



220 and 221 Owner's Manual & Parts Book

Purchase Date
Serial Number
Model Number
Tractor Model
Dealer

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To The Owner

This manual contains information concerning the operation, adjustment, and maintenance of the 220 blade assembly. You have purchased dependable, long lasting equipment, but only by proper care and operation can you expect to receive the performance and long service built into our products. Please have all operators read this manual carefully and keep the manual available for ready reference. If you have any questions or concerns, contact Grouser Products.

Maintenance

Due to the harsh environment many of our equipment operates in, the following tasks should be performed every 10 hours or less.

- Inspect all equipment before operation for existing or potential damages.
- Lubricate all joints with high quality grease.
- Inspect and tighten all bolts to torque specifications on page 3.
- Check replaceable cutting edge for wear ensuring there is enough material to prevent permanent damage to the blade.
- Make sure all non-rotating pins are secured properly.
- Check hydraulic cylinders and hoses for damage or leaks. For replacement parts, see pages 9 & 12.
- Check skid shoes for wear and replace if necessary. For adjustment, see page 4.
- Inspect all tilt-ways for aggressive wear. See page 4 for tilt plate adjustment.

Safety Precautions

A careful operator is the best operator. Most accidents can be avoided by observing certain precautions. To help prevent accidents, read and take the following precautions before operating this equipment. In addition to these precautions, please follow all safety and operational instructions of your tractor manufacturer.

The Dozer:

1. The 200 Series Dozer should be operated only by those who are responsible and instructed to do so.
2. Read the owner's manual carefully before using this equipment. Lack of operating knowledge can lead to accidents.
3. Keep the dozer maintained in reliable and satisfactory condition to ensure your safety.
4. Make sure the area is clear of people before moving any equipment.
5. Do not modify or permit anyone else to modify or alter the equipment and its components without first consulting Grouser Products or a Grouser dealer.

Servicing the Dozer:

1. Read and follow all safety instructions provided by the tractor manufacturer.
2. Always use proper personal safety gear when performing maintenance on equipment.
3. Before servicing, relieve hydraulic pressure, stop engine and fully engage parking brake.
4. Escaping hydraulic fluid under pressure can penetrate skin causing serious injury. If fluid is injected into skin, obtain medical attention immediately.
 - DO NOT use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks.
 - Stop the engine and relieve pressure before connecting or disconnecting lines.
 - Tighten all connections before starting the engine or pressurizing lines.

Storing the Dozer:

1. Thoroughly clean the dozer before storage. Use paint where necessary to prevent rust.
2. Check the dozer for worn or damaged parts. Install new parts as required.
3. Lubricate all pins and joints.

Torque Specifications

All bolts should be tightened to specifications set by the manufacturer or previously stated amounts. If neither of these can be found the following torque chart should be used.

Size	Torque (ft-lbs)			
	SAE Grade 5		SAE Grade 8	
	UNC	UNF	UNC	UNF
5/16	17	19	24	27
3/8	30	35	45	50
7/16	50	55	70	80
1/2	75	85	110	120
9/16	110	120	150	170
5/8	150	170	210	240
3/4	260	300	380	420
7/8	430	470	600	670
1	640	720	910	1020

Size	Torque (ft-lbs)	
	Grade 8.8	Grade 10.9
M18 x 2.50	202	284
M20 x 2.50	286	401
M22 x 2.50	388	547
M24 x 3.00	493	694

Skid Shoe and Tilt Plate Adjustment

Skid Shoe Adjustment:

1. Raise and secure blade to access skid shoe bolts and nuts.
2. Loosen nuts and set skid shoe depth by sliding the shoe up and down in direction 'A' shown in Figure 1.
3. Once the depth is set, tighten bolts to 150 ft-lbs.
4. When skid shoes are worn down, replace with new skid shoes.

Tilt Plate Adjustment:

1. Remove bolts and tilt plates.

Note: Don't remove all of the bolts at the same time.

2. Add or remove washers as needed to adjust tilt-way clearance to have 1/16" - 1/8" of clearance in direction 'B' shown in Figure 1.
3. Once the tilt-way clearance is set, tighten bolts to 640 ft-lbs.

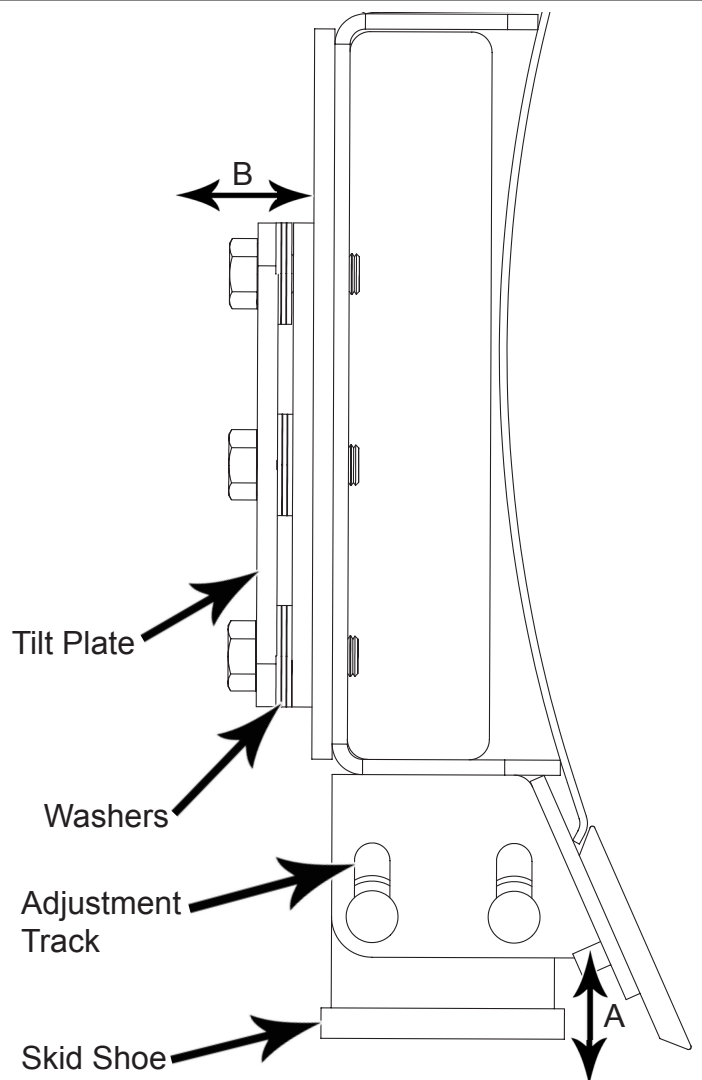


Figure 1

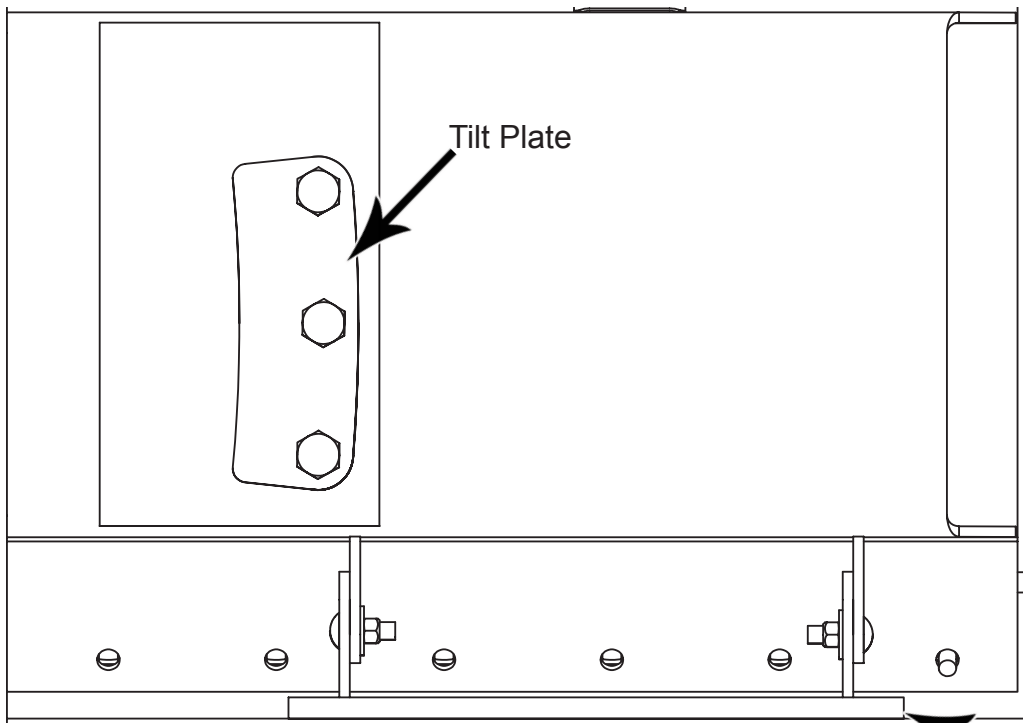


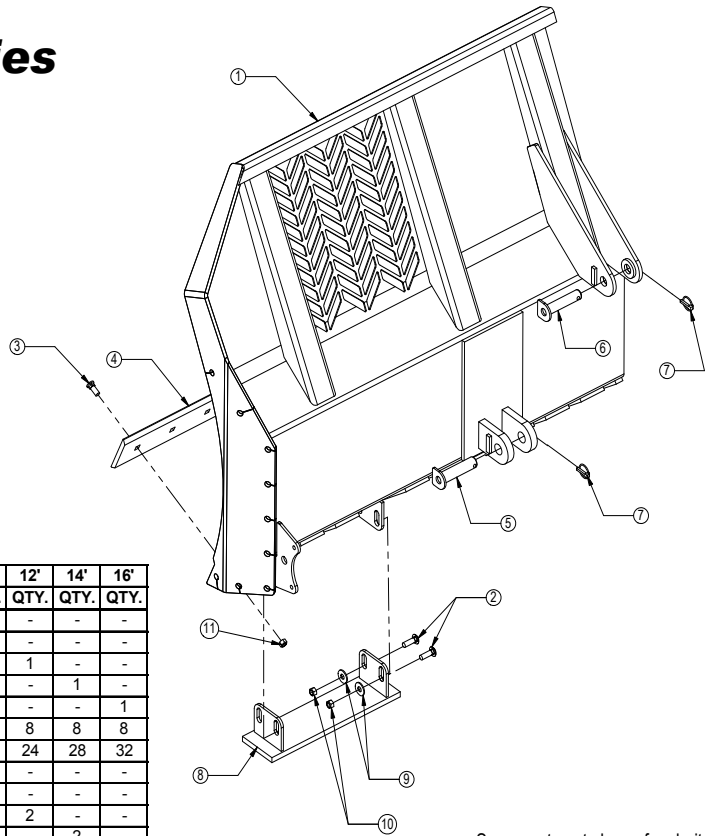
Figure 2

Skid Shoe

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2-Way Blade Assemblies

For No Angle and No Tilt (NANT)



Some parts not shown for clarity.

ITEM NO.	PART NO.	DESCRIPTION	Blade Length				
			9'	10'	12'	14'	16'
			QTY.	QTY.	QTY.	QTY.	QTY.
1	15-3233-9-2	220 2-Way Blade -9'	1	-	-	-	-
1	15-3233-10-2	220 2-Way Blade -10'	-	1	-	-	-
1	15-3233-12-2	220 2-Way Blade -12'	-	-	1	-	-
1	15-3233-14-2	220 2-Way Blade -14'	-	-	-	1	-
1	15-3233-16-2	220 2-Way Blade -16'	-	-	-	-	1
2	16-21218	3/4" x 2" Carriage Bolt Gr. 5 NC	8	8	8	8	8
3	16-21666	5/8" x 1-3/4" Plow Bolt Gr. 5 NC	18	20	24	28	32
4	29-7950-2	Cutting Edge-2'	1	-	-	-	-
4	29-7950-5	Cutting Edge-5'	-	2	-	-	-
4	29-7950-6	Cutting Edge-6'	-	-	2	-	-
4	29-7950-7	Cutting Edge-7'	1	-	-	2	-
4	29-7950-8	Cutting Edge-8'	-	-	-	-	2
5	43-3737	1-7/16" x 5.85" NR Pin	2	2	2	2	2
6	43-9336	1-1/4" x 5.78" NR Pin	1	1	1	1	1
7	43-9360	7/16" Lynch Pin	3	3	3	3	3
8	50-8740	Skid Shoe	2	2	2	2	2
9	57-20747	3/4" Flat Washer	8	8	8	8	8
10	70-20607	3/4" Hex Center Lock Nut Gr. 5 NC	8	8	8	8	8
11	70-20646	5/8" Hex Top Lock Nut Gr. 5 NC	18	20	24	28	32



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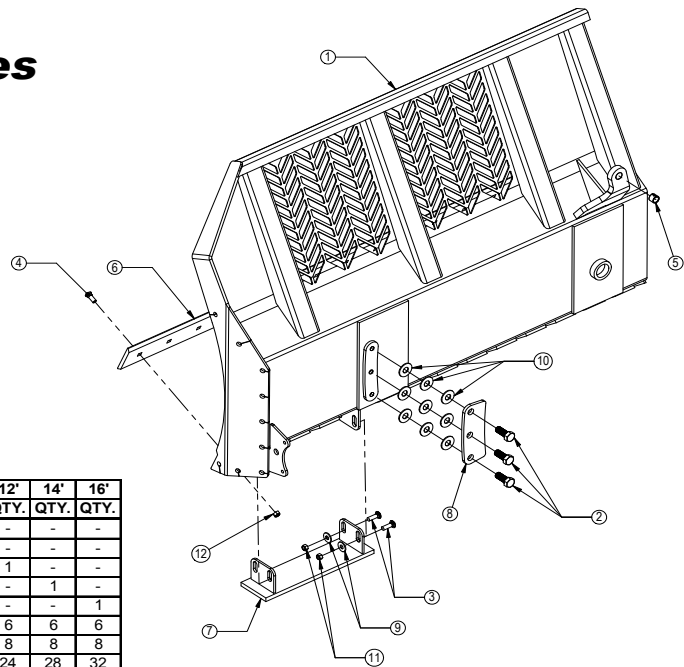
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2-Way Blade Assemblies

Date:
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6-Way Blade Assemblies

For Hydraulic Angle and Hydraulic Tilt (HAHT)



Some parts not shown for clarity.

ITEM NO.	PART NO.	DESCRIPTION	Blade Length				
			9'	10'	12'	14'	16'
			QTY.	QTY.	QTY.	QTY.	QTY.
1	15-3233-9-6	220 6-Way Blade -9'	1	-	-	-	-
1	15-3233-10-6	220 6-Way Blade -10'	-	1	-	-	-
1	15-3233-12-6	220 6-Way Blade -12'	-	-	1	-	-
1	15-3233-14-6	220 6-Way Blade -14'	-	-	-	1	-
1	15-3233-16-6	220 6-Way Blade -16'	-	-	-	-	1
2	16-20560	1" x 2-1/2" Hex Bolt Gr. 8 NC	6	6	6	6	6
3	16-21218	3/4" x 2" Carriage Bolt Gr. 5 NC	8	8	8	8	8
4	16-21666	5/8" x 1-3/4" Plow Bolt Gr. 5 NC	18	20	24	28	32
5	19-7774	1" x 1" Spring Bushing	1	1	1	1	1
6	29-7950-2	Cutting Edge-2'	1	-	-	-	-
6	29-7950-5	Cutting Edge-5'	-	2	-	-	-
6	29-7950-6	Cutting Edge-6'	-	-	2	-	-
6	29-7950-7	Cutting Edge-7'	1	-	-	2	-
6	29-7950-8	Cutting Edge-8'	-	-	-	-	2
7	50-8740	Skid Shoe	2	2	2	2	2
8	52-8204	Tilt Plate	2	2	2	2	2
9	57-20747	3/4" Flat Washer	8	8	8	8	8
10	57-20749	1" Flat Washer	18	18	18	18	18
11	70-20607	3/4" Hex Center Lock Nut Gr. 5 NC	8	8	8	8	8
12	70-20646	5/8" Hex Top Lock Nut Gr. 5 NC	18	20	24	28	32



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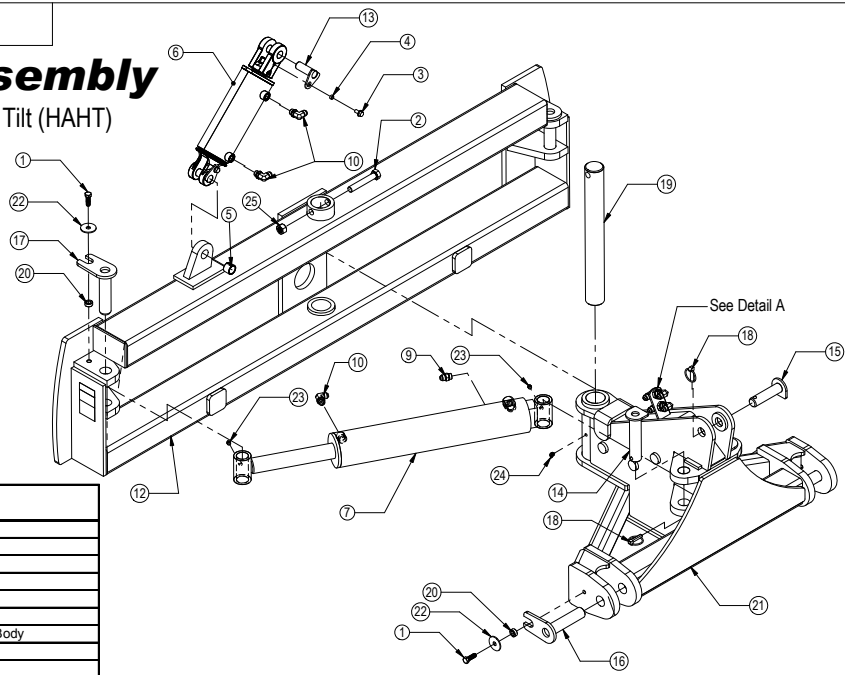
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6-Way Blade Assemblies

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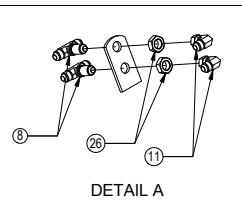
6-Way Angle Assembly

For Hydraulic Angle and Hydraulic Tilt (HAHT)



Refer to Page 9 for hydraulic components and hoses.
Refer to Page 8 for optional Angle components.

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	4	16-20126	1/2" x 1-1/2" Hex Bolt Gr. 5 NC
2	1	16-20227	3/4" x 4-1/2" Hex Bolt Gr. 5 NC
3	2	16-35C612	3/8" -16 X 3/4" Flanged Bolt
4	2	19-13577	NR Pin Spacer Clevis End
5	1	19-7774	1" x 1" Spring Bushing
6	1	26-34711	4" x 8" Cylinder w/ Clevis Ends
7	2	26-34726	4" x 20" Cylinder w/ Tube Ends, Short Body
8	2	31-34020	Bulkhead Branch Tee JIC (2703-8-8-8)
9	2	31-34040	Straight JIC x O-Ring (6400-8-8)
10	4	31-34050	Straight Thread Elbow 90° JIC x O-Ring (6801-8-8)
11	2	31-34100	Swivel Nut Elbow 90° JIC (6500-8-8)
12	1	32-2060	220 Tilt Frame
13	2	43-13580	1" Clevis Bolt in Pin
14	2	43-3285	220 Blade Angle Cylinder Base End Pin
15	1	43-3287	220 Blade Top Link Pin
16	2	43-3289	220 Blade Lower Lift Pin
17	2	43-8466	1-1/2" x 6-1/4" NR Pin
18	3	43-9360	7/16" Lynch Pin
19	1	43-13930	2.485" x 21" NR Pin
20	4	44-8490	Non Rotating Pin Spacer
21	1	45-2040	220 Angle Frame
22	4	57-20794	1/2" Fender Washer
23	4	58-9369	Grease Zerk 1/8" NPT Straight
24	1	58-9371	Grease Zerk 1/8" NPT 45°
25	1	70-20607	3/4" Hex Center Lock Nut Gr. 5 NC
26	2	70-20807	3/4" Hex Jam Nut NF



Duplicate parts not shown for clarity.



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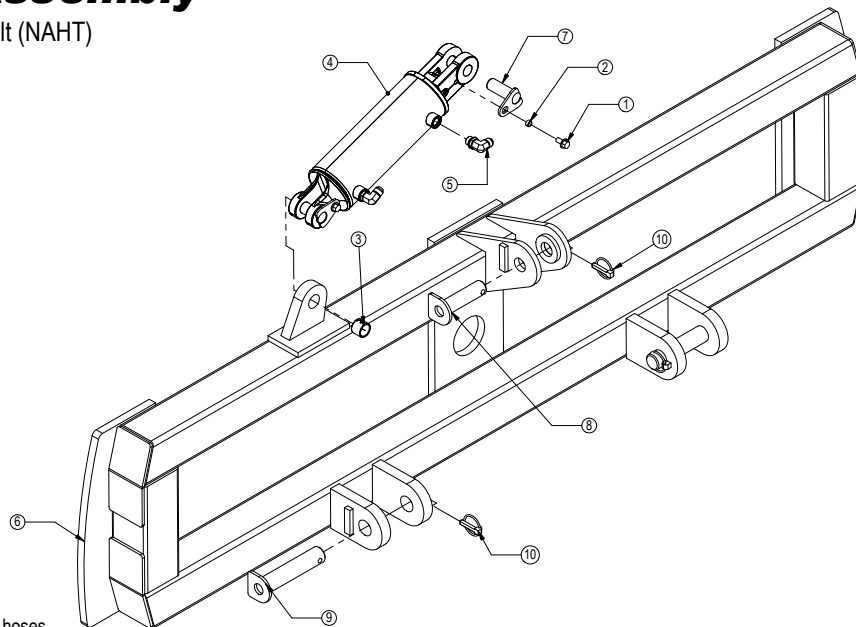
TITLE: 6-Way Angle Assembly

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4-Way Angle Assembly

For No Angle and Hydraulic Tilt (NAHT)



Refer to Page 9 for hydraulic components and hoses.
Refer to Page 8 for optional Angle components.

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	2	16-35C612	3/8" -16 X 3/4" Flanged Bolt
2	2	19-13577	NR Pin Spacer Clevis End
3	1	19-7774	1" x 1" Spring Bushing
4	1	26-34711	4" x 8" Cylinder w/ Clevis Ends
5	2	31-34050	Straight Thread Elbow 90° JIC x O-Ring (6801-8-8)
6	1	32-3621	220 NAHT Tilt Frame
7	2	43-13580	1" Clevis Bolt in Pin
8	1	43-3287	220 Blade Top Link Pin
9	2	43-9337	FH-400 Lower Arm Attachment Pin
10	3	43-9360	7/16" Lynch Pin



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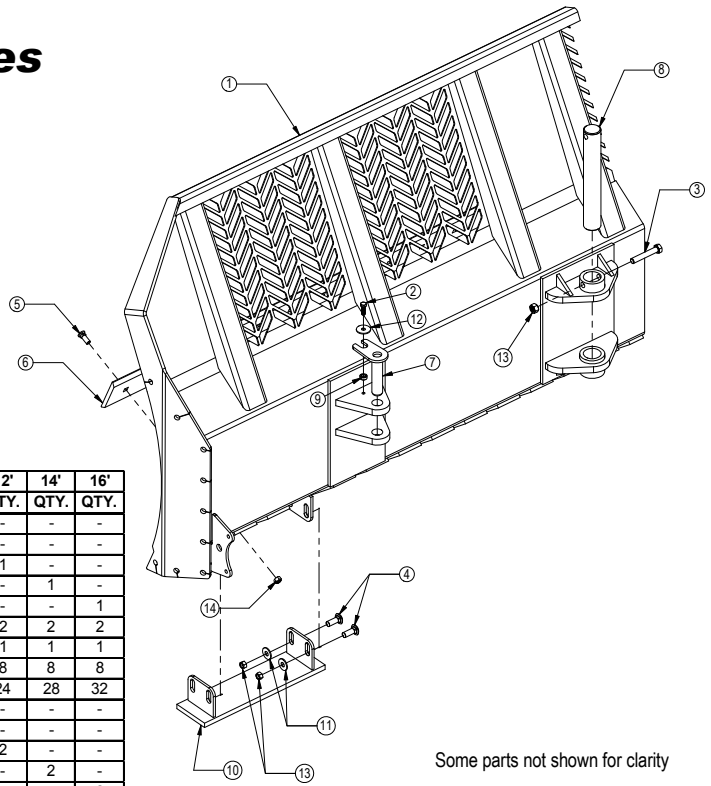
TITLE: 4-Way No Angle Assembly

Date: 6-7-2012

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4-Way Blade Assemblies

For Hydraulic Angle and No Tilt (HANT)



Some parts not shown for clarity

ITEM NO.	PART NO.	DESCRIPTION	Blade Length				
			9'	10'	12'	14'	16'
			QTY.	QTY.	QTY.	QTY.	QTY.
1	15-3233-9-4	220 4-Way Blade -9'	1	-	-	-	-
1	15-3233-10-4	220 4-Way Blade -10'	-	1	-	-	-
1	15-3233-12-4	220 4-Way Blade -12'	-	-	1	-	-
1	15-3233-14-4	220 4-Way Blade -14'	-	-	-	1	-
1	15-3233-16-4	220 4-Way Blade -16'	-	-	-	-	1
2	16-20126	1/2" x 1-1/2" Hex Bolt Gr. 5 NC	2	2	2	2	2
3	16-20227	3/4" x 4-1/2" Hex Bolt Gr. 5 NC	1	1	1	1	1
4	16-21218	3/4" x 2" Carriage Bolt Gr. 5 NC	8	8	8	8	8
5	16-21666	5/8" x 1-3/4" Plow Bolt Gr. 5 NC	18	20	24	28	32
6	29-7950-2	Cutting Edge-2'	1	-	-	-	-
6	29-7950-5	Cutting Edge-5'	-	2	-	-	-
6	29-7950-6	Cutting Edge-6'	-	-	2	-	-
6	29-7950-7	Cutting Edge-7'	1	-	-	2	-
6	29-7950-8	Cutting Edge-8'	-	-	-	-	2
7	43-8466	1-1/2" x 6-1/4" NR Pin	2	2	2	2	2
8	43-8784	2-7/16" x 16-1/2" NR Pin	1	1	1	1	1
9	44-8490	Non Rotating Pin Spacer	2	2	2	2	2
10	50-8740	Skid Shoe	2	2	2	2	2
11	57-20747	3/4" Flat Washer	8	8	8	8	8
12	57-20794	1/2" Fender Washer	2	2	2	2	2
13	70-20607	3/4" Hex Center Lock Nut Gr. 5 NC	9	9	9	9	9
14	70-20646	5/8" Hex Top Lock Nut Gr. 5 NC	18	20	24	28	32



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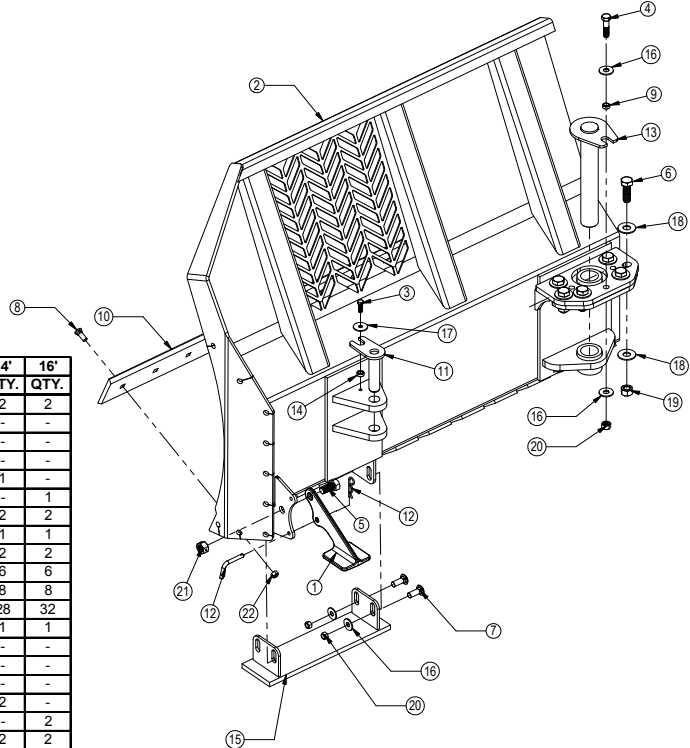
TITLE:
4-Way Blade Assemblies

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4-Way Adjustable Blade Assemblies

For Hydraulic Angle and No Tilt (HANT)



ITEM NO.	PART NO.	DESCRIPTION	Blade Length				
			9'	10'	12'	14'	16'
			QTY.	QTY.	QTY.	QTY.	QTY.
1	11-11316	Blade Stand Arm	2	2	2	2	2
2	15-12720-9-4	220 4-Way Adjustable Blade -9'	1	-	-	-	-
2	15-12720-10-4	220 4-Way Adjustable Blade -10'	-	1	-	-	-
2	15-12720-12-4	220 4-Way Adjustable Blade -12'	-	-	1	-	-
2	15-12720-14-4	220 4-Way Adjustable Blade -14'	-	-	-	1	-
2	15-12720-16-4	220 4-Way Adjustable Blade -16'	-	-	-	-	1
3	16-20126	1/2" x 1-1/2" Hex Bolt Gr. 5 NC	2	2	2	2	2
4	16-20222	3/4" x 3" Hex Bolt Gr. 5 NC	1	1	1	1	1
5	16-20558	1" X 2" Hex Bolt Gr. 8 NC	2	2	2	2	2
6	16-20562	1" X 3" Hex Bolt Gr. 8 NC	6	6	6	6	6
7	16-21218	3/4" x 2" Carriage Bolt Gr. 5 NC	8	8	8	8	8
8	16-21666	5/8" x 1-3/4" Plow Bolt Gr. 5 NC	18	20	24	28	32
9	19-13515	3/4" ID - Non Rotating Pin Spacer	1	1	1	1	1
10	29-7950-2	Cutting Edge-2'	1	-	-	-	-
10	29-7950-5	Cutting Edge-5'	-	2	-	-	-
10	29-7950-6	Cutting Edge-6'	-	-	2	-	-
10	29-7950-7	Cutting Edge-7'	1	-	-	2	-
10	29-7950-8	Cutting Edge-8'	-	-	-	-	2
11	43-8466	1-1/2" x 6-1/4" NR Pin	2	2	2	2	2
12	43-9582	Bent Claw Pin with Clip Pin	2	2	2	2	2
13	43-13901	2.485" NR Pin Weld	1	1	1	1	1
14	44-8490	Non Rotating Pin Spacer	2	2	2	2	2
15	50-8740	Skid Shoe	2	2	2	2	2
16	57-20747	3/4" Flat Washer	10	10	10	10	10
17	57-20794	1/2" Fender Washer	2	2	2	2	2
18	57-20819	1" Flat Washer Heavy Duty Gr. 8	12	12	12	12	12
19	70-20599	1" Hex Nut Gr. 8 NC	6	6	6	6	6
20	70-20607	3/4" Hex Center Lock Nut Gr. 5 NC	9	9	9	9	9
21	70-20609	1" Hex Center Lock Nut Gr. 5 NC	2	2	2	2	2
22	70-20646	5/8" Hex Top Lock Nut Gr. 5 NC	18	20	24	28	32



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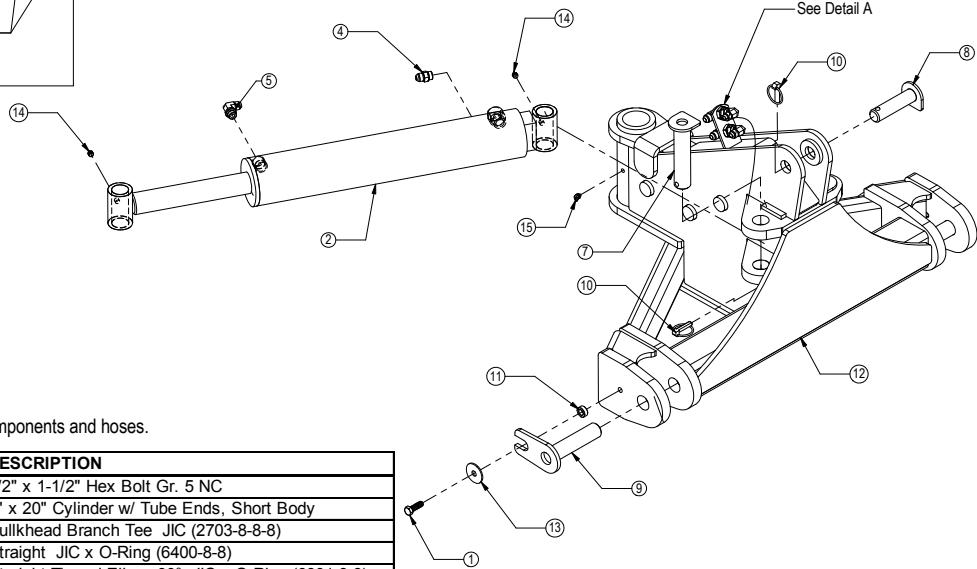
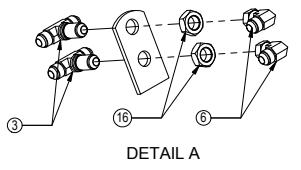
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4-Way Blade Assemblies

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4-Way Angle Assembly

For Hydraulic Angle and No Tilt (HANT)



Refer to Page 9 for hydraulic components and hoses.

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	2	16-20126	1/2" x 1-1/2" Hex Bolt Gr. 5 NC
2	2	26-34726	4" x 20" Cylinder w/ Tube Ends, Short Body
3	2	31-34020	Bulkhead Branch Tee JIC (2703-8-8-8)
4	2	31-34040	Straight JIC x O-Ring (6400-8-8)
5	2	31-34050	Straight Thread Elbow 90° JIC x O-Ring (6801-8-8)
6	2	31-34100	Swivel Nut Elbow 90° JIC (6500-8-8)
7	2	43-3285	1-1/2" x 6.85" NR Pin
8	1	43-3287	1-1/4" x 4.85" NR Pin
9	2	43-3289	1-7/16" x 5-1/8" NR Pin
10	3	43-9360	7/16" Lynch Pin
11	2	44-8490	Non Rotating Pin Spacer
12	1	45-2040	220 Angle Frame
13	2	57-20794	1/2" Fender Washer
14	4	58-9369	Grease Zerk 1/8" NPT Straight
15	1	58-9371	Grease Zerk 1/8" NPT 45°
16	2	70-20807	3/4" Hex Jam Nut NF

Duplicate parts not shown for clarity.



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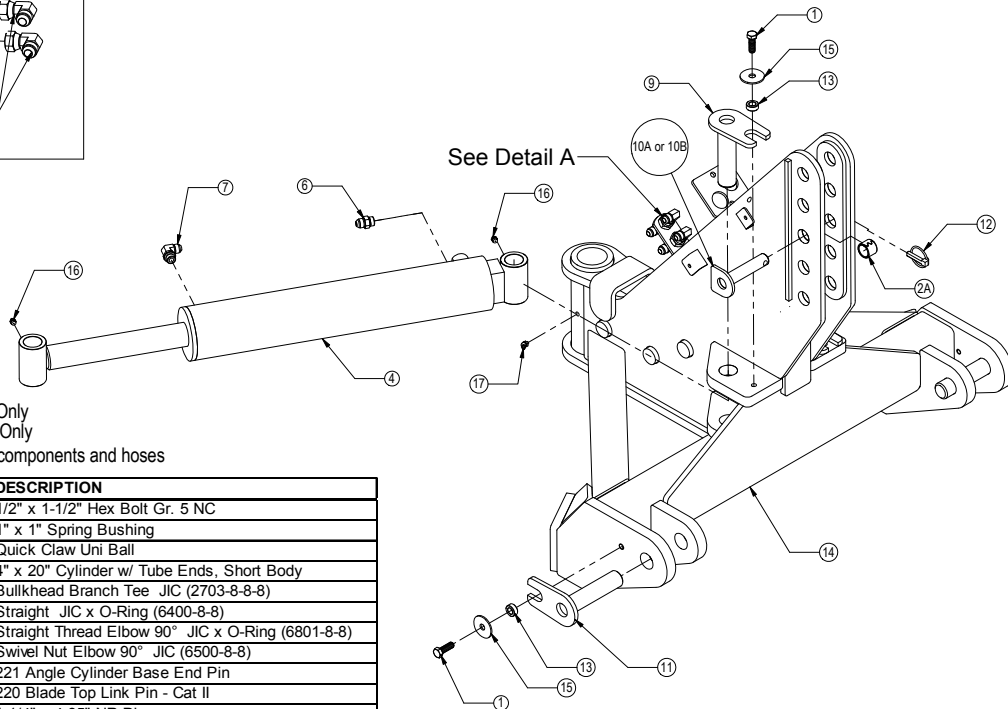
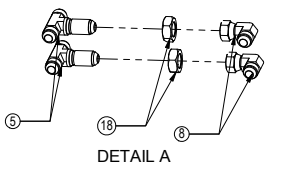
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TITLE:
4-Way Angle Assembly

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221 Angle Assembly



* Part Not Shown

A - Parts for Cat II Assembly Only

B - Parts for Cat III Assembly Only

Refer to Page 9 for hydraulic components and hoses

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	4	16-20126	1/2" x 1-1/2" Hex Bolt Gr. 5 NC
2A	2	19-7774	1" x 1" Spring Bushing
3*	2	22-8813	Quick Claw Uni Ball
4	2	26-34726	4" x 20" Cylinder w/ Tube Ends, Short Body
5	2	31-34020	Bulkhead Branch Tee JIC (2703-8-8-8)
6	2	31-34040	Straight JIC x O-Ring (6400-8-8)
7	2	31-34050	Straight Thread Elbow 90° JIC x O-Ring (6801-8-8)
8	2	31-34100	Swivel Nut Elbow 90° JIC (6500-8-8)
9	2	43-12268	221 Angle Cylinder Base End Pin
10A	1	43-11665	220 Blade Top Link Pin - Cat II
10B	1	43-3287	1-1/4" x 4.85" NR Pin
11	2	43-3289	1-7/16" x 5-1/8" NR Pin
12	1	43-9360	7/16" Lynch Pin
13	4	44-8490	Non Rotating Pin Spacer
14	1	45-12260	221 QA Universal Front / Rear Three Point
15	4	57-20794	1/2" Fender Washer
16	4	58-9369	Grease Zerk 1/8" NPT Straight
17	1	58-9371	Grease Zerk 1/8" NPT 45°
18	2	70-20807	3/4" Hex Jam Nut NF



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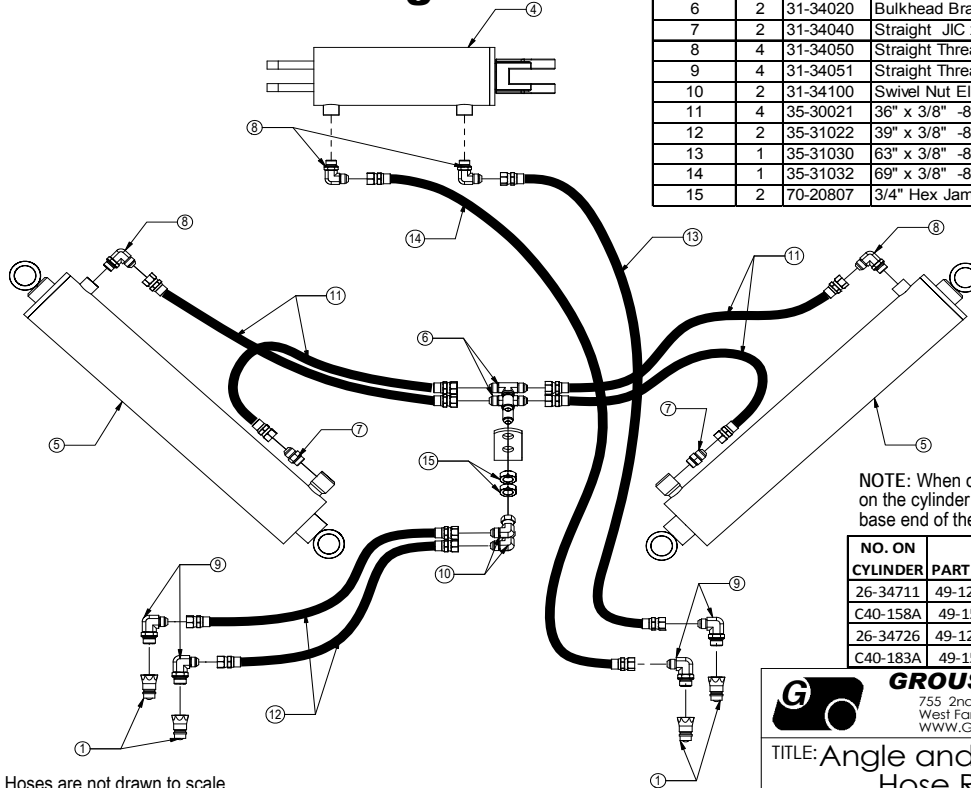
755 2nd Ave NW Phone 701.282.7710
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TITLE:
4-Way Angle Assembly

Date:
6-1-2012

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Angle and Tilt System Hose Routing



Hoses are not drawn to scale

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	4	25-34322	Tappet Quick Coupler Male -10 ORB
2*	2	25-3453	Pioneer Dust Cap Tilt (Green)
3*	2	25-3455	Pioneer Dust Cap Angle (Red)
4	1	26-34711	4" x 8" Cylinder w/ Clevis Ends
5	2	26-34726	4" x 20" Cylinder w/ Tube Ends, Short Body
6	2	31-34020	Bulkhead Branch Tee JIC (2703-8-8-8)
7	2	31-34040	Straight JIC x O-Ring (6400-8-8)
8	4	31-34050	Straight Thread Elbow 90° JIC x O-Ring (6801-8-8)
9	4	31-34051	Straight Thread Elbow 90° JIC x O-Ring (6801-8-10)
10	2	31-34100	Swivel Nut Elbow 90° JIC (6500-8-8)
11	4	35-30021	36" x 3/8" -8JIC-8JIC Hose
12	2	35-31022	39" x 3/8" -8JIC-8JIC Hose w/ Cordura
13	1	35-31030	63" x 3/8" -8JIC-8JIC Hose w/ Cordura
14	1	35-31032	69" x 3/8" -8JIC-8JIC Hose w/ Cordura
15	2	70-20807	3/4" Hex Jam Nut NF

* Parts not shown.

NOTE: When ordering cylinder seal kits, the part number on the cylinder is needed. The number is stamped on the base end of the cylinder opposite of the hydraulic ports.

NO. ON CYLINDER	PART NO.	DESCRIPTION
26-34711	49-12271	Seal Kit 4x8 Nitrided Rod, Clevis Ends
C40-158A	49-1534	Seal Kit 4x2 Nitrided Rod, Clevis Ends
26-34726	49-12272	Seal Kit 4" Bore x 2" Rod Nitrided Rod
C40-183A	49-1535	Seal Kit 4x2" Nitrided Rod, Tube Ends



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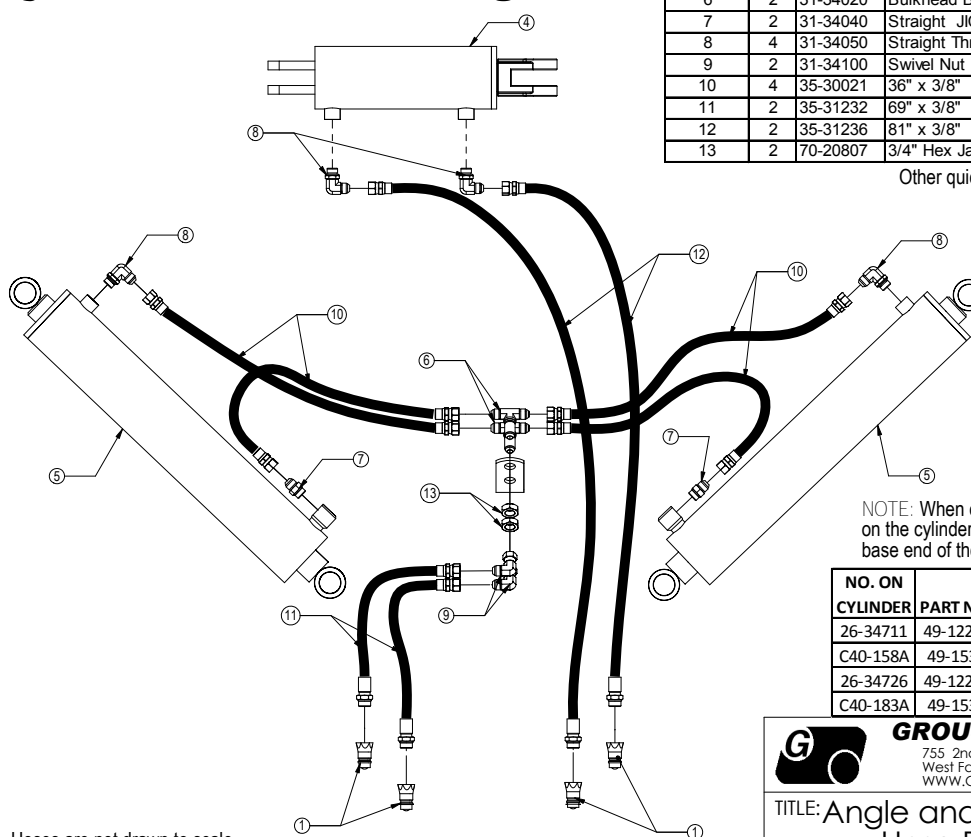
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TITLE: Angle and Tilt System
Hose Routing

Date:
1-12-2010

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221 Angle and Tilt System Hose Routing



Hoses are not drawn to scale

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	4	25-34322	Tappet Quick Coupler Male -10 ORB
2*	2	25-3453	Pioneer Dust Cap Tilt (Green)
3*	2	25-3455	Pioneer Dust Cap Angle (Red)
4	1	26-34711	4" x 8" Cylinder w/ Clevis Ends
5	2	26-34726	4" x 20" Cylinder w/ Tube Ends, Short Body
6	2	31-34020	Bulkhead Branch Tee JIC (2703-8-8-8)
7	2	31-34040	Straight JIC x O-Ring (6400-8-8)
8	4	31-34050	Straight Thread Elbow 90° JIC x O-Ring (6801-8-8)
9	2	31-34100	Swivel Nut Elbow 90° JIC (6500-8-8)
10	4	35-30021	36" x 3/8" -8JIC-8JIC Hose
11	2	35-31232	69" x 3/8" -8JIC-10MB Hose w/ Cordura
12	2	35-31236	81" x 3/8" -8JIC-10MB Hose w/ Cordura
13	2	70-20807	3/4" Hex Jam Nut NF

Other quick connect and hose options are available.

* Parts not shown.

NOTE: When ordering cylinder seal kits, the part number on the cylinder is needed. The number is stamped on the base end of the cylinder opposite of the hydraulic ports.

NO. ON CYLINDER	PART NO.	DESCRIPTION
26-34711	49-12271	Seal Kit 4x8 Nitrided Rod, Clevis Ends
C40-158A	49-1534	Seal Kit 4x2 Nitrided Rod, Clevis Ends
26-34726	49-12272	Seal Kit 4" Bore x 2" Rod Nitrided Rod
C40-183A	49-1535	Seal Kit 4x2" Nitrided Rod, Tube Ends



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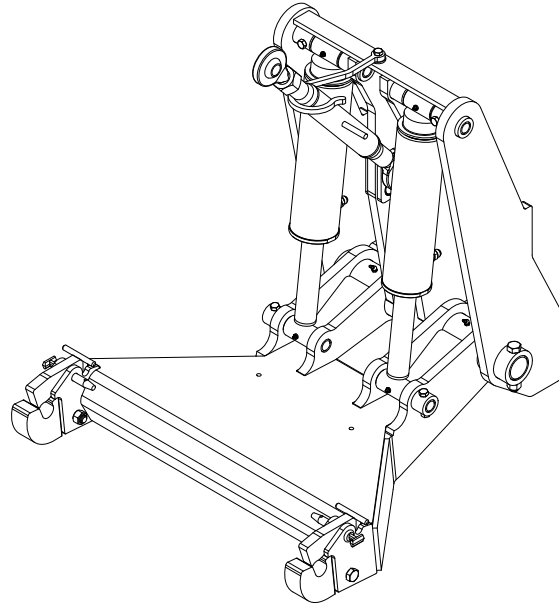
TITLE: Angle and Tilt System
Hose Routing

Date:
1-12-2010

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Solid Lower Arm Lift System

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	11-1455	FH-400 Top Arm Hook
2, 3, 4	1	11-11135	FH-400 Pitch Control Top Arm
2	1	11-11137	FH-400 Pitch Control Arm Housing
3	1	11-11136RH	FH-400 Pitch Control Arm Screw Assy Right Hand
4	1	11-11136LH	FH-400 Pitch Control Arm Screw Assy Left Hand
5	1	11-15710	FH-400 Solid Lower Arm - V2
6	2	16-20126	1/2" x 1-1/2" Hex Bolt Gr. 5 NC
7	4	16-20130	1/2" x 2-1/2" Hex Bolt Gr. 5 NC
8	2	16-20222	3/4" x 3" Hex Bolt Gr. 5 NC
9	1	16-20227	3/4" x 4-1/2" Hex Bolt Gr. 5 NC
10	4	19-3774	1.5" x 1.25" x 2.00" Spring Bushing (150125200)
11	2	19-15711	Lower Lift Arm Bushing
12	2	22-15701	FH-400 Solid Lower Arm Latch
13	2	26-34728	4" x 12" Cylinder w/ Tube Ends
14	2	43-15712	3/4" x 3-1/4" Safety Hitch Pin and Clip
15	2	43-8234	1-1/4" x 7-1/4" NR Pin
16	1	43-8322	2-7/16" x 25" NR Pin
17	2	43-9334	1-1/4" x 10" NR Pin
18	1	43-11471	FH-400 Top Arm Pin
19	1	57-20744	1/2" Flat Washer
20	1	57-20794	1/2" Fender Washer (2.00" x .500" x .125")
21	4	58-9369	Grease Zerk 1/8" NPT Straight
22	3	58-9371	Grease Zerk 1/8" NPT 45°
23	5	70-20604	1/2" Center Lock Hex Nut NC
24	3	70-20607	3/4" Hex Center Lock Nut NC



Refer to Page 5 for hydraulic components and hoses.

For Serial Numbers 200500313 and higher, use 11-11135 for the top arm and 11-11137, 11-11136RH, and 11-11136LH for items 2, 3, and 4, respectively.

For Serial Numbers earlier than 200500313, use 11-2014 for the top arm and 11-3711, 11-1890, and 11-1891 for items 2, 3, and 4, respectively.

For Serial Numbers 10202291 and higher, use 11-15710 for the lower arm and 16-20222, 19-15711, 22-15701, 43-15712, & 70-20607 for the latch assy.

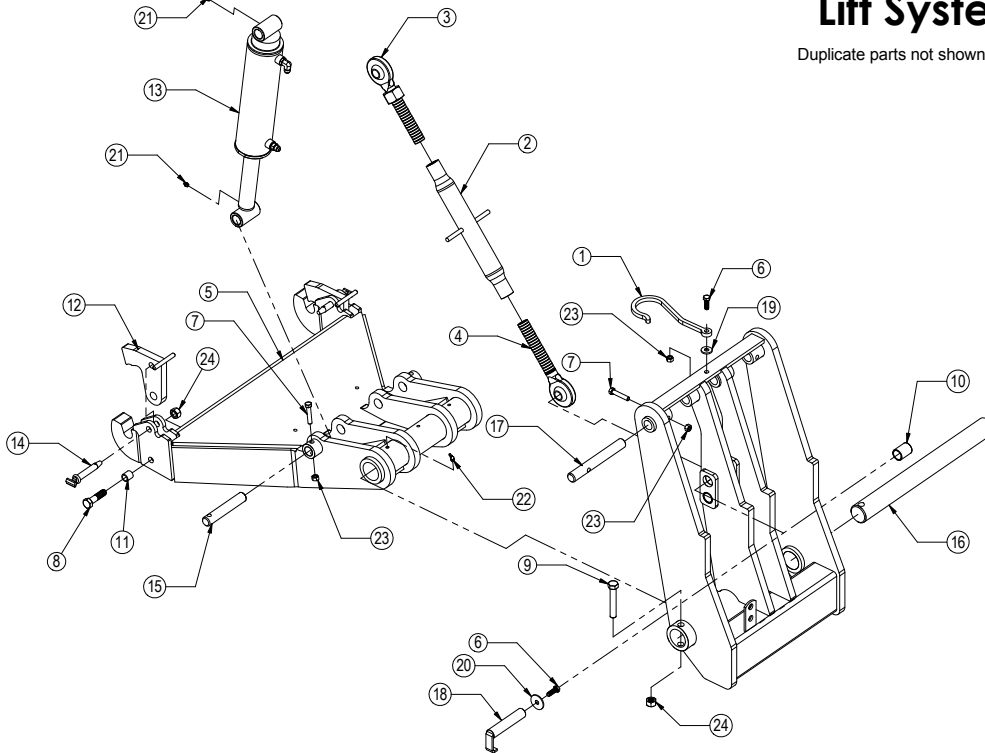
For Serial Numbers earlier than 10202291, use 11-13230 for the lower arm and 43-3708 & 43-9582 for locking the claw.

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TITLE: Solid Lower Arm Lift System		Date: 6-29-2012

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Solid Lower Arm Lift System

Duplicate parts not shown for clarity.



Note: If Item #10 is not present, use PN: 43-9335 (1-1/4" x 6" NR Pin) and PN: 43-9360 (7/16" Lynch Pin) in place of Item #6, #18, and #20.

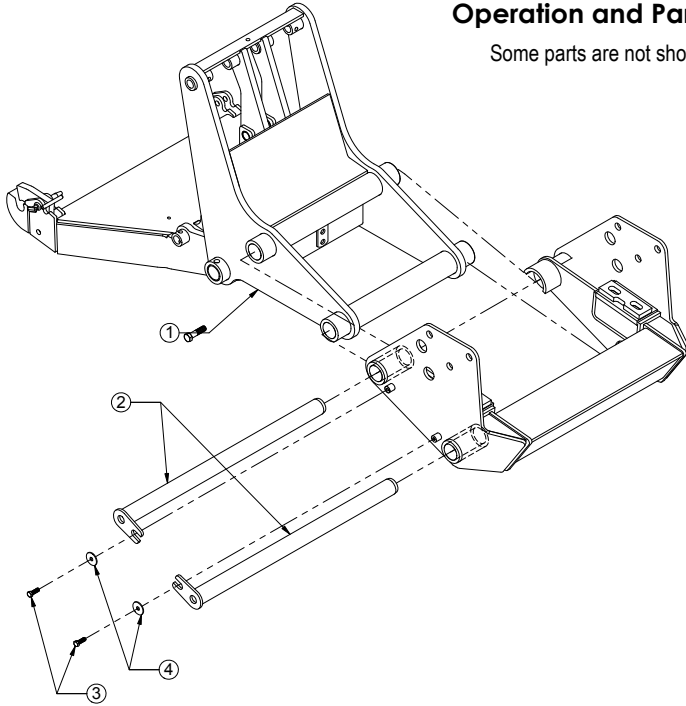
	GROUSER PRODUCTS INC.	
	755 2nd Ave NW West Fargo, ND 58078 WWW.GROUSER.COM	Phone 701.282.7710 Fax 701.282.8131
TITLE: Solid Lower Arm Lift System		Date: 6-29-2012

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FH-400 Kneeler

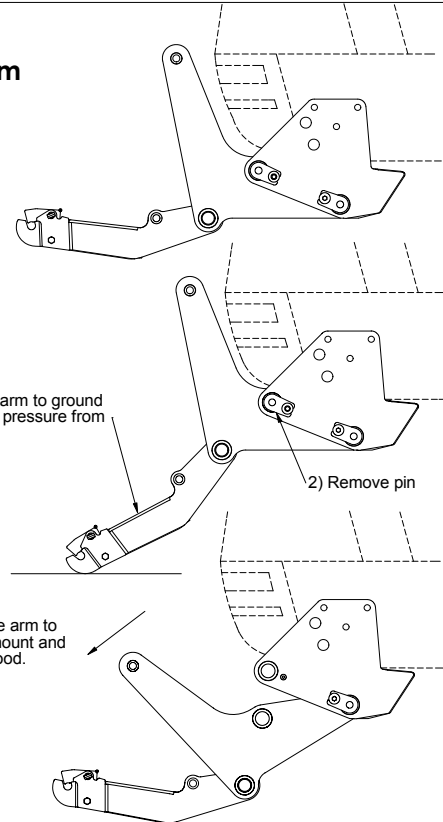
Operation and Parts Diagram

Some parts are not shown for clarity.



Hose routing for kneeler is similar to standard lift system, however hose lengths may vary.
 Standard hoses for kneeler lift system are included but not shown:
 2- 20" -8JIC-8JIC Hose (PN 35-30005) - Bottom port (rod end) of cylinders
 2- 30" -8JIC-8JIC Hose (PN 35-30015) - Top port (base end) of cylinders

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	17-9610	FH-400 Kneeler Mount
2	2	43-1355	2-3/8" X 39" NR Pin
3	2	16-20126	1/2" X 1-1/2" Hex Bolt Gr. 5 NC
4	2	57-20794	1/2" Fender Washer



1) Lower arm to ground releasing pressure from pin.

2) Remove pin

3) Raise arm to lower mount and open hood.

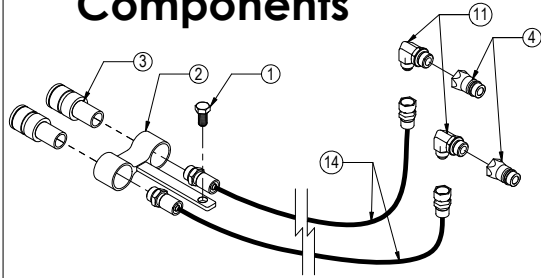


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TITLE: FH-400 Kneeler Date: 8-21-2006

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Auxiliary Hydraulic Components



Hoses not drawn to scale

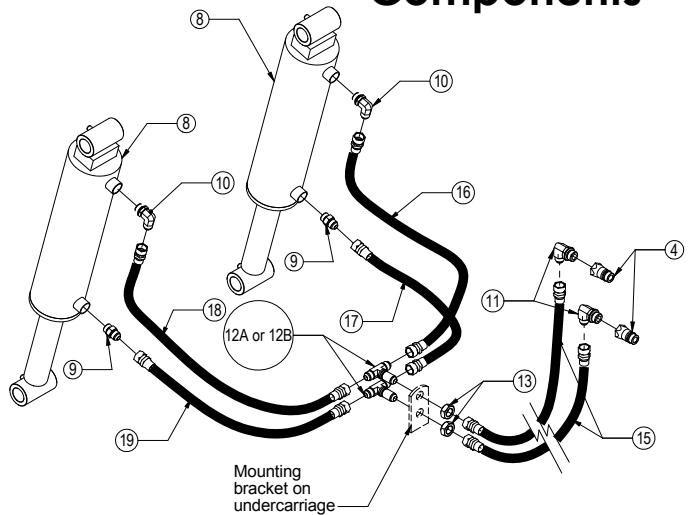
*Part not shown.

NOTE: When ordering cylinder seal kits, the part number on the cylinder is needed. The number is stamped on the base end of the cylinder opposite of the hydraulic ports.

Hose lengths vary per tractor model. Please contact Grouser if hose length is needed for item 14, 15, 16, 17, 18, or 19.

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	2	16-20124	1/2" x 1" Hex Bolt Gr 5 NC
2	1	18-8973	Coupler Mounting Bracket
3	2	25-34321	Tappet Quick Coupler Female
4	4	25-34322	Tappet Quick Coupler Male
5*	2	25-3455	Pioneer Dust Cap Angle (Red)
6*	2	25-3456	Pioneer Dust Plug Angle (Red)
7*	2	25-3457	Pioneer Dust Cap Lift (Orange)
8	2	26-34728	4" X 12" Cylinder w/ Tube Ends
9	2	31-34040	8MB-8MJ Straight (6400-8-8)
10	2	31-34050	8MB-8MJ 90° (6400-8-8)
11	4	31-34051	10MB-8MJ 90° (6801-8-10)
12A	2	31-34030	8MJ-8BH-8MJ BH Run Tee
12A	2	31-34020	8MJ-8MJ-8MJ BH Tee (2703-8-8-8)
13	2	70-20807	3/4" Hex Jam Nut NF

FH-400 Hydraulic Components



Mounting bracket on undercarriage

Note 1: If tee mounting bracket is towards left side of frame, use parts labeled with 'A'. For center mounted bracket, use parts labeled with 'B'.

No. on Cylinder	Part No.	Description
26-34728	49-12272	Seal Kit 4" Bore x 2" Rod Nitrided Rod
C40-182A10	49-1535	Seal Kit 4x2" (SKC40-162A)



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TITLE: FH-400 Hydraulic Components Date: 8-21-2006

Contact Us

As always, if you have any questions about your 200 Series Dozer or other products made by Grouser, feel free to contact us.

Grouser Products

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Website: www.grouser.com

Improvements

Grouser Products Inc. is continually striving to improve its products. We reserve the right to change prices, specification, or equipment at any time without notice. We also reserve the right to make improvements or changes when it becomes practical and possible to do so without incurring any obligation to make changes or additions to the equipment sold previously.

Warranty

Grouser Products warrants to the original purchaser of each item that the product be free from defects in material and workmanship under normal use and service for a period of one year. If such equipment is found to be defective within one year, it is the obligation of Grouser Products under this warranty to repair or replace (exclusive of the cost of labor and transportation), any equipment or parts, in the judgment of Grouser Products to be defective in material or workmanship.

All equipment or parts claimed to be defective in material or workmanship must be made available for inspection at the place of business of a dealer authorized to handle the equipment covered by this warranty, or, upon request by Grouser Products, shipped to the Grouser Products factory in West Fargo, North Dakota. Grouser Products shall have no obligation to bear the cost of labor or transportation in connection with replacement or repair of any such defective parts in the setup process.

This warranty covers only defects in material and workmanship. It does not cover depreciation or damage caused by normal wear, accident, improper assembly, improper adjustments, improper maintenance including lack of proper lubrication, or improper use. Therefore, Grouser Products liability under this warranty shall not be effective or actionable unless the equipment is assembled, maintained and operated in accordance with the operating instructions accompanying the equipment. Grouser Products shall have no liability if the equipment has been altered or reworked without the written authorization of Grouser Products.

Grouser Products' parts, which are furnished under this warranty and properly installed, shall be warranted to the same extent as the original parts under this warranty if, and only if, such parts are found to be defective within the original warranty period covering the original equipment.

