)		
				*b		Used Only on D61EX-12 (K47)		
				*c		Last Used on S/N AW5C-1261 for D41E-6 (K27)		

Handling Gear, Power Controls

New Holland DC150 (A40), DC150 PS (A38)

Reference Service Gram A3-C-7
for more information.



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2304807W	Assembly, Control Lever	1				
1	2304806W	. Bracket, Control Lever	1	8	2304570W	Gasket	1
2	2303982W	. Lever, Control (3-93)	1	10	225871W	Trim (Not Illustrated)	2 Ft
3	2303986W	. Lever, Freespool (3-93)	1	11	18497W	Capscrew	4
4	2304878W	. Capscrew	3	12	15055W	Nut	4
5	15113W	. Nut	3	13	18515W	Washer	8
6	110322W	Clamp, Strap	1	14	15155W	Lockwasher	4
7	271731W	Decal	1	15	303945W	Cable, Control	1
7.1	2303437W	Decal, ISO Standard	1	16	303945W	Cable, Freespool	1

Intentionally Blank

Handling Gear, Electronic Controls

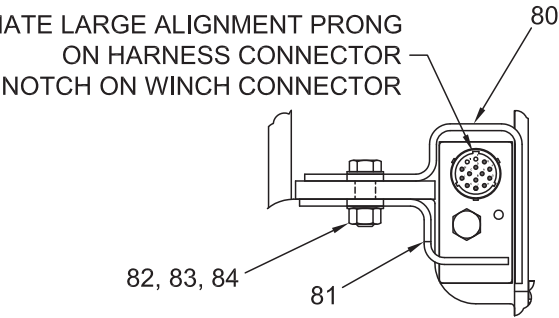
Case 1150K (R37), 1650L (R40)

Last Used on S/N AW5C-1696

First Used on S/N AW5C-1697 (See Pages 3-86/87)

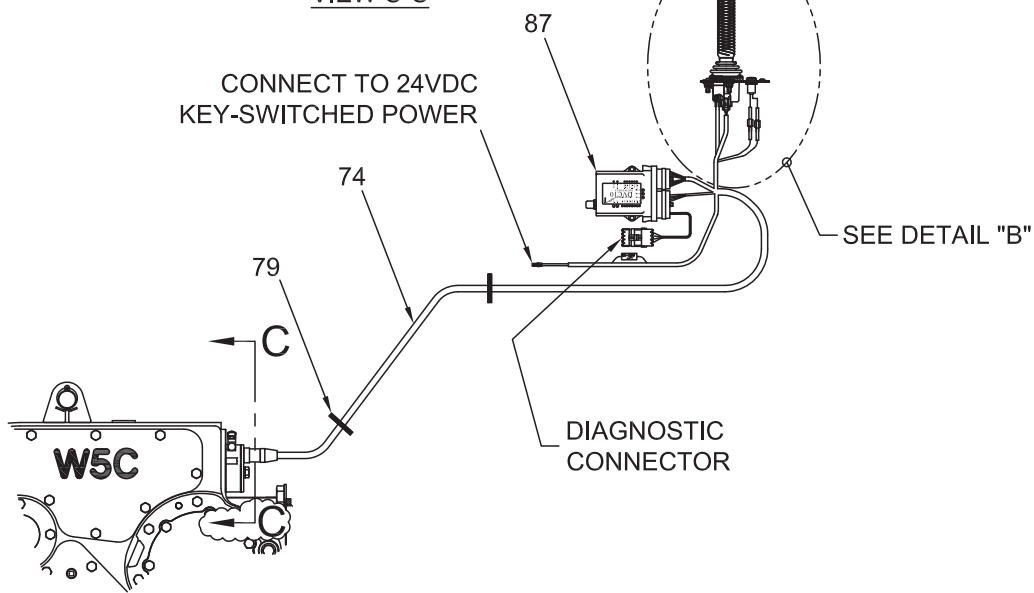
Page 1 of 2

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

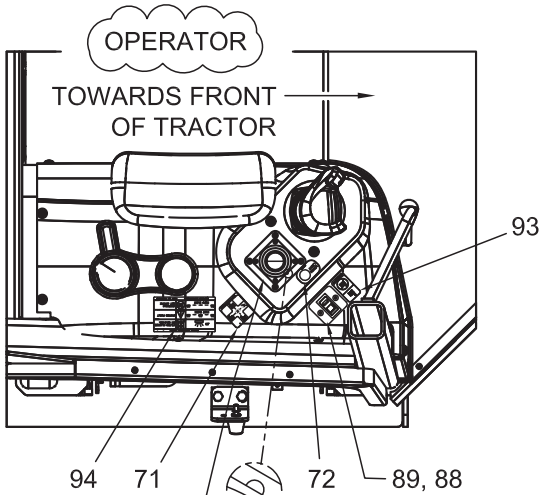


VIEW C-C

CONNECT TO 24VDC
KEY-SWITCHED POWER



DIAGNOSTIC
CONNECTOR

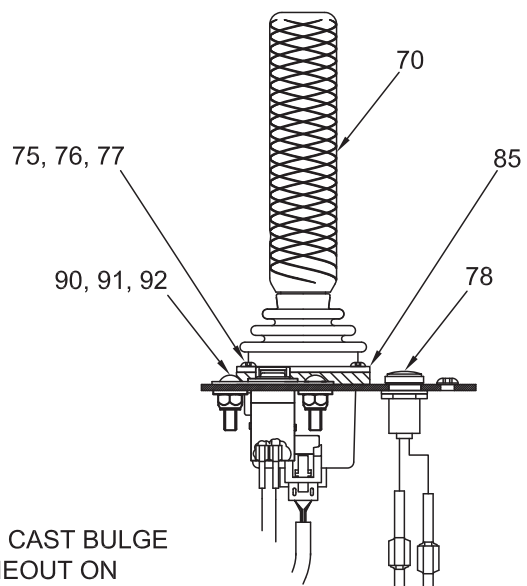


OPERATOR

TOWARDS FRONT
OF TRACTOR

ORIENT LEVER WITH CAST BULGE
IN DIRECTION OF LINEOUT ON
DECAL (ITEM 71)

VIEW A-A



DETAIL "B"

NOTE: Communication cable p/n 2304603W is necessary to perform extensive troubleshooting on the electronic controls system. For basic troubleshooting, see Service Manual.

Handling Gear, Electronic Controls

Case 1150K (R37), 1650L (R40)

Last Used on S/N AW5C-1696

First Used on S/N AW5C-1697 (See Pages 3-86/87)

Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
70	2310575	Assembly, Control Lever (3-98)	1	85	2304779W	Mounting Collar, Control Lever	1
71	2305258W	Decal, Control w/FS	1	87	2310626	Module, Electronic Control	1
72	2307944W	Decal, Winch Light	1	88	2307849W	Assembly, Rocker Switch w/FS	1
74	*b 2310079W	Harness, Wiring	1	89	2307643W	Plate, Switch Mounting	1
	*c 2311444	Harness, Wiring	1	90	15127W	Washer	6
75	*a 2304892W	Capscrew	4	91	15113W	Nut	6
76	*a 15039W	Nut	4	92	Y25G-0416	Capscrew	6
77	197066W	Washer	4	93	2307925W	Decal, Activation Switch	1
78	2303912W	Assembly, Bypass LED	1	94	2307942W	Decal, Winch Indicator Light	1
79	129563W	Clamp, Strap	5	95	2310161	Plate, Controller Adapter	1
80	2304629W	Guard, Harness - Upper	1				
81	2304630W	Guard, Harness - Lower	1	*a	Uses 318702W Thread Lock		
82	*a 200454W	Capscrew	2	*b	Last Used on S/N AW5C-1665		
83	221771W	Washer	4	*c	First Used on S/N AW5C-1666		
84	15058W	Nut	2				

Handling Gear, Electronic Controls

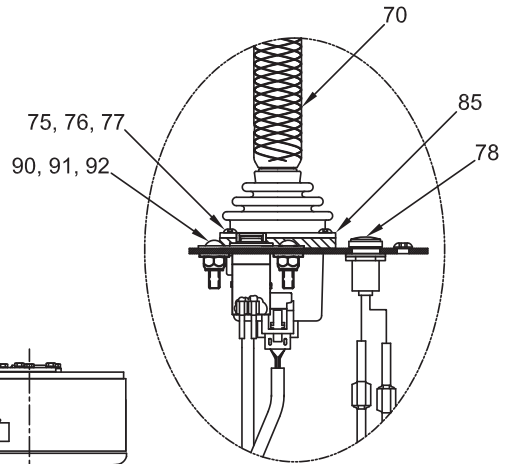
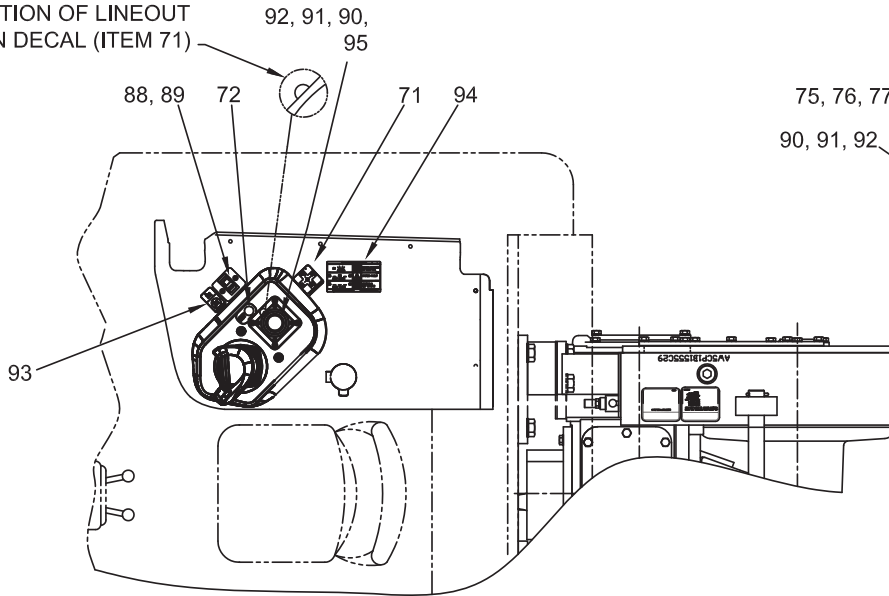
Case 1650K (R38)

Last Used on S/N AW5C-1696

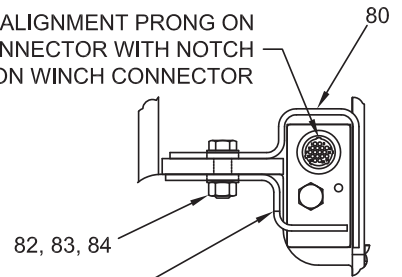
First Used on S/N AW5C-1697 (See Pages 3-86/87)

Page 1 of 2

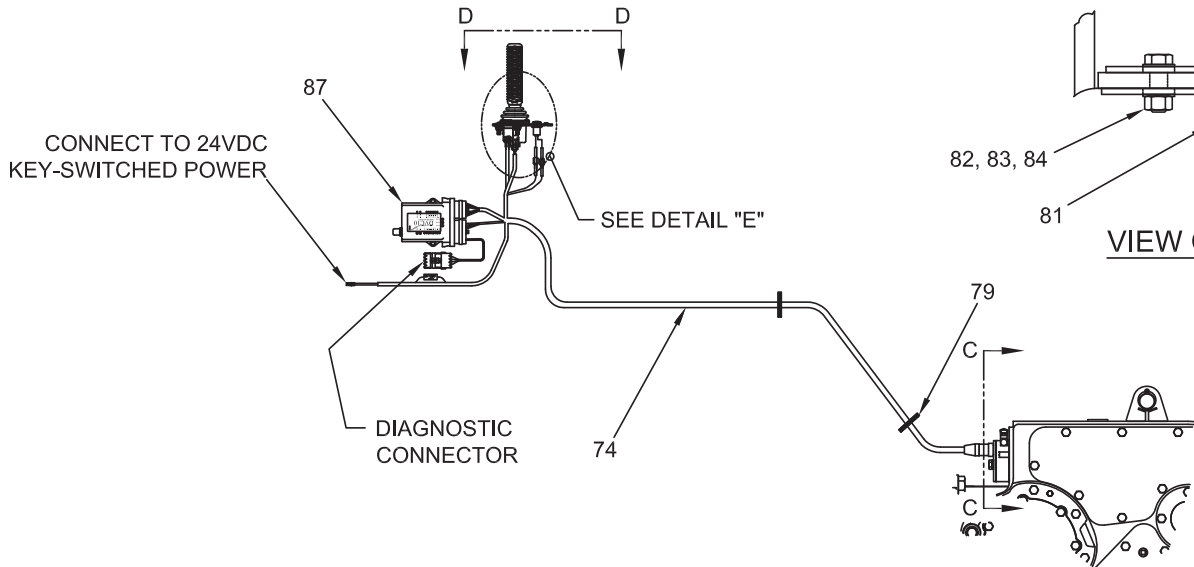
ORIENT LEVER WITH
CAST BULGE IN
DIRECTION OF LINEOUT
ON DECAL (ITEM 71)



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



CONNECT TO 24VDC
KEY-SWITCHED POWER



Handling Gear, Electronic Controls

Case 1650K (R38)

Last Used on S/N AW5C-1696

First Used on S/N AW5C-1697 (See Pages 3-86/87)

Page 2 of 2

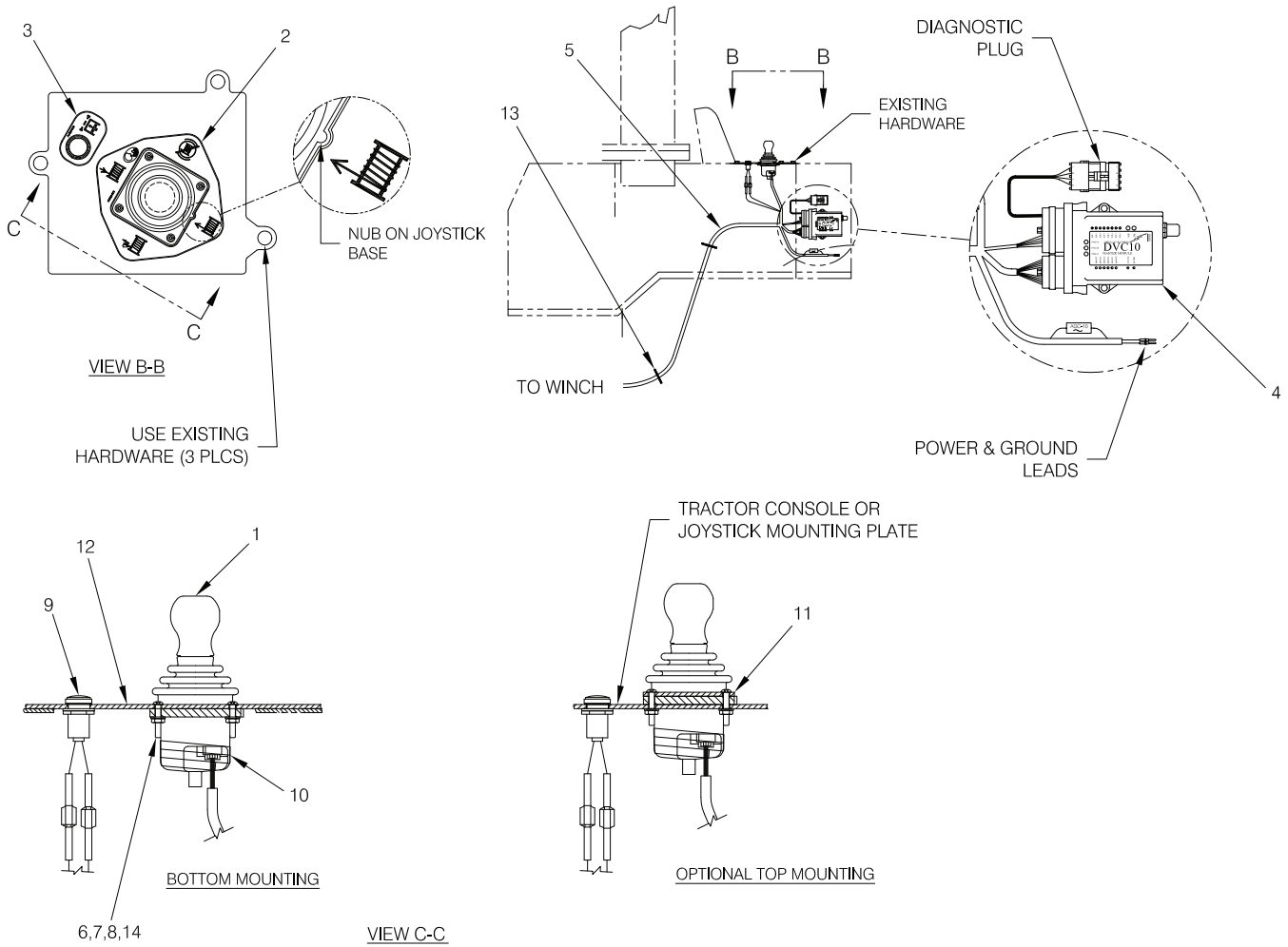
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
70	2310575	Assembly, Control Lever (3-98)	1	84	15058W	Nut	2
71	2305258W	Decal, Control w/FS	1	85	2304779W	Collar, Control Lever Mounting	1
72	2307944W	Decal, Winch Light	1	87	2310626	Module, Electronic Control	1
74	2310079	Harness, Wiring	1	88	2307849W	Assembly, Rocker Switch w/Lock	1
75	*a 2304892W	Capscrew	4	89	2307643W	Plate, Switch Mounting	1
76	15039W	Nut	4	90	15127W	Washer	6
77	197066W	Washer	4	91	15113W	Nut	6
78	2303912W	Assembly, Bypass LED	1	92	Y25G-0416	Capscrew	6
79	129563W	Clamp, Strap	5	93	2307925W	Decal, Activation Switch	1
80	2304629W	Guard, Harness - Upper	1	94	2307942W	Decal, Winch Indicator Light	1
81	2304630W	Guard, Harness - Lower	1	95	2310161	Plate, Controller Adapter	1
82	*a 200454W	Capscrew	2				
83	221771W	Washer	4	*a	Uses 230064W Loctite Kit		

Handling Gear, Electronic Controls

Caterpillar D4H Series III (C370), D5H (C370), D5M and D6M (C29)

Last Used on S/N AW5C-1319

Page 1 of 2



NOTE: Communication cable p/n 2304603W is necessary to perform extensive troubleshooting on the electronic controls system. For basic troubleshooting, see Service Manual.

Handling Gear, Electronic Controls

Caterpillar D4H Series III (C370), D5H (C370), D5M and D6M (C29)

Last Used on S/N AW5C-1319

Page 2 of 2

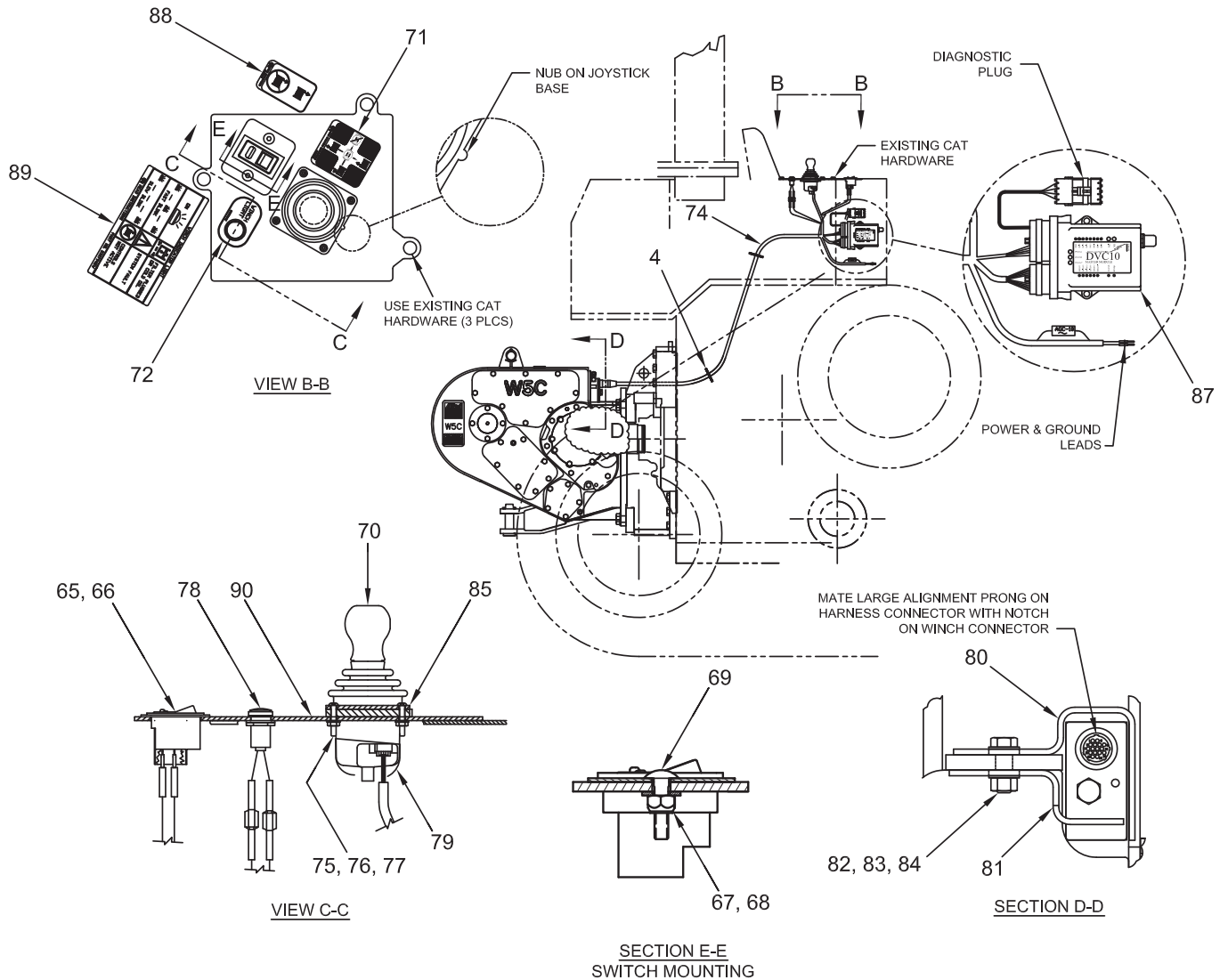
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2304781W	Lever, Control - w/Freespool (3-96)	1	9	2303912W	Assembly, Bypass LED	1
2	2304505W	Decal, Control	1	10	2304796W	Tape, Self-Fusing	1
3	2304504W	Decal, Filter LED	1	11	2304779W	Collar, Control Lever Mounting	1
4	2303820W	Module, Electronic Control	1	12	2303933W	Plate, Control Lever Mounting	1
5	2303900W	Harness, Wiring	1	13	137852W	Strap, Clamp	A/R
6	*a 2304892W	Screw	4				
7	15039W	Nut	4	*a	Uses 318702W Thread Lock		
8	197066W	Washer	4				

Handling Gear, Electronic Controls

Caterpillar D4H Series III (C370), D5H (C370), D5M and D6M (C29)

Used on S/N AW5C-1320 thur AW5C-1561

Page 1 of 2



NOTE: Communication cable p/n 2304603W is necessary to perform extensive troubleshooting on the electronic controls system. For basic troubleshooting, see Service Manual.

Handling Gear, Electronic Controls

Caterpillar D4H Series III (C370), D5H (C370), D5M and D6M (C29)

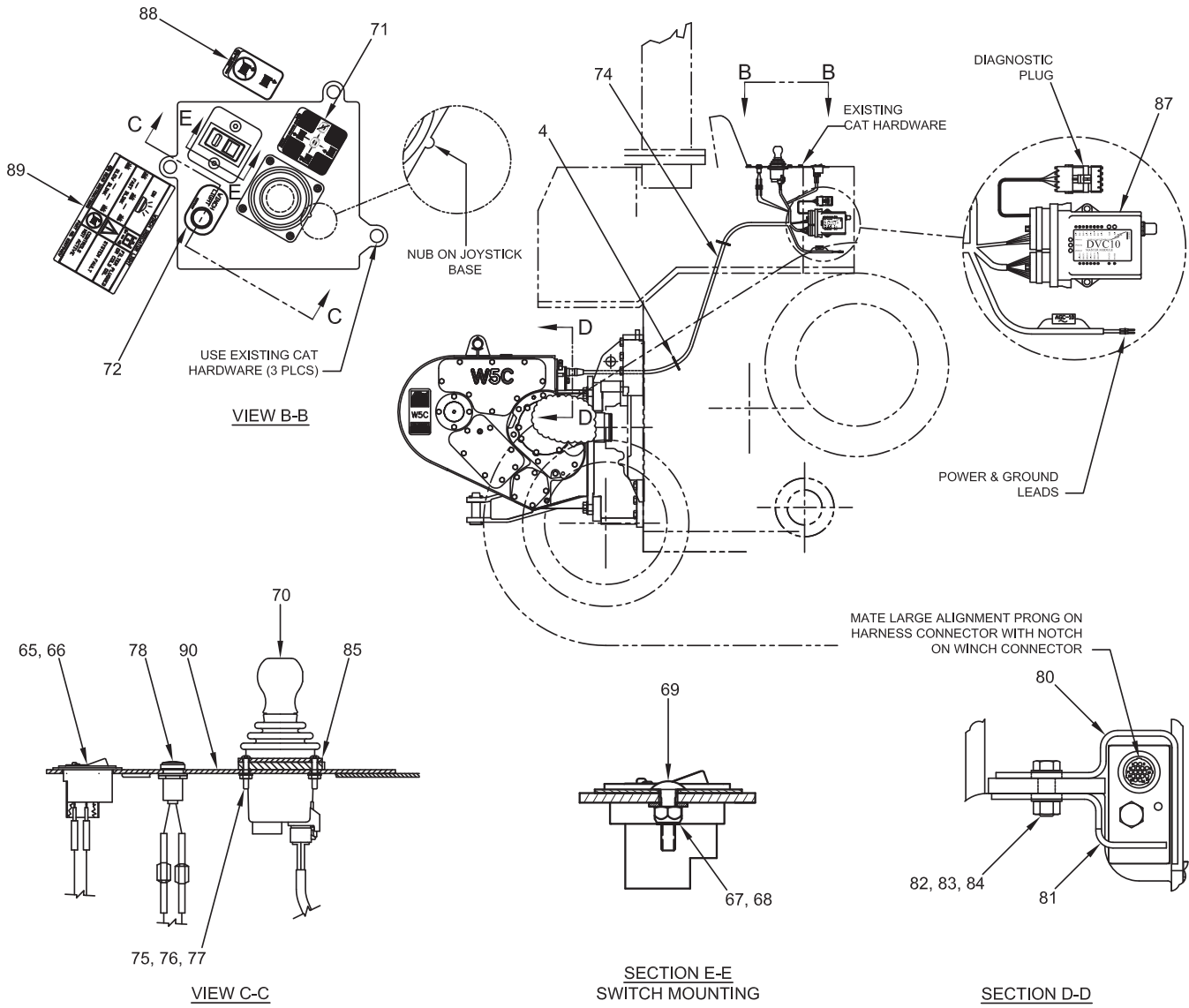
Used on S/N AW5C-1320 thur AW5C-1561

Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
4	137852W	Clamp, Strap	4	79	2307389W	Tubing, Heat Shrink	1
65	2307849W	Assembly, Rocker Switch - w/Lock	1	80	2304629W	Guard, Harness - Upper	1
66	2307643W	Plate, Switch Mounting	1	81	2304630W	Guard, Harness - Lower	1
67	15127W	Washer	2	82	*a Y17C-0824	Capscrew	2
68	15113W	Nut	2	83	221771W	Washer	4
69	Y25G-0416	Capscrew	2	84	15058W	Nut	2
70	2304781W	Lever, Control - w/Freespool (3-96)	1	85	2304779W	Collar, Control Lever Mounting	1
71	2305258W	Decal, Control - w/Freespool	1	87	2307857W	Module, Electronic Control	1
72	2307944W	Decal, Winch Light	1	88	2307925W	Decal, Activation Switch	1
74	2307576W	Harness, Wiring	1	89	2307942W	Decal, Winch Indicator Light	1
75	*a 2304892W	Capscrew	4	90	*b 2307868W	Plate, Control Lever Mounting	1
76	15039W	Nut	4				
77	197066W	Washer	4				
78	2303912W	Assembly, Bypass LED	1				
					*a	Uses 318702W Thread Lock	
					*b	Used on D5/6M only	

Handling Gear, Electronic Controls

Caterpillar D4H Series III (C370), D5H (C370), D5M and D6M (C29)
 Used on S/N AW5C-1562 thru AW5C-1665
 Page 1 of 2



NOTE: Communication cable p/n 2304603W is necessary to perform extensive troubleshooting on the electronic controls system. For basic troubleshooting, see Service Manual.

Handling Gear, Electronic Controls

Caterpillar D4H Series III (C370), D5H (C370), D5M and D6M (C29)

Used on S/N AW5C-1562 thru AW5C-1665

Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
4	137852W	Clamp, Strap	4	81	2304630W	Guard, Harness - Lower	1
65	2307849W	Assembly, Rocker Switch - w/Lock	1	82	*a Y17C-0824	Capscrew	2
66	2307643W	Plate, Switch Mounting	1	83	221771W	Washer	4
67	15127W	Washer	2	84	15058W	Nut	2
68	15113W	Nut	2	85	2304779W	Collar, Control Lever Mounting	1
69	Y25G-0416	Capscrew	2	87	2307857W	Module, Electronic Control	1
70	2307887W	Lever, Control - w/Freespool (3-97)	1	88	2307925W	Decal, Activation Switch	1
71	2305258W	Decal, Control - w/Freespool	1	89	2307942W	Decal, Winch Indicator Light	1
72	2307944W	Decal, Winch Light	1	90	*b 2307868W	Plate, Control Lever Mounting	1
74	*c 2307576W	Harness, Wiring	1				
	*d 2310079	Harness, Wiring	1		*a	Uses 318702W Thread Lock	
75	*a 2304892W	Capscrew	4		*b	Used on D5/6M Only	
76	15039W	Nut	4		*c	Last Used on S/N AW5C-1579	
77	197066W	Washer	4		*d	First Used on S/N AW5C-1580	
78	2303912W	Assembly, Bypass LED	1				
80	2304629W	Guard, Harness - Upper	1				

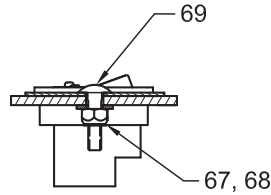
Handling Gear, Electronic Controls

Caterpillar D4H Series III (C370), D5H (C370), D5M and D6M (C29)

Used on S/N AW5C-1666 thru AW5C-1696

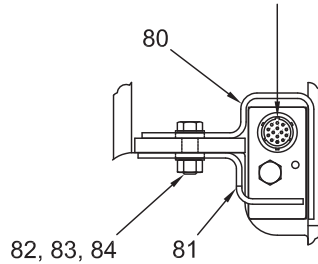
First Used on AW5C-1697 (See Pages 3-86/87)

Page 1 of 2

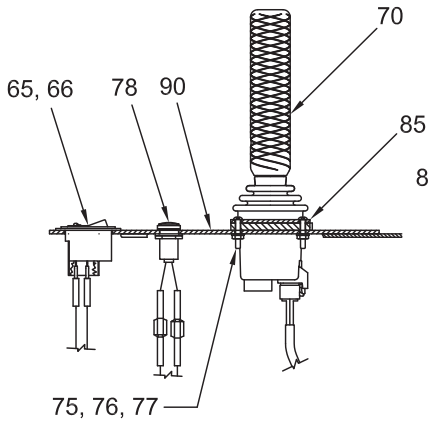


SECTION E-E
SWITCH MOUNTING

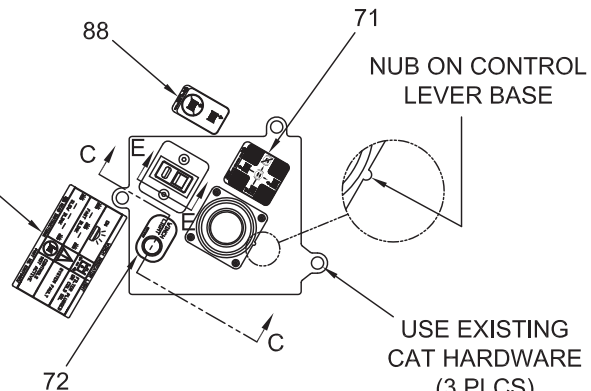
MATE LARGE ALIGNMENT PRONG ON
HARNES CONNECTOR WITH NOTCH
ON WINCH CONNECTOR



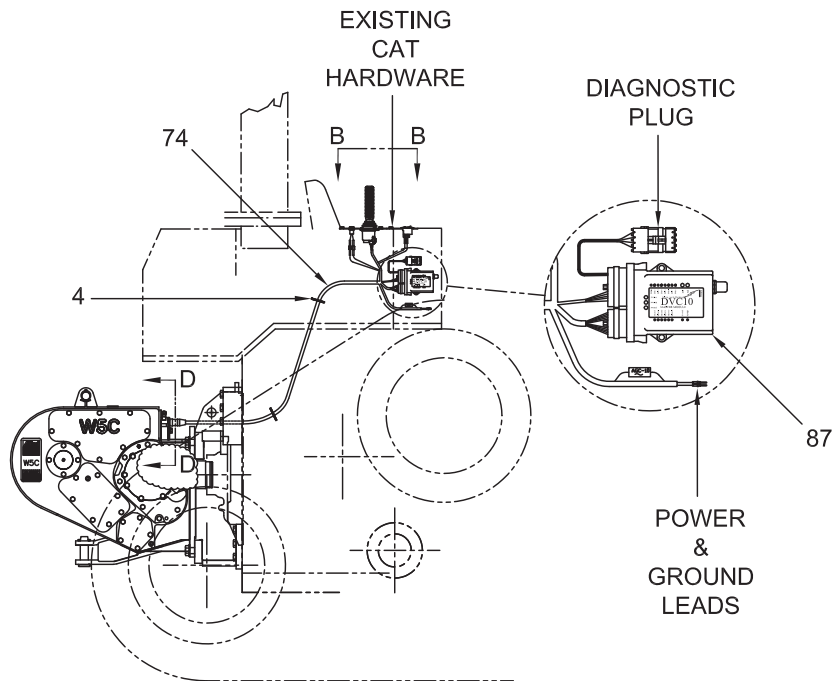
SECTION D-D



VIEW C-C



VIEW B-B



NOTE: Communication cable p/n 2304603W is necessary to perform extensive troubleshooting on the electronic controls system. For basic troubleshooting, see Service Manual.

Handling Gear, Electronic Controls

Caterpillar D4H Series III (C370), D5H (C370), D5M and D6M (C29)

Used on S/N AW5C-1666 thru AW5C-1696

First Used on AW5C-1697 (See Pages 3-86/87)

Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
4	137852W	Clamp, Strap	4	80	2304629W	Guard, Harness - Upper	1
65	2307849W	Assembly, Rocker Switch - w/Lock	1	81	2304630W	Guard, Harness - Lower	1
66	2307643W	Plate, Switch Mounting	1	82	*a Y17C-0824	Capscrew	2
67	15127W	Washer	2	83	221771W	Washer	4
68	15113W	Nut	2	84	15058W	Nut	2
69	Y25G-0416	Capscrew	2	85	2304779W	Collar, Control Lever Mounting	1
70	2310575	Assembly, Control Lever (3-98)	1	87	2310632	Module, Electronic Control	1
71	2305258W	Decal, Control - w/Freespool	1	88	2307925W	Decal, Activation Switch	1
72	2307944W	Decal, Winch Light	1	89	2307942W	Decal, Winch Indicator Light	1
74	2311444	Harness, Wiring	1	90	*b 2307868W	Plate, Control Lever Mounting	1
75	*a 2304892W	Capscrew	4				
76	15039W	Nut	4		*a Uses 318702W Thread Lock		
77	197066W	Washer	4		*b Used on D5/6M Only		
78	2303912W	Assembly, Bypass LED	1				

Handling Gear, Electronic Controls

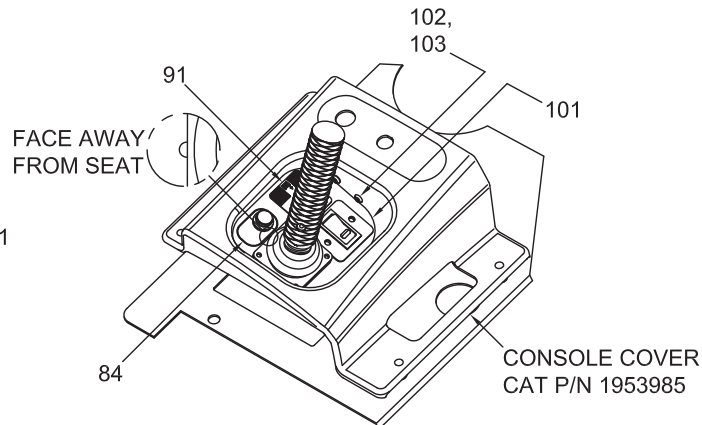
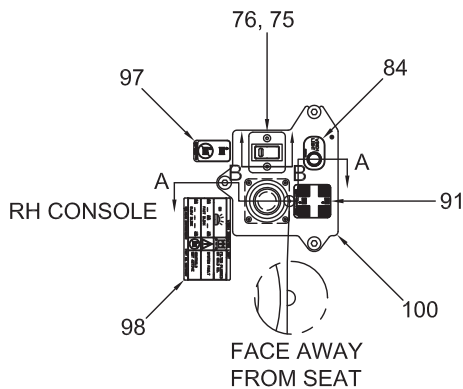
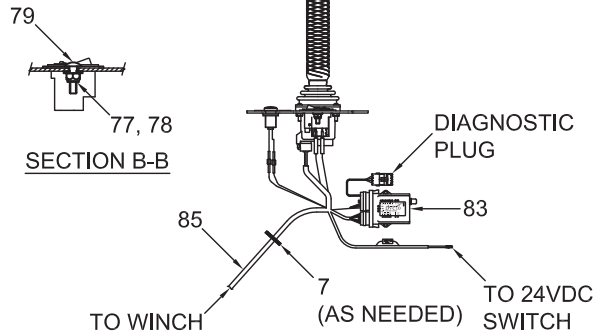
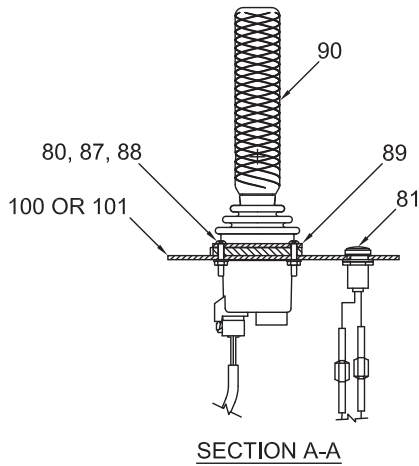
Caterpillar D5N (C28, C77) and D6N (C47, C78)

For Tractors with *Mechanical Controls*[†]

Last Used on S/N AW5C-1696

First Used on S/N AW5C-1697 (See Pages 3-86/87)

[†] See Figure A in Section 0 for details.



E-CONTROLS FOR TRACTORS WITHOUT CAB AND WITH MECHANICAL CONTROLS

E-CONTROLS FOR TRACTORS WITH CAB AND MECHANICAL CONTROLS

Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
7	137852W	Clamp, Strap	AR	90	*c 2310575	Assembly, Control Lever (3-98)	1
75	2307849W	Assembly, Switch	1	91	2305258W	Decal, Control Lever,	1
76	2307643W	Plate, Switch Mounting	1	97	2307925W	Decal, Switch Activation	1
77	15127W	Washer	2	98	2307942W	Decal, Winch Indicator Light	1
78	15113W	Nut	2	100	*b 2307843W	Plate, Control Lever Mounting	1
79	Y25G-0416	Cap screw	2	101	2307845W	Plate, Control Lever Cover	1
80	*a 2304892W	Cap screw	4	102	18717W	Cap screw	4
81	2303912W	Assembly, Bypass LED	1	103	15004W	Nut	4
83	2310632	Module, Electronic Control	1				
84	2307944W	Decal, Winch Light	1				
85	*d 2310079	Harness, Wiring	1				
	*e 2311444	Harness, Wiring	1				
87	15039W	Nut	4				
88	197066W	Washer	4				
89	2304779W	Plate, Cover	1				
					*a	Use 318702W Thread Lock	
					*b	Used on Caterpillar D6N without Cab Only	
					*c	This Assembly with Longer Handle Replaces the Previous One, P/N 2307887W, with Shorter Handle	
					*d	Last Used on S/N AW5C-1665	
					*e	First Used on S/N AW5C-1666	

Handling Gear, Electronic Controls

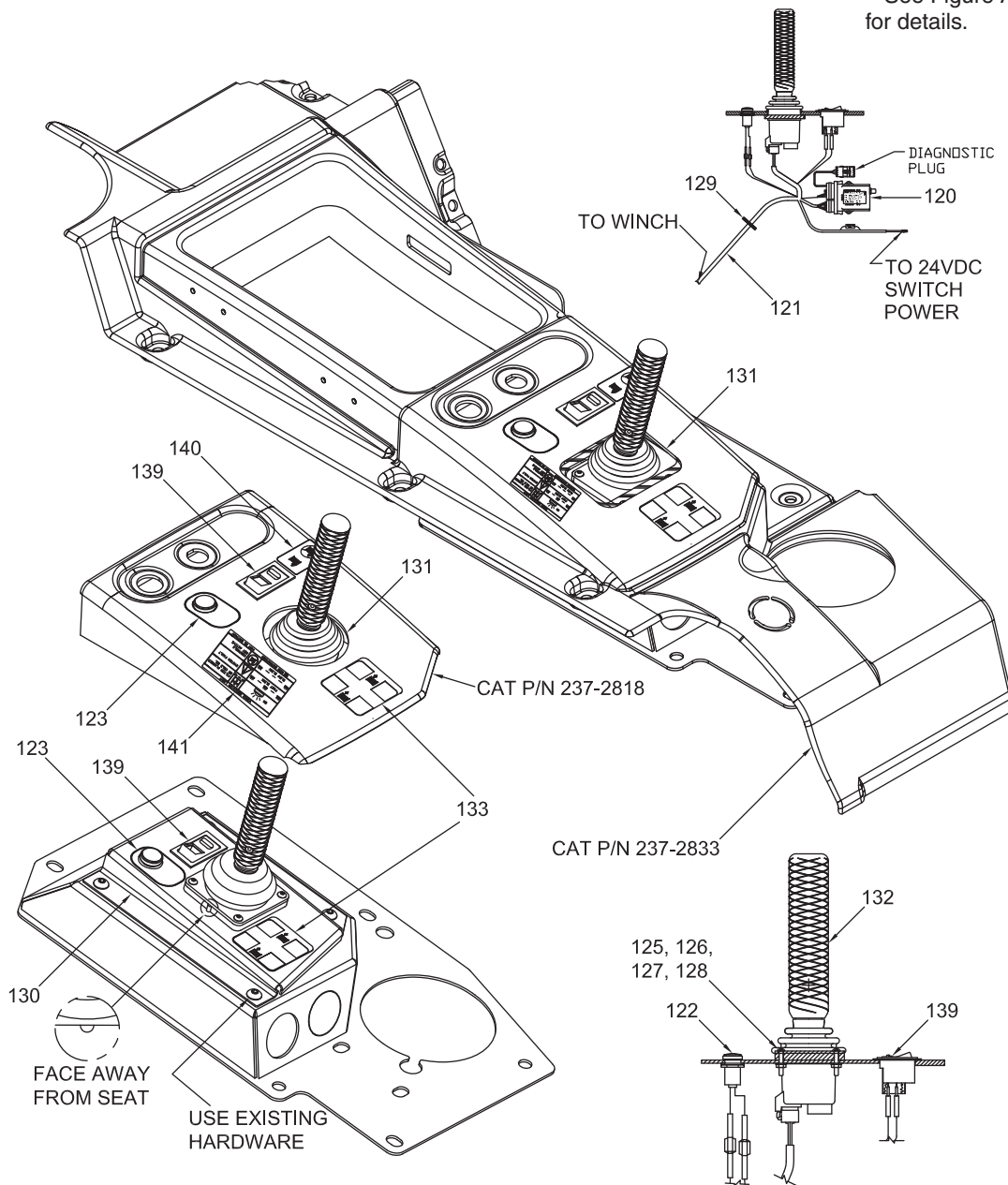
Caterpillar D5N (C28, C77) and D6N (C47, C78)

For Tractors with *Pilot Hydraulic Controls*†

Last Used on S/N AW5C-1696

First Used on S/N AW5C-1697 (See Pages 3-86/87)

† See Figure A in Section 0 for details.



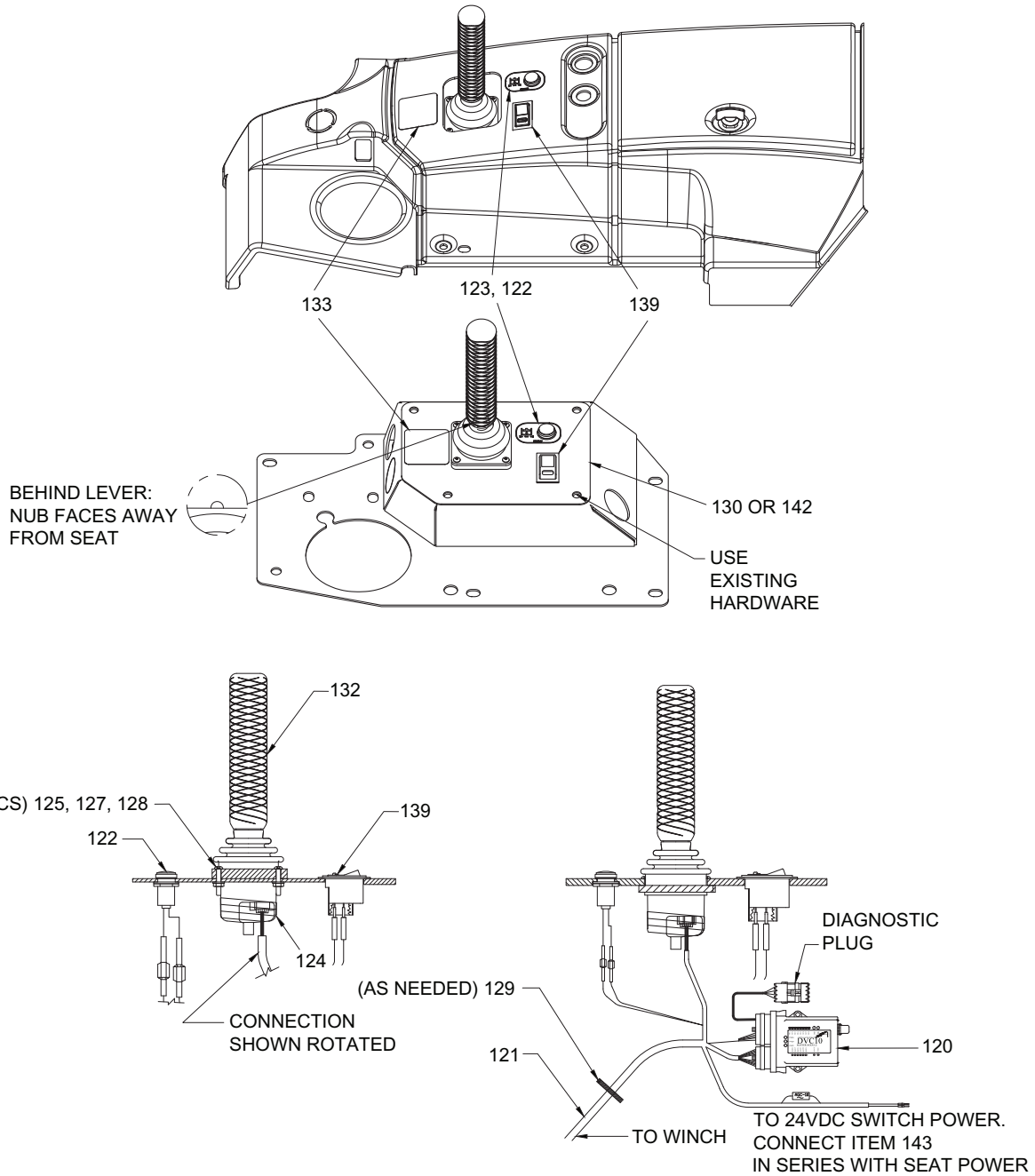
Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
120	2310632	Module, Electronic Control	1	132	*b 2310575	Assembly, Control Lever (3-98)	1
121	*c 2310079	Harness, Wiring	1	133	2305258W	Decal, Control Lever	1
	*d 2311444	Harness, Wiring	1	139	2307849W	Assembly, Switch	1
122	2303912W	Assembly, Bypass LED	1	140	2307925W	Decal, Activation Switch	1
123	2307944W	Decal, Winch Light	1	141	2307942W	Decal, Winch Indicator Light	1
125	*a 18699W	Capscrew	4				
127	15039W	Nut	4		*a	Use 318702W Thread Lock	
128	197066W	Washer	4		*b	This Assembly with Longer Handle Replaces the Previous One, P/N 2307887W, with Shorter Handle	
129	137852W	Clamp, Strap	6		*c	Last Used on S/N AW5C-1665	
130	2314174	Bracket, Control Lever - E-Controls	1		*d	First Used on S/N AW5C-1666	
131	225871	Trim, Edge	2 Ft				

Handling Gear, Electronic Controls

Caterpillar D6N (C81)

Last Used on S/N AW5C-1696

First Used on S/N AW5C-1697 (See Pages 3-86/87)

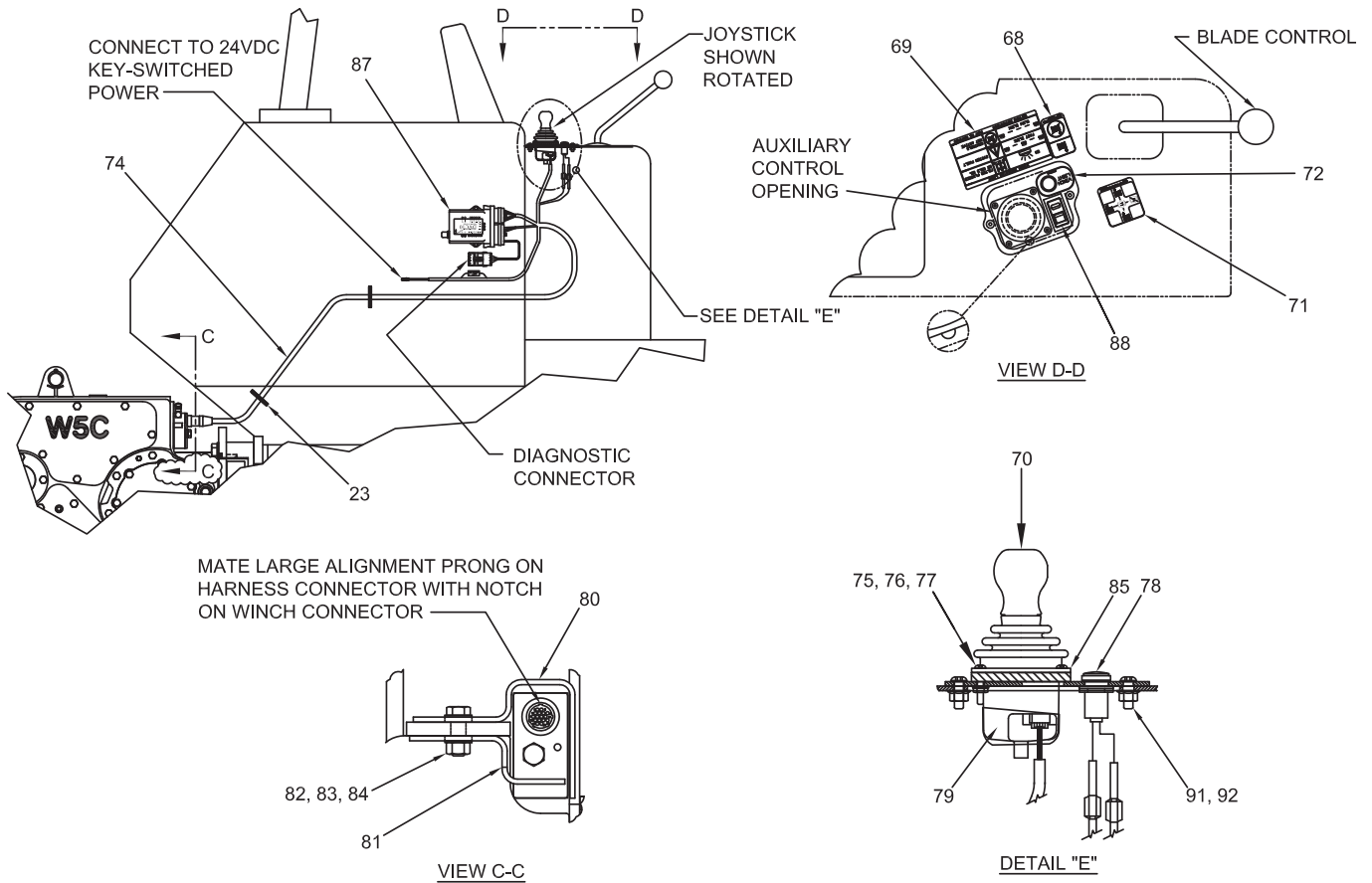


Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
120	2310632	Module, Control	1	132	2310575	Assembly, Control Lever (3-98)	1
121	*b 2310079	Harness, Wiring	1	133	2305258W	Decal, Control Lever	1
	*c 2311444	Harness, Wiring	1	139	2307849W	Assembly, Switch	1
122	2303912W	Assembly, Bypass LED	1	140	2307925W	Decal, Activation Switch	1
123	2307944W	Decal, Winch Light	1	141	2307942W	Decal, Winch Indication Light	1
124	2304796W	Tape, Self Fusing (Not Shown)	1	142	2314090	Bracket, E-Controls w/Dual Controls	1
125	*a 18699W	Capscrew	4	143	2310692	Harness, Power Adapter	1
127	15039W	Nut	4				
128	197066W	Washer	4				
129	137852W	Clamp, Strap	6				
130	2314174	Bracket, E-Controls	1				
131	225871	Trim, Edge (Not Shown)	2 Ft				

*a Use 318702W Thread Lock
 *b Last Used on S/N AW5C-1665
 *c First Used on S/N AW5C-1666

Handling Gear, Electronic Controls

John Deere 750C I & II (E45)
 Used on S/N AW5C-1320 thru AW5C-1561
 Page 1 of 3

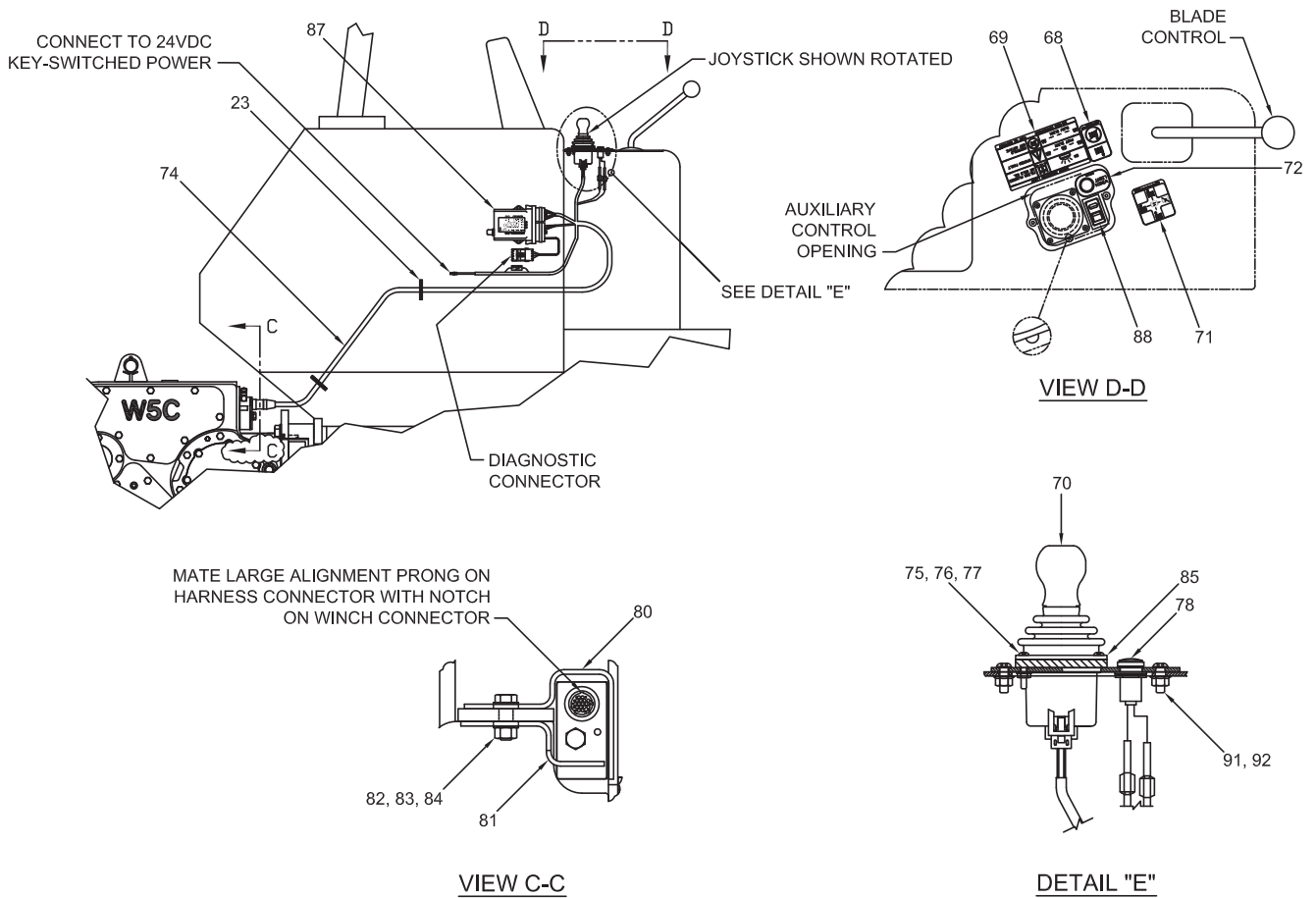


NOTE: Communication cable p/n 2304603W is necessary to perform extensive troubleshooting on the electronic controls system. For basic troubleshooting, see Service Manual.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
23	137852W	Clamp, Strap	5	81	2304630W	Guard, Harness - Lower	1
68	2307925W	Decal, Activation Switch	1	82	*a Y17C-0824	Capscrew	2
69	2307942W	Decal, Winch Indicator Light	1	83	221771W	Washer	4
70	2304781W	Lever, Control - w/Freespool (3-96)	1	84	15058W	Nut	2
71	2305258W	Decal, Control - w/Freespool	1	85	2304779W	Collar, Control Lever Mounting	1
72	2307944W	Decal, Winch Light	1	87	2307857W	Module, Electronic Control	1
74	2307576W	Harness, Wiring	1	88	2307849W	Assembly, Rocker Switch - w/Lock	1
75	*a 2304892W	Capscrew	4	90	2307872W	Plate, Control Lever Mounting	1
76	15039W	Nut	4	91	18720W	Capscrew	2
77	197066W	Washer	4	92	264150W	Flangenut	2
78	2303912W	Assembly, Bypass LED	1				
79	2307389W	Tubing, Heat Shrink	1				
80	2304629W	Guard, Harness - Upper	1				
				*a	Uses 318702W Thread Lock		

Handling Gear, Electronic Controls

John Deere 750C I & II (E45)
 Used on S/N AW5C-1562 thru AW5C-1665
 Page 2 of 3

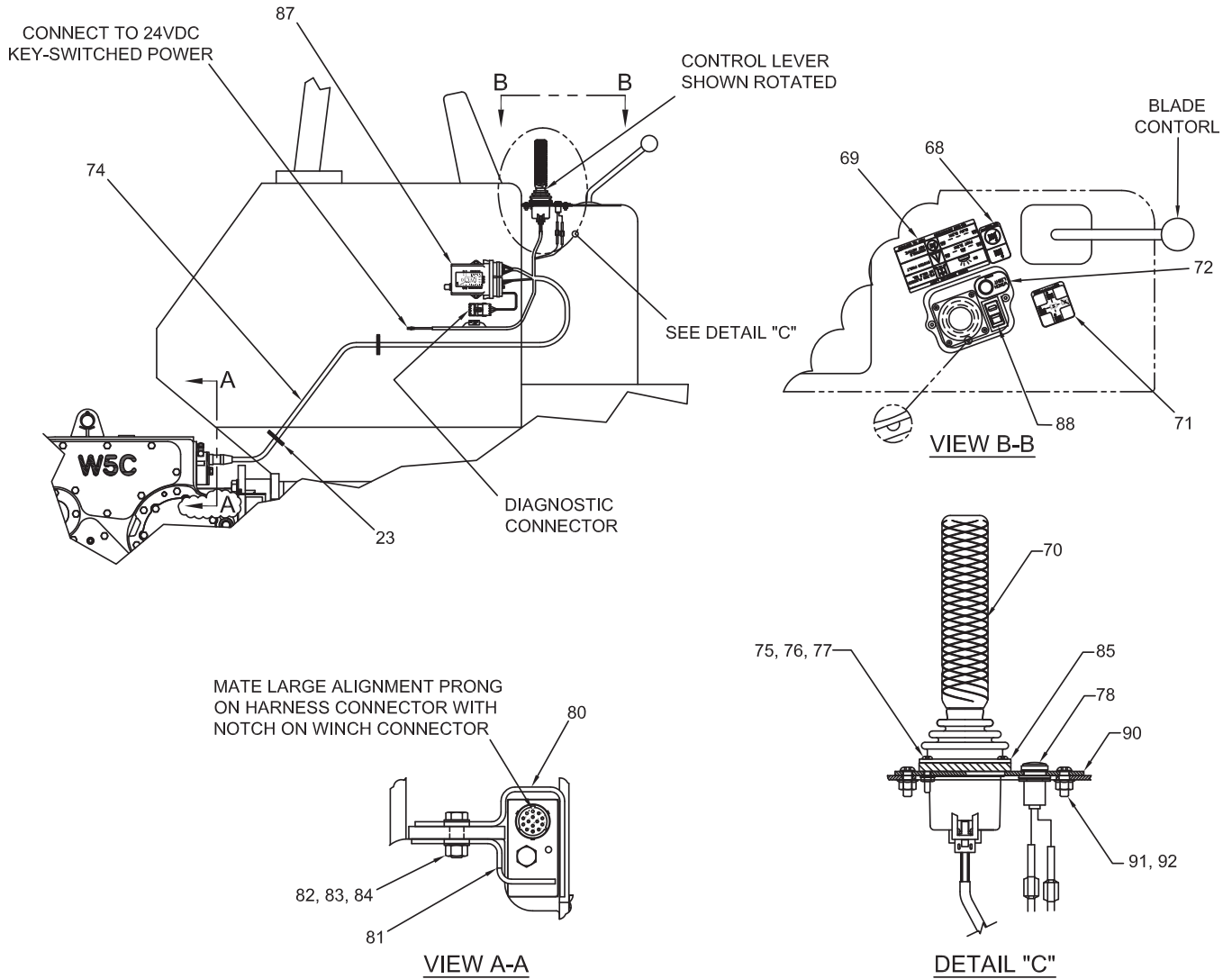


NOTE: Communication cable p/n 2304603W is necessary to perform extensive troubleshooting on the electronic controls system. For basic troubleshooting, see Service Manual.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
23	129563W	Clamp, Strap	5	82	*a Y17C-0824	Capscrew	2
68	2307925W	Decal, Activation Switch	1	83	221771W	Washer	4
69	2307942W	Decal, Winch Indicator Light	1	84	15058W	Nut	2
70	2307887W	Lever, Control - w/Freespool (3-97)	1	85	2304779W	Collar, Control Lever Mounting	1
71	2305258W	Decal, Control - w/Freespool	1	87	2307857W	Module, Electronic Control	1
72	2307944W	Decal, Winch Light	1	88	2307849W	Assembly, Rocker Switch - w/Lock	1
74	*b 2307576W	Harness, Wiring	1	90	2307872W	Plate, Control Lever Mounting	1
74	*c 2310079	Harness, Wiring	1	91	18720W	Capscrew	2
75	*a 2304892W	Capscrew	4	92	264150W	Flangenut	2
76	15039W	Nut	4				
77	197066W	Washer	4				
78	2303912W	Assembly, Bypass LED	1		*a	Uses 318702W Thread Lock	
80	2304629W	Guard, Harness - Upper	1		*b	Last Used on S/N AW5C-1579	
81	2304630W	Guard, Harness - Lower	1		*c	First Used on S/N AW5C-1580	

Handling Gear, Electronic Controls

John Deere 750C I & II (E45)
 Used on S/N AW5C-1666 thru AW5C-1696
 First Used on S/N AW5C-1697 (See Pages 3-86/87)
 Page 3 of 3

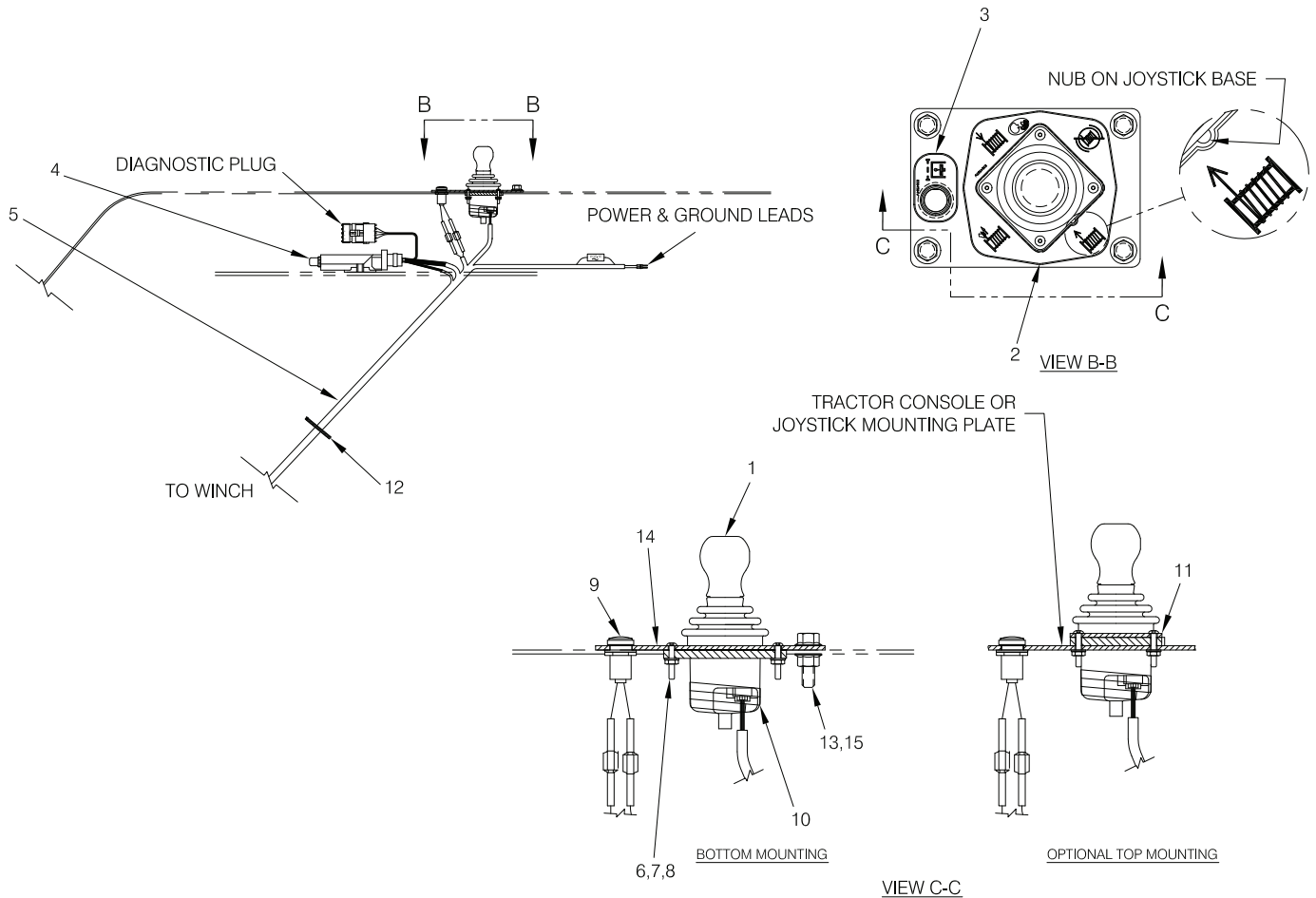


NOTE: Communication cable p/n 2304603W is necessary to perform extensive troubleshooting on the electronic controls system. For basic troubleshooting, see Service Manual.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
23	129563W	Clamp, Strap	2	81	2304630W	Guard, Harness - Lower	1
68	2307925W	Decal, Activation Switch	1	82	*a Y17C-0824	Capscrew	2
69	2307942W	Decal, Winch Indicator Light	1	83	221771W	Washer	4
70	2310575	Assembly, Control Lever (3-98)	1	84	15058W	Nut	2
71	2305258W	Decal, Control - w/Freespool	1	85	2304779W	Collar, Control Lever Mounting	1
72	2307944W	Decal, Winch Light	1	87	2310626	Module, Electronic Control	1
74	2311444	Harness, Wiring	1	88	2307849W	Assembly, Rocker Switch - w/Lock	1
75	*a 2304892W	Capscrew	4	90	2307872W	Plate, Control Lever Mounting	1
76	15039W	Nut	4	91	18720W	Capscrew	2
77	197066W	Washer	4	92	264150W	Flangenut	2
78	2303912W	Assembly, Bypass LED	1				
80	2304629W	Guard, Harness - Upper	1				
				*a	Uses 318702W Thread Lock		

Handling Gear, Electronic Controls

Komatsu D41E-6 (K27)
 Last Used on S/N AW5C-1319
 Page 1 of 4



NOTE: Communication cable p/n 2304603W is necessary to perform extensive troubleshooting on the electronic controls system. For basic troubleshooting, see Service Manual.

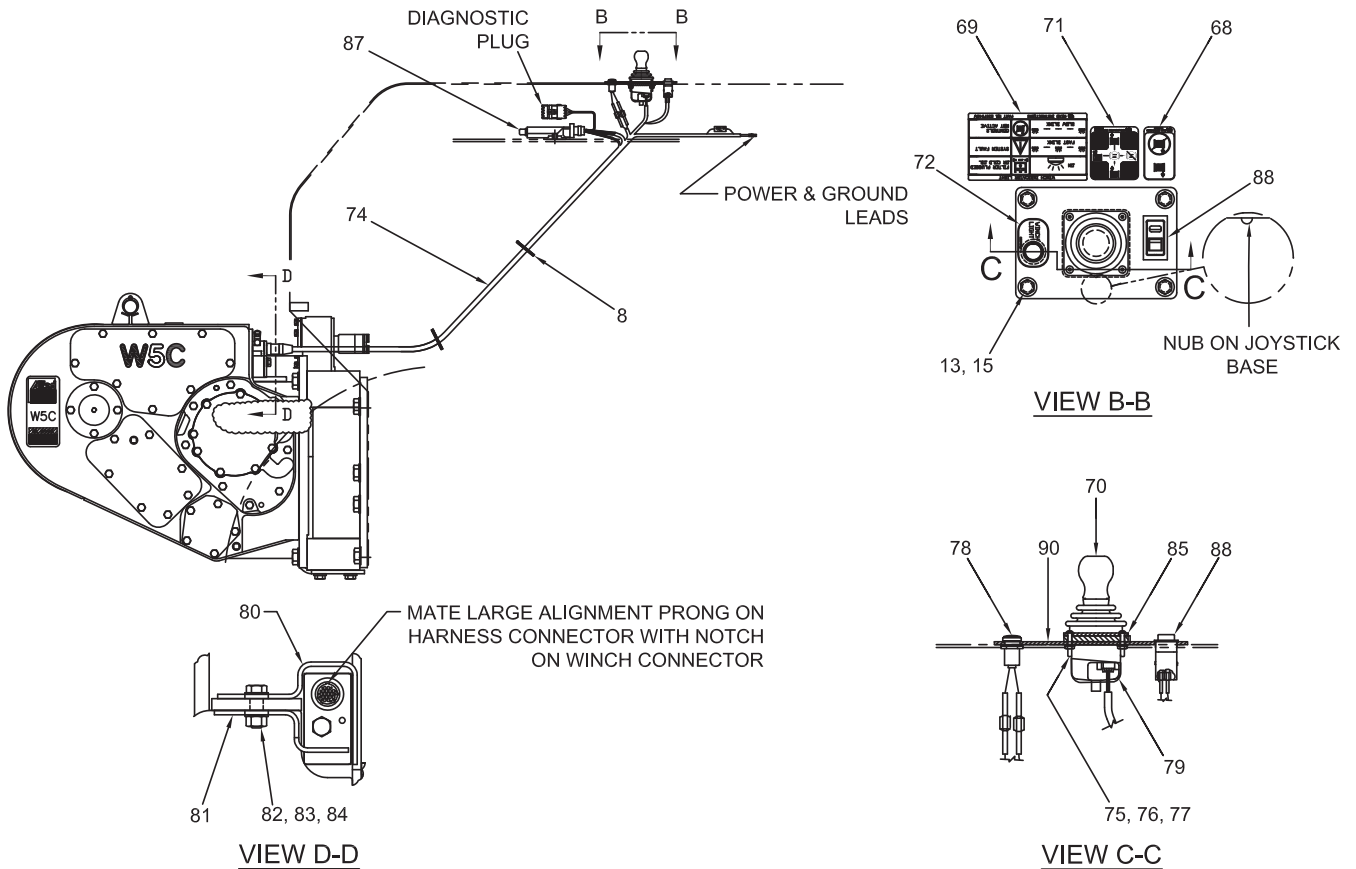
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2304781W	Lever, Control - w/Freespool (3-96)	1	9	2303912W	Assembly, Bypass LED	1
2	2304505W	Decal, Control	1	10	2304796W	Tape, Self-Fusing	1
3	2304504W	Decal, Filter LED	1	11	2304779W	Collar, Control Lever Mounting	1
4	2303820W	Module, Electronic Control	1	12	137852W	Strap, Clamp	AR
5	2303900W	Harness, Wiring	1	13	398599W	Screw, Flange	4
6	2304892W	Screw	4	14	2305194W	Plate, Control Lever Mounting	1
7	15039W	Nut	4	15	156133W	Flangenut	4
8	197066W	Washer	4				

Handling Gear, Electronic Controls

Komatsu D41E-6 (K27)

Used on S/N AW5C-1320 thru AW5C-1561

Page 2 of 4



NOTE: Communication cable p/n 2304603W is necessary to perform extensive troubleshooting on the electronic controls system. For basic troubleshooting, see Service Manual.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
8	137852W	Clamp, Strap	5	79	2307389W	Tubing, Heat Shrink	1
13	398599W	Screw, Flange	4	80	2304629W	Guard, Harness - Upper	1
15	156133W	Flangenut	4	81	2304630W	Guard, Harness - Lower	1
68	2307925W	Decal, Activation Switch	1	82	Y17C-0824	Capscrew	2
69	2307942W	Decal, Winch Indicator Light	1	83	221771W	Washer	4
70	2304781W	Lever, Control - w/Freespool (3-96)	1	84	15058W	Nut	2
71	2305258W	Decal, Control - w/Freespool	1	85	2304779W	Collar, Control Lever Mounting	1
72	2307944W	Decal, Winch Light	1	87	2307857W	Module, Electronic Control	1
74	2307576W	Harness, Wiring	1	88	2307849W	Assembly, Rocker Switch - w/Lock	1
75	*a 2304892W	Capscrew	4	90	2307874W	Plate, Control Lever Mounting	1
76	15039W	Nut	4				
77	197066W	Washer	4				
78	2303912W	Assembly, Bypass LED	1				

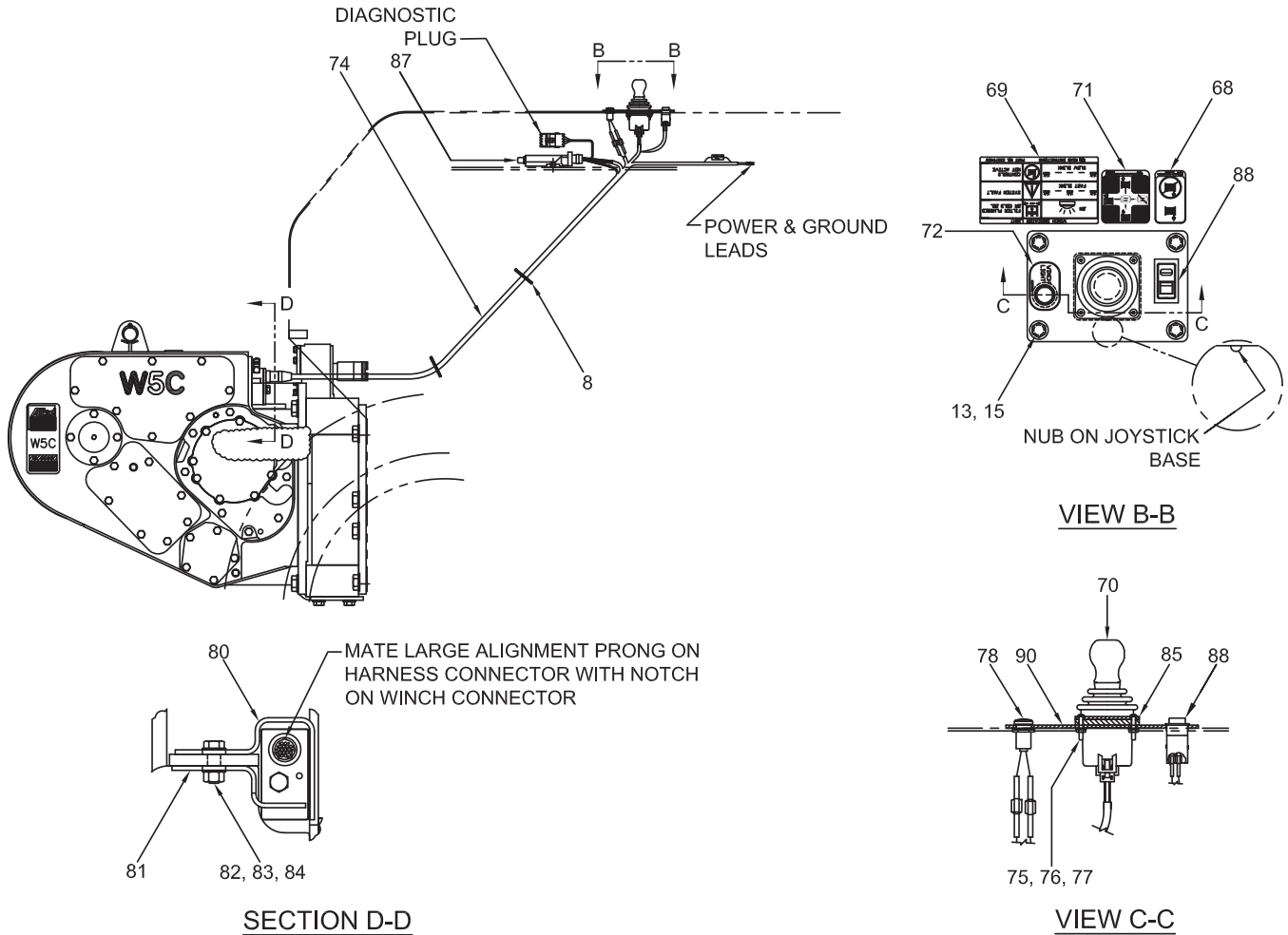
*a Uses 318702W Thread Lock

Handling Gear, Electronic Controls

Komatsu D41E-6 (K27)

Used on S/N AW5C-1562 thru AW5C-1665

Page 3 of 4



NOTE: Communication cable p/n 2304603W is necessary to perform extensive troubleshooting on the electronic controls system. For basic troubleshooting, see Service Manual.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
8	137852W	Clamp, Strap	5	80	2304629W	Guard, Harness - Upper	1
13	398599W	Screw, Flange	4	81	2304630W	Guard, Harness - Lower	1
15	156133W	Flangenut	4	82	Y17C-0824	Capscrew	2
68	2307925W	Decal, Activation Switch	1	83	221771W	Washer	4
69	2307942W	Decal, Winch Indicator Light	1	84	15058W	Nut	2
70	2307887W	Lever, Control - w/Freespool (3-97)	1	85	2304779W	Collar, Control Lever Mounting	1
71	2305258W	Decal, Control - w/Freespool	1	87	2307856W	Module, Electronic Control	1
72	2307944W	Decal, Winch Light	1	88	2307849W	Assembly, Rocker Switch - w/Lock	1
74	*b 2307576W	Harness, Wiring	1	90	2307874W	Plate, Control Lever Mounting	1
	*c 2310079	Harness, Wiring	1				
75	*a 2304892W	Capscrew	4				
76	15039W	Nut	4				
77	197066W	Washer	4				
78	2303912W	Assembly, Bypass LED	1				
				*a		Uses 318702W Thread Lock	
				*b		Last Used on S/N AW5C-1579	
				*c		First Used on S/N AW5C-1580	

Handling Gear, Electronic Controls

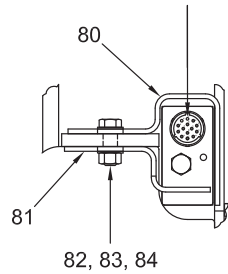
Komatsu D41E-6 (K27)

Used on S/N AW5C-1666 thru AW5C-1696

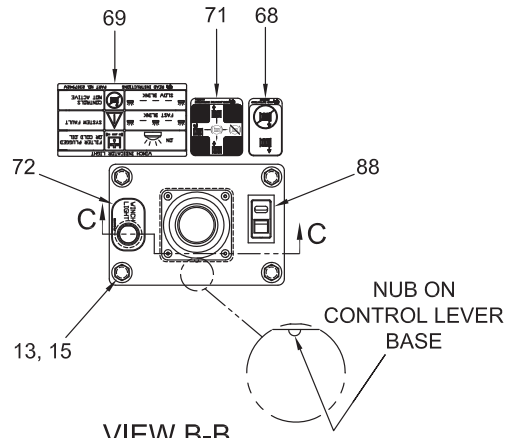
First Used on S/N AW5C-1697 (See Pages 3-86/87)

Page 4 of 4

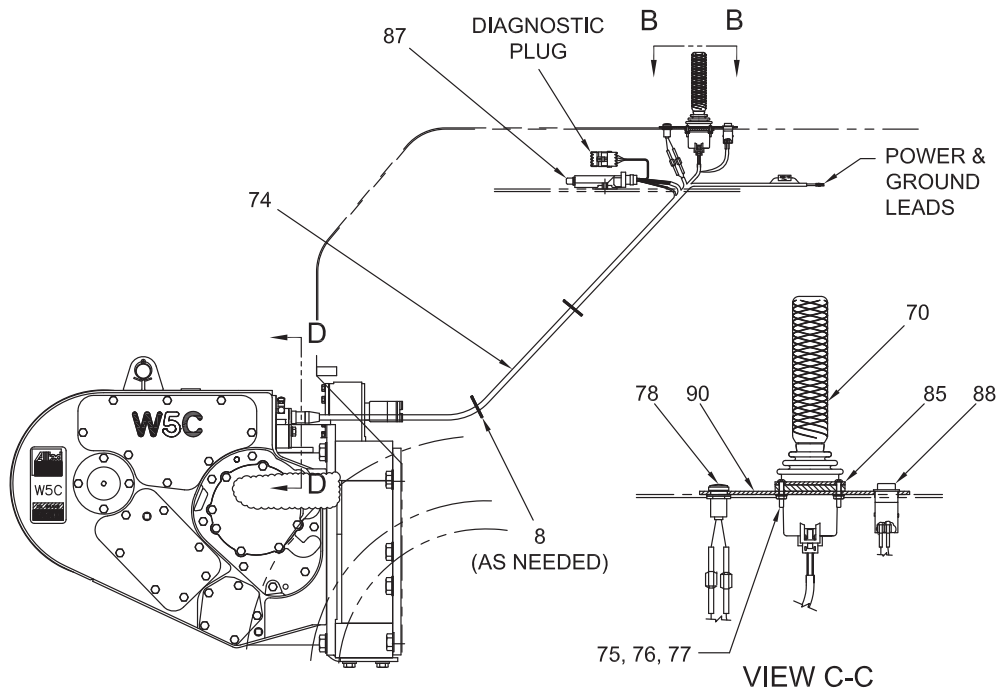
MATE LARGE ALIGNMENT PRONG ON HARNESS CONNECTOR WITH NOTCH ON WINCH CONNECTOR



SECTION D-D



VIEW B-B



VIEW C-C

NOTE: Communication cable p/n 2304603W is necessary to perform extensive troubleshooting on the electronic controls system. For basic troubleshooting, see Service Manual.

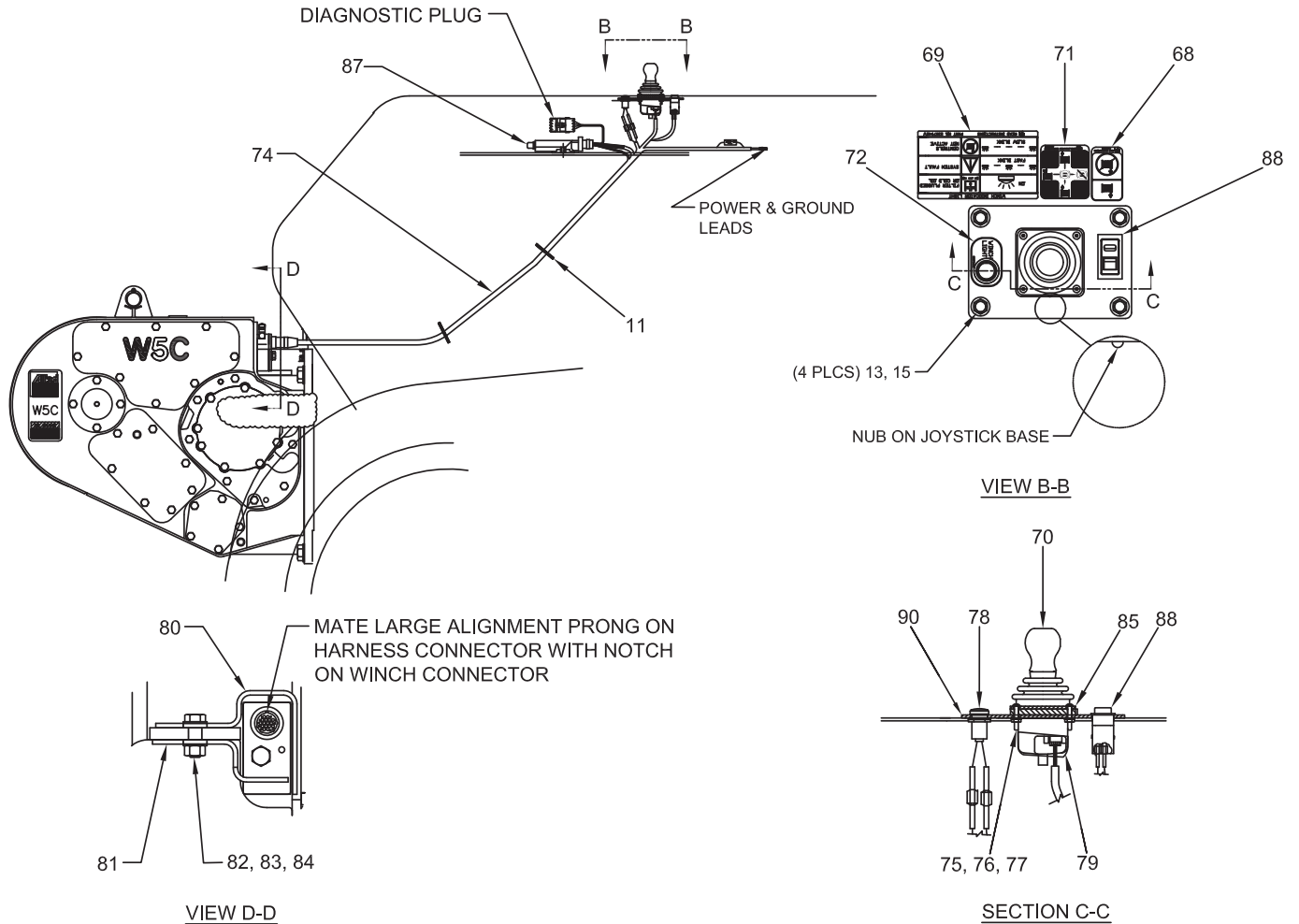
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
8	137852W	Clamp, Strap	5	77	197066W	Washer	4
13	398599W	Screw, Flange	4	78	2303912W	Assembly, Bypass LED	1
15	156133W	Flangenut	4	80	2304629W	Guard, Harness - Upper	1
68	2307925W	Decal, Activation Switch	1	81	2304630W	Guard, Harness - Lower	1
69	2307942W	Decal, Winch Indicator Light	1	82	Y17C-0824	Capscrew	2
70	2310575	Lever, Control - w/Freespool (3-98)	1	83	221771W	Washer	4
71	2305258W	Decal, Control - w/Freespool	1	84	15058W	Nut	2
72	2307944W	Decal, Winch Light	1	85	2304779W	Collar, Control Lever Mounting	1
74	2311444	Harness, Wiring	1	87	2310626	Module, Electronic Control	1
75	2304892W	Capscrew	4	88	2307849W	Assembly, Rocker Switch - w/Lock	1
76	15039W	Nut	4	90	2307874W	Plate, Control Lever Mounting	1

Handling Gear, Electronic Controls

Komatsu D61E-12 (K47)

Used on S/N AW5C-1320 thru AW5C-1561

Page 1 of 3



NOTE: Communication cable p/n 2304603W is necessary to perform extensive troubleshooting on the electronic controls system. For basic troubleshooting, see Service Manual.

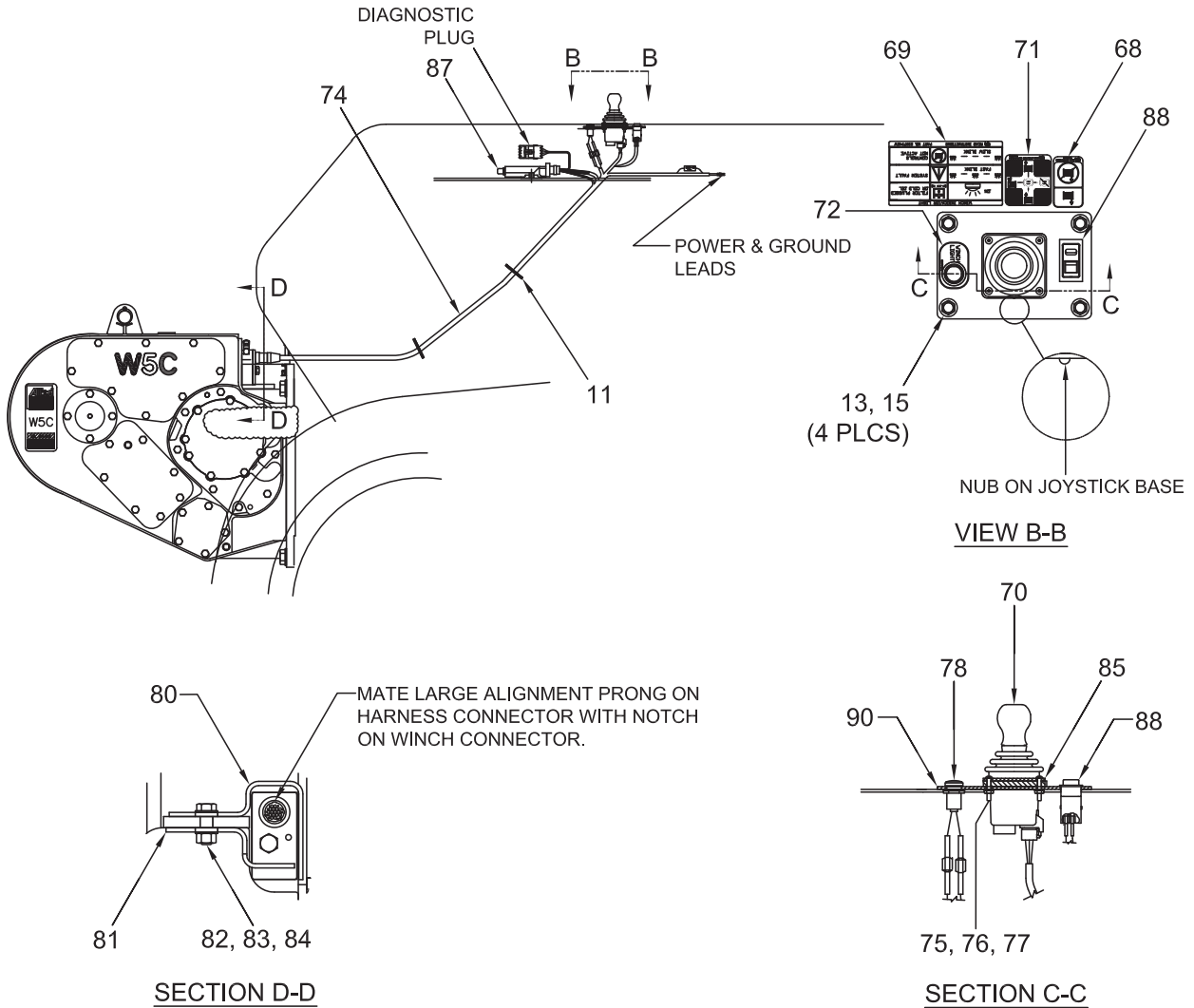
Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
11	137852W	Clamp, Strap	5	79	2307389W	Tubing, Heat Shrink	1
68	2307925W	Decal, Activation Switch	1	80	2304629W	Guard, Harness - Upper	1
69	2307942W	Decal, Winch Indicator Light	1	81	2304630W	Guard, Harness - Lower	1
70	2304781W	Lever, Control - w/Freespool (3-96)	1	82	Y17C-0824	Capscrew	2
71	2305258W	Decal, Control - w/Freespool	1	83	221771W	Washer	4
72	2307944W	Decal, Winch Light	1	84	15058W	Nut	2
74	2307576W	Harness, Wiring	1	85	2304779W	Collar, Control Lever Mounting	1
75	2304892W	Capscrew	4	87	2307856W	Module, Electronic Control	1
76	15039W	Nut	4	88	2307849W	Assembly, Rocker Switch - w/Lock	1
77	197066W	Washer	4	90	2307874W	Plate, Control Lever Mounting	1
78	2303912W	Assembly, Bypass LED	1				

Handling Gear, Electronic Controls

Komatsu D61E-12 (K47)

Used on S/N AW5C-1562 thru AW5C-1665

Page 2 of 3



NOTE: Communication cable p/n 2304603W is necessary to perform extensive troubleshooting on the electronic controls system. For basic troubleshooting, see Service Manual.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
11	137852W	Clamp, Strap	5	80	2304629W	Guard, Harness - Upper	1
68	2307925W	Decal, Activation Switch	1	81	2304630W	Guard, Harness - Lower	1
69	2307942W	Decal, Winch Indicator Light	1	82	Y17C-0824	CapscREW	2
70	2307887W	Lever, Control - w/Freespool (3-97)	1	83	221771W	Washer	4
71	2305258W	Decal, Control - w/Freespool	1	84	15058W	Nut	2
72	2307944W	Decal, Winch Light	1	85	2304779W	Collar, Control Lever Mounting	1
74	*a 2307576W	Harness, Wiring	1	87	2307856W	Module, Electronic Control	1
	*b 2310079	Harness, Wiring	1	88	2307849W	Assembly, Rocker Switch - w/Lock	1
75	2304892W	CapscREW	4	90	2307874W	Plate, Control Lever Mounting	1
76	15039W	Nut	4				
77	197066W	Washer	4				
78	2303912W	Assembly, Bypass LED	1				
				*a	Last Used on S/N AW5C-1579		
				*b	First Used on S/N AW5C-1580		

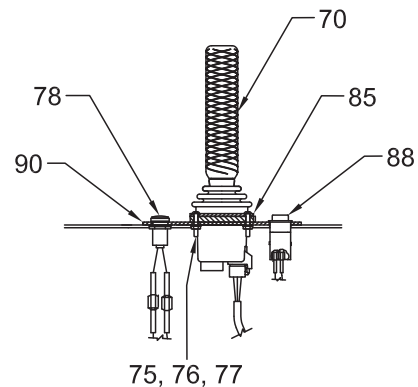
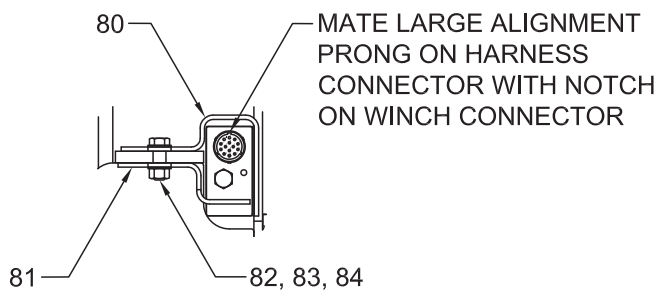
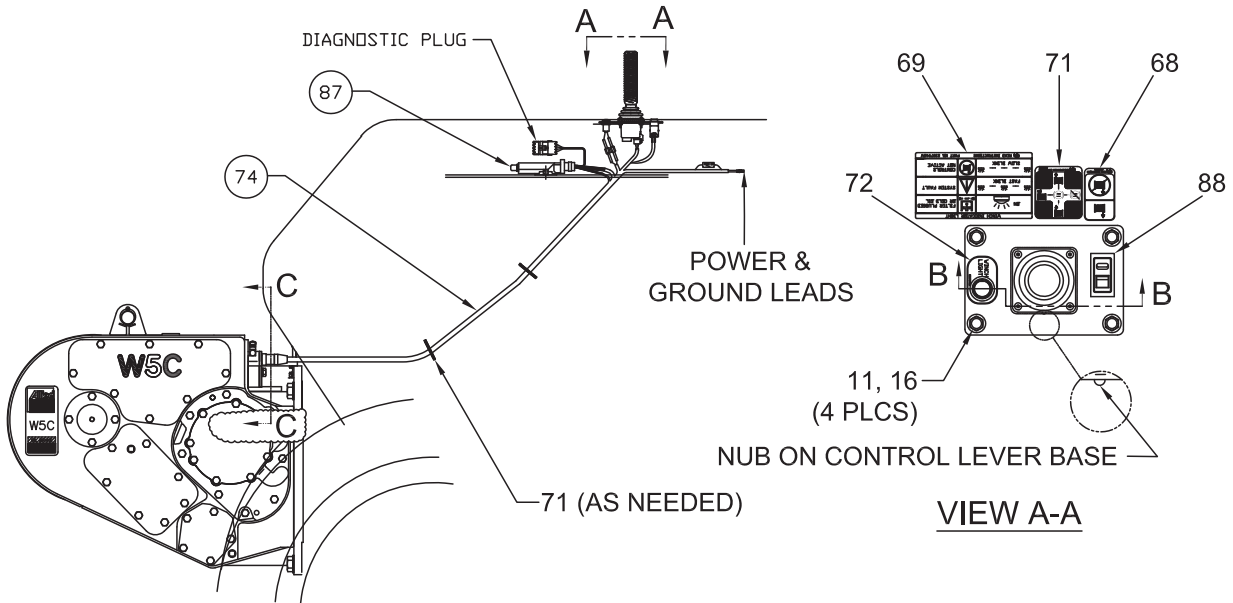
Handling Gear, Electronic Controls

Komatsu D61E-12 (K47)

Used on S/N AW5C-1666 thru AW5C-1696

First Used on S/N AW5C-1697 (See Pages 3-86/87)

Page 3 of 3



NOTE: Communication cable p/n 2304603W is necessary to perform extensive troubleshooting on the electronic controls system. For basic troubleshooting, see Service Manual.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
11	398599W	Screw, Flanged	4	78	2303912W	Assembly, Bypass LED	1
16	156133W	Nut	4	80	2304629W	Guard, Harness - Upper	1
68	2307925W	Decal, Activation Switch	1	81	2304630W	Guard, Harness - Lower	1
69	2307942W	Decal, Winch Indicator Light	1	82	Y17C-0824	Capscrew	2
70	2310575	Lever, Control - w/Freespool (3-98)	1	83	221771W	Washer	4
71	2305258W	Decal, Control - w/Freespool	1	84	15058W	Nut	2
72	2307944W	Decal, Winch Light	1	85	2304779W	Collar, Control Lever Mounting	1
74	2311444	Harness, Wiring	1	87	2310626	Module, Electronic Control	1
75	2304892W	Capscrew	4	88	2307849W	Assembly, Rocker Switch - w/Lock	1
76	15039W	Nut	4	90	2307874W	Plate, Control Lever Mounting	1
77	197066W	Washer	4				

Intentionally Blank

Handling Gear, Electronic Controls

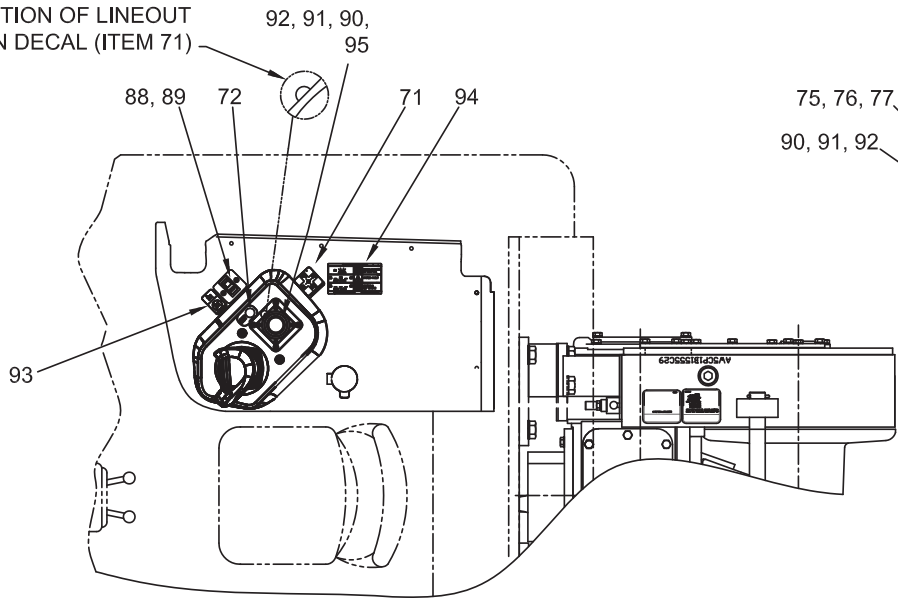
New Holland DC150 PS (A38)

Last Used on S/N AW5C-1696

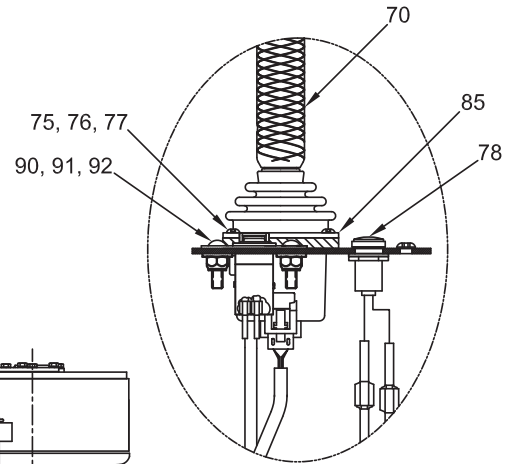
First Used on S/N AW5C-1697 (See Pages 3-86/87)

Page 1 of 2

ORIENT LEVER WITH
CAST BULGE IN
DIRECTION OF LINEOUT
ON DECAL (ITEM 71)

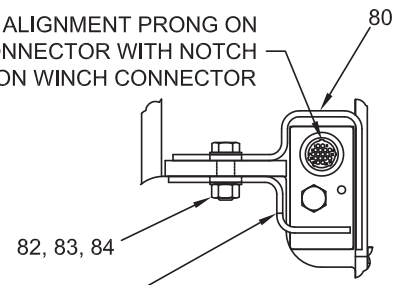


VIEW D-D



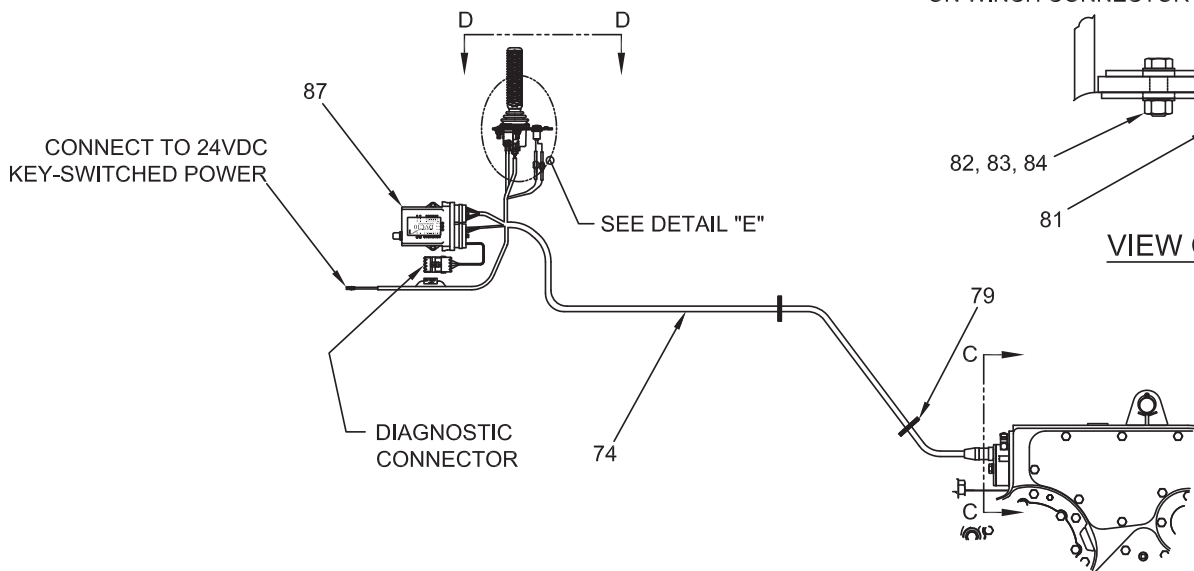
DETAIL "E"

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



VIEW C-C

CONNECT TO 24VDC
KEY-SWITCHED POWER



Handling Gear, Electronic Controls

New Holland DC150 PS (A38)

Last Used on S/N AW5C-1696

First Used on S/N AW5C-1697 (See Pages 3-86/87)

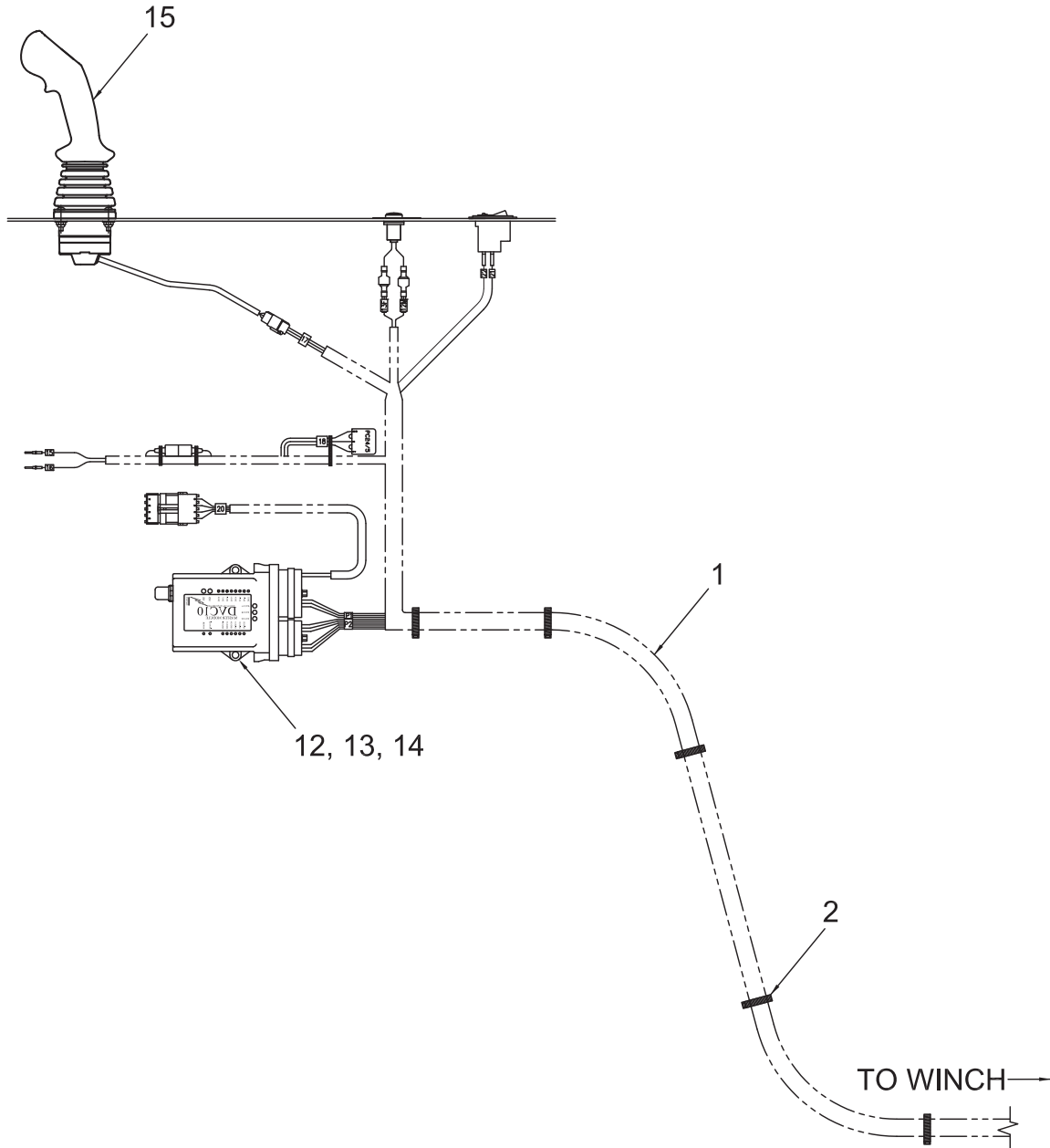
Page 2 of 2

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
70	2310575	Lever, Control - w/FS (See 3-98)	1	84	15058W	Nut	2
71	2305258W	Decal, Control - w/FS	1	85	2304779W	Collar, Control Lever Mounting	1
72	2307944W	Decal, Winch Light	1	87	2310626	Module, Electronic Control	1
74	2310079	Harness, Wiring	1	88	2307849W	Assembly, Rocker Switch - w/Lock	1
75	*a 2304892W	Capscrew	4	89	2307643W	Plate, Switch Mounting	1
76	15039W	Nut	4	90	15127W	Washer	6
77	197066W	Washer	4	91	15113W	Nut	6
78	2303912W	Assembly, Bypass LED	1	92	Y25G-0416	Capscrew	6
79	129563W	Clamp, Strap	5	93	2307925W	Decal, Activation Switch	1
80	2304629W	Guard, Harness - Upper	1	94	2307942W	Decal, Winch Indicator Light	1
81	2304630W	Guard, Harness - Lower	1	95	2310161	Plate, Control Lever Mounting	1
82	*a 200454W	Capscrew	2				
83	221771W	Washer	4		*a Uses 230064W Loctite Kit		

Handling Gear, Electronic Controls

First Used on S/N AW5C-1697

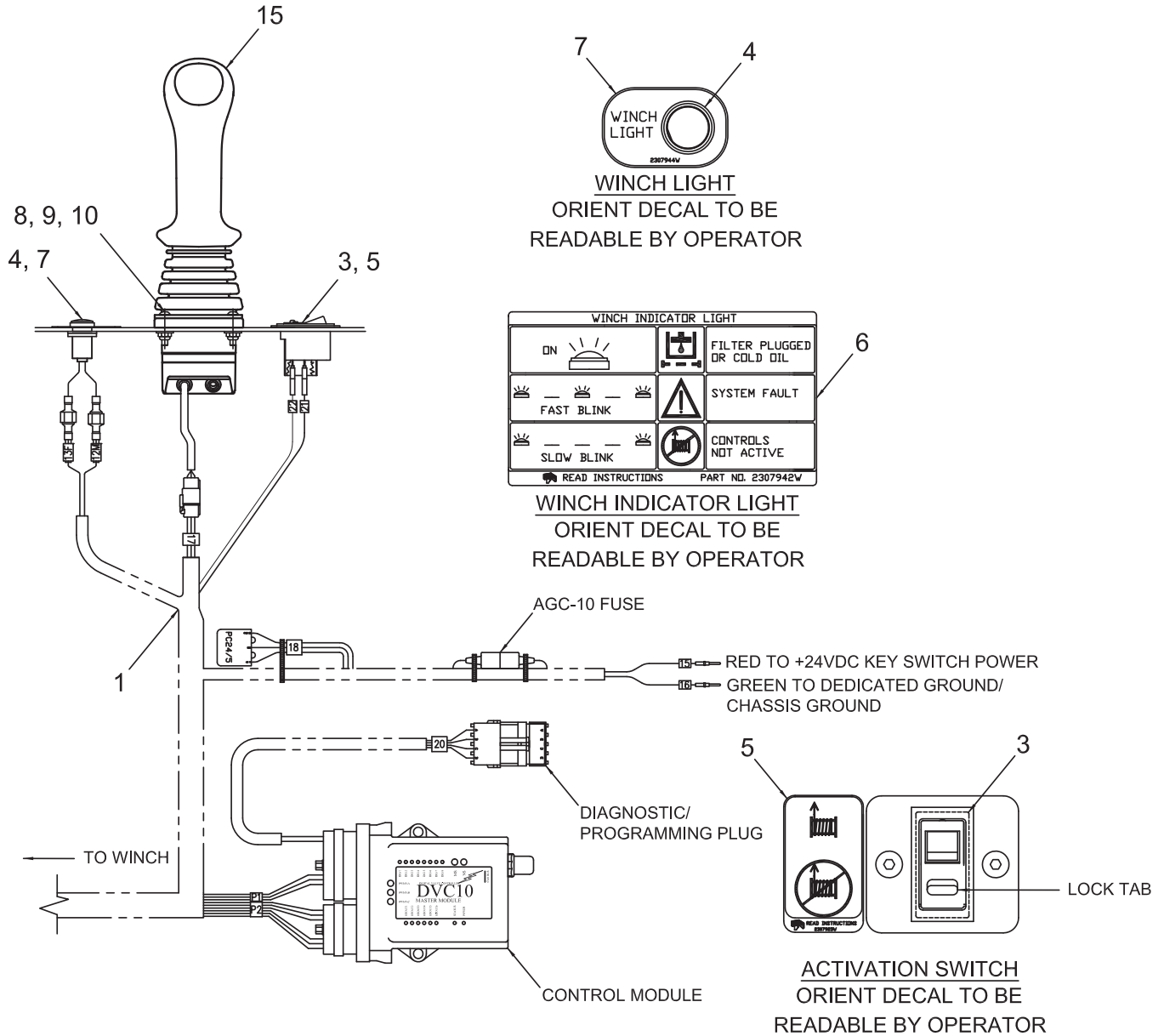
Page 1 of 2



Handling Gear, Electronic Controls

First Used on S/N AW5C-1697

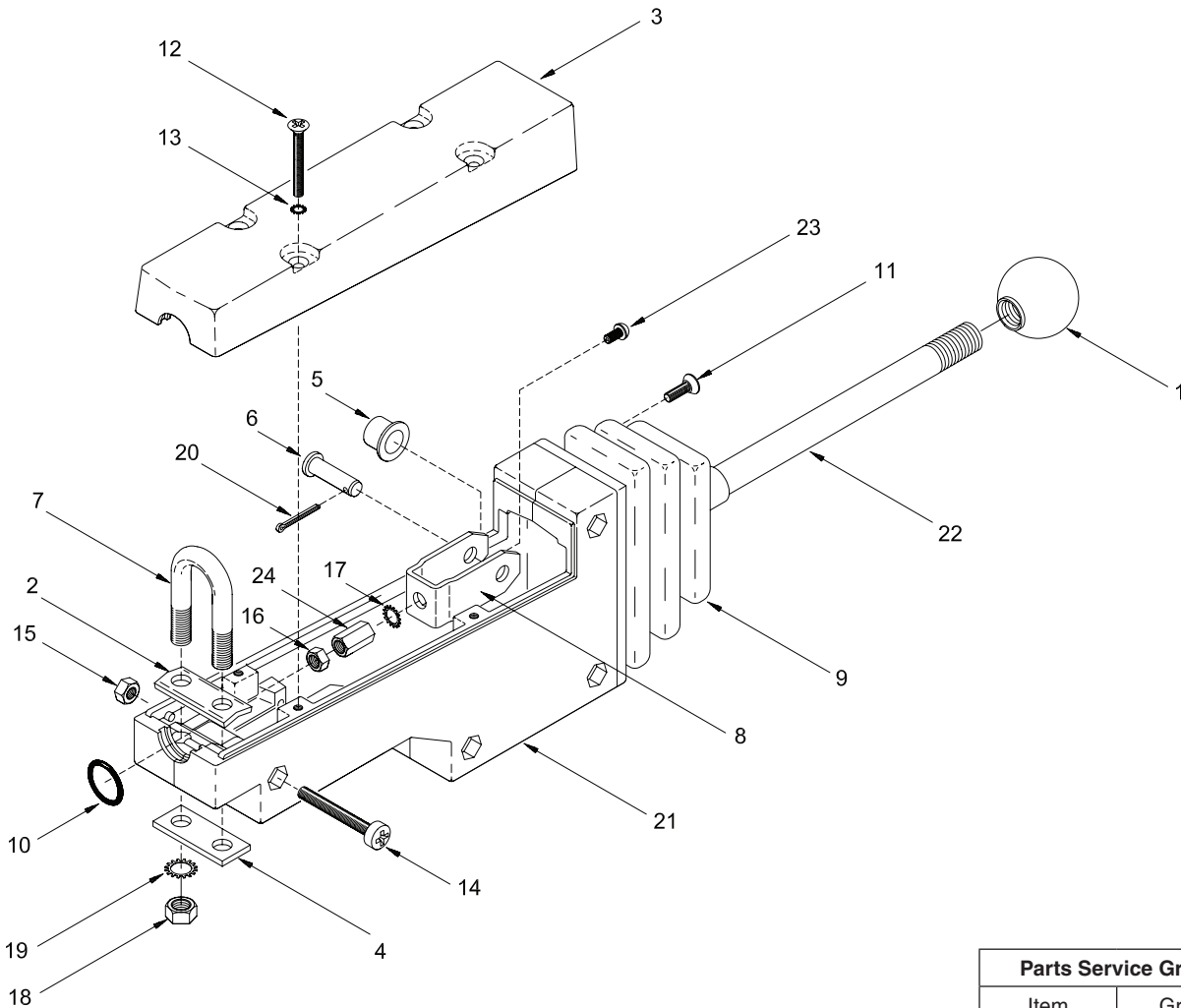
Page 2 of 2



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2311444	Harness, Wiring	1	8	Y25G-(1024)16	Capscrew	4
2	137852W	Tie, Cable - Black	10	9	Y35E-#10	Washer	4
3	2307849W	Assembly, Rocker Switch - w/Lock	1	10	224191	Nut	4
4	2303912W	Assembly, Bypass LED - 24VDC	1	12	221763W	Washer	4
5	2307925W	Decal, Activation Switch	1	13	15113W	Nut	2
6	2307942W	Decal, Winch Indicator Light	1	14	R13801782	Capscrew	2
7	2307944W	Decal, Winch Light	1	15	2315001	Assembly, Control Lever (See 3-99)	1

Control Lever, Power Controls

Consult Control Lever Installation Pages for Last Use Serial Numbers

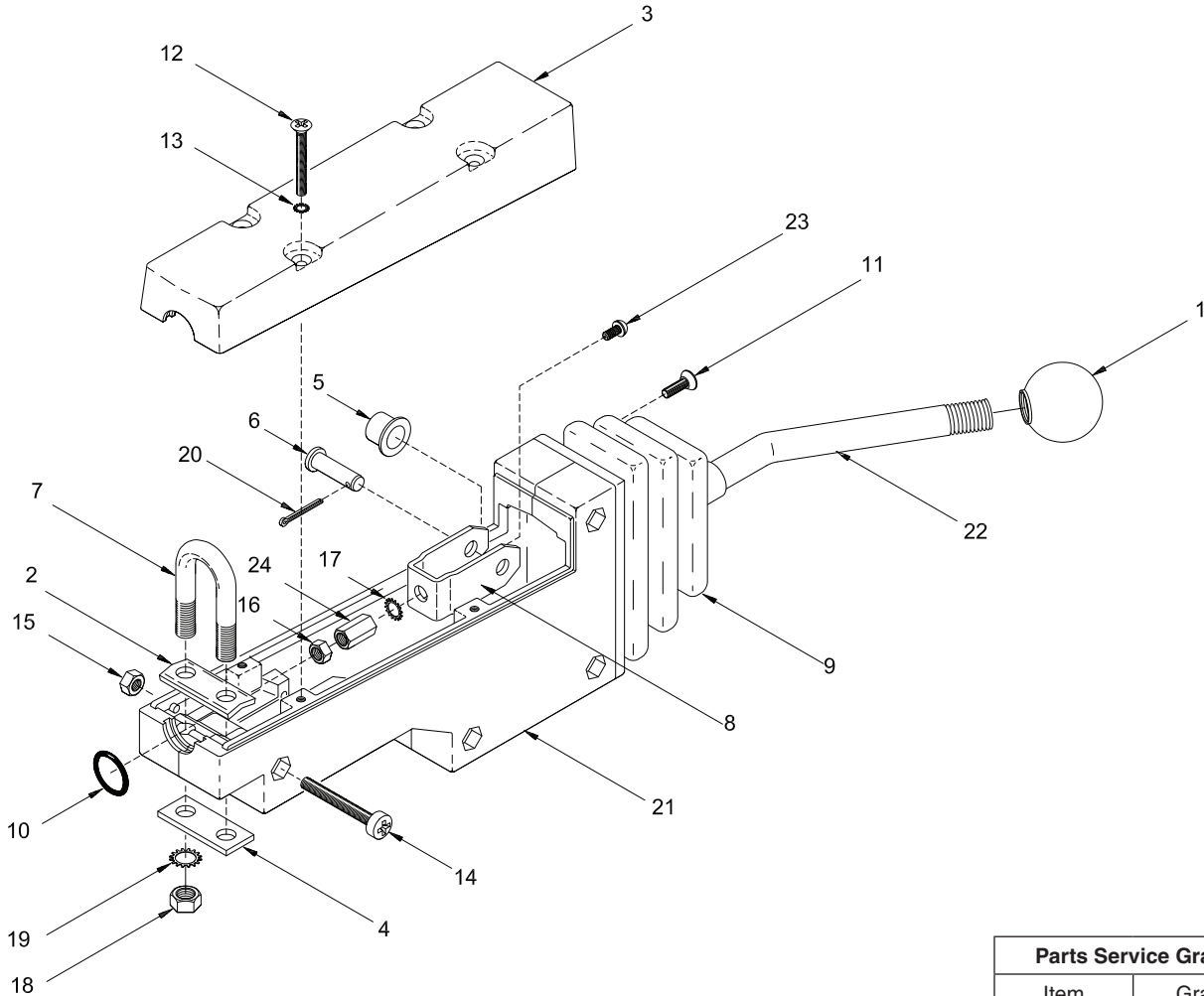


Parts Service Gram	
Item	Gram
All	A3-C-7

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	383880W	Assembly, Control Lever	1				
1	1302049W	. Knob	1	15	15024W	. Nut	1
2	*b NSS	. Clamp, Cable	1	16	15004W	. Nut	1
3	1302047W	. Cover	1	17	15923W	. Washer	1
4	*b NSS	. Clamp, Base	1	18	*b NSS	. Nut	2
5	1302045W	. Bearing	2	19	*b NSS	. Lockwasher	2
6	1302044W	. Pin, Clevis	1	20	1302039W	. Pin	1
7	*b NSS	. U-Bolt	1	21	NSS	. Housing	1
8	1302042W	. Clevis	1	22	NSS	. Lever	1
9	1302041W	. Boot	1	23	*a 18717W	CapscREW, Button Head	1
10	1302040W	. O-Ring	1	24	383881W	Nut, Tall	1
11	1306003W	. Screw	4				
12	1306002W	. Screw	4				
13	221867W	. Lockwasher, Star	4				
14	1306001W	. Screw	1				
					*a	Uses 318702W Thread Lock	
					*b	Included in 2300995W U-Bolt Clamp Kit	

Control Lever, Power Controls

Consult Control Lever Installation Pages for Last Use Serial Numbers

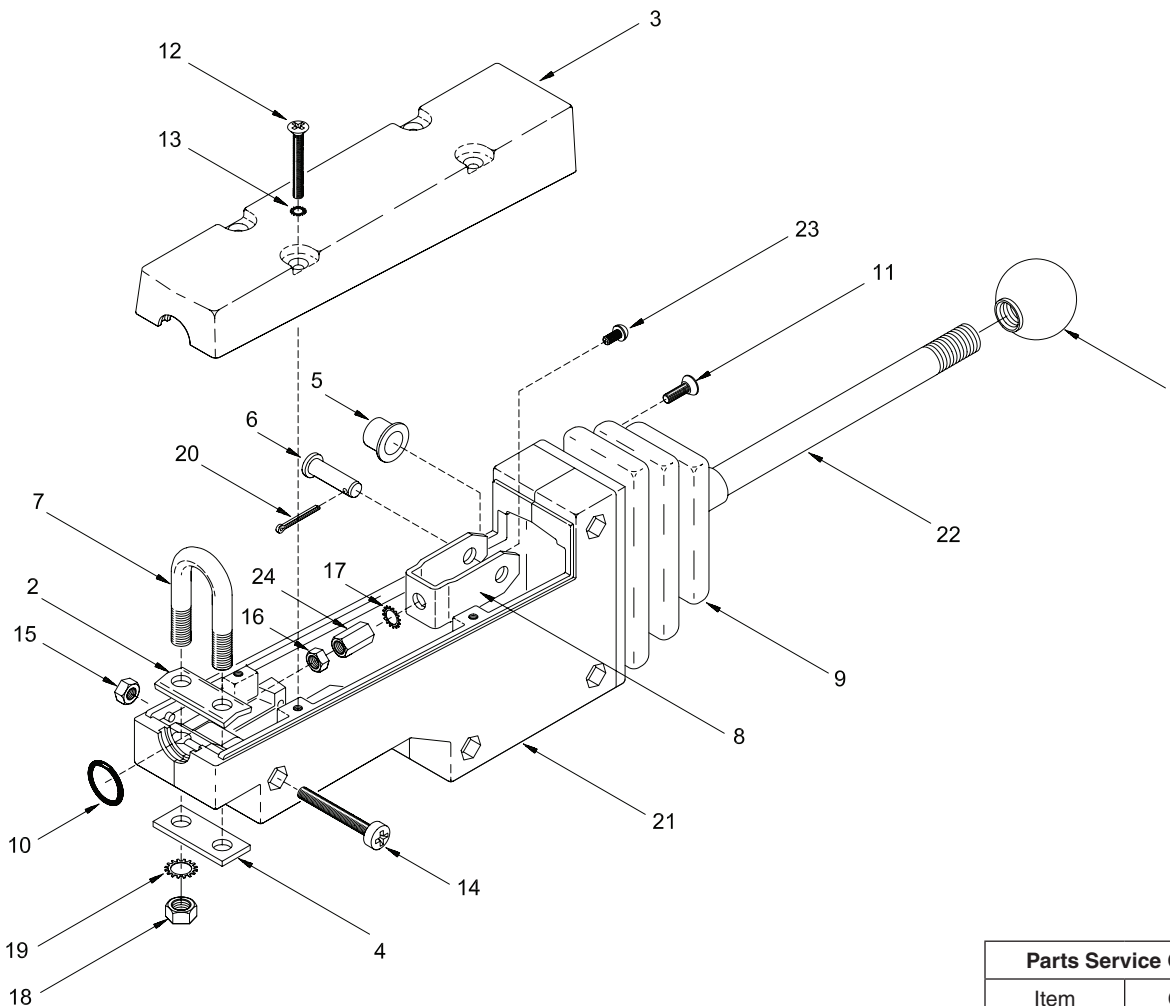


Parts Service Gram	
Item	Gram
All	A3-C-7

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2303120W	Assembly, Control Lever	1				
1	1302049W	. Knob	1	15	15024W	. Nut	1
2	*b NSS	. Clamp, Cable	1	16	15004W	. Nut	1
3	1302047W	. Cover	1	17	15923W	. Washer	1
4	*b NSS	. Clamp, Base	1	18	*b NSS	. Nut	2
5	1302045W	. Bearing	2	19	*b NSS	. Lockwasher	2
6	1302044W	. Pin, Clevis	1	20	1302039W	. Pin	1
7	*b NSS	. U-Bolt	1	21	NSS	. Housing	1
8	1302042W	. Clevis	1	22	NSS	. Lever	1
9	1302041W	. Boot	1	23	*a 18717W	Capscrew, Button Head	1
10	1302040W	. O-Ring	1	24	383881W	Nut, Tall	1
11	1306003W	. Screw	4				
12	1306002W	. Screw	4		*a	Uses 318702W Thread Lock	
13	221867W	. Lockwasher, Star	4		*b	Included in 2300995W U-Bolt Clamp Kit	
14	1306001W	. Screw	1				

Control Lever, Power Controls

Consult Control Lever Installation Pages for Last Use Serial Numbers



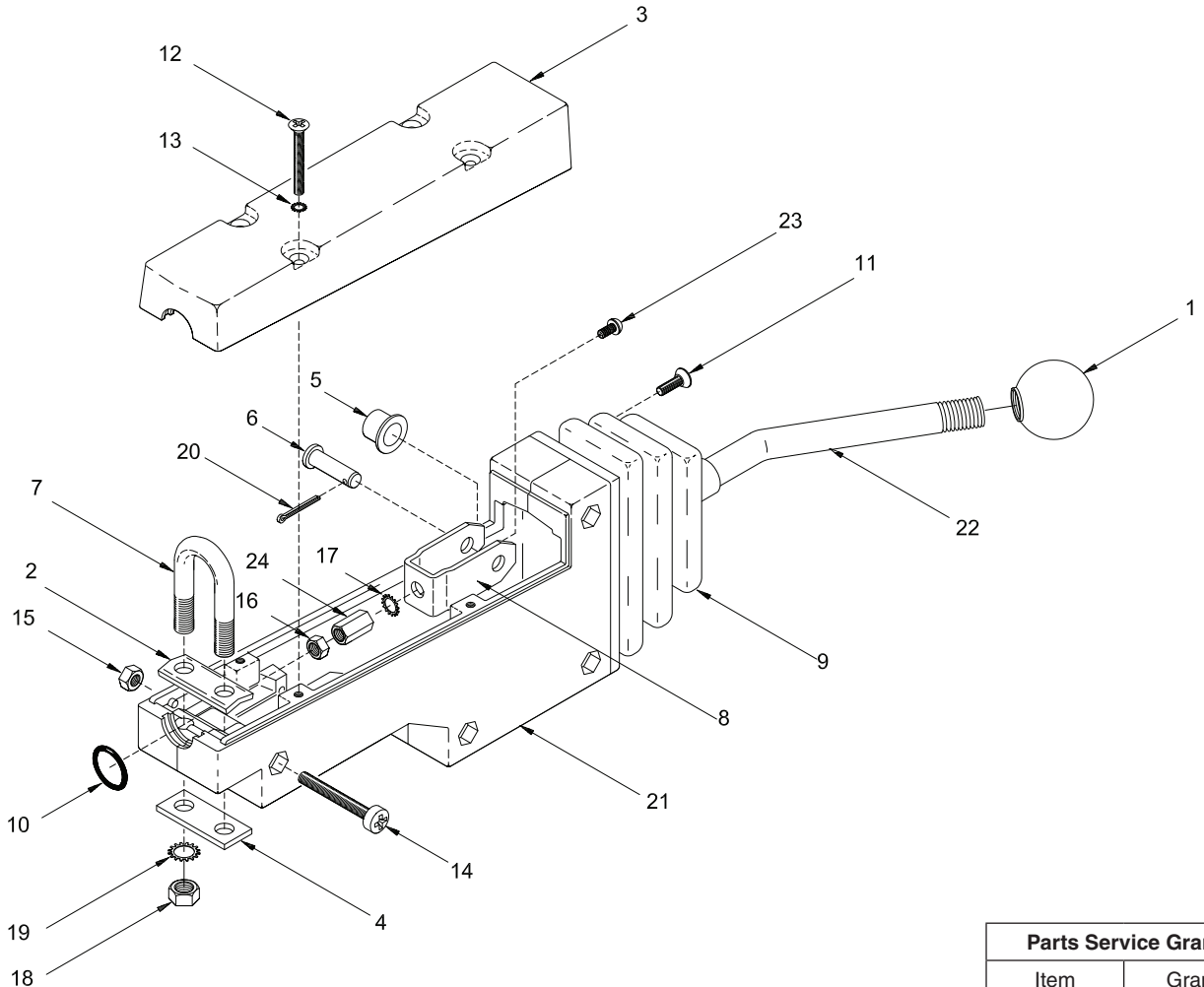
Parts Service Gram

Item	Gram
All	A3-C-7

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	1300785W	Assembly, Control Lever	1				
1	1302049W	. Knob	1	15	15024W	. Nut	1
2	*b NSS	. Clamp, Cable	1	16	15004W	. Nut	1
3	1302047W	. Cover	1	17	15923W	. Washer	1
4	*b NSS	. Clamp, Base	1	18	*b NSS	. Nut	2
5	1302045W	. Bearing	2	19	*b NSS	. Lockwasher	2
6	1302044W	. Pin, Clevis	1	20	1302039W	. Pin	1
7	*b NSS	. U-Bolt	1	21	NSS	. Housing	1
8	1302042W	. Clevis	1	22	NSS	. Lever	1
9	1302041W	. Boot	1	23	*a 18717W	CapscREW, Button Head	1
10	1302040W	. O-Ring	1	24	383881W	Nut, Tall	1
11	1306003W	. Screw	4				
12	1306002W	. Screw	4				
13	221867W	. Lockwasher, Star	4	*a	Uses 318702W Thread Lock		
14	1306001W	. Screw	1	*b	Included in 2300995W U-Bolt Clamp Kit		

Control Lever, Power Controls

Consult Control Lever Installation Pages for Last Use Serial Numbers

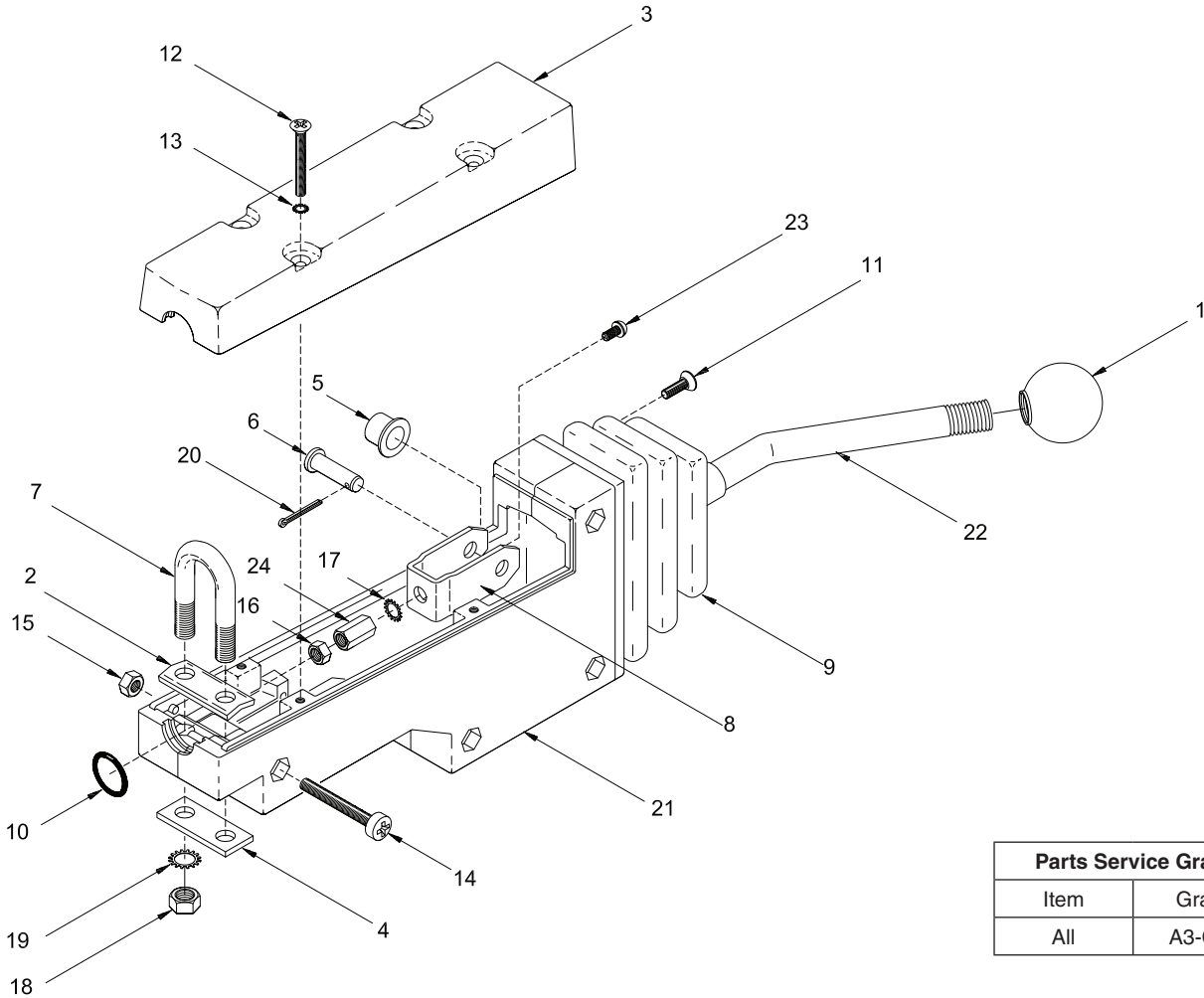


Parts Service Gram	
Item	Gram
All	A3-C-7

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2301845W	Assembly, Control Lever	1				
1	1302049W	. Knob	1	15	15024W	. Nut	1
2	*b NSS	. Clamp, Cable	1	16	15004W	. Nut	1
3	1302047W	. Cover	1	17	15923W	. Washer	1
4	*b NSS	. Clamp, Base	1	18	*b NSS	. Nut	2
5	1302045W	. Bearing	2	19	*b NSS	. Lockwasher	2
6	1302044W	. Pin, Clevis	1	20	1302039W	. Pin	1
7	*b NSS	. U-Bolt	1	21	NSS	. Housing	1
8	1302042W	. Clevis	1	22	NSS	. Lever	1
9	1302041W	. Boot	1	23	*a 18717W	Capscrew, Button Head	1
10	1302040W	. O-Ring	1	24	383881W	Nut, Tall	1
11	1306003W	. Screw	4				
12	1306002W	. Screw	4				
13	221867W	. Lockwasher, Star	4				
14	1306001W	. Screw	1				
					*a	Uses 318702W Thread Lock	
					*b	Included in 2300995W U-Bolt Clamp Kit	

Control Lever, Power Controls

Consult Control Lever Installation Pages for Last Use Serial Numbers

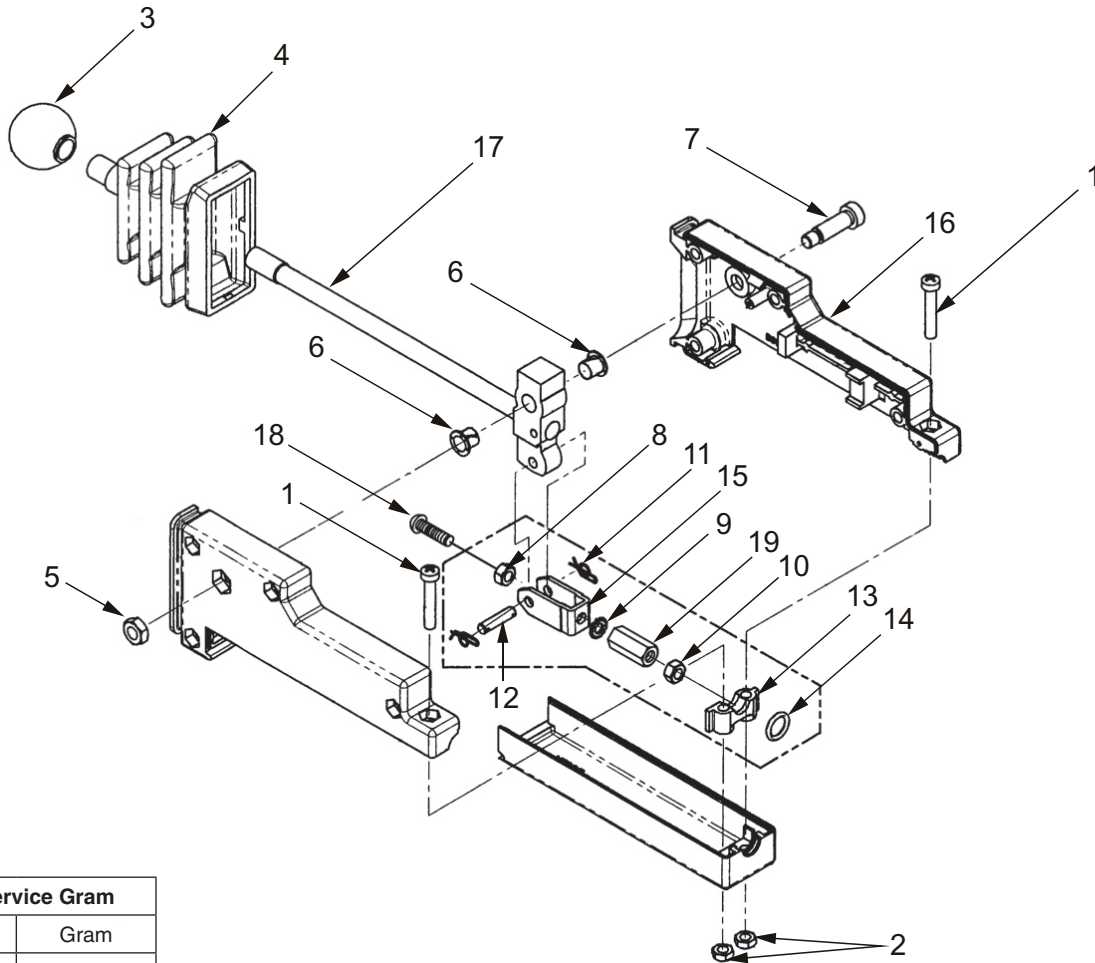


Parts Service Gram	
Item	Gram
All	A3-C-7

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	388634W	Assembly, Control Lever	1				
1	1302049W	. Knob	1	15	15024W	. Nut	1
2	*b NSS	. Clamp, Cable	1	16	15004W	. Nut	1
3	1302047W	. Cover	1	17	15923W	. Washer	1
4	*b NSS	. Clamp, Base	1	18	*b NSS	. Nut	2
5	1302045W	. Bearing	2	19	*b NSS	. Lockwasher	2
6	1302044W	. Pin, Clevis	1	20	1302039W	. Pin	1
7	*b NSS	. U-Bolt	1	21	NSS	. Housing	1
8	1302042W	. Clevis	1	22	NSS	. Lever	1
9	1302041W	. Boot	1	23	*a 18717W	Cap screw	1
10	1302040W	. O-Ring	1	24	383881W	Nut, Tall	1
11	1306003W	. Screw	4				
12	1306002W	. Screw	4				
13	221867W	. Lockwasher, Star	4				
14	1306001W	. Screw	1				
				*a	Uses 318702W Thread Lock		
				*b	Included in 2300995W U-Bolt Clamp Kit		

Control Lever, Power Controls

Consult Control Lever Installation Pages for Last Use Serial Numbers

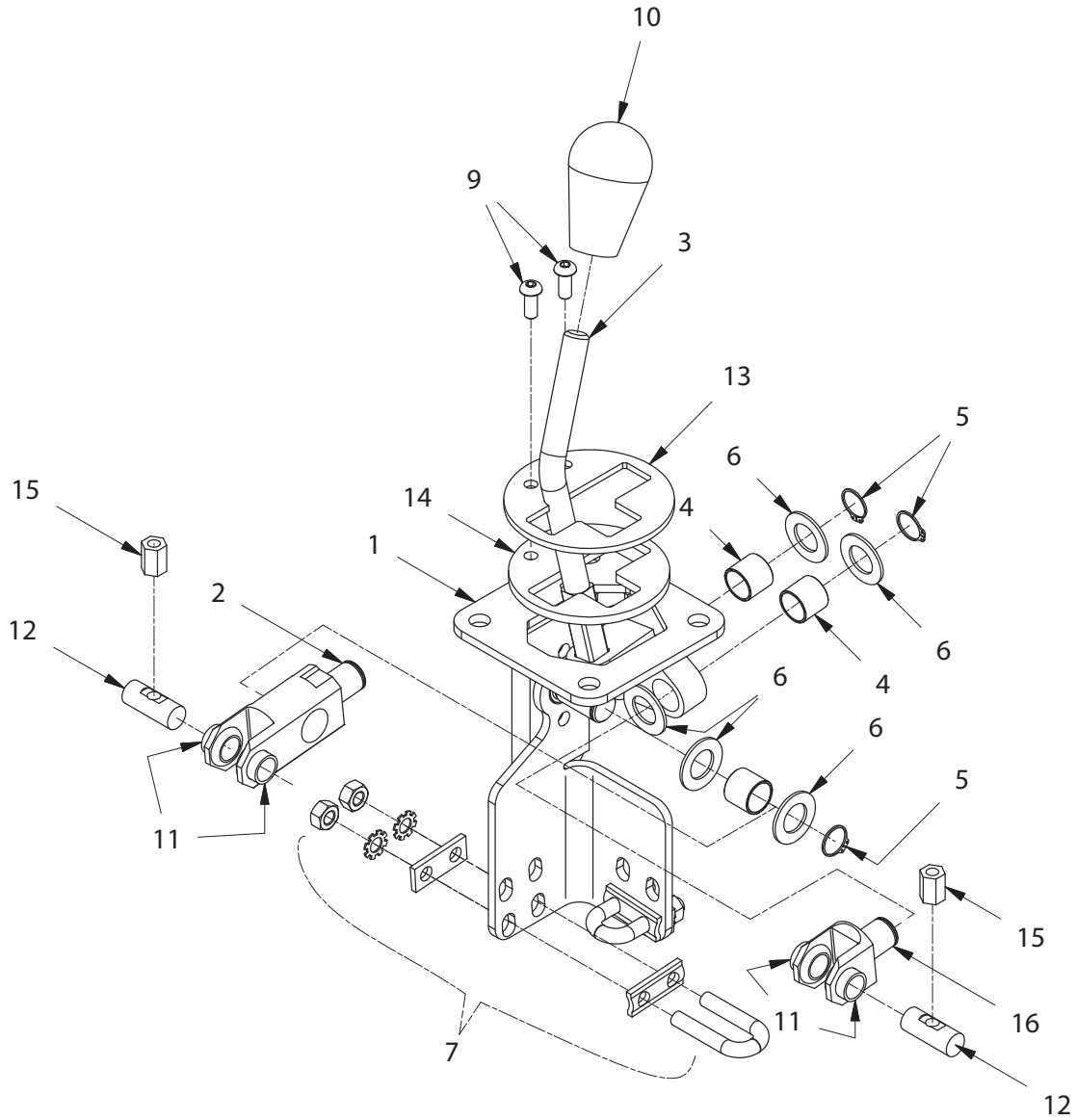


Parts Service Gram	
Item	Gram
All	A3-C-7

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2303982W	Assembly, Control Lever	1				
	2303983W	Assembly, Control Lever	1				
	2303984W	Assembly, Control Lever	1				
	2303986W	Assembly, Control Lever	1				
	2303987W	Assembly, Control Lever	1				
	2304820W	Assembly, Control Lever	1				
1	*a	NSS . Screw	2	12	*b	NSS . Pin	1
2	*a	NSS . Nut	2	13	*b	NSS . Adapter, Cable	1
3		2304339W . Knob	1	14	*b	NSS . O-Ring	1
4		2304340W . Boot	1	15	*b	NSS . Clevis	1
5		2304341W . Nut, Jam	1	16		NSS . Cover	1
6		2304342W . Bearing, Plastic	2	17		NSS . Lever	1
7		2304343W . Screw, Shoulder	1	18		18717W Capscrew	1
8	*b	NSS . Nut	1	19		383881W Nut, Tall	1
9	*b	NSS . Washer, Star	1				
10	*b	NSS . Nut	1		*a	Included in 2304338W Hardware Kit	
11	*b	NSS . Pin, Cotter	2		*b	Included in 2305023W Cable Attaching Hardware Kit	

Control Lever, Power Controls

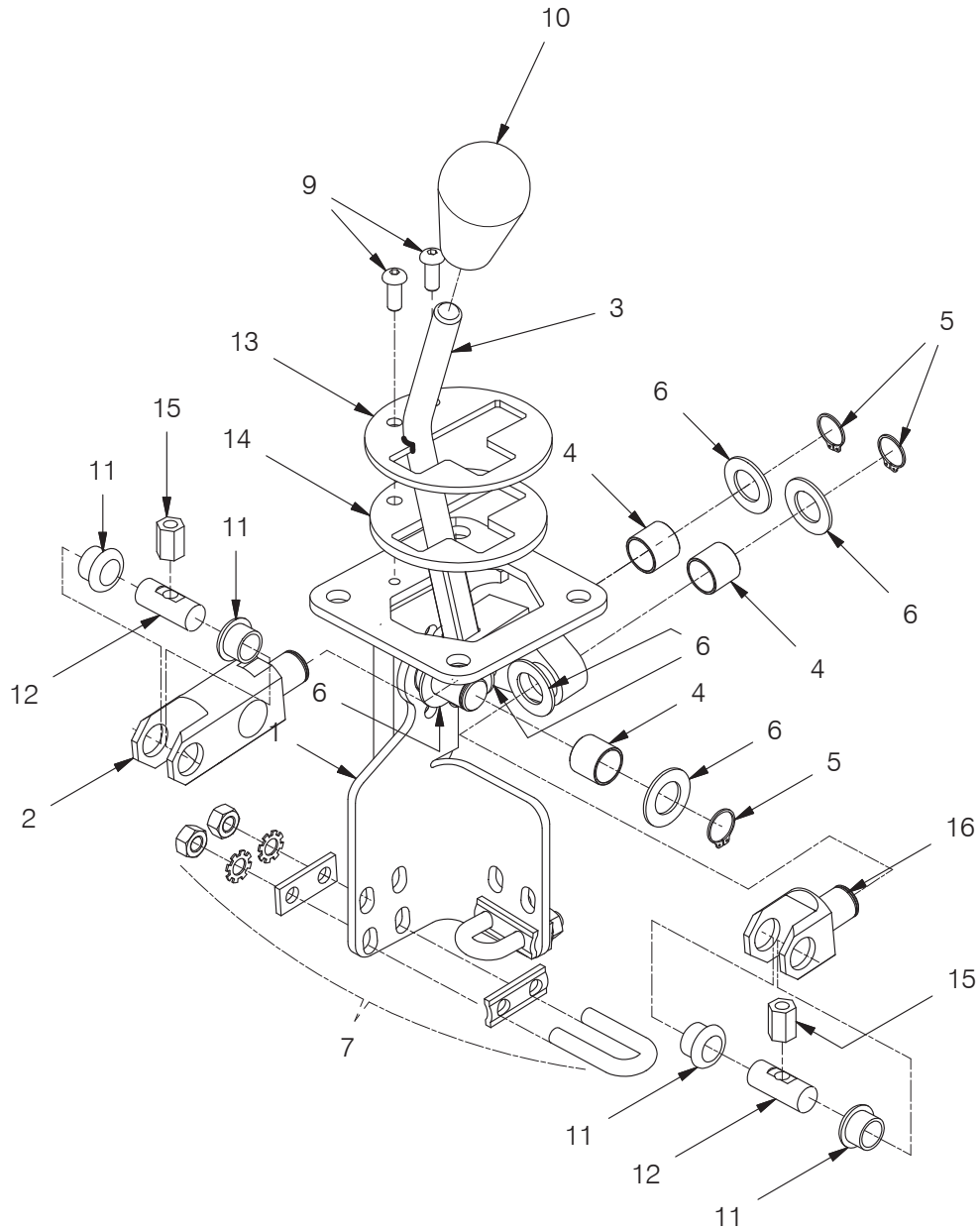
Consult Control Lever Installation Pages for Last Use Serial Numbers



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2310105	Assembly, Control Lever	1				
1	2312189	. Bracket, Vertical	1	8	228131	. Boot (Not Shown)	1
2	2305296W	. Pivot, Main	1	9	Y25G-0410	. Capscrew	2
3	2310106	. Bracket, Pivot	1	10	2304339W	. Knob	1
4	2305302W	. Bushing	3	11	*a 2307974W	. Bushing	4
5	58903W	. Ring, Snap	3	12	196128W	. Pin	2
6	2301634W	. Washer, Thrust	6	13	2312188	. Plate, Gate	1
7	2300995W	. Kit, U-Bolt Clamp	2	14	2312232	. Plate, Spacer	1
	NSS	.. U-Bolt	1	15	2301487	. Nut, Tall	2
	NSS	.. Plate, Cup	1	16	2305301W	. Pivot, Aux.	1
	NSS	.. Plate	1				
	NSS	.. Washer, Star	2				
	NSS	.. Nut	2				
				*a	Use 257291W Adhesive in Two Places for Retention		

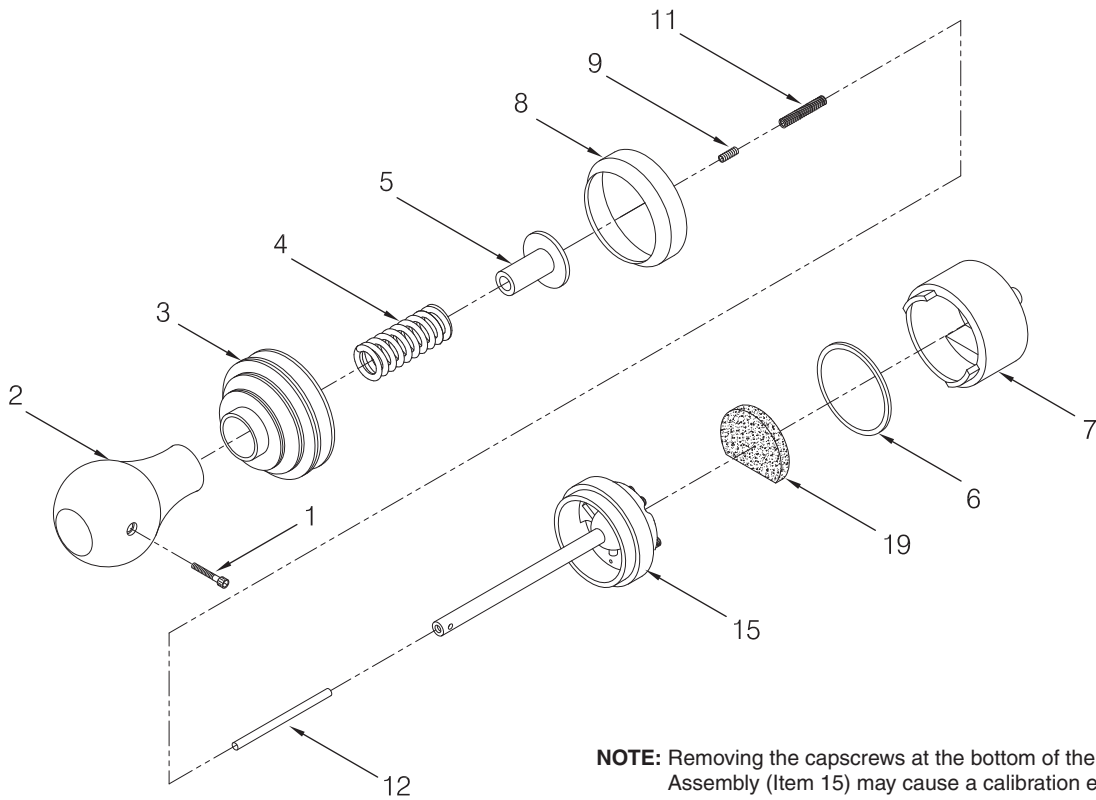
Control Lever, Power Controls

Consult Control Lever Installation Pages for Last Use Serial Numbers



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2310118	Assembly, Control Lever	1	8	228131	. Boot (Not Shown)	1
1	2312189	. Bracket, Vertical	1	9	Y25G-0410	. Capscrew	2
2	2305296W	. Pivot, Main	1	10	2304339W	. Knob	1
3	2310117	. Bracket, Pivot	1	11	*a 2307974W	. Bushing	4
4	2305302W	. Bushing	3	12	196128W	. Pin	2
5	58903W	. Ring, Snap	3	13	2312188	. Plate, Gate	1
6	2301634W	. Washer, Thrust	6	14	2312232	. Plate, Spacer	1
7	2300995W	. Kit, U-Bolt Clamp	2	15	2301487	. Nut, Tall	2
	NSS	.. U-Bolt	1	16	2305301W	. Pivot, Aux.	1
	NSS	.. Plate, Cup	1				
	NSS	.. Plate	1				
	NSS	.. Washer, Star	2				
	NSS	.. Nut	2				
				*a	Use 257291W Adhesive in Two Places for Retention		

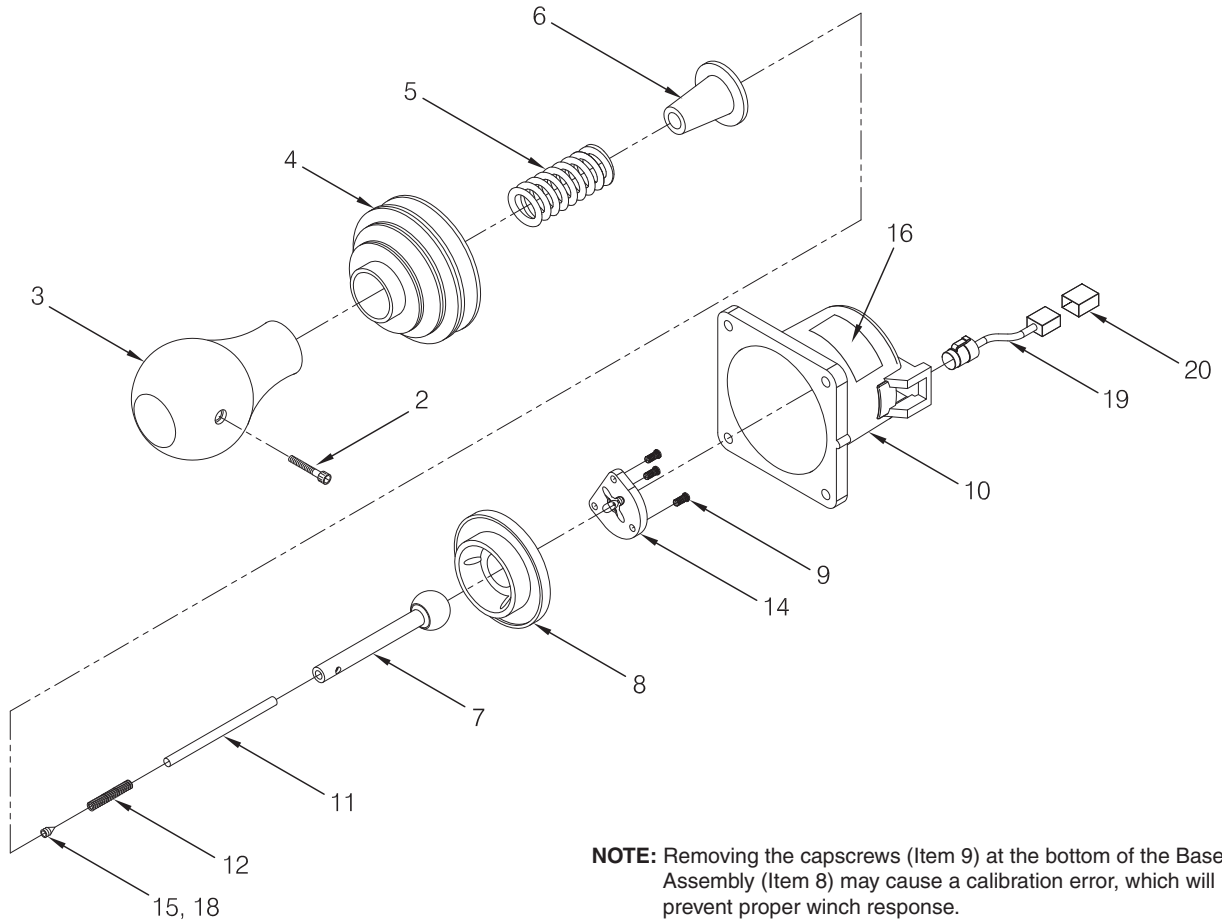
Control Lever, Electronic Controls



NOTE: Removing the capscrews at the bottom of the Base Assembly (Item 15) may cause a calibration error, which will prevent proper winch response.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2304781W	Assembly, Control Lever	1				
1	*c	NSS . Screw	1	11	2303992W	. Spring	1
2	*c	NSS . Knob	1	12	2303991W	. Pin, Detent	1
3	*a,*c	NSS . Boot	1	15	NSS	. Assembly, Base	1
4	2304836W	. Spring	1	19	2304782W	. Filter, Dust	1
5	2304832W	. Collar	1				
6	39362W	. O-Ring	1		*a	Use 219941 Contact Cement	
7	2304837W	. Cup, Base	1		*b	Use 318702W Thread Lock	
8	NSS	. Collar, Interior Boot	1		*c	Included in 2305048W Service Kit	
9	*b	302090W . Setscrew	1				

Control Lever, Electronic Controls

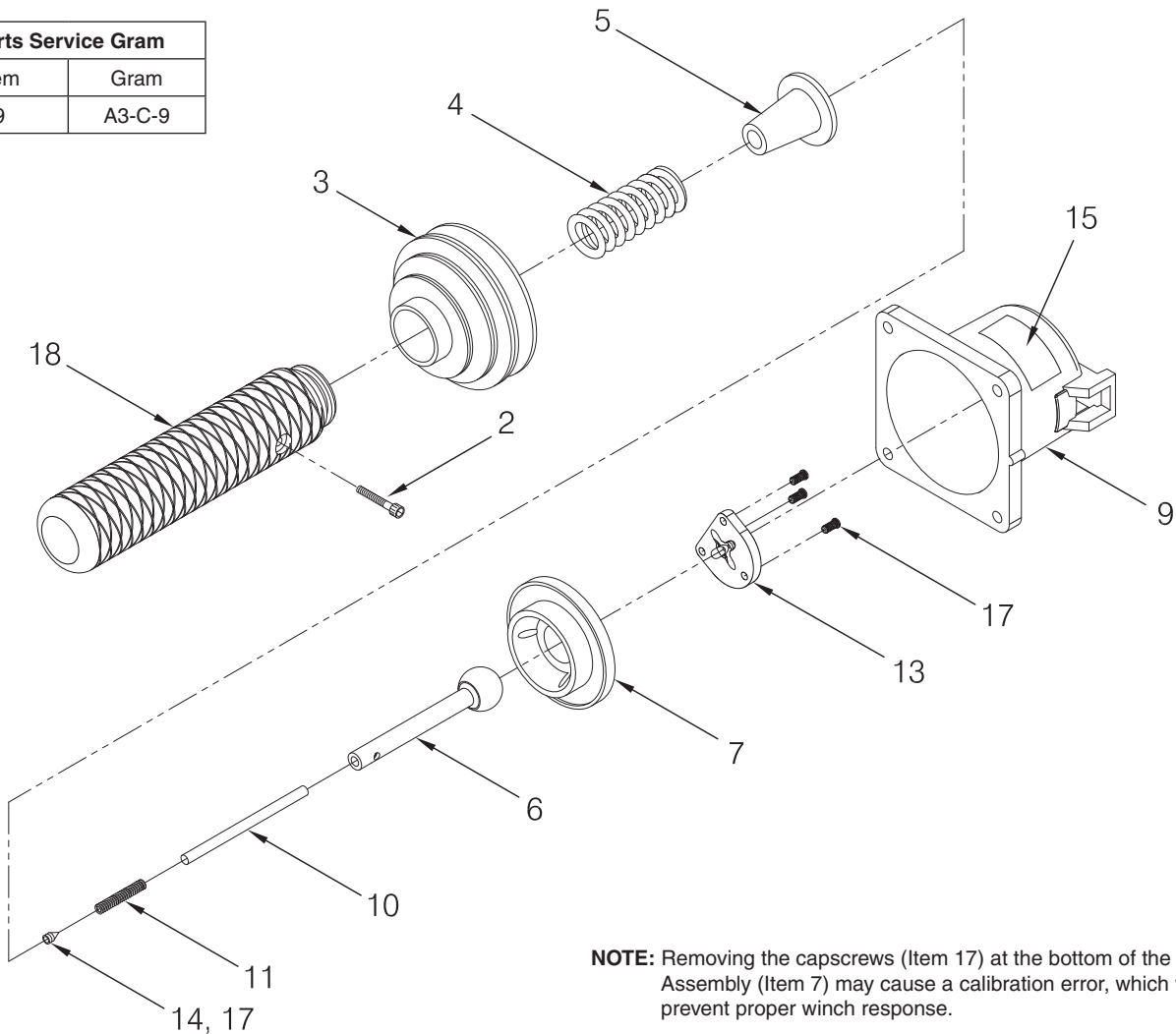


NOTE: Removing the capscrews (Item 9) at the bottom of the Base Assembly (Item 8) may cause a calibration error, which will prevent proper winch response.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2307887W	Assembly, Control Lever	1				
1	NSS	. Lever, Control	1	12	2303992W	. Spring	1
2	*c	NSS .. Screw	1	14	2307884W	. Plate, Detent	1
3	*c	NSS .. Knob	1	15	*b 302090W	. Setscrew	1
4	*a,*c	NSS .. Boot	1	16	2310163	. Sticker, ID	1
5	NSS	.. Spring	1	18	2305428W	. Disc, Adhesive	AR
6	NSS	.. Collar	1	19	2310257	. Assembly, Adapter	1
7	NSS	.. Shaft	1	20	232619	. Tube, Heat Shrink	1
8	NSS	.. Base, Control Lever	1				
9	NSS	.. Screw, Base	3		*a	Use 219941 Contact Adhesive	
10	NSS	.. Cup, Base	1		*b	Use 318702W Thread Lock	
11	2303991W	. Pin	1		*c	Included in 2305048W Service Kit	

Control Lever, Electronic Controls

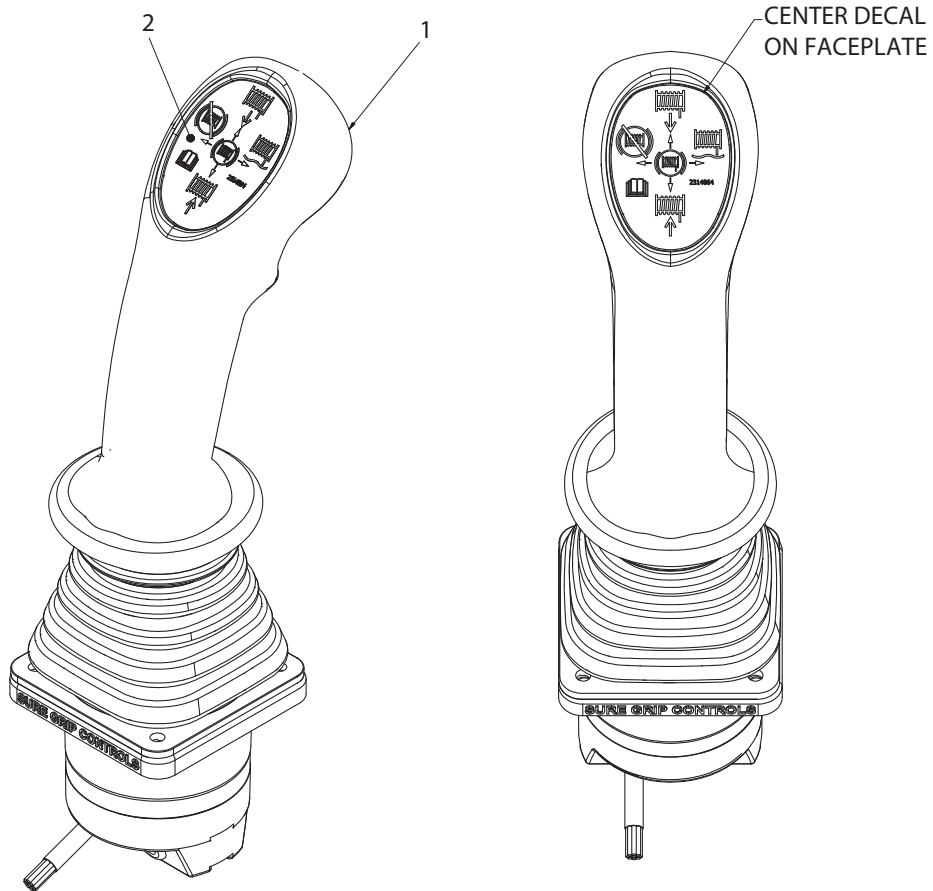
Parts Service Gram	
Item	Gram
9	A3-C-9



NOTE: Removing the capscrews (Item 17) at the bottom of the Base Assembly (Item 7) may cause a calibration error, which will prevent proper winch response.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2310575	Assembly, Control Lever	1				
1	NSS	. Lever, Control	1	10	2303991W	. Pin	1
2	NSS	. Screw	1	11	2303992W	. Spring	1
3	NSS	. Boot	1	13	2307884W	. Plate, Detent	1
4	NSS	. Spring	1	14	*a 302090W	. Setscrew	1
5	NSS	. Collar	1	15	2310163	. Sticker, ID	1
6	NSS	. Shaft	1	17	2305428W	. Disc, Adhesive	AR
7	NSS	. Base, Control Lever	1	18	2310585	. Assembly, Handle	1
8	NSS	. Screw, Base	3				
9	NSS	. Cup, Base	1		*a	Use 383789W Adhesive Sealant	

Control Lever, Electronic Controls



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2315001	Assembly, Control Lever	1				
1	2314854	. Lever, Control	1	2	2314864	. Decal, Control Lever - W/FS	1

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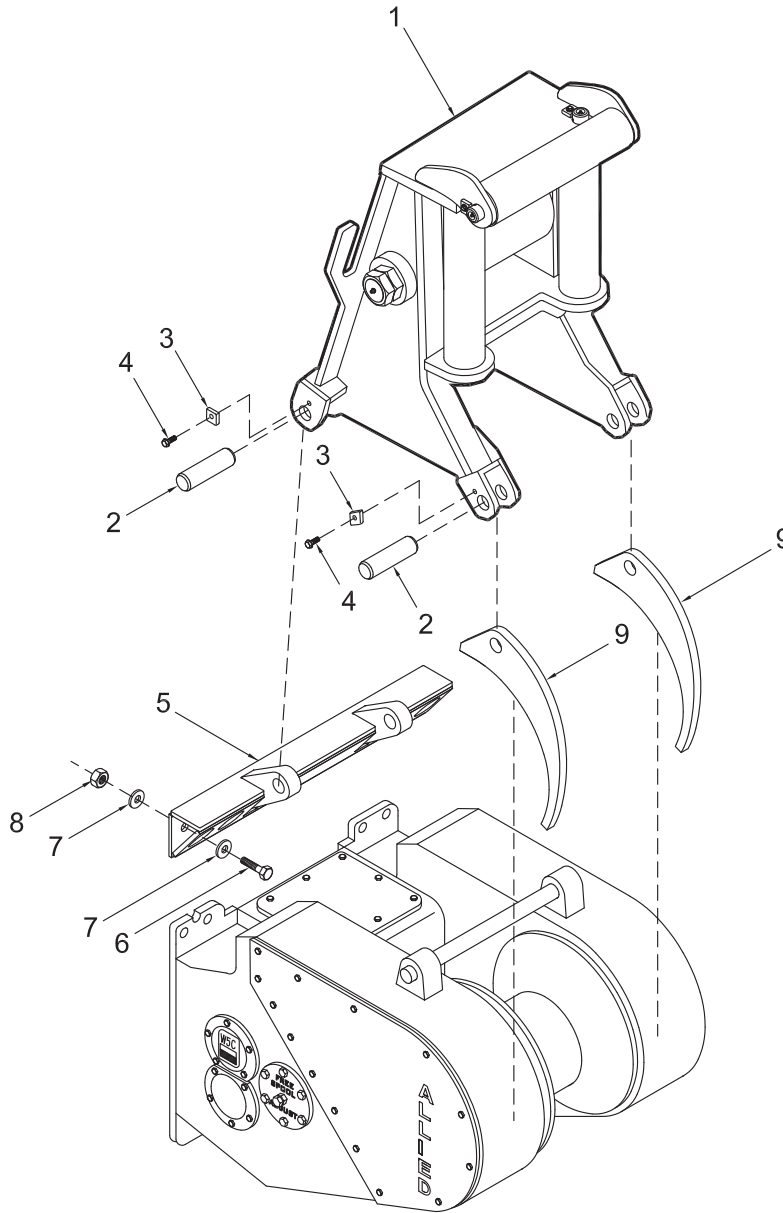
Optional Equipment

Arch Assembly	4-7
Arch Installation	4-2 thru 4-6
Fairlead Assembly	4-8 & 4-9
Extended Heavy Duty Drawbar	4-10
Wire Rope Assemblies	4-11



Arch Installation

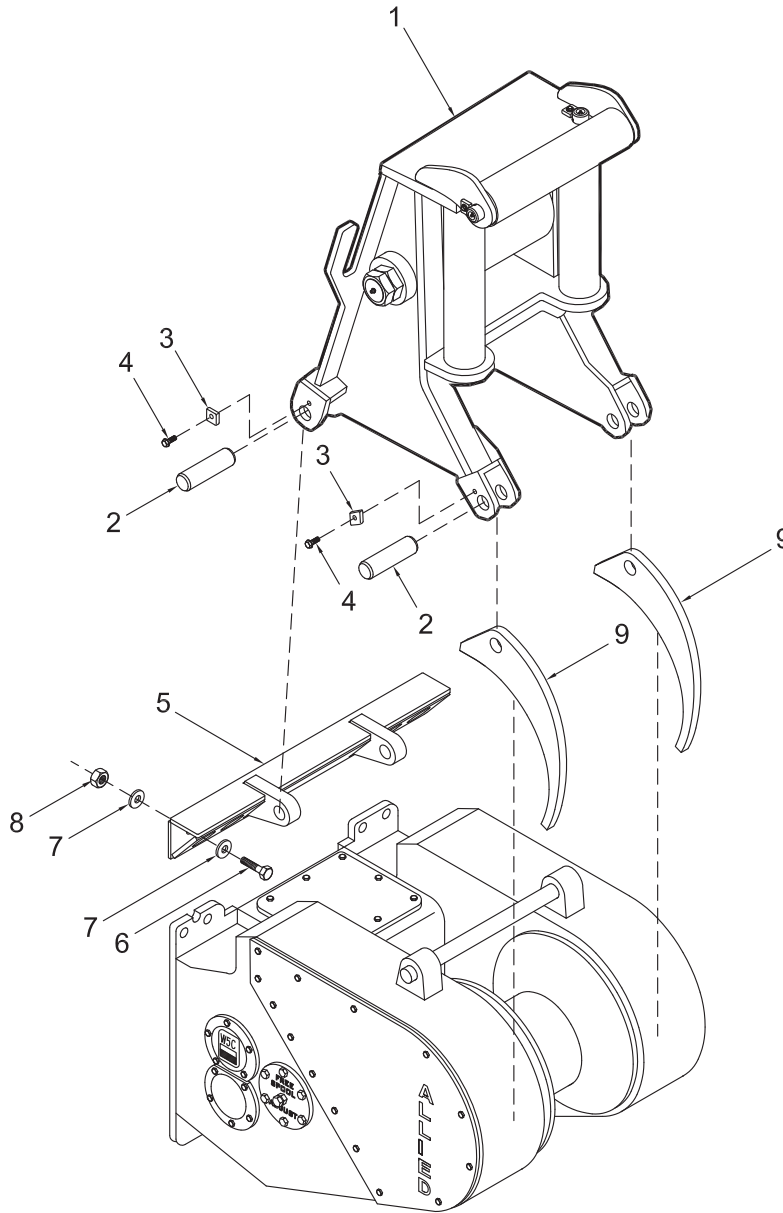
Case 1150D/E/G (R35) and 1150H (R36)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2301923W	Assembly, Arch (See 4-7)	1	6	18672W	Capscrew	4
2	2301924W	Pin	4	7	221780W	Washer	8
3	2301706W	Keeper	4	8	221720W	Nut	4
4	398817W	Capscrew	4	9	2302792W	Lug	2
5	2302795W	Bracket, Arch	1				

Arch Installation

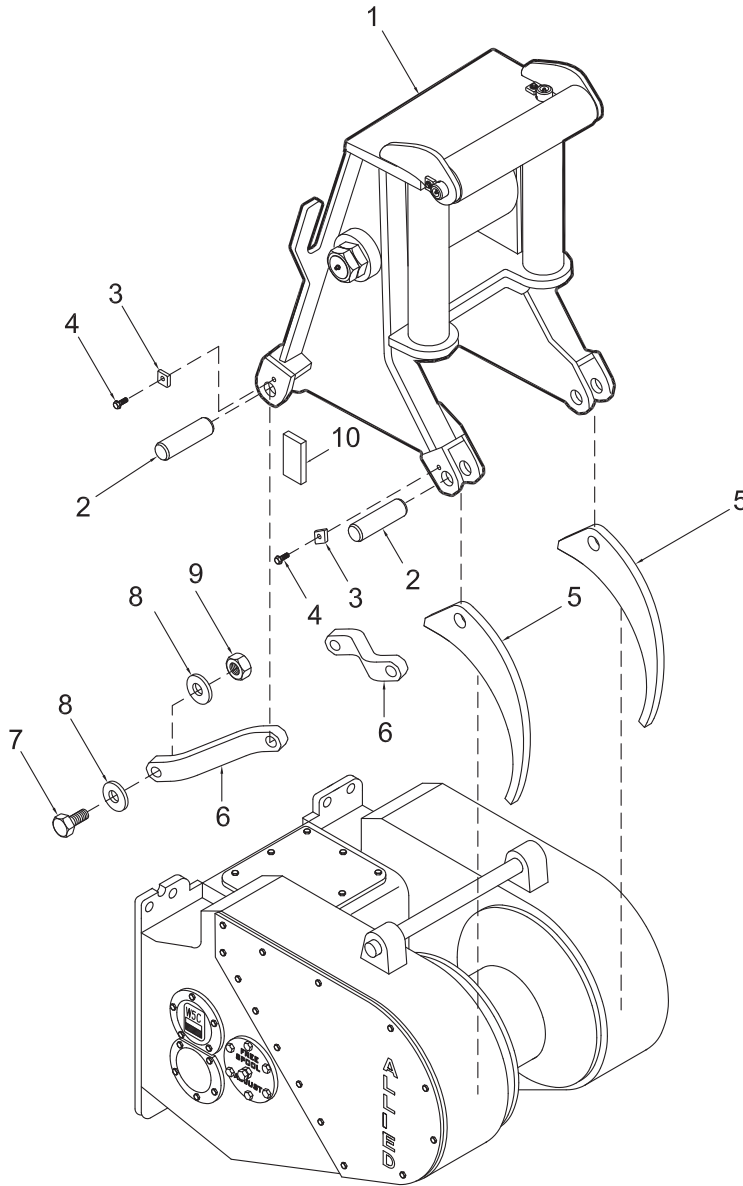
Case 1150K (R37), 1650K (R40) and 1650L (R38)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2301923W	Assembly, Arch (See 4-7)	1	6	18672W	Capscrew	4
2	2301924W	Pin	4	7	221780W	Washer	8
3	2301706W	Keeper	4	8	221720W	Nut	4
4	398817W	Capscrew	4	9	2302792W	Lug	2
5	2311057	Bracket, Arch	1				

Arch Installation

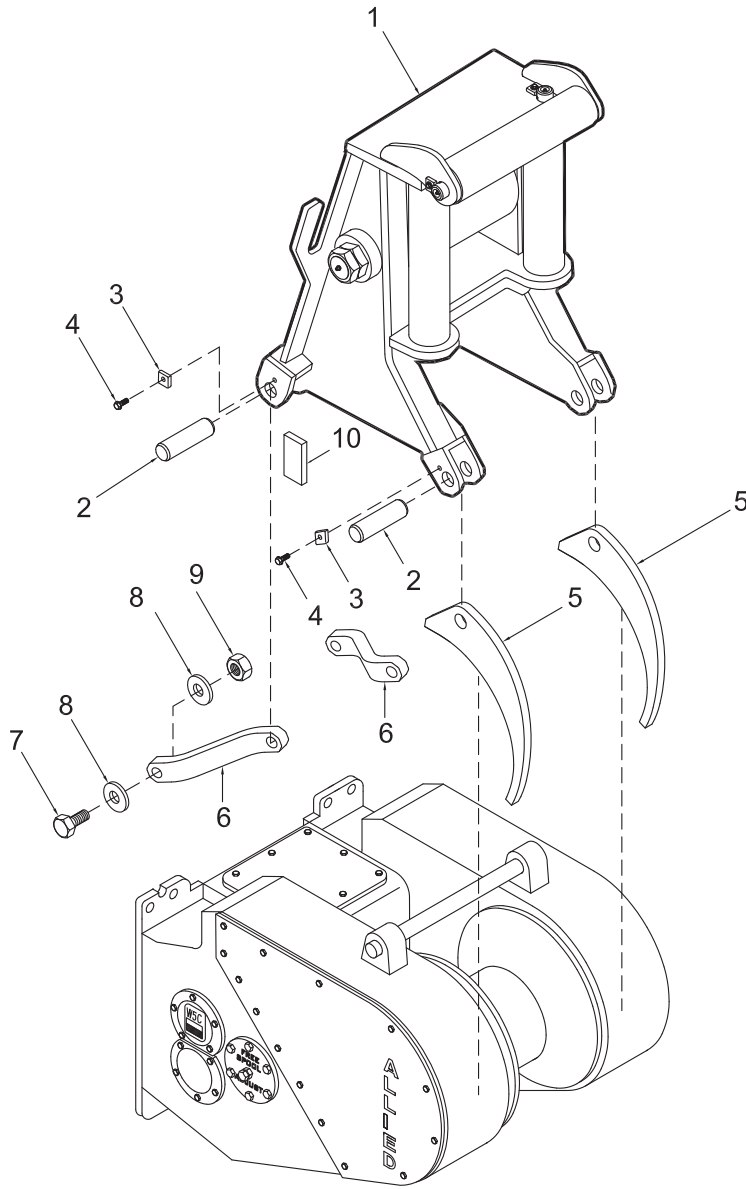
Caterpillar D4H Series III/XL/LGP PS (C370), D5H PS (C370), D5M/D6M (C29)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2301923W	Assembly, Arch (See 4-7)	1	6	2302943W	Link	2
2	2301924W	Pin	4	7	296868W	Capscrew	2
3	2301706W	Keeper	4	8	221786W	Washer	4
4	398817W	Capscrew	4	9	221728W	Nut	2
5	2302792W	Lug	2	10	2303038W	Block, Support	2

Arch Installation

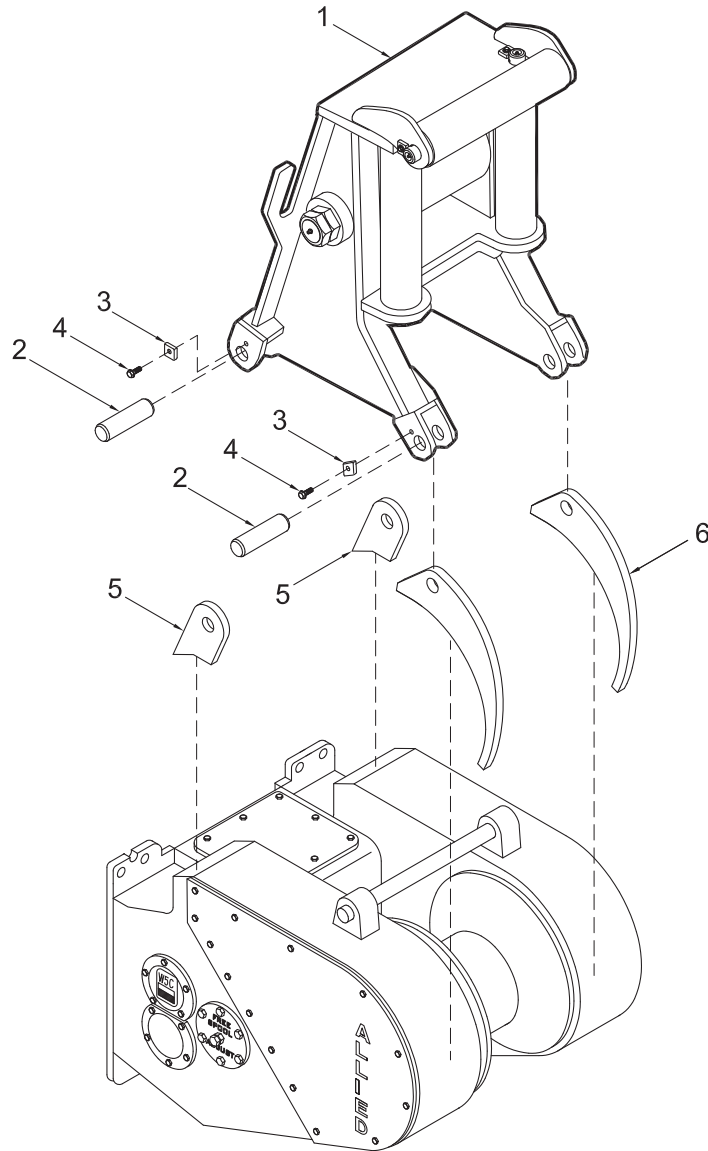
Caterpillar D5N (C28, C77), D6N (C47, C78, C81), D6N Tier 4i (C810)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2301923W	Assembly, Arch (See 4-7)	1	6	2305650W	Link	2
2	2301924W	Pin	4	7	2304826W	Capscrew	2
3	2301706W	Keeper	4	8	221786W	Washer	4
4	398817W	Capscrew	4	9	221728W	Nut	2
5	2302792W	Lug	2	10	2303038W	Block, Support	2

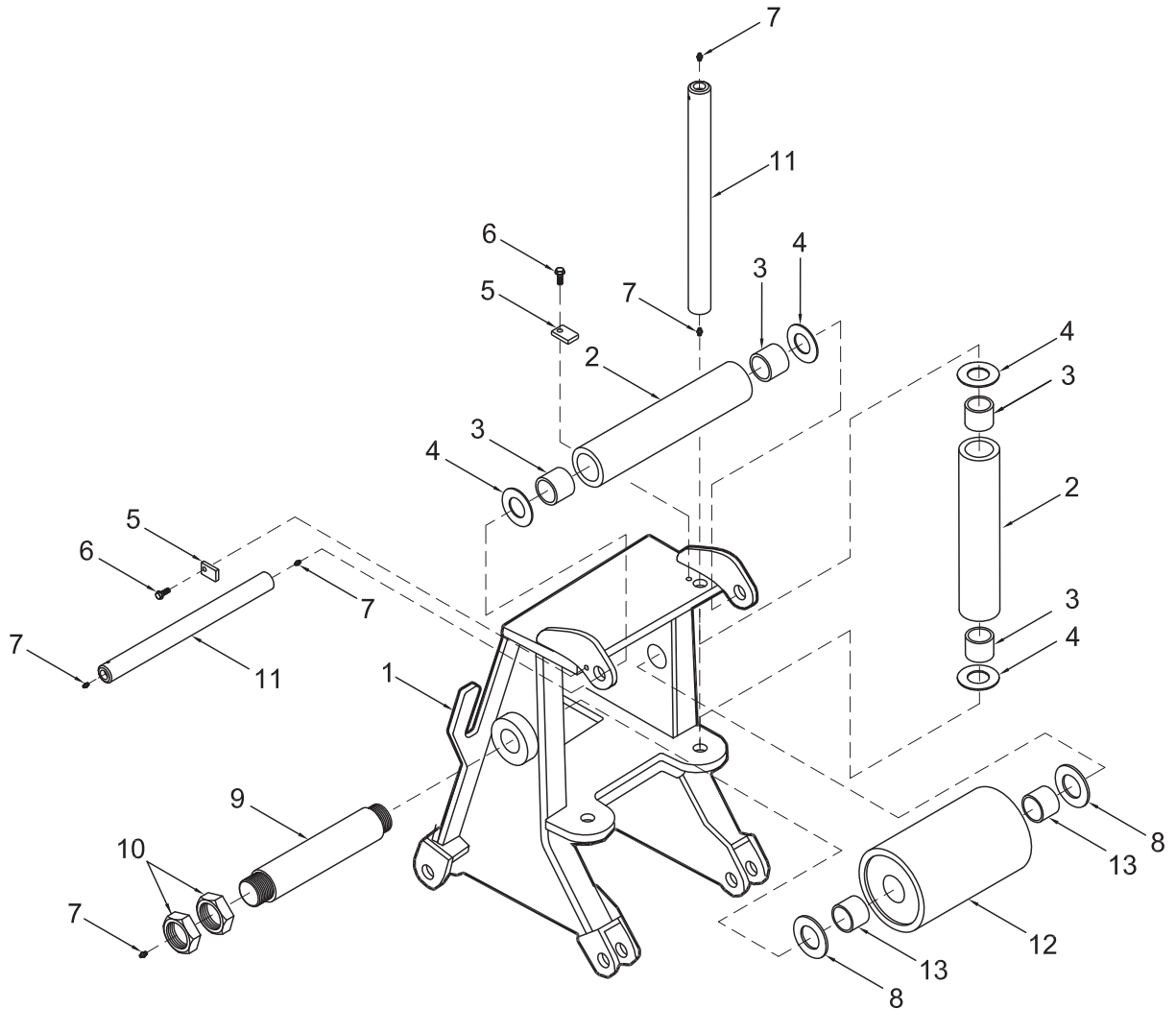
Arch Installation

Dresser/Dressta TD14M (H38);
 Fiat-Hitachi/New Holland DC130 (A37), DC150 PS (A38), FD/FL10E (A39), FD/DX145 (A39), DC150 (A40);
 John Deere 700J (E39), 700H (E40), 750C I/II (E45);
 Komatsu D61EX-12 (K47)



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2301923W	Assembly, Arch (See 4-7)	1	5	*a 2303227W	Lug	2
2	2301924W	Pin	4	6	2302792W	Lug, Wrapped	2
3	2301706W	Keeper	4				
4	398817W	Capscrew	4		*a	First Used on S/N AW5C-1071	
5	2302793W	Lug	2				

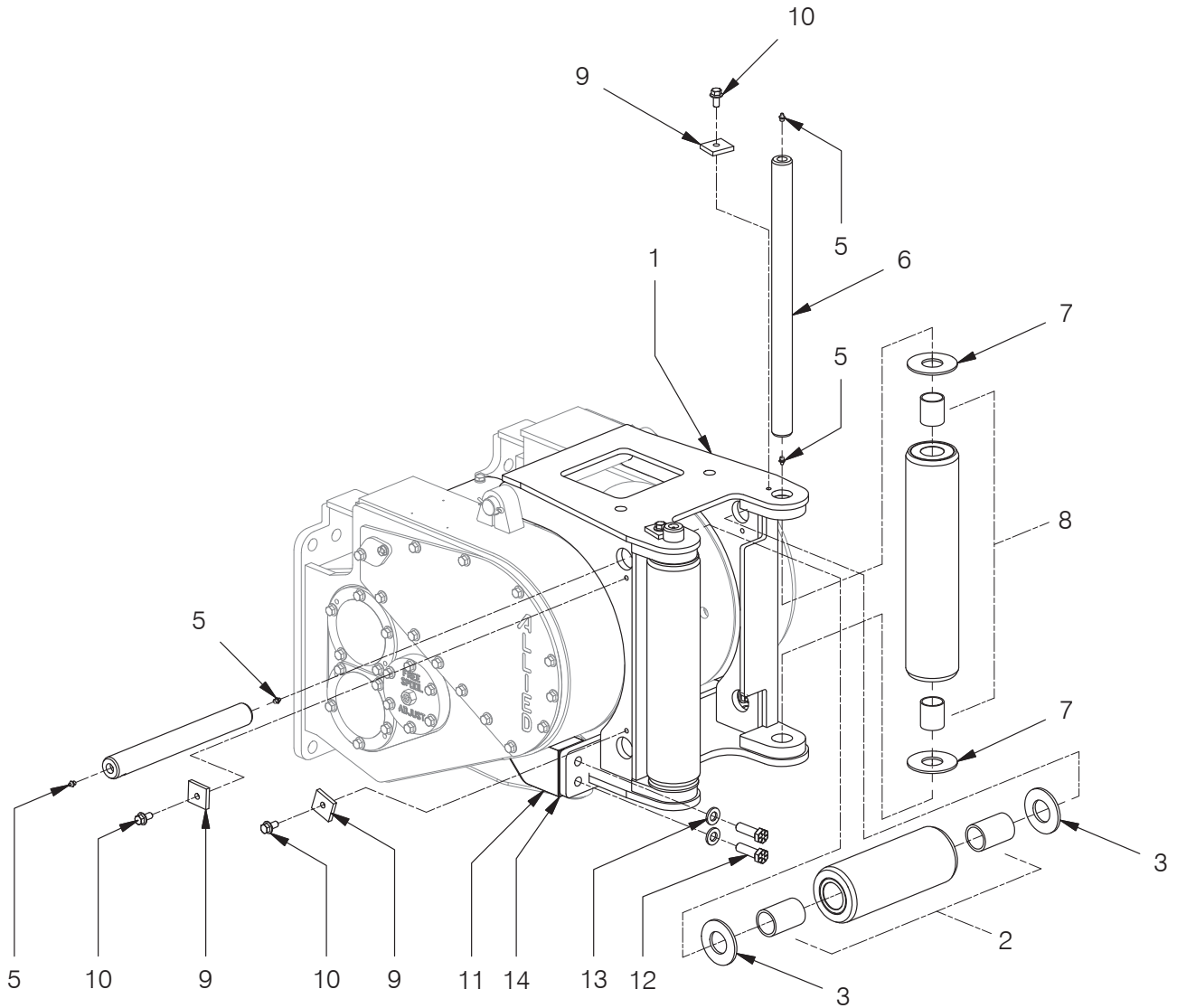
Arch Assembly



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2301923W	Assembly, Arch	1				
1	2301922W	. Arch	1	8	2821W	. Washer	2
2	2301910W	. Assembly, Roller	3	9	2302120W	. Shaft	1
3	35135W	. Bushing	2	10	221336W	. Nut	4
4	331767W	. Washer	6	11	2301919W	. Shaft	3
5	2301706W	. Keeper	3	12	2301925W	. Roller	1
6	398817W	. Capscrew	3	13	2817W	. Bushing	2
7	16001W	. Fitting, Lube	8				

Fairlead Assembly

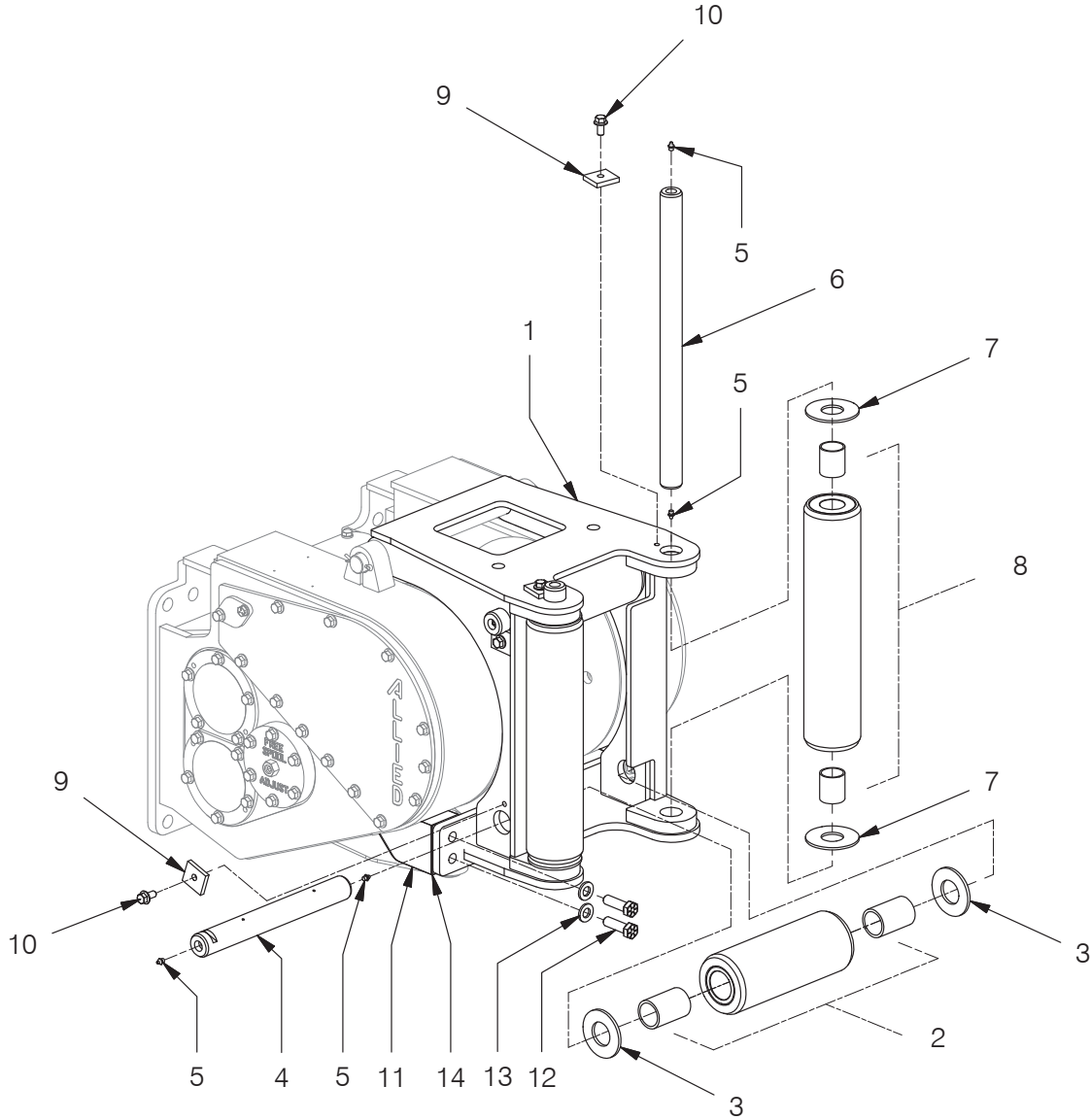
3-Roller



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2307784W	Assembly, Fairlead - 3-Roller	1				
1	2306333W	. Frame, Fairlead	1	8	2301907W	. Assembly, Roller	2
2	2301727W	. Assembly, Roller	1		35135W	. Bushing	2
	2570W	. Bushing	2	9	2301706W	. Keeper	3
3	33394W	. Washer	2	10	398817W	Screw, Flange	3
4	2301722W	. Shaft	1	11	2306330W	Block, Mounting	2
5	16001W	. Fitting, Lube	8	12	221657W	Capscrew	4
6	2306572W	. Shaft	2	13	221777W	Washer	4
7	331767W	. Washer	4	14	2315676	Shim .134	8

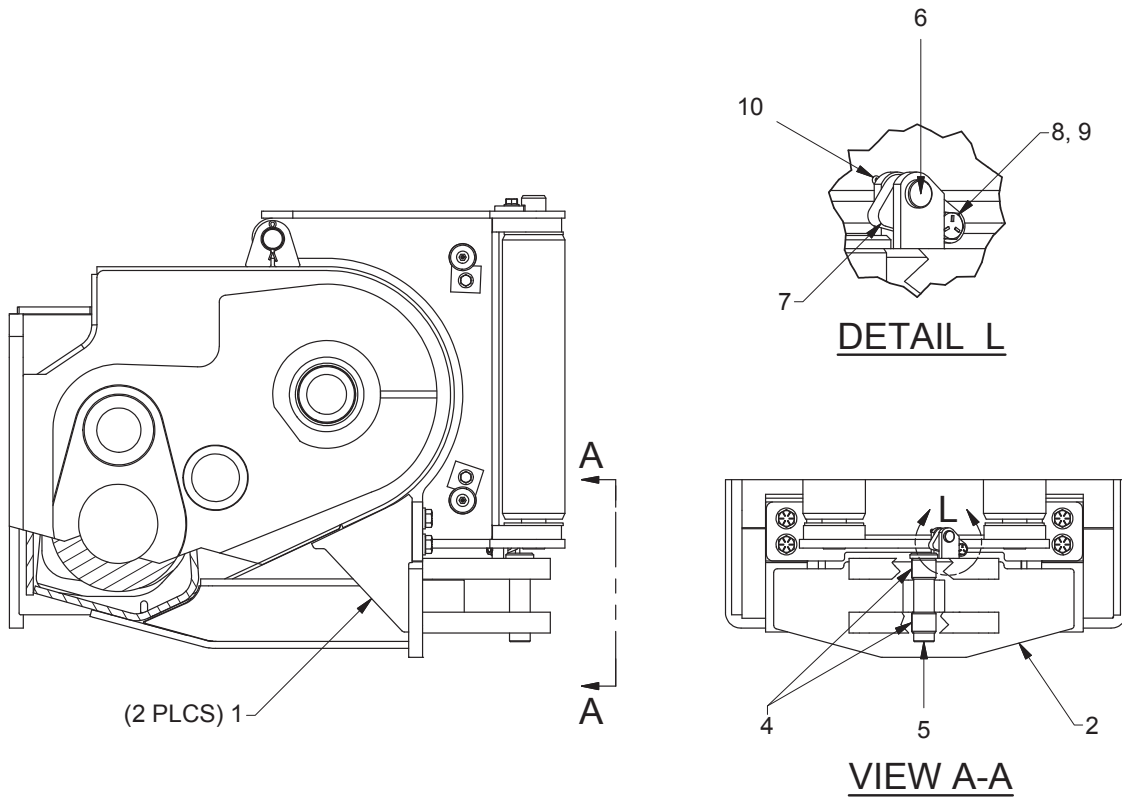
Fairlead Assembly

4-Roller



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
	2307785W	Assembly, Fairlead - 4-Roller	1				
1	2306333W	. Frame, Fairlead	1	8	2301907W	. Assembly, Roller	2
2	2301727W	. Assembly, Roller	2		35135W	. Bushing	2
	2570W	. Bushing	2	9	2301706W	. Keeper	4
3	33394W	. Washer	4	10	398817W	Screw, Flange	4
4	2301722W	. Shaft	2	11	2306330W	Block, Mounting	2
5	16001W	. Fitting, Lube	8	12	221657W	Capscrew	4
6	2306572W	. Shaft	2	13	221777W	Washer	4
7	331767W	. Washer	4	14	2315676	Shim .134	8

Extended Heavy Duty Drawbar



Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2307839W	Block	2	7	145499W	Latch, Drawbar Pin	1
2	2314757	Drawbar, Extended	1	8	16829W	Capscrew	1
4	2303219W	Bushing	2	9	15058W	Nut	1
5	2314978	Pin, Drawbar	1	10	15223W	Pin	1
6	159W	Pin, Rod End	1				

Wire Rope Assemblies

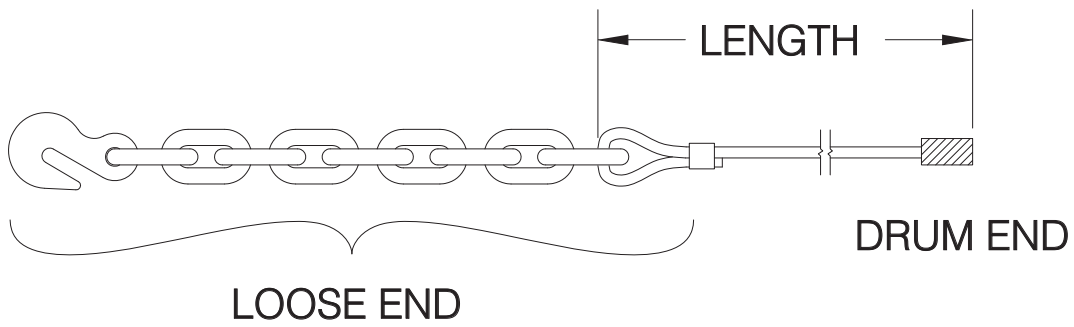


Figure A

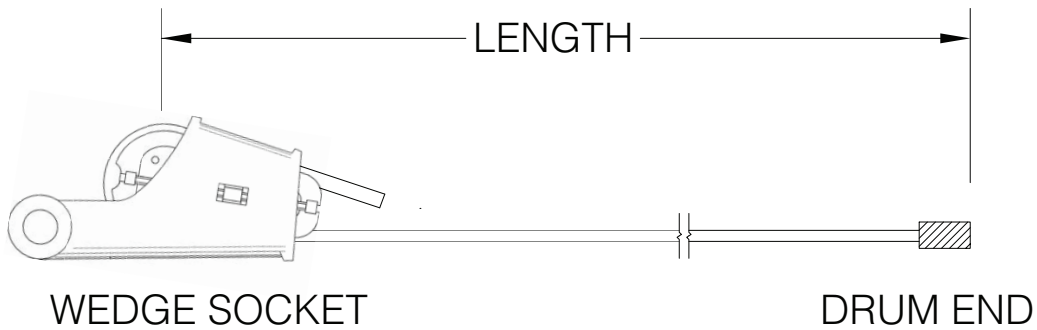


Figure B

Part No.	Wire Diameter	Length Ft (M)	Part No.	Wire Diameter	Length Ft (M)
WR5-279L	*a 5/8"	279 (85) *	YS7-215LWS	*b 7/8"	215 (66) **
WR5-423L	*a 5/8"	423 (129) **			
WR6-197L	*a 3/4"	197 (60) *			
WR6-298L	*a 3/4"	298 (91) **			
WR7-142L	*a 7/8"	142 (43) *			
WR7-215L	*a 7/8"	215 (66) **			

* Length to fill drum up to 2/3 capacity (recommended)

** Length to fill drum to full capacity

*a WR Series Wire Rope (Illustrated in Figure A)

*b YS Series Wire Rope (Illustrated in Figure B)

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Recommended Service Kits

Recommended Winch Service Intervals	5-2
Recommended Service Kits Chart	5-3
• Filter Kit - 2311728	5-4
• Filter Kit - 2311729	5-5
• Gasket Kit - 2302983W	5-6
• Clutch & Brake Bearing Kit - 2311724	5-7
• Brake Assembly Kit - 2311723	5-8
• Brake, Clutch, & Idler Shaft Bearing Kit - 2311725	5-9
• Brake, Clutch, & Idler Shaft Bearing Kit - 2311726	5-10 & 5-11
• Drum/Freespool Shaft Bearing & Seal Kit - 2311727	5-12 & 5-13
• Drum/Freespool Shaft Bearing & Seal Kit - 2315873	5-14 & 5-15

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

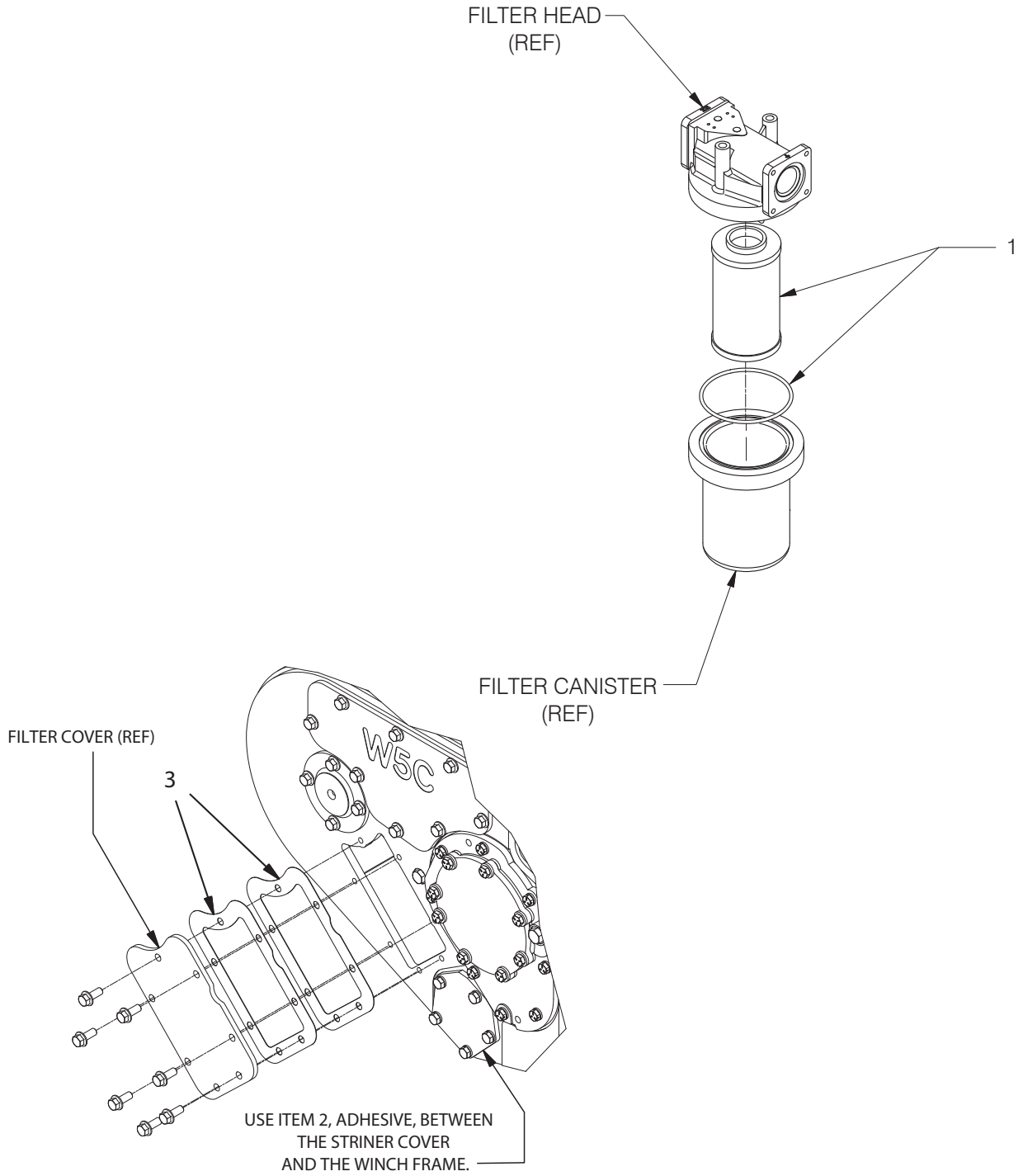
Recommended Service Kits

SERVICE KITS FOR W5C 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	ALL	2311728	2311729	
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	2302983W		
	Clutch/Brake Shaft Kit*	ALL	2311724		
	Brake Assembly Kit	ALL	2311723		
	Pump Assembly	Fiat Hitachi/ New Holland, and Case (R35, R36, and R38 Tractor Code Only)	Last used AW5C-1005	Order quantity 1 of each of the following: 2302963W, 2303677W, 88297W, 271729W	
			First used AW5C-1006	2302963W	
			Last used AW5C-1008	Order quantity 1 of each of the following: 2302989W, 2303677W, 88297W, 271729W	
First used AW5C-1009			2302989W		
Major Overhaul (Every 10000 hours)	Brake, Clutch, and Idler Shaft Bearing Kit	Gear ratio 1	2311725		
		Gear ratios 2 & 3	2311726		
	Drum & Intermediate Shaft Bearing and Seal Kit	ALL	2311727		

* 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: 2311728
For Winches with Power Controls

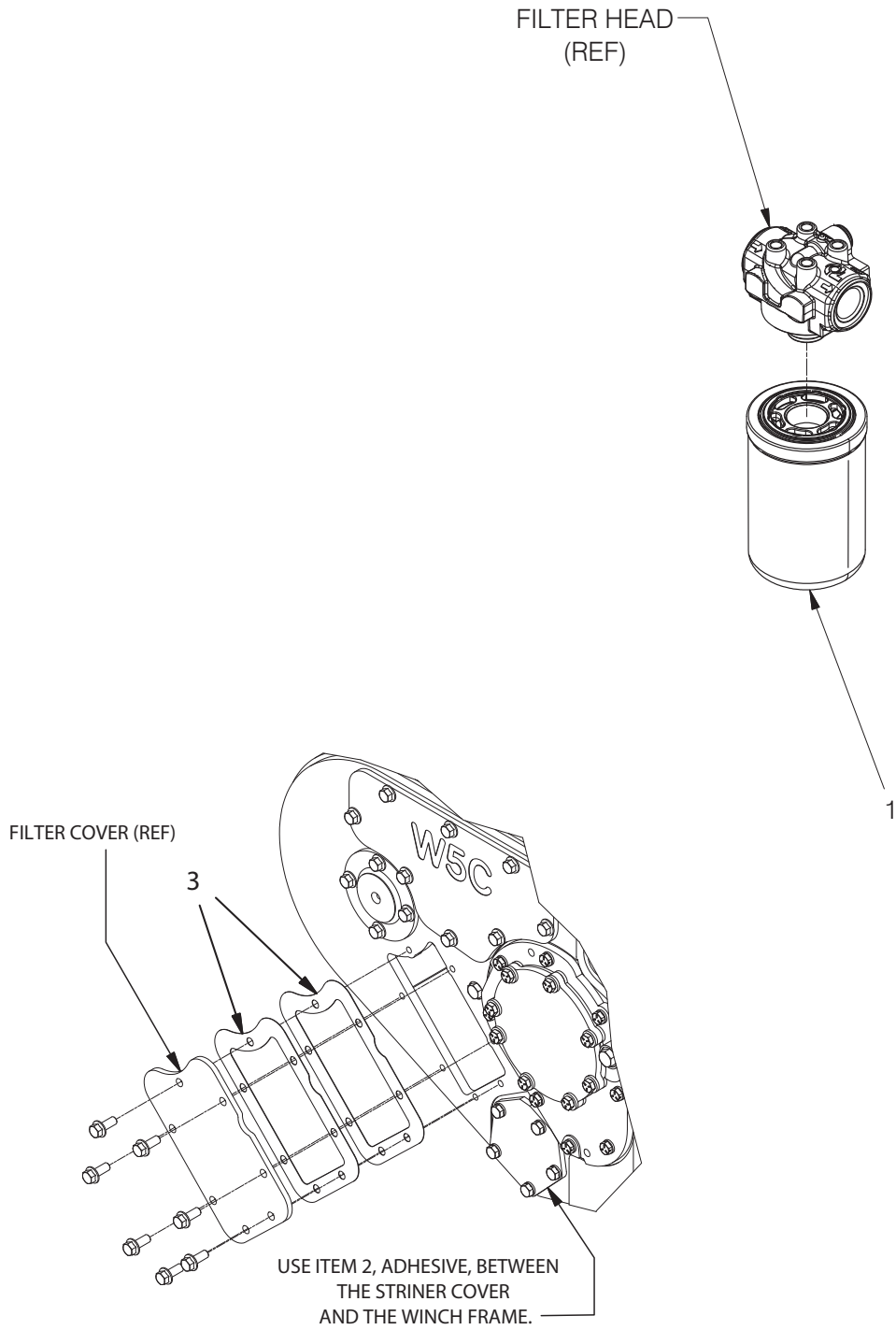


FILTER COVER & GASKET

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	2314780	Gasket, Filter Cover	2
2	313022W	Adhesive	1				

Filter Kit: 2311729
For Winches with Electronic Controls

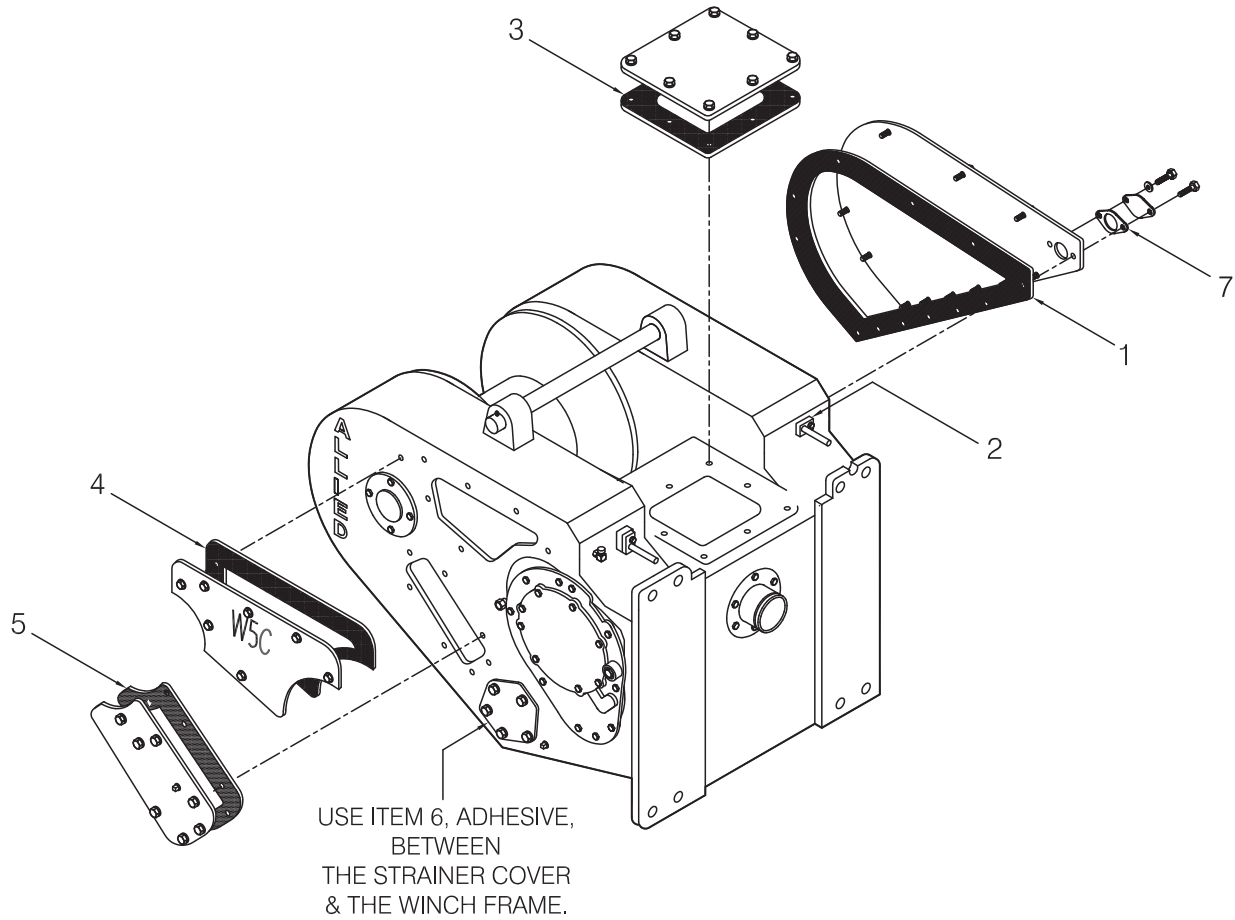


FILTER COVER & GASKET

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	Filter	1	3	2314780	Gasket, Filter Cover	2
2	313022W	Adhesive	1				

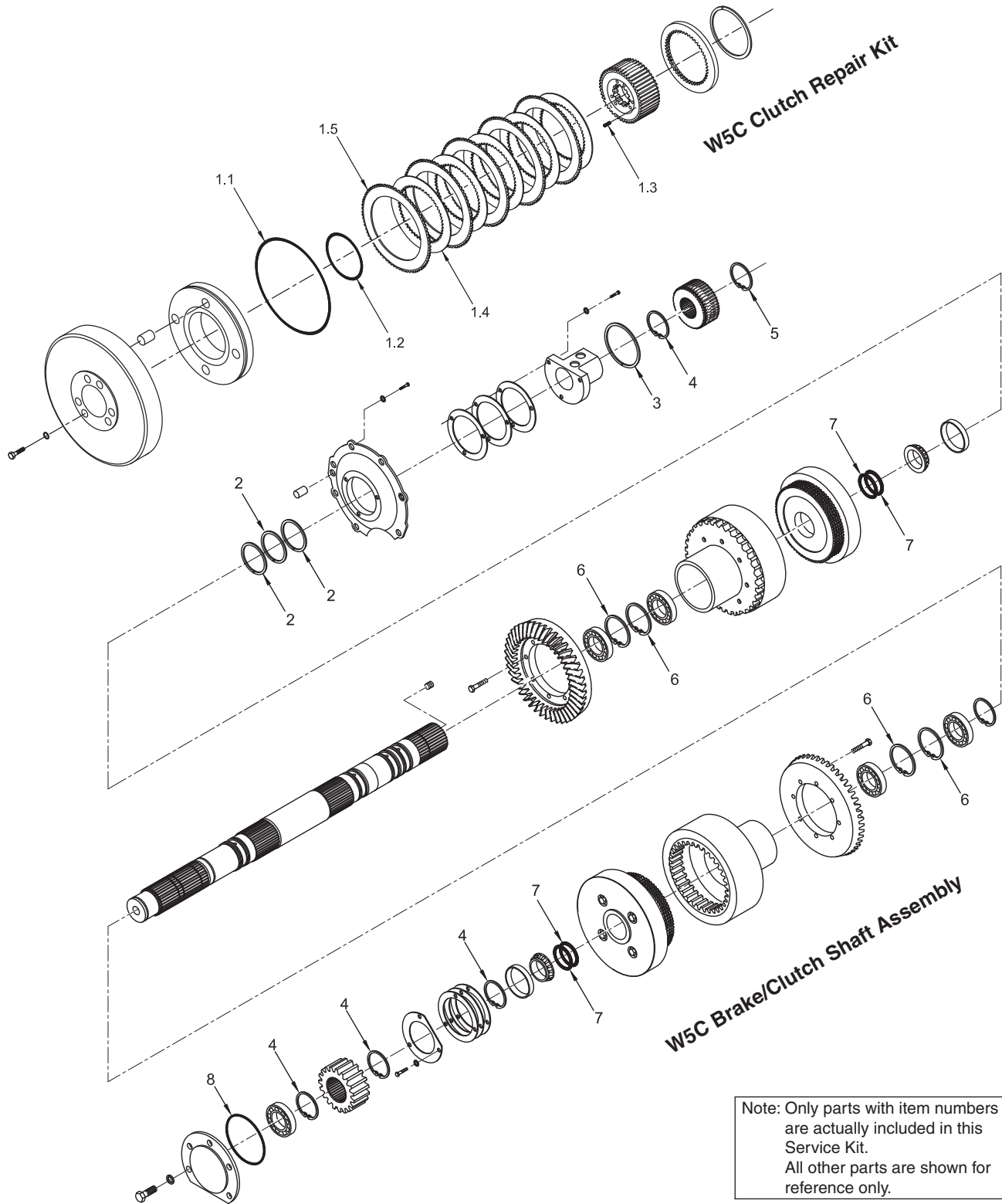
Gasket Kit: 2302983W



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	2302417W	Gasket	1	5	2314780	Gasket	2
2	303946W	Gasket	2	6	313022W	Adhesive	1
3	2314778	Gasket	1	7	151646W	Gasket	1
4	2314779	Gasket	1				

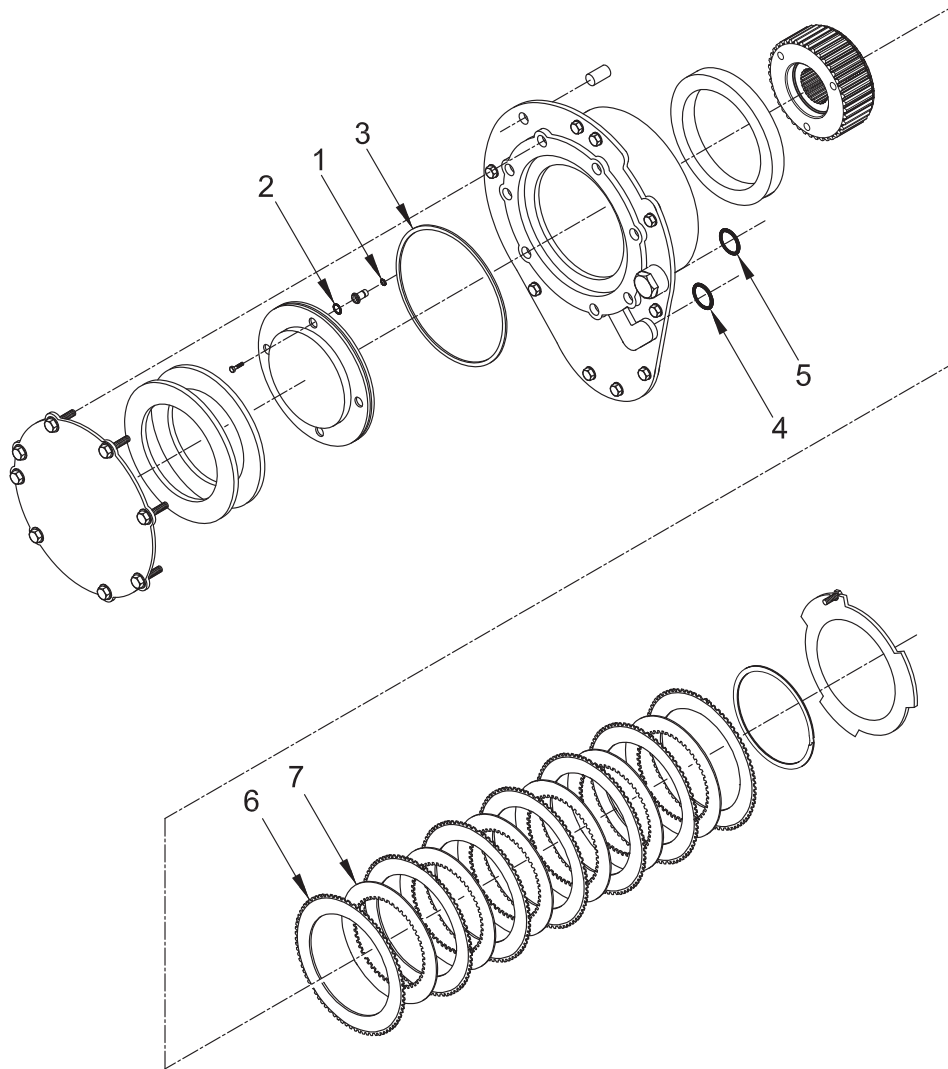
Clutch/Brake Shaft Kit: 2311724



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	2302982W	Kit, Repair-Forward/Reverse Clutch	2	3	2302363W	Ring, Retaining	1
1.1	87287W	. O-Ring	1	4	12916W	Ring, Snap	4
1.2	15883W	. O-Ring	1	5	58939W	Ring, Snap	1
1.3	282707W	. Spring	18	6	46441W	Ring, Snap	4
1.4	282704W	. Plate, Separator	5	7	39384W	O-Ring	4
1.5	328714W	. Plate, Friction	5	8	15895W	O-Ring	1
2	219070W	Ring, Seal	3				

Brake Assembly Kit: 2311723

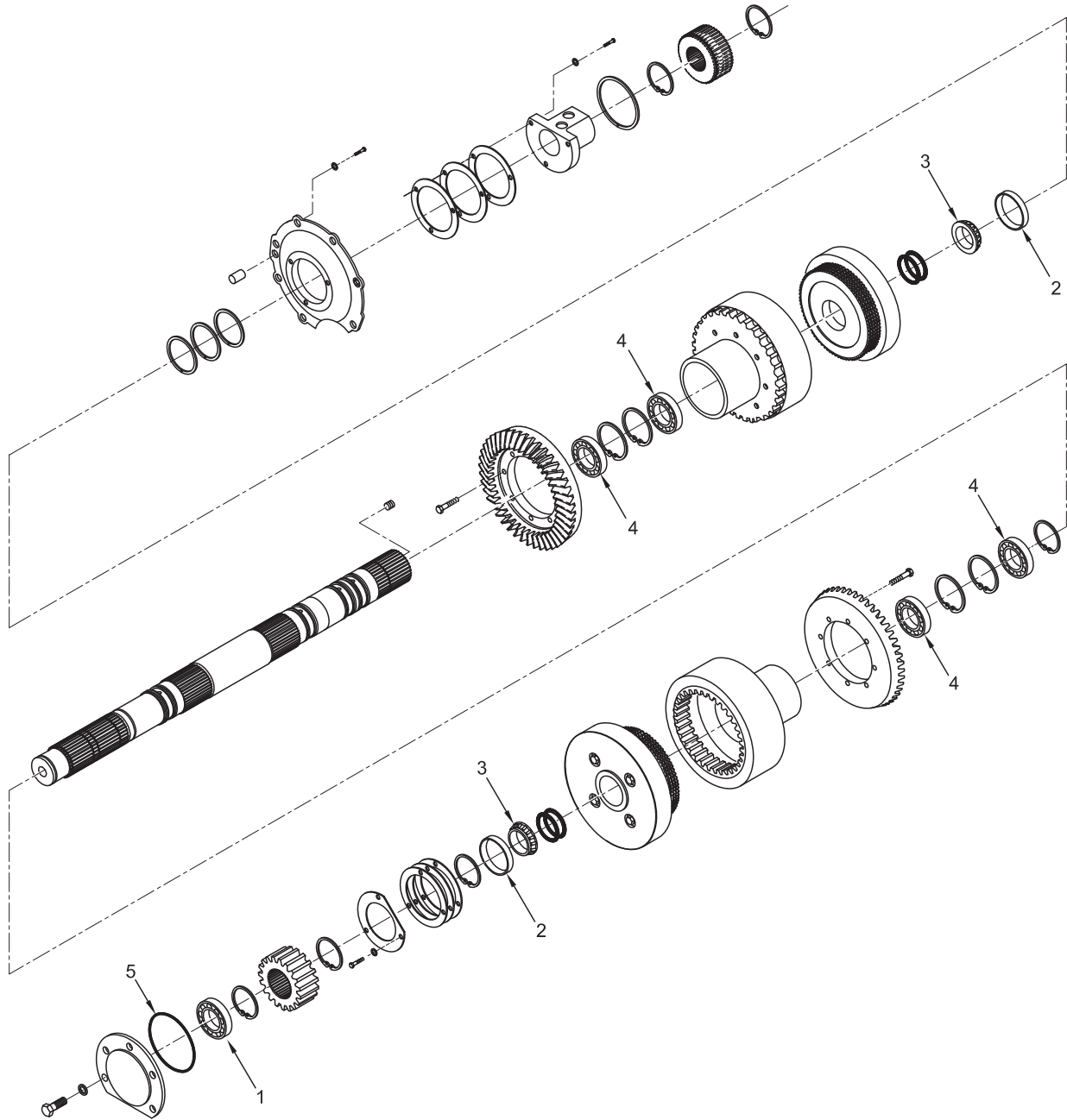


Note: Only parts with item numbers are actually included in this Service Kit.
All other parts are shown for reference only.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	15860W	O-Ring	4	6	328714W	Plate, Friction	7
2	63105W	O-Ring	4	7	282704W	Plate, Separator	6
3	219096W	Seal, Ring	1	8	264159W	Adhesive (Not Shown)	1
4	217897	O-Ring	1	9	383789W	Adhesive, Sealant (Not Shown)	1
5	39377W	O-Ring	1				

Brake, Clutch Shaft Bearing Kit: 2311725

For Winches with Gear Ratio 1 (35:1)



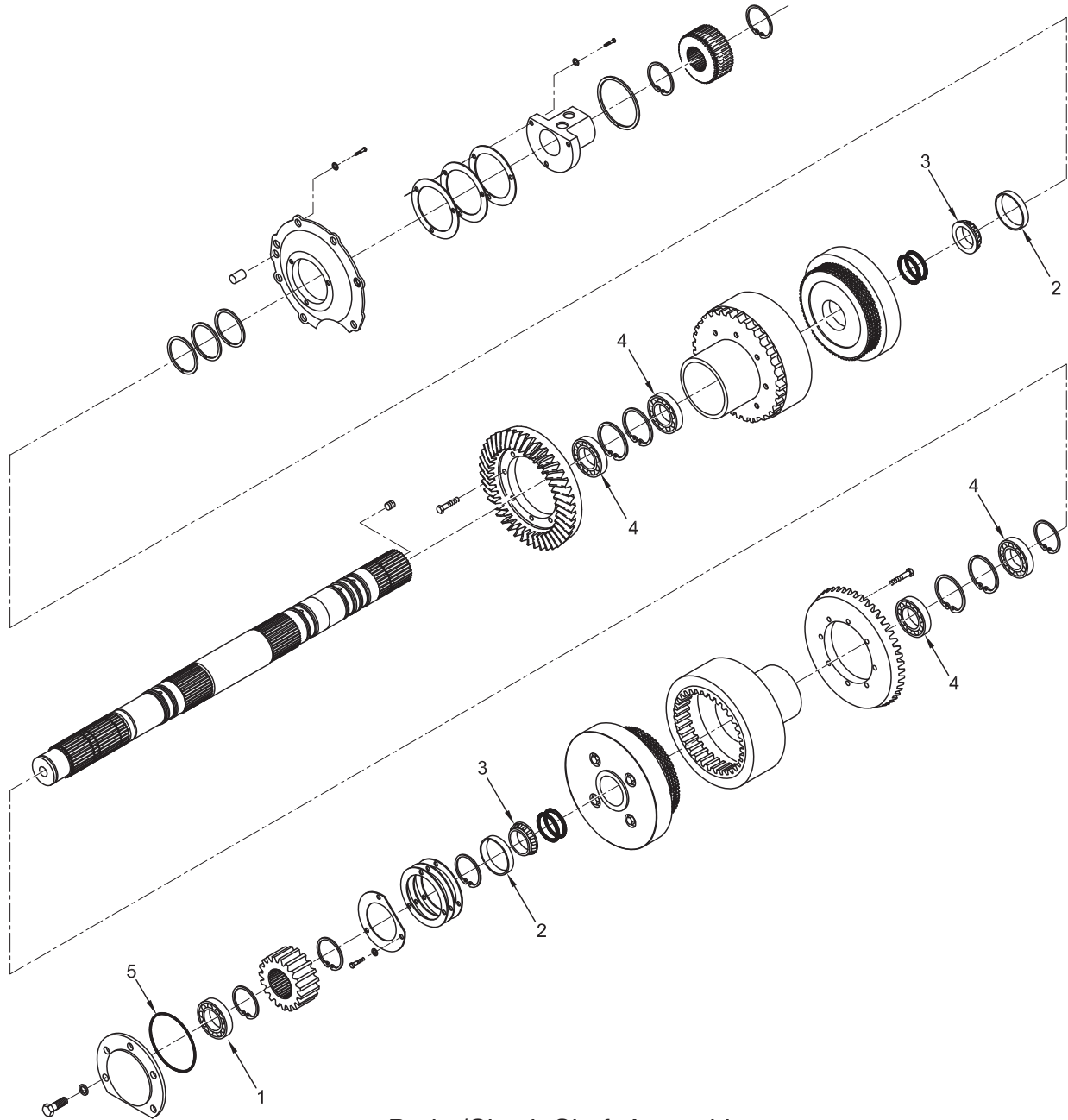
Note: Only parts with item numbers are actually included in this Service Kit. All other parts are shown for reference only.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	41207W	Bearing	1	4	44312W	Bearing	4
2	30055W	Cup, Bearing	2	5	15895W	O-Ring	1
3	184484W	Cone, Bearing	2				

Brake, Clutch & Idler Shaft Bearing Kit: 2311726

For Winches with Gear Ratios 2 (66:1) & 3 (100:1)

Page 1 of 2



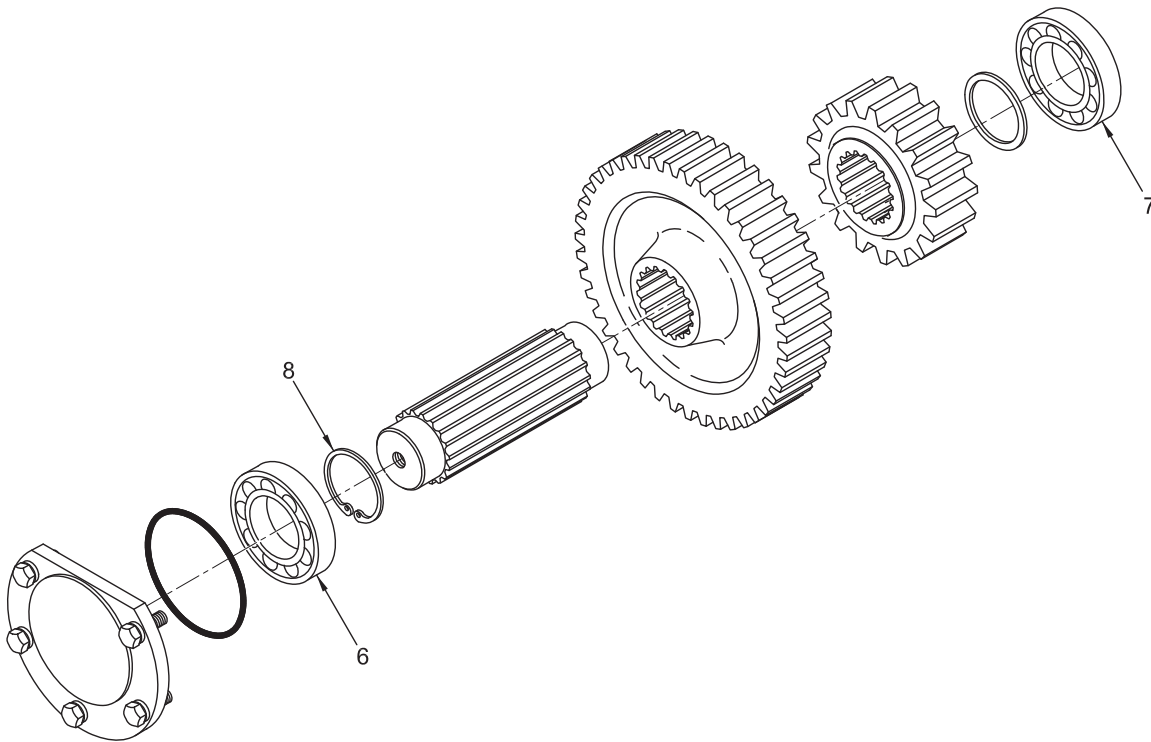
Brake/Clutch Shaft Assembly

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

Brake, Clutch & Idler Shaft Bearing Kit: 2311726

For Winches with Gear Ratios 2 (66:1) & 3 (100:1)

Page 2 of 2



Idler Shaft Assembly

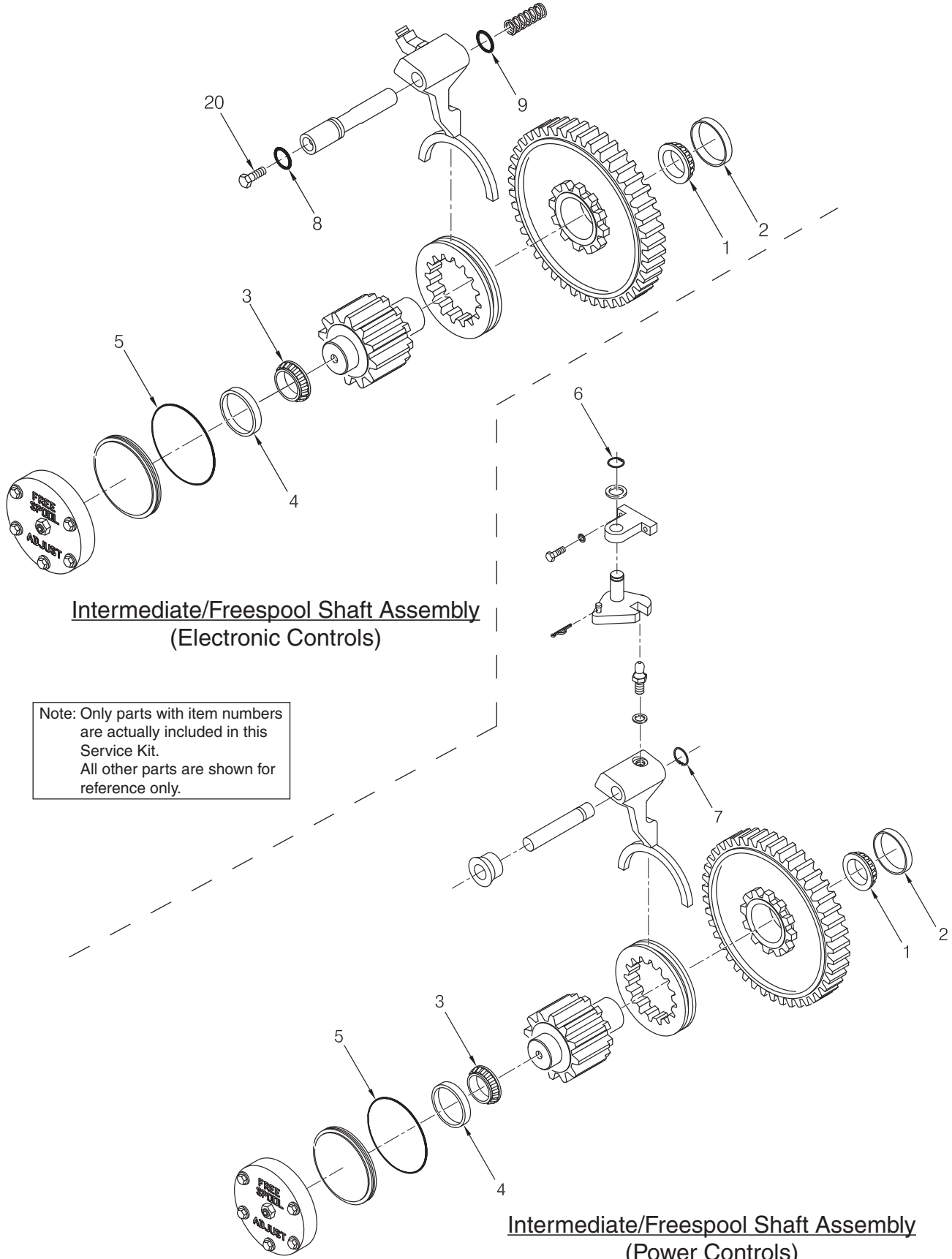
Note: Only parts with item numbers are actually included in this Service Kit. All other parts are shown for reference only.

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	41207W	Bearing	1	5	15895W	O-Ring	1
2	30055W	Cup, Bearing	2	6	41207W	Bearing	1
3	184484W	Cone, Bearing	2	7	2304580W	Bearing	1
4	44312W	Bearing	4	8	12916W	Ring, Snap	1

Drum/Freespool Shaft Bearing & Seal Kit: 2311727

Last Used on S/N AW5C-1314

Page 1 of 2



Intermediate/Freespool Shaft Assembly
(Electronic Controls)

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

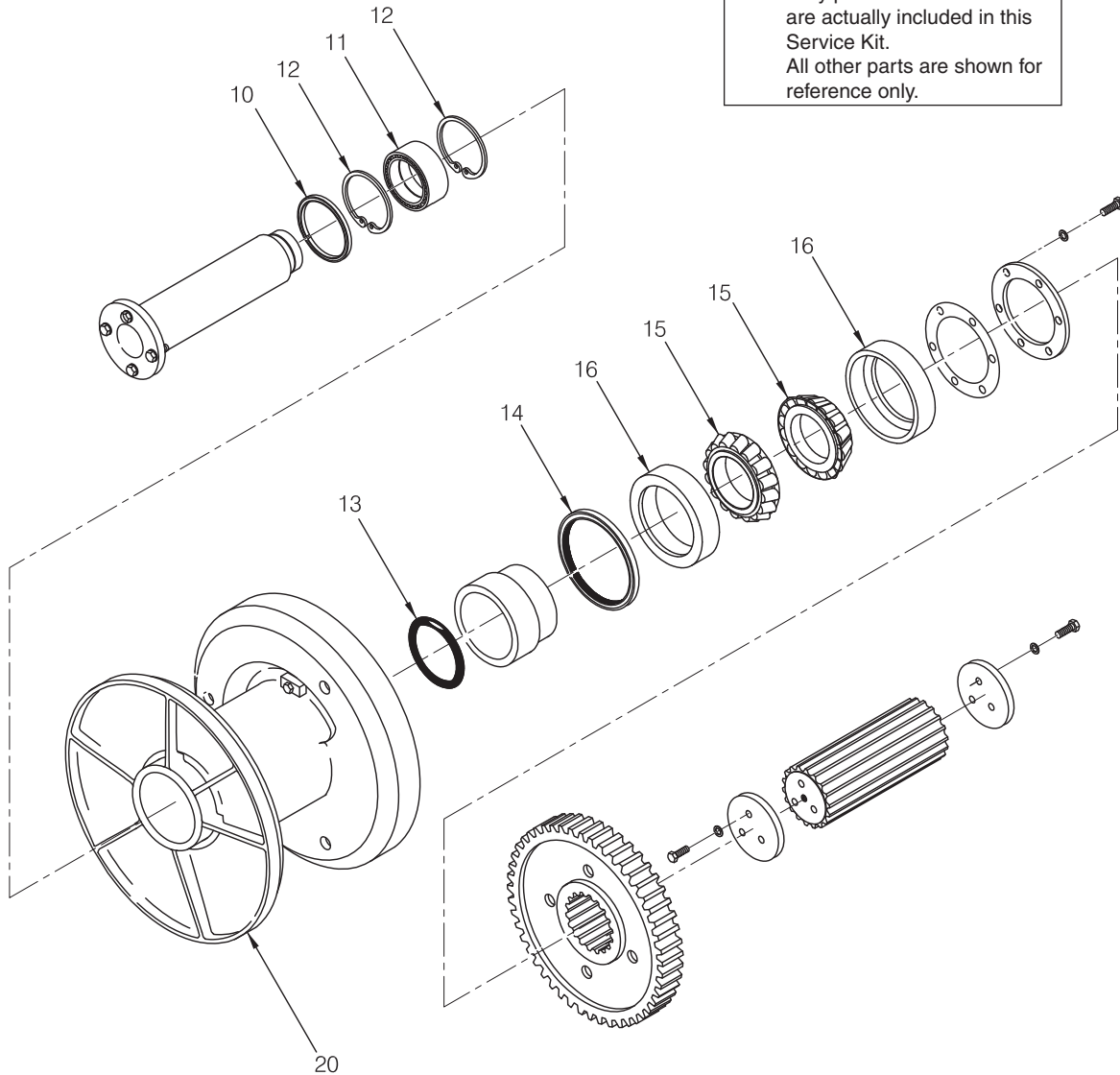
Intermediate/Freespool Shaft Assembly
(Power Controls)

Drum/Freespool Shaft Bearing & Seal Kit: 2311727

Last Used on S/N AW5C-1314

Page 2 of 2

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



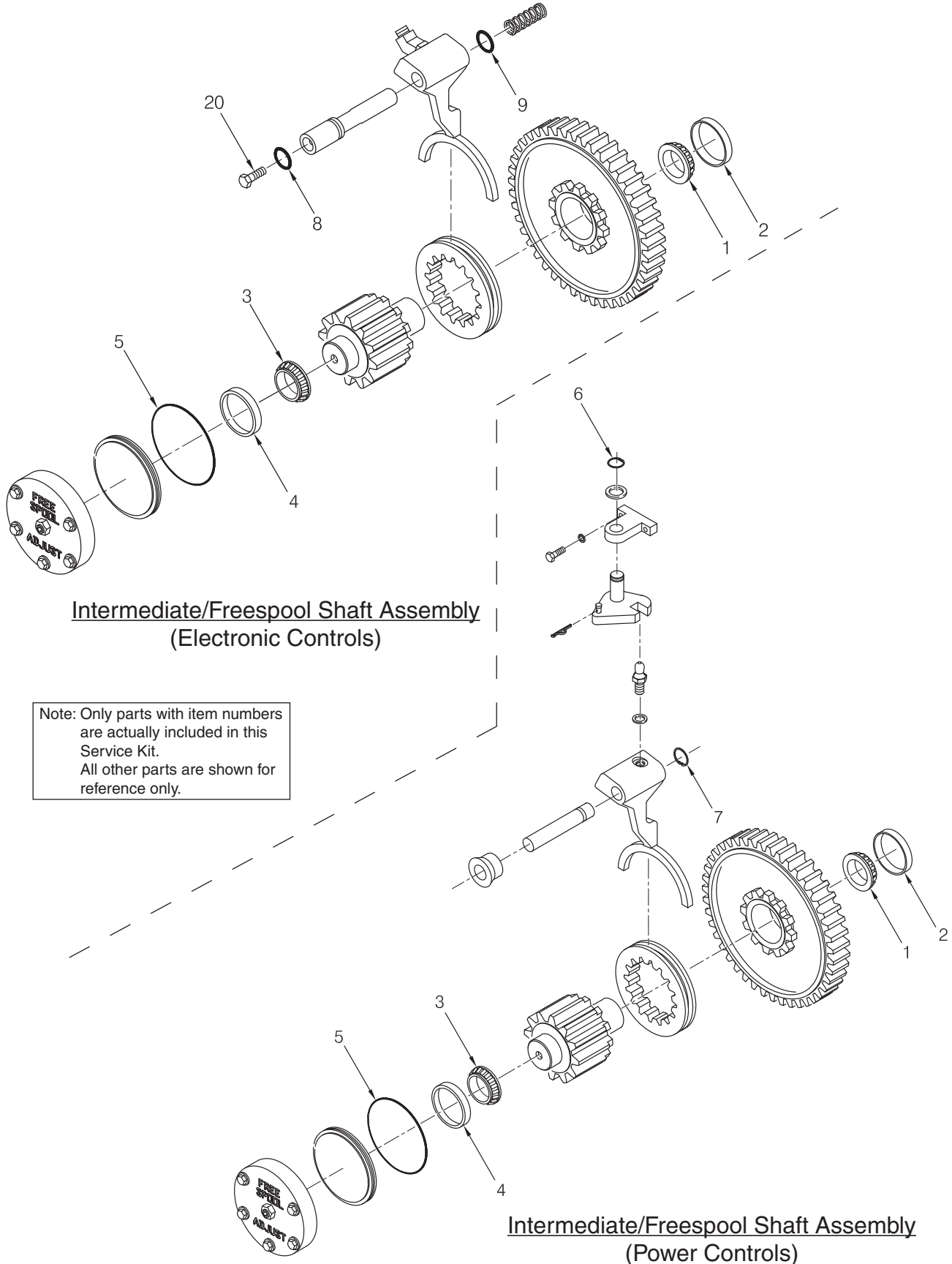
Drum Shaft Assembly

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	29758W	Cone, Bearing	1	9	218214	O-Ring	1
2	45733W	Cup, Bearing	1	10	133523W	Seal, Oil	1
3	219114W	Cone, Bearing	1	11	219095W	Bearing	1
4	2302515W	Cup, Bearing	1	12	12956W	Ring, Snap	2
5	159940W	O-Ring	1	13	15885W	O-Ring	1
6	58933W	Ring, Snap	1	14	339681W	Seal, Oil	1
7	2302367W	Ring, Snap	1	15	219093W	Cone, Bearing	2
8	212380	O-Ring	1	16	219094W	Cup, Bearing	2

Drum/Freespool Shaft Bearing & Seal Kit: 2315873

First Used on S/N AW5C-1315

Page 1 of 2



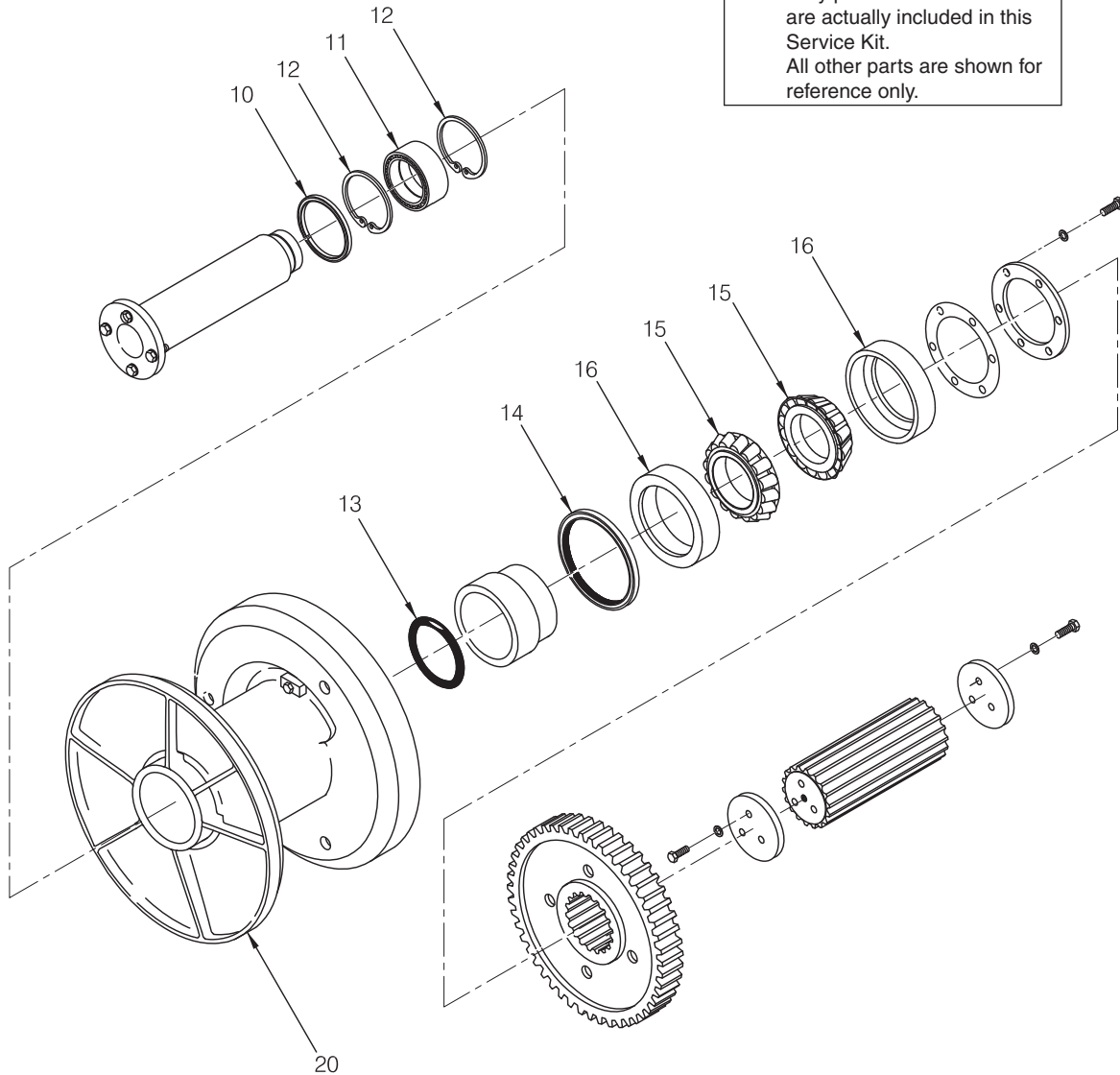
Note: Only parts with item numbers are actually included in this Service Kit. All other parts are shown for reference only.

Drum/Freespool Shaft Bearing & Seal Kit: 2315873

First Used on S/N AW5C-1315

Page 2 of 2

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



Drum Shaft Assembly

Item	Part No.	Description	Qty	Item	Part No.	Description	Qty
1	2305923W	Cone, Bearing	1	9	218214	O-Ring	1
2	45733W	Cup, Bearing	1	10	133523W	Seal, Oil	1
3	219114W	Cone, Bearing	1	11	219095W	Bearing	1
4	2302515W	Cup, Bearing	1	12	12956W	Ring, Snap	2
5	159940W	O-Ring	1	13	15885W	O-Ring	1
6	58933W	Ring, Snap	1	14	339681W	Seal, Oil	1
7	2302367W	Ring, Snap	1	15	219093W	Cone, Bearing	2
8	212380	O-Ring	1	16	219094W	Cup, Bearing	2

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Suggested Spares Guide

Recommended Service Kits	6-2
• Filter Kit, P/N 2311728.....	6-2
• Filter Kit, P/N 2311729.....	6-2
• Gasket Kit, P/N 2302983W.....	6-3
• Clutch & Brake Bearing Kit, P/N 2311724	6-3
• Brake Assembly Kit, P/N 2311723.....	6-3
• Brake, Clutch & Idler Shaft Bearing Kit, P/N 2311725.....	6-4
• Brake, Clutch & Idler Shaft Bearing Kit, P/N 2311726.....	6-4
• Drum/Freespool Shaft Bearing & Seal Kit, P/N 2311727.....	6-5
• Drum/Freespool Shaft Bearing & Seal Kit, P/N 2315873.....	6-5
• Miscellaneous Parts.....	6-6
• Tool Kits	6-6
• Diagnostic Tools	6-7



Suggested Spares Guide

W5C Towing Winch

Recommended Service Kits

The following pages list the service kits that are available for your Allied W5C Winch. Each kit includes all parts listed in the table.

Page 6-2 includes filter kits. 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. Keep this kit in stock at all times for regular maintenance.

Page 6-3 contains a Gasket Kit, a Clutch & Brake Bearing Kit, and a Brake Assembly Kit. Order these kits in preparation for the 5,000 hour scheduled maintenance.

Page 6-4 contains a Brake, Clutch Shaft Bearing Kit and a Brake, Clutch & Idler Shaft Bearing Kit. Order these kits in preparation for the 10,000 hour scheduled maintenance.

Page 6-5 contains two Drum/Freespool Shaft Bearing & Seals Kits. Order these kits in preparation for the 10,000 hour scheduled maintenance.

Page 6-6 contains a list of Miscellaneous Parts. 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.

Pages 6-6 and 6-7 contain 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 free download at <http://www.alliedsystems.com/pubs/pubs.htm>.

Filter Kit, P/N: 2311728

Applies to: Winches with Power Controls		See Section 5 in Parts Manual	Order Quantity
Service Interval: First 250, then every 500 hours			
Allied P/N	Description	Quantity in Kit	Order Quantity
2311728	Filter Kit		
3001363W	. Filter	1	
313022W	. Adhesive	1	
2314780	. Gasket, Filter Cover	1	

Filter Kit, P/N: 2311729

Applies to: Winches with Electronic Controls		See Section 5 in Parts Manual	Order Quantity
Service Interval: First 250, then every 500 hours			
Allied P/N	Description	Quantity in Kit	Order Quantity
2311729	Filter Kit		
2304112W	. Filter	1	
313022W	. Adhesive	1	
2314780	. Gasket, Filter Cover	1	



Suggested Spares Guide

Gasket Kit, P/N: 2302983W

Applies to: All		See Section 5 in Parts Manual	Order Quantity
Service Interval: Every 5,000 hours			
Allied P/N	Description	Quantity in Kit	Order Quantity
2302983W	Gasket Kit		
2302417W	. Gasket	1	
303946W	. Gasket	1	
2314778	. Gasket	1	
2314779	. Gasket	1	
2317480	. Gasket	1	
313022W	. Adhesive	1	
151646W	. Gasket	1	

Clutch & Brake Bearing Kit, P/N: 2311724

Applies to: All		See Section 5 in Parts Manual	Order Quantity
Service Interval: Every 5,000 hours			
Allied P/N	Description	Quantity in Kit	Order Quantity
2311724	Clutch & Brake Bearing Kit		
2302982W	. Kit, Repair - Forward/Reverse Clutch	2	
219070W	. Ring, Seal	3	
2302363W	. Ring, Retaining	1	
12916W	. Ring, Snap	4	
58939W	. Ring, Snap	1	
46441W	. Ring, Snap	4	
39384W	. O-Ring	4	
15895W	. O-Ring	1	

Brake Assembly Kit, P/N: 2311723

Applies to: All		See Section 5 in Parts Manual	Order Quantity
Service Interval: Every 5,000 hours			
Allied P/N	Description	Quantity in Kit	Order Quantity
2311723	Brake Assembly Kit		
15860W	. O-Ring	4	
63105W	. O-Ring	4	
219096W	. Seal, Ring	1	
217897	. O-Ring	1	
39377W	. O-Ring	1	
328714W	. Plate, Friction	7	
282704W	. Plate, Separator	6	
264159W	. Adhesive	1	
383789W	. Adhesive, Sealant	1	



Suggested Spares Guide

Brake, Clutch Shaft Bearing Kit, P/N: 2311725

Applies to: For Winches with Gear Ratio 1 (35:1)		See Section 5 in Parts Manual	
Service Interval: Every 10,000 hours			
Allied P/N	Description	Quantity in Kit	Order Quantity
2311725	Brake, Clutch & Idler Shaft Bearing Kit		
41207W	. Bearing	1	
30055W	. Cup, Bearing	2	
184484W	. Cone, Bearing	2	
44312W	. Bearing	4	
15895W	. O-Ring	1	

Brake, Clutch & Idler Shaft Bearing Kit, P/N: 2311726

Applies to: For Winches with Gear Ratios 2 (66:1) & 3 (100:1)		See Section 5 in Parts Manual	
Service Interval: Every 10,000 hours			
Allied P/N	Description	Quantity in Kit	Order Quantity
2311726	Brake, Clutch & Idler Shaft Bearing Kit		
41207W	. Bearing	1	
30055W	. Cup, Bearing	2	
184484W	. Cone, Bearing	2	
44312W	. Bearing	4	
15895W	. O-Ring	1	
41207W	. Bearing	1	
2304580W	. Bearing	1	
12916W	. Ring, Snap	1	



Suggested Spares Guide

Drum/Freespool Shaft Bearing & Seal Kit, P/N: 2311727			
Applies to: All (Last Used on S/N AW5C-1314)		See Section 5 in Parts Manual	
Service Interval: Every 10,000 hours			
Allied P/N	Description	Quantity in Kit	Order Quantity
2311727	Drum/Freespool Shaft Bearing & Seal Kit		
29758W	. Cone, Bearing	1	
45733W	. Cup, Bearing	1	
219114W	. Cone, Bearing	1	
2302515W	. Cup, Bearing	1	
159940W	. O-Ring	1	
58933W	. Ring, Snap	1	
2302367W	. Ring, Snap	1	
212380	. O-Ring	1	
218214	. O-Ring	1	
133523W	. Seal, Oil	1	
219095W	. Bearing	1	
12956W	. Ring, Snap	2	
15885W	. O-Ring	1	
339681W	. Seal, Oil	1	
219093W	. Cone, Bearing	2	
219094W	. Cup, Bearing	2	

Drum/Freespool Shaft Bearing & Seal Kit, P/N: 2315873			
Applies to: All (First Used on S/N AW5C-1315)		See Section 5 in Parts Manual	
Service Interval: Every 10,000 hours			
Allied P/N	Description	Quantity in Kit	Order Quantity
2315873	Drum/Freespool Shaft Bearing & Seal Kit		
2305923W	. Cone, Bearing	1	
45733W	. Cup, Bearing	1	
219114W	. Cone, Bearing	1	
2302515W	. Cup, Bearing	1	
159940W	. O-Ring	1	
58933W	. Ring, Snap	1	
2302367W	. Ring, Snap	1	
212380	. O-Ring	1	
218214	. O-Ring	1	
133523W	. Seal, Oil	1	
219095W	. Bearing	1	
12956W	. Ring, Snap	2	
15885W	. O-Ring	1	
339681W	. Seal, Oil	1	
219093W	. Cone, Bearing	2	
219094W	. Cup, Bearing	2	



Suggested Spares Guide

Miscellaneous Parts

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
varies	Cables, Control	Section 3	
varies	Levers, Control	Section 3	
varies	Related components such As U-Joints, Driveline	Section 1	
varies	Pump, Hydraulic	Section 3	
varies	Coils and Valves, Control Manifold	Section 3	
varies	Assembly, Wire Rope	Section 4	
varies	Seal(s), PTO Input Shaft	Section 2	
varies	Bearing(s), PTO Input	Section 2	
varies	Yoke(s), Input (if Present)	Section 2	
1314656W	Pin, Drawbar (Standard)	Section 1	
2303221W	Keeper, Drawbar Pin (Standard)	Section 1	
2314978	Pin, Drawbar (Extended Heavy Duty)	Section 4	
varies	Harnesses, Wire	Section 3	
varies	Switches, Control Lever Panel	Section 3	

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	



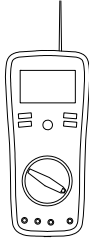
Suggested Spares Guide

Diagnostic Tools

Order as Required

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

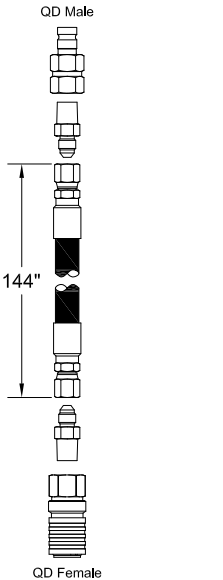
Allied P/N	Description	Order Quantity
906601	0 to 8700 PSI Digital Pressure Gauge W/Female QD Connector	
69782	72" Hose Assembly W/QD Connectors Both Ends	
70381	144" Hose Assembly W/QD Connectors Both Ends	
69778	Multi-Meter, 12 Function	



69778
Multi-Meter, 12 Function

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

QD Male

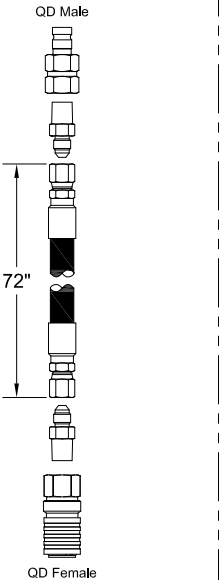


144"

QD Female

70381
Kit, Hose Assembly, W/QD Both Ends

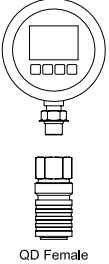
QD Male



72"

QD Female

69782
Kit, Hose Assembly, W/QD Both Ends



QD Female

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

Intentionally Blank

Numerical Index

69778 - 12956W	7-2
12956W - 15127W.....	7-3
15127W - 16745W.....	7-4
16745W - 219093W.....	7-5
219093W - 2300183W.....	7-6
2300183W - 2302792W.....	7-7
2302793W - 2303907W.....	7-8
2303908W - 2304792W.....	7-9
2304792W - 2307364W.....	7-10
2307389W - 295756W.....	7-11
295756W - 44503W.....	7-12
44503W - YS7-215LWS.....	7-13

7-2

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
69778	6-7		2310108	3-32	61	2311443	3-22	633	2314780	5-4	3
69782	6-7		2310116	3-44	19	2311444	3-59	74	2314780	5-5	3
70381	6-7		2310117	3-95	3	2311444	3-69	74	2314780	5-6	5
209578	3-15	620	2310118	3-44	16	2311444	3-70	85	2314780	6-2	1
209744	3-24	41	2310118	3-95		2311444	3-71	121	2314780	6-2	1
211556	1-19	14	2310161	3-59	95	2311444	3-72	121	2314854	3-99	1
211556	3-17	14	2310161	3-61	95	2311444	3-75	74	2314864	3-99	2
211556	3-18	14	2310161	3-85	95	2311444	3-79	74	2314978	4-10	5
212380	2-41	19	2310163	3-97	16	2311444	3-82	74	2314978	6-6	
212380	5-13	8	2310163	3-98	15	2311444	3-87	1	2315001	3-87	15
212380	5-15	8	2310252	3-26	3	2311481	1-38	12	2315001	3-99	
212380	6-5	1	2310252	3-27	3	2311558	3-15	643	2315676	4-8	14
212380	6-5	1	2310253	3-26	5	2311558	3-27	4	2315676	4-9	14
217897	2-30	21	2310253	3-27	5	2311621	1-8	6	2315873	6-5	
217897	5-8	4	2310254	3-26	6	2311723	6-3		2317480	6-3	1
217897	6-3	1	2310254	3-27	6	2311724	6-3		10389W	2-27	27
218214	2-41	23	2310255	3-26	2	2311725	6-4		110322W	3-45	11
218214	5-13	9	2310255	3-27	2	2311726	6-4		110322W	3-46	5
218214	5-15	9	2310257	3-97	19	2311727	6-5		110322W	3-56	6
218214	6-5	1	2310258	3-26	3	2311728	6-2		111331W	3-13	671
218214	6-5	1	2310258	3-27	3	2311729	6-2		111331W	3-15	671
224191	3-87	10	2310260	3-26	2	2311807	3-22	631	111331W	3-9	590
225871	3-38	114	2310260	3-27	2	2311887	3-15	625	11133W	3-3	52
225871	3-39	114	2310438	3-13	680	2311887	3-27		11133W	3-5	52
225871	3-41	4.9	2310438	3-15	680	2312188	3-94	13	114312W	3-42	13
225871	3-71	131	2310438	3-9	580	2312188	3-95	13	114312W	3-54	13
225871	3-72	131	2310439	3-13	670	2312189	3-94	1	114312W	3-55	13
228131	3-94	8	2310439	3-15	670	2312189	3-95	1	118361W	3-24	15
228131	3-95	8	2310439	3-9	591	2312232	3-94	14	118365W	3-24	26
232619	3-97	20	2310440	3-9	514	2312232	3-95	14	127045W	3-11	58
236713	3-23	3	2310445	1-7	1	2313699	3-23	4	127045W	3-3	43
242601	3-23	2	2310448	2-4	50	2313717	3-23		127045W	3-5	43
243057	1-21	31	2310449	1-7	11	2313958	1-7	13	127045W	3-9	75
243057	1-23	31	2310470	1-7	12	2314016	1-32	30	127156W	1-9	3
243057	3-19	1.2	2310520	1-7	3	2314034	1-5	17	12896W	2-19	19
588466	6-6		2310521	1-7	4	2314036	1-36	15	12896W	2-21	19
588467	6-6		2310522	1-7	20	2314043	1-7	21	12896W	2-3	8
588468	6-6		2310575	3-59	70	2314090	3-72	142	12896W	2-4	57
588469	6-6		2310575	3-61	70	2314138	3-39	118	12916W	2-29	7
588526	6-6		2310575	3-69	70	2314174	3-71	130	12916W	2-33	6
588527	6-6		2310575	3-70	90	2314174	3-72	130	12916W	5-7	4
588528	6-6		2310575	3-71	132	2314240	1-25	3	12916W	5-11	8
588529	6-6		2310575	3-72	132	2314240	1-27	2.3	12916W	6-3	4
588530	6-6		2310575	3-75	70	2314244	1-25	4	12916W	6-4	1
906601	6-7		2310575	3-79	70	2314244	1-27	2.4	12922W	2-11	27
2301487	3-94	15	2310575	3-82	70	2314245	1-25	5	12922W	2-15	27
2301487	3-95	15	2310575	3-85	70	2314245	1-27	2.5	12922W	2-17	16
2304350	1-36	16	2310575	3-98		2314246	1-25	1	12922W	2-23	27
2310015	3-13	86	2310585	3-98	18	2314246	1-27	2.1	12922W	2-25	27
2310015	3-15	86	2310626	3-59	87	2314247	1-25	2	12922W	2-9	27
2310015	3-9	86	2310626	3-61	87	2314247	1-27	2.2	12944W	2-27	4
2310079	3-61	74	2310626	3-75	87	2314418	1-5	13	12944W	2-27	35
2310079	3-67	74	2310626	3-79	87	2314643	3-41	4.1	129563W	1-32	21
2310079	3-70	85	2310626	3-82	87	2314735	3-19	1.15	129563W	3-40	4
2310079	3-71	121	2310626	3-85	87	2314742	3-19	1.16	129563W	3-49	5
2310079	3-72	121	2310627	3-21	3	2314757	4-10	2	129563W	3-51	5
2310079	3-74	74	2310632	3-69	87	2314778	1-3	9	129563W	3-53	5
2310079	3-78	74	2310632	3-70	83	2314778	5-6	3	129563W	3-59	79
2310079	3-81	74	2310632	3-71	120	2314778	6-3	1	129563W	3-61	79
2310079	3-85	74	2310632	3-72	120	2314779	1-3	13	129563W	3-74	23
2310105	3-32	65	2310692	3-72	143	2314779	5-6	4	129563W	3-75	23
2310105	3-94		2311057	4-3	5	2314779	6-3	1	129563W	3-85	79
2310106	3-94	3	2311330	1-38	14	2314780	1-3	15	12956W	2-32	6

7-3

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
12956W	5-13	12	1306002W	3-92	12	137852W	3-65	4	15039W	3-65	76
12956W	5-15	12	1306003W	3-88	11	137852W	3-67	4	15039W	3-67	76
12956W	6-5	2	1306003W	3-89	11	137852W	3-69	4	15039W	3-69	76
12956W	6-5	2	1306003W	3-90	11	137852W	3-70	7	15039W	3-70	87
1300780W	3-11	50	1306003W	3-91	11	137852W	3-71	129	15039W	3-71	127
1300780W	3-5	8	1306003W	3-92	11	137852W	3-72	129	15039W	3-72	127
1300780W	3-9	83	1308436W	3-45	4	137852W	3-73	23	15039W	3-73	76
1300785W	3-30	1	1308437W	3-45	3	137852W	3-76	12	15039W	3-74	76
1300785W	3-42	1	1310821W	3-11	55	137852W	3-77	8	15039W	3-75	76
1300785W	3-43	1	1310821W	3-3	40	137852W	3-78	8	15039W	3-76	7
1300785W	3-45	1	1310821W	3-5	40	137852W	3-79	8	15039W	3-77	76
1300785W	3-53	6	1310821W	3-9	72	137852W	3-80	11	15039W	3-78	76
1300785W	3-54	1	1314503W	2-32	19	137852W	3-81	11	15039W	3-79	76
1300785W	3-90		1314656W	1-2	20	137852W	3-87	2	15039W	3-80	76
1302039W	3-88	20	1314656W	1-3	20	139718W	3-3	5	15039W	3-81	76
1302039W	3-89	20	1314656W	6-6		139718W	3-5	5	15039W	3-82	76
1302039W	3-90	20	1314687W	1-29	4	139W	3-3	31	15039W	3-85	76
1302039W	3-91	20	1314687W	1-30	4	139W	3-5	31	15054W	3-36	5
1302039W	3-92	20	1321651W	3-45		139W	3-9	509	15054W	3-37	67
1302040W	3-88	10	1321665W	1-38	11	142270W	1-10	8	15055W	3-34	4
1302040W	3-89	10	133523W	2-32	4	142270W	1-9	8	15055W	3-45	8
1302040W	3-90	10	133523W	5-13	10	14349W	3-3	21	15055W	3-56	12
1302040W	3-91	10	133523W	5-15	10	14349W	3-5	21	15056W	1-21	29
1302040W	3-92	10	133523W	6-5	1	14349W	3-9	520	15056W	1-23	29
1302041W	3-88	9	133523W	6-5	1	14538W	3-3	29	15056W	3-11	20
1302041W	3-89	9	134078W	2-11	8	14538W	3-5	29	15056W	3-13	622
1302041W	3-90	9	134078W	2-12	10	14538W	3-9	507	15056W	3-15	622
1302041W	3-91	9	134078W	2-15	8	145499W	4-10	7	15056W	3-30	11
1302041W	3-92	9	134078W	2-17	8	14581W	3-3	25	15056W	3-31	9
1302042W	3-88	8	134078W	2-23	8	14581W	3-5	25	15058W	1-10	14
1302042W	3-89	8	134078W	2-25	8	14581W	3-9	504	15058W	1-15	94
1302042W	3-90	8	134078W	2-5	10	14595W	3-24	40	15058W	1-19	94
1302042W	3-91	8	134078W	2-6	10	14604W	3-24	38	15058W	1-23	136
1302042W	3-92	8	134078W	2-9	8	14668W	3-3	51	15058W	3-59	84
1302044W	3-88	6	134079W	2-11	8	14668W	3-5	51	15058W	3-61	84
1302044W	3-89	6	134079W	2-12	10	14668W	3-9	382	15058W	3-65	84
1302044W	3-90	6	134079W	2-15	8	14668W	3-9	482	15058W	3-67	84
1302044W	3-91	6	134079W	2-17	8	14681W	3-11	39	15058W	3-69	84
1302044W	3-92	6	134079W	2-23	8	14681W	3-13	311	15058W	3-73	84
1302045W	3-88	5	134079W	2-25	8	14681W	3-15	311	15058W	3-74	84
1302045W	3-89	5	134079W	2-5	11	14681W	3-3	35	15058W	3-75	84
1302045W	3-90	5	134079W	2-6	10	14681W	3-5	35	15058W	3-77	84
1302045W	3-91	5	134079W	2-9	8	14681W	3-9	311	15058W	3-78	84
1302045W	3-92	5	134803W	3-3	8	14682W	3-11	17	15058W	3-79	84
1302047W	3-88	3	134803W	3-32	60	14682W	3-13	619	15058W	3-80	84
1302047W	3-89	3	137852W	1-11	7	14682W	3-15	619	15058W	3-81	84
1302047W	3-90	3	137852W	1-12	7	15004W	3-37	72	15058W	3-82	84
1302047W	3-91	3	137852W	1-16	7	15004W	3-70	103	15058W	3-85	84
1302047W	3-92	3	137852W	1-21	6	15004W	3-88	16	15058W	4-10	9
1302049W	3-88	1	137852W	1-23	6	15004W	3-89	16	15113W	3-56	5
1302049W	3-89	1	137852W	1-27	1.6	15004W	3-90	16	15113W	3-59	91
1302049W	3-90	1	137852W	1-32	28	15004W	3-91	16	15113W	3-61	91
1302049W	3-91	1	137852W	1-36	11	15004W	3-92	16	15113W	3-65	68
1302049W	3-92	1	137852W	1-8	4	15024W	3-88	15	15113W	3-67	68
1306001W	3-88	14	137852W	3-17	7	15024W	3-89	15	15113W	3-69	68
1306001W	3-89	14	137852W	3-18	7	15024W	3-90	15	15113W	3-70	78
1306001W	3-90	14	137852W	3-33	20	15024W	3-91	15	15113W	3-85	91
1306001W	3-91	14	137852W	3-33	24	15024W	3-92	15	15113W	3-87	13
1306001W	3-92	14	137852W	3-36	6	15027W	3-24	13	15127W	2-19	25
1306002W	3-88	12	137852W	3-49	16	15030W	3-33	5	15127W	2-21	25
1306002W	3-89	12	137852W	3-51	16	15039W	3-59	76	15127W	2-3	14
1306002W	3-90	12	137852W	3-55	13	15039W	3-61	76	15127W	2-4	63
1306002W	3-91	12	137852W	3-63	13	15039W	3-63	7	15127W	3-44	18

7-4

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
15127W	3-59	90	15158W	1-32	35	15887W	1-10	4	16457W	3-11	15
15127W	3-61	90	15158W	1-36	19	15887W	1-11	5	16457W	3-13	617
15127W	3-65	67	15158W	1-5	23	15887W	1-12	5	16457W	3-15	617
15127W	3-67	67	15158W	1-7	25	15887W	1-15	5	16484W	3-24	9
15127W	3-69	67	15158W	2-21	8	15887W	1-16	5	16484W	3-24	34
15127W	3-70	77	15158W	2-29	2	15887W	1-19	5	16484W	3-3	13
15127W	3-85	90	15158W	2-29	12	15887W	1-21	4	16484W	3-5	13
15128W	1-33	8	15158W	2-30	25	15887W	1-23	4	16485W	2-30	17
15128W	1-34	16	15158W	2-32	3	15887W	1-27	1.4	16485W	3-24	37
15133W	1-4	4	15158W	2-32	21	15887W	1-28	5	16485W	3-3	37
15134W	1-21	28	15158W	2-33	2	15887W	1-30	9	16485W	3-5	37
15134W	1-23	28	15158W	2-35	11	15887W	1-8	3	16486W	3-3	9
15134W	3-32	64	15158W	2-35	26	15887W	1-9	4	16486W	3-3	41
15134W	3-42	12	15158W	2-37	26	15887W	2-12	12	16486W	3-5	9
15134W	3-49	3	15158W	2-39	11	15887W	2-5	12	16486W	3-5	41
15134W	3-51	3	15158W	3-13	3	15887W	2-6	12	16487W	3-24	39
15134W	3-53	3	15158W	3-15	3	15887W	2-9	29	16541W	3-11	9
15134W	3-54	12	15158W	3-3	22	15895W	2-29	4	16541W	3-11	52
15134W	3-55	12	15158W	3-5	22	15895W	2-33	4	16541W	3-13	611
15134W	3-55	14	15158W	3-9	500	15895W	5-7	8	16541W	3-15	611
15135W	1-32	34	151646W	1-2	23	15895W	5-9	5	16541W	3-9	103
15135W	1-36	20	151646W	1-3	23	15895W	5-11	5	16542W	3-11	63
15135W	1-4	2	151646W	5-6	7	15895W	6-3	1	16542W	3-24	36
15135W	1-4	12	151646W	6-3	1	15895W	6-4	1	16542W	3-3	37
15135W	1-5	22	15166W	1-34	33	15895W	6-4	1	16542W	3-5	37
15135W	1-7	26	15223W	4-10	10	15906W	2-35	18	16542W	3-9	321
15135W	2-11	36	15256W	1-2	2	15906W	2-37	18	16543W	3-9	516
15135W	2-15	34	15256W	1-3	2	15923W	3-88	17	16556W	3-13	648
15135W	2-23	36	15273W	1-2	24	15923W	3-89	17	16556W	3-15	648
15135W	2-25	36	15303W	1-2	19	15923W	3-90	17	16556W	3-25	14
15135W	2-9	36	15314W	3-24	18	15923W	3-91	17	16557W	1-11	12
15135W	3-33	8	15315W	1-3	19	15923W	3-92	17	16557W	1-19	12
15137W	1-29	5	15315W	1-3	32	15962W	3-24	6	16557W	3-17	12
15137W	1-30	5	15316W	2-27	26	159940W	2-35	8	16557W	3-18	12
15155W	3-33	10A	15483W	2-29	31	159940W	2-37	8	16559W	3-11	12
15155W	3-45	7	15483W	3-24	4	159940W	2-39	8	16559W	3-13	614
15155W	3-56	14	156133W	3-55	11	159940W	2-41	8	16559W	3-15	614
15156W	2-11	25	156133W	3-76	15	159940W	5-13	5	16560W	3-11	37
15156W	2-15	25	156133W	3-77	15	159940W	5-15	5	16561W	3-11	53
15156W	2-23	25	156133W	3-78	15	159940W	6-5	1	16561W	3-3	4
15156W	2-25	25	156133W	3-79	15	159940W	6-5	1	16561W	3-5	4
15156W	2-27	9	156133W	3-82	16	159W	4-10	6	16561W	3-9	77
15156W	2-9	25	15860W	2-11	29	16001W	2-17	18	16565W	2-39	17
15156W	3-11	19	15860W	2-23	29	16001W	4-7	7	16565W	2-41	17
15156W	3-11	45	15860W	2-25	29	16001W	4-8	5	16565W	3-11	22
15156W	3-11	48	15860W	2-30	8	16001W	4-9	5	16565W	3-13	624
15156W	3-13	621	15860W	3-24	10	16151W	1-2	17	16565W	3-13	644
15156W	3-15	621	15860W	5-8	1	16151W	1-3	17	16565W	3-15	624
15156W	3-24	2	15860W	6-3	4	16168W	3-45	5	16565W	3-15	644
15156W	3-3	18	15880W	1-31	16	162155W	3-13	649	16569W	3-11	5
15156W	3-30	12	15880W	2-15	29	162155W	3-15	649	16569W	3-13	607
15156W	3-31	10	15883W	2-11	22	162155W	3-3	13	16569W	3-15	607
15156W	3-5	18	15883W	2-15	22	162155W	3-5	13	16602W	1-38	2
15156W	3-55	14	15883W	2-23	22	162155W	3-9	517	16602W	3-20	4
15156W	3-9	79	15883W	2-25	22	16247W	3-5	57	16602W	3-21	4
151583W	2-35	17	15883W	2-31	7	16328W	1-5	24	16602W	3-22	639
151583W	2-37	17	15883W	2-9	22	16328W	1-7	17	166425W	1-11	9
151589W	1-2	22	15883W	5-7	1.2	16378W	2-19	24	166425W	2-32	7
151589W	1-3	22	15885W	2-32	12	16378W	2-21	24	166857W	1-21	14
15158W	1-2	3	15885W	5-13	13	16378W	2-3	13	166857W	1-23	14
15158W	1-2	29	15885W	5-15	13	16378W	2-4	62	166857W	3-16	23
15158W	1-3	3	15885W	6-5	1	16451W	3-3	7	166905W	3-24	29
15158W	1-3	29	15885W	6-5	1	16451W	3-5	7	16745W	3-11	8

7-5

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
16745W	3-13	610	177461W	2-21	34	18662W	1-27	2.7	196009W	3-24	31
16745W	3-15	610	177461W	2-23	5	18662W	1-34	32	196128W	3-33	7
16805W	3-30	10	177461W	2-25	5	18672W	1-33	6	196128W	3-94	12
16805W	3-31	8	177461W	2-5	8	18672W	1-34	14	196128W	3-95	12
16828W	1-25	12	177461W	2-6	8	18672W	4-2	6	196144W	3-33	3
16828W	1-27	2.12	177461W	2-9	5	18672W	4-3	6	196144W	3-33	15
16828W	3-11	44	177461W	3-11	62	18699W	3-71	125	197066W	3-59	77
16828W	3-3	36	177946W	2-31	3	18699W	3-72	125	197066W	3-61	77
16828W	3-42	10	178402W	1-2	4	18717W	3-30	23	197066W	3-63	8
16828W	3-49	2	178402W	1-2	30	18717W	3-31	23	197066W	3-65	77
16828W	3-5	36	178402W	1-3	4	18717W	3-37	65	197066W	3-67	77
16828W	3-51	2	178402W	1-3	30	18717W	3-37	71	197066W	3-69	77
16828W	3-53	2	178402W	2-27	28	18717W	3-38	116	197066W	3-70	88
16828W	3-54	10	178402W	2-29	1	18717W	3-39	116	197066W	3-71	128
16828W	3-55	10	178402W	2-30	24	18717W	3-41	4.8	197066W	3-72	128
16828W	3-9	78	178402W	2-33	1	18717w	3-49	19	197066W	3-73	77
16829W	1-34	25	178402W	2-35	24	18717W	3-49	63	197066W	3-74	77
16829W	2-11	32	178402W	2-37	24	18717W	3-51	19	197066W	3-75	77
16829W	2-17	17	178402W	3-15	31	18717W	3-51	63	197066W	3-76	8
16829W	2-19	13	178403W	1-2	5	18717W	3-53	19	197066W	3-77	77
16829W	2-21	7	178403W	1-3	5	18717W	3-70	102	197066W	3-78	77
16829W	2-21	13	179443W	2-11	24	18717W	3-88	23	197066W	3-79	77
16829W	2-23	32	179443W	2-15	24	18717W	3-89	23	197066W	3-80	77
16829W	2-25	32	179443W	2-23	24	18717W	3-90	23	197066W	3-81	77
16829W	2-3	2	179443W	2-25	24	18717W	3-91	23	197066W	3-82	77
16829W	2-4	51	179443W	2-27	8	18717W	3-92	23	197066W	3-85	77
16829W	4-10	8	179443W	2-9	24	18717W	3-93	18	198385W	3-3	23
16830W	1-2	11	18000W	1-29	9	18720W	2-30	2	198385W	3-5	23
16830W	1-2	28	18000W	1-30	13	18720W	3-73	91	198385W	3-9	501
16830W	1-2	30	18001W	1-36	7	18720W	3-74	91	19928W	1-31	5
16830W	1-3	11	18001W	1-37	7	18720W	3-75	91	19928W	1-6	5
16830W	1-3	28	182209W	1-2	21	18738W	1-15	25	200454W	1-10	12
16830W	1-3	30	184484W	2-29	14	18738W	1-19	25	200454W	1-15	92
16830W	2-29	11	184484W	5-9	3	18738W	1-21	16	200454W	1-19	92
16830W	2-30	15	184484W	5-11	3	18738W	1-23	16	200454W	1-23	134
16830W	2-32	17	184484W	6-4	2	18738W	3-16	25	200454W	3-59	82
16830W	3-13	17	184484W	6-4	2	188210W	3-11	43	200454W	3-61	82
16836W	3-33	12	18452W	3-9	474	188210W	3-5	55	200454W	3-85	82
16923W	3-3	26	18497W	3-56	11	188210W	3-9	131	201784W	3-11	25
16923W	3-5	26	18515W	3-11	10	190930W	3-33	9	201784W	3-13	630
16923W	3-9	503	18515W	3-13	612	191534W	3-30	4	201784W	3-15	630
170987W	3-24	25	18515W	3-15	612	191534W	3-42	4	209578W	3-11	18
17151W	2-39	20	18515W	3-30	5	191534W	3-43	4	209578W	3-13	620
17151W	2-41	20	18515W	3-33	10B	191534W	3-49	9	211556W	1-11	14
17196W	3-11	13	18515W	3-34	5	191534W	3-51	9	21420W	1-2	18
17196W	3-13	615	18515W	3-42	5	191534W	3-54	4	21420W	1-3	18
17196W	3-15	615	18515W	3-43	5	192673W	2-9	33	216590W	2-30	17
17346W	3-3	3	18515W	3-49	10	194090W	2-11	34	218589w	1-30	8
17346W	3-5	3	18515W	3-51	10	194090W	2-23	34	218589W	2-12	11
17346W	3-9	530	18515W	3-54	5	194090W	2-25	34	218589W	2-6	11
17384W	1-33	5	18515W	3-56	13	194090W	3-11	47	219060W	2-31	13
17384W	1-34	13	18524W	3-11	11	194090W	3-3	17	219066W	2-29	8
174413W	2-15	32	18526W	3-13	613	194090W	3-5	17	219066W	2-33	8
174413W	2-9	32	18526W	3-15	613	194090W	3-9	97	219070W	2-29	26
174803W	2-32	2	18526W	3-34	3	195992W	3-24	8	219070W	5-7	2
176208W	2-29	25	18526W	3-53	8	195993W	3-24	11	219070W	6-3	3
176208W	2-30	23	18528W	3-30	3	195995W	3-24	14	219081W	2-30	3
176208W	2-31	2	18528W	3-42	3	195997W	3-24	24	219084W	2-30	12
177461W	2-11	5	18528W	3-43	3	196000W	3-24	23	219087W	2-29	9
177461W	2-12	8	18528W	3-54	3	196002W	3-24	30	219088W	2-29	9
177461W	2-15	5	18530W	3-45	6	196003W	3-24	17	219089W	2-29	9
177461W	2-17	6	18586W	1-32	24	196004W	3-24	16	219090W	2-29	10
177461W	2-19	34	18662W	1-25	7	196006W	3-24	7	219093W	2-32	14

7-6

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
219093W	5-13	15	221690W	1-29	6	221767W	2-12	9	221780W	1-15	8
219093W	5-15	15	221690W	1-30	6	221767W	2-15	7	221780W	1-16	8
219093W	6-5	2	221690W	1-31	8	221767W	2-17	7	221780W	1-19	8
219093W	6-5	2	221690W	1-35	9	221767W	2-19	33	221780W	1-21	7
219094W	2-32	15	221690W	1-36	12	221767W	2-21	33	221780W	1-23	7
219094W	5-13	16	221690W	1-37	12	221767W	2-23	7	221780W	1-25	6
219094W	5-15	16	221690W	1-4	8	221767W	2-25	7	221780W	1-27	1.7
219094W	6-5	2	221690W	1-5	9	221767W	2-5	9	221780W	1-27	2.6
219094W	6-5	2	221690W	1-6	8	221767W	2-6	9	221780W	1-28	2
219095W	2-32	5	221690W	1-7	9	221767W	2-9	7	221780W	1-29	7
219095W	5-13	11	221690W	1-8	1	221767W	3-9	312	221780W	1-30	7
219095W	5-15	11	221692W	1-11	21	221767W	3-9	385	221780W	1-31	9
219095W	6-5	1	221692W	1-12	41	221771W	1-10	13	221780W	1-32	6
219095W	6-5	1	221692W	1-15	41	221771W	1-15	93	221780W	1-33	9
219096W	2-30	11	221692W	1-16	41	221771W	1-19	93	221780W	1-34	17
219096W	5-8	3	221692W	1-19	41	221771W	1-23	135	221780W	1-35	10
219096W	6-3	1	221692W	1-21	41	221771W	1-32	23	221780W	1-36	13
219106W	2-32	16	221692W	1-23	41	221771W	1-34	26	221780W	1-37	13
219114W	2-35	6	221692W	1-27	3.2	221771W	1-7	5	221780W	1-5	10
219114W	2-37	6	221692W	1-33	7	221771W	2-27	29	221780W	1-6	9
219114W	2-39	6	221692W	1-34	15	221771W	2-30	14	221780W	1-7	10
219114W	2-41	6	221696W	1-9	1	221771W	3-59	83	221780W	1-8	2
219114W	5-13	3	221698W	1-4	5	221771W	3-61	83	221780W	1-9	2
219114W	5-15	3	221698W	1-5	8	221771W	3-65	83	221780W	2-27	13
219114W	6-5	1	221700W	1-11	20	221771W	3-67	83	221780W	2-35	21
219114W	6-5	1	221703W	3-41	4.5	221771W	3-69	83	221780W	2-37	21
219172W	3-11	54	221707W	3-32	62	221771W	3-73	83	221780W	4-2	7
219172W	3-3	39	221707W	3-42	11	221771W	3-74	83	221780W	4-3	7
219172W	3-5	39	221707W	3-49	4	221771W	3-75	83	221786W	4-4	8
219172W	3-9	71	221707W	3-51	4	221771W	3-77	83	221786W	4-5	8
219194W	1-2	15	221707W	3-53	4	221771W	3-78	83	221867W	3-88	13
219240W	3-3	24	221707W	3-54	11	221771W	3-79	83	221867W	3-89	13
219240W	3-5	24	221707W	3-55	11	221771W	3-80	83	221867W	3-90	13
219240W	3-9	502	221710W	1-32	11	221771W	3-81	83	221867W	3-91	13
221336W	4-7	10	221710W	1-34	5	221771W	3-82	83	221867W	3-92	13
221351W	1-35	7	221710W	2-19	5	221771W	3-85	83	222442W	3-13	647
221355W	3-11	60	221710W	2-19	6	221775W	1-11	10	222442W	3-15	647
221355W	3-3	47	221710W	2-21	5	221775W	1-12	10	222442W	3-25	8
221355W	3-5	47	221711W	1-25	10	221775W	1-15	10	222443W	3-25	9
221355W	3-9	81	221711W	1-27	2.1	221775W	1-16	10	222648W	3-11	1
221466W	1-35	11	221712W	1-7	8	221775W	1-19	10	223693W	3-25	18
221466W	1-5	12	221717W	2-35	13	221775W	1-21	9	224108W	2-35	4
221475W	1-35	6	221717W	2-37	13	221775W	1-23	9	224108W	2-37	4
221499W	3-32	63	221717W	2-39	13	221775W	1-31	13	224108W	2-39	4
221563W	1-4	3	221717W	2-41	13	221775W	1-35	19	224108W	2-41	4
221563W	1-4	13	221720W	1-11	22	221775W	1-6	13	224111W	2-35	3
221563W	2-11	35	221720W	1-12	42	221775W	2-32	8	224111W	2-37	3
221563W	2-15	33	221720W	1-15	42	221777W	1-10	5	224111W	2-39	3
221563W	2-23	35	221720W	1-16	42	221777W	1-11	19	224111W	2-41	3
221563W	2-25	35	221720W	1-19	42	221777W	1-12	56	225050W	2-37	3
221563W	2-9	35	221720W	1-21	42	221777W	1-15	56	225050W	2-41	3
221574W	1-4	1	221720W	1-23	42	221777W	1-16	34	225065W	1-35	3
221616W	1-31	14	221720W	1-27	3.3	221777W	1-19	34	225065W	1-36	3
221616W	1-35	20	221720W	1-32	4	221777W	1-21	20	225065W	1-37	3
221616W	1-6	14	221720W	4-2	8	221777W	1-23	20	225871W	3-56	10
221650W	2-35	14	221720W	4-3	8	221777W	1-27	1.14	226445W	3-24	12
221650W	2-37	14	221728W	4-4	9	221777W	1-8	5	226450W	3-3	27
221650W	2-41	14	221728W	4-5	9	221777W	1-9	5	226450W	3-5	27
221657W	4-8	12	221763W	3-87	12	221777W	4-8	13	226450W	3-9	505
221657W	4-9	12	221767W	1-25	11	221777W	4-9	13	2300041W	1-35	11
221668W	1-10	9	221767W	1-27	2.11	221780W	1-10	2	2300042W	2-30	10
221690W	1-10	1	221767W	1-36	18	221780W	1-11	8	2300043W	2-30	7
221690W	1-28	1	221767W	2-11	7	221780W	1-12	8	2300183W	3-3	6

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
2300183W	3-5	6	2301722W	4-8	4	2302348W	3-5	53	2302397W	1-9	6
2300183W	3-9	515	2301722W	4-9	4	2302349W	3-3	16	2302405W	1-2	13
2300308W	3-24	33	2301727W	4-8	2	2302351W	2-30	1	2302406W	1-2	14
2300308W	3-25	2	2301727W	4-9	2	2302352W	2-29	6	2302406W	1-3	14
2300369W	3-43	9	2301845W	3-53	7	2302353W	2-31	9	2302407W	1-2	6
2300422W	1-36	27	2301845W	3-91		2302354W	2-29	23	2302407W	1-3	6
2300422W	1-37	14	2301907W	4-8	8	2302355W	2-29	17	2302417W	1-2	7
2300423W	1-36	28	2301907W	4-9	8	2302356W	2-29	16	2302417W	1-3	7
2300423W	1-37	15	2301910W	4-7	2	2302356W	2-31		2302417W	5-6	1
2300842W	2-33	9	2301919W	4-7	11	2302357W	2-30	6	2302417W	6-3	1
2300995W	3-33	19	2301922W	4-7	1	2302358W	2-29	29	2302418W	2-12	1
2300995W	3-94	7	2301923W	4-2	1	2302358W	2-30	19	2302418W	2-5	1
2300995W	3-95	7	2301923W	4-3	1	2302359W	2-31	1	2302512W	1-2	9
2301030W	3-42	9	2301923W	4-4	1	2302360W	2-33	11	2302512W	1-23	43
2301030W	3-53	1	2301923W	4-5	1	2302361W	3-11	59	2302512W	1-34	34
2301054W	3-36	4	2301923W	4-6	1	2302361W	3-3	48	2302513W	1-2	10
2301054W	3-37	63	2301923W	4-7		2302361W	3-5	48	2302513W	1-3	10
2301055W	3-42	14	2301924W	4-2	2	2302361W	3-9	80	2302515W	2-35	7
2301055W	3-54	14	2301924W	4-3	2	2302362W	2-30	13	2302515W	2-37	7
2301055W	3-55	15	2301924W	4-4	2	2302363W	2-29	28	2302515W	2-39	7
2301336W	2-11	12	2301924W	4-5	2	2302363W	2-30	20	2302515W	2-41	7
2301336W	2-15	12	2301924W	4-6	2	2302363W	5-7	3	2302515W	5-13	4
2301336W	2-23	12	2301925W	4-7	12	2302363W	6-3	1	2302515W	5-15	4
2301336W	2-25	12	2302109W	3-11	49	2302364W	2-31	5	2302515W	6-5	1
2301336W	2-9	12	2302109W	3-3	15	2302365W	2-35	25	2302515W	6-5	1
2301337W	2-11	13	2302109W	3-5	15	2302365W	2-37	25	2302624W	2-35	9
2301337W	2-15	13	2302109W	3-9	95	2302366W	2-29	27	2302624W	2-37	9
2301337W	2-23	13	2302110W	3-11	41	2302367W	2-35	23	2302624W	2-39	9
2301337W	2-25	13	2302110W	3-3	14	2302367W	2-37	23	2302624W	2-41	9
2301337W	2-9	13	2302110W	3-5	14	2302367W	5-13	7	2302625W	2-35	12
2301338W	2-27	23	2302110W	3-9	94	2302367W	5-15	7	2302625W	2-37	12
2301339W	2-27	22	2302120W	4-7	9	2302367W	6-5	1	2302625W	2-39	12
2301426W	3-29		2302247W	3-24		2302367W	6-5	1	2302625W	2-41	12
2301477W	1-31	1	2302247W	3-3	32	2302368W	2-35	16	2302661W	2-30	
2301477W	1-6	1	2302247W	3-5	32	2302368W	2-37	16	2302694W	2-35	10
2301487W	3-33	13	2302247W	3-9	510	2302369W	3-3	44	2302694W	2-39	10
2301531W	2-17	11	2302327W	2-5	6	2302369W	3-5	44	2302724W	3-3	28
2301540W	1-32	10	2302328W	2-12	7	2302369W	3-9	340	2302724W	3-5	28
2301540W	1-34	4	2302328W	2-5	7	2302370W	3-3	45	2302724W	3-9	506
2301540W	2-17	13	2302328W	2-6	7	2302370W	3-5	45	2302772W	3-11	64
2301540W	2-19	3	2302333W	2-32	18	2302370W	3-9	341	2302772W	3-3	46
2301540W	2-19	4	2302334W	2-32	10	2302371W	3-3	11	2302772W	3-5	46
2301540W	2-21	3	2302335W	2-32	11	2302371W	3-5	11	2302772W	3-9	381
2301540W	2-21	4	2302336W	2-32	9	2302371W	3-9	330	2302772W	3-9	481
2301541W	2-17	14	2302338W	2-32	20	2302372W	3-3	12	2302785W	2-15	6
2301627W	2-11	33	2302339W	2-35	5	2302372W	3-5	12	2302785W	2-9	6
2301627W	2-23	33	2302340W	2-33	7	2302372W	3-9	331	2302785W	3-11	62
2301627W	2-25	33	2302342W	2-33	7	2302373W	2-35	15	2302785W	3-9	360
2301634W	3-94	6	2302343W	2-29	8	2302373W	2-37	15	2302785W	3-9	451
2301634W	3-95	6	2302344W	3-11	61	2302374W	2-29	3	2302785W	3-9	461
2301642W	1-36	32	2302344W	3-3	38	2302374W	2-33	3	2302785W	2-11	6
2301642W	1-37	19	2302344W	3-5	38	2302375W	3-3	34	2302785W	2-23	6
2301643W	1-36	30	2302344W	3-9	76	2302375W	3-5	34	2302785W	2-25	6
2301643W	1-37	17	2302345W	3-11	57	2302375W	3-9	512	2302787W	3-3	49
2301680W	1-35	11	2302345W	3-3	42	2302376W	3-3	33	2302787W	3-5	49
2301706W	4-2	3	2302345W	3-5	42	2302376W	3-5	33	2302787W	3-9	383
2301706W	4-3	3	2302345W	3-9	74	2302376W	3-9	511	2302787W	3-9	483
2301706W	4-4	3	2302346W	3-3	19	2302377W	2-29	24	2302790W	2-21	1A
2301706W	4-5	3	2302346W	3-5	19	2302379W	2-32	1	2302792W	4-2	9
2301706W	4-6	3	2302346W	3-9	518	2302386W	1-2	16	2302792W	4-3	9
2301706W	4-7	5	2302347W	3-3	2	2302386W	1-3	16	2302792W	4-4	5
2301706W	4-8	9	2302347W	3-5	2	2302387W	1-2	12	2302792W	4-5	5
2301706W	4-9	9	2302348W	3-3	53	2302387W	1-3	12	2302792W	4-6	6

7-8

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
2302793W	4-6	5	2302855W	2-5	5	2303039W	1-8	9	2303437W	3-39	115.1
2302795W	4-2	5	2302855W	2-6	5	2303039W	3-33	23	2303437W	3-40	6.1
2302798W	2-19	1A	2302855W	2-9	3	2303039W	3-49	17	2303437W	3-41	4.6.1
2302807W	2-11	10	2302888W	1-4	9	2303039W	3-51	17	2303437W	3-42	6.1
2302807W	2-15	10	2302889W	1-4	10	2303040W	3-49	71	2303437W	3-43	6.1
2302807W	2-23	10	2302901W	1-4	11	2303040W	3-53	22	2303437W	3-45	12.1
2302807W	2-9	10	2302903W	1-4	7	2303064W	3-3	20	2303437W	3-46	7.1
2302808W	2-11	9	2302908W	1-29	1	2303064W	3-5	20	2303437W	3-49	11.1
2302808W	2-15	9	2302908W	1-30	1	2303064W	3-9	519	2303437W	3-51	11.1
2302808W	2-23	9	2302909W	1-29	2	2303071W	3-34	9	2303437W	3-53	11.1
2302808W	2-9	9	2302909W	1-30	2	2303102W	1-35	18	2303437W	3-54	6.1
2302813W	2-15	30	2302913W	3-3	50	2303105W	3-33	6	2303437W	3-55	6.1
2302815W	2-11	15	2302913W	3-5	50	2303118W	1-10	6	2303437W	3-56	7.1
2302815W	2-15	15	2302913W	3-9	380	2303120W	3-34	1	2303437W	3-33	18.1
2302815W	2-23	15	2302913W	3-9	480	2303120W	3-89		2303458W	2-29	22
2302815W	2-25	15	2302923W	1-33	1	2303211W	1-31	10	2303460W	2-9	31
2302815W	2-9	15	2302923W	1-34	6	2303211W	1-6	10	2303461W	2-9	28
2302816W	2-11	17	2302924W	1-33	2	2303212W	1-31	11	2303462W	1-28	7
2302816W	2-15	17	2302924W	1-34	7	2303212W	1-6	11	2303464W	2-9	34
2302816W	2-23	17	2302925W	1-33	3	2303219W	4-10	4	2303527W	1-28	8
2302816W	2-25	17	2302925W	1-34	8	2303221W	1-2	24	2303674W	1-36	9
2302816W	2-9	17	2302926W	1-33	4	2303221W	1-3	24	2303674W	1-37	9
2302817W	2-11	21	2302926W	1-34	9	2303221W	6-6		2303730W	1-32	3
2302817W	2-15	21	2302927W	2-17	12	2303226W	2-15	28	2303731W	1-32	2
2302817W	2-23	21	2302930W	2-11	1	2303227W	4-6	5	2303732W	1-32	1
2302817W	2-25	21	2302930W	2-15	1	2303232W	1-31	15	2303733W	1-32	16
2302817W	2-9	21	2302930W	2-17	1	2303234W	2-11	14	2303733W	1-34	2
2302819W	2-11	31	2302930W	2-2	10	2303234W	2-15	14	2303733W	2-19	2
2302819W	2-23	31	2302930W	2-23	1	2303234W	2-23	14	2303733W	2-21	2
2302828W	2-23	31	2302930W	2-25	1	2303234W	2-25	14	2303734W	1-32	12
2302842W	2-35	4	2302930W	2-9	1	2303234W	2-9	14	2303734W	2-19	1
2302842W	2-37	4	2302933W	1-30	12	2303235W	1-31	12	2303737W	2-19	10
2302842W	2-39	4	2302933W	2-12	13	2303235W	1-6	12	2303737W	2-21	10
2302842W	2-41	4	2302933W	2-6	13	2303247W	2-32	20	2303737W	2-3	15
2302843W	1-38	10	2302943W	4-4	6	2303256W	2-32	16	2303737W	2-4	64
2302844W	1-38	13	2302955W	1-30	11	2303257W	2-32	22	2303794W	2-25	31
2302845W	2-35	19	2302955W	2-12	6	2303264W	2-19	12	2303797W	2-25	10
2302845W	2-37	19	2302963W	3-28		2303264W	2-21	12	2303800W	1-36	1
2302846W	2-11	26	2302963W	3-9	370	2303265W	1-34	24	2303800W	1-37	1
2302846W	2-15	26	2302969W	1-29	3	2303265W	2-21	6	2303801W	1-36	2
2302846W	2-23	26	2302969W	1-30	3	2303373W	2-27	3	2303801W	1-37	2
2302846W	2-25	26	2302978W	1-35	1	2303374W	2-27	10	2303817W	1-36	5
2302846W	2-9	26	2302979W	1-35	2	2303379W	2-27	16	2303817W	1-37	5
2302847W	2-11	28	2302982W	5-7	1	2303380W	2-27	17	2303820W	3-63	4
2302847W	2-23	28	2302982W	6-3	2	2303382W	2-27	24	2303820W	3-76	4
2302847W	2-25	28	2302983W	6-3		2303383W	2-27	6	2303831W	2-25	9
2302848W	2-11	30	2302989W	3-29		2303384W	2-27	18	2303848W	1-3	31
2302848W	2-23	30	2302989W	3-9	320	2303385W	2-27	19	2303848W	2-29	1
2302848W	2-25	30	2303021W	3-30	9	2303386W	2-27	20	2303848W	2-32	2
2302851W	2-15	31	2303021W	3-54	9	2303387W	2-27	31	2303848W	2-33	1
2302854W	2-29	21	2303025W	2-35	20	2303388W	2-27	11	2303856W	1-5	11
2302855W	2-11	3	2303025W	2-37	20	2303389W	2-27	21	2303889W	3-11	23
2302855W	2-12	5	2303025W	3-3	30	2303390W	2-27	1	2303889W	3-25	
2302855W	2-15	3	2303025W	3-5	30	2303397W	3-9	470	2303898W	1-3	21
2302855W	2-17	5	2303025W	3-9	508	2303434W	2-29	22	2303900W	3-63	5
2302855W	2-19	21	2303030W	2-17	9	2303435W	2-29	22	2303900W	3-76	5
2302855W	2-2	12	2303033W	2-17	10	2303437W	3-30	6.1	2303901W	3-20	1
2302855W	2-21	21	2303036W	2-17	15	2303437W	3-31	6.1	2303905W	1-5	2
2302855W	2-23	3	2303036W	2-19	26	2303437W	3-34	6.1	2303905W	1-7	2
2302855W	2-25	3	2303036W	2-21	26	2303437W	3-35	6.1	2303906W	2-39	18
2302855W	2-27	32	2303038W	4-4	10	2303437W	3-36	7.1	2303906W	2-41	18
2302855W	2-3	10	2303038W	4-5	10	2303437W	3-37	64.1	2303907W	2-39	15
2302855W	2-4	59	2303039W	1-32	27	2303437W	3-38	115.1	2303907W	2-41	15

7-9

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
2303908W	2-39	16	2303992W	3-98	11	2304504W	3-76	3	2304630W	3-82	81
2303908W	2-41	16	2304111W	3-11	2	2304505W	3-63	2	2304630W	3-85	81
2303912W	3-59	78	2304111W	3-13	604	2304505W	3-76	2	2304641W	1-36	31
2303912W	3-61	78	2304111W	3-15	604	2304508W	3-49	70	2304641W	1-37	18
2303912W	3-63	9	2304112W	3-11	2	2304508W	3-53	21	2304699W	3-11	42
2303912W	3-65	78	2304112W	3-13	604	2304527W	3-11	28	2304699W	3-5	54
2303912W	3-67	78	2304112W	3-15	604	2304528W	3-11	29	2304699W	3-9	132
2303912W	3-69	78	2304112W	5-5	1	2304529W	3-11	6	2304779W	3-59	85
2303912W	3-70	81	2304112W	6-2	1	2304530W	3-11	7	2304779W	3-61	85
2303912W	3-71	122	2304304W	3-31	16	2304531W	3-11	38	2304779W	3-63	11
2303912W	3-72	122	2304304W	3-53	1	2304532W	3-11	14	2304779W	3-65	85
2303912W	3-73	78	2304304W	3-55	9	2304570W	3-56	8	2304779W	3-67	85
2303912W	3-74	78	2304305W	3-31	16	2304580W	2-33	10	2304779W	3-69	85
2303912W	3-75	78	2304308W	3-43	3	2304580W	5-11	7	2304779W	3-70	89
2303912W	3-76	9	2304308W	3-43	10	2304580W	6-4	1	2304779W	3-73	85
2303912W	3-77	78	2304329W	3-46		2304605W	3-11	21	2304779W	3-74	85
2303912W	3-78	78	2304339W	3-93	3	2304605W	3-13	623	2304779W	3-75	85
2303912W	3-79	78	2304339W	3-94	10	2304605W	3-15	623	2304779W	3-76	11
2303912W	3-80	78	2304339W	3-95	10	2304606W	3-11	4	2304779W	3-77	85
2303912W	3-81	78	2304340W	3-93	4	2304606W	3-13	606	2304779W	3-78	85
2303912W	3-82	78	2304341W	3-93	5	2304606W	3-15	606	2304779W	3-79	85
2303912W	3-85	78	2304342W	3-93	6	2304607W	3-11	3	2304779W	3-80	85
2303912W	3-87	4	2304343W	3-93	7	2304607W	3-13	605	2304779W	3-81	85
2303918W	2-35	5	2304349W	3-23	1	2304607W	3-15	605	2304779W	3-82	85
2303918W	2-37	5	2304350W	1-32	33	2304611W	1-32	22	2304779W	3-85	85
2303918W	2-39	5	2304350W	1-34	30	2304612W	1-32	25	2304781W	3-63	1
2303918W	2-41	5	2304350W	1-5	18	2304613W	1-32	26	2304781W	3-65	70
2303923W	3-24	28	2304350W	1-7	24	2304629W	1-10	10	2304781W	3-73	70
2303933W	3-63	12	2304363W	3-11	46	2304629W	1-15	95	2304781W	3-76	1
2303952W	1-34	1	2304363W	3-5	16	2304629W	1-19	95	2304781W	3-77	70
2303952W	2-21	1	2304363W	3-9	96	2304629W	1-23	137	2304781W	3-80	70
2303981W	1-34	31	2304366W	1-2	25	2304629W	3-59	80	2304781W	3-96	
2303982W	3-31	31	2304366W	1-3	25	2304629W	3-61	80	2304782W	3-96	19
2303982W	3-36	1	2304366W	3-13	637	2304629W	3-65	80	2304784W	2-19	27
2303982W	3-43	2	2304366W	3-15	637	2304629W	3-67	80	2304784W	2-21	27
2303982W	3-46	2	2304370W	3-11	16	2304629W	3-69	80	2304784W	2-3	16
2303982W	3-55	2	2304370W	3-13	618	2304629W	3-73	80	2304784W	2-4	65
2303982W	3-56	2	2304370W	3-15	618	2304629W	3-74	80	2304785W	2-19	28
2303982W	3-93		2304375W	3-11	30	2304629W	3-75	80	2304785W	2-21	28
2303983W	3-35	2	2304380W	3-30	22	2304629W	3-77	80	2304785W	2-3	17
2303983W	3-40	1	2304380W	3-31	22	2304629W	3-78	80	2304785W	2-4	66
2303983W	3-93		2304380W	3-31	32	2304629W	3-79	80	2304786W	2-19	29
2303984W	3-31	30	2304380W	3-46	4	2304629W	3-80	80	2304786W	2-21	29
2303984W	3-43	1	2304380W	3-49	8	2304629W	3-81	80	2304786W	2-3	18
2303984W	3-46	1	2304380W	3-49	18	2304629W	3-82	80	2304786W	2-4	67
2303984W	3-49	60	2304380W	3-49	62	2304629W	3-85	80	2304787W	2-19	30
2303984W	3-53	7	2304380W	3-51	8	2304630W	1-10	11	2304787W	2-21	30
2303984W	3-55	1	2304380W	3-51	18	2304630W	1-15	96	2304787W	2-3	19
2303984W	3-93		2304380W	3-51	62	2304630W	1-19	96	2304787W	2-4	68
2303986W	3-36	2	2304380W	3-53	8	2304630W	1-23	138	2304788W	2-19	20
2303986W	3-49	6	2304380W	3-53	18	2304630W	3-59	81	2304788W	2-21	20
2303986W	3-49	61	2304380W	3-55	3	2304630W	3-61	81	2304788W	2-3	9
2303986W	3-51	6	2304381W	3-35	3	2304630W	3-65	81	2304788W	2-4	58
2303986W	3-53	6	2304381W	3-38	113	2304630W	3-67	81	2304789W	2-19	16
2303986W	3-56	3	2304381W	3-39	113	2304630W	3-69	81	2304789W	2-21	16
2303986W	3-93		2304381W	3-49	72	2304630W	3-73	81	2304789W	2-3	5
2303987W	3-35	1	2304381W	3-53	23	2304630W	3-74	81	2304789W	2-4	54
2303987W	3-93		2304387W	3-43	9	2304630W	3-75	81	2304790W	2-19	15
2303991W	3-96	12	2304389W	3-35	9	2304630W	3-77	81	2304790W	2-21	15
2303991W	3-97	11	2304394W	3-46	3	2304630W	3-78	81	2304790W	2-3	4
2303991W	3-98	10	2304503W	3-20	3	2304630W	3-79	81	2304790W	2-4	53
2303992W	3-96	11	2304503W	3-21	2	2304630W	3-80	81	2304792W	2-19	14
2303992W	3-97	12	2304504W	3-63	3	2304630W	3-81	81	2304792W	2-21	14

7-10

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
2304792W	2-3	3	2304892W	3-81	75	2305541W	1-21	2	2305987W	3-13	600
2304792W	2-4	52	2304892W	3-82	75	2305541W	1-23	2	2305987W	3-15	600
2304793W	2-19	23	2304892W	3-85	75	2305541W	1-27	1.2	2306312W	1-15	16
2304793W	2-21	23	2304942W	2-19	32	2305588W	1-11	16	2306312W	1-19	16
2304793W	2-3	12	2304942W	2-21	32	2305588W	1-19	31	2306312W	3-18	16
2304793W	2-4	61	2304942W	2-3	21	2305588W	1-21	18	2306313W	1-15	15
2304794W	2-19	22	2304942W	2-4	70	2305588W	1-23	18	2306313W	1-19	15
2304794W	2-21	22	2304971W	3-25	2	2305588W	3-17	31	2306313W	3-18	15
2304794W	2-3	11	2304972W	3-25	3	2305588W	3-18	31	2306315W	1-15	3
2304794W	2-4	60	2305101W	1-3	33	2305588W	3-19	1.12	2306315W	1-19	3
2304796W	3-63	10	2305132W	3-11	2	2305595W	1-11	23	2306315W	3-17	3
2304796W	3-72	124	2305132W	3-13	604	2305595W	1-15	50	2306315W	3-18	3
2304796W	3-76	10	2305132W	3-15	604	2305595W	3-17	50	2306330W	4-8	11
2304803W	2-35	15	2305194W	3-76	14	2305595W	3-18	50	2306330W	4-9	11
2304803W	2-37	14	2305204W	3-11	36	2305612W	3-36	3	2306333W	4-8	1
2304803W	2-39	14	2305258W	3-59	71	2305612W	3-37	60	2306333W	4-9	1
2304803W	2-41	14	2305258W	3-61	71	2305613W	1-11	17	2306362W	3-32	66
2304806W	3-56	1	2305258W	3-65	71	2305613W	1-19	32	2306362W	3-44	20
2304807W	3-56		2305258W	3-67	71	2305613W	3-17	32	2306547W	3-11	23
2304820W	3-49	7	2305258W	3-69	71	2305613W	3-18	32	2306547W	3-13	625
2304820W	3-93		2305258W	3-70	91	2305614W	1-11	26	2306547W	3-26	1
2304821W	2-35	27	2305258W	3-71	133	2305614W	1-15	53	2306572W	4-8	6
2304821W	2-37	27	2305258W	3-72	133	2305614W	3-17	53	2306572W	4-9	6
2304823W	3-5	56	2305258W	3-73	71	2305614W	3-18	53	2306661W	3-38	110
2304823W	3-9	521	2305258W	3-74	71	2305615W	1-11	27	2306661W	3-39	110
2304825W	3-11	24	2305258W	3-75	71	2305615W	1-15	54	2306703W	3-38	111
2304825W	3-13	626	2305258W	3-77	71	2305615W	3-17	54	2306703W	3-39	111
2304825W	3-15	626	2305258W	3-78	71	2305616W	1-11	13	2306703W	3-41	4.3
2304826W	4-5	7	2305258W	3-79	71	2305616W	1-19	13	2306704W	3-38	112
2304832W	3-96	5	2305258W	3-80	71	2305616W	3-17	13	2306704W	3-39	112
2304836W	3-96	4	2305258W	3-81	71	2305616W	3-18	13	2306704W	3-41	4.2
2304837W	3-96	7	2305258W	3-82	71	2305617W	1-11	11	2306740W	3-13	634
2304840W	3-25	3	2305258W	3-85	71	2305617W	1-15	11	2306740W	3-15	634
2304841W	3-25	4	2305296W	3-94	2	2305617W	1-19	11	2306741W	3-13	635
2304842W	3-25	5	2305296W	3-95	2	2305617W	1-21	10	2306741W	3-15	635
2304845W	3-25	12	2305301W	3-94	16	2305617W	1-23	10	2306742W	3-13	616
2304845W	3-25	17	2305301W	3-95	16	2305617W	3-17	11	2306742W	3-15	616
2304846W	3-25	16	2305302W	3-94	4	2305617W	3-18	11	2306743W	3-13	609
2304862W	3-11	2	2305302W	3-95	4	2305617W	3-19	1.1	2306743W	3-15	609
2304862W	3-13	604	2305415W	2-37	10	2305620W	1-11	15	2306790W	3-49	1
2304862W	3-15	604	2305415W	2-41	10	2305620W	1-11	25	2306790W	3-51	1
2304871W	2-19	31	2305428W	3-97	18	2305620W	1-15	52	2306836W	1-15	19
2304871W	2-21	31	2305428W	3-98	17	2305620W	1-19	30	2306836W	1-19	19
2304871W	2-3	20	2305429W	1-31	15	2305620W	1-21	17	2306836W	1-21	11
2304871W	2-4	69	2305429W	1-6	15	2305620W	1-23	17	2306836W	1-23	11
2304877W	3-20	2	2305430W	2-15	28	2305620W	3-17	30	2306836W	3-16	19
2304878W	3-41	4.4	2305441W	1-3	14	2305620W	3-17	52	2306857W	1-15	21
2304878W	3-56	4	2305495W	2-6	1	2305620W	3-18	30	2306857W	1-19	21
2304892W	3-59	75	2305496W	2-6	6	2305620W	3-18	52	2306857W	1-21	12
2304892W	3-61	75	2305516W	1-11	1	2305620W	3-19	1.11	2306857W	1-23	12
2304892W	3-63	6	2305516W	1-12	1	2305650W	4-5	6	2306857W	3-16	21
2304892W	3-65	75	2305516W	1-15	1	2305715W	1-25	9	2306858W	1-15	24
2304892W	3-67	75	2305516W	1-16	1	2305715W	1-27	2.9	2306858W	1-19	24
2304892W	3-69	75	2305516W	1-19	1	2305915W	2-37	5	2306858W	1-21	15
2304892W	3-70	80	2305516W	1-21	1	2305915W	2-41	5	2306858W	1-23	15
2304892W	3-73	75	2305516W	1-23	1	2305923W	2-37	2	2306858W	3-16	24
2304892W	3-74	75	2305516W	1-27	1.1	2305923W	2-41	2	230687W	1-32	5
2304892W	3-75	75	2305528W	1-11	3	2305923W	5-15	1	2307219W	1-5	3
2304892W	3-76	6	2305541W	1-11	2	2305923W	6-5	1	2307220W	1-5	4
2304892W	3-77	75	2305541W	1-12	2	2305977W	3-37	70	2307252W	2-3	1
2304892W	3-78	75	2305541W	1-15	2	2305978W	3-37	62	2307311W	1-32	14
2304892W	3-79	75	2305541W	1-16	2	2305979W	3-37	61	2307311W	1-34	28
2304892W	3-80	75	2305541W	1-19	2	2305986W	3-9	536	2307364W	1-5	1

7-11

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
2307389W	3-65	79	2307868W	3-69	90	2307942W	3-81	69	271731W	3-40	6
2307389W	3-73	79	2307872W	3-73	90	2307942W	3-82	69	271731W	3-41	4.6
2307389W	3-77	79	2307872W	3-74	90	2307942W	3-85	94	271731W	3-42	6
2307389W	3-80	79	2307872W	3-75	90	2307942W	3-87	6	271731W	3-43	6
2307576W	3-65	74	2307874W	3-77	90	2307944W	3-59	72	271731W	3-45	12
2307576W	3-67	74	2307874W	3-78	90	2307944W	3-61	72	271731W	3-46	7
2307576W	3-73	74	2307874W	3-79	90	2307944W	3-65	72	271731W	3-49	11
2307576W	3-74	74	2307874W	3-80	90	2307944W	3-67	72	271731W	3-49	65
2307576W	3-77	74	2307874W	3-81	90	2307944W	3-69	72	271731W	3-51	11
2307576W	3-78	74	2307874W	3-82	90	2307944W	3-70	84	271731W	3-53	11
2307576W	3-80	74	2307884W	3-97	14	2307944W	3-71	123	271731W	3-54	6
2307576W	3-81	74	2307884W	3-98	13	2307944W	3-72	123	271731W	3-55	6
2307643W	3-59	89	2307887W	3-67	70	2307944W	3-73	72	271731W	3-56	7
2307643W	3-61	89	2307887W	3-74	70	2307944W	3-74	72	274044W	1-5	6
2307643W	3-65	66	2307887W	3-78	70	2307944W	3-75	72	274044W	1-7	6
2307643W	3-67	66	2307887W	3-81	70	2307944W	3-77	72	276036W	3-33	2
2307643W	3-69	66	2307887W	3-97		2307944W	3-78	72	276037W	3-33	14
2307643W	3-70	76	2307890W	1-21	21	2307944W	3-79	72	276043W	3-33	4
2307643W	3-85	89	2307890W	1-23	21	2307944W	3-80	72	276043W	3-33	16
2307649W	3-13	608	2307894W	1-21	24	2307944W	3-81	72	279397W	3-24	19
2307649W	3-15	608	2307894W	1-23	24	2307944W	3-82	72	2817W	4-7	13
2307740W	3-13	638	2307894W	3-16	30	2307944W	3-85	72	2821W	4-7	8
2307740W	3-15	638	2307895W	1-21	22	2307944W	3-87	7	282704W	2-30	5
2307740W	3-9	513	2307895W	1-23	22	2307974W	3-94	11	282704W	2-31	10
2307769W	3-13	642	2307896W	1-21	23	2307974W	3-95	11	282704W	5-7	1.4
2307769W	3-15	642	2307896W	1-23	23	2310079W	3-59	74	282704W	5-8	7
2307769W	3-26	8	2307911W	1-21	30	2310256	3-26	7	282704W	6-3	6
2307770W	3-13	643	2307911W	1-23	30	2314908	3-27	7	282706W	2-31	12
2307770W	3-26	4	2307911W	3-16	26	233693W	3-13	645	282707W	2-31	8
2307784W	4-8		2307925W	3-59	93	233693W	3-15	645	282707W	5-7	1.3
2307785W	4-9		2307925W	3-61	93	233693W	3-25	11	283881W	3-49	64
2307839W	4-10	1	2307925W	3-65	88	235691W	3-13	646	283881W	3-51	64
2307843W	3-70	100	2307925W	3-67	88	235691W	3-15	646	292527W	1-32	13
2307845W	3-70	101	2307925W	3-69	88	235691W	3-25	10	292527W	1-34	27
2307849W	3-59	88	2307925W	3-70	97	238992W	3-24	27	292527W	2-19	9
2307849W	3-61	88	2307925W	3-71	140	241778W	3-24	1	292527W	2-21	9
2307849W	3-65	65	2307925W	3-72	140	243189W	3-33	17	292655W	3-16	29
2307849W	3-67	65	2307925W	3-73	68	246769W	2-29	20	292682W	1-15	18
2307849W	3-69	65	2307925W	3-74	68	246770W	2-31	4	292682W	1-19	18
2307849W	3-70	75	2307925W	3-75	68	2570W	4-8	2	292682W	3-18	18
2307849W	3-71	139	2307925W	3-77	68	2570W	4-9	2	293617W	1-35	17
2307849W	3-72	139	2307925W	3-78	68	258217W	3-24	21	293628W	1-5	20
2307849W	3-73	88	2307925W	3-79	68	258220W	3-24	22	293628W	1-7	22
2307849W	3-74	88	2307925W	3-80	68	262088W	3-24	20	293629W	1-36	14
2307849W	3-75	88	2307925W	3-81	68	264150W	3-73	92	293632W	1-36	10
2307849W	3-77	88	2307925W	3-82	68	264150W	3-74	92	293632W	1-36	29
2307849W	3-78	88	2307925W	3-85	93	264150W	3-75	92	293632W	1-37	10
2307849W	3-79	88	2307925W	3-87	5	264159W	5-8	8	293647W	1-21	26
2307849W	3-80	88	2307942W	3-59	94	264159W	6-3	1	293647W	1-23	26
2307849W	3-81	88	2307942W	3-61	94	265787W	3-24	35	293708W	1-10	8
2307849W	3-82	88	2307942W	3-65	89	267018W	3-24	3	293708W	1-9	9
2307849W	3-85	88	2307942W	3-67	89	271729W	3-11	51	293710W	1-11	18
2307849W	3-87	3	2307942W	3-69	89	271729W	3-3	10	293710W	1-12	55
2307856W	3-78	87	2307942W	3-70	98	271729W	3-5	10	293710W	1-15	55
2307856W	3-80	87	2307942W	3-71	141	271731W	3-30	6	293710W	1-16	33
2307856W	3-81	87	2307942W	3-72	141	271731W	3-31	6	293710W	1-19	33
2307857W	3-65	87	2307942W	3-73	69	271731W	3-33	18	293710W	1-21	19
2307857W	3-67	87	2307942W	3-74	69	271731W	3-34	6	293710W	1-23	19
2307857W	3-73	87	2307942W	3-75	69	271731W	3-35	6	293710W	1-27	1.13
2307857W	3-74	87	2307942W	3-77	69	271731W	3-36	7	293716W	1-10	9
2307857W	3-77	87	2307942W	3-78	69	271731W	3-37	64	293730W	1-5	5
2307868W	3-65	90	2307942W	3-79	69	271731W	3-38	115	293732W	1-32	8
2307868W	3-67	90	2307942W	3-80	69	271731W	3-39	115	295756W	2-11	23

7-12

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
295756W	2-15	23	303942W	3-33	22	33394W	4-8	3	39384W	5-7	7
295756W	2-23	23	303942W	3-34	7	33394W	4-9	3	39384W	6-3	4
295756W	2-25	23	303942W	3-35	7	339681W	2-32	13	39389W	2-19	18
295756W	2-9	23	303942W	3-36	9	339681W	5-13	14	39389W	2-21	18
295757W	2-11	23	303942W	3-43	7	339681W	5-15	14	39389W	2-3	7
295757W	2-15	23	303942W	3-44	22	339681W	6-5	1	39389W	2-4	56
295757W	2-23	23	303943W	3-30	8	339681W	6-5	1	397161W	3-45	9
295757W	2-25	23	303943W	3-31	1	35135W	4-7	3	397161W	3-46	6
295757W	2-9	23	303943W	3-33	21	35135W	4-8	8	398599W	3-55	10
295758W	2-11	23	303943W	3-34	8	35135W	4-9	8	398599W	3-76	13
295758W	2-15	23	303943W	3-35	8	35573W	2-11	4	398599W	3-77	13
295758W	2-23	23	303943W	3-37	74	35573W	2-12	3	398599W	3-78	13
295758W	2-25	23	303943W	3-38	119	35573W	2-15	4	398599W	3-79	13
295758W	2-9	23	303943W	3-39	120	35573W	2-17	3	398599W	3-82	11
296027W	1-15	17	303943W	3-41	5.1	35573W	2-2	13	398817W	4-2	4
296027W	1-19	17	303943W	3-43	8	35573W	2-23	4	398817W	4-3	4
296027W	3-18	17	303943W	3-44	21	35573W	2-25	4	398817W	4-4	4
296420W	1-5	21	303943W	3-54	7	35573W	2-27	34	398817W	4-5	4
296420W	1-7	23	303943W	3-55	7	35573W	2-5	3	398817W	4-6	4
296420W	3-16	28	303944W	3-42	7	35573W	2-6	3	398817W	4-7	6
296422W	1-5	14	303944W	3-42	8	35573W	2-9	4	398817W	4-8	10
296422W	1-7	14	303944W	3-54	8	381193W	3-33	1	398817W	4-9	10
296422W	3-19	1.18	303944W	3-55	8	381194W	3-33		41207W	2-29	5
296434W	1-31	2	303945W	3-45	10	383789W	5-8	9	41207W	2-33	5
296434W	1-32	9	303945W	3-46	8	383789W	6-3	1	41207W	5-9	1
296434W	1-32	32	303945W	3-49	12	383880W	3-30	2	41207W	5-11	1
296434W	1-35	4	303945W	3-49	13	383880W	3-42	2	41207W	5-11	6
296434W	1-36	4	303945W	3-51	12	383880W	3-43	2	41207W	6-4	1
296434W	1-37	4	303945W	3-51	13	383880W	3-45	2	41207W	6-4	1
296434W	1-5	7	303945W	3-53	12	383880W	3-54	2	41207W	6-4	1
296434W	1-6	2	303945W	3-53	13	383880W	3-88		41209W	2-11	11
296434W	1-7	7	303945W	3-56	15	383881W	3-30	24	41209W	2-15	11
296438W	1-36	6	303945W	3-56	16	383881W	3-31	24	41209W	2-23	11
296438W	1-37	6	303946W	1-2	8	383881W	3-37	66	41209W	2-25	11
296868W	4-4	7	303946W	1-2	27	383881W	3-38	117	41209W	2-27	5
29758W	2-35	2	303946W	1-3	8	383881W	3-39	117	41209W	2-9	11
29758W	2-37	2	303946W	1-3	27	383881W	3-41	4.7	41310W	2-11	2
29758W	2-39	2	303946W	3-13	32	383881W	3-49	20	41310W	2-15	2
29758W	2-41	2	303946W	3-15	32	383881W	3-51	20	41310W	2-2	11
29758W	5-13	1	303946W	5-6	2	383881W	3-53	20	41310W	2-23	2
29758W	6-5	1	303946W	6-3	1	383881W	3-88	24	41310W	2-25	2
3001363W	3-3	6	307788W	1-25	8	383881W	3-89	24	41310W	2-27	33
3001363W	3-5	6	307788W	1-27	2.8	383881W	3-90	24	41310W	2-9	2
3001363W	3-9	515	313022W	5-4	2	383881W	3-91	24	43208W	2-11	16
3001363W	5-4	1	313022W	5-5	2	383881W	3-92	24	43208W	2-15	16
3001363W	6-2	1	313022W	5-6	6	383881W	3-93	19	43208W	2-23	16
30055W	2-29	13	313022W	6-2	1	387316W	1-21	13	43208W	2-25	16
30055W	5-9	2	313022W	6-2	1	387316W	1-23	13	43208W	2-27	25
30055W	5-11	2	313022W	6-3	1	387316W	3-16	22	43208W	2-9	16
30055W	6-4	2	314833W	3-28		388634W	3-34	2	44312W	2-29	18
30055W	6-4	2	316823W	3-28	1	388634W	3-40	1	44312W	5-9	4
302090W	3-96	9	316823W	3-28	5	388634W	3-92		44312W	5-11	4
302090W	3-97	15	316823W	3-29	1	39362W	3-96	6	44312W	6-4	4
302090W	3-98	14	316823W	3-29	5	39376W	3-24	32	44312W	6-4	4
303939W	3-36	8	328714W	2-30	4	39377W	2-30	22	44495W	2-12	4
303941W	3-30	7	328714W	2-31	11	39377W	5-8	5	44495W	2-17	4
303941W	3-31	2	328714W	5-7	1.5	39377W	6-3	1	44495W	2-27	12
303941W	3-37	73	328714W	5-8	6	39383W	2-11	18	44495W	2-5	4
303941W	3-38	118	328714W	6-3	7	39383W	2-15	18	44495W	2-6	4
303941W	3-39	119	331767W	4-7	4	39383W	2-23	18	44503W	2-11	20
303941W	3-40	2	331767W	4-8	7	39383W	2-25	18	44503W	2-15	20
303941W	3-40	3	331767W	4-9	7	39383W	2-9	18	44503W	2-23	20
303941W	3-41	5	332882W	3-33	11	39384W	2-29	15	44503W	2-25	20

7-13

Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item	Part No.	Page No.	Item
44503W	2-9	20	58933W	5-15	6	90937W	2-27	30	Y17C-0824	3-67	82
45310W	2-12	2	58933W	6-5	1	90937W	2-9	37	Y17C-0824	3-69	82
45310W	2-17	2	58933W	6-5	1	93927W	1-2	1	Y17C-0824	3-73	82
45310W	2-5	2	58939W	2-11	27	93927W	1-3	1	Y17C-0824	3-74	82
45310W	2-6	2	58939W	2-15	27	9554W	1-31	6	Y17C-0824	3-75	82
45733W	2-35	1	58939W	2-23	27	9554W	1-6	6	Y17C-0824	3-77	82
45733W	2-37	1	58939W	2-27	2	R13801782	3-87	14	Y17C-0824	3-78	82
45733W	2-39	1	58939W	2-29	30	R13811435	1-27	1.9	Y17C-0824	3-79	82
45733W	2-41	1	58939W	2-9	27	R15005	3-25	7	Y17C-0824	3-80	82
45733W	5-13	2	58939W	5-7	5	R15006	3-25	6	Y17C-0824	3-81	82
45733W	5-15	2	58939W	6-3	1	R15006	3-25	15	Y17C-0824	3-82	82
45733W	6-5	1	58947W	2-11	19	R15012	3-25	4	Y17C-1024	1-12	9
45733W	6-5	1	58947W	2-15	19	R216058	2-27	14	Y17C-1024	1-15	9
46388W	1-4	6	58947W	2-23	19	R231553	2-27	15	Y17C-1024	1-16	9
46441W	2-29	19	58947W	2-25	19	R330325	3-13	641	Y17C-1024	1-19	9
46441W	5-7	6	58947W	2-9	19	R330325	3-15	641	Y17C-1024	1-21	8
46441W	6-3	4	58989W	2-27	35	R833217	3-19	1.17	Y17C-1024	1-23	8
55468W	3-3	6	61056W	2-39	19	R833276W	3-49	73	Y17C-1024	1-27	1.8
55468W	3-5	6	61142W	2-39	23	R833276W	3-51	73	Y17C-1236	1-8	11
55468W	3-9	515	63105W	2-30	9	R833806W	3-49	74	Y17C-1272	1-8	12
56995W	1-10	7	63105W	5-8	2	R833806W	3-51	74	Y17C-1664	1-12	40
56995W	1-11	4	63105W	6-3	4	R834107	1-11	24	Y17C-1664	1-15	40
56995W	1-19	4	68370W	3-24	19	R834107	1-15	51	Y17C-1664	1-16	40
56995W	1-21	3	79389W	2-19	17	R834107	3-17	51	Y17C-1664	1-19	40
56995W	1-23	3	79389W	2-21	17	R834107	3-18	51	Y17C-1664	1-21	40
56995W	1-8	8	79389W	2-3	6	WR5-279L	4-11		Y17C-1664	1-23	40
56995W	1-9	7	79389W	2-4	55	WR5-423L	4-11		Y17C-1664	1-27	3.1
56995W	3-17	4	83846W	3-11	56	WR6-197L	4-11		Y19C-M2440	1-32	31
56995W	3-18	4	83846W	3-3	41	WR6-298L	4-11		Y25G-(1024)16	3-87	8
56995W	3-19	1.3	83846W	3-5	41	WR7-142L	4-11		Y25G-0408	3-44	17
58903W	3-94	5	83846W	3-9	73	WR7-215L	4-11		Y25G-0410	3-94	9
58903W	3-95	5	87287W	2-31	6	Y09C-M1030	3-16	27	Y25G-0410	3-95	9
58906W	2-27	2	87287W	5-7	1.1	Y09C-M1225	1-5	15	Y25G-0416	3-59	92
58916W	1-32	15	90263W	1-31	16	Y09C-M1225	1-7	15	Y25G-0416	3-61	92
58916W	1-34	29	90263W	1-6	16	Y09C-M1255	3-19	1.19	Y25G-0416	3-65	69
58916W	2-19	11	90937W	1-29	8	Y09G-0616	1-21	27	Y25G-0416	3-67	69
58916W	2-21	11	90937W	1-30	10	Y09G-0616	1-23	27	Y25G-0416	3-69	69
58918W	2-29	22	90937W	2-11	37	Y17C-0616	1-36	17	Y25G-0416	3-70	79
58933W	2-35	22	90937W	2-15	35	Y17C-0624	3-9	313	Y25G-0416	3-85	92
58933W	2-37	22	90937W	2-23	37	Y17C-0624	3-9	386	Y35E-#10	3-87	9
58933W	5-13	6	90937W	2-25	37	Y17C-0824	3-65	82	YS7-215LWS	4-11	

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