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NOTE: PRODUCT CHANGES AND/OR ADDITIONS WILL BE PUBLISHED AS APPENDICES.

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GILCREST PUSHER™ G

WARRANTY AND MAINTENANCE

OCTOBER 1996

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WARRANTY

GILCREST EQUIPMENT COMPANY PRODUCTS ARE WARRANTED FOR A PERIOD OF 12 MONTHS FROM DATE OF SHIPMENT FROM OUR PLANT TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP. NO OBLIGATION IS ASSUMED BY GILCREST EQUIPMENT COMPANY FOR PRODUCTS RENDERED DEFECTIVE OR DAMAGED THROUGH NORMAL WEAR, IMPROPER APPLICATION, OR MISUSE.

GILCREST EQUIPMENT COMPANY'S OBLIGATION UNDER THIS WARRANTY SHALL BE LIMITED TO REPAIR OR EXCHANGE, AT OUR OPTION, F.O.B. OUR FACTORY, OF ANY GILCREST EQUIPMENT COMPANY PRODUCT OR PART WHICH PROVES TO BE DEFECTIVE. **GILCREST EQUIPMENT COMPANY ASSUMES NO OBLIGATION FOR CLAIMS THAT ARE INCIDENTAL TO THE REPAIR OR EXCHANGE OF OUR PRODUCTS.**

THIS WARRANTY IS SUBJECT TO GILCREST EQUIPMENT COMPANY BEING NOTIFIED IMMEDIATELY UPON THE DISCOVERY OF ANY DEFECTIVE MATERIAL AND/OR WORKMANSHIP WITHIN THE SAID 12 MONTH WARRANTY PERIOD, AND THE HOLDING OF THE ITEM FOR GILCREST EQUIPMENT COMPANY'S INSPECTION AND DISPOSITION.

ANY AFFIRMATION OF FACT OR PROMISE MADE BY ANY AGENT, DISTRIBUTOR, DEALER, OR EMPLOYEE OF GILCREST EQUIPMENT COMPANY SHALL NOT BE DEEMED TO CREATE AN EXPRESS WARRANTY THAT THE GOODS SHALL CONFORM TO THE AFFIRMATION OR PROMISE. THE BUYER IS SOLELY RESPONSIBLE FOR DETERMINING SUITABILITY FOR USE.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE AND OF ALL OTHER OBLIGATIONS OR LIABILITIES ON OUR PART. THIS WARRANTY STATES OUR ENTIRE AND EXCLUSIVE LIABILITY AND THE BUYER'S EXCLUSIVE REMEDY FOR CLAIM OF DAMAGES IN CONNECTION WITH THE SALE OR USE OF GILCREST EQUIPMENT COMPANY PRODUCTS.

IN NO EVENT SHALL GILCREST EQUIPMENT COMPANY BE MADE LIABLE TO CONSEQUENTIAL OR SPECIAL DAMAGES WHATSOEVER, NOR FOR ANY SUM IN EXCESS OF THE PRICE RECEIVED FOR THE PRODUCTS FOR WHICH THE LIABILITY IS CLAIMED OR ASSOCIATED.

GILCREST EQUIPMENT COMPANY RESERVES THE RIGHT TO CHANGE THE DESIGN AND/OR SPECIFICATIONS OF OUR PRODUCTS WITHOUT NOTICE.

FOR FURTHER INFORMATION CONTACT DEALERSHIP.

OPERATING THE FOUR WHEEL DRIVE AXLE WITH THE "SHIFT ON THE GO" OPTION

The function of the **SHIFT ON THE GO** four wheel drive is affected by the operation of two things, the engagement of the hubs, and the position of the electric switch.

HUB ENGAGEMENT: The hubs used on the **SHIFT ON THE GO** four wheel drive have are continuously engaged to their hydraulic motors by means of a nippled cover plate used in place of the push-button lockout.

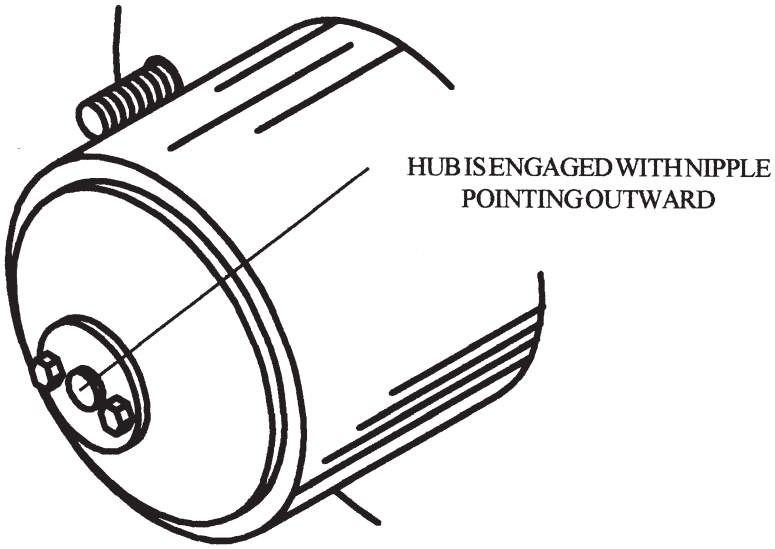


Fig. 1

SWITCH POSITION: The electrical switch in the cab, is used to control the function of the solenoid valve.

When the switch is off, the 12VDC signal is blocked from going to the solenoid valve, and the hydraulic oil is blocked from going to the four wheel drive motors.

When the switch is on, the 12VDC signal is sent to the valve, opening it, and allowing the hydraulic oil to go to the motors and give the four wheel drive its power. **NOTE:** Insuring that the hubs are properly engaged(as shown), the electrical switch is the only thing needed to go from 2WD to 4WD.

MODES OF OPERATION: By switching the switch **OFF** and **ON**, we end up with two workable modes of operation. Since the four wheel drive motors and their circuitry are designed for a maximum speed of **10MPH**, the combine should not be operated in excess of this speed while in 4WD.

During field operation, the unit can be used either as an assist or as a full time four wheel drive. As an assist the combine is operated in two wheel drive. When extremely bad field conditions are encountered, the operator merely flips the electrical switch on, and the four wheel drive is activated. (**NOTE:** When the switch is on, part of the hydrostatic drive oil is allowed to go to the rear axle, which results in a decrease in ground speed. This can be compensated for by increasing the hydrostatic control lever setting.) After the need for the four wheel drive is over, simply switch it off. (**NOTE:** The combine will speed up when switching from four wheel drive to two wheel drive.)

For full time four wheel drive, switch the unit on, and leave it on. It is not harmful to the unit to run it continuously at **field speeds**.

OPERATING THE FOUR WHEEL DRIVE AXLE

The function of the four wheel drive is affected by the operation of two things, the engagement of the hubs, and the position of the electric switch.

HUB ENGAGEMENT: The hubs used on the four wheel drive have a provision to either be engaged or dis-engaged from their hydraulic motors.

When engaged, the wheels are connected to the hydraulic motors, and are capable of receiving power. Since the four wheel drive motors and their circuitry are designed for a maximum speed of 10 MPH, the combine should not be operated in excess of this speed with the hubs engaged.

When dis-engaged, the wheels are free to rotate, and the machine may be driven as fast as deemed necessary.

The illustration below will help in determining the engaged and dis-engaged positions of the hubs.

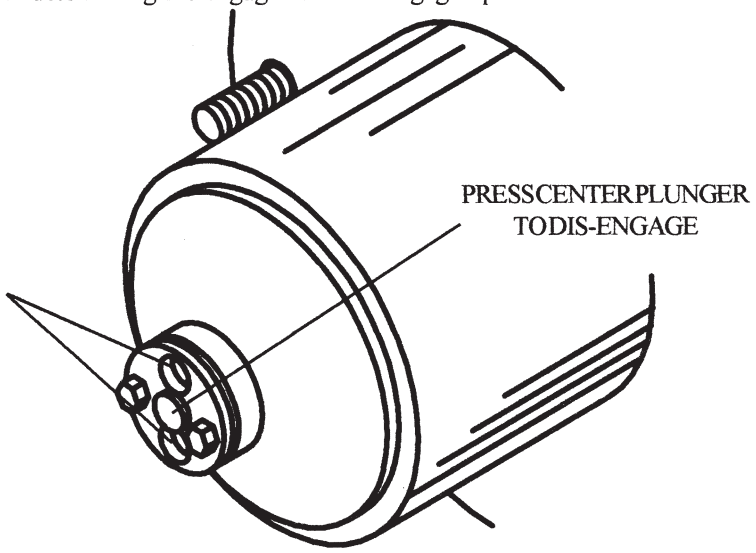


Fig. 2

SWITCH POSITION: The electrical switch in the cab, is used to control the function of the solenoid valve.

When the switch is off, the 12VDC signal is blocked from going to the solenoid valve, and the hydraulic oil is blocked from going to the four wheel drive motors.

When the switch is on, the 12VDC signal is sent to the valve, opening it, and allowing the hydraulic oil to go to the motors and give the four wheel drive its power. (NOTE: The switch should <u>not</u> be **ON** with the hubs dis-engaged, as this would allow oil to go to the motors that were not connected to their wheels.
This condition would cause the combine to be very slow and sluggish in its movement, and could eventually create enough heat to burn up the main hydrostatic transmission.)

MODES OF OPERATION: By engaging and dis-engaging the hubs, and switching the switch **OFF** and **ON**, we end up with three workable modes of operation as follows:

MODE	HUB ENGAGEMENT	SWITCH POSITION	MAX. SPEED
2 wheel drive	dis-engaged	**"off"**	max.
2 wheel drive	engaged	**"off"**	8 MPH
4 wheel drive	engaged	**"on"**	10 MPH

During field operation, the unit can be used either as an assist or as a full time four wheel drive.

As an assist the combine is operated in two wheel drive with the hubs engaged. When extremely bad field conditions are encountered, the operator merely flips the electrical switch on, and the four wheel drive is activated. (NOTE: When the switch is on, part of the hydrostatic drive oil is allowed to go to the rear axle, which results in a decrease in ground speed. This can be compensated for by increasing the hydrostatic control lever setting.) After the need for the four wheel drive is over, simply switch it off. (NOTE: The combine will speed up when switching from four wheel drive to two wheel drive.)

For full time four wheel drive, switch the unit on, and leave it on. It is not harmful to the unit to run it continuously at **field speeds**.

LUBRICATION AND MAINTENANCE

GREASE THE FOUR KINGPIN BEARINGS DAILY WITH A GOOD GRADE OF GUN GREASE.

GREASE THE AXLE PIVOT DAILY WITH A GOOD GRADE OF GUN GREASE.

GREASE THE TIE ROD ENDS EVERY 100 HRS. WITH A GOOD GRADE OF GUN GREASE.

DURING THE GREASING OPERATION, VISUALLY INSPECT THE TIE ROD END NUTS, THE STEERING RAM NUTS, THE KINGPINS, THE KINGPIN LOCKNUTS, AND THE WHEEL LUG NUTS FOR TIGHTNESS. THE LOOSENING OF ANY OF THESE PARTS CAN CAUSE CONSIDERABLE DAMAGE IF NOT CAUGHT QUICKLY AND CORRECTED.

CHECK THE FLUID LEVEL IN THE HUBS EVERY 100 HRS. AND MAINTAIN HALF FULL WITH 90 WEIGHT EP GEAR GREASE.

FOLLOW THE COMBINE OR COTTONPICKER MANUFACTURER'S RECOMMENDATIONS RELATIVE TO HYDRO-STATIC FLUID TYPE, FREQUENCY OF CHANGE, AND FILTER CHANGE INTERVALS.

THE PUSH-BUTTON OPERATED LOCK-OUTS ARE LUBRICATED AT THE FACTORY WHEN ASSEMBLED. IF THEY BECOME DIFFICULT TO OPERATE, THEY CAN BE LOOSENED UP WITH SPRAY PENETRANT.

GILCREST

PUSHER™ G

DRIVE SYSTEM COMPONENTS

INSTALLATION, MAINTENANCE, AND OPERATION INSTRUCTIONS
for
PUSH-BUTTON OPERATED LOCK-OUT HUBS

INSTALLATION:

1. REMOVE THE ORIGINAL LOCKOUT CAP BOLTS FROM THE HUB.

2. REMOVE THE LOCKOUT FROM ITS PACKAGING. BE PARTICULARLY CAREFUL TO AVOID DROPPING ANY OF THE SMALL COMPONENTS.

3. USING THE TWO 5/16-18 x 2 INCH BOLTS THAT ARE FURNISHED IN THE KIT, BOLT THE LOCKOUT TO THE HUB.

OPERATIONS:

ENGAGEMENT: TO ENGAGE THE HUB, PUSH BOTH OUTSIDE PLUNGERS THE CENTER PLUNGER SNAPS OUT. NOTE THAT SOMETIMES THE GEARS IN THE HUB ARE NOT ALIGNED TO ALLOW THE CENTER PLUNGER TO SNAP COMPLETELY OUT. TOTAL ENGAGEMENT OF THE GEARS WILL OCCUR AS SOON AS THE MACHINE IS MOVED.
CAUTION: START MOVING MACHINE SLOWLY TO ALLOW GEARS TO MESH.

DISENGAGEMENT: TO DISENGAGE THE HUB, PUSH THE CENTER PLUNGER IN UNTIL THE TWO OUTSIDE PLUNGERS SNAP OUT.

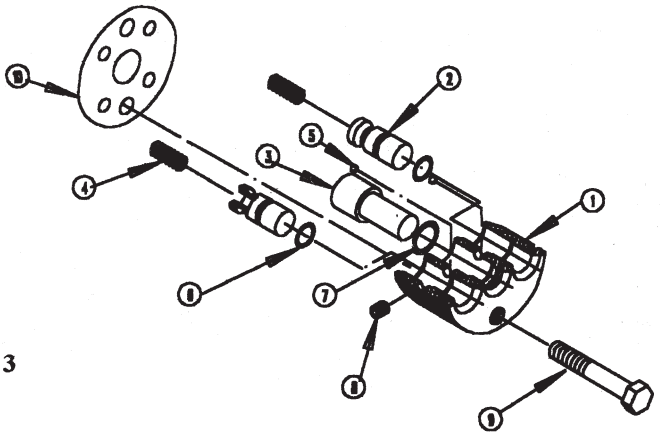


Fig. 3

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	BODY, LOCK-OUT	1533463
2	2	PLUNGER, ENGAGING	1795459
3	1	PLUNGER, DIS-ENGAGING	1795460
4	2	SPRING	5799511
5	2	BALL, 7/32" DIA	4051732
6	2	O'RING, 1/2" OD	4584012
7	1	O'RING, 5/8" OD	4584014
8	1	SCREW, SET, ALLEN 1/4"-28 x 1/4"	7744470
9	2	BOLT, HEX, 5/16"-18 x 2" G8P	7721531
10	1	GASKET, LOCK-OUT TO HUB	4444550

POWER WHEEL PLANETARY GEAR DRIVES

GENERAL INFORMATION

IDENTIFICATION

Important: When ordering parts, the information on the large cover is necessary to identify the model to obtain the correct replacement parts.

On model 6 power wheels, the ID # is located on the flange of the cover; on model 8 power wheels, the ID # is located on the cover between the fill plug and the drain plug.

Example ID stamped on cover 6 023 M3 04. The 6 indicates the model number, and the 023 identifies the assembly number. Please specify the model and assembly numbers when ordering replacement parts.

CARRIER ASSEMBLIES

The primary and secondary carriers(sub-assemblies) must be serviced in their entirety to protect the integrity of the power wheel.

LUBRICATION RECOMMENDATIONS

Observe lubrication recommendations given by the original equipment manufacturer. When specific recommendations are not available, use mild extreme pressure lubricant API-GL-5, No. 80 or 90 for filling the power wheel under normal temperature ranges between 0° to 120°F (-18° to 49°C). Fill until oil just begins to flow from fill plug. Fill and drain plug are the same. Cover to be positioned horizontal when filling.

RTV SEALING COMPOUND

Silastic RTV # 732 sealer and General Electric Silimate RTV # 1473 are currently recommended for sealing gasket surfaces. The RTV should be applied in a continuous bead which should be centered on the surface to be sealed but should move to the inside of the hole at each bolt hole location.

TOWING THE VEHICLE

Caution: The power wheel will not normally be damaged by towing; however, the hydraulic drive components may be damaged unless the power wheel is disengaged from the drive motor. Road speeds in excess of 25 MPH should be avoided unless clearly specified to be permissible by the equipment manufacturer.

TO DISENGAGE POWER WHEEL

The Gilcrest **PUSHER**$_{TM}$ rear wheel assist drive system comes equipped with one of two types of hubs; Standard Lockout Hubs, or Shift-on-the-Go Hubs.

On Standard Lockout hubs, to disconnect the wheel from the input shaft, push the center plunger in until the two outside plungers snap out.

On Shift-on-the-Go hubs, this operation is done internally within the hydraulic drive motor, all the operator isrequired to do is switch the electrical switch in the cab 'off'.

STORAGE

Caution: Finished surfaces must be protected to prevent rust when units are to be stored for extended periods of time.

SERVICE

For servicing of the Planetary Gear Drive, conctact the your local **PUSHER**$_{TM}$ dealer or the Gilcrest factory to obtain the appropriate service instructions.

Power Wheel
Planetary Gear Drive
Model 6
Snap Ring Retention

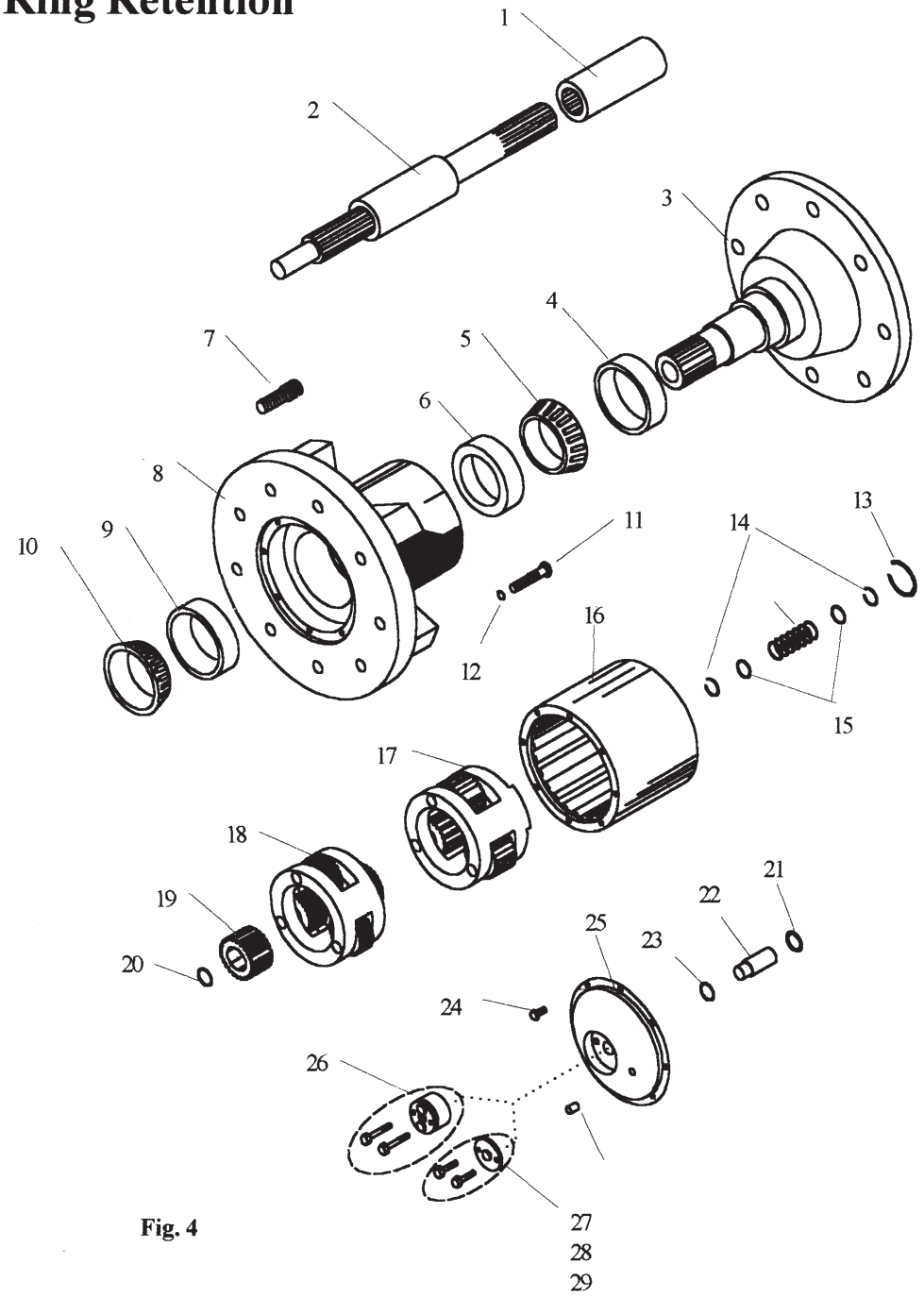


Fig. 4

PARTS LIST

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	Coupling	4205500
2	1	Input Shaft	4793530
3	1	Spindle	4793525
4	1	Oil Seal	4761725
5	1	Bearing Cone	4080399
6	1	Bearing Cup	4080394
7	9	Bolt, Wheel 9/16"	7126655
	9	Bolt, Wheel 1/2"	7121655
8	1	Hub- 6 Bolt	4437525
	1	Hub-12 Bolt	4437530
9	1	Bearing Cup	4080394
10	1	Bearing Cone	4080395
11	6	Bolt, 3/8"-24 x 1 7/8" HHCS	7114540
12		Bolt, 3/8"-24 x 2 1/4" HHCS	7114550
12	6-12	Washer, Flat 3/8	7958265
13	1	Ring, Retaining .108" thick	4698042
	1	Ring, Retaining .118" thick	4698043
	1	Ring, Retaining .125" thick	4698045
	1	Ring, Retaining .133" thick	4698046
14	2	Ring, Retaining	4793535
15	2	Washer	4793540
16	1	Spring, dis-engaging	4793545
17	1	Ring, Gear-6 Bolt	4793560
	1	Ring, Gear-12 Bolt	4793570
18	1	Secondary Carrier Universal	4446000
	1	Secondary Carrier 014 only	4446100

NO.	REQ'D	DESCRIPTION	PART NO.
19	1	Primary Carrier for 005 Hub	4446005
	1	Primary Carrier for 010-031 Hub	4446010
	1	Primary Carrier for 014 Hub	4446014
	1	Primary Carrier for 015 Hub	4446015
	1	Primary Carrier for 019 Hub	4446019
20	1	Sun Gear; 28 teeth	4446214
	1	Sun Gear; 25 teeth	4446215
	1	Sun Gear; 19 teeth	4446205
	1	Sun Gear; 22 teeth	4446210
	1	Sun Gear; 16 teeth	4446219
21	1	Thrust Washer Nylon	4793555
22	1	Thrust Washer Metal	4793550
23	1	Plunger, Dis-engaging	4650300
24	1	O'Ring	4596010
25	8	Bolt, Hex 5/16"-18 x 1" HHCS	7721523
26	1	Plug, Pipe	4648100
27	1	Cover	4216265
28	1	Lockout Assembly	1533738
29	1	Dimpled Cover Plate w/ 2 Bolts, 5/16"-18 x 3/4"	OEM

Note: Hub Serial Number must be used when ordering any replacement parts. (Located on cover of Hub in-between bolts.)

Complete Hub Without Lug Studs	3 Wheel CP	4495014
	STD	4495015
	HP	4495005
	SP	4495019

SPECIFICATIONS

Approximate weight 95 lbs.(43.1 Kg)

Oil Capacity 30 oz.(885 ml)

Power Wheel
Planetary Gear Drive
Model 6
Bearing Nut Retention

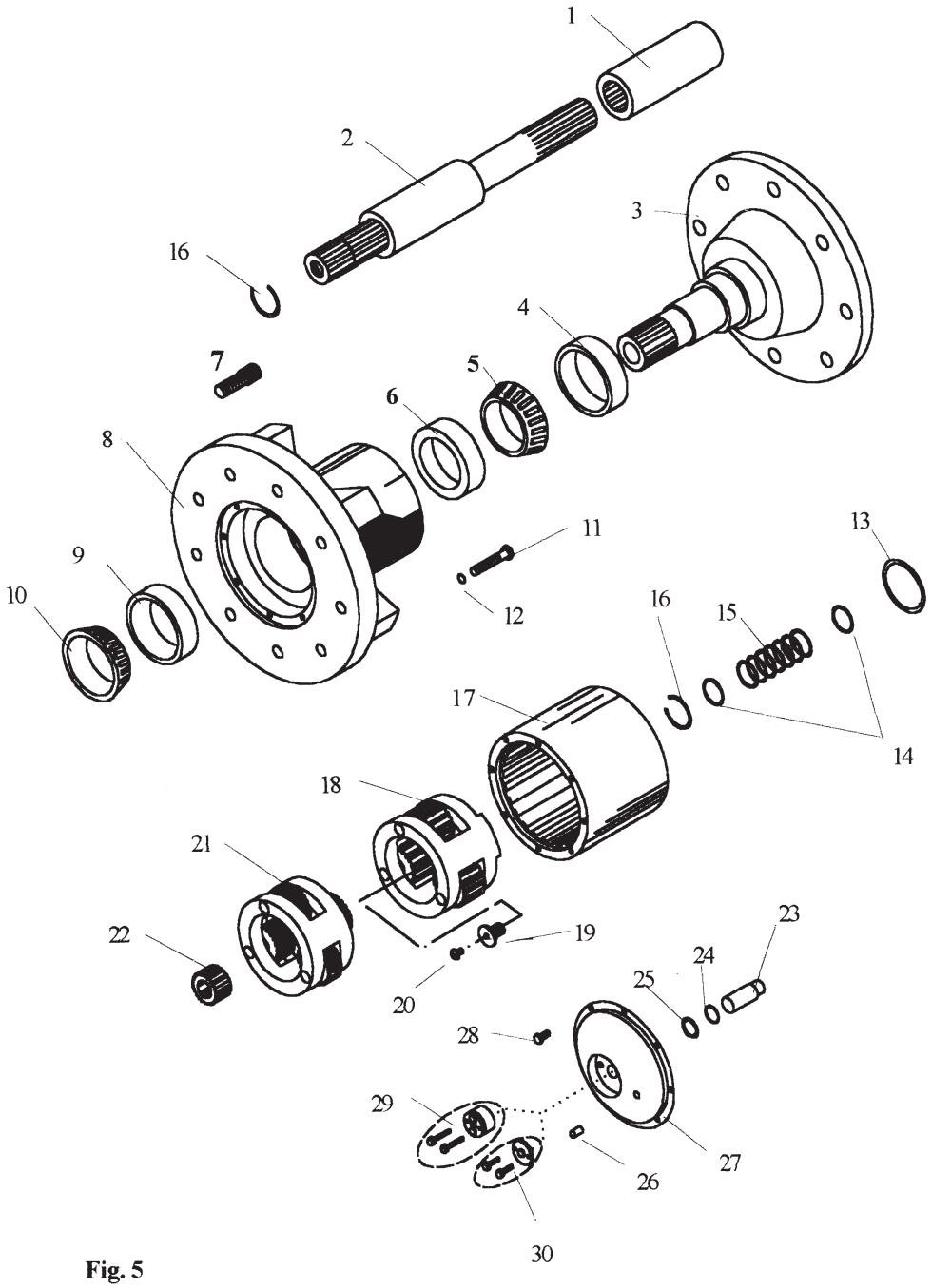


Fig. 5

PARTS LIST

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	Coupling	4205500
2	1	Input Shaft	4793531
3	1	Spindle	4793526
4	1	Oil Seal	4761725
5	1	Bearing Cone	4080398
6	1	Bearing Cup	4080394
7	9	Bolt, Wheel 9/16" 7126655	
8	1	Hub-12 Bolt	4437528
9	1	Bearing Cup	4080394
10	1	Bearing Cone	4080390
11	12	Bolt, 3/8"-24 x 1 7/8"	
		HHCS	7114540
12	12	Washer, Flat 3/8	7958265
13	1	Thrust Washer	4793551
14	2	Thrust Washer	4793541
15	1	Spring dis-engaging	4793546
16	2	Ring Retaining	4793536
17	1	Ring, Gear-12 Bolt	4793570
18	1	Secondary Carrier	
		Model 6 B/N Hub	4445999
19	1	Bearing Locknut	*7114500
20	1	Lockscrew	*7114510
21	1	Primary Carrier	
		for 005 Hub	4446105
	1	Primary Carrier	
		for 015 Hub	4446115
	1	Primary Carrier	
		for 019 Hub	4446119
22	1	Sun Gear; 25 teeth	4446315
	1	Sun Gear; 19 teeth	4446305
	1	Sun Gear; 16 teeth	4446319
23	1	Plunger, Dis-engaging	4650305
24	1	O'Ring	4584111
25	1	Thrust Washer Metal	4793550
26	1	Plug, Pipe	4648100
27	1	Cover	4216268
28	8	Bolt, Hex 5/16"-18 x 1"	
		HHCS	7721523
29	1	Lockout Assembly	1533738
30	1	Dimpled Cover Plate w/	
		2 Bolts, 5/16"-18 x 3/4"	OEM

Complete Hub Without Lug Studs	3 Wheel CP	4496014
	STD	4496015
	HP	4496005
	SP	4496019

Note: Hub Serial Number must be used when ordering any replacement parts. (Located on cover lip in-between bolts.)

*** Serviced as part of the Secondary Carrier Assembly**

SPECIFICATIONS

Approximate weight 95 lbs.(43.1 Kg)

Oil Capacity 30 oz.(885 ml)

Power Wheel
Planetary Gear Drive
Model 8
Snap Ring Retention

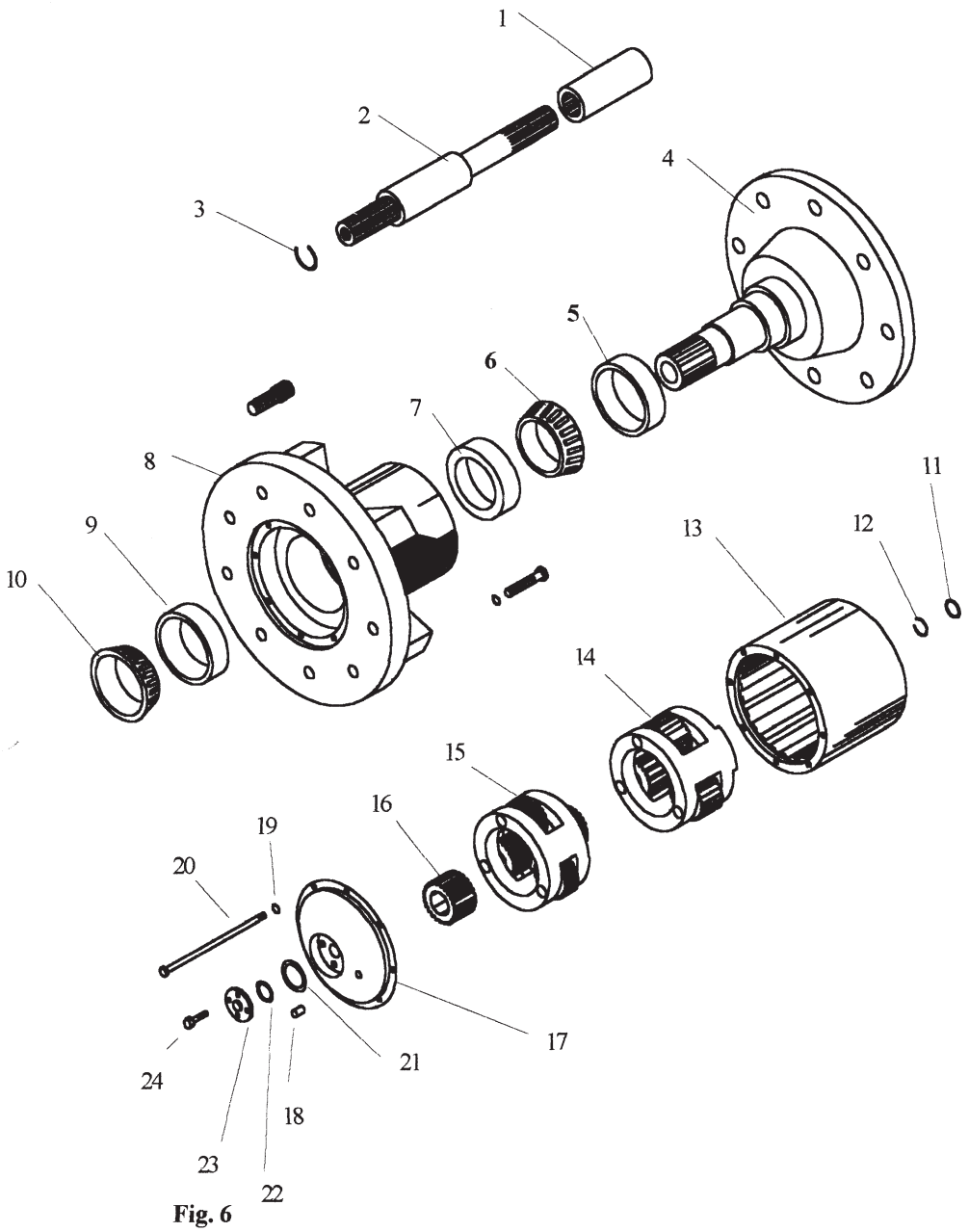


Fig. 6

PARTS LIST

NO.	REQ'D	DESCRIPTION	PART NO.	NO.	REQ'D	DESCRIPTION	PART NO.
1	1	Coupling	4205500	14	1	Secondary Carrier	
2	1	Input Shaft	4793553			Universal	4447100
3	1	Ring, Retaining	4793535	15	1	Primary Carrier	4447140
4	1	Spindle	4793528	16	1	Sun Gear	4447340
5	1	Oil Seal	4761750	17	1	Cover, Large	4216270
6	1	Bearing Cone	4080649	18	1	Plug, drain & filler	4648100
7	1	Bearing Cup	4080610	19	1	Washer, lock 3/8"	7958265
8	1	Hub	4437540	20	1	Bolt, 3/8"-16 X 5 1/2"	
9	1	Bearing Cup	4080910			HHCS, G8P	7721585
10	1	Bearing Cone	4080949	21	1	Gasket	4444510
11	1	Thrust Washer	4793552	22	1	Thrust Washer	4793550
12	1	Ring, Retaining Kit	4698120	23	1	Cover, Small	4216273
13	1	Ring, Gear	4793560	24	4	Bolt, 5/16"-18 x 3/4"	
						HHCS, G8P	7721519

Note: Hub Serial Number must be used when ordering any replacement parts.

SPECIFICATIONS

Approximate weight 169 lbs.(76.6 Kg)

Oil Capacity 47 oz.(1390 ml)

Power Wheel
Planetary Gear Drive
Model 8
Bearing Nut Retention

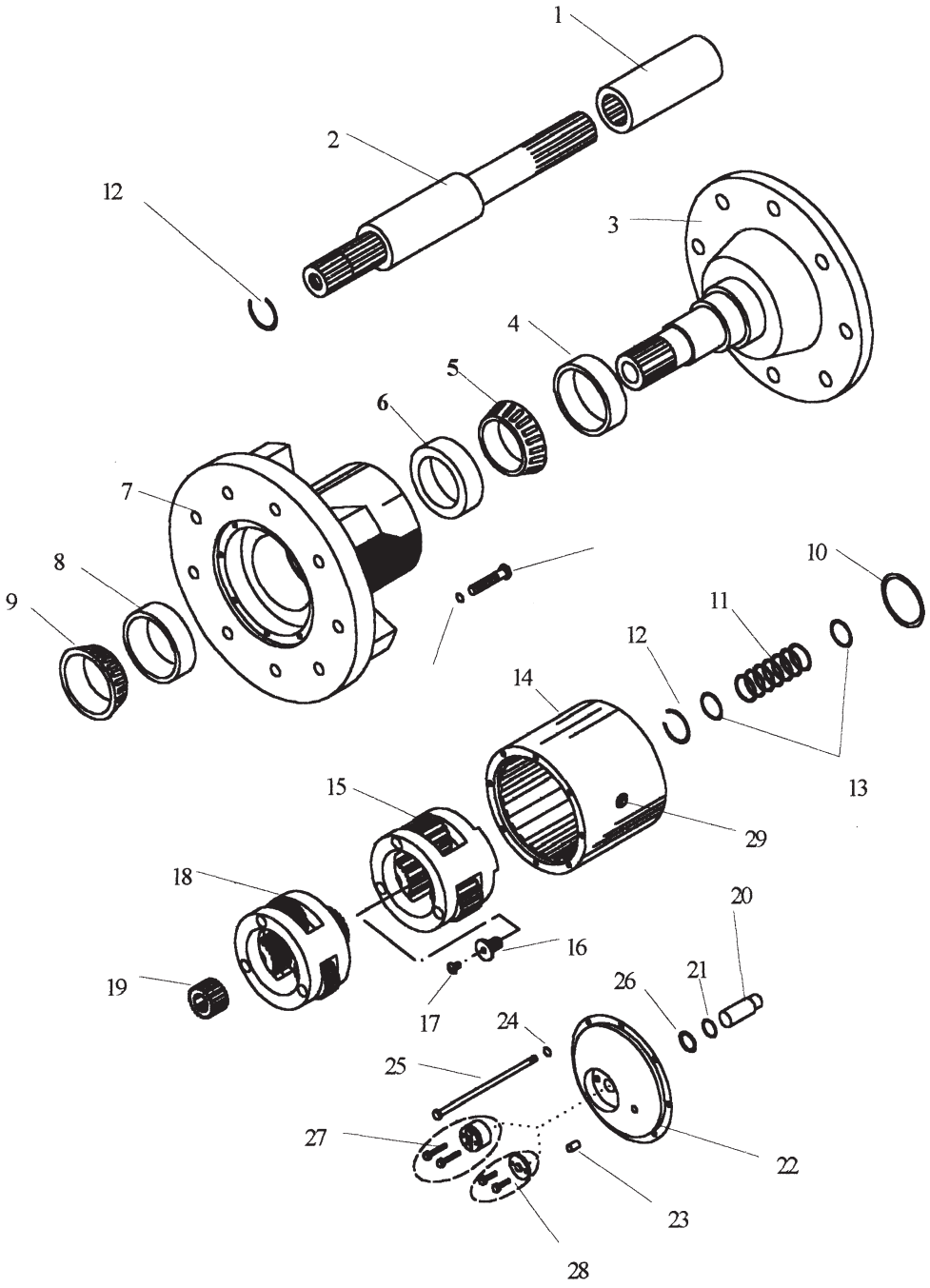


Fig. 7

PARTS LIST

NO.	REQ'D	DESCRIPTION	PART NO.	NO.	REQ'D	DESCRIPTION	PART NO.
1	1	Coupling	4205500	16	1	Bearing Locknut	*7114500
2	1	Input Shaft	4793532	17	1	Lockscrew	*7114510
3	1	Spindle	4793527	18	1	Primary Carrier	4447030
4	1	Oil Seal	4761750	19	1	Sun Gear	4447230
5	1	Bearing Cone	4080649	20	1	Plunger, Dis-engaging	4650305
6	1	Bearing Cup	4080610	21	1	O'Ring	4584111
7	1	Hub	4437550	22	1	Cover	4216275
8	1	Bearing Cup	4080910	23	1	Plug, Pipe	4648105
9	1	Bearing Cone	4080949	24	12	Washer, Flat	7958265
10	1	Thrust Washer	4793553	25	12	Bolt, 3/8"-16 x 5 1/2"	
11	1	Spring dis-engaging	4793546			HHCS, G8P	7721585
12	2	Ring Retaining	4793536	26	1	Thrust Washer Metal	4793550
13	2	Thrust Washer	4793541	27	1	Lockout Assembly	1533738
14	1	Ring, Gear	4793590	28	1	Dimpled Cover Plate w/	
15	1	Secondary Carrier				2 Bolts, 5/16"-18 x 3/4"	OEM
		Universal	4447000	29	1	Plug, Magnetic	4648100

Complete Hub Without	30.5:1	4497800
Lug Studs	39.9:1	4497820

Note: Hub Serial Number must be used when ordering any replacement parts.

* **Serviced as part of Secondary Carrier Assembly**

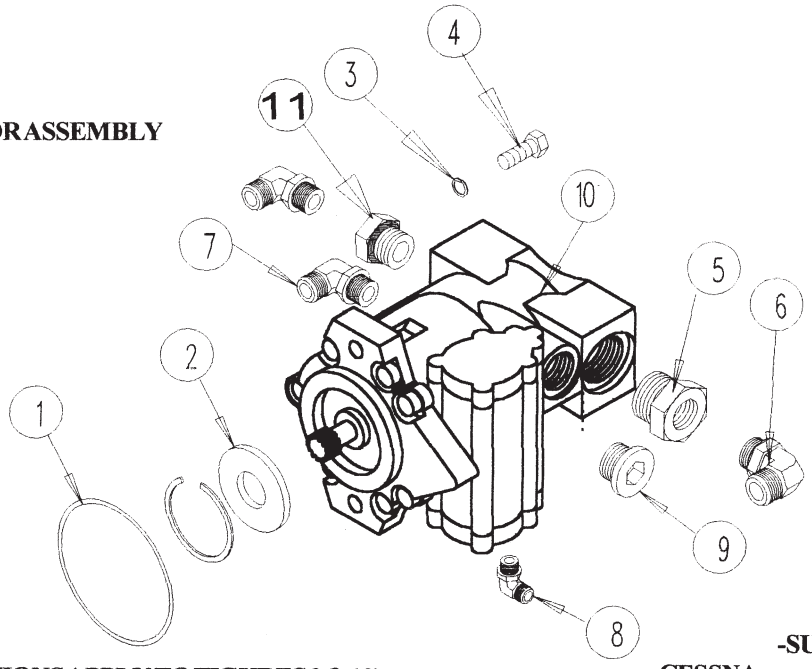
SPECIFICATIONS

Approximate weight 200 lbs. (90.7 Kg)

Oil Capacity 47 oz. (1390 ml)

ITEM	REQ'D	DESCRIPTION	PART NO.
1	1	O'RING, MOTOR TO HUB	4584155
2	1	KIT, MOTOR SHAFT SEAL	4761710
3	2	WASHER, LOCK, 1/2" MED	7962278
4	2	BOLT, HHCS, 1/2"-13 X 2" M46	7750200
5	2	FITTING, HYDRAULIC REDUCER HIGH PRESSURE INLET	1372735
		O'RING, FOR SAE TUBE FITTING (INCLUDED ABOVE)	4595916
6	2	FITTING, 90 DEGREE ELBOW HIGH PRESSURE INLET	1340515
		O'RING, FOR SAE TUBE FITTING (INCLUDED ABOVE)	4595910
7	1	FITTING, 90 DEGREE ELBOW MOTOR DRAIN	1340415
		O'RING, FOR SAE TUBE FITTING (INCLUDED ABOVE)	4595908
8	1	FITTING, 90 DEGREE ELBOW MOTOR SERVO	1340345
		O'RING, FOR SAE TUBE FITTING (INCLUDED ABOVE)	4595906
9	1	FITTING, MOTOR DRAIN PLUG	OEM
		O'RING, FOR SAE TUBE FITTING (INCLUDED ABOVE)	-
10	1	MOTOR, SHIFT ON THE GO MODEL	3549675
11	1	FITTING, HYDRAULIC REDUCER CASE DRAIN 12MOR-8FOR	3372585

FIG. 8
SHIFT ON THE GO MOTOR ASSEMBLY



(THE FOLLOWING DESCRIPTIONS APPLY TO FIGURES 9 & 10)

ITEM	REQ'D	DESCRIPTION	-CESSNA- (FIG. 9) PART NO.	-SUNSTRAND- (FIG. 10) MODEL 18 PART NO.
1	1	O'RING, MOTOR TO HUB	4584155	4584155
2	1	KIT, MOTOR SHAFT SEAL	4761250	4761705
3	2	WASHER, LOCK, 1/2" MED	7962278	7962278
4	2	BOLT, HHCS, 1/2"-13 G8P	7721654	7721656
5	2	FITTING, 90 DEGREE ELBOW HIGH PRESSURE INLET	1340555	1340605
		O'RING, FOR SAE TUBE FITTING (INCLUDED ABOVE)	4595912	4595916
6	1	FITTING, 90 DEGREE ELBOW, SWIVEL 8MOR 6MJ (DRAIN)	3435375	3435375
		O'RING, FOR SAE TUBE FITTING (INCLUDED ABOVE)	4591908	4591908
7	1	HOSE, MOTOR DRAIN w/SPRING GUARD	1481509	1481509
8	1	MOTOR, CESSNA (NEW), SUNSTRAND (NEW)	3549600	3549500
		MOTOR, CESSNA (REBUILT), SUNSTRAND (REBUILT)	3549650	3549550
9	1	FITTING, MOTOR DRAIN PLUG **(SUNSTRAND ONLY)**	-	3366415
		O'RING, FOR SAE TUBE FITTING (INCLUDED ABOVE)	-	4591908

FIG. 9
CESSNA MOTOR ASSEMBLY

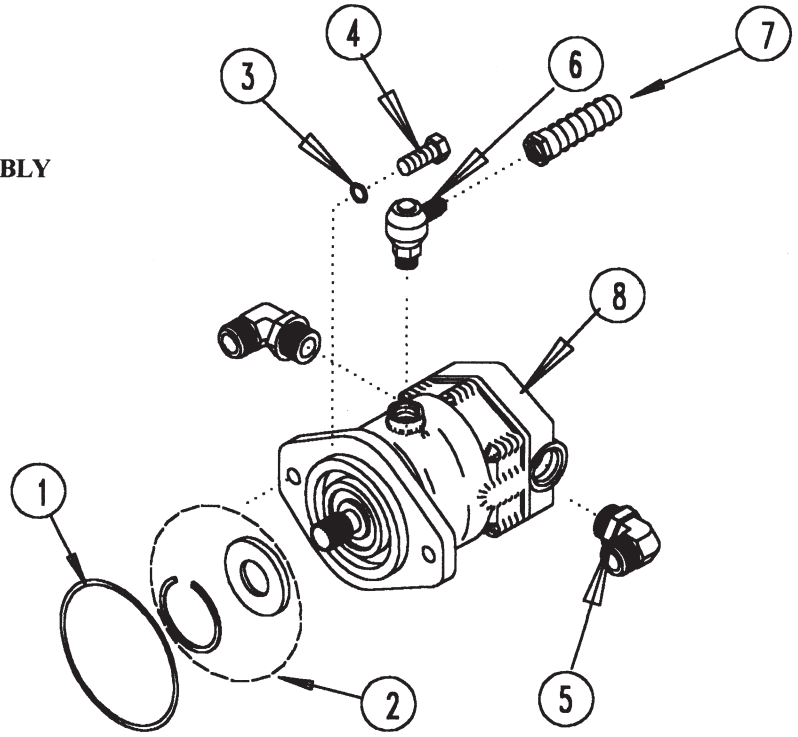
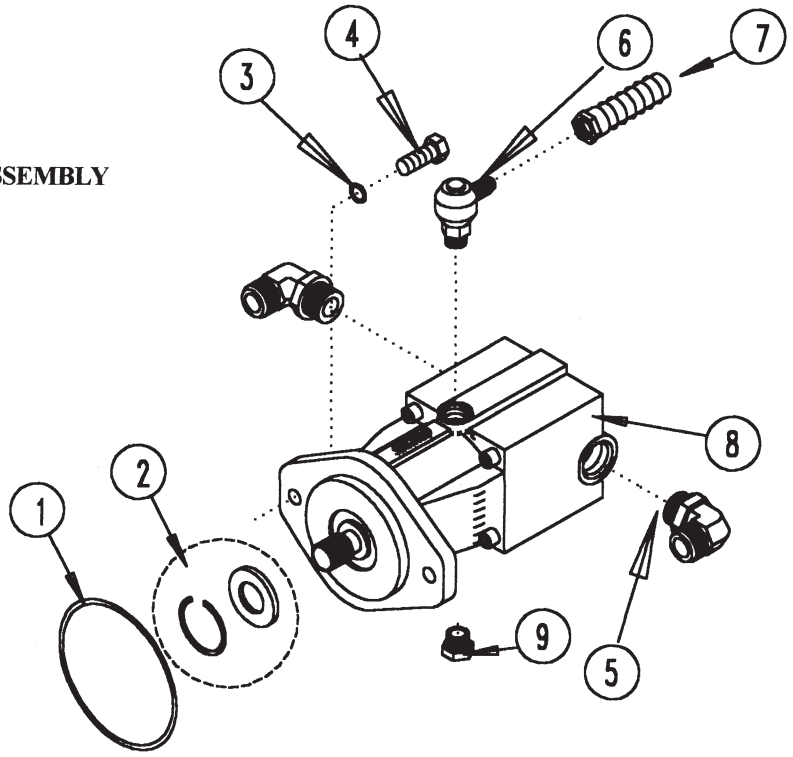


FIG. 10
SUNSTRAND MOTOR ASSEMBLY



HUB AND WHEEL ASSEMBLY

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	HUB, POWER WHEEL 24.53:1 RATIO (NEW)	4495005
	1	HUB, POWER WHEEL 21.7:1 RATIO (NEW)	4495010
	1	HUB, POWER WHEEL 15.08:1 RATIO (NEW)	4495014
	1	HUB, POWER WHEEL 19.1:1 RATIO (NEW)	4495015
	1	HUB, POWER WHEEL 28.37:1 RATIO (NEW)	4495019
	1	HUB, POWER WHEEL 24.53:1 RATIO (REBUILT)	4495105
	1	HUB, POWER WHEEL 21.7:1 RATIO (REBUILT)	4495110
	1	HUB, POWER WHEEL 15.08:1 RATIO (REBUILT)	4495114
	1	HUB, POWER WHEEL 19.1:1 RATIO (REBUILT)	4495115
	1	HUB, POWER WHEEL 28.37:1 RATIO (REBUILT)	4495119
	1	HUB, POWER WHEEL 24.5:1 RATIO BRNG NUT RET	4496005
	1	HUB, POWER WHEEL 21.3:1 RATIO BRNG NUT RET	4496010
	1	HUB, POWER WHEEL 19.6:1 RATIO BRNG NUT RET	4496015
	1	HUB, POWER WHEEL 28.0:1 RATIO BRNG NUT RET	4496019
	1	HUB, POWER WHEEL 30.8:1 RATIO BRNG NUT RET	4497800
	1	HUB, POWER WHEEL 39.9:1 RATIO BRNG NUT RET	4497820
2	1	WHEEL, 14 x 16.1, 1/2" LUG	4982419
	1	WHEEL, 15 x 24, 1/2" LUG	4982524
	1	WHEEL, 15 x 28, 1/2" LUG	4982528
	1	WHEEL, 16 x 26, 1/2" LUG	4982626
	1	WHEEL, 14 x 16.1, 9/16" LUG	4982716
	1	WHEEL, 15 x 24, 9/16" LUG	4982724
	1	WHEEL, 16 x 26, 9/16" LUG	4982726
	1	WHEEL, 15 x 28, 9/16" LUG	4982728
	1	WHEEL, 16 x 26, 9/16" LUG	4982730
	1	WHEEL, 20 x 26, 9/16" LUG	4982736
3	9	NUT, WHEEL, 1/2"-20 HEAVY	7574278
	9	NUT, WHEEL, 9/16"-18 HEAVY	7574280
	9	NUT, WHEEL, 9/16"-18 HEAVY, FOR MEGA	7574282
4	9	LUG STUD 1/2"-20 HEAVY (.622 SPLINE)	7121655
	9	LUG STUD 9/16"-18 HEAVY (.622 SPLINE)	7126655

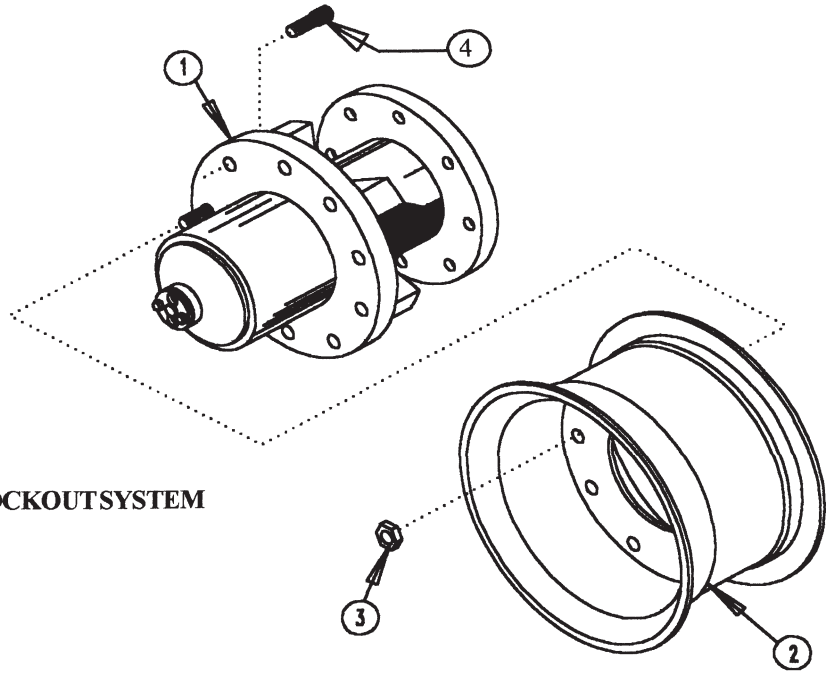


Fig. 11
SHOWN AS STANDARD LOCKOUT SYSTEM

GILCREST

PUSHER™ G

STEERING COMPONENTS

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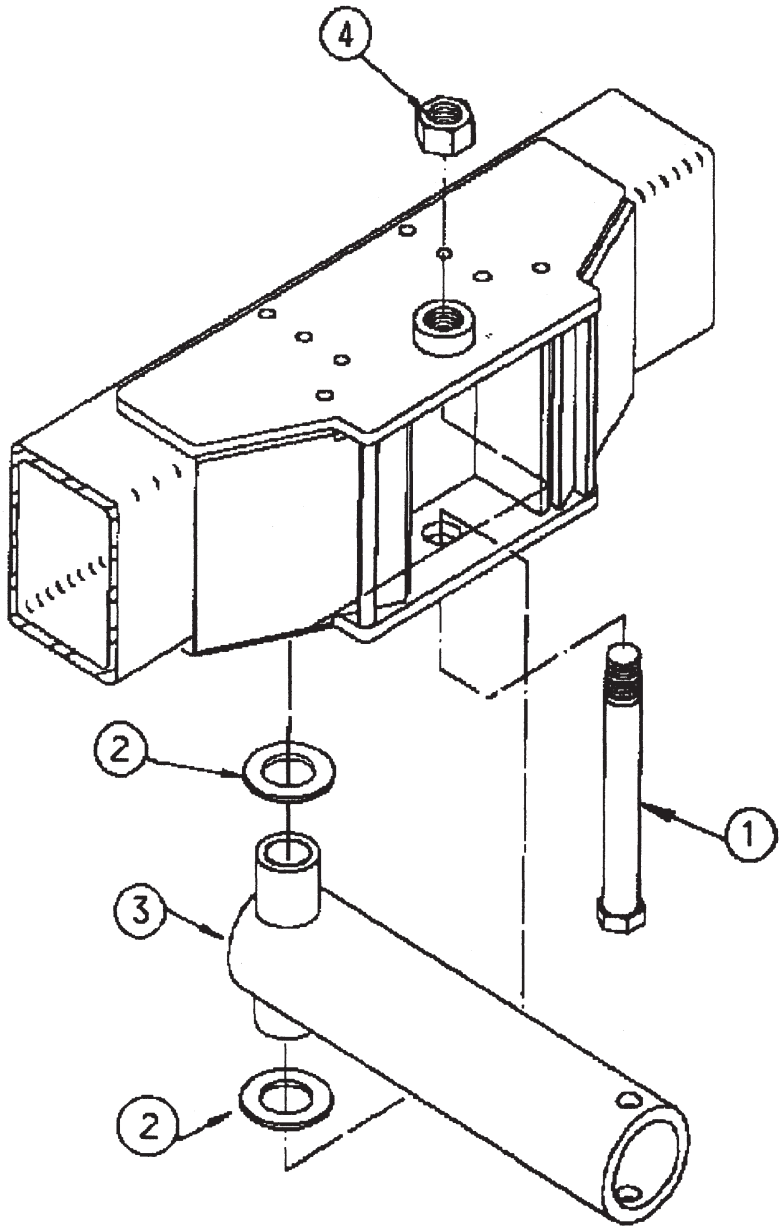
CASE-IH VERTICAL PIVOT PIN ASSEMBLY

ITEM	REQ'D	DESCRIPTION	PART NO.
1	1	PIN, PIVOT TUBE, CASE-IH HEAVY DUTY	1636649
2	2	WASHER, THRUST 1-1/4" x 9/32" x 1/4" THICK	7971378
3	1	PIVOT TUBE ASSEMBLY	1912166
4	1	HEX NUT, 1-1/8"-12 LH	7565358
	1	ZERK, GREASE FTG, 1/4"-28	5997500

THIS ASSEMBLY IS USED ON THE FOLLOWING AXLES:

IH 815	IH 1420	CASE-IH 1620	CASE-IH 1640
IH 1460	IH 1480	CASE-IH 1660	CASE-IH 1680



SPINDLE AND YOKE ASSEMBLY/UNIVERSAL

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	YOKE ASSEMBLY UNIVERSAL	1994786
2	1	SPINDLE ASSEMBLY LH UNIVERSAL	1793852
	1	SPINDLE ASSEMBLY RH UNIVERSAL	1793788
3	2	PIN, KINGPIN BOLT	1636793
4	2	BEARING, SPHERICAL KINGPIN	4075100
5	1	WASHER, SPHERICAL	7970100
6	1	WASHER, TEFLON THRUST	1971851
7	1	SCREW, FLAT HEAD, 8-32 x 3/8"	7730262
8	2	NUT, HEX JAM, 1 1/8"-12 LH	7565359
9	1	INSERT, STERING ARM	1503866
	1	INSERT, STERING ARM	1503867
	1	INSERT, STERING ARM	1503868
	1	INSERT, STERING ARM	1503870
10	2	ZERK, GREASE-STR, 1/4"-28	5997500
11	2	SCREW, SET, ALLEN, 1/4"-28 x 1/4"	7744470
12	2	BOLT, HEX, 5/8"-11 x 1 3/4" G8P	7721753
13	2	NUT, HEX JAM, 5/8"-11	7565294
14	3	WASHER, FLAT, 5/16" MED	7958254
15	1	CLAMP, ADEL, .62 ID	5183600
16	1	WASHER, LOCK, 5/16" MED	7962254
17	1	BOLT, HEX, 5/16"-18 x 3/4" G8P	7721519

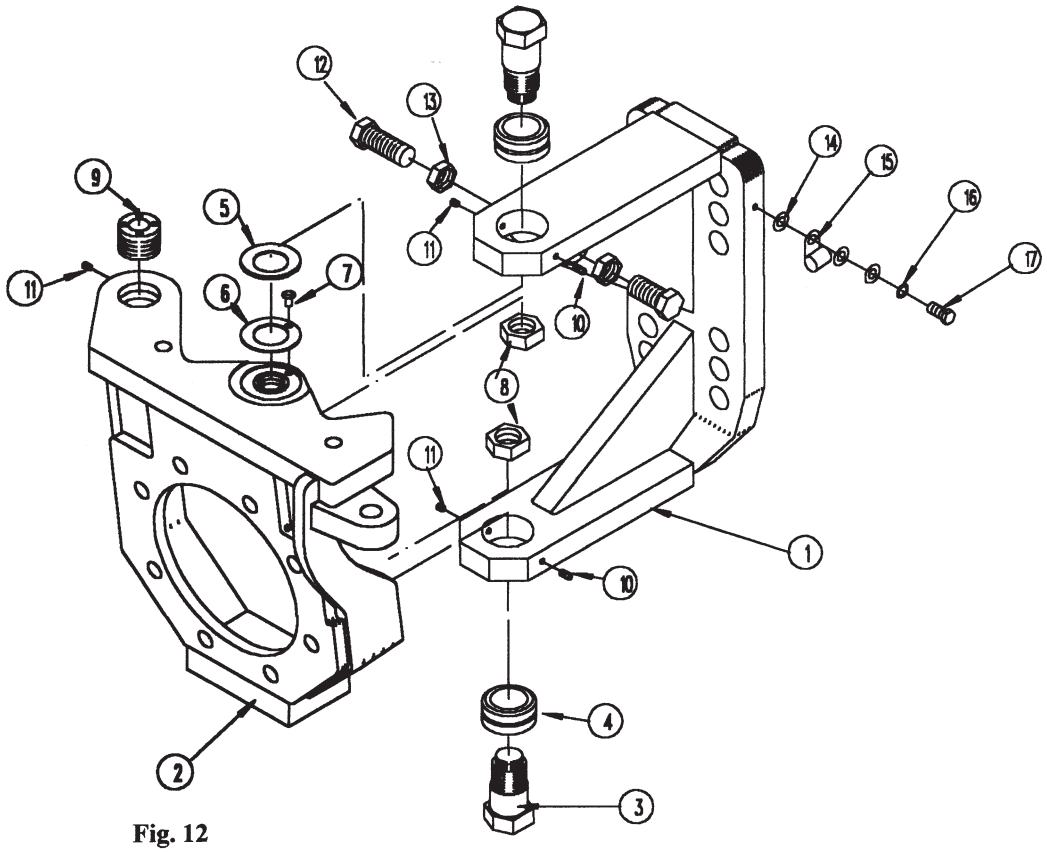


Fig. 12

SPINDLE AND YOKE ASSEMBLY
DEUTZ-ALLIS R50 GLEANER

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	YOKE ASSEMBLY UNIVERSAL	1994786
2	1	SPINDLE ASSEMBLY LH DEUTZ-ALLIS R50	1793901
	1	SPINDLE ASSEMBLY RH DEUTZ-ALLIS R50	1793900
3	2	PIN, KINGPIN BOLT	1636793
4	2	BEARING, SPHERICAL KINGPIN	4075100
5	1	WASHER, SPHERICAL	7970100
6	1	WASHER, TEFLON THRUST	1971851
7	1	SCREW, FLAT HEAD, 8-32 x 3/8"	7730262
8	2	NUT, HEX JAM, 1 1/8"-12 LH	7565359
9	1	INSERT, STERING ARM	1503870
10	2	ZERK, GREASE-STR, 1/4"-28	5997500
11	2	SCREW, SET, ALLEN, 1/4"-28 x 1/4"	7744470
12	2	BOLT, HEX, 5/8"-11 x 1 3/4" G8P	7721753
13	2	NUT, HEX JAM, 5/8"-11	7565294
14	1	TIE ROD ASSEMBLY, 106" OAL	1883100-212
15	1	NUT, HEX JAM, 1"-16 LH	7565343
	1	NUT, HEX JAM, 1"-16 RH	7565342
16	1	END, TIE ROD, ES330 LH HD	5251331
	1	END, TIE ROD, ES330 RH HD	5251330
17	1	NUT, HEX, CASTLE (INCLUDED w/TIE ROD END)	
18	1	COTTER PIN (INCLUDED w/TIE ROD END)	
19	3	WASHER, FLAT, 5/16" MED	7958254
20	1	CLAMP, ADEL, .62 ID	5183600
21	1	WASHER, LOCK, 5/16" MED	7962254
22	1	BOLT, HEX, 5/16"-18 x 3/4" G8P	7721519

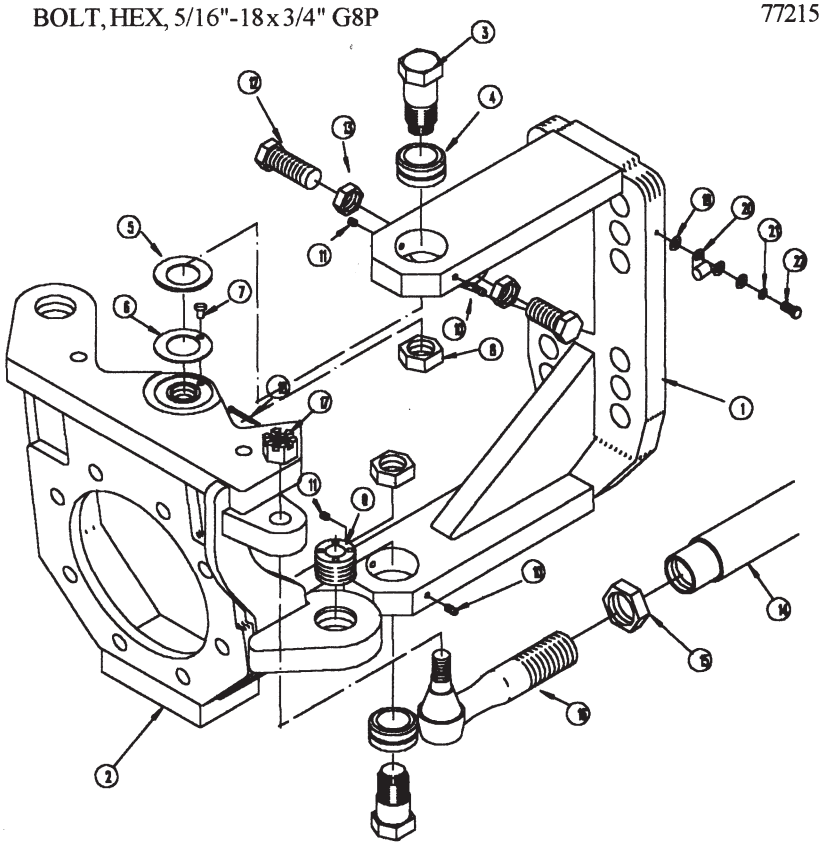


Fig. 13

SPINDLE AND YOKE ASSEMBLY
JOHN DEERE 4435

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	YOKE ASSEMBLY UNIVERSAL	1994786
2	1	SPINDLE ASSEMBLY RH	1793963
	1	SPINDLE ASSEMBLY LH	1793964
3	2	PIN, KINGPIN BOLT	1636793
4	2	BEARING, SPHERICAL KINGPIN	4075100
5	1	WASHER, SPHERICAL	7970100
6	1	WASHER, TEFLON THRUST	1971851
7	1	SCREW, FLAT HEAD, 8-32 x 3/8"	7730262
8	2	NUT, HEX JAM, 1 1/8"-12 LH	7565359
9	1	INSERT, STERING ARM	1503879
10	2	ZERK, GREASE-STR, 1/4"-28	5997500
11	2	SCREW, SET, ALLEN, 1/4"-28 x 1/4"	7744470
12	2	BOLT, HEX, 5/8"-11 x 1 3/4" G8P	7721753
13	2	NUT, HEX JAM, 5/8"-11	7565294
14	3	WASHER, FLAT, 5/16" MED	7958254
15	1	CLAMP, ADEL, .62 ID	5183600
16	1	WASHER, LOCK, 5/16" MED	7962254
17	1	BOLT, HEX, 5/16"-18 x 3/4" G8P	7721519

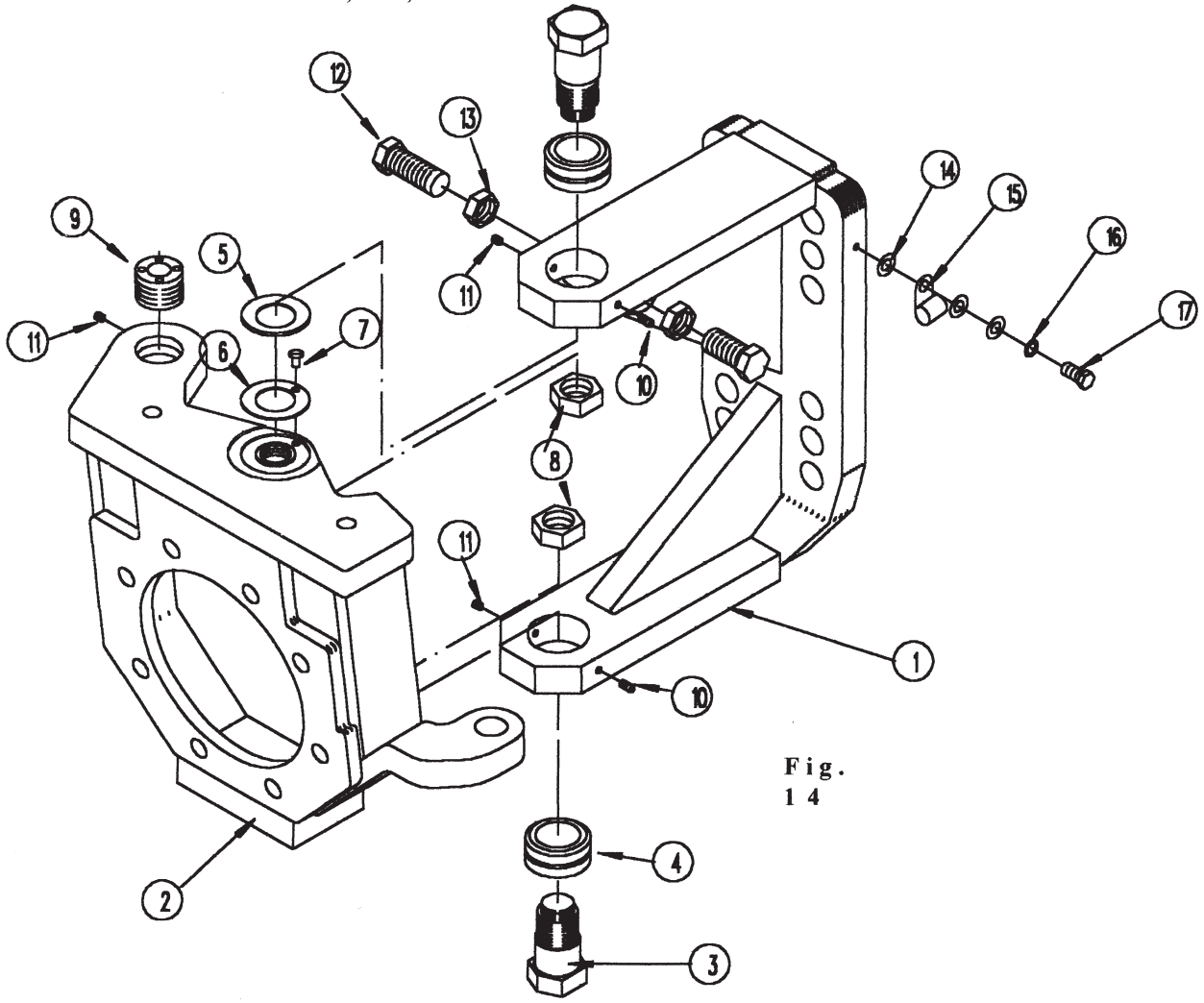


Fig. 14

SPINDLE AND YOKE ASSEMBLY
JOHN DEERE 6620/7720/8820 HEAVY DUTY

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	YOKE ASSEMBLY JOHN DEERE HEAVY DUTY	1994531
2	1	SPINDLE ASSEMBLY LH JOHN DEERE HEAVY DUTY	1793934
	1	SPINDLE ASSEMBLY RH JOHN DEERE HEAVY DUTY	1793933
3	2	PIN, KINGPIN BOLT	1636793
4	2	BEARING, SPHERICAL KINGPIN	4075100
5	1	WASHER, SPHERICAL	7970100
6	1	WASHER, TEFLON THRUST	1971851
7	1	SCREW, FLAT HEAD, 8-32 x 3/8"	7730262
8	2	NUT, HEX JAM, 1 1/8"-12 LH	7565359
9	1	INSERT, STERING ARM (C)	1503868
10	2	ZERK, GREASE-STR, 1/4"-28	5997500
11	2	SCREW, SET, ALLEN, 1/4"-28 x 1/4"	7744470
12	2	BOLT, HEX, 5/8"-11 x 1 3/4" G8P	7721753
13	2	NUT, HEX JAM, 5/8"-11	7565294
14	4	WASHER, LOCK (ORIGINAL EQUIPMENT)	
15	4	BOLT, YOKE MOUNTING (ORIGINAL EQUIPMENT)	
16	2	CLAMP, ADEL, .62 ID	5183600
17	3	WASHER, FLAT, 5/16" MED	7958254
18	2	WASHER, LOCK, 5/16" MED	7962254
19	1	BOLT, HEX, 5/16"-18 x 3/4" G8P	7721519
20	1	NUT, HEX, 5/16"-18	7651254
21	1	BRACKET, HOSE MOUNT, JOHN DEERE HEAVY DUTY	1136950
22	1	SPACER, AXLE HOSE CLAMP	5791500
23	2	CLAMP, ADEL, .94 ID	5183729
24	1	BOLT, HEX, 5/16"-18 x 2" G8P	7721531

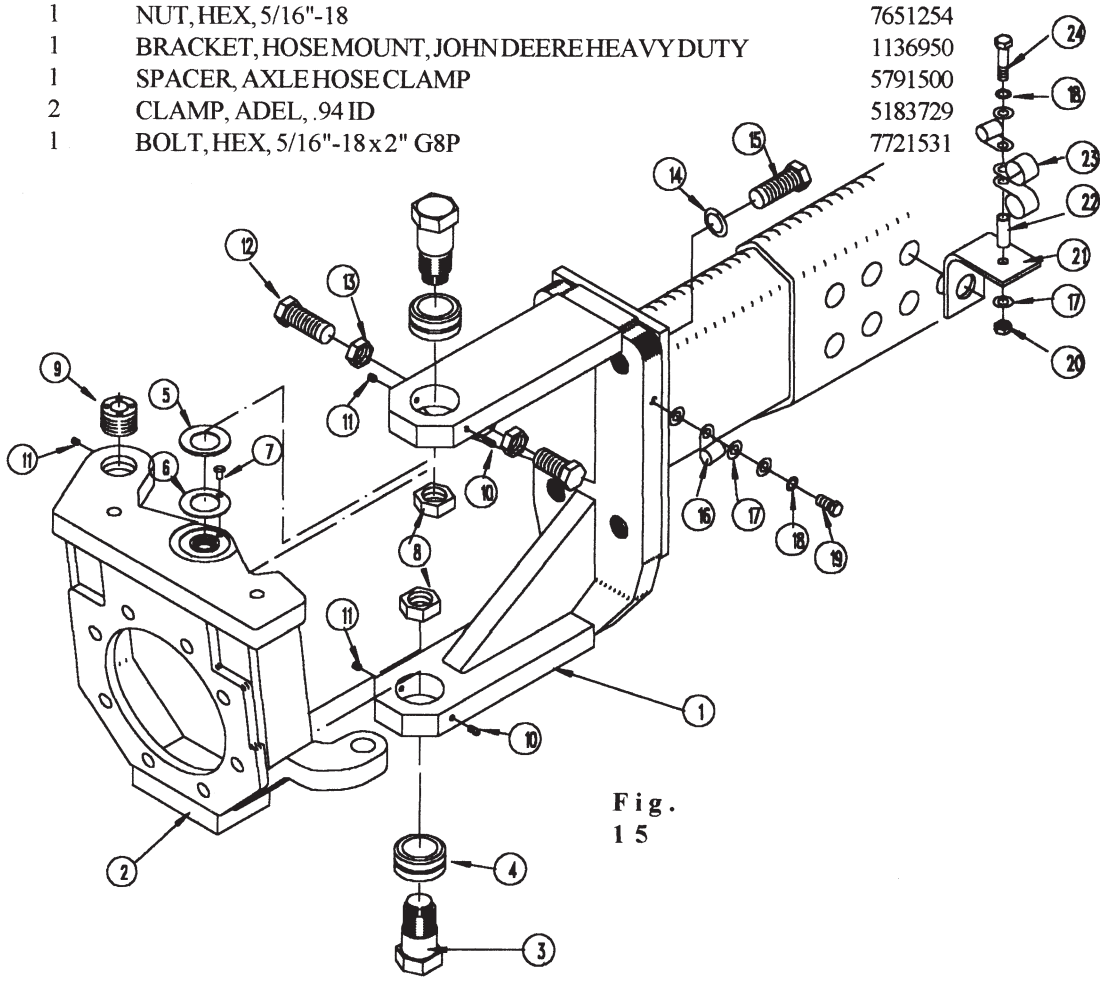


Fig. 15

SPINDLE AND YOKE ASSEMBLY
JOHN DEERE 9400/9500/9600 MAXIMIZER COMBINES

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	YOKE ASSEMBLY JOHN DEERE HEAVY DUTY	1994786
2	1	SPINDLE ASSEMBLY RH JOHN DEERE MAXIMIZER	1793954
	1	SPINDLE ASSEMBLY LH JOHN DEERE MAXIMIZER	1793955
3	2	PIN, KINGPIN BOLT	1636793
4	2	BEARING, SPHERICAL KINGPIN	4075100
5	1	WASHER, SPHERICAL	7970100
6	1	WASHER, TEFLON THRUST	1971851
7	1	SCREW, FLAT HEAD, 8-32 x 3/8"	7730262
8	2	NUT, HEX JAM, 1 1/8"-12 LH	7565359
9	1	INSERT, STERING ARM	1503877
10	2	ZERK, GREASE-STR, 1/4"-28	5997500
11	2	SCREW, SET, ALLEN, 1/4"-28 x 1/4"	7744470
12	2	BOLT, HEX, 5/8"-11 x 1 3/4" G8P	7721753
13	2	NUT, HEX JAM, 5/8"-11	7565294
14	3	WASHER, FLAT, 5/16" MED	7958254
15	1	CLAMP, ADEL, .62 ID	5183600
16	1	WASHER, LOCK, 5/16" MED	7962254
17	1	BOLT, HEX, 5/16"-18 x 3/4" G8P	7721519

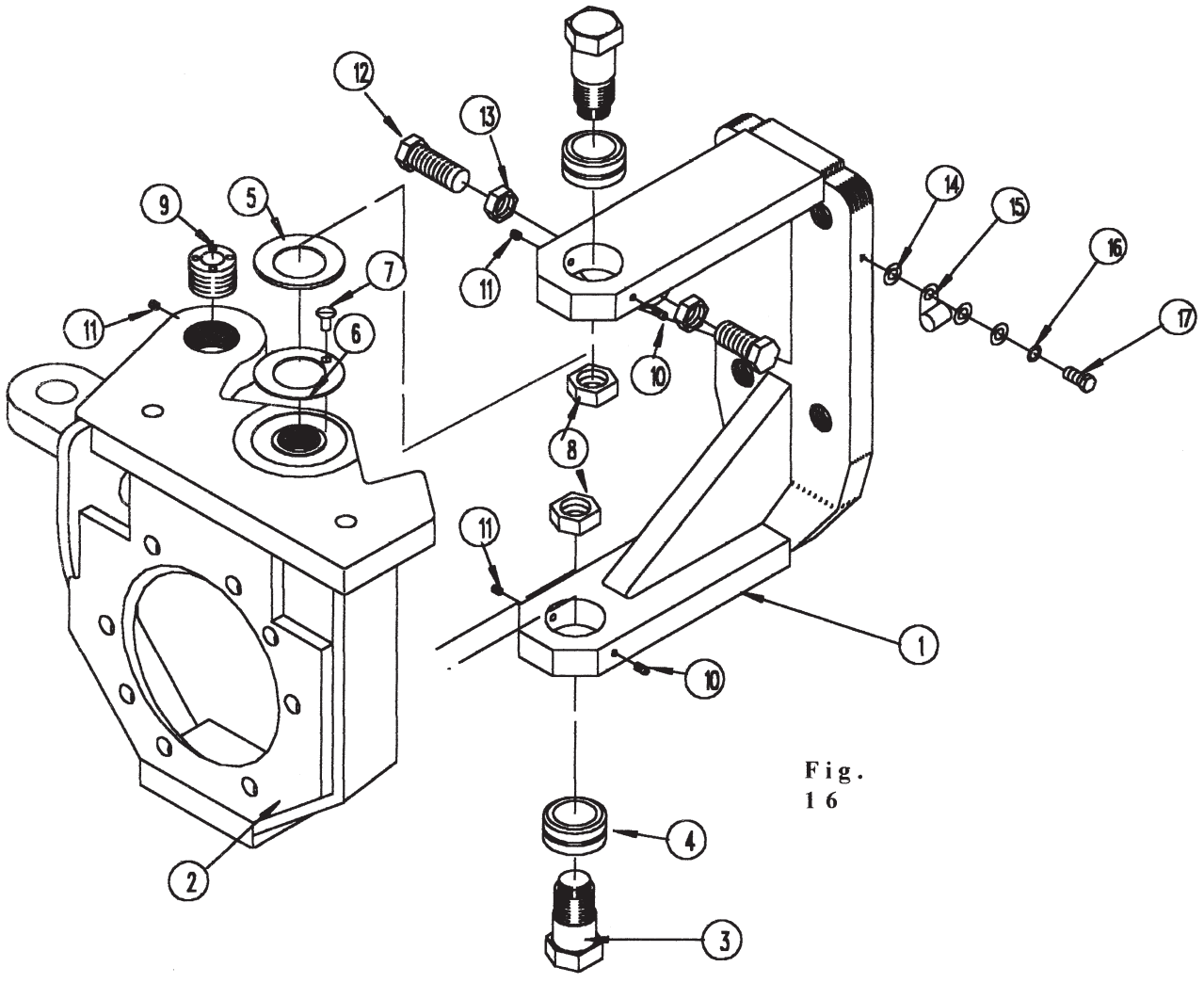
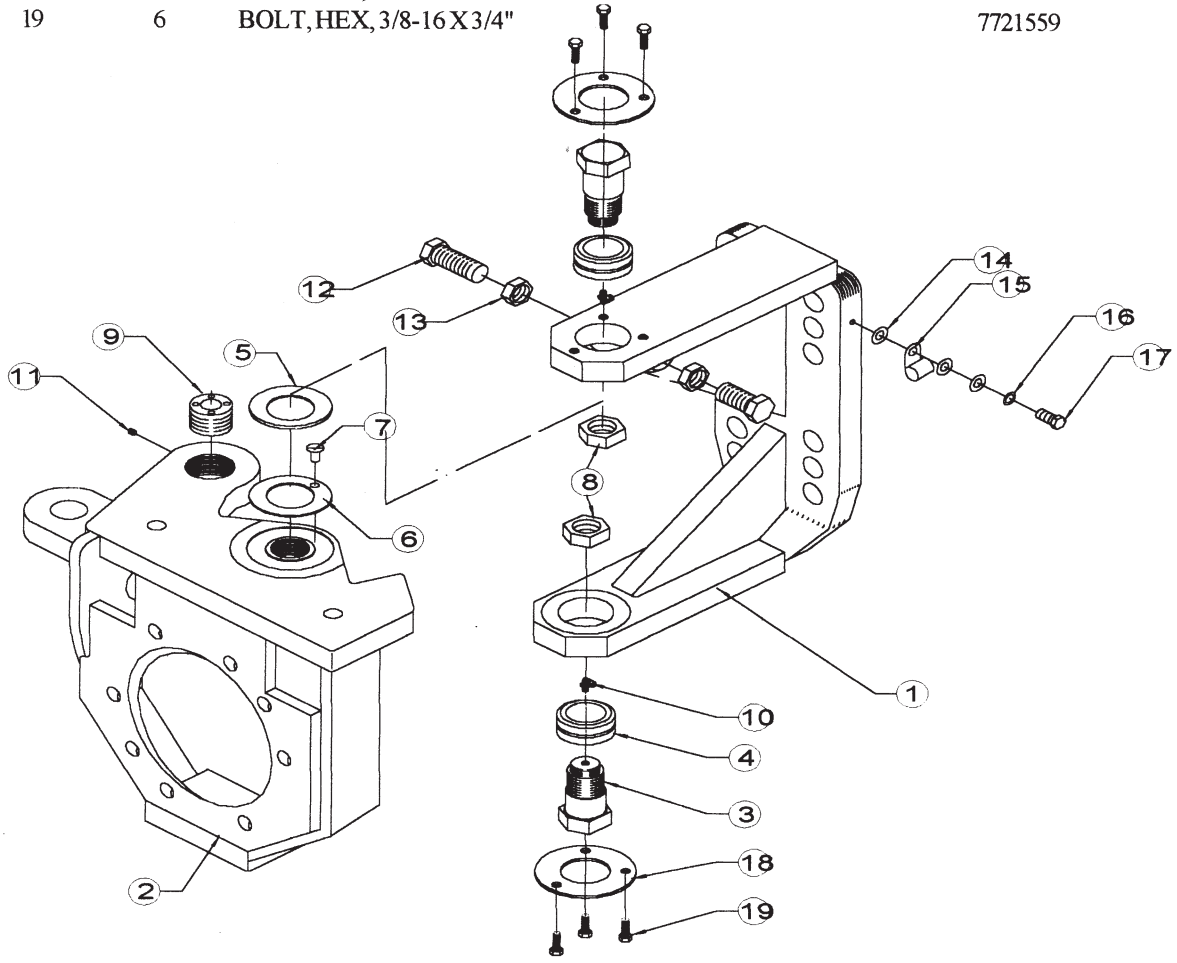


Fig. 16

BRUTE SPINDLE AND YOKE ASSEMBLY
JOHN DEERE MAXIMIZER COMBINES
AFTER SERIAL NUMBER 9500

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	YOKE ASSEMBLY JOHN DEERE BRUTE	1194601
2	1	SPINDLE ASSEMBLY RH JOHN DEERE BRUTE MAXIMIZER	1793958
	1	SPINDLE ASSEMBLY LH JOHN DEERE BRUTE MAXIMIZER	1793959
3	2	PIN, BRUTE KINGPIN BOLT	1636150
4	2	BEARING, SPHERICAL BRUTE KINGPIN	4075102
5	1	WASHER, BRUTE SPHERICAL THRUST	1790150
6	1	WASHER, TEFLON THRUST	1971486
7	1	SCREW, FLAT HEAD, 8-32 x 3/8"	7730262
8	2	NUT, HEX JAM, 1-1/4-12 LH	7566374
9	1	INSERT, STERING ARM	1503877
10	2	ZERK, GREASE-90° 1/8"-27	5997335
11	1	SCREW, SET, ALLEN, 1/4"-28 x 1/4"	7744470
12	2	BOLT, HEX, 5/8"-11 x 1 3/4" G8P	7721753
13	2	NUT, HEX JAM, 5/8"-11	7565294
14	3	WASHER, FLAT, 5/16" MED	7958254
15	1	CLAMP, ADEL, .62 ID	5183600
16	1	WASHER, LOCK, 5/16" MED	7962254
17	1	BOLT, HEX, 5/16"-18 x 3/4" G8P	7721519
18	2	RETAINER, BEARING BRUTE YOKE	1694940
19	6	BOLT, HEX, 3/8-16 X 3/4"	7721559



SPINDLE AND YOKE ASSEMBLY
JOHN DEERE 9930 COTTON PICKER

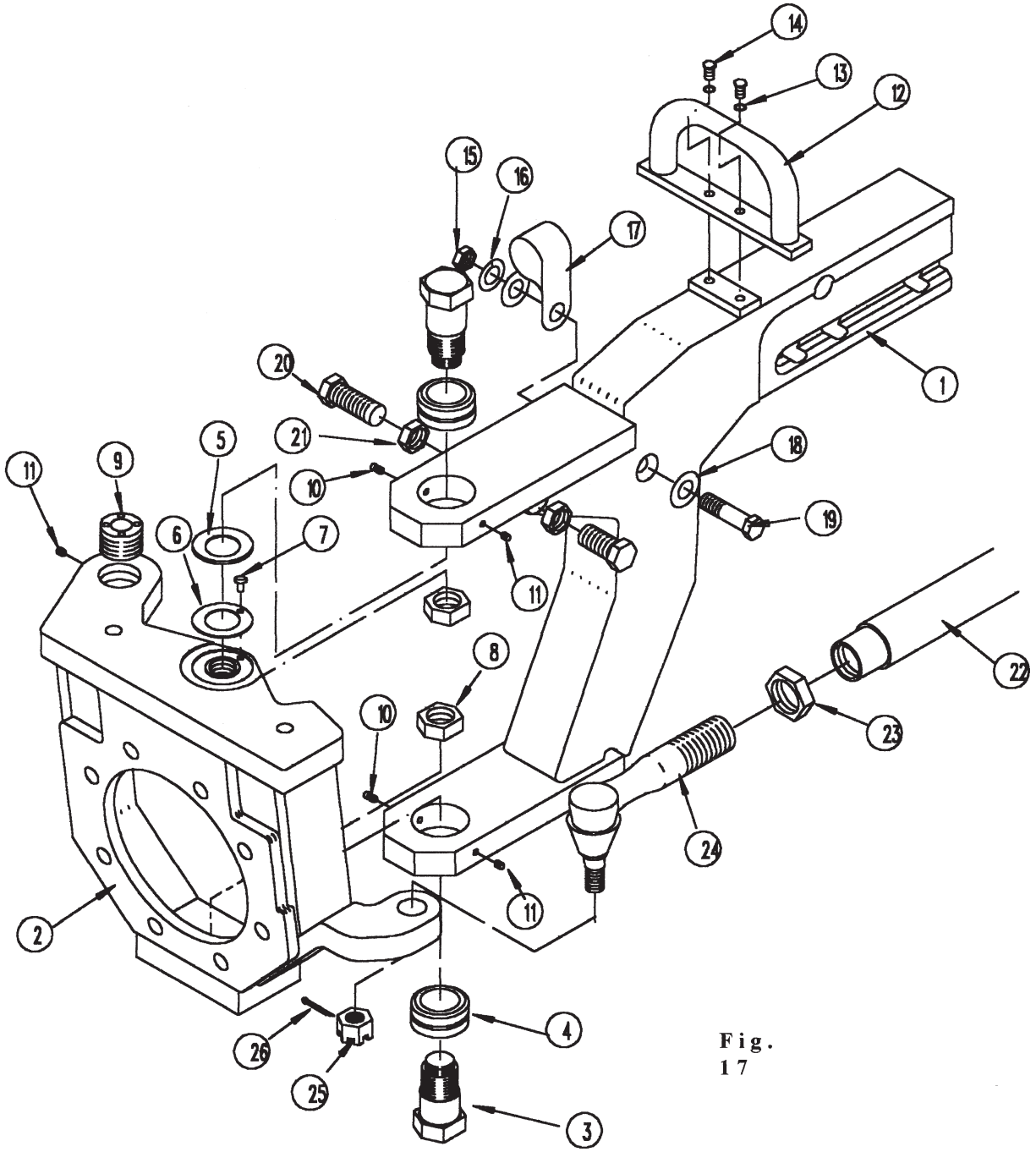


Fig. 17

SPINDLE AND YOKE ASSEMBLY
JOHN DEERE 9930 COTTON PICKER

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	YOKE ASSEMBLY RH JOHN DEERE 9930 CP	1994490
	1	YOKE ASSEMBLY LH JOHN DEERE 9930 CP	1994491
2	1	SPINDLE ASSEMBLY RH JOHN DEERE 9930 CP	1793963
	1	SPINDLE ASSEMBLY LH JOHN DEERE 9930 CP	1793964
3	2	PIN, KINGPIN BOLT	1636793
4	2	BEARING, SPHERICAL KINGPIN	4075100
5	1	WASHER, SPHERICAL	7970100
6	1	WASHER, TEFLON THRUST	1971851
7	1	SCREW, FLAT HEAD, 8-32 x 3/8"	7730262
8	2	NUT, HEX JAM, 1 1/8"-12 LH	7565359
9	1	INSERT, STERING ARM	1503868
10	2	ZERK, GREASE-STR, 1/4"-28	5997500
11	3	SCREW, SET, ALLEN, 1/4"-28 x 1/4"	7744470
12	1	HOSE GUIDE	1458501
13	2	WASHER, LOCK, 5/16" MED	7962254
14	2	BOLT, HEX, 5/16"-18 x 3/4" G8P	7721519
15	1	NUT, HEX, 3/8"-16 PLTD	7561262
16	1	WASHER, LOCK, 3/8" MED	7962262
17	1	CLAMP, ADEL, .62 ID	5183600
18	2	WASHER, FLAT, 3/8" MED	7958262
19	1	BOLT, HEX, 3/8"-16 x 3" G8P	7721575
20	2	BOLT, HEX, 5/8"-11 x 1 3/4" G8P	7721753
21	2	NUT, HEX JAM, 5/8"-11	7565294
22	1	TIE ROD ASSEMBLY, 62.5" OAL	1883101-128
23	1	NUT, HEX JAM, 1"-16 RH	7565342
	1	NUT, HEX JAM, 1"-16 LH	7565343
24	1	END, TIE ROD, ES330 RH HD	5251330
	1	END, TIE ROD, ES330 LH HD	5251331
25	1	NUT, HEX, CASTLE (INCLUDED w/TIE ROD END)	
26	1	COTTER PIN (INCLUDED w/TIE ROD END)	

SPINDLE AND YOKE ASSEMBLY
JOHN DEERE 9940/9950 COTTON PICKER

SERIAL #'s AFTER 6047

(SERIAL #'s PRIOR TO 6047 SEE PAGE 120/121)

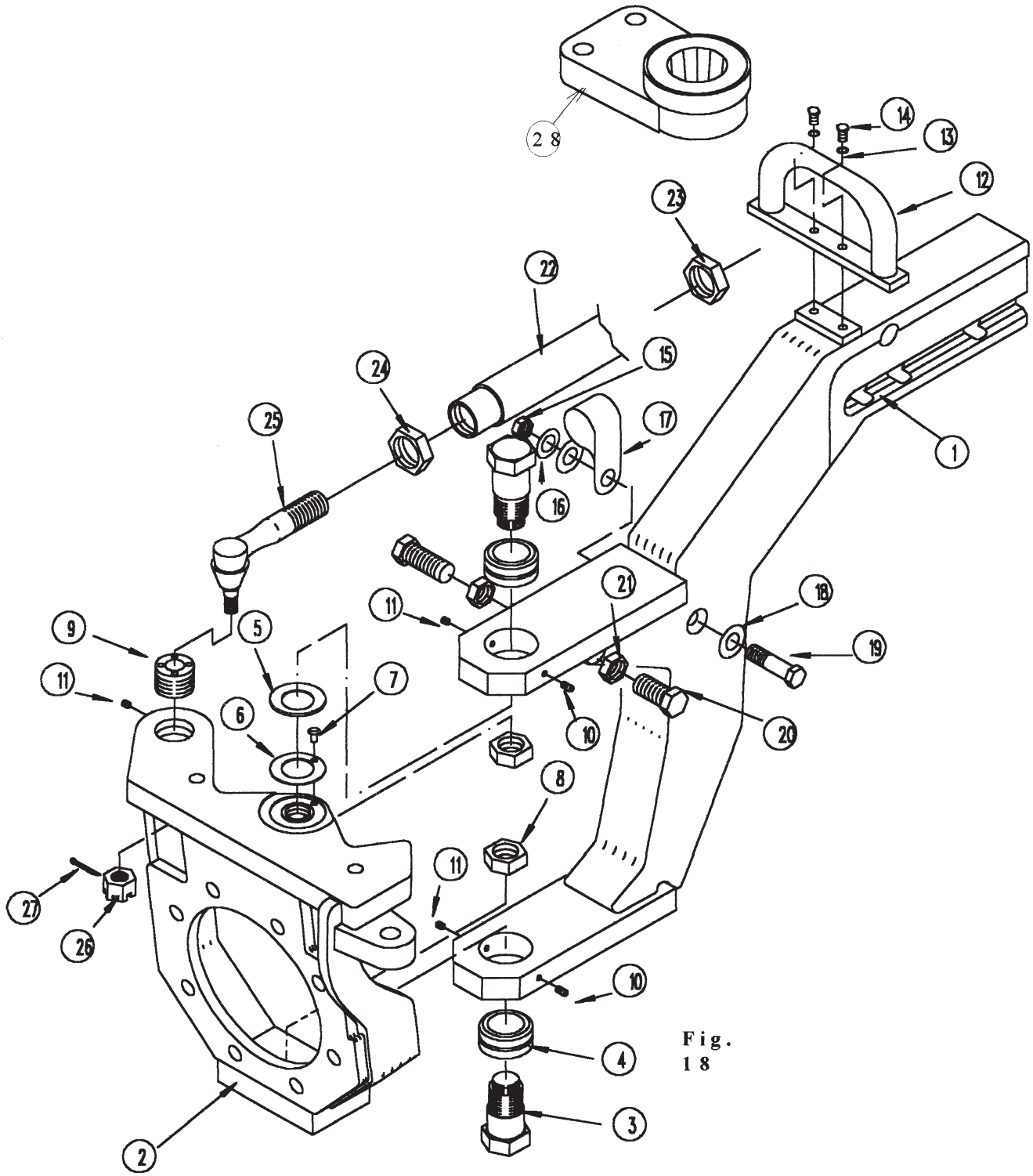


Fig. 18

SPINDLE AND YOKE ASSEMBLY
JOHN DEERE 9940/9950 COTTON PICKER

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	YOKE ASSEMBLY LH JOHN DEERE 9940/9950 CP	1994501
	1	YOKE ASSEMBLY RH JOHN DEERE 9940/9950 CP	1994500
2	1	SPINDLE ASSEMBLY LH UNIVERSAL	1793852
	1	SPINDLE ASSEMBLY RH UNIVERSAL	1793788
3	2	PIN, KINGPIN BOLT	1636793
4	2	BEARING, SPHERICAL KINGPIN	4075100
5	1	WASHER, SPHERICAL	7970100
6	1	WASHER, TEFLON THRUST	1971851
7	1	SCREW, FLAT HEAD, 8-32 x 3/8"	7730262
8	2	NUT, HEX JAM, 1 1/8"-12 LH	7565359
9	2	INSERT, STERING ARM	1503875
10	2	ZERK, GREASE-STR, 1/4"-28	5997500
11	3	SCREW, SET, ALLEN, 1/4"-28 x 1/4"	7744470
12	1	HOSE GUIDE	1458501
13	2	WASHER, LOCK, 1/4" MED	7962246
14	2	BOLT, HEX, 1/4"-20 x 1/2" G8P	7721474
15	1	NUT, HEX, 3/8"-16 PLTD	7561262
16	1	WASHER, LOCK, 3/8" MED	7962262
17	1	CLAMP, ADEL, .62 ID	5183600
18	2	WASHER, FLAT, 3/8" MED	7958262
19	1	BOLT, HEX, 3/8"-16 x 3" G8P	7721575
20	2	BOLT, HEX, 5/8"-11 x 1 3/4" G8P	7721753
21	2	NUT, HEX JAM, 5/8"-11	7565294
22	2	TIE ROD ASSEMBLY, 28" OAL	1883101-057
23	1	NUT, HEX JAM, 1"-16 RH	7565342
24	1	NUT, HEX JAM, 1"-16 LH	7565343
25	2	END, TIE ROD, ES330 LH HD	5251331
26	1	NUT, HEX, CASTLE (INCLUDED w/TIE ROD END)	
27	1	COTTER PIN (INCLUDED w/TIE ROD END)	
28	1	ARM, SPLINED HUB STEERING	1029931

SPINDLE AND YOKE ASSEMBLY
JOHN DEERE 9960 COTTON PICKER

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	YOKE ASSEMBLY UNIVERSAL	1994786
2	1	SPINDLE ASSEMBLY RH JOHN DEERE 9960	1793950
	1	SPINDLE ASSEMBLY LH JOHN DEERE 9960	1793951
3	2	PIN, KINGPIN BOLT	1636793
4	2	BEARING, SPHERICAL KINGPIN	4075100
5	1	WASHER, SPHERICAL	7970100
6	1	WASHER, TEFLON THRUST	1971851
7	1	SCREW, FLAT HEAD, 8-32 x 3/8"	7730262
8	2	NUT, HEX JAM, 1 1/8"-12 LH	7565359
9	1	INSERT, STERING ARM 9960	1503875-E
10	2	ZERK, GREASE-STR, 1/4"-28	5997500
11	2	SCREW, SET, ALLEN, 1/4"-28 x 1/4"	7744470
12	2	BOLT, HEX, 5/8"-11 x 1 3/4" G8P	7721753
13	2	NUT, HEX JAM, 5/8"-11	7565294

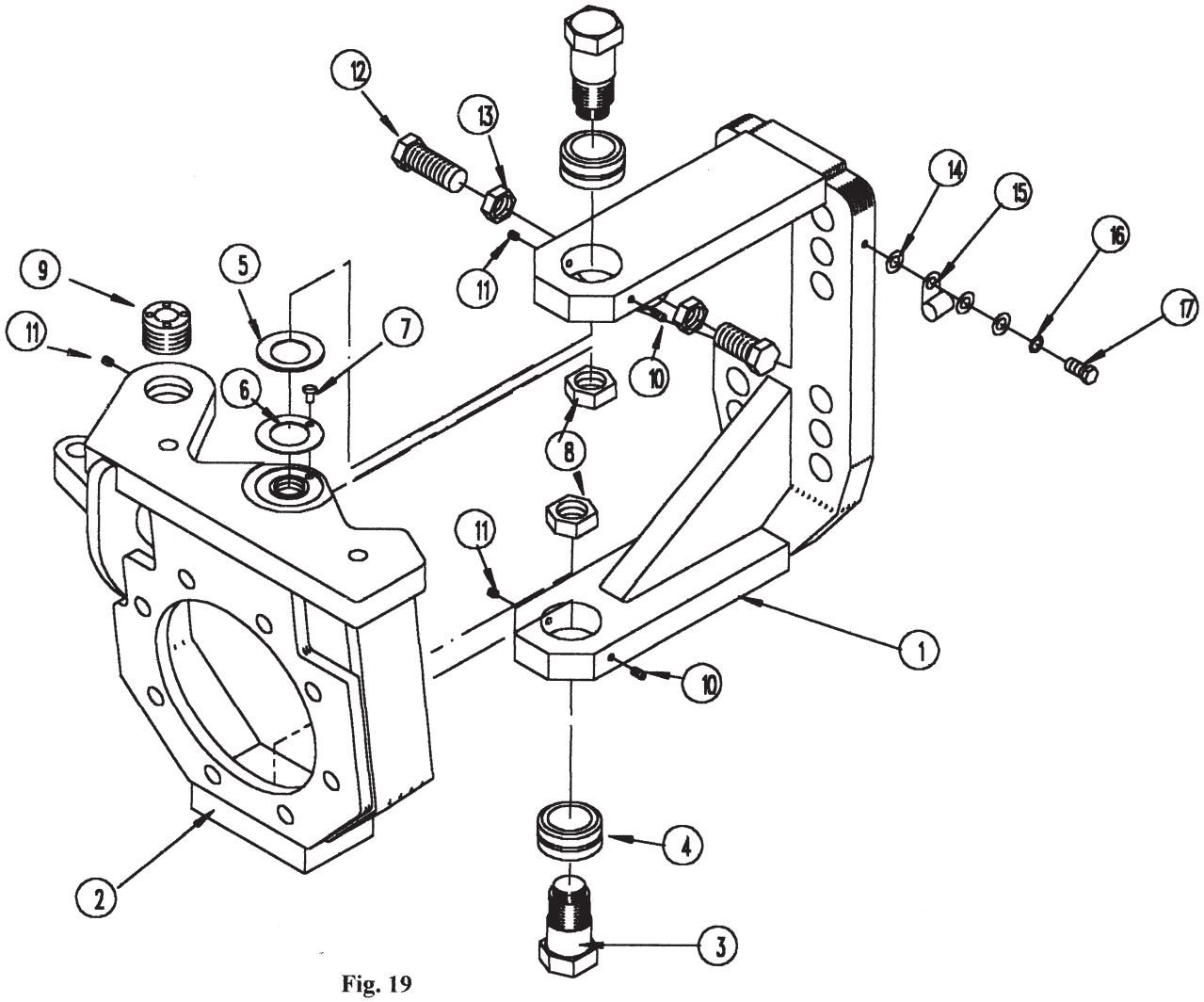


Fig. 19

SPINDLE AND YOKE ASSEMBLY
NEW HOLLAND TR-75 & TR-85 AXLE

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	YOKE ASSEMBLY UNIVERSAL	1994786
2	1	SPINDLE ASSEMBLY RH	1793963
	1	SPINDLE ASSEMBLY LH	1793964
3	2	PIN, KINGPIN BOLT	1636793
4	2	BEARING, SPHERICAL KINGPIN	4075100
5	1	WASHER, SPHERICAL	7970100
6	1	WASHER, TEFLON THRUST	1971851
7	1	SCREW, FLAT HEAD, 8-32 x 3/8"	7730262
8	2	NUT, HEX JAM, 1 1/8"-12 LH	7565359
9	1	INSERT, STERING ARM	1503870
10	2	ZERK, GREASE-STR, 1/4"-28	5997500
11	2	SCREW, SET, ALLEN, 1/4"-28 x 1/4"	7744470
12	2	BOLT, HEX, 5/8"-11 x 1 3/4" G8P	7721753
13	2	NUT, HEX JAM, 5/8"-11	7565294
14	3	WASHER, FLAT, 5/16" MED	7958254
15	1	CLAMP, ADEL, .62 ID	5183600
16	1	WASHER, LOCK, 5/16" MED	7962254
17	1	BOLT, HEX, 5/16"-18 x 3/4" G8P	7721519

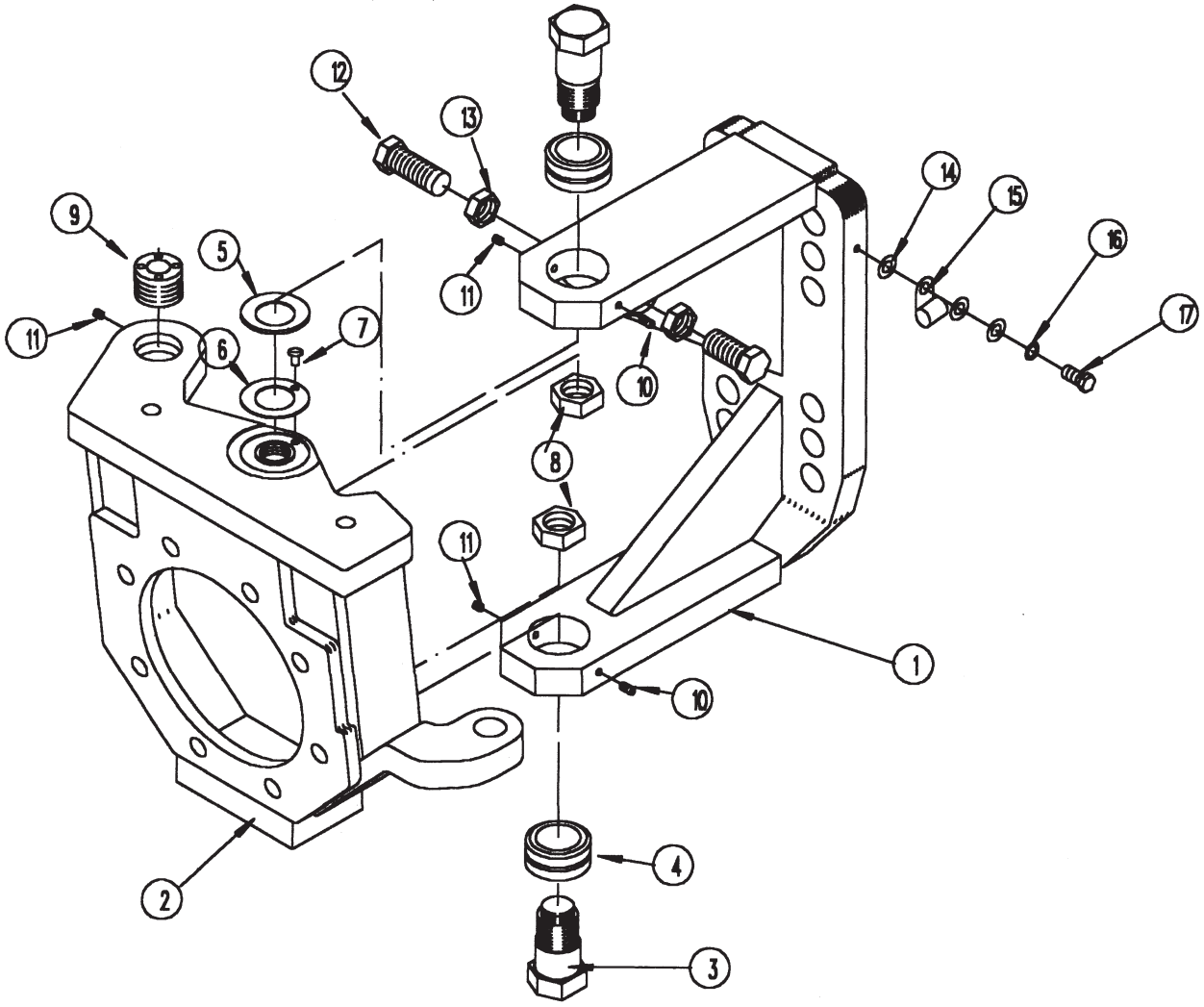


Fig. 20

SPINDLE AND YOKE ASSEMBLY
MASSEY-FERGUSON & WHITE ROTARY COMBINES

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	YOKE ASSEMBLY UNIVERSAL	1994786
2	1	SPINDLE ASSEMBLY LH	1793934
	1	SPINDLE ASSEMBLY RH	1793933
3	2	PIN, KINGPIN BOLT	1636793
4	2	BEARING, SPHERICAL KINGPIN	4075100
5	1	WASHER, SPHERICAL	7970100
6	1	WASHER, TEFLON THRUST	1971851
7	1	SCREW, FLAT HEAD, 8-32 x 3/8"	7730262
8	2	NUT, HEX JAM, 1 1/8"-12 LH	7565359
9	1	INSERT, STERING ARM	1503868
10	2	ZERK, GREASE-STR, 1/4"-28	5997500
11	2	SCREW, SET, ALLEN, 1/4"-28 x 1/4"	7744470
12	2	BOLT, HEX, 5/8"-11 x 1 3/4" G8P	7721753
13	2	NUT, HEX JAM, 5/8"-11	7565294
14	3	WASHER, FLAT, 5/16" MED	7958254
15	1	CLAMP, ADEL, .62 ID	5183600
16	1	WASHER, LOCK, 5/16" MED	7962254
17	1	BOLT, HEX, 5/16"-18 x 3/4" G8P	7721519

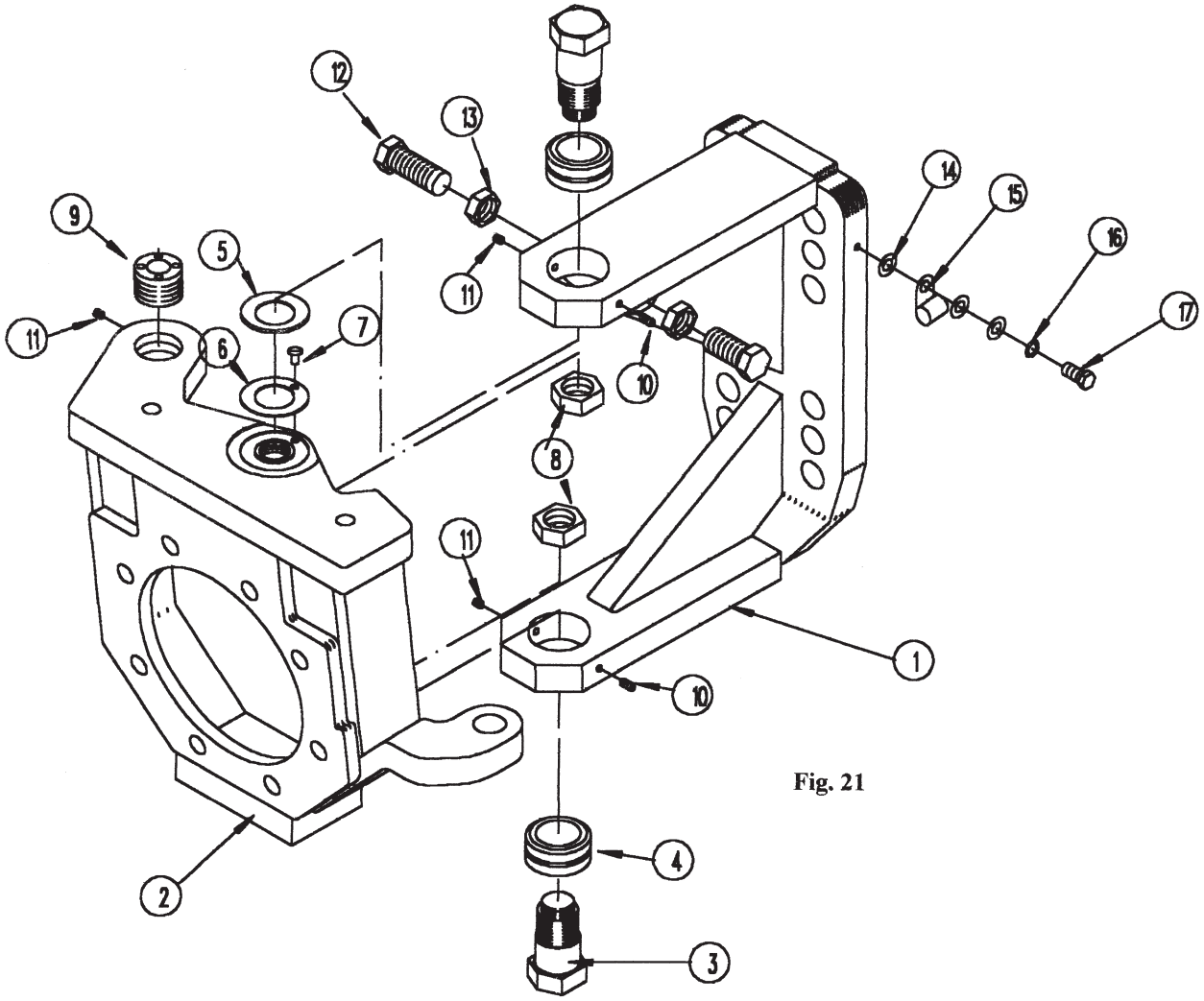


Fig. 21

TIE RODS & TIE ROD EXTENSIONS

Fig. 22
HEAVY DUTY TIE ROD, PN 1883100-****

THIS TIE ROD USES THE FOLLOWING TIE ROD ENDS:

PN 5251330	1"-16tpi-RH
PN 5251331	1"-16tpi-LH

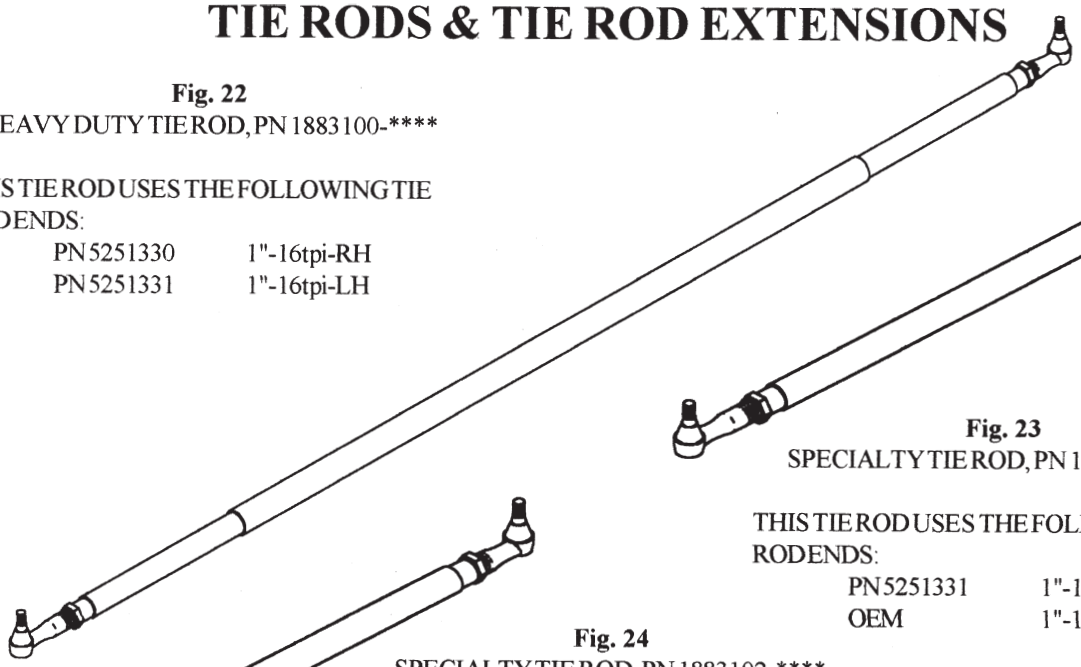


Fig. 23
SPECIALTY TIE ROD, PN 1883101-****

THIS TIE ROD USES THE FOLLOWING TIE ROD ENDS:

PN 5251331	1"-16tpi-LH
OEM	1"-16tpi-RH

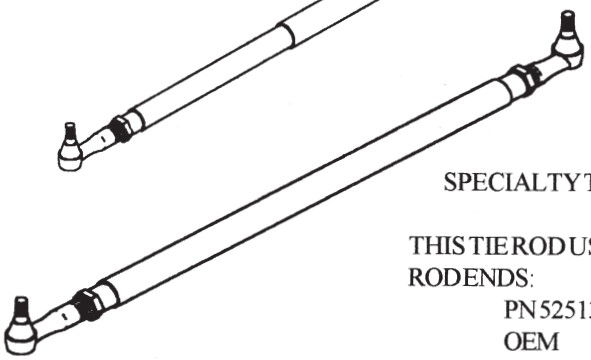


Fig. 24
SPECIALTY TIE ROD, PN 1883102-****

THIS TIE ROD USES THE FOLLOWING TIE ROD ENDS:

PN 5251331	1"-16tpi-LH
OEM	7/8"-18tpi-RH

NOTE:
TIE ROD PART NUMBERS HAVE A THREE(3) - FOUR(4) DIGIT EXTENSION TO DENOTE LENGTHS

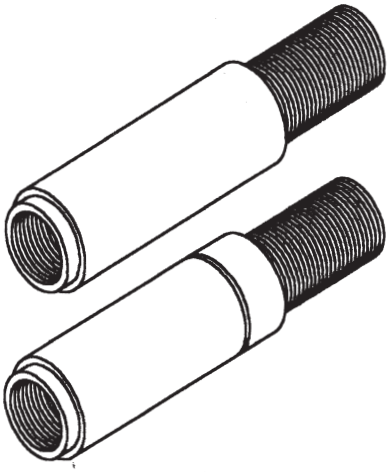


Fig. 25
UNIVERSAL TIE ROD EXTENSIONS
SEE UNIVERSAL EXTENSION KIT; pg. 111 IN THIS BOOK

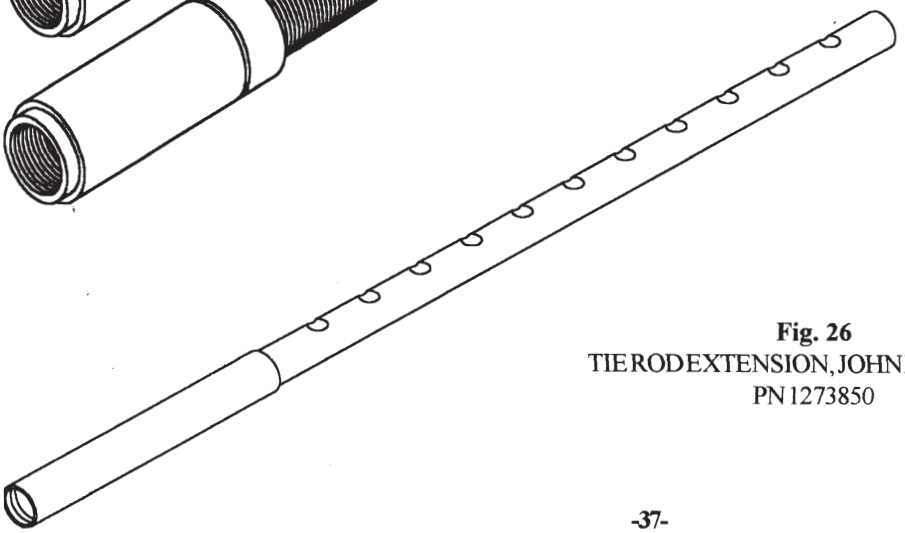


Fig. 26
TIE ROD EXTENSION, JOHN DEERE 9960
PN 1273850

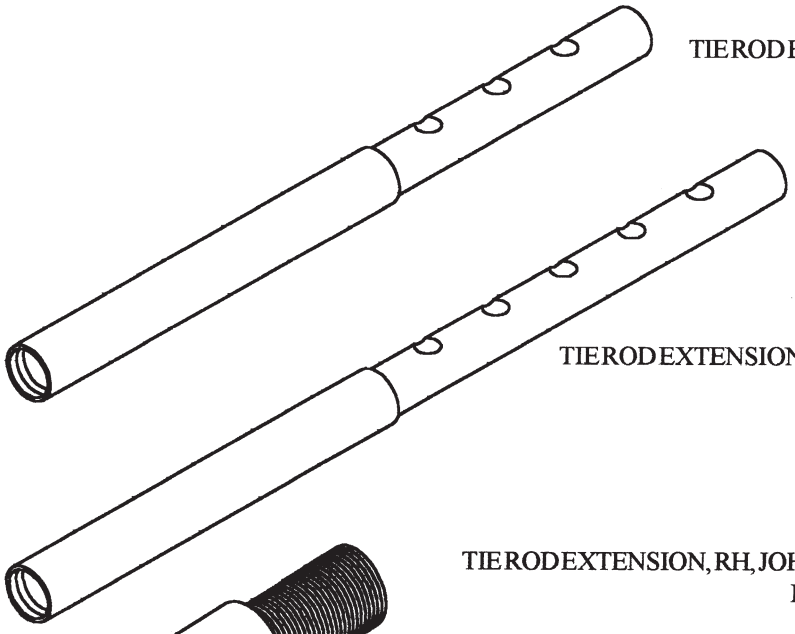


Fig. 27
TIE ROD EXTENSION, CASE-INTERNATIONAL 1844
PN 1273900

Fig. 28
TIE ROD EXTENSION, CASE-INTERNATIONAL 1844 SKIP ROW
PN 1273901

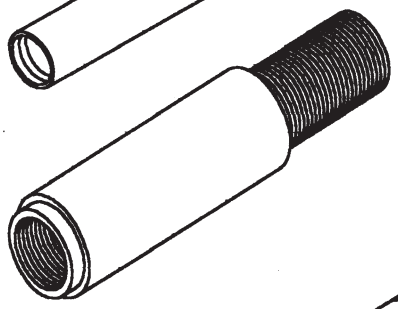


Fig. 29
TIE ROD EXTENSION, RH, JOHN DEERE 9400/9500/9600 MAXIMIZERS
PN 1273940

Fig. 30
TIE ROD EXTENSION, LH, JOHN DEERE 9400/9500/9600 MAXIMIZERS
PN 1273941

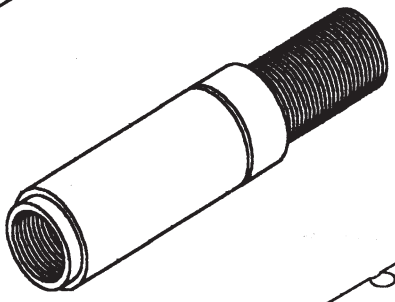


Fig. 31
TIE ROD EXTENSION, RH,
JOHN DEERE 4435
PN 1273950

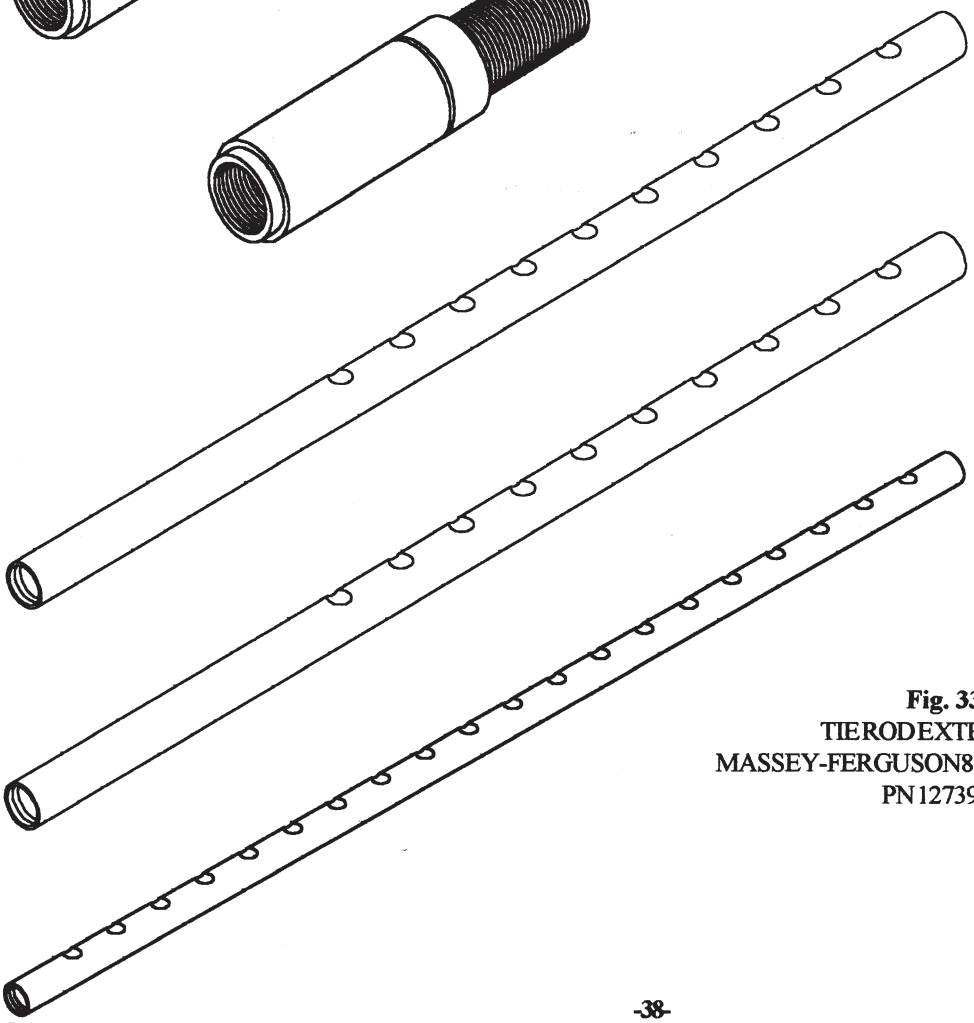
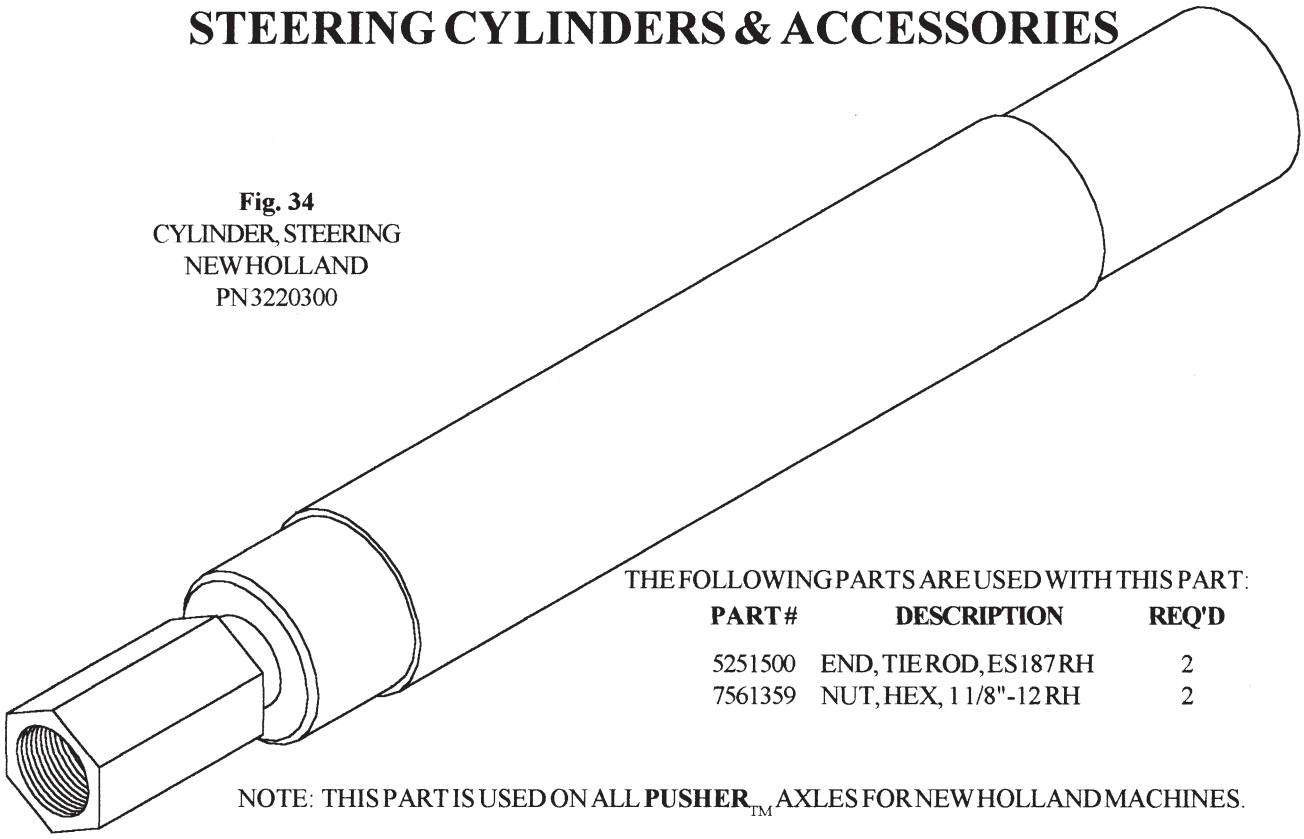


Fig. 32
TIE ROD EXTENSION, LH,
JOHN DEERE 4435
PN 1273951

Fig. 33
TIE ROD EXTENSION,
MASSEY-FERGUSON 8560 & WHITE 9320
PN 1273975

STEERING CYLINDERS & ACCESSORIES

Fig. 34
CYLINDER, STEERING
NEW HOLLAND
PN 3220300



THE FOLLOWING PARTS ARE USED WITH THIS PART:

PART #	DESCRIPTION	REQ'D
5251500	END, TIE ROD, ES187RH	2
7561359	NUT, HEX, 1 1/8"-12 RH	2

NOTE: THIS PART IS USED ON ALL **PUSHER**$_{TM}$ AXLES FOR NEW HOLLAND MACHINES.

Fig. 35
EXTENSION, STEERING CYLINDER
JOHN DEERE 9960
PN 1273800

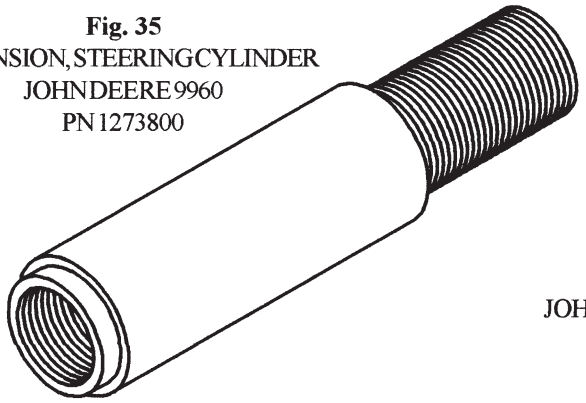


Fig. 36
BLOCK, STEERING ANCHOR, RH
JOHN DEERE 9400/9500/9600 MAXIMIZERS
PN 11534810

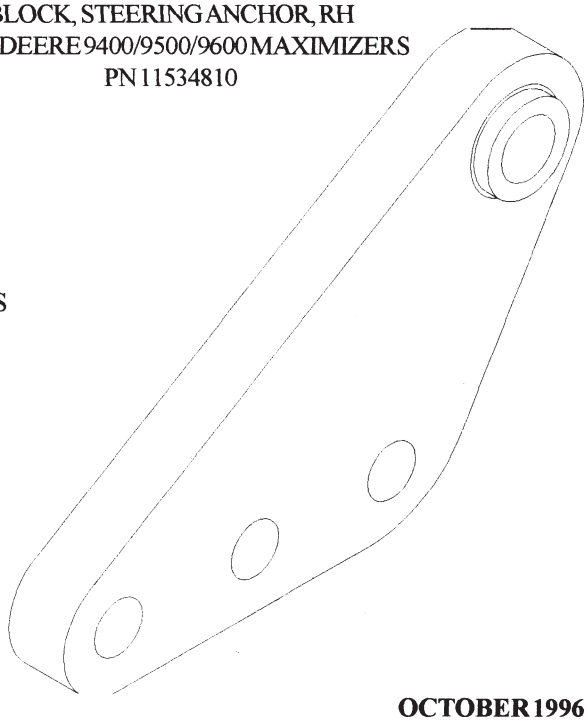
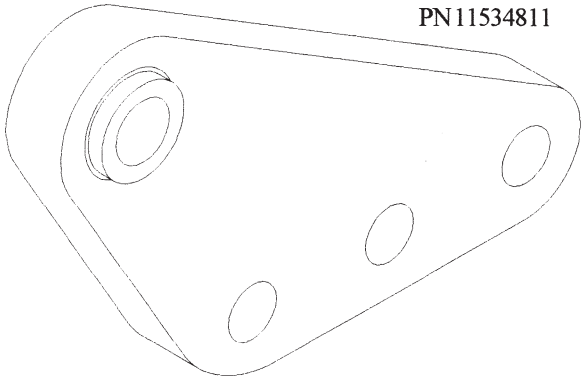


Fig. 37
BLOCK, STEERING ANCHOR, LH
JOHN DEERE 9400/9500/9600 MAXIMIZERS
PN 11534811



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GILCREST

PUSHER™ G

ELECTRONIC & HYDROSTATIC SYSTEM COMPONENTS

Gilcrest PUSHER$_{TM}$ Electrical System

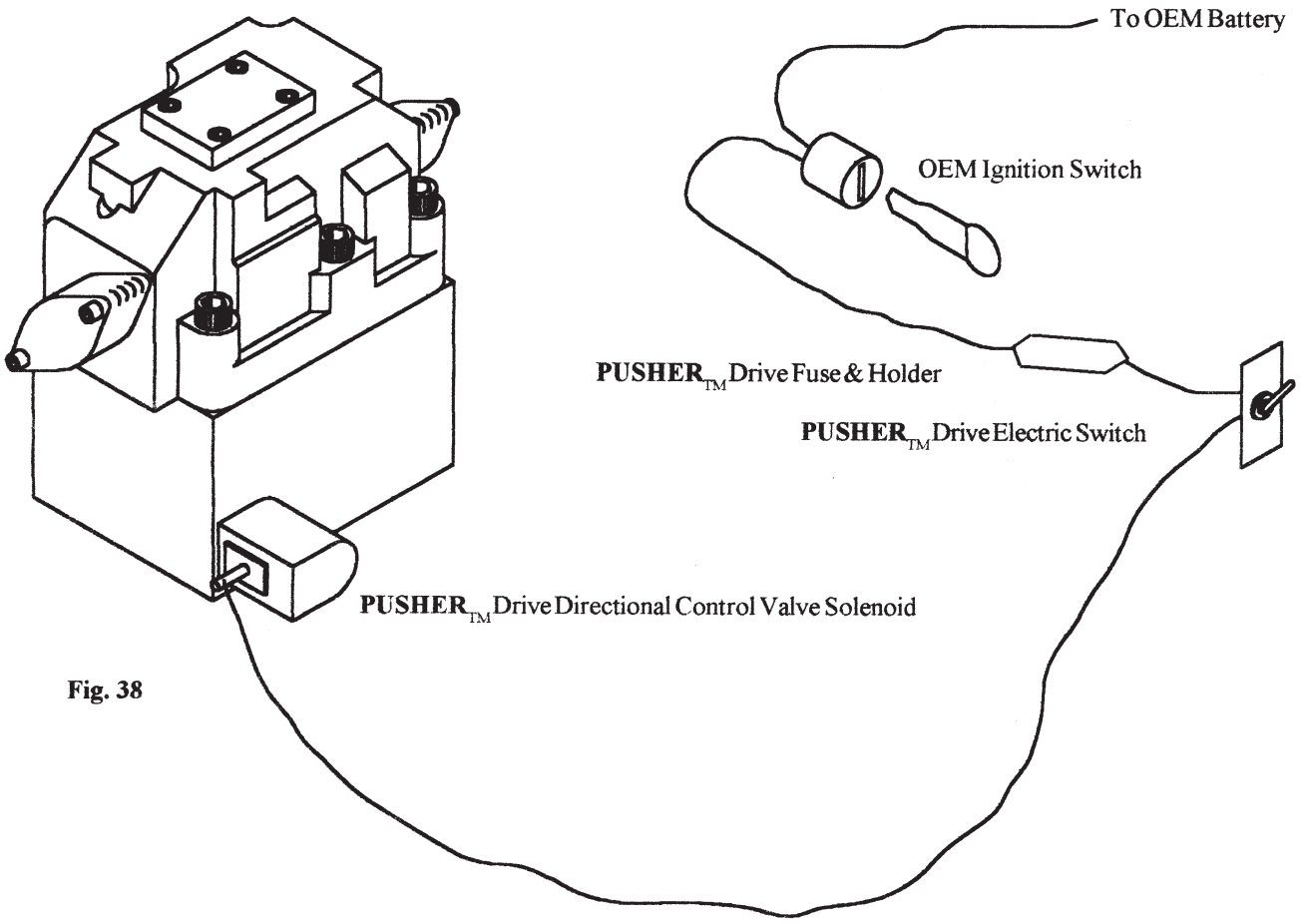


Fig. 38

REQ'D	DESCRIPTION	PART NO.
	KIT, ELECTRICAL CONVERSION	1609950
1	SWITCH, TOGGLE, ELECTRICAL CONVERSION	6860356
1	SWITCH, ROCKER, ELECTRICAL CONVERSION(OPTIONAL)	6560358
1	ROLL, ELECTRICAL WIRE	6986500
1	FUSE, 20amp w/HOLDER	6473354

HIGH PRESSURE TUBE MOUNTING
'SHIFT on the GO'

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	SPINDLE	
2	1	BRACKET, HP TUBE SUPPORT	1136666
3	1	BRACKET, HP TUBE THREADED	1136667
4	1	BRACKET, HP TUBE SEPARATOR	1136669
5	1	BOLT, HHCS, 5/16"-18 x 1 3/4" G8P	7721529
6	1	WASHER, LOCK, 5/16" MED	7962254
7	2	BOLT, HHCS, 3/8"-16 x 2" G8P	7721571
8	2	WASHER, FLAT, 3/8" MED	7958262
9	2	WASHER, LOCK, 3/8" MED	7962262
10	1	NUT, HEX, 3/8"-16	7561262
11	1	HOSE, RH/LH(REVERSE)	1482400-****
12	1	HOSE, RH/LH(FORWARD)	1482400-****
13	1	MANIFOLD, TUBE ANCHOR	1539050
14	1	TUBE, HIGH PRESSURE LH(REVERSE)	1908203
	1	TUBE, HIGH PRESSURE RH(REVERSE)	1908201
15	1	TUBE, HIGH PRESSURE LH(FORWARD)	1908202
	1	TUBE, HIGH PRESSURE RH(FORWARD)	1908200
16	1	TUBE, DRAIN LH(UPPER)	1908231
NS	1	TUBE, DRAIN RH(LOWER)	1908232
	1	TUBE, DRAIN RH	1908230
17	1	TUBE, SERVO LH	1908221
	1	TUBE, SERVO RH	1908220

****-NOTE:** HOSE PART NUMBERS HAVE A FOUR(4) DIGIT SUFIX INDICATING LENGTH OF HOSE.

SPINDLE & HIGH PRESSURE TUBE CONFIGURATIONS MAY VARY FROM PICTURE.
REVERSE FLOW HOSES ALWAYS COME FROM THE PORT ON THE DIRECTRAC VALVE CLOSEST TO THE SIDE WHERE THE INLETS ARE LOCATED.
SERVO WILL BE ON EITHER TOP OR BOTTOM OF MOTOR(TOP ON RH, BOTTOM ON LH).

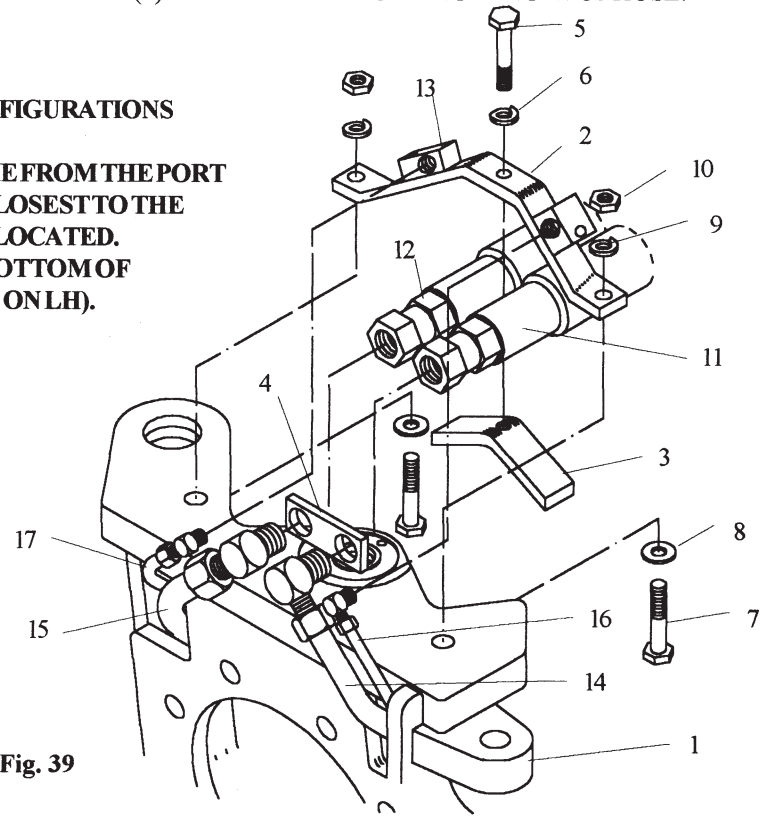


Fig. 39

HIGH PRESSURE TUBE MOUNTING

STANDARD LOCKOUT SYSTEMS (NOT 'SHIFT on the GO')

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	SPINDLE	
2	1	BRACKET, HP TUBE SUPPORT	1136666
3	1	BRACKET, HP TUBE THREADED	1136667
4	1	BRACKET, HP TUBE SEPARATOR	1136669
5	1	BOLT, HHCS, 5/16"-18 x 1 3/4" G8P	7721529
6	1	WASHER, LOCK, 5/16" MED	7962254
7	2	BOLT, HHCS, 3/8"-16 x 2" G8P	7721571
8	2	WASHER, FLAT, 3/8" MED	7958262
9	2	WASHER, LOCK, 3/8" MED	7962262
10	1	NUT, HEX, 3/8"-16	7561262
11	1	HOSE, RH/LH (REVERSE)	1482400-****
12	1	HOSE, RH/LH (FORWARD)	1482400-****
13	2	TUBE, HIGH PRESSURE	1909650
14	2	FITTING, HYD, 90° ELBOW 8MJ-12MJ	3320455

NOTE: HOSE PART NUMBERS HAVE A FOUR (4) DIGIT SUFIX INDICATING LENGTH OF HOSE.

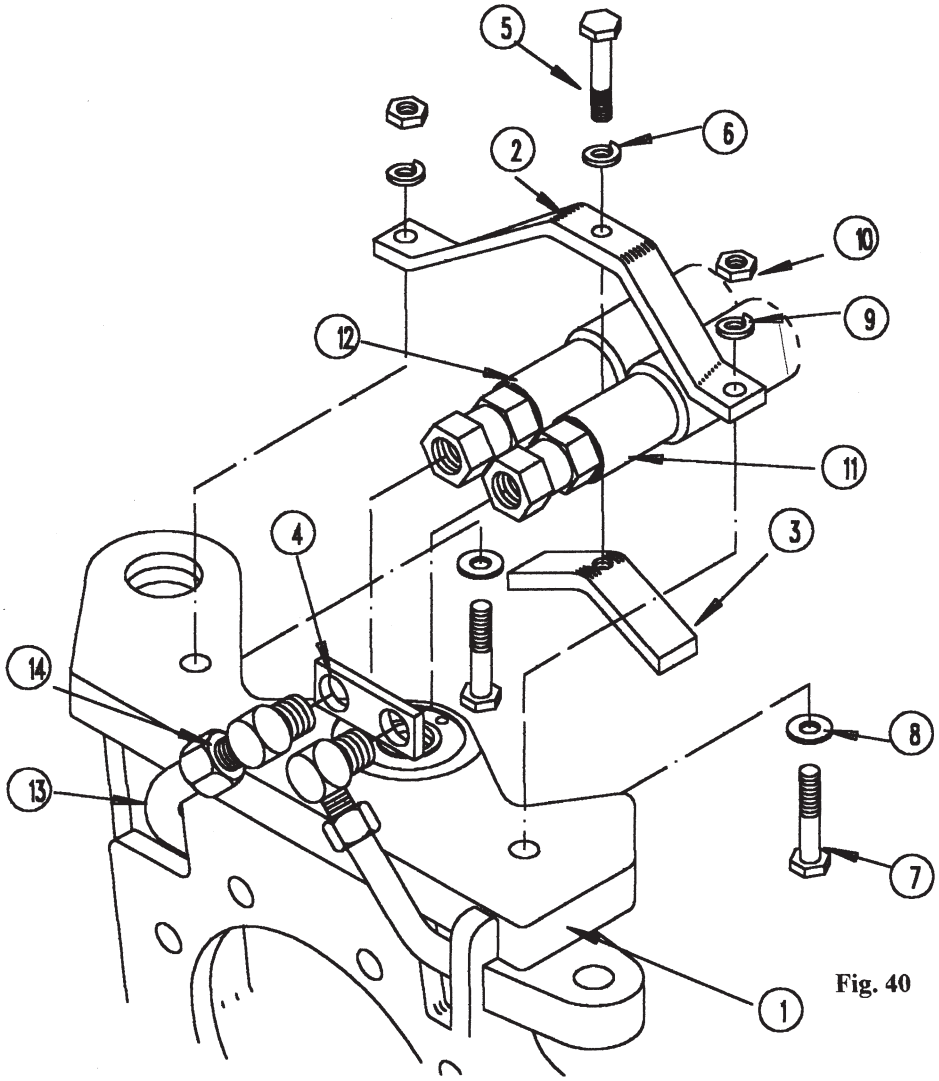


Fig. 40

BRUTE HIGH PRESSURE TUBE MOUNTING
'SHIFT on the GO'

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	SPINDLE	
2	1	BRACKET, HP TUBE SUPPORT	1136666
3	1	BRACKET, HP TUBE THREADED	1136667
4	1	BRACKET, HP TUBE SEPARATOR	1136669
5	1	BOLT, HHCS, 5/16"-18 x 1 3/4" G8P	7721529
6	1	WASHER, LOCK, 5/16" MED	7962254
7	2	BOLT, HHCS, 3/8"-16 x 2" G8P	7721571
8	2	WASHER, FLAT, 3/8" MED	7958262
9	2	WASHER, LOCK, 3/8" MED	7962262
10	1	NUT, HEX, 3/8"-16	7561262
11	1	HOSE, RH/LH(REVERSE)	1482400-****
12	1	HOSE, RH/LH(FORWARD)	1482400-****
13	1	MANIFOLD, TUBE ANCHOR	1539050
14	1	TUBE, HIGH PRESSURE LH REVERSE BRUTE	1908303
	1	TUBE, HIGH PRESSURE RH REVERSE BRUTE	1908301
15	1	TUBE, HIGH PRESSURE LH FORWARD BRUTE	1908302
	1	TUBE, HIGH PRESSURE RH FORWARD BRUTE	1908300
16	1	TUBE, DRAIN LH	1908331
	1	TUBE, DRAIN RH	1908330
17	1	TUBE, SERVO LH	1908321
	1	TUBE, SERVO RH	1908320

****-NOTE:** HOSE PART NUMBERS HAVE A FOUR(4) DIGIT SUFIX INDICATING LENGTH OF HOSE.

SPINDLE & HIGH PRESSURE TUBE CONFIGURATIONS MAY VARY FROM PICTURE.
REVERSE FLOW HOSES ALWAYS COME FROM THE PORT ON THE DIRECTRAC VALVE CLOSEST TO THE SIDE WHERE THE INLETS ARE LOCATED.
SERVO WILL BE ON EITHER TOP OR BOTTOM OF MOTOR(TOP ON RH, BOTTOM ON LH).

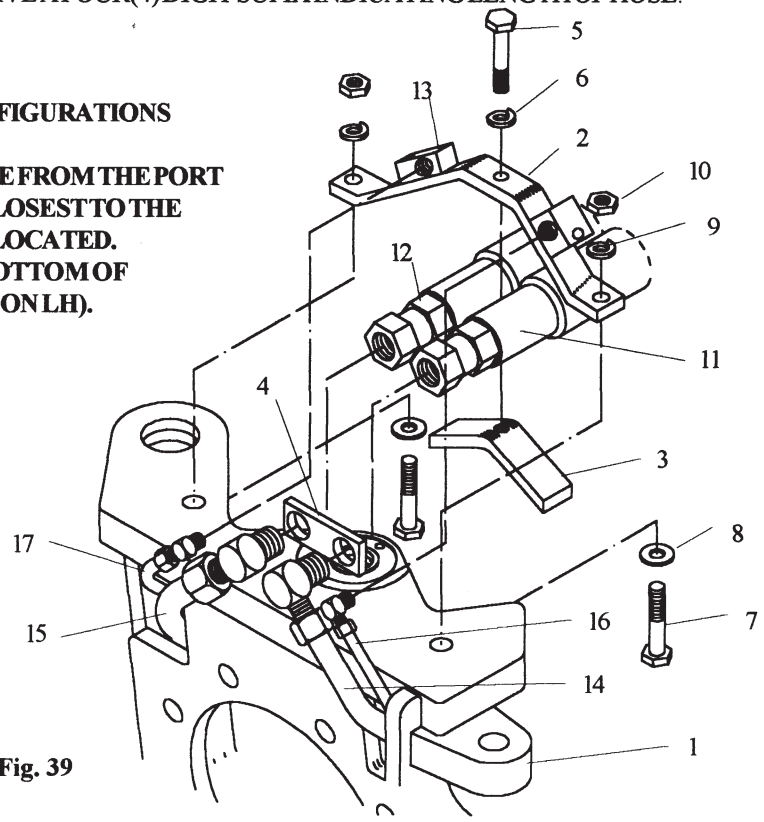


Fig. 39

BRUTE HIGH PRESSURE TUBE MOUNTING
STANDARD LOCKOUT SYSTEMS (NOT 'SHIFT on the GO')

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	SPINDLE	
2	1	BRACKET, HP TUBE SUPPORT	1136666
3	1	BRACKET, HP TUBE THREADED	1136667
4	1	BRACKET, HP TUBE SEPARATOR	1136669
5	1	BOLT, HHCS, 5/16"-18 x 1 3/4" G8P	7721529
6	1	WASHER, LOCK, 5/16" MED	7962254
7	2	BOLT, HHCS, 3/8"-16 x 2" G8P	7721571
8	2	WASHER, FLAT, 3/8" MED	7958262
9	2	WASHER, LOCK, 3/8" MED	7962262
10	1	NUT, HEX, 3/8"-16	7561262
11	1	HOSE, RH/LH(REVERSE)	1482400-****
12	1	HOSE, RH/LH(FORWARD)	1482400-****
13	2	TUBE, HIGH PRESSURE BRUTE	1909655
14	2	FITTING, HYD, 90° ELBOW 8MJ-12MJ	3320455

NOTE: HOSE PART NUMBERS HAVE A FOUR(4) DIGIT SUFIX INDICATING LENGTH OF HOSE.

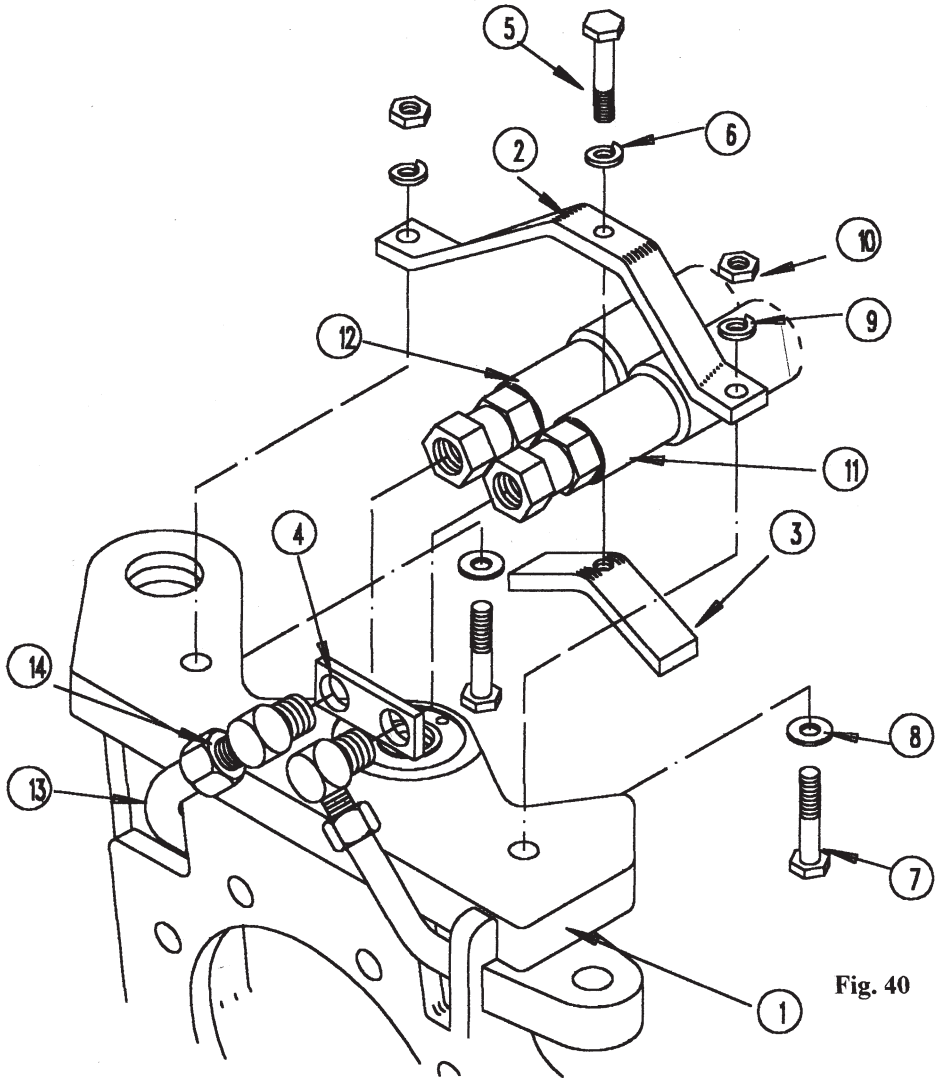


Fig. 40

HYDROSTATIC TRANSMISSION ACCESS PACKAGES
ACCESS PACKAGE for ALLIS CHALMERS 'F' GLEANER

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	BODY, RELIEF VALVE, 'F' GLEANER	1105200
2	2	FITTING, HYD EL45 12MJ-8MOR	3346585
3	10	O'RING, 7/8" OD, 3/32" SECTION (SQCUT)	4585115

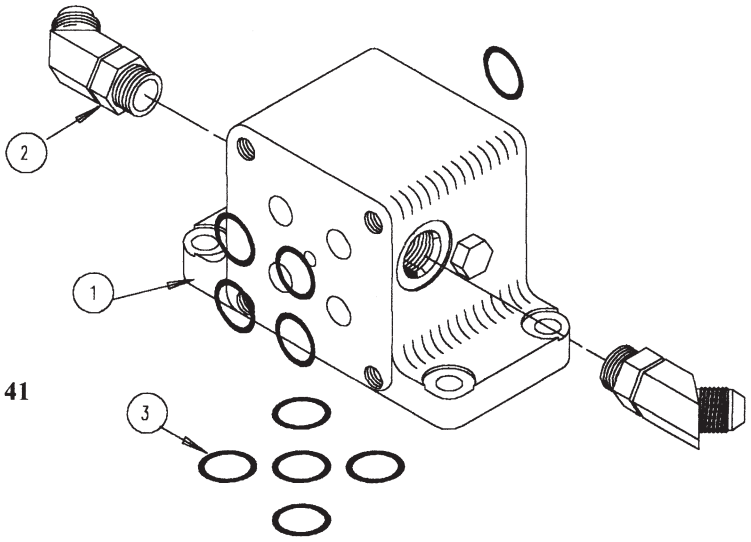


Fig. 41

ACCESS PACKAGE UNIVERSAL SPLIT FLANGE CODE 61 & 62

NO.	REQ'D	DESCRIPTION	PART NO. CODE 61	PART NO. CODE 62
1	2	MANIFOLD, ACCESS UNIVERSAL	1359630	1359625
2	4	BOLT, HHCS, 7/16"-14 x 4 1/4" G8P	7721640	7721640
	4	BOLT, HHCS, 7/16"-14 x 3 1/4" G8P	7721636	7721636
3	2	O'RING, 1 9/16" OD, 1/8" SECTION	4592219	4592219
4	2	FITTING, HYD ADAPT 12MJ-12MOR	3300555	3300555

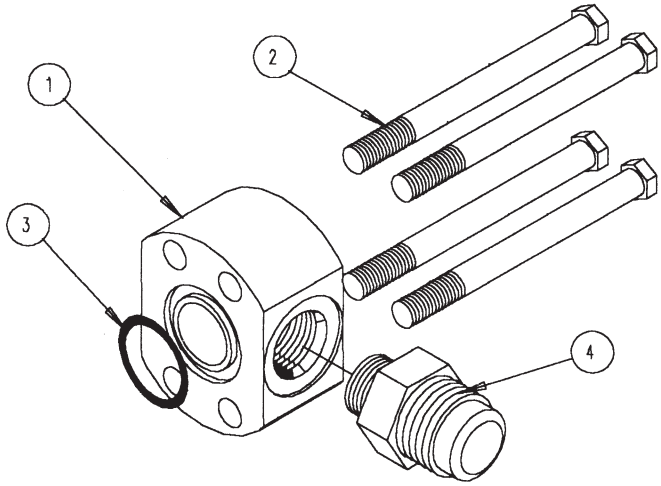


Fig. 42

ACCESS PACKAGE for EATON HYDROSTATIC TRANSMISSIONS

NO.	REQ'D	DESCRIPTION	PART NO. STANDARD (Fig 43)	PART NO. JD 9960 (Fig 44)
1	1	MANIFOLD, EATON ACCESS	1539093	1539100
2	1	O'RING KIT, EATON ACCESS PACKAGE	1517460	1517460
	1	O'RING, 7/8" OD, 3/32" SECTION	4585115	4585115
	2	O'RING, 1 1/8" OD, 3/32" SECTION	4592119	4592119
3	2	FITTING, HYD EL90 12MJ-12MOR	1340555	1340555
4	4	BOLT, HHCS, 3/8"-16 x 5 3/4" G8P	7725586	7725586
5	1	FITTING, HYD ADAPT 12MJ-12MOR	1300555	
6	1	FITTING, HYD PLUG HH-12MOR	1366555	

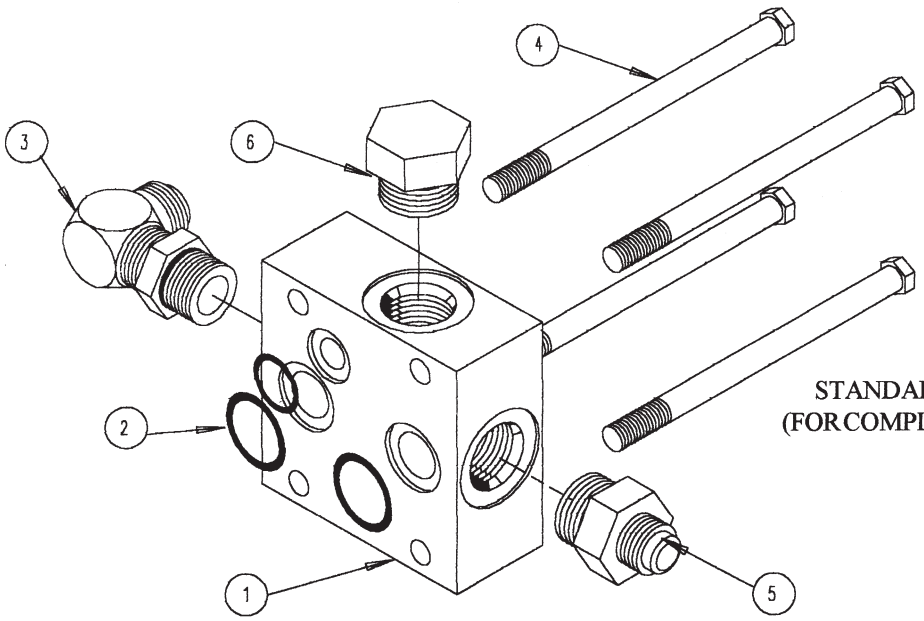


Fig. 43
STANDARD EATON ACCESS PACKAGE
(FOR COMPLETE ACCESS KIT ORDER PART # 1517100)

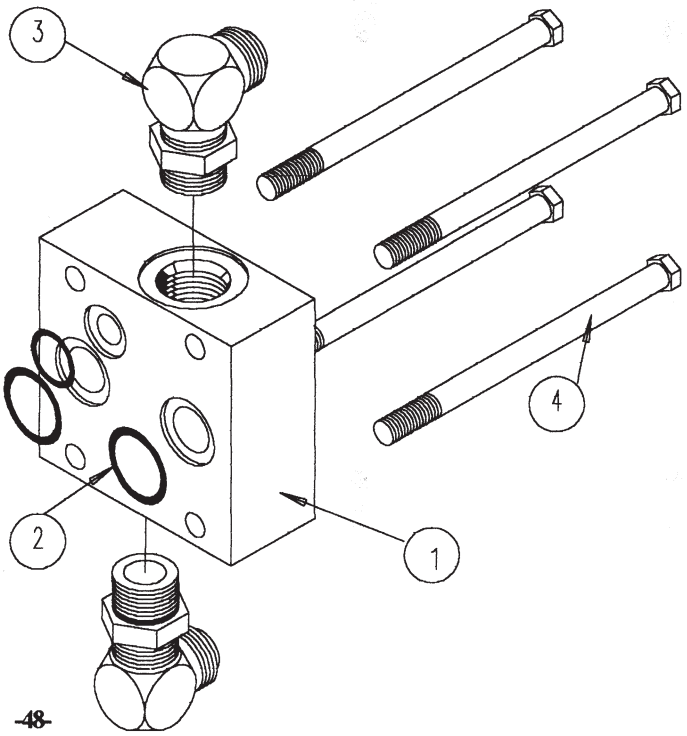


Fig. 44
EATON ACCESS PACKAGE
for JOHN DEERE 9960 COTTON PICKER
(FOR COMPLETE ACCESS KIT ORDER PART # 1517105)

ACCESS PACKAGE for SUNSTRAND HYDROSTATIC TRANSMISSIONS

NO.	REQ'D	DESCRIPTION	PART NO. STANDARD (Fig 45)	PART NO. 3WD CP (Fig 46)
1	1	MANIFOLD, SUNSTRAND ACCESS	1539500	1539581
2	1	O'RING KIT, SUNSTRAND ACCESS PACKAGE	1517461	1517461
	3	O'RING, 1 1/8" OD, 3/32" SECTION	4592119	4592119
3	2	FITTING, HYD EL90 12MJ-12MOR	1340555	1340555
4	6	BOLT, HHCS, 5/16"-18 x 5 1/2" G8P	7725545	7725545

Fig. 45
STANDARD SUNSTRAND ACCESS PACKAGE
(FOR COMPLETE ACCESS KIT ORDER
PART # 1517150)

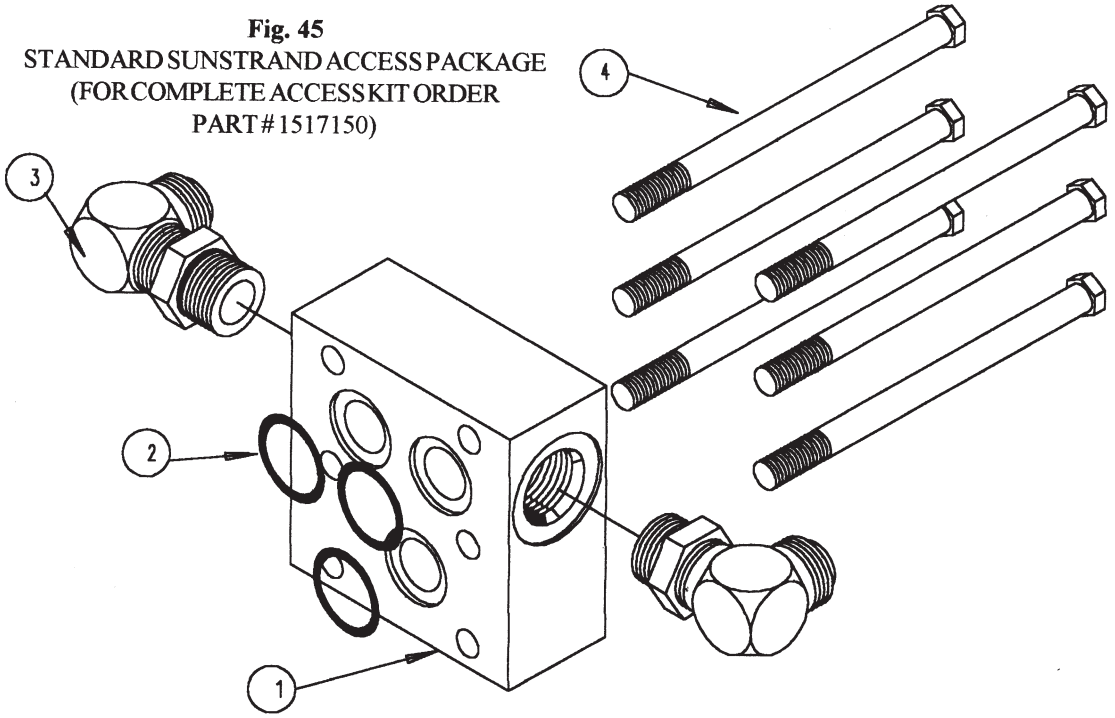
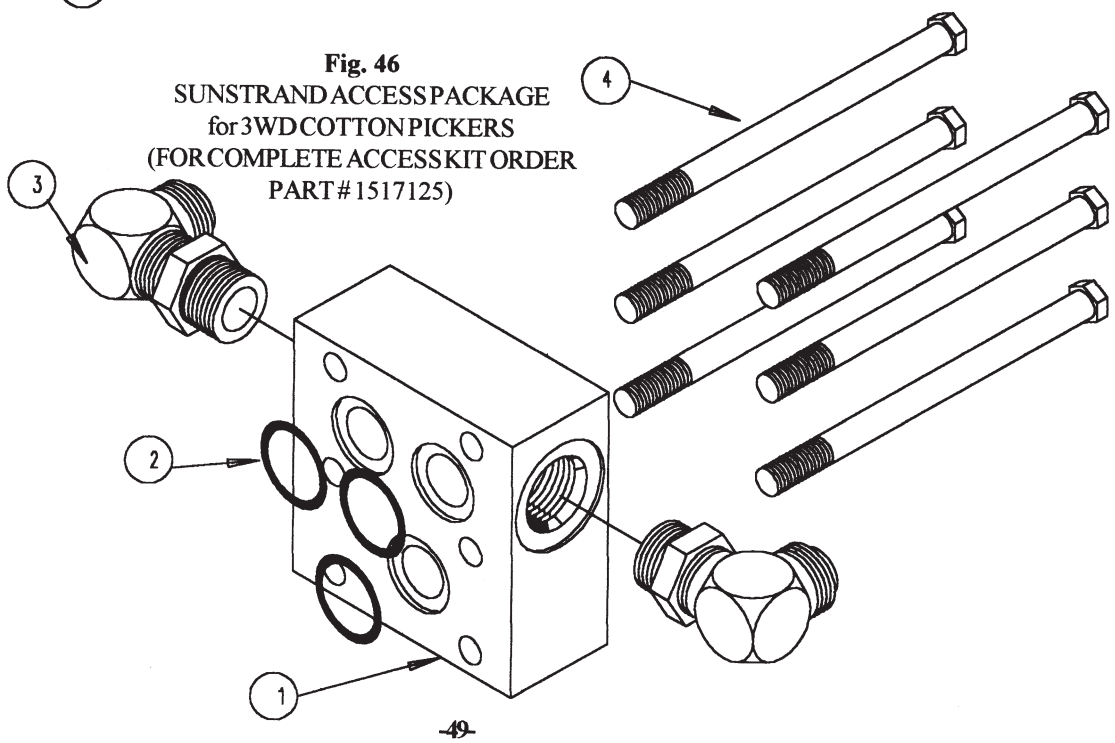


Fig. 46
SUNSTRAND ACCESS PACKAGE
for 3WD COTTON PICKERS
(FOR COMPLETE ACCESS KIT ORDER
PART # 1517125)



ACCESS PACKAGE for HYDRECO 45/60 HYDROSTATIC TRANSMISSIONS

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	MANIFOLD, HYDRECO 45/60 ACCESS	1539400
2	2	FITTING, HYD ADAPT 12MJ-10MOR	3300590
3	1	FITTING, HYD ADAPT 6MJ-6MOR(CHARGE)	3300345
4	2	FITTING, HYD PLUG HH-10MOR	3366485
5	4	BOLT, HHCS 3/8"-16 x 3" G8P	7721586
6	10	O'RING, 7/8" OD, 3/32" SECTION (SQCUT)	4592115

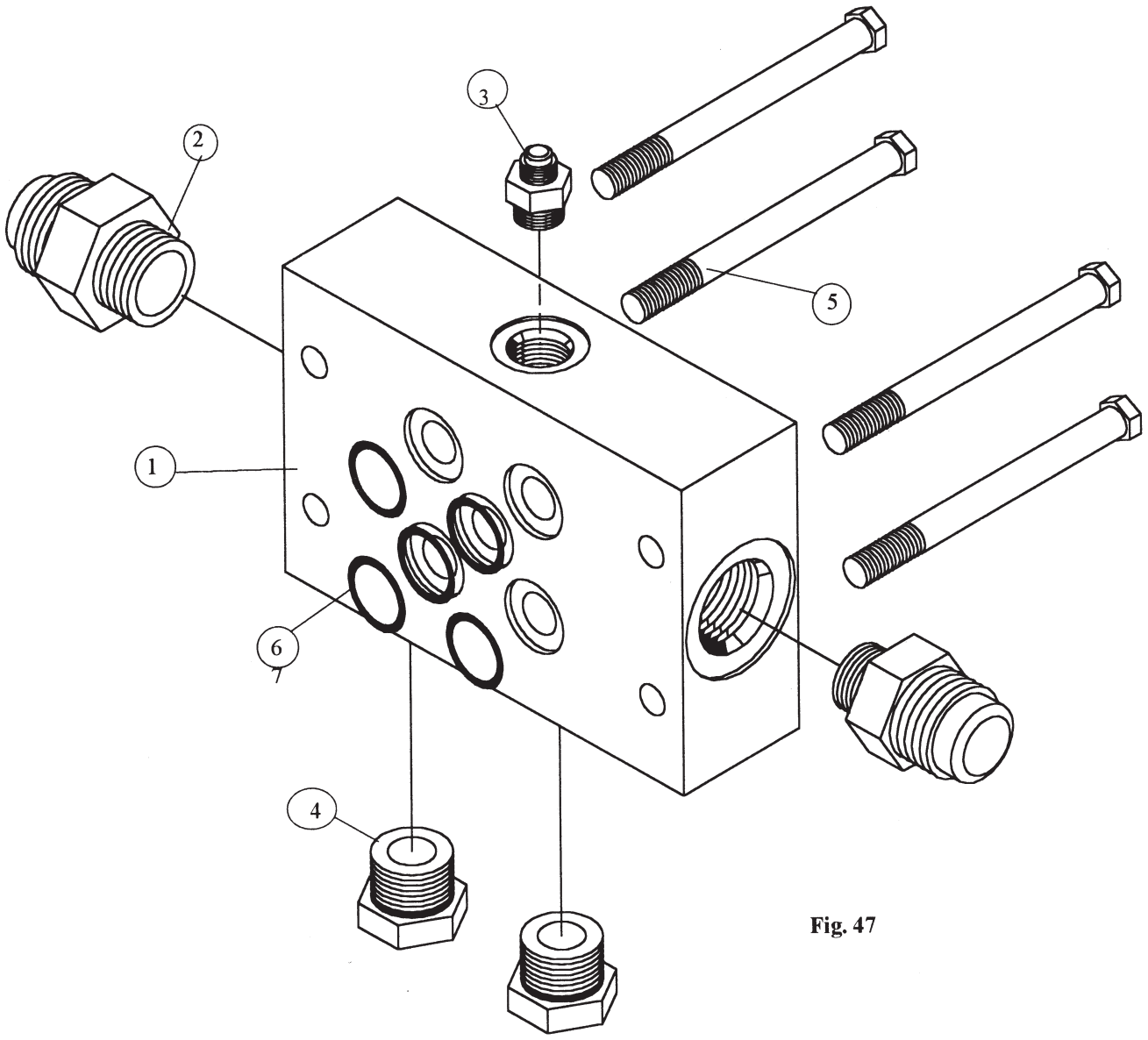


Fig. 47

ACCESS PACKAGE for HYDRECO 45/60 HYDROSTATIC TRANSMISSIONS for ALLIS-CHALMERS 'F2' GLEANER

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	MANIFOLD, HYDRECO 45/60 ACCESS, 'F2' GLEANER	1539300
2	2	FITTING, HYD ADAPT 12MJ-10MOR	3300590
3	1	FITTING, HYD EL90 6MJ-2MP(CHARGE)	3300350
4	4	BOLT, HHCS 3/8"-16 x 3" G8P	7721586
5	2	O'RING, 7/8" OD, 3/32" SECTION (SQCUT)	4592115
6	1	O'RING, 5/8" OD, 3/32" SECTION	4584111
7	1	O'RING, 7/8" OD, 1/16" SECTION	4584018

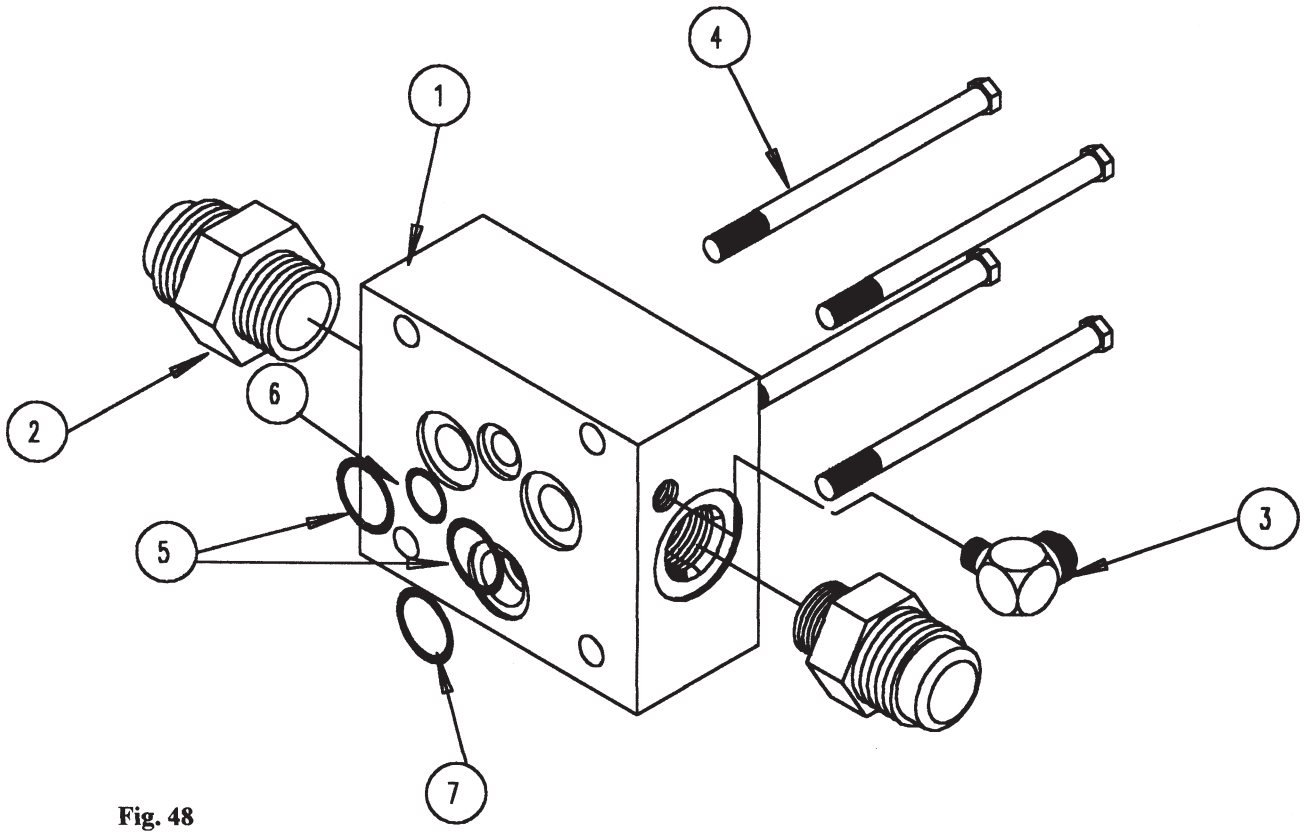


Fig. 48

DIRECTRAC VALVE ASSEMBLY

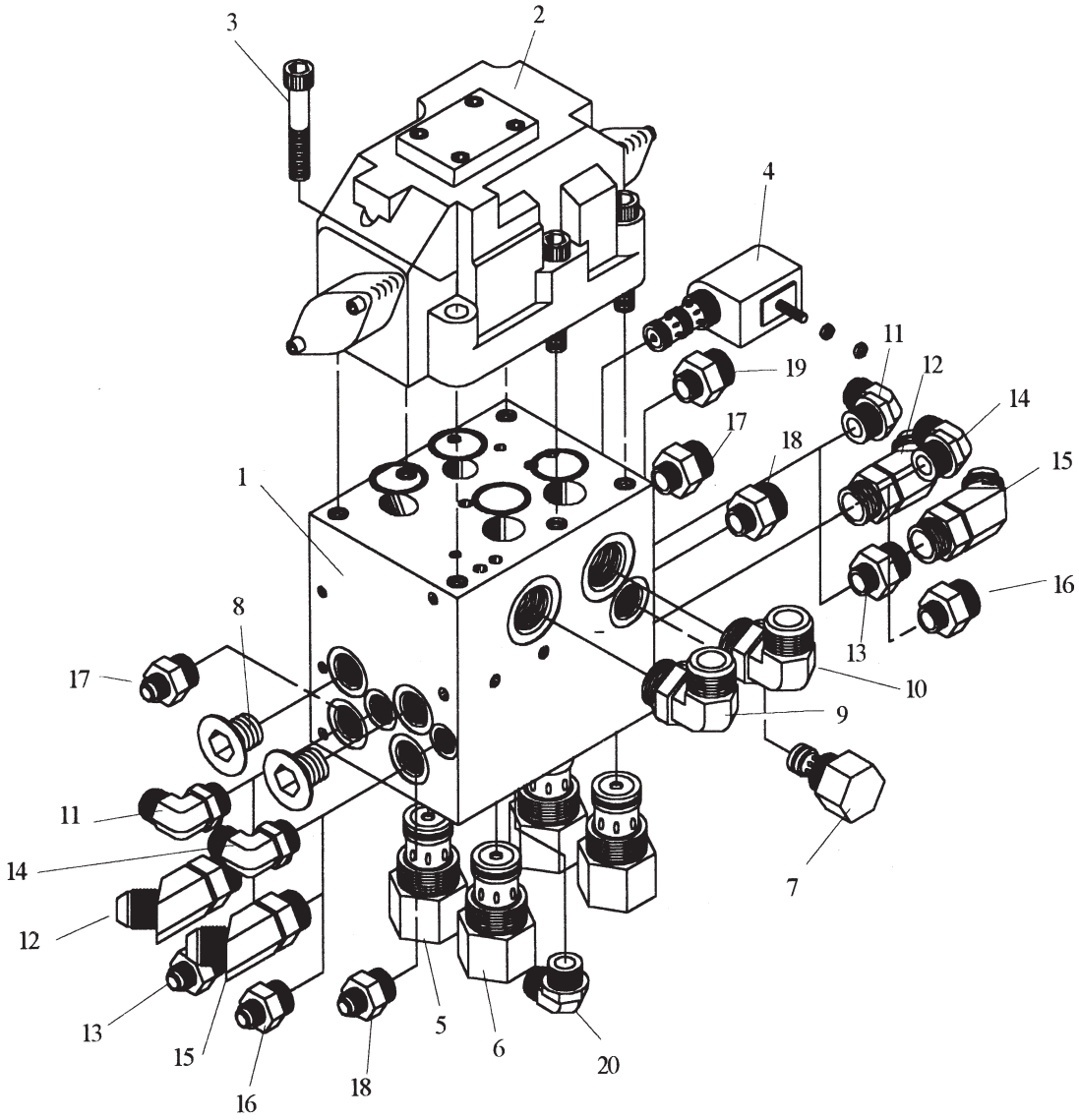


Fig. 49

DIRECTRAC VALVE ASSEMBLY

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	MANIFOLD, DIRECTIONAL VALVE SUBPLATE	1539340
2	1	VALVE, DIRECTIONAL CONTROL (REXROTH)	3932500
		O'RING KIT, DIRECTIONAL CONTROL VALVE	1517410
3	6	CAP SCREW, SOCKET HEAD, 1/2"-13 x 2 1/2" G8P	7739658
4	1	VALVE, 3-WAY SOLENOID	3935338
	1	O'RING KIT, SOLENOID VALVE	4517103
		O'RING, #10 TUBE, 95 DUR	4595910
5	2	VALVE, FLOW REGULATOR, 20 GPM (FOWARD)	1933000-0260
6	2	VALVE, FLOW REGULATOR, 10 GPM (REVERSE)	1933000-0175
		O'RING KIT, FLOW REGULATOR VALVE	4517162
		O'RING, #16 TUBE, 95 DUR	4595916
7	1	VALVE, CHECK	3931339
		O'RING KIT, CHECK VALVE	4517102
		O'RING, #10 TUBE, 95 DUR	4595910
8	2	FITTING, HYDRAULIC PLUG SH8-MOR	3367415
		O'RING, #8 TUBE, 95 DUR	4595908
9	1	FITTING, EL90-12MJ-12MOR (FOWARD INLET)	1340555
10	1	FITTING, EL90-12MJ-12MOR (REVERSE INLET)	1340555
11	2	FITTING, EL90 8MJ-8MOR (FOWARD OUTLET)	3340415
12	2	FITTING, EL45 8MJ-8MOR (FOWARD OUTLET)	3346445
13	2	FITTING, HYD ADPT 8MJ-8MOR (FOWARD OUTLET)	3300415
14	2	FITTING, EL90 8MJ-8MOR (FOWARD OUTLET)	3340415
15	2	FITTING, EL45 8MJ-8MOR (FOWARD OUTLET)	3346445
16	2	FITTING, HYD ADPT 8MJ-8MOR (FOWARD OUTLET)	3300415
		O'RING, #8 TUBE, 95 DUR	4595908
17	2	FITTING, HYD ADPT, 6MJ-6MOR (AXLE DRAIN)	3300345
		O'RING, #6 TUBE, 95 DUR	4595906
18	2	FITTING, HYD ADPT, 4MJ-4MOR (SERVO)	3300200
19	1	FITTING, HYD ADPT, 6MJ-4MOR (CHARGE)	3300360
		O'RING, #4 TUBE, 95 DUR	4595904
20	1	FITTING, HYD ADPT 8MJ-8MOR (TANK DRAIN)	3300415

*UNIVERSAL DIRECTIONAL VALVE ASSEMBLY

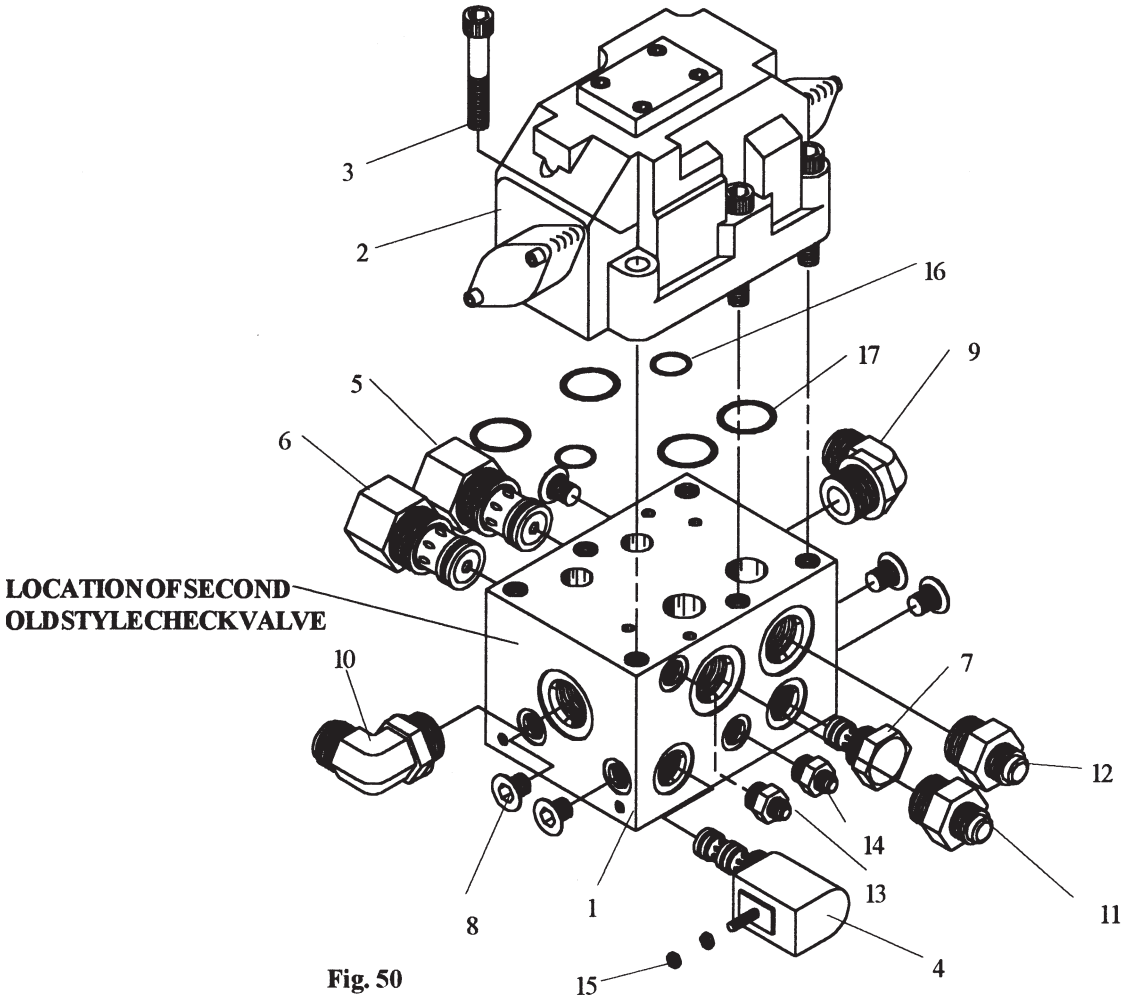


Fig. 50

* If you have the valve assembly with 2 check valves (#7's) you will need to order new flow regulators. The new flow regulator part numbers are for #5 & #6 on the parts list.

*UNIVERSAL DIRECTIONAL VALVE ASSEMBLY

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	MANIFOLD, DIRECTIONAL VALVE SUBPLATE	1539331
2	1	VALVE, DIRECTIONAL CONTROL (REXROTH)	3932500
		O'RING KIT, DIRECTIONAL CONTROL VALVE	1517401
3	6	CAP SCREW, SOCKET HEAD, 1/2"-13 x 2 1/2" G8P	7739658
4	1	VALVE, 3-WAY SOLENOID	3935338
	1	O'RING KIT, SOLENOID VALVE	4517103
		O'RING, #10 TUBE, 95 DUR	4595910
5	1	VALVE, FLOW REGULATOR, 30 GPM (FWD)	1933000-0359
6	1	VALVE, FLOW REGULATOR, 15 GPM (REV)	1933000-0249
		O'RING KIT, FLOW REGULATOR VALVE	4517162
		O'RING, #16 TUBE, 95 DUR	4595916
7	1	VALVE, CHECK	3931339
		O'RING KIT, CHECK VALVE	4517102
		O'RING, #10 TUBE, 95 DUR	4595910
8	4	FITTING, HYDRAULIC PLUG SH4-MOR	3367200
		O'RING, #4 TUBE, 95 DUR	4595904
9	1	FITTING, EL90-12MJ-12MOR (FWD INLET)	1340555
10	1	FITTING, EL90-12MJ-12MOR (REV INLET)	1340555
11	1	FITTING, HYD ADPT, 12MJ-12MOR (FWD OUTLET)	3300555
12	1	FITTING, HYD ADPT, 12MJ-12MOR (REV OUTLET)	3300555
		O'RING, #12 TUBE, 95 DUR	4595912
13	1	FITTING, HYD ADPT, 6MJ-4MOR (AXLE DRAIN)	3300360
14	1	FITTING, HYD ADPT, 6MJ-4MOR (CHARGE)	3300360
		O'RING, #4 TUBE, 95 DUR	4595904
15	2	NUT, HEX, 10-32 PLTD	7561230
16	2	O'RING, 24 MILLIMETER	4595100
17	4	O'RING, 32 MILLIMETER	4595200

TO ORDER FULLY ASSEMBLED DIRECTIONAL CONTROL VALVE USE PART NUMBER 1936447

DIRECTIONAL VALVE ASSEMBLY FOR 3WD COTTON PICKERS

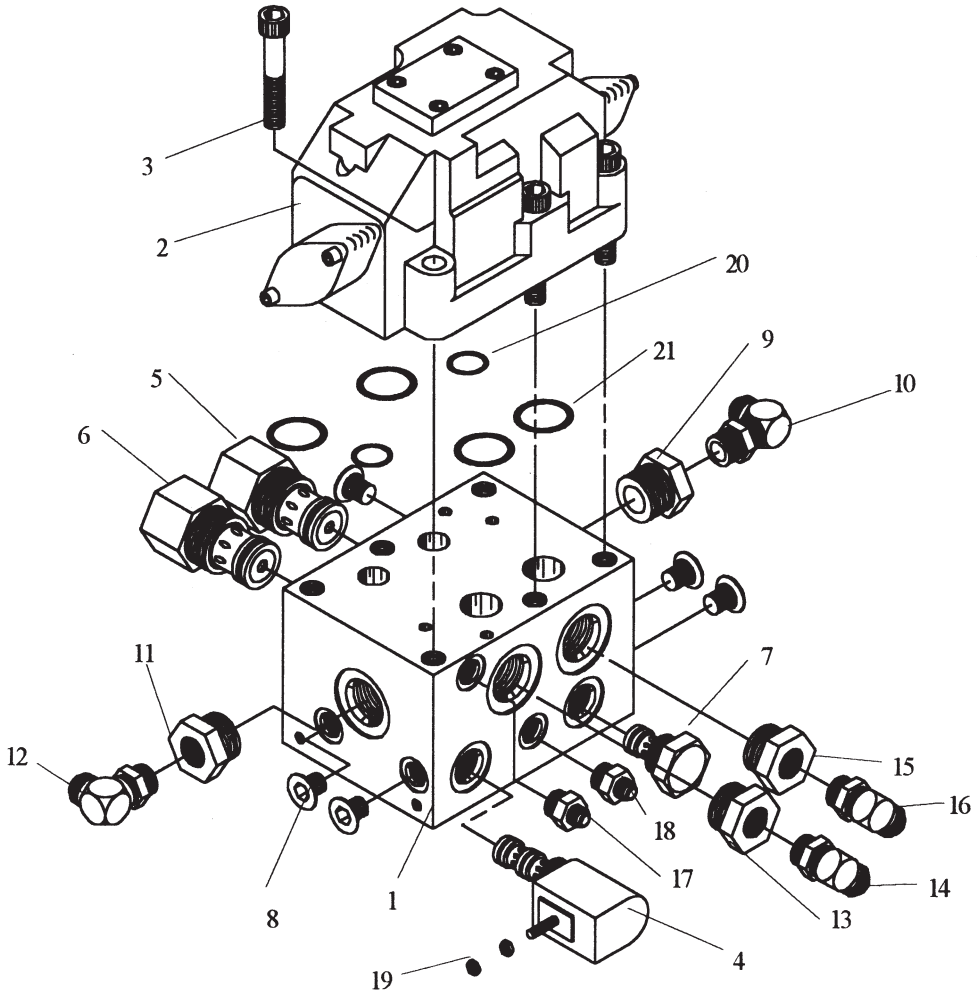


Fig. 51

DIRECTIONAL VALVE ASSEMBLY FOR 3WD COTTON PICKERS

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	MANIFOLD, DIRECTIONAL VALVE SUBPLATE	1539331
2	1	VALVE, DIRECTIONAL CONTROL (REXROTH)	3932500
		O'RING KIT, DIRECTIONAL CONTROL VALVE	1517401
3	6	CAP SCREW, SOCKET HEAD, 1/2"-13 x 2 1/2" G8P	7739658
4	1	VALVE, 3-WAY SOLENOID	3935338
	1	O'RING KIT, SOLENOID VALVE	4517103
		O'RING, #10 TUBE, 95 DUR	4595910
5	1	VALVE, FLOW REGULATOR, 15 GPM (FWD)	1933000-0215
6	1	VALVE, FLOW REGULATOR, 7 GPM (REV)	1933000-0153
		O'RING KIT, FLOW REGULATOR VALVE	4517162
		O'RING, #16 TUBE, 95 DUR	4595916
7	1	VALVE, CHECK	3931339
		O'RING KIT, CHECK VALVE	4517102
		O'RING, #10 TUBE, 95 DUR	4595910
8	4	FITTING, HYDRAULIC PLUG SH4-MOR	3367200
		O'RING, #4 TUBE, 95 DUR	4595904
9	1	FITTING, HYD RED 12MOR-8FOR (FWD INLET)	3372585
10	1	FITTING, EL90-8MJ-8MOR (FOWARD INLET)	3341445
11	1	FITTING, HYD RED 12MOR-8FOR (REV INLET)	3372585
12	1	FITTING, EL90-8MJ-8MOR (REVERSE INLET)	3341445
13	1	FITTING, HYD RED 12MOR-8FOR (FWD OUTLET)	3372585
14	1	FITTING, EL90-8MJ-8MOR (FWD OUTLET)	3341445
15	1	FITTING, HYD RED 12MOR-8FOR (REV OUTLET)	3372585
16	1	FITTING, EL90-8MJ-8MOR (REVERSE OUTLET)	3341445
17	1	FITTING, HYD ADPT, 6MJ-4MOR (AXLE DRAIN)	3300360
18	1	FITTING, HYD ADPT, 6MJ-4MOR (CHARGE)	3300360
		O'RING, #4 TUBE, 95 DUR	4595904
19	2	NUT, HEX, 10-32 PLTD	7561230
20	2	O'RING, 24 MILLIMETER	4595100
21	4	O'RING, 32 MILLIMETER	4595200

TO ORDER FULLY ASSEMBLED DIRECTIONAL CONTROL VALVE USE PART NUMBER 1935485

UNIVERSAL TRACTION CONTROL VALVE ASSEMBLY

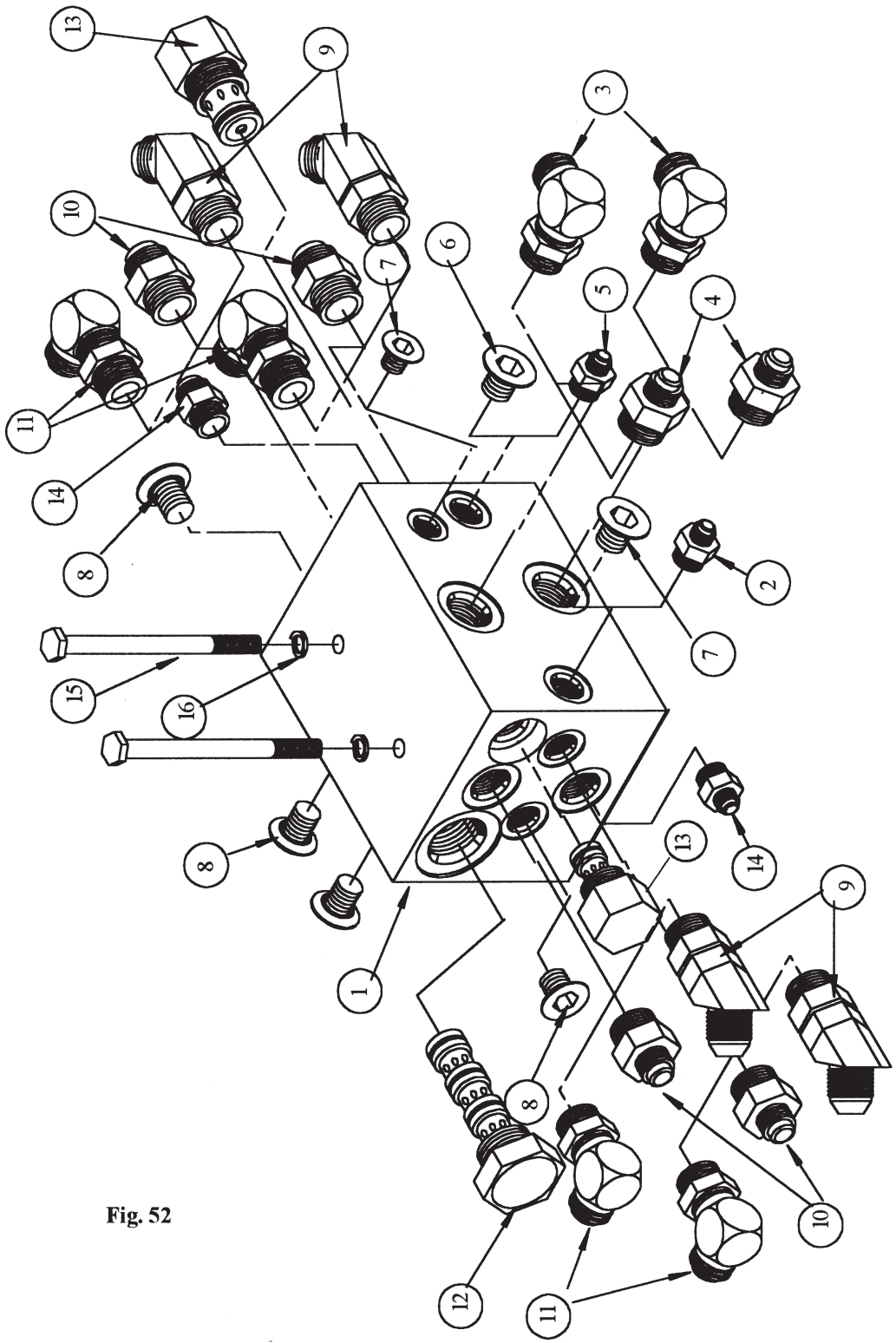


Fig. 52

UNIVERSAL TRACTION CONTROL VALVE ASSEMBLY

NO.	REQ'D	DESCRIPTION	PART NO.
1	1	MANIFOLD, DIRECTIONAL VALVE SUBPLATE	1539200
2	1	FITTING, HYD ADPT 8MJ-8MOR (DRAIN-AXLE to RES)	3300415
		O'RING, #8 TUBE, 95 DUR	4595908
3	2	FITTING, EL90-12MJ-12MOR (AC,IH,NH,WH)	1340555
4	2	FITTING, HYD ADPT 12MJ-12MOR (MF,JD-STD,JD-HD)	3300555
		O'RING, #12 TUBE, 95 DUR	4595912
5	1	FITTING, HYD ADPT 8MJ-8MOR (DRAIN-AXLE to D.C.)	3300415
		O'RING, #8 TUBE 95 DUR	4595908
6	1	FITTING, HYD PLUG, SH-8MOR	3367415
		O'RING, #8 TUBE, 95 DUR	4595908
7	4	FITTING, HYD PLUG, SH-4MOR	3367200
		O'RING, #4 TUBE, 95 DUR	4595904
8	1	FITTING, HYD PLUG, SH-6MOR	3367345
		O'RING, #6 TUBE, 95 DUR	4595906
9	4	FITTING, EL45-8MJ-8MOR (NH,WH)	3346455
10	4	FITTING, HYD ADPT 8MJ-8MOR (AC,MF,JD-STD)	3300415
11	4	FITTING, EL90-8MJ-8MOR (IH,JD-HD)	3340445
		O'RING #8 TUBE, 95 DUR	4595908
12	1	VALVE, POSITIVE TRACTION	3937125
		O'RING KIT, POSITIVE TRACTION VALVE	4517164
		O'RING, 16 TUBE, 95 DUR	4595916
13	2	VALVE, FLOW CONTROL, 5 GPM	3933005
		O'RING KIT, 5 GPM FLOW CONTROL	4517102
		O'RING, #10 TUBE, 95 DUR	4595910
14	2	FITTING, HYD ADPT 6MJ-6MOR (MOTOR DRAIN)	3300345
		O'RING, #6 TUBE, 95 DUR	4595906
15	2	CAP SCREW, HEX HEAD, 5/16"-18 x 4 1/2" G8P	7721541
16	2	WASHER, LOCK 5/16" MEDIUM	7962254

NOTE:

AC	ALLIS-CHALMERS\DEUTZ-ALLIS
IH	INTERNATIONAL HARVESTER/CASE-IH
JD-STD	JOHN DEERE (STANDARD)
JD-HD	JOHN DEERE (HEAVY DUTY)
NH	NEW HOLLAND
MF	MASSEY-FERGUSON
WH	WHITE

HYDRAULIC HOSE ROUTING for SHIFT ON THE GO CASE-IH COMBINES

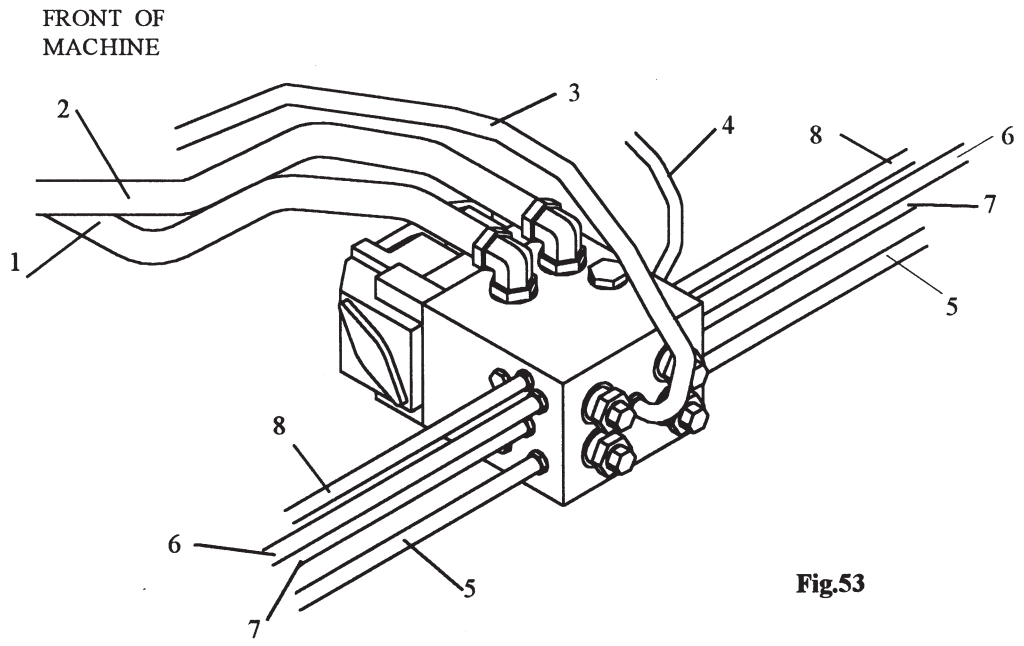


Fig.53

NO.	REQ'D	DESCRIPTION	PART NO.		
		Axle type and Transmission >	*1460/1660*	*1480/1680-E*	*1480/1680-RI*
1	1	Hose, Forward HP	1484500-1440	1484500-1440	1484750-0810
2	1	Hose, Reverse HP	1484600-1500	1484600-1500	1484750-0810
3	1	Hose, Drain	1482525-1100	1482525-1100	1482525-1100
4	1	Hose, Charge	1479500-1355	1479500-1355	1479500-1355
5	2	Hose, Axle, Forward	1482400-0655	1482400-0685	1482400-0685
6	2	Hose, Axle, Reverse	1482400-0655	1482400-0685	1482400-0685
7	2	Hose, Axle, Drain	1481525-0650	1481525-0680	1481525-0680
8	2	Hose, Axle, Servo	1479625-0620	1479625-0630	1479625-0650

Note: E = Eaton Transmission
Ri = Rice Machine

HYDRAULIC HOSE ROUTING with DIRECTRAC VALVE
CASE-IH COTTON PICKERS

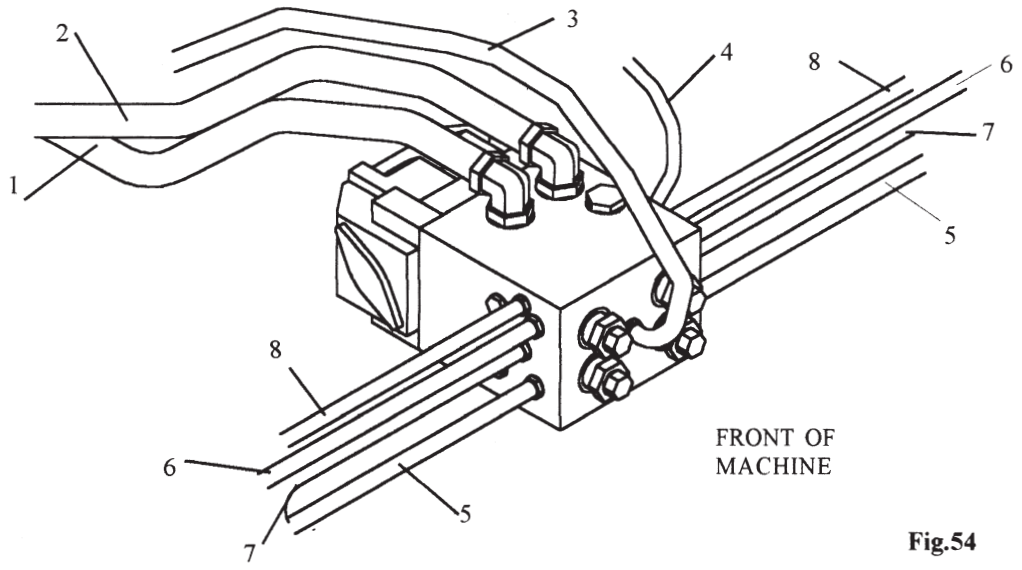


Fig.54

NO.	REQ'D	DESCRIPTION	PART NO.			
		Axle type and Transmission >	*1844/1822/ 2022*	*1844 SKIP ROW*	*2055 NARROW*	*2055 WIDE*
1	1	Hose, Forward HP	1484600-1800	1484600-1800	1484600-1600	1484600-1600
2	1	Hose, Reverse HP	1484600-1800	1484600-1800	1484600-1600	1484600-1600
3	1	Hose, Drain	1482525-1100	1482525-1100	1482525-1600	1482525-1600
4	1	Hose, Charge	1479550-1700	1479550-1700	1479550-1700	1479550-1700
5	2	Hose, Axle, Forward	1482400-0460	1482400-0530	1482400-0460	1482400-0530
6	2	Hose, Axle, Reverse	1482400-0460	1482400-0530	1482400-0460	1482400-0530
7	2	Hose, Axle, Drain	1481525-0430	1481525-0530	1481525-0430	1481525-0530
8	2	Hose, Servo	1479625-0430	1479625-0530	1479625-0430	1479625-0530

HYDRAULIC HOSE ROUTING
CASE-IH COMBINES

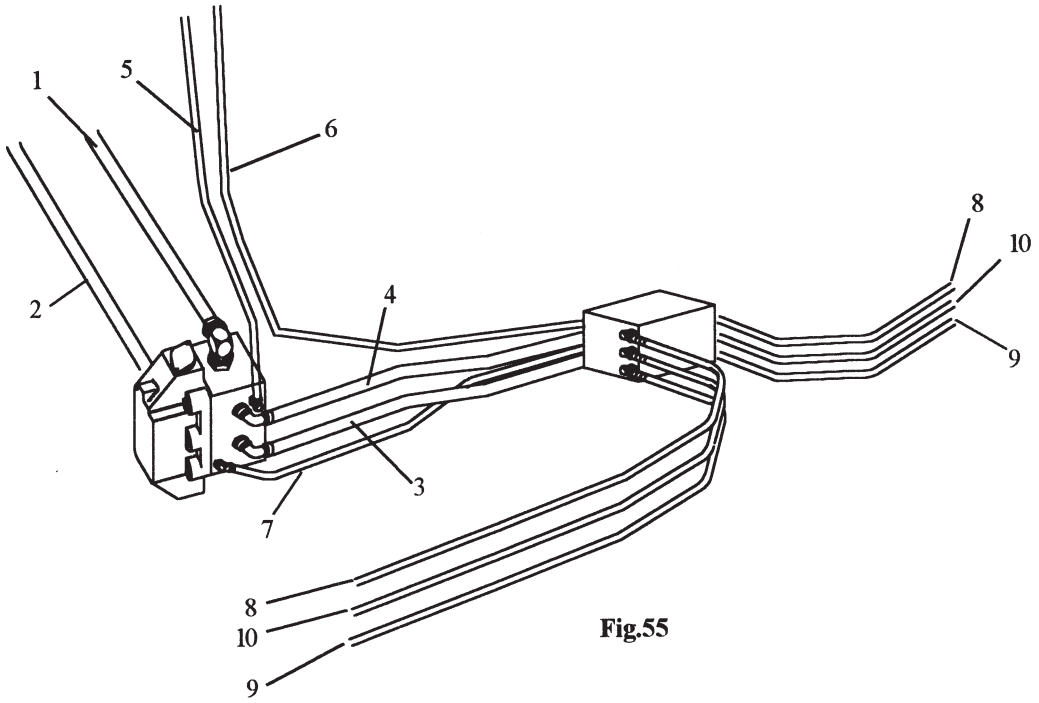


Fig.55

NO.	REQ'D	DESCRIPTION	PART NO.		
		Axle type and Transmission >	*715-S*	*815-S*	*815OS-S*
1	1	Hose, Front Forward HP	1484500-1060	1484500-1060	1484500-1120
2	1	Hose, Front Reverse HP	1484500-1010	1484500-1060	1484700-1120
3	1	Hose, Rear Forward HP	1484700-0300	1484600-0280	1484500-0390
4	1	Hose, Rear Reverse HP	1484700-0300	1484600-0280	1484500-0390
5	1	Hose, Charge	1479500-0920	1479500-0825	1479500-0825
6	1	Hose, Drain, Axle to Tank	1482525-1400	1482525-1100	1482525-2060
7	1	Hose, Drain, Axle to Valve	1481525-0335	1481525-0305	1481525-0455
8	2	Hose, Axle, Reverse	1482400-0570	1482400-0605	1482400-0570
9	2	Hose, Axle, Forward	1482400-0570	1482400-0605	1482400-0570
10	2	Hose, Axle, Drain	1481509-0510	1481509-0560	1481509-0560

Note: **1600 Series Axles are more recent versions of 1400 Series Axles.**

Note: **OS = Old Style**
E = Eaton Transmission
E2 = 2 speed Eaton Transmission
S = Sunstrand Transmission

NO.	REQ'D	DESCRIPTION	PART NO.		
		Axle type and Transmission >	*915-S*	*1420-E*	*1420-S*
1	1	Hose, Front Forward HP	1484500-1060	1484500-1060	1484500-1060
2	1	Hose, Front Reverse HP	1484500-1010	1484500-1060	1484500-1060
3	1	Hose, Rear Forward HP	1484600-0320	1484600-0280	1484600-0280
4	1	Hose, Rear Reverse HP	1484600-0320	1484600-0280	1484600-0280
5	1	Hose, Charge	1479500-0920	1479500-0635	1479500-0635
6	1	Hose, Drain, Axle to Tank	1482525-1500	1482525-1100	1482525-1100
7	1	Hose, Drain, Axle to Valve	1481525-0305	1481525-0305	1481525-0305
8	2	Hose, Axle, Reverse	1482400-0655	1482400-0605	1482400-0605
9	2	Hose, Axle, Forward	1482400-0655	1482400-0605	1482400-0605
10	2	Hose, Axle, Drain	1481509-0610	1481509-0560	1481509-0560

NO.	REQ'D	DESCRIPTION	PART NO.		
		Axle type and Transmission >	*1440/60*	*1440/60-S*	*1460-E2*
1	1	Hose, Front Forward HP	1484500-1060	1484500-1060	1484500-1060
2	1	Hose, Front Reverse HP	1484500-1060	1484500-1110	1484500-1110
3	1	Hose, Rear Forward HP	1484600-0320	1484600-0320	1484600-0320
4	1	Hose, Rear Reverse HP	1484600-0320	1484600-0320	1484600-0320
5	1	Hose, Charge	1479500-0635	1479500-0635	1479500-0635
6	1	Hose, Drain, Axle to Tank	1482525-1100	1482525-1100	1482525-1100
7	1	Hose, Drain, Axle to Valve	1481525-0335	1481525-0335	1481525-0335
8	2	Hose, Axle, Reverse	1482400-0655	1482400-0605	1482400-0605
9	2	Hose, Axle, Forward	1482400-0655	1482400-0605	1482400-0605
10	2	Hose, Axle, Drain	1481509-0610	1481509-0610	1481509-0610

NO.	REQ'D	DESCRIPTION	PART NO.		
		Axle type and Transmission >	*1480-E*	*1480-E2*	*1480-S*
1	1	Hose, Front Forward HP	1484500-1060	1484500-1060	1484500-1060
2	1	Hose, Front Reverse HP	1484500-1060	1484500-1110	1484500-1110
3	1	Hose, Rear Forward HP	1484600-0370	1484600-0370	1484600-0370
4	1	Hose, Rear Reverse HP	1484600-0370	1484600-0370	1484600-0370
5	1	Hose, Charge	1479500-0635	1479500-0635	1479500-0635
6	1	Hose, Drain, Axle to Tank	1482525-1100	1482525-1100	1482525-1100
7	1	Hose, Drain, Axle to Valve	1481525-0370	1481525-0370	1481525-0370
8	2	Hose, Axle, Reverse	1482400-0685	1482400-0685	1482400-0685
9	2	Hose, Axle, Forward	1482400-0685	1482400-0685	1482400-0685
10	2	Hose, Axle, Drain	1481509-0650	1481509-0650	1481509-0650

HYDRAULIC HOSE ROUTING
CASE-IH COTTONPICKERS

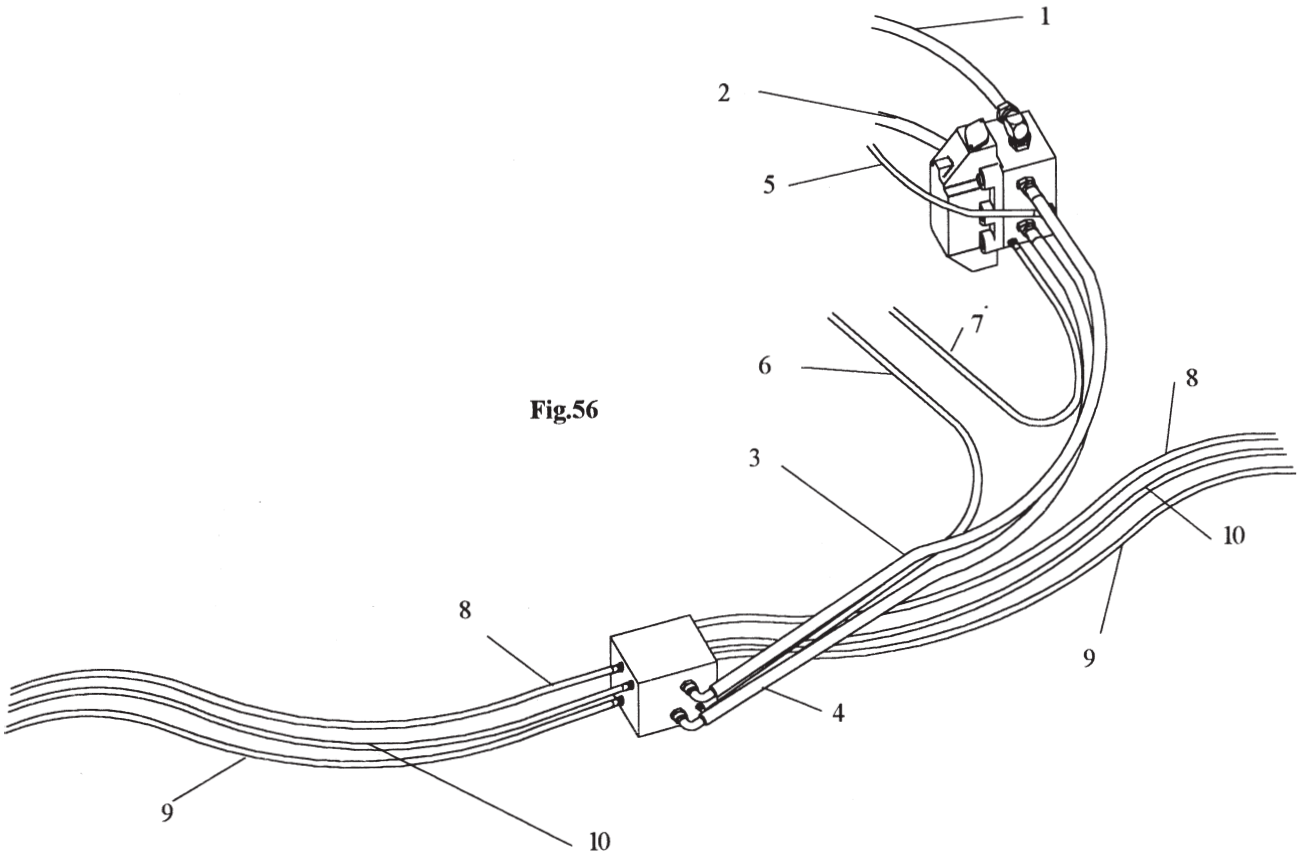


Fig.56

NO.	REQ'D	DESCRIPTION	PART NO.		
		Axle type and Transmission >	*1822-E*	*1844-E*	*1844 SKIP ROW*
1	1	Hose, Front Forward HP	1484600-0320	1484600-0320	1484600-0320
2	1	Hose, Front Reverse HP	1484600-0320	1484600-0320	1484600-0320
3	1	Hose, Rear Forward HP	1484500-1390	1484500-1390	1484500-1390
4	1	Hose, Rear Reverse HP	1484500-1390	1484500-1390	1484500-1390
5	1	Hose, Charge	1479500-0315	1479500-0315	1479500-0315
6	1	Hose, Drain, Axle to Tank	1482525-1000	1482525-1000	1482525-1000
7	1	Hose, Drain, Axle to Valve	1481525-0650	1481525-0650	1481525-0650
8	2	Hose, Axle, Reverse	1482401-0435	1482401-0435	1482401-0530
9	2	Hose, Axle, Forward	1482401-0435	1482401-0435	1482401-0530
10	2	Hose, Axle, Drain	1481510-0410	1481510-0410	1481510-0510

NOTE: ITEMS #8, 9, & 10 ARE SPRING COVERED HOSES

HYDRAULIC HOSE ROUTING
CLAAS COMBINES

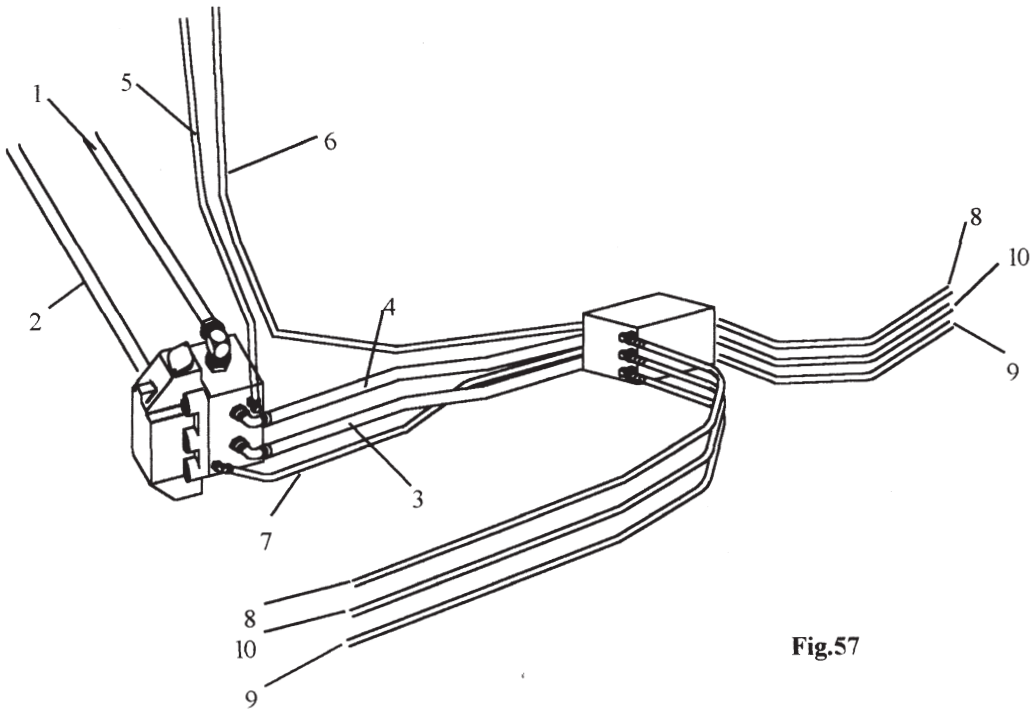


Fig.57

NO.	REQ'D	DESCRIPTION	PART NO.
		Axle type and Transmission >	*98*
1	1	Hose, Front Forward HP	1484600-1550
2	1	Hose, Front Reverse HP	1484600-1550
3	1	Hose, Rear Forward HP	1484500-0520
4	1	Hose, Rear Reverse HP	1484500-0520
5	1	Hose, Charge	1479500-1540
6	1	Hose, Drain, Axle to Tank	1482525-2000
7	1	Hose, Drain, Axle to Valve	1481525-0475
8	2	Hose, Axle, Reverse	1482400-0520
9	2	Hose, Axle, Forward	1482400-0520
10	2	Hose, Axle, Drain	1481509-0475

HYDRAULIC HOSE ROUTING for SHIFT ON THE GO
DEUTZ-ALLIS/ALLIS CHALMERS
GLEANERS

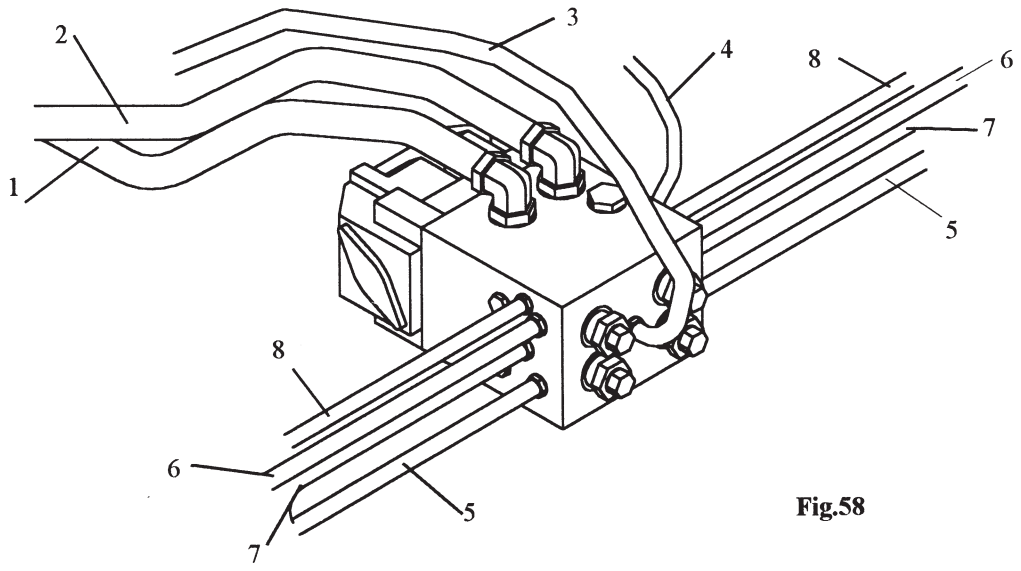


Fig.58

NO.	REQ'D	DESCRIPTION	PART NO.		
		Axle type and Transmission >	*R40*	*R50*	*N6/7 & R60/70*
1	1	Hose, Forward HP	1484701-1385	1484701-1385	1484600-1550
2	1	Hose, Reverse HP	1484701-1385	1484701-1385	1484600-1550
3	1	Hose, Drain	1482525-1600	1482525-1600	1482525-1600
4	1	Hose, Charge	1479500-1580	1479500-1580	1479500-1580
5	2	Hose, Axle, Forward	1482400-0530	1482400-0570	1482400-0605
6	2	Hose, Axle, Reverse	1482400-0530	1482400-0570	1482400-0605
7	2	Hose, Axle, Drain	1481525-0530	1481525-0570	1481525-0570
8	2	Hose, Axle, Servo	1479625-0530	1479625-0570	1479625-0570

HYDRAULIC HOSE ROUTING with DIRECTRAC VALVE
DEUTZ-ALLIS/ALLIS CHALMERS
GLEANERS

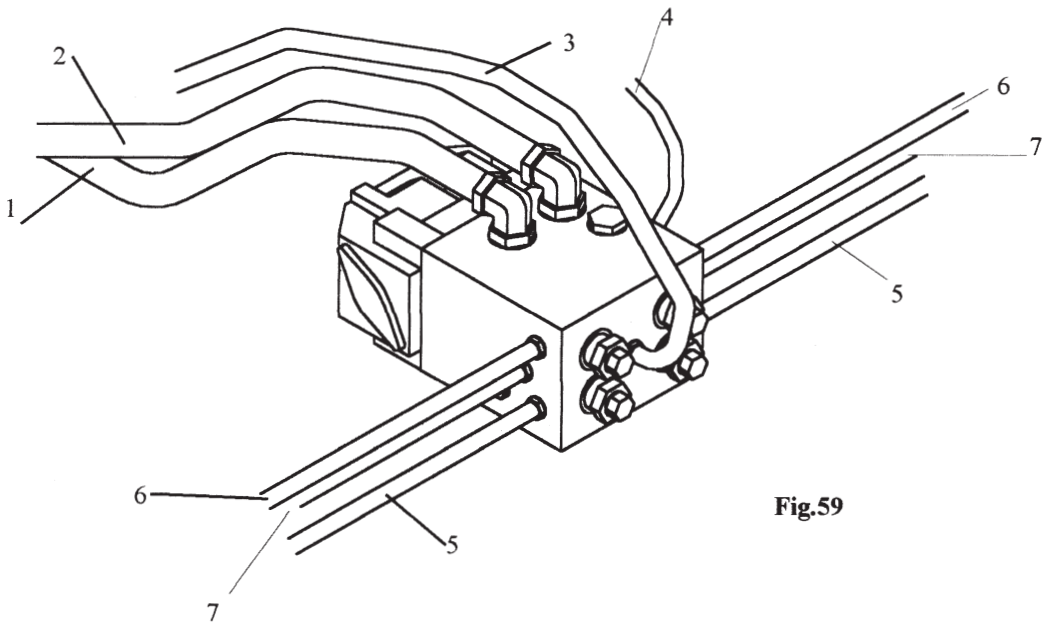


Fig.59

NO.	REQ'D	DESCRIPTION	PART NO.		
		Axle type and Transmission >	*R40*	*R50*	*N6/7 & R60/70*
1	1	Hose, Forward HP	1484701-1380	1484701-1380	1484600-1550
2	1	Hose, Reverse HP	1484701-1380	1484701-1380	1484600-1550
3	1	Hose, Drain	1482525-1600	1482525-1600	1482525-1600
4	1	Hose, Charge	1479500-1580	1479500-1580	1479500-1580
5	2	Hose, Axle, Forward	1482400-0530	1482400-0570	1482400-0605
6	2	Hose, Axle, Reverse	1482400-0530	1482400-0570	1482400-0605
7	2	Hose, Axle, Drain	1481525-0530	1481525-0570	1481525-0570

HYDRAULIC HOSE ROUTING
DEUTZ-ALLIS\ALLIS CHALMERS
GLEANERS

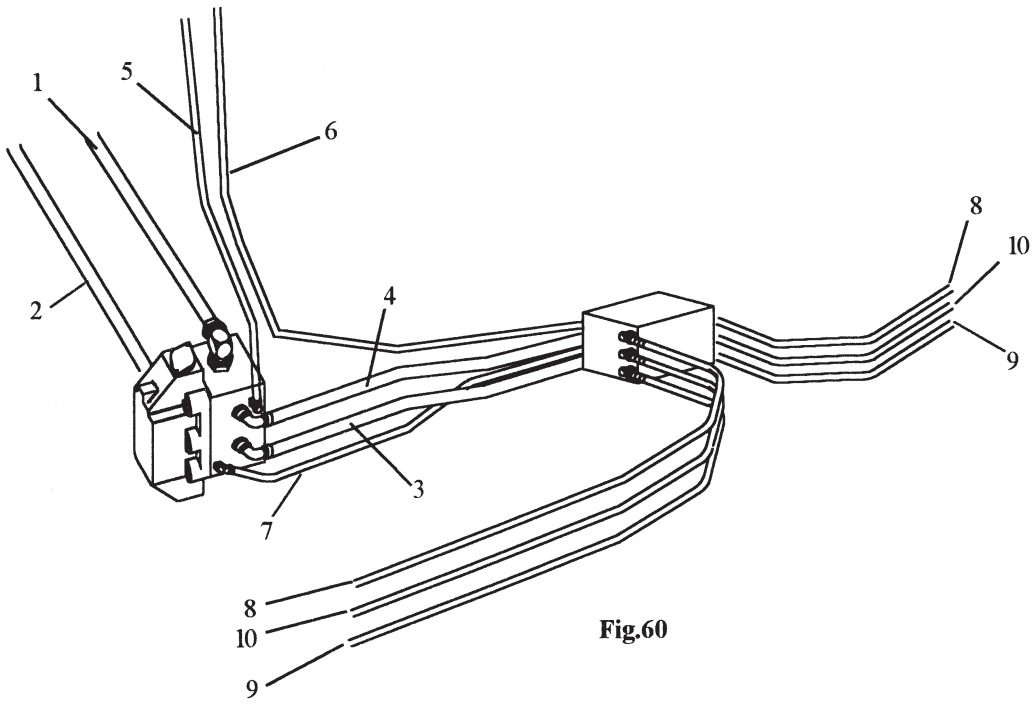


Fig.60

NO.	REQ'D	DESCRIPTION	PART NO.		
		Axle type and Transmission >	*F*	*F2-h*	*F2, F3-6x6-dp*
1	1	Hose, Front Forward HP	1484700-0860	1484600-0920	1484500-0820
2	1	Hose, Front Reverse HP	1484700-1020	1484600-0920	1484500-0820
3	1	Hose, Rear Forward HP	1484700-0420	1484700-0420	1484700-0420
4	1	Hose, Rear Reverse HP	1484700-0420	1484700-0420	1484700-0420
5	1	Hose, Charge	1479500-1025	1479500-1025	1479500-1025
6	1	Hose, Drain, Axle to Tank	1482525-1400	1482525-1400	1482525-1600
7	1	Hose, Drain, Axle to Valve	1481525-0455	1481525-0455	1481525-0455
8	2	Hose, Axle, Reverse	1482400-0460	1482400-0460	1482400-0460
9	2	Hose, Axle, Forward	1482400-0460	1482400-0460	1482400-0460
10	2	Hose, Axle, Drain	1481509-0410	1481509-0410	1481509-0410

Note: **d = Denison Transmission**
dp = DynaPower Transmission
h = Hydreco Transmission
s = Sunstrand Transmission
g = "Grain" Gleaner
r = "Rice" Gleaner

NO.	REQ'D	DESCRIPTION	PART NO.		
		Axle type and Transmission >	*L2,M2-6x6-g-dp*	*L2,M2-6x6-r-dp*	*L,L2,M,M2-4x4-g-h*
1	1	Hose, Front Forward HP	1484600-0820	1484600-0820	1484600-0870
2	1	Hose, Front Reverse HP	1484500-0800	1484500-0800	1484600-0870
3	1	Hose, Rear Forward HP	1484700-0480	1484700-0480	1484700-0480
4	1	Hose, Rear Reverse HP	1484700-0480	1484700-0480	1484700-0480
5	1	Hose, Charge	1479500-1065	1479500-1065	1479500-1025
6	1	Hose, Drain, Axle to Tank	1482525-1100	1482525-1100	1482525-2000
7	1	Hose, Drain, Axle to Valve	1481525-0475	1481525-0475	1481525-0475
8	2	Hose, Axle, Reverse	1482400-0520	1482400-0530	1482400-0520
9	2	Hose, Axle, Forward	1482400-0520	1482400-0530	1482400-0520
10	2	Hose, Axle, Drain	1481509-0475	1481509-0490	1481509-0475

NO.	REQ'D	DESCRIPTION	PART NO.		
		Axle type and Transmission >	*L2,M2-6x6-r-dp*	*N5, N6 6x6-dp*	*N6, R6, R7, R60, R70-d*
1	1	Hose, Front Forward HP	1484600-0870	1484600-0740	1484600-0820
2	1	Hose, Front Reverse HP	1484600-0870	1484500-0740	1484500-0740
3	1	Hose, Rear Forward HP	1484700-0480	1484500-0820	1484500-0820
4	1	Hose, Rear Reverse HP	1484700-0480	1484500-0820	1484500-0820
5	1	Hose, Charge	1479500-1025	1479500-1025	1479500-1025
6	1	Hose, Drain, Axle to Tank	1482525-2000	1482525-1600	1482525-1600
7	1	Hose, Drain, Axle to Valve	1481525-0475	1481525-0800	1481525-0800
8	2	Hose, Axle, Reverse	1482400-0530	1482400-0605	1482400-0605
9	2	Hose, Axle, Forward	1482400-0530	1482400-0605	1482400-0605
10	2	Hose, Axle, Drain	1481509-0490	1481509-0565	1481509-0565

NO.	REQ'D	DESCRIPTION	PART NO.
		Axle type and Transmission >	*R40, R50-s*
1	1	Hose, Front Forward HP	1484701-1025
2	1	Hose, Front Reverse HP	1484701-1065
3	1	Hose, Rear Forward HP	1484600-0460
4	1	Hose, Rear Reverse HP	1484600-0460
5	1	Hose, Charge	1479500-1355
6	1	Hose, Drain, Axle to Tank	1482525-1120
7	1	Hose, Drain, Axle to Valve	1481525-0455
8	1	Hose, Axle, Reverse RH	1482400-0410
	1	Hose, Axle, Reverse LH	1482400-0710
9	1	Hose, Axle, Forward RH	1482400-0410
	1	Hose, Axle, Forward LH	1482400-0710
10	1	Hose, Axle, Drain RH	1481509-0350
	1	Hose, Axle, Drain LH	1481509-0650

HYDRAULIC HOSE ROUTING for SHIFT ON THE GO JOHN DEERE COMBINES

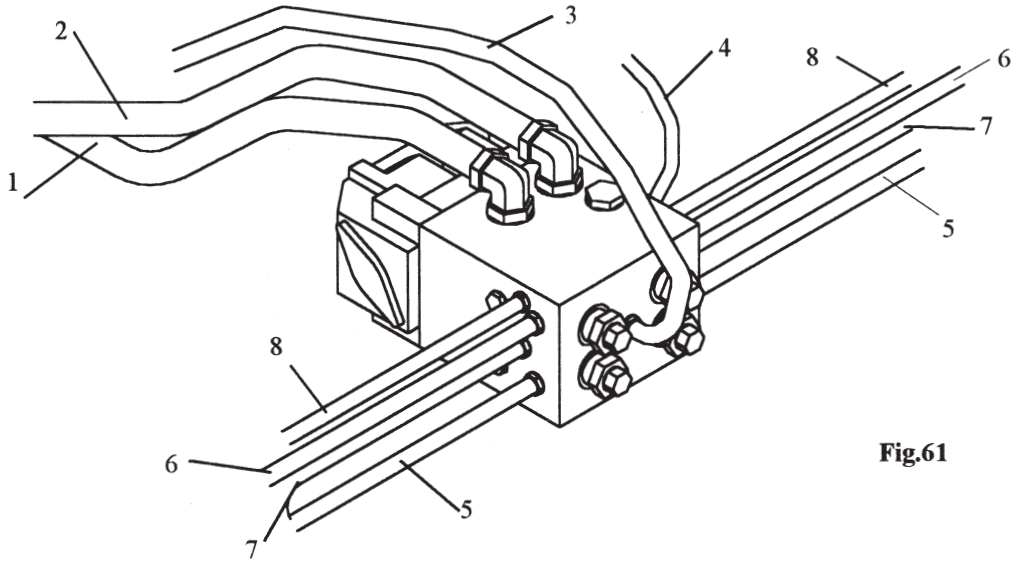


Fig.61

NO.	REQ'D	DESCRIPTION	PART NO.	
		Axle type and Transmission >	*4435*	*94/95/9600*
1	1	Hose, Forward HP*	1484500-1390	1484500-0650
	1		—	1484500-0650
2	1	Hose, Reverse HP*	1484700-1390	1484500-0650
	1		—	1484500-0650
3	1	Hose, Drain*	1482525-1400	1482525-0850
	1		—	1482525-0660
4	1	Hose, Charge*	1479500-1025	1479500-0920
	1		—	1479500-0750
5	2	Hose, Axle, Forward	1482400-0530	1482400-0760
6	2	Hose, Axle, Reverse	1482400-0530	1482400-0760
7	2	Hose, Axle, Drain	1481525-0510	1481525-0745
8	2	Hose, Axle, Servo	1479625-0510	1479625-0730

* FRONT HOSES FOR 94/95/9600 MAXIMIZER COMBINES ARE SPLICED THROUGH BULKHEAD AT LEFT REAR CORNER OF MACHINE.

** 9940/9950 SKIPROW COTTON PICKERS USE TWO HOSES FOR AXLE TO TANK DRAIN.

HYDRAULIC HOSE ROUTING with DIRECTRAC VALVE
JOHN DEERE COTTONPICKERS

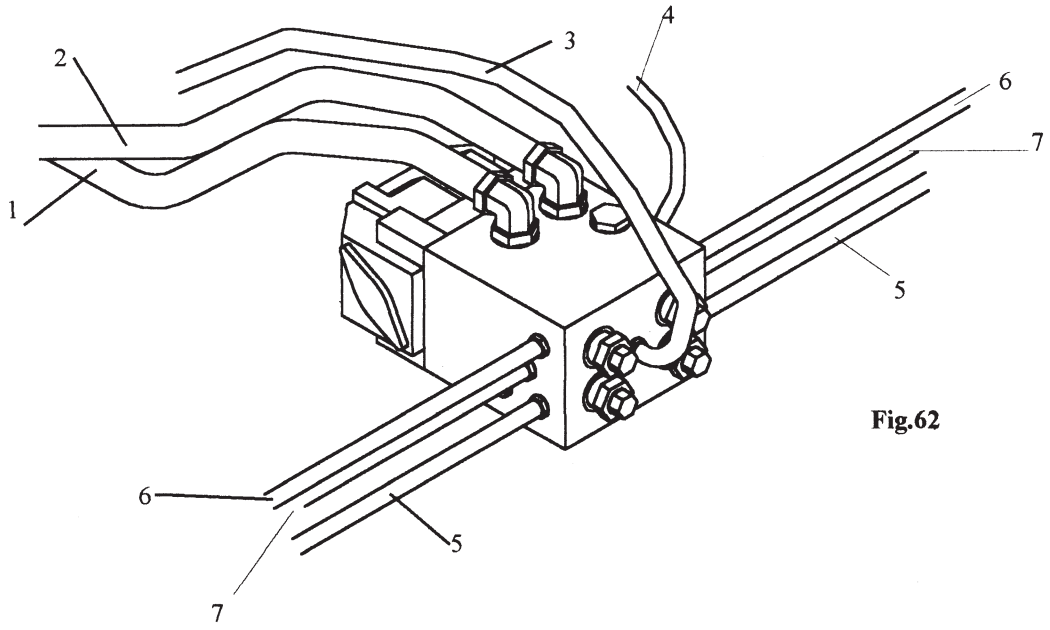


Fig.62

NO.	REQ'D	DESCRIPTION	PART NO.	
		Axle type and Transmission >	*9940/50-SKIP ROW*	*9960*
1	1	Hose, Forward HP(*)	1484600-0920	1484500-0950
2	1	Hose, Reverse HP*	1484600-0920	1484500-0950
3	1	Hose, Drain*(**)	1482525-0340	1482525-0660
	1		1482525-0280	—
4	1	Hose, Charge*	1479500-0920	1479500-0920
5	2	Hose, Axle, Forward	1482400-0510	1482400-0605
6	2	Hose, Axle, Reverse	1482400-0510	1482400-0605
7	2	Hose, Axle, Drain	1481525-0510	1481525-0570
8	2	Hose, Axle, Servo	1479625-0510	1479625-0570

* FRONT HOSES FOR 94/95/9600 MAXIMIZER COMBINES ARE SPLICED THROUGH BULKHEAD AT LEFT REAR CORNER OF MACHINE.

** 9940/9950 SKIPROW COTTONPICKERS USE TWO HOSES FOR AXLE TO TANK DRAIN.

HYDRAULIC HOSE ROUTING
JOHN DEERE COMBINES

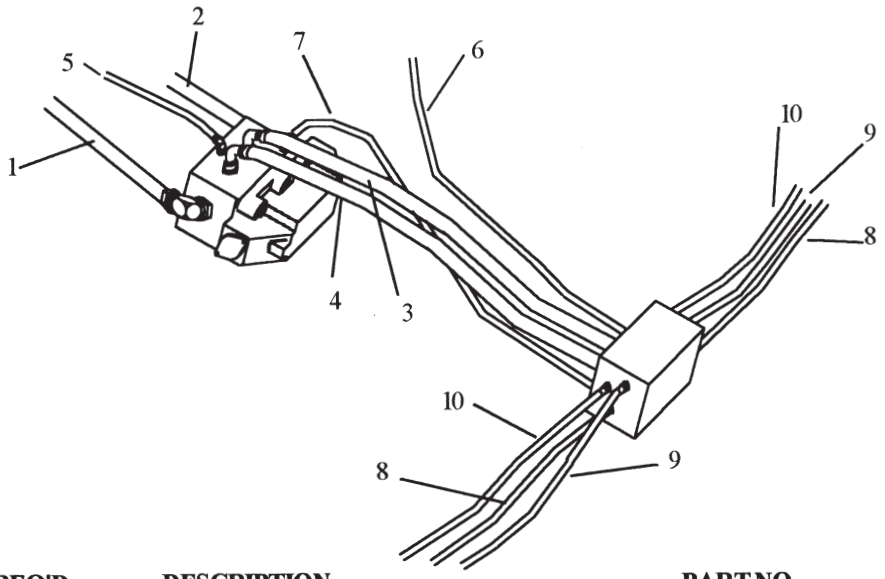


Fig.63

NO.	REQ'D	DESCRIPTION	PART NO.		
		Axle type and Transmission >	*6600 OS*	*6600, 6620*	*7700, 7720*
1	1	Hose, Front Forward HP	1484600-0920	1484600-0920	1484600-0920
2	1	Hose, Front Reverse HP	1484600-0920	1484600-0920	1484600-0920
3	1	Hose, Rear Forward HP	1484600-0580	1484600-0580	1484600-0580
4	1	Hose, Rear Reverse HP	1484600-0580	1484600-0580	1484600-0580
5	1	Hose, Charge	1479500-0825	1479500-0825	1479500-0825
6	1	Hose, Drain, Axle to Tank	1482525-1100	1482525-1100	1482525-1100
7	1	Hose, Drain, Axle to Valve	1481525-0570	1481525-0570	1481525-0570
8	1	Hose, Axle, Reverse LH	1482400-0460	1482400-0460	1482400-0510
	1	Hose, Axle, Reverse RH	1482400-0510	1482400-0510	1482400-0570
9	1	Hose, Axle, Forward LH	1482400-0460	1482400-0460	1482400-0510
	1	Hose, Axle, Forward RH	1482400-0510	1482400-0510	1482400-0570
10	1	Hose, Axle, Drain LH	1481509-0435	1481509-0435	1481509-0475
	1	Hose, Axle, Drain RH	1481509-0490	1481509-0490	1481509-0510

NO.	REQ'D	DESCRIPTION	PART NO.	
		Axle type and Transmission >	*5820, 5830*	*6620, 7720, 8820, HD*
1	1	Hose, Front Forward HP	1484500-0155	1484600-0920
2	1	Hose, Front Reverse HP	1484600-0165	1484600-0920
3	1	Hose, Rear Forward HP	1484700-0710	1484600-0460
4	1	Hose, Rear Reverse HP	1484700-0710	1484600-0460
5	1	Hose, Charge	1479550-0315	1479500-1025
6	1	Hose, Drain, Axle to Tank	1482525-1100	1482525-1100
7	1	Hose, Drain, Axle to Valve	1481525-0710	1481525-0470
8	2	Hose, Axle, Reverse	1482401-0520	1482401-0755
9	2	Hose, Axle, Forward	1482401-0520	1482401-0755
10	2	Hose, Axle, Drain	1481510-0510	1481510-0730

Note: OS = Old Style

HYDRAULIC HOSE ROUTING
JOHN DEERE 4WD COTTONPICKERS

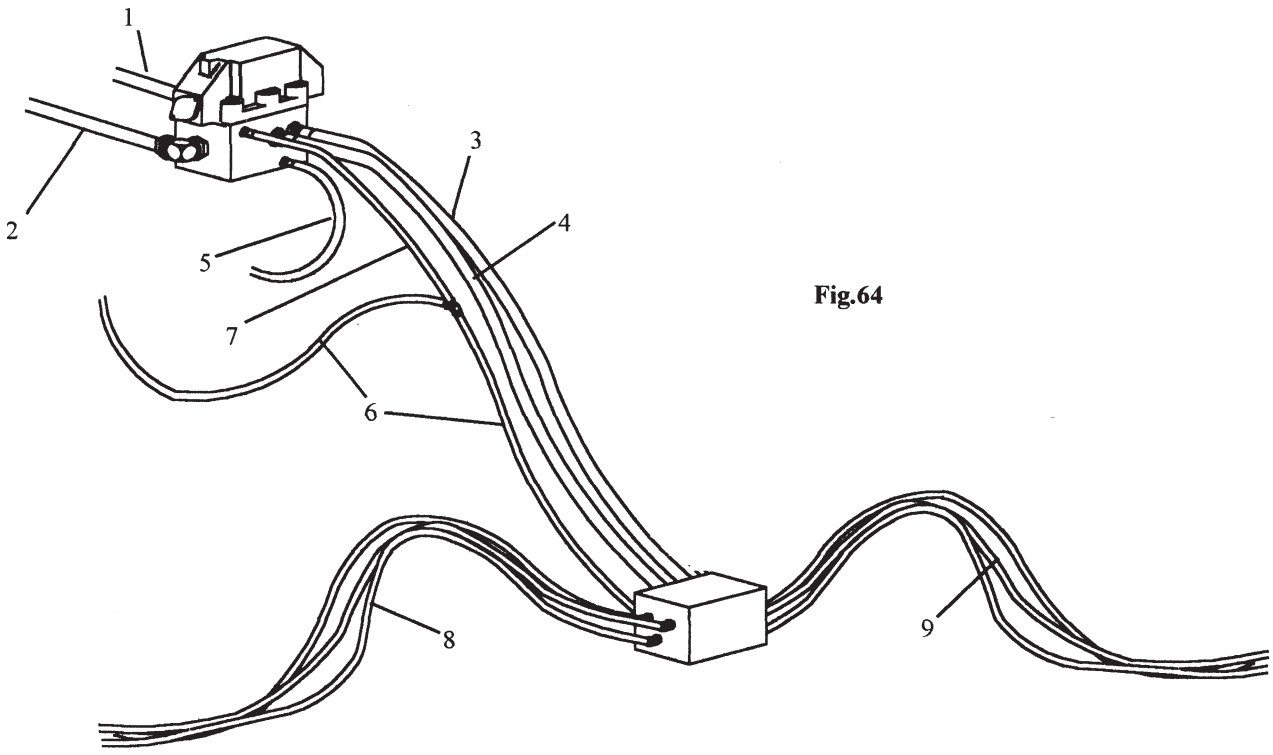


Fig.64

NO.	REQ'D	DESCRIPTION	PART NO.	
		Axle type and Transmission >	9940\50	9940\50-SKIPROW
1	1	Hose, Front Forward HP	1484700-0480	1484700-0480
2	1	Hose, Front Reverse HP	1484700-0560	1484700-0560
3	1	Hose, Rear Reverse HP	1484700-0710	1484700-0710
4	1	Hose, Rear Forward HP	1484700-0710	1484700-0710
5	1	Hose, Charge	1479500-0520	1479500-0520
6	1	Hose, Axle to Tank Drain	1482525-0340	1482525-0340
			1482525-0280	1482525-0280
7	1	Hose, Valve to Axle Drain	1481525-0745	1481525-0745
8	4	Hose, Axle to Hub HP	1482401-0490	1482401-0605
9	2	Hose, Axle Drain	1481510-0510	1481510-0610

HYDRAULIC HOSE ROUTING
JOHN DEERE 4WD COTTONPICKERS

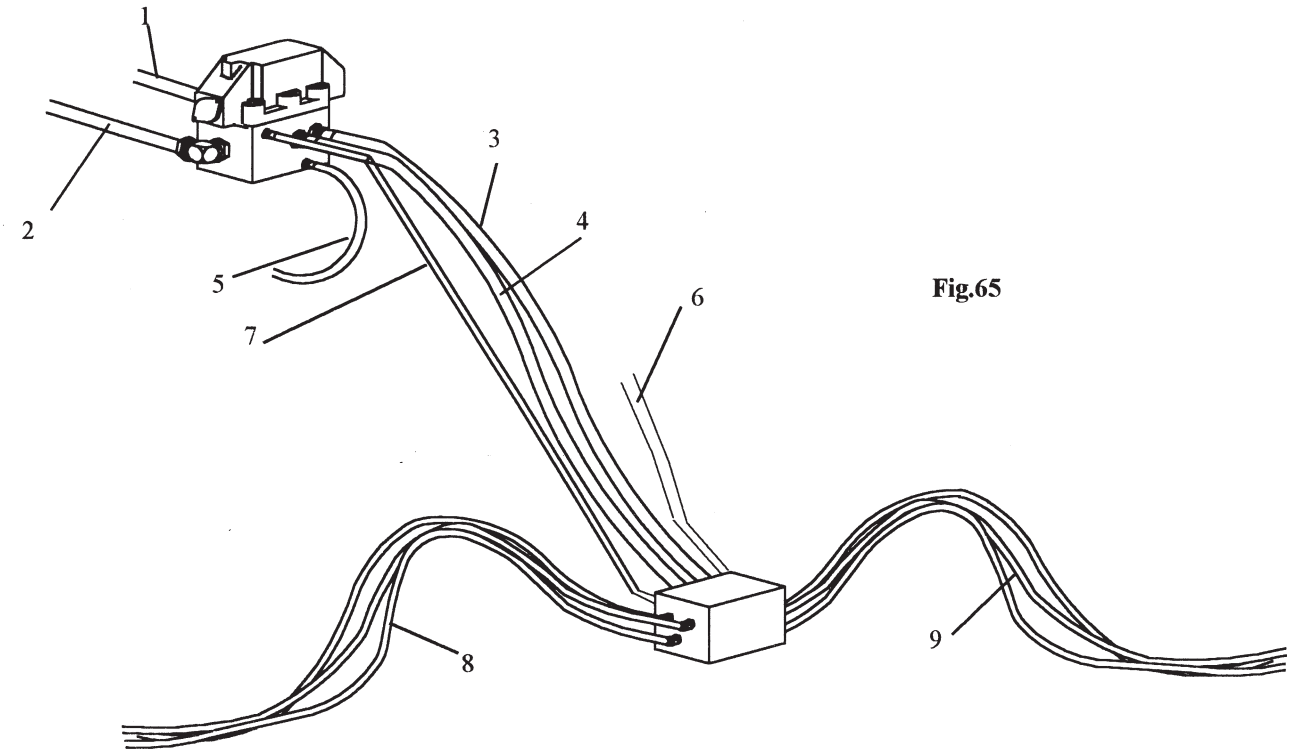


Fig.65

NO.	REQ'D	DESCRIPTION	PART NO.
		Axle type and Transmission >	*9930*
1	1	Hose, Front Foward HP	1484600-0480
2	1	Hose, Front Reverse HP	1484700-0480
3	1	Hose, Rear Reverse HP	1484600-0630
4	1	Hose, Rear Foward HP	1484600-0630
5	1	Hose, Charge	1479500-0520
6	1	Hose, Axle to Tank Drain	1482525-1000
7	1	Hose, Valve to Axle Drain	1481525-0650
8	4	Hose, Axle to Hub HP	1482401-0490
9	2	Hose, Axle, Drain	1481510-0510

HYDRAULIC HOSE ROUTING
MASSEY FERGUSON

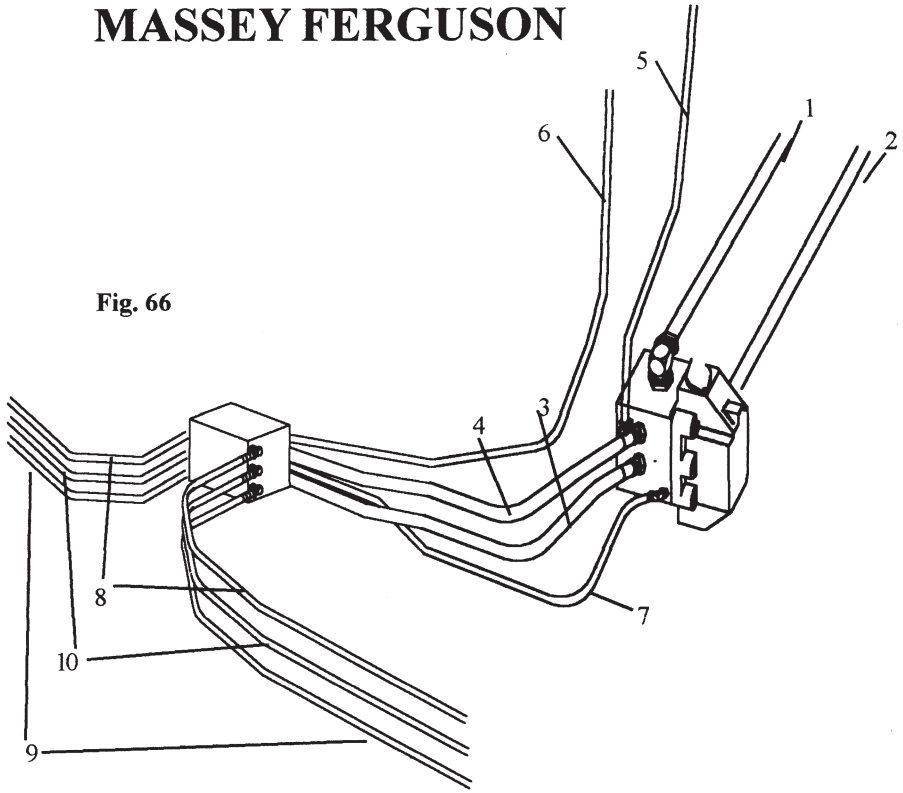


Fig. 66

NO.	REQ'D	DESCRIPTION	PART NO.	
		Axle type and Transmission >	*510, 550-e-g*	*510, 550-e-r*
1	1	Hose, Front Forward HP	1484700-0970	1484700-0970
2	1	Hose, Front Reverse HP	1484700-0970	1484700-0970
3	1	Hose, Rear Forward HP	1484600-0460	1484600-0460
4	1	Hose, Rear Reverse HP	1484600-0460	1484600-0460
5	1	Hose, Charge	1479500-1395	1479500-1395
6	1	Hose, Drain, Axle to Tank	1482525-2060	1482525-2060
7	1	Hose, Drain, Axle to Valve	1481525-0455	1481525-0455
8	2	Hose, Axle, Reverse	1482400-0570	1482400-0480
9	2	Hose, Axle, Forward	1482400-0570	1482400-0480
10	2	Hose, Axle, Drain	1481509-0510	1481509-0435

NO.	REQ'D	DESCRIPTION	PART NO.	
		Axle type and Transmission >	*510, 550-s-g*	*510, 550-s-r*
1	1	Hose, Front Forward HP	1484700-0970	1484700-0970
2	1	Hose, Front Reverse HP	1484700-0970	1484700-0970
3	1	Hose, Rear Forward HP	1484600-0460	1484600-0460
4	1	Hose, Rear Reverse HP	1484600-0460	1484600-0460
5	1	Hose, Charge	1479500-1395	1479500-1395
6	1	Hose, Drain, Axle to Tank	1482525-2060	1482525-2060
7	1	Hose, Drain, Axle to Valve	1481525-0455	1481525-0455
8	2	Hose, Axle, Reverse	1482400-0570	1482400-0480
9	2	Hose, Axle, Forward	1482400-0570	1482400-0480
10	2	Hose, Axle, Drain	1481509-0510	1481509-0435

Note: e = Eaton Transmission
s = Sunstrand Transmission

Note: g = "Grain" combine
r = "Rice" Combine

HYDRAULIC HOSE ROUTING
MASSEY FERGUSON

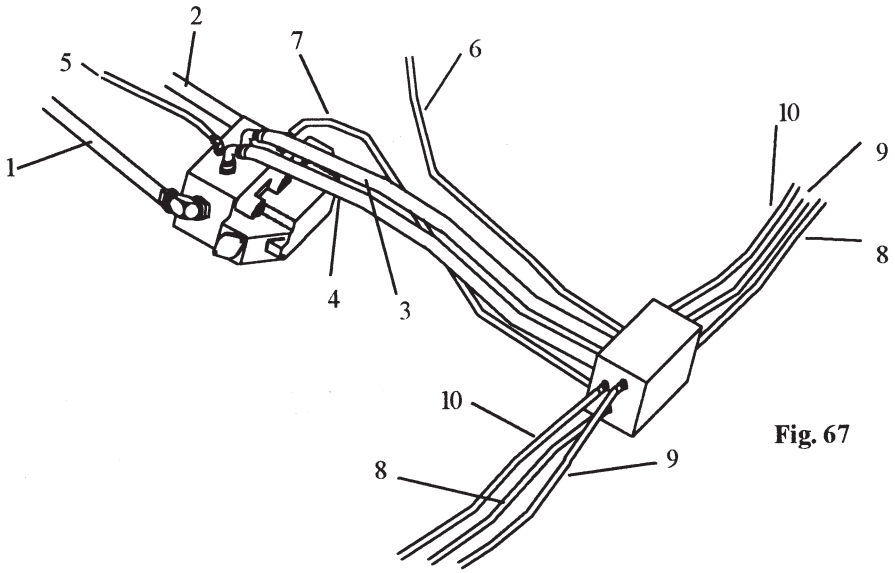


Fig. 67

NO.	REQ'D	DESCRIPTION	PART NO.		
		Axle type and Transmission >	*750-e-g*	*750-e-r*	*750-s-g*
1	1	Hose, Front Forward HP	1484600-1110	1484600-1110	1484600-1110
2	1	Hose, Front Reverse HP	1484600-1110	1484600-1110	1484600-1110
3	1	Hose, Rear Forward HP	1484600-0480	1484600-0580	1484600-0480
4	1	Hose, Rear Reverse HP	1484600-0480	1484600-0580	1484600-0480
5	1	Hose, Charge	1479500-1105	1479500-1105	1479500-1105
6	1	Hose, Drain, Axle to Tank	1482525-2000	1482525-2000	1482525-2000
7	1	Hose, Drain, Axle to Valve	1481525-0475	1481525-0475	1481525-0475
8	2	Hose, Axle, Reverse	1482400-0570	1482400-0530	1482400-0570
9	2	Hose, Axle, Forward	1482400-0570	1482400-0530	1482400-0570
10	2	Hose, Axle, Drain	1481509-0535	1481509-0495	1481509-0535

Note: e = Eaton Transmission
s = Sunstrand Transmission

Note: g = "Grain" combine
r = "Rice" Combine

HYDRAULIC HOSE ROUTING
MASSEY FERGUSON
(CONTINUED)

NO.	REQ'D	DESCRIPTION	PART NO.		
		Axle type and Transmission >	*750-s-r*	*760-e*	*760-s*
1	1	Hose, Front Forward HP	1484600-1110	1484600-1110	1484600-1110
2	1	Hose, Front Reverse HP	1484600-1110	1484600-1110	1484600-1110
3	1	Hose, Rear Forward HP	1484600-0580	1484600-0630	1484600-0630
4	1	Hose, Rear Reverse HP	1484600-0580	1484600-0630	1484600-0630
5	1	Hose, Charge	1479500-1105	1479500-1105	1479500-1105
6	1	Hose, Drain, Axle to Tank	1482525-2000	1482525-2700	1482525-2700
7	1	Hose, Drain, Axle to Valve	1481525-0475	1481525-0650	1481525-0650
8	2	Hose, Axle, Reverse	1482400-0530	1482400-0620	1482400-0620
9	2	Hose, Axle, Forward	1482400-0530	1482400-0620	1482400-0620
10	2	Hose, Axle, Drain	1481509-0495	1481509-0575	1481509-0575

NO.	REQ'D	DESCRIPTION	PART NO.		
		Axle type and Transmission >	*850-e-g*	*850-e-r*	*850-s-g*
1	1	Hose, Front Forward HP	1484600-1110	1484600-1110	1484600-1110
2	1	Hose, Front Reverse HP	1484600-1110	1484600-1110	1484600-1110
3	1	Hose, Rear Forward HP	1484600-0630	1484600-0630	1484600-0630
4	1	Hose, Rear Reverse HP	1484600-0630	1484600-0630	1484600-0630
5	1	Hose, Charge	1479500-1105	1479500-1105	1479500-1105
6	1	Hose, Drain, Axle to Tank	1482525-2700	1482525-2700	1482525-2700
7	1	Hose, Drain, Axle to Valve	1481525-0650	1481525-0650	1481525-0650
8	2	Hose, Axle, Reverse	1482400-0570	1482400-0530	1482400-0570
9	2	Hose, Axle, Forward	1482400-0570	1482400-0530	1482400-0570
10	2	Hose, Axle, Drain	1481509-0535	1481509-0495	1481509-0535

NO.	REQ'D	DESCRIPTION	PART NO.		
		Axle type and Transmission >	*850-s-r*	*860-e*	*860-s*
1	1	Hose, Front Forward HP	1484600-1110	1484600-1110	1484600-1110
2	1	Hose, Front Reverse HP	1484600-1110	1484600-1110	1484600-1110
3	1	Hose, Rear Forward HP	1484600-0630	1484600-0630	1484600-0630
4	1	Hose, Rear Reverse HP	1484600-0630	1484600-0630	1484600-0630
5	1	Hose, Charge	1479500-1105	1479500-1105	1479500-1105
6	1	Hose, Drain, Axle to Tank	1482525-2700	1482525-2700	1482525-2700
7	1	Hose, Drain, Axle to Valve	1481525-0650	1481525-0650	1481525-0650
8	2	Hose, Axle, Reverse	1482400-0530	1482400-0620	1482400-0620
9	2	Hose, Axle, Forward	1482400-0530	1482400-0620	1482400-0620
10	2	Hose, Axle, Drain	1481509-0495	1481509-0575	1481509-0575

Note: e = Eaton Transmission
s = Sunstrand Transmission

Note: g = "Grain" combine
r = "Rice" Combine

HYDRAULIC HOSE ROUTING
MASSEY FERGUSON ROTARY COMBINES

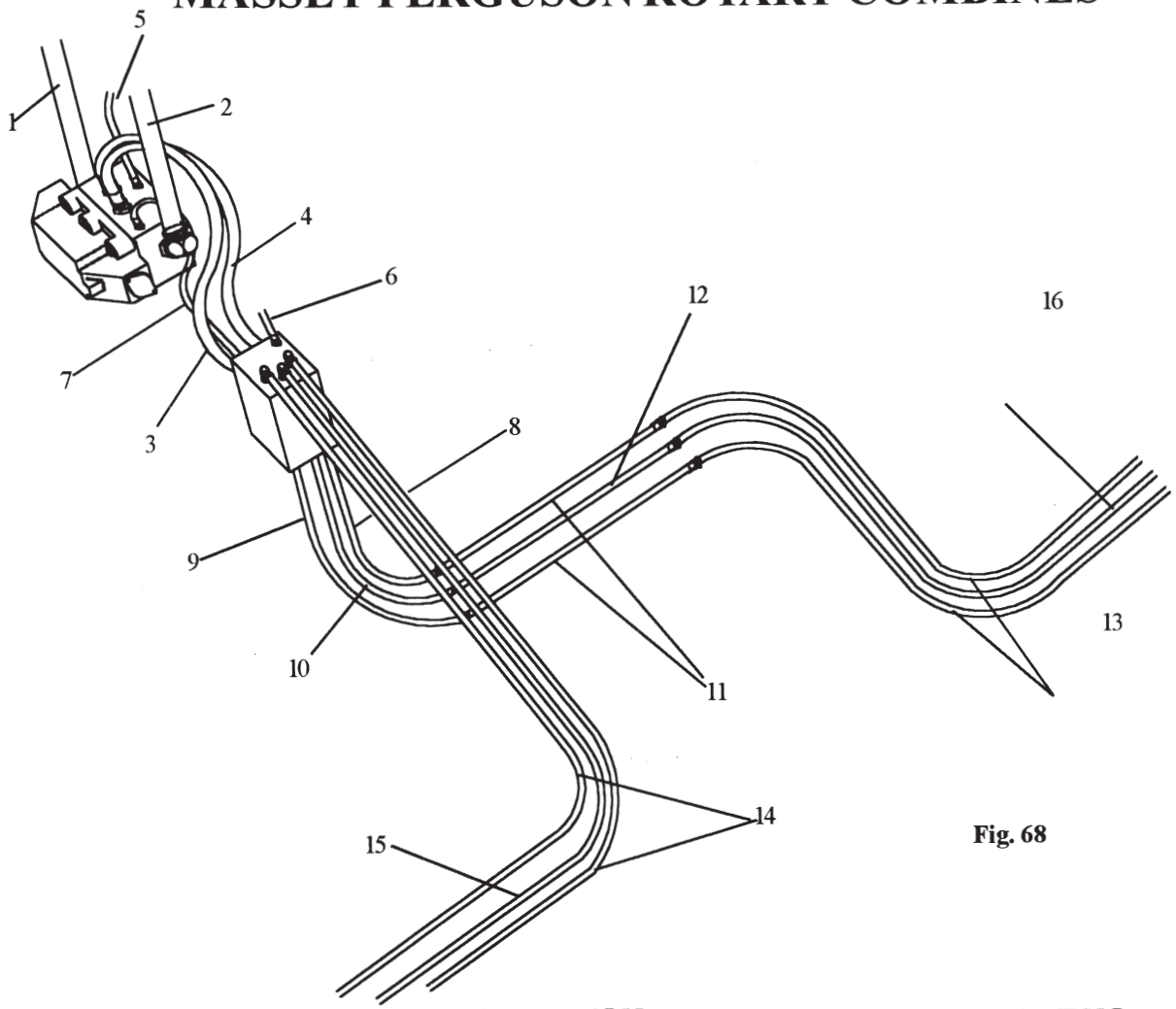


Fig. 68

NO.	REQ'D	DESCRIPTION	PART NO.	
		Axle type and Transmission >	*8560*	*8590*
1	1	Hose, Front Forward HP	1484600-1060	1484600-0480
2	1	Hose, Front Reverse HP	1484600-0780	1484500-0460
3	1	Hose, Rear Forward HP	1484600-0320	1484600-0305
4	1	Hose, Rear Reverse HP	1484600-0305	1484600-0320
5	1	Hose, Charge	1479500-0920	1479500-0825
6	1	Hose, Axle to Tank Drain	1482525-0960	1481525-0250
7	1	Hose, Valve to Axle Drain	1481525-0250	1482525-1080
8	1	Hose, Axle Crossover to Valve Rev HP	1482400-0175	1482400-0175
9	1	Hose, Axle Crossover to Valve Fwd HP	1482400-0185	1482400-0185
10	1	Hose, Axle Crossover to Valve Drain	1482525-0180	1482585-0180
11	2	Tube, Axle Crossover HP	1909775	1909700
12	1	Tube, Axle Crossover Drain	1909780	1909750
13	2	Hose, Axle Fwd and Rev RH HP	1482400-0655	1482400-0760
14	2	Hose, Axle Fwd and Rev LH HP	1482400-0710	1482400-0685
15	1	Hose, Axle Drain RH	1481509-0650	1481509-0710
16	1	Hose, Axle Drain LH	1481509-0610	1481509-0650

HYDRAULIC HOSE ROUTING for SHIFT ON THE GO
NEW HOLLAND

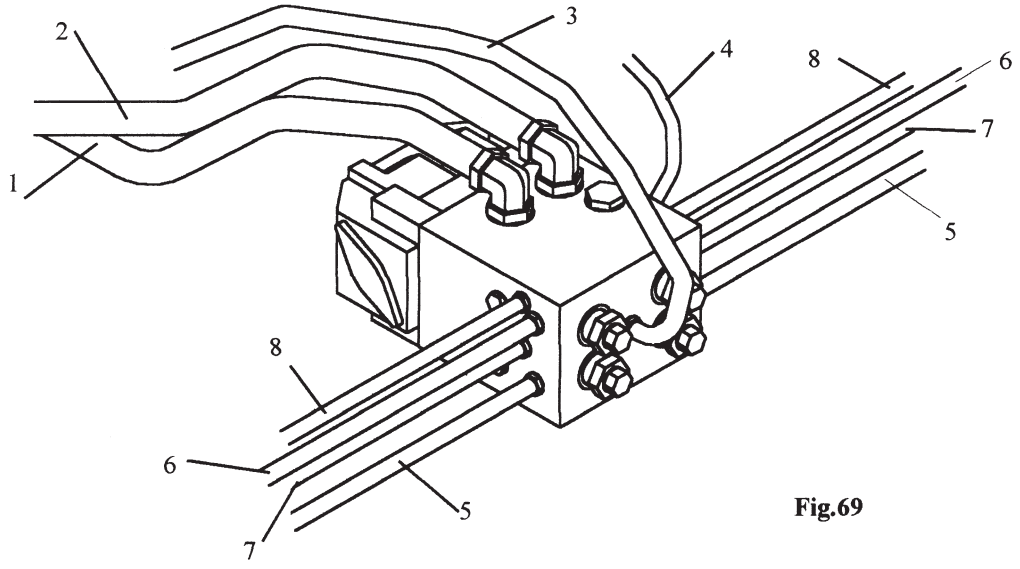


Fig.69

NO.	REQ'D	DESCRIPTION	PART NO.
		Axle type and Transmission >	*TR86 SOG / TR96 SOG*
1	1	Hose, Forward HP	1484600-1550
2	1	Hose, Reverse HP	1484600-1550
3	1	Hose, Drain	1482525-2400
4	1	Hose, Charge	1479500-1395
5	2	Hose, Axle, Forward	1482400-0605
6	2	Hose, Axle, Reverse	1482400-0605
7	2	Hose, Axle, Drain	1481525-0605
8	2	Hose, Axle, Servo	1479625-0620

HYDRAULIC HOSE ROUTING with DIRECTRAC VALVE NEW HOLLAND

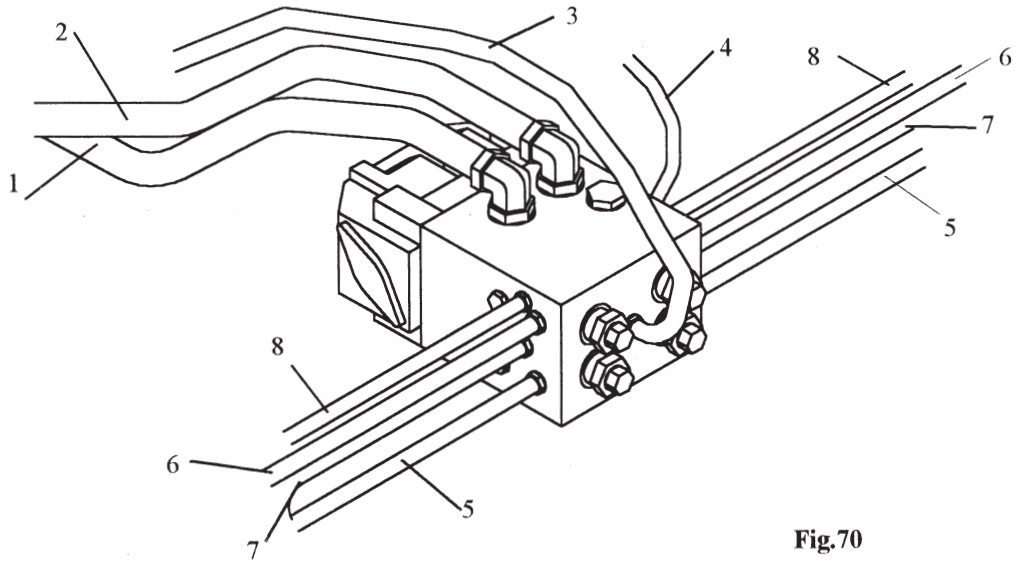


Fig.70

NO.	REQ'D	DESCRIPTION	PART NO.
		Axle type and Transmission >	*TR86/TR96*
1	1	Hose, Forward HP	1484600-1550
2	1	Hose, Reverse HP	1484600-1550
3	1	Hose, Drain	1482525-0660
4	1	Hose, Charge	1479500-1580
5	2	Hose, Axle, Forward	1482400-0605
6	2	Hose, Axle, Reverse	1482400-0605
7	2	Hose, Axle, Drain	1481525-0605
8	2	Hose, Axle, Servo	1479625-0620

HYDRAULIC HOSE ROUTING
NEW HOLLAND w/ONE PIECE HYDRO

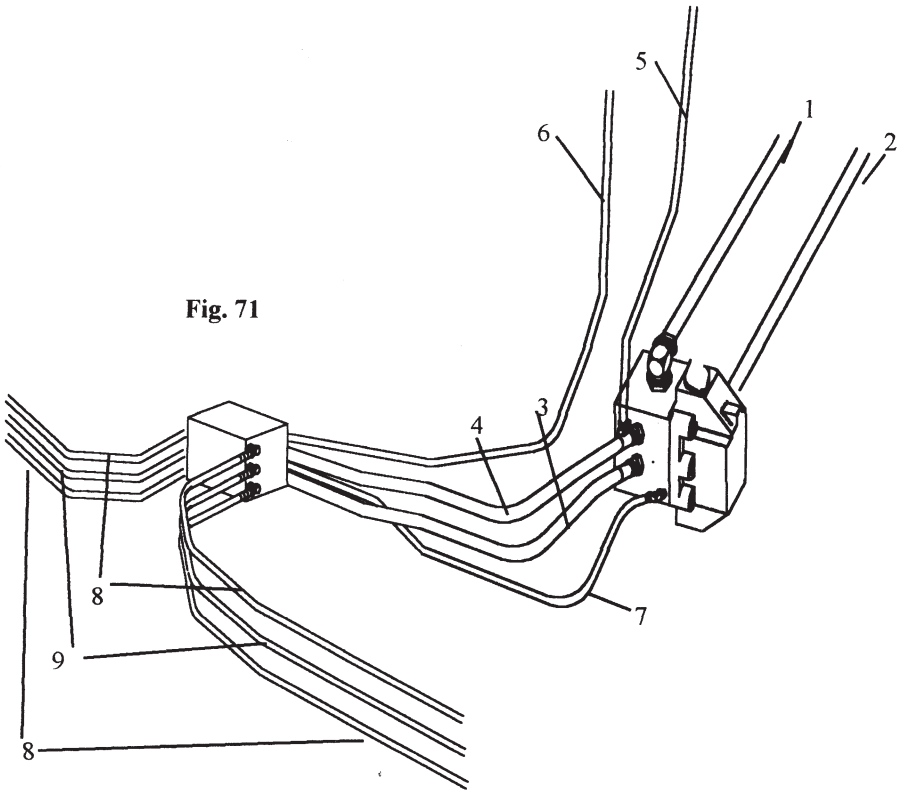


Fig. 71

NO.	REQ'D	DESCRIPTION	PART NO.	
		Axle type and Transmission >	*TR 70*	*TR 75, TR 85*
1	1	Hose, Front Forward HP	1484500-1190	1484700-1190
2	1	Hose, Front Reverse HP	1484500-1190	1484700-1190
3	1	Hose, Rear Forward HP	1484500-0520	1484600-0520
4	1	Hose, Rear Reverse HP	1484500-0520	1484600-0520
5	1	Hose, Charge	1479500-1355	1479500-0920
6	1	Hose, Drain, Axle to Tank	1482525-2000	1482525-2400
7	1	Hose, Drain, Axle to Valve	1481525-0570	1481525-0570
8	4	Hose, Axle HP	1482401-0605	1482401-0605
9	2	Hose, Axle, Drain	1481510-0565	1481510-0565

HYDRAULIC HOSE ROUTING
NEW HOLLAND w/TWO PIECE HYDRO

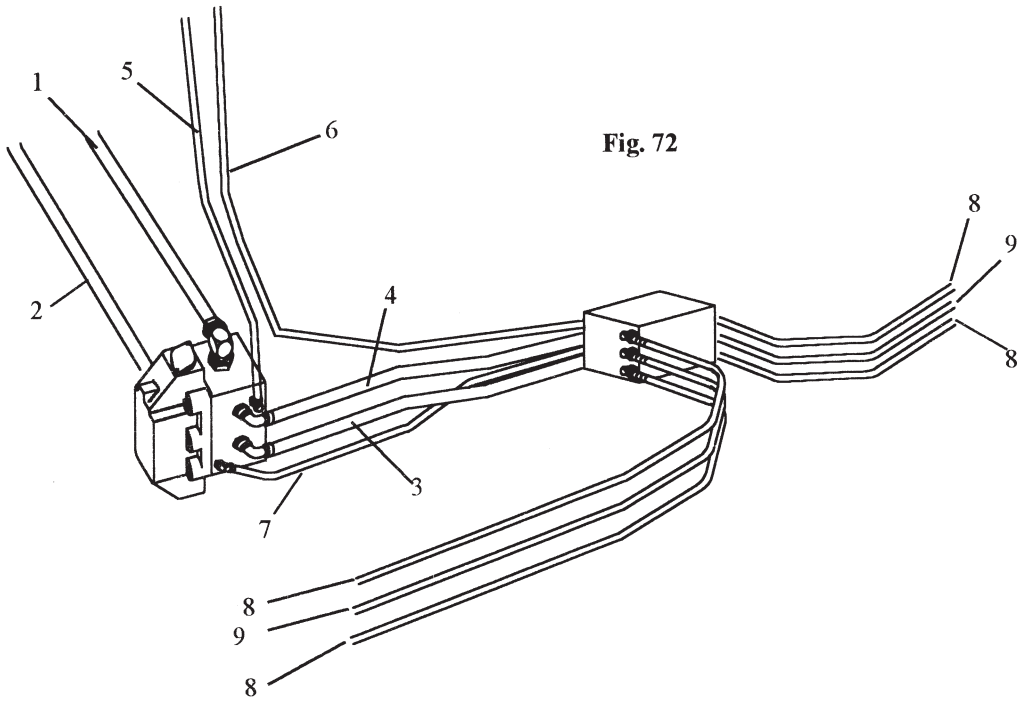


Fig. 72

NO.	REQ'D	DESCRIPTION	PART NO.	
		Axle type and Transmission >	*TR 85, TR 86*	*TR 95*
1	1	Hose, Front Forward HP	1484500-1110	1484500-1190
2	1	Hose, Front Reverse HP	1484500-1110	1484500-1190
3	1	Hose, Rear Forward HP	1484500-0570	1484500-0570
4	1	Hose, Rear Reverse HP	1484500-0570	1484500-0570
5	1	Hose, Charge	1479500-0920	1479500-0920
6	1	Hose, Drain, Axle to Tank	1482525-2400	1482525-2400
7	1	Hose, Drain, Axle to Valve	1481525-0475	1481525-0570
8	4	Hose, Axle HP	1482401-0605	1482401-0605
9	2	Hose, Axle, Drain	1481510-0565	1481510-0565

HYDRAULIC HOSE ROUTING
WHITE

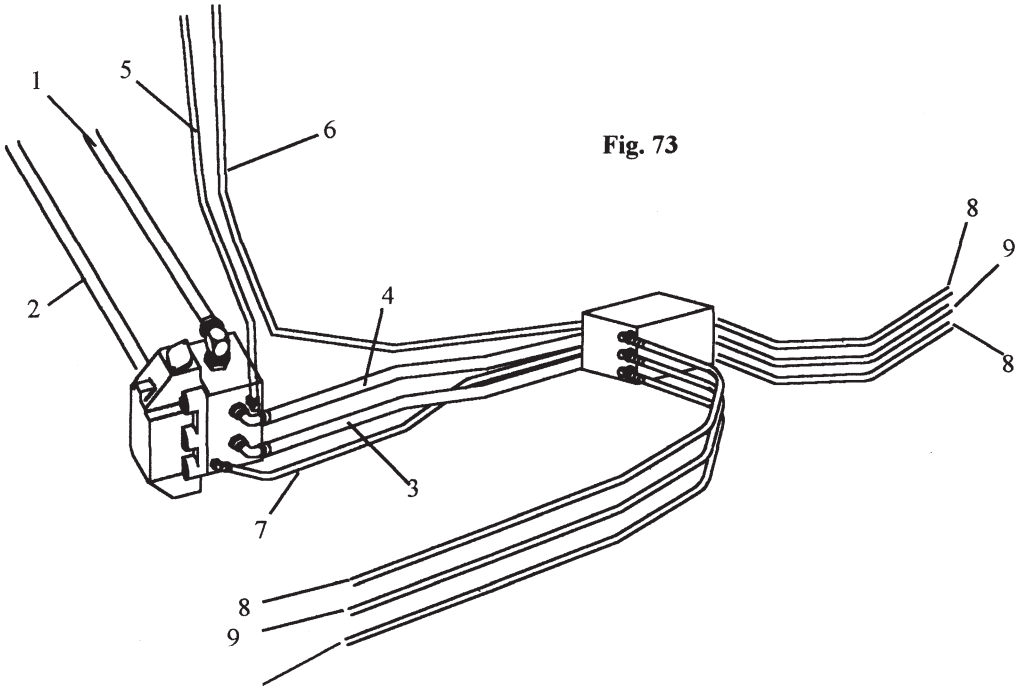


Fig. 73

NO.	REQ'D	DESCRIPTION	PART NO.	
		Axle type and Transmission >	*86-8700*	*88-8900*
1	1	Hose, Front Forward HP	1484600-1340	1484600-1340
2	1	Hose, Front Reverse HP	1484600-1340	1484600-1340
3	1	Hose, Rear Forward HP	1484600-0400	1484600-0400
4	1	Hose, Rear Reverse HP	1484600-0400	1484600-0400
5	1	Hose, Charge	1479500-1355	1479500-1355
6	1	Hose, Drain, Axle to Tank	1482525-2700	1482525-2700
7	1	Hose, Drain, Axle to Valve	1481525-0370	1481525-0370
8	4	Hose, Axle HP	1482401-0565	1482401-0620
9	2	Hose, Axle, Drain	1481510-0510	1481510-0565

HYDRAULIC HOSE ROUTING
WHITE 4WD ROTARY COMBINES

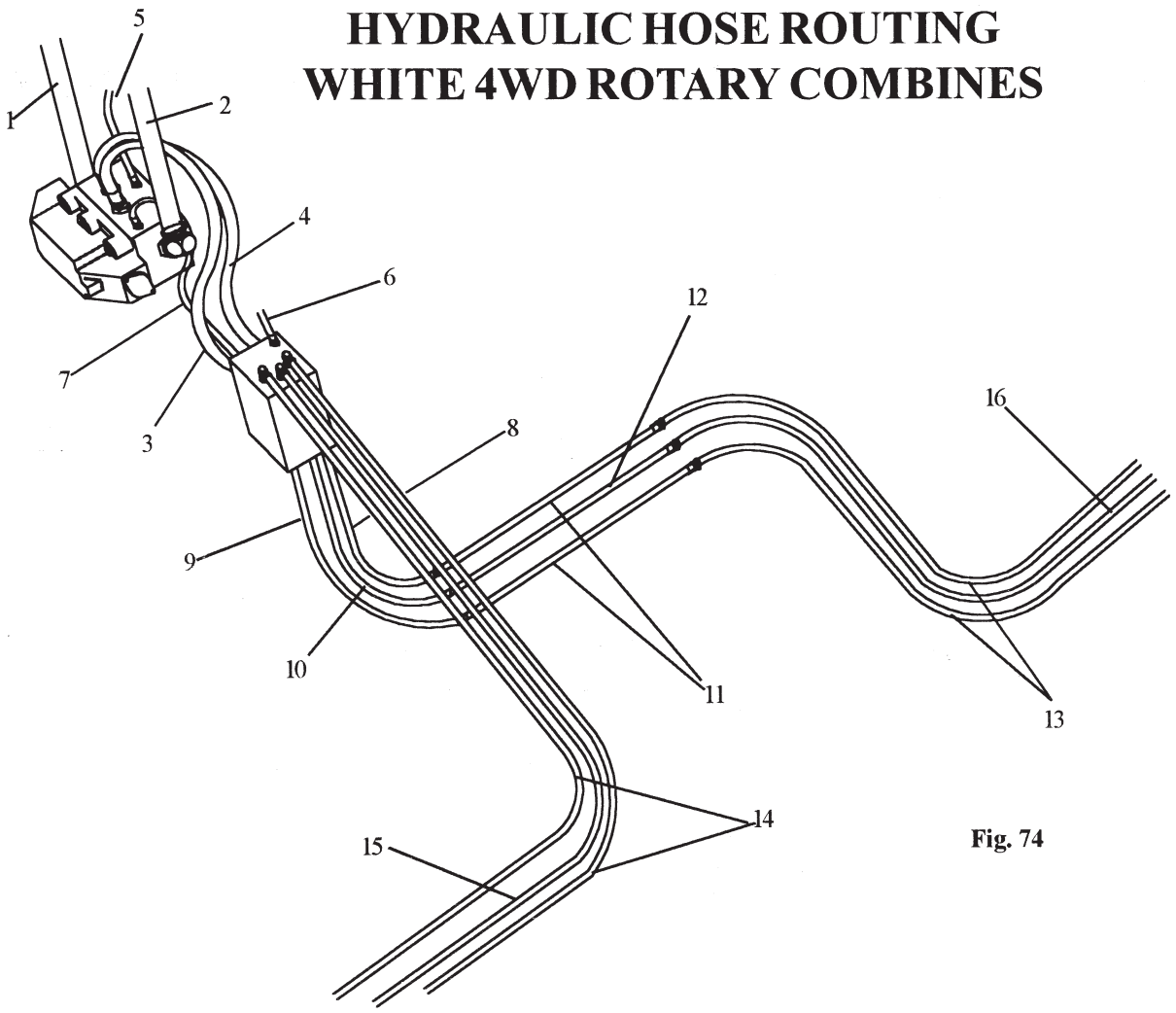


Fig. 74

NO.	REQ'D	DESCRIPTION	PART NO.	
		Axle type and Transmission >	*9320*	*9700/9720*
1	1	Hose, Front Forward HP	1484600-1060	1484600-0480
2	1	Hose, Front Reverse HP	1484600-0780	1484500-0460
3	1	Hose, Rear Forward HP	1484600-0320	1484600-0305
4	1	Hose, Rear Reverse HP	1484600-0305	1484600-0320
5	1	Hose, Charge	1479500-0920	1479500-0825
6	1	Hose, Axle to Tank Drain	1482525-0960	1481525-0250
7	1	Hose, Valve to Axle Drain	1481525-0250	1482525-1080
8	1	Hose, Axle Crossover to Valve Rev HP	1482400-0175	1482400-0175
9	1	Hose, Axle Crossover to Valve Fwd HP	1482400-0185	1482400-0185
10	1	Hose, Axle Crossover to Valve Drain	1482525-0180	1482585-0180
11	2	Tube, Axle Crossover HP	1909775	1909700
12	1	Tube, Axle Crossover Drain	1909780	1909750
13	2	Hose, Axle Fwd and Rev RH HP	1482400-0655	1482400-0760
14	2	Hose, Axle Fwd and Rev LH HP	1482400-0710	1482400-0685
15	1	Hose, Axle Drain RH	1481509-0650	1481509-0710
16	1	Hose, Axle Drain LH	1481509-0610	1481509-0650

GILCREST PUSHER™ G

PUSHER™ DRIVE SYSTEMS

PUSHER$_{TM}$ DRIVE SYSTEMS
CASE-IH COMBINES

Components and Options

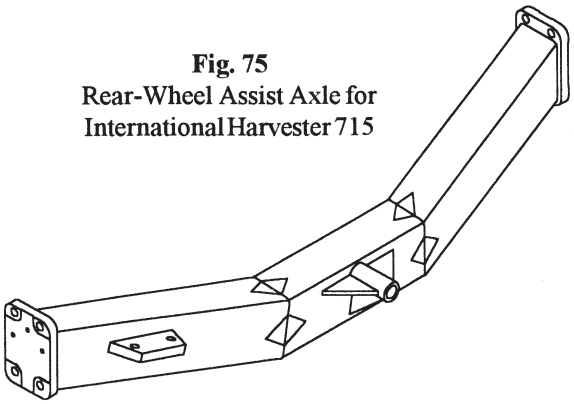


Fig. 75
Rear-Wheel Assist Axle for
International Harvester 715

-Universal Spindle/Yoke Assembly
-86" OAL Tie Rod

-High Power Hubs is the most powerful hub option available for this application.
-14.9 x 24 is the largest tire option available for this application.

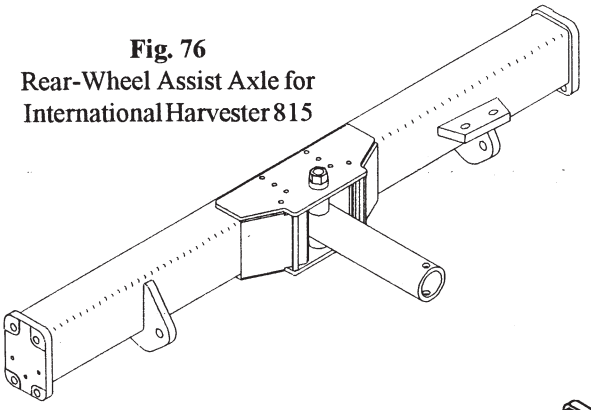


Fig. 76
Rear-Wheel Assist Axle for
International Harvester 815

-Universal Spindle/Yoke Assembly
-96" OAL Tie Rod

-High Power Hubs is the most powerful hub option available for this application.
-16.9 x 26 is the largest tire option available for this application.

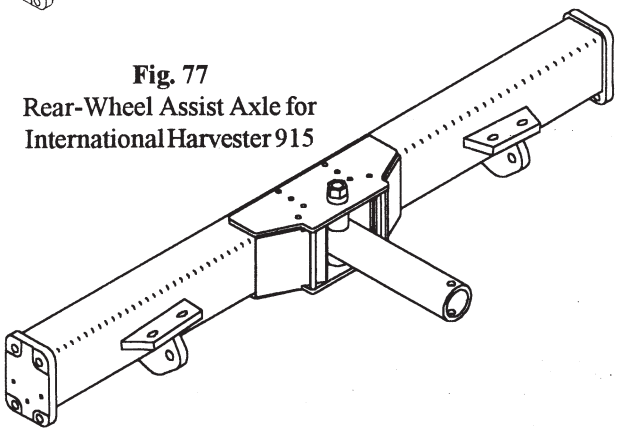


Fig. 77
Rear-Wheel Assist Axle for
International Harvester 915

-Universal Spindle/Yoke Assembly
-100.5" OAL Tie Rod Tube

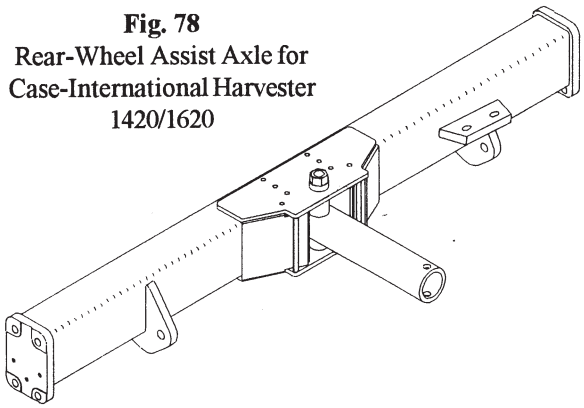


Fig. 78
Rear-Wheel Assist Axle for
Case-International Harvester
1420/1620

-Universal Spindle/Yoke Assembly
-90" OAL Tie Rod Tube

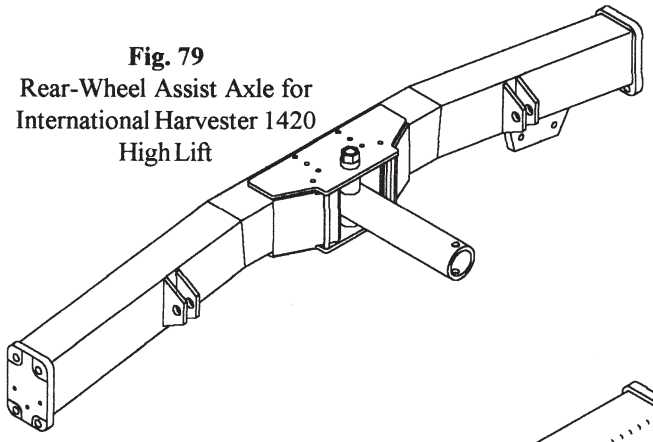


Fig. 79
Rear-Wheel Assist Axle for
International Harvester 1420
High Lift

-Universal Spindle/Yoke Assembly
-90" OAL Tie Rod Tube

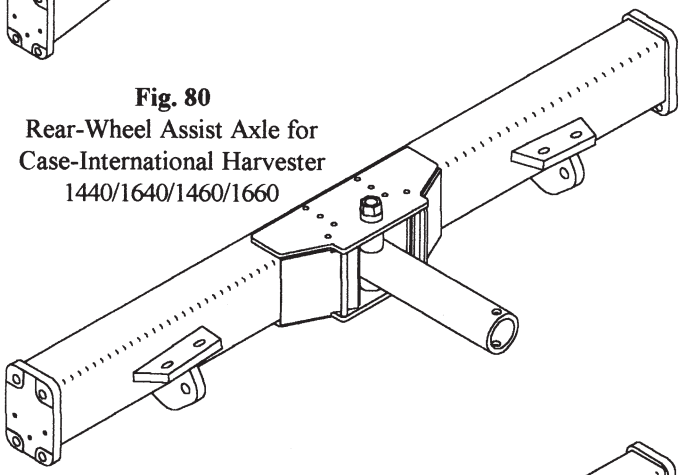


Fig. 80
Rear-Wheel Assist Axle for
Case-International Harvester
1440/1640/1460/1660

-Universal Spindle/Yoke Assembly
-100.5" OAL Tie Rod Tube

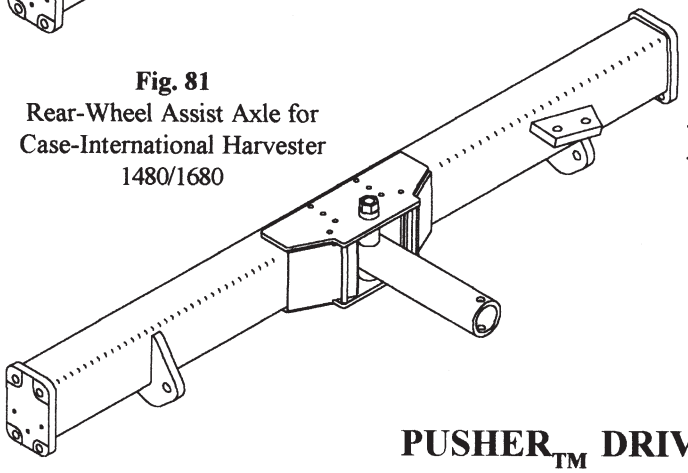


Fig. 81
Rear-Wheel Assist Axle for
Case-International Harvester
1480/1680

-Universal Spindle/Yoke Assembly
-106" OAL Tie Rod Tube

PUSHER$_{TM}$ DRIVE SYSTEMS for CLAAS COMBINES

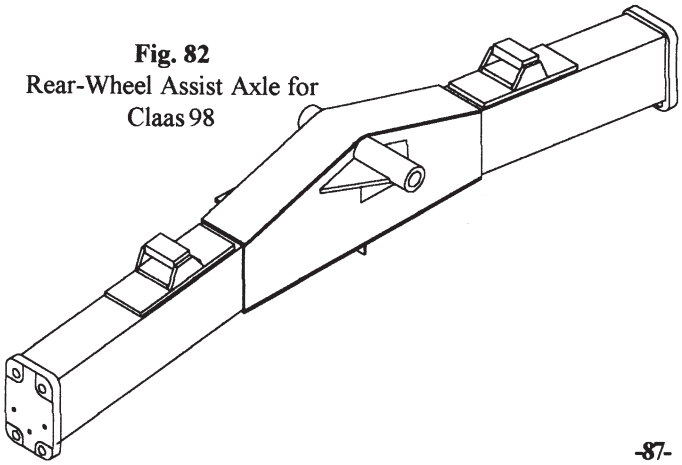


Fig. 82
Rear-Wheel Assist Axle for
Claas 98

-Universal Spindle/Yoke Assembly
-96" OAL Tie Rod Tube

PUSHER$_{TM}$ DRIVE SYSTEMS
ALLIS CHALMERS/DEUTZ ALLIS GLEANERS

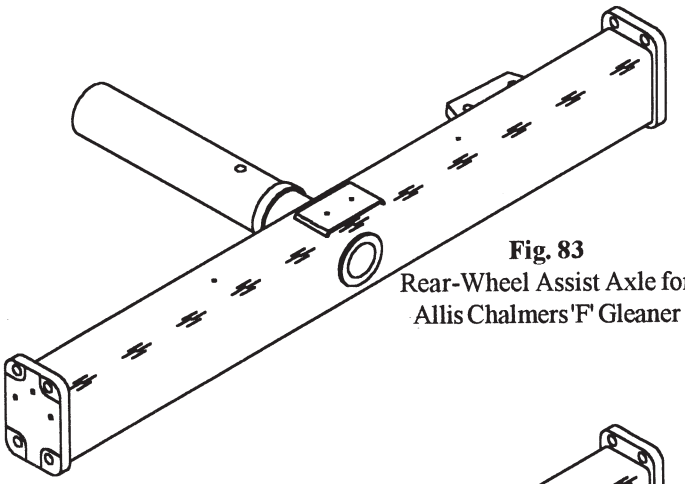


Fig. 83
Rear-Wheel Assist Axle for
Allis Chalmers 'F' Gleaner

Components and Options

-Universal Spindle/Yoke Assembly
-84" OAL Tie Rod

-High Power Hubs is the most powerful hub option available for this application.
-14.9 x 28 is the largest tire option available for this application.

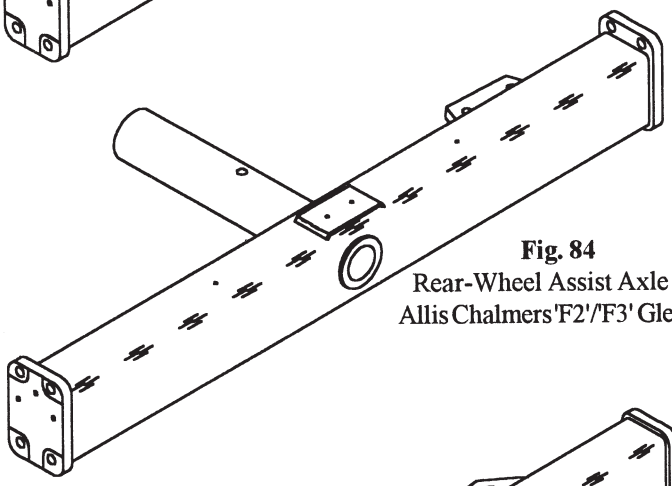


Fig. 84
Rear-Wheel Assist Axle for
Allis Chalmers 'F2'/'F3' Gleaner

-Universal Spindle/Yoke Assembly
-84" OAL Tie Rod

-High Power Hubs is the most powerful hub option available for this application.
-14.9 x 28 is the largest tire option available for this application.

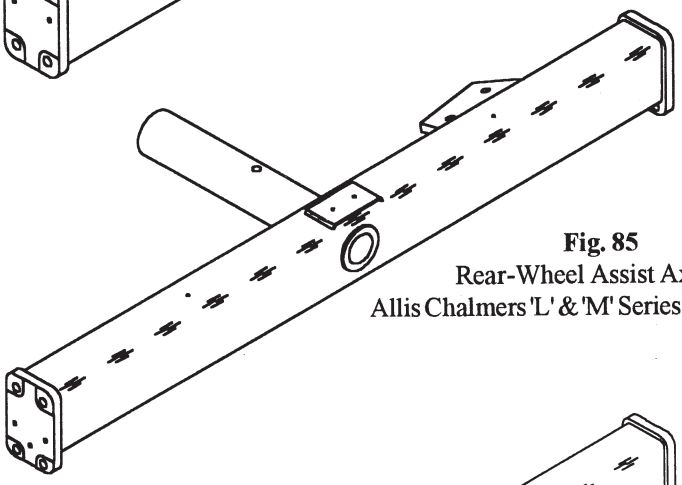


Fig. 85
Rear-Wheel Assist Axle for
Allis Chalmers 'L' & 'M' Series Grain Gleaner

-Universal Spindle/Yoke Assembly
-96" OAL Tie Rod

-Some shield modification may be necessary when 14.9 x 28 tires or larger are used.

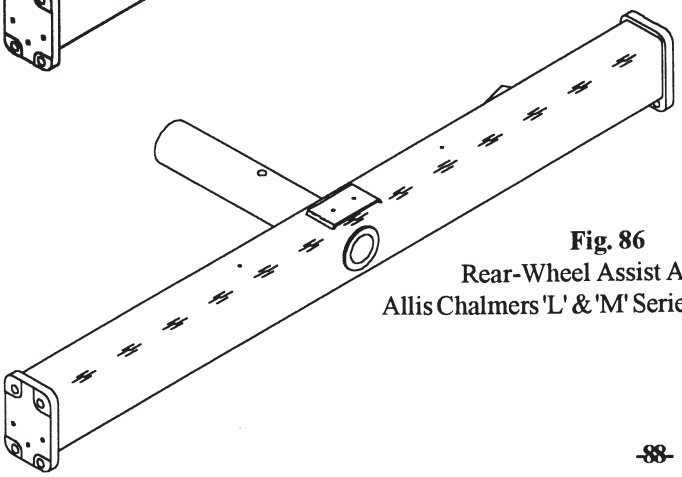
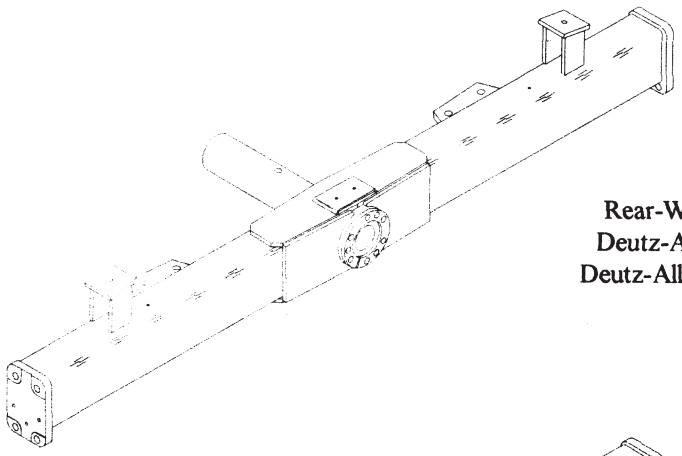


Fig. 86
Rear-Wheel Assist Axle for
Allis Chalmers 'L' & 'M' Series Rice Gleaner

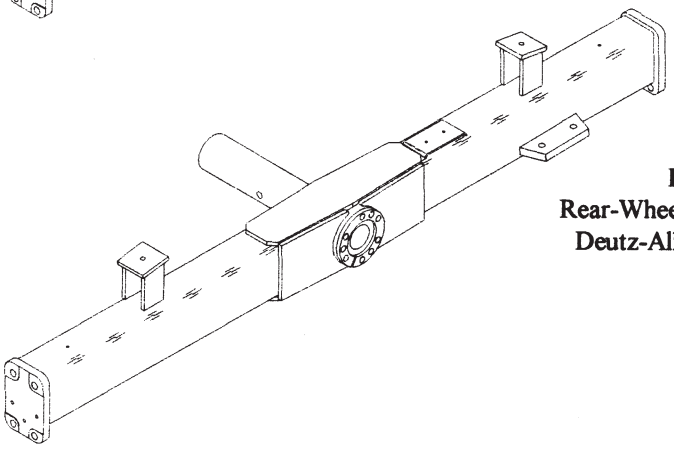
-Universal Spindle/Yoke Assembly
-102" OAL Tie Rod

-Some shield modification may be necessary when 14.9 x 28 tires or larger are used.



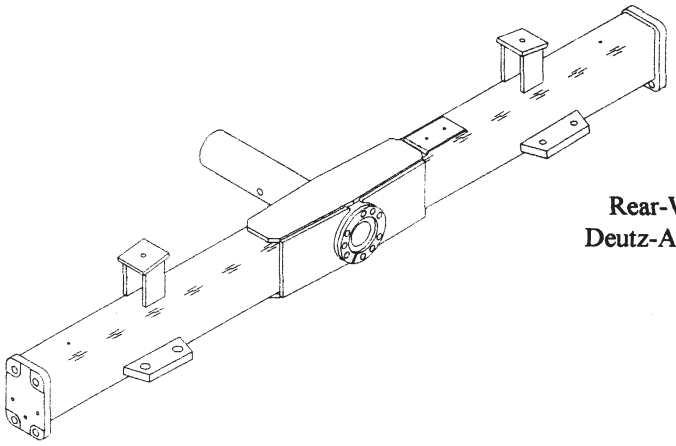
-Universal Spindle/Yoke Assembly
-114" OAL Tie Rod

Fig. 87
Rear-Wheel Assist Axle for
Deutz-Allis 'N' Series Gleaner
Deutz-Allis 'R60' & 'R70' Gleaner



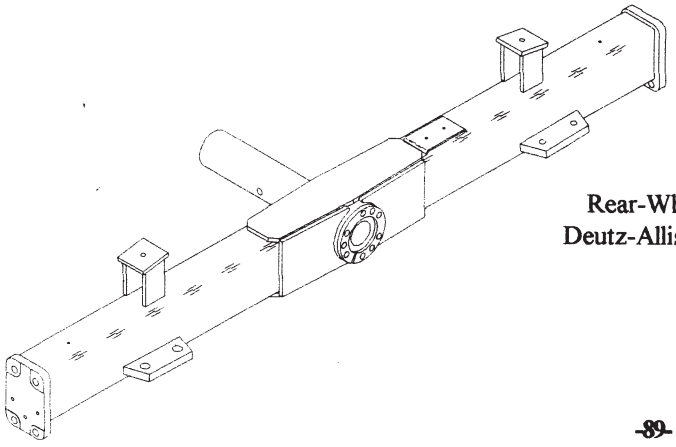
-'R40'/'R50' Spindle/Yoke Assembly
-100.5" OAL Tie Rod

Fig. 88
Rear-Wheel Assist Axle for
Deutz-Allis 'R40' Gleaner



-'R40'/'R50' Spindle/Yoke Assembly
-106" OAL Tie Rod

Fig. 89
Rear-Wheel Assist Axle for
Deutz-Allis 'R50' & 'R52' Gleaner



-'50' Spindle/Yoke Assembly
-114" OAL Tie Rod

Fig. 90
Rear-Wheel Assist Axle for
Deutz-Allis 'R62' & 'R72' Gleaner

PUSHER$_{TM}$ DRIVE SYSTEMS
JOHN DEERE COMBINES

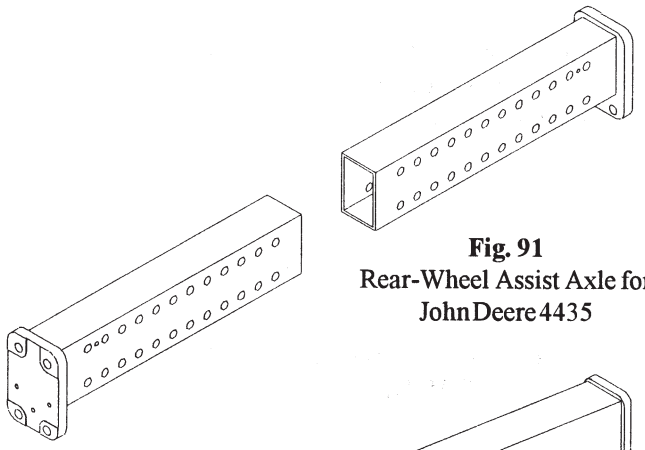


Fig. 91
Rear-Wheel Assist Axle for
John Deere 4435

Components and Options

-John Deere 4435 Spindle/Yoke Assembly

-Available in 'Shift on the Go' only.
-Uses original axle center section, steering cylinder & ends, and tie rod with GEC extensions.

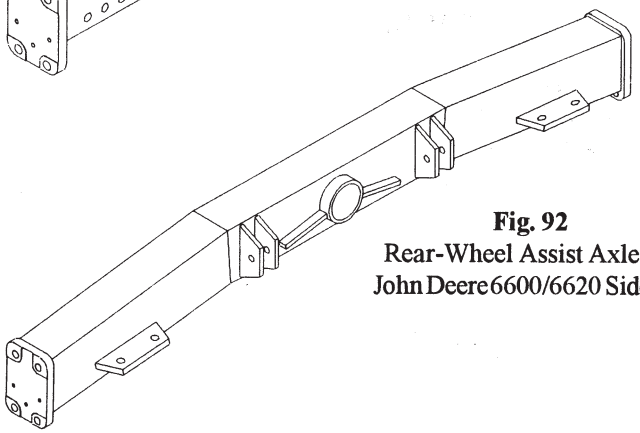


Fig. 92
Rear-Wheel Assist Axle for
John Deere 6600/6620 Sidehill

-Universal Spindle/Yoke Assembly
-103" OAL Tie Rod

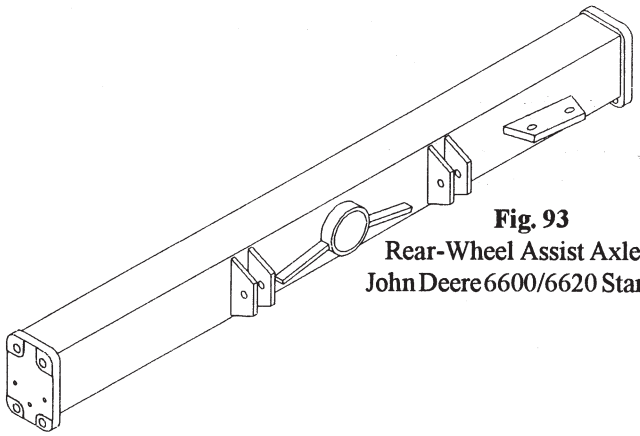


Fig. 93
Rear-Wheel Assist Axle for
John Deere 6600/6620 Standard

-Universal Spindle/Yoke Assembly
-90" OAL Tie Rod

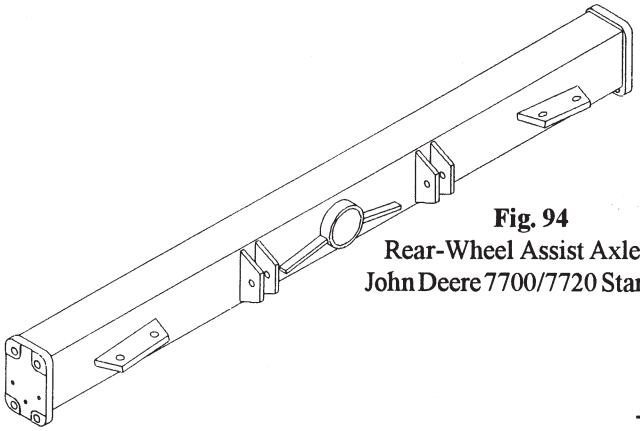


Fig. 94
Rear-Wheel Assist Axle for
John Deere 7700/7720 Standard

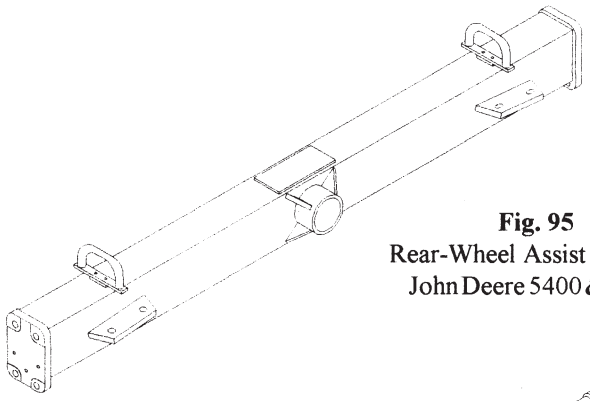
-Universal Spindle/Yoke Assembly
-100.5" OAL Tie Rod

PUSHER$_{TM}$ DRIVE SYSTEMS
JOHN DEERE COMBINES
(SPECIAL APPLICATION BOLT-ON CONVERSIONS)

Rear-Wheel Assist Conversions for John Deere 6620, 7720, & 8820 Heavy duty (including TITAN 2 Machines) use the John Deere Heavy Duty Spindle/Yoke Assembly (seen on page 24 of this book, **Fig. 15**) with OEM axle, steering cylinder & ends, and tie rod & ends.

Rear-Wheel Assist Conversions for John Deere 9400, 9500, 9600 Maximizers use the John Deere Maximizer Spindle/Yoke Assembly (seen on page 25 of this book, **Fig. 16**) with OEM axle, steering cylinder & ends, and tie rod & ends with GEC extensions.

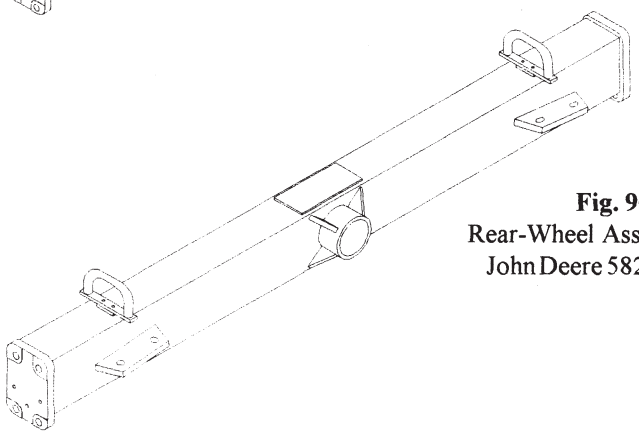
PUSHER$_{TM}$ DRIVE SYSTEMS
for JOHN DEERE
CHOPPERS



Components and Options

-Universal Spindle/Yoke Assembly
-78" OAL Tie Rod

Fig. 95
Rear-Wheel Assist Axle for
John Deere 5400 & 5460



-Universal Spindle/Yoke Assembly
-86" OAL Tie Rod

Fig. 96
Rear-Wheel Assist Axle for
John Deere 5820 & 5830

PUSHER$_{TM}$ DRIVE SYSTEMS
MASSEY-FERGUSON COMBINES

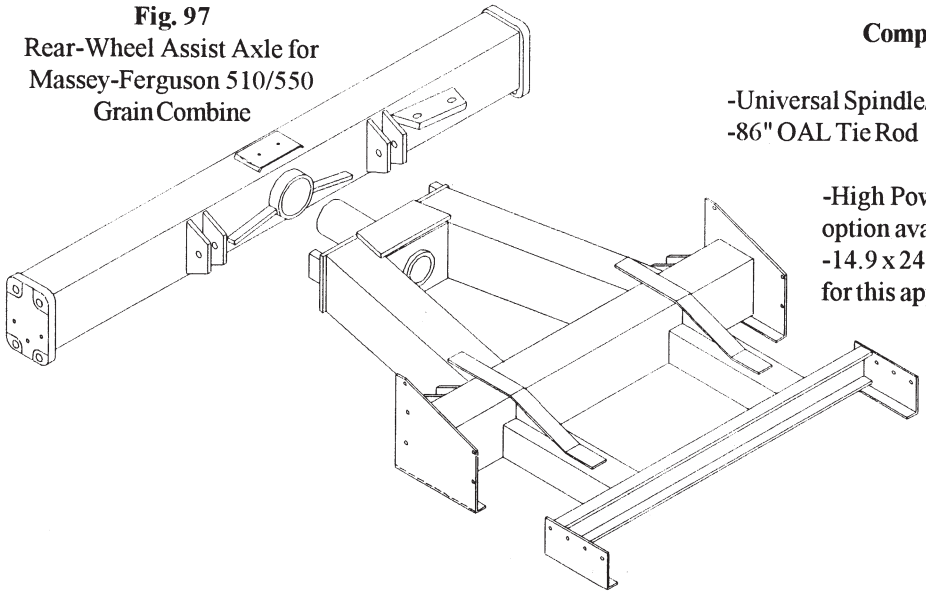


Fig. 97
Rear-Wheel Assist Axle for
Massey-Ferguson 510/550
Grain Combine

Components and Options

-Universal Spindle/Yoke Assembly
-86" OAL Tie Rod

-High Power Hubs is the most powerful hub option available for this application.
-14.9 x 24 is the largest tire option available for this application.
-This conversion replaces OEM Rear frame assembly(as seen to left).

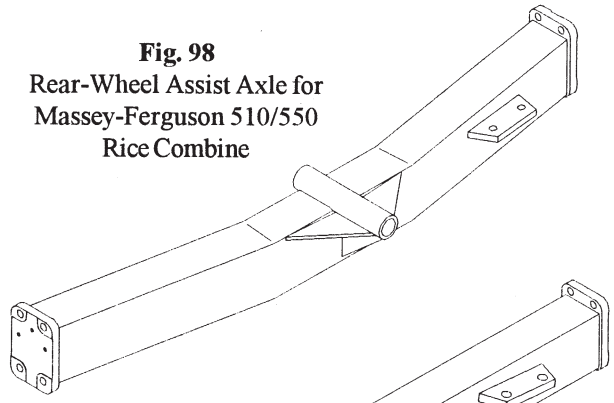


Fig. 98
Rear-Wheel Assist Axle for
Massey-Ferguson 510/550
Rice Combine

-Universal Spindle/Yoke Assembly
-94" OAL Tie Rod

-High Power Hubs is the most powerful hub option available for this application.
-14.9 x 28 is the largest tire option available for this application.

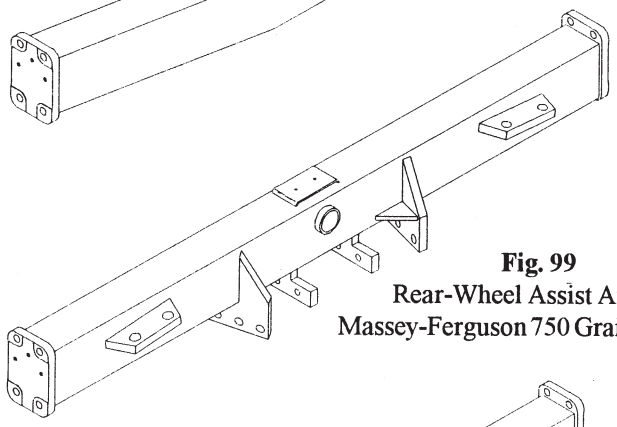


Fig. 99
Rear-Wheel Assist Axle for
Massey-Ferguson 750 Grain Combine

-Universal Spindle/Yoke Assembly
-108" OAL Tie Rod

-16.9 x 24 is the largest tire option available for this application.

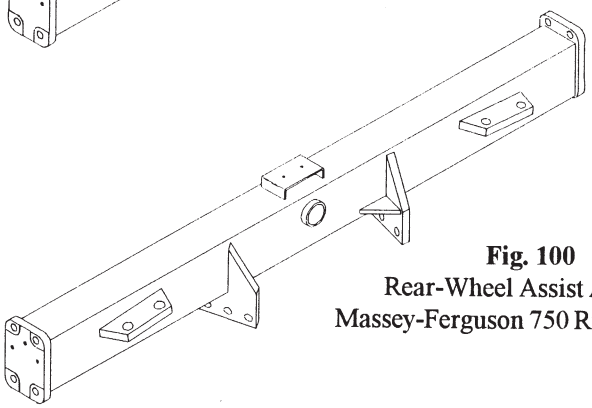
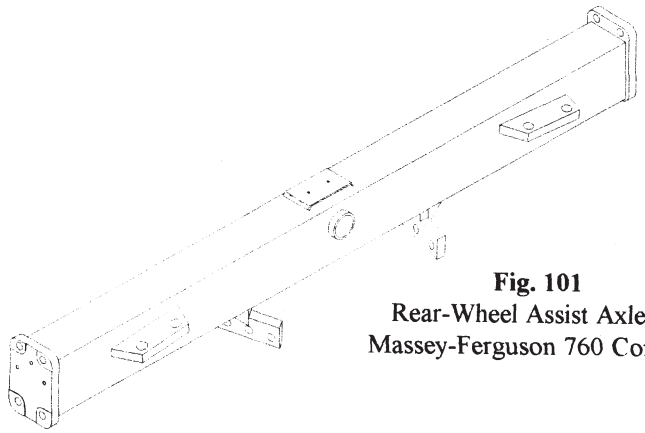


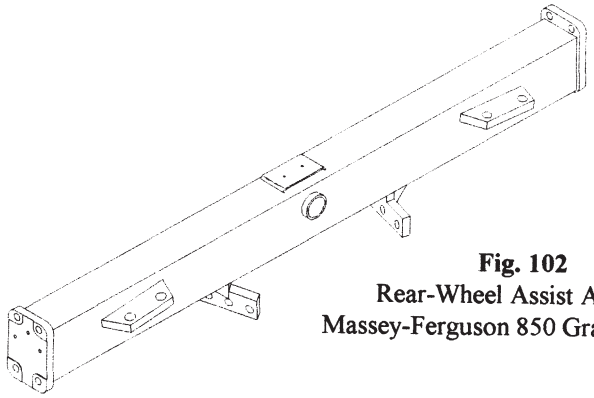
Fig. 100
Rear-Wheel Assist Axle for
Massey-Ferguson 750 Rice Combine

-Universal Spindle/Yoke Assembly
-100.5" OAL Tie Rod



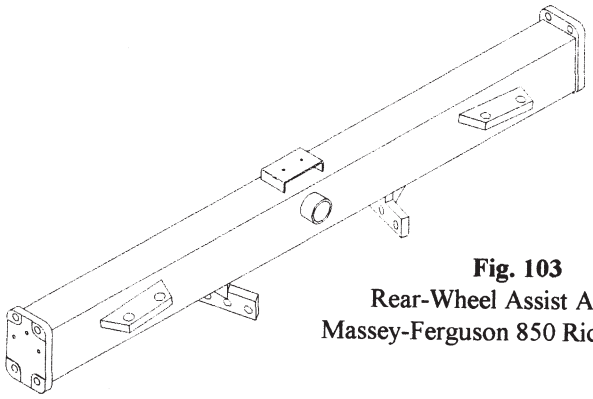
-Universal Spindle/Yoke Assembly
-118" OAL Tie Rod

Fig. 101
Rear-Wheel Assist Axle for
Massey-Ferguson 760 Combine



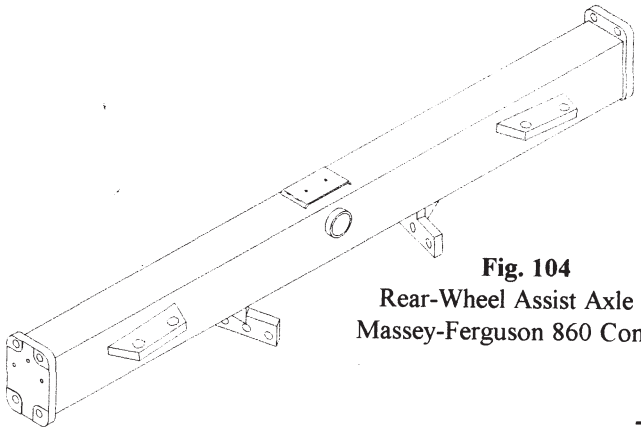
-Universal Spindle/Yoke Assembly
-108" OAL Tie Rod

Fig. 102
Rear-Wheel Assist Axle for
Massey-Ferguson 850 Grain Combine



-Universal Spindle/Yoke Assembly
-100.5" OAL Tie Rod

Fig. 103
Rear-Wheel Assist Axle for
Massey-Ferguson 850 Rice Combine



-Universal Spindle/Yoke Assembly
-118" OAL Tie Rod

Fig. 104
Rear-Wheel Assist Axle for
Massey-Ferguson 860 Combine

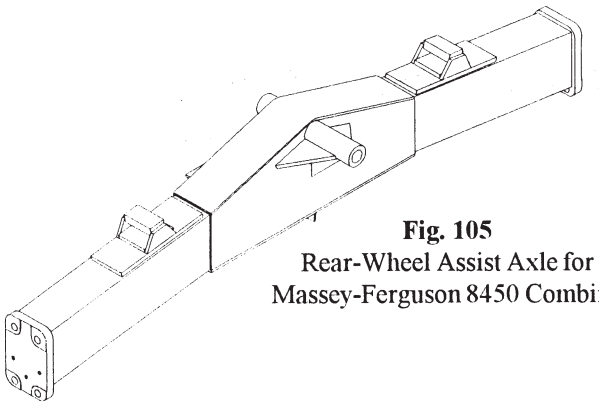


Fig. 105
Rear-Wheel Assist Axle for
Massey-Ferguson 8450 Combine

Components and Options

-Universal Spindle/Yoke Assembly
-96" OAL Tie Rod

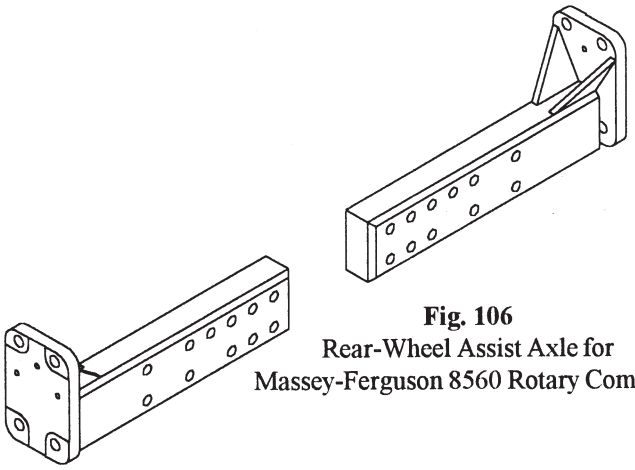


Fig. 106
Rear-Wheel Assist Axle for
Massey-Ferguson 8560 Rotary Combine

-Massey-Ferguson Spindle/Yoke Assembly

-Uses original axle center section, steering cylinder & ends, and tie rod & ends with GEC extensions.

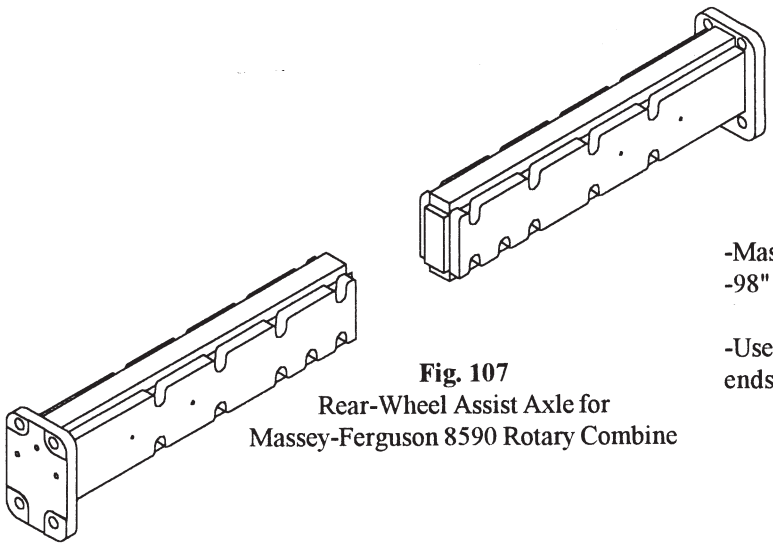


Fig. 107
Rear-Wheel Assist Axle for
Massey-Ferguson 8590 Rotary Combine

-Massey-Ferguson Spindle/Yoke Assembly
-98" OAL Tie Rod

-Uses original axle center section, steering cylinder & ends.

PUSHER$_{TM}$ DRIVE SYSTEMS
NEW HOLLAND COMBINES

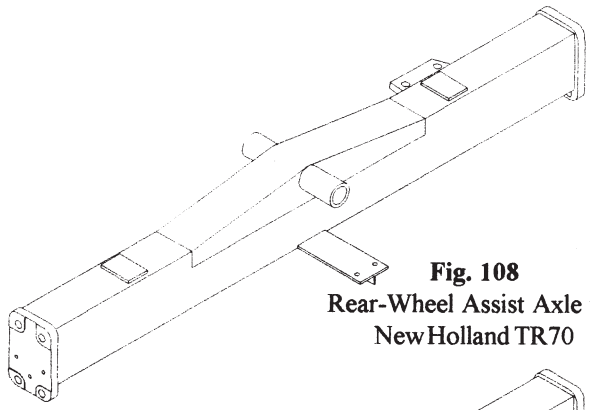


Fig. 108
Rear-Wheel Assist Axle for
New Holland TR70

Components and Options

-New Holland Spindle/Yoke Assembly
-89" OAL Tie Rod

-14.9 x 24 is the largest tire option available for this application.

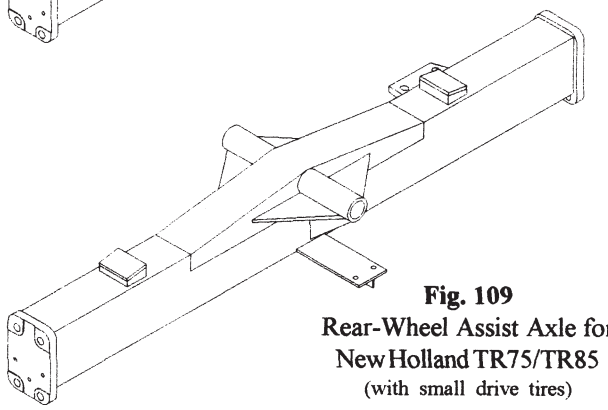


Fig. 109
Rear-Wheel Assist Axle for
New Holland TR75/TR85
(with small drive tires)

-New Holland Spindle/Yoke Assembly
-89" OAL Tie Rod

-14.9 x 24 is the largest tire option available for this application.

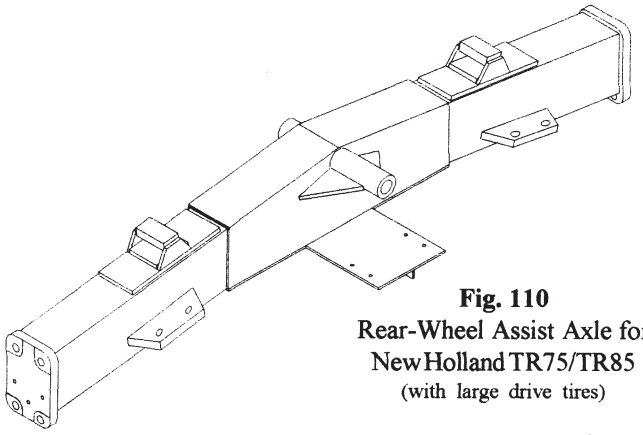


Fig. 110
Rear-Wheel Assist Axle for
New Holland TR75/TR85
(with large drive tires)

-Universal Spindle/Yoke Assembly
-100.5" OAL Tie Rod

-16.9 x 26 is the largest tire option available for this application.

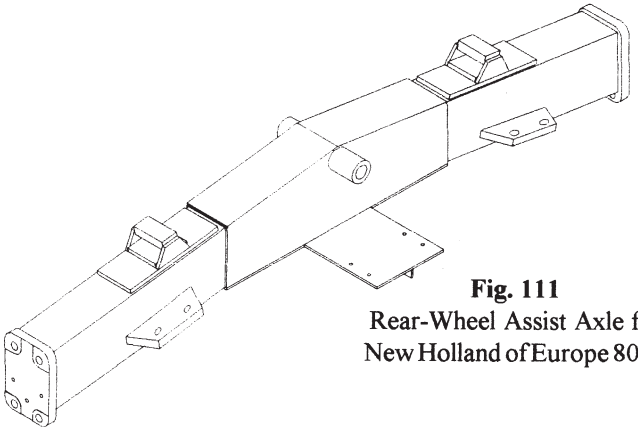


Fig. 111
Rear-Wheel Assist Axle for
New Holland of Europe 8080

-Universal Spindle/Yoke Assembly
-100.5" OAL Tie Rod

-16.9 x 26 is the largest tire option available for this application.

PUSHER$_{TM}$ DRIVE SYSTEMS
WHITE COMBINES

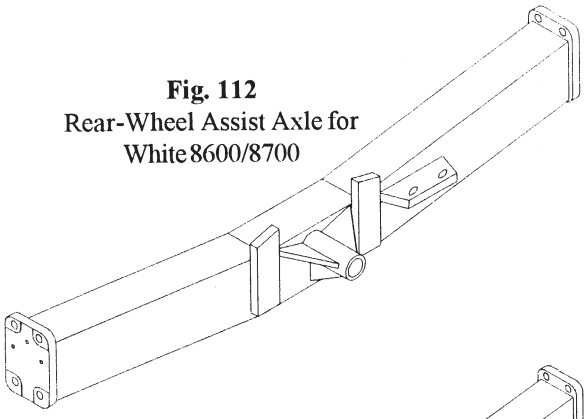


Fig. 112
Rear-Wheel Assist Axle for
White 8600/8700

Components and Options

-Universal Spindle/Yoke Assembly
-89" OAL Tie Rod

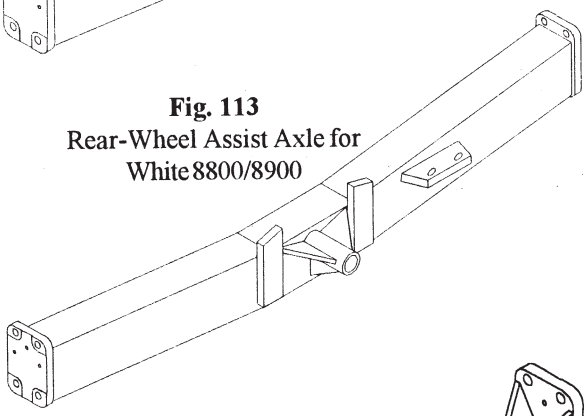


Fig. 113
Rear-Wheel Assist Axle for
White 8800/8900

-Universal Spindle/Yoke Assembly
-98" OAL Tie Rod

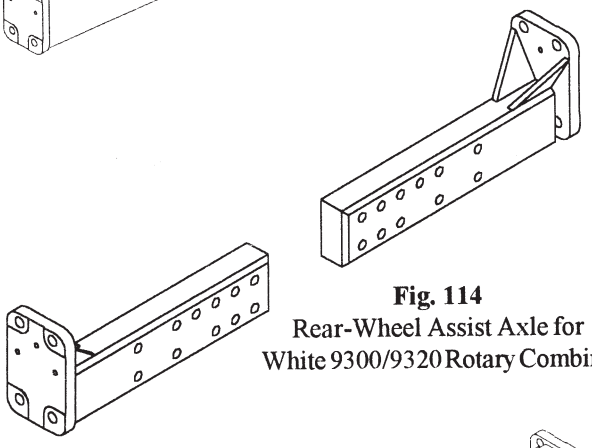


Fig. 114
Rear-Wheel Assist Axle for
White 9300/9320 Rotary Combine

-White Spindle/Yoke Assembly

-Uses original axle center section, steering cylinder & ends, and tie rod & ends with GEC extensions.

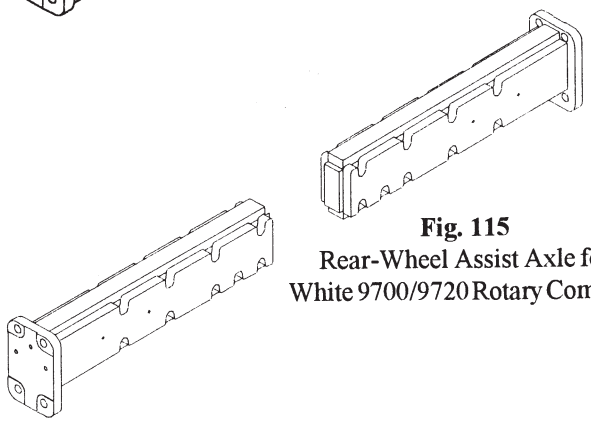


Fig. 115
Rear-Wheel Assist Axle for
White 9700/9720 Rotary Combine

-White Spindle/Yoke Assembly
-98" OAL Tie Rod

-Uses original axle center section, steering cylinder & ends.

PUSHER$_{TM}$ DRIVE SYSTEMS
CASE-IH 1822 4WD COTTON PICKER

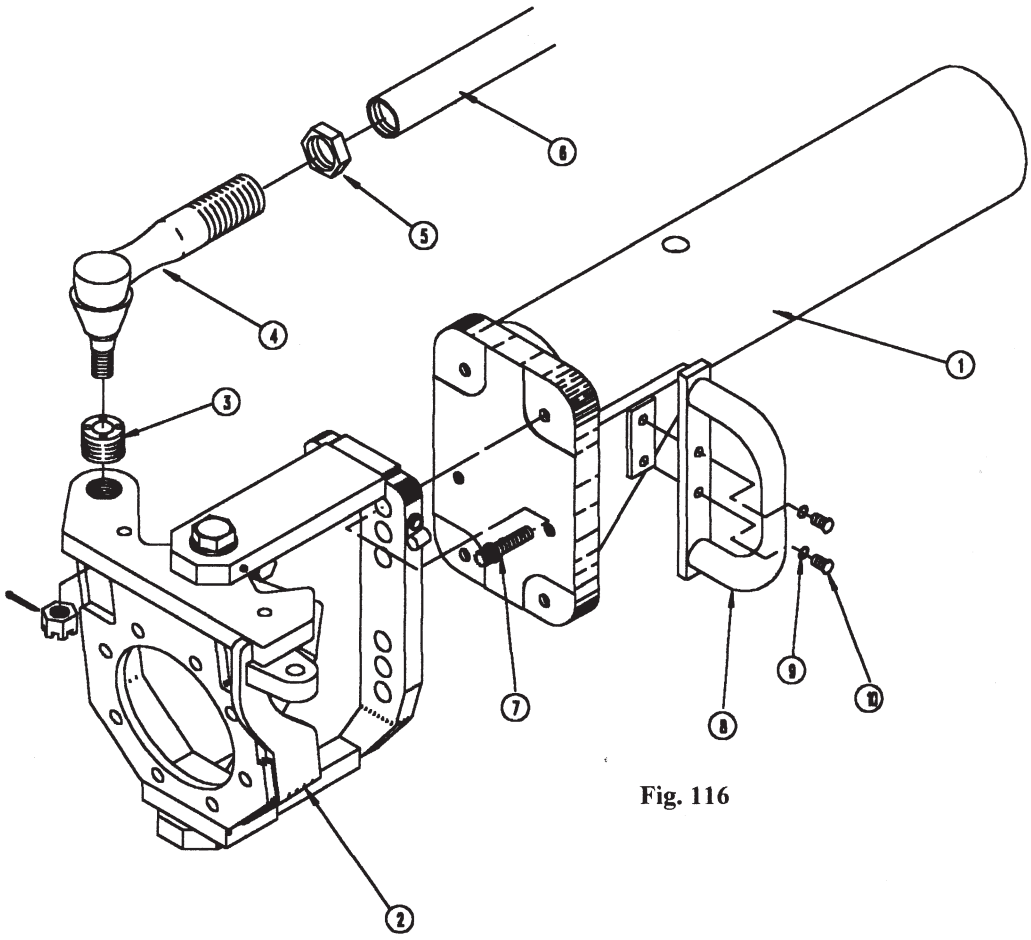


Fig. 116

PARTS LIST

ITEM	REQ'D	DESCRIPTION	PART NO.
1	1	Axle Stub, Case-IH 1822 (LH)	1038891
	1	Axle Stub, Case-IH 1822 (RH)	1038890
2	1	Spindle/Yoke Assembly LH Universal	1034200
	1	Spindle/Yoke Assembly RH Universal	1034100
3	2	Insert, Steering	1503875
4	2	End, Tie Rod, ES330 RH HD	5251330
5	2	Nut, Hex Jam 1 1/16"-12 LH	7565343
6	2	Tie Rod Assembly 28.25" OAL	1883102-0505
7	8	Bolt, 12 pt, Yoke Mounting	7750326
8	2	Guide, Hose	1458501
9	4	Washer, Lock 5/16" Med	7962254
10	4	Bolt, Hex, 5/16"-18 x 3/4" G8P	7721519

PUSHER$_{TM}$ DRIVE SYSTEMS
CASE-IH 1844 4WD COTTON PICKER

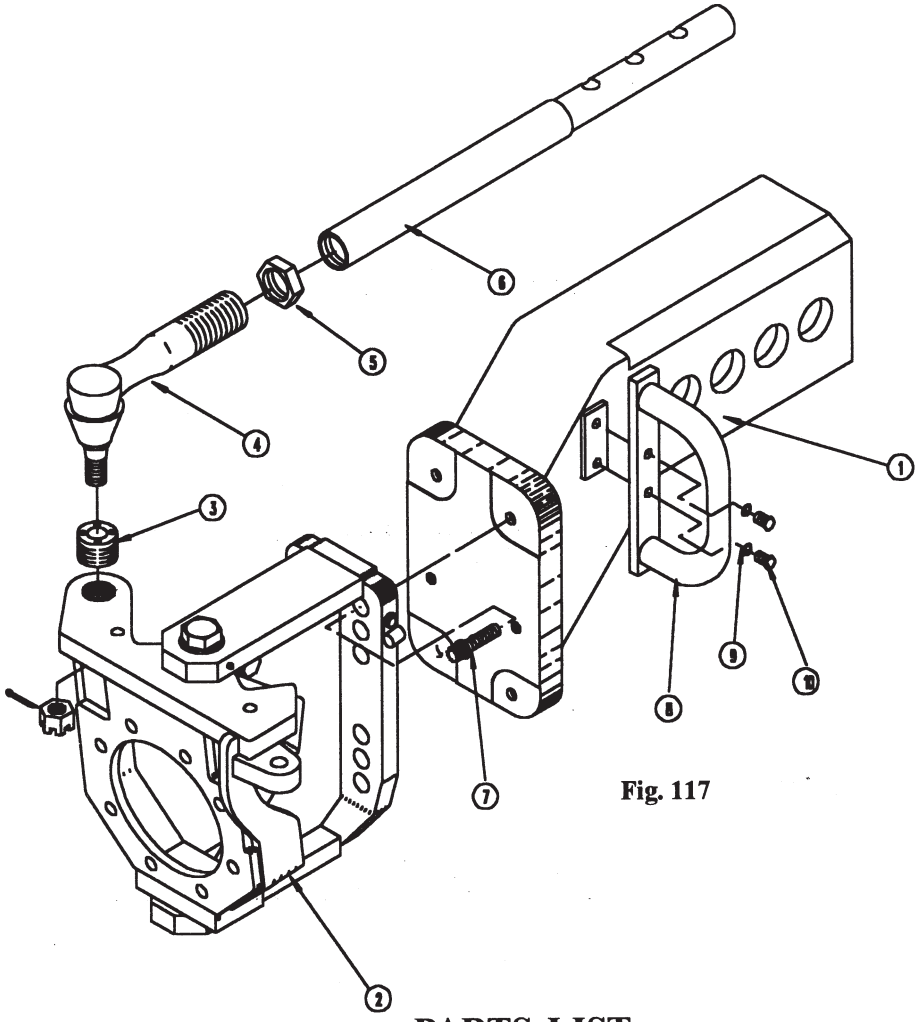


Fig. 117

PARTS LIST

ITEM	REQ'D	DESCRIPTION	PART NO.
1	1	Axle Stub, Case-IH 1844 (LH)	1038897
	1	Axle Stub, Case-IH 1844 (RH)	1038896
2	1	Spindle/Yoke Assembly LH Universal	1034200
	1	Spindle/Yoke Assembly RH Universal	1034100
3	2	Insert, Steering	1503875
4	2	End, Tie Rod, ES330 RH HD	5251330
5	2	Nut, Hex Jam 1 1/16"-12 RH	7565342
6	2	Steering Extension Case-IH 1844	1273900
7	8	Bolt, 12 pt, Yoke Mounting	7750326
8	2	Guide, Hose	1458501
9	4	Washer, Lock 5/16" Med	7962254
10	4	Bolt, Hex, 5/16"-18 x 3/4" G8P	7721519

PUSHER$_{TM}$ DRIVE SYSTEMS
CASE-IH 1844 SKIPROW 4WD COTTON PICKER

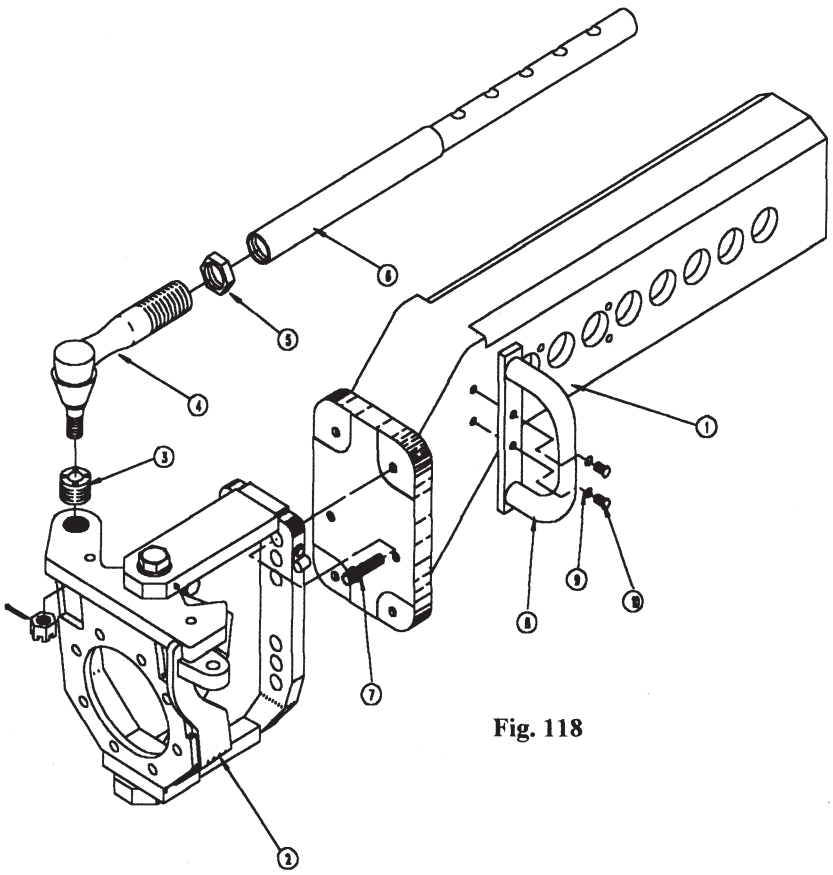


Fig. 118

PARTS LIST

ITEM	REQ'D	DESCRIPTION	PART NO.
1	1	Axle Stub, Case-IH 1844 SR (LH)	1038898
	1	Axle Stub, Case-IH 1844 SR (RH)	1038899
2	1	Spindle/Yoke Assembly LH Universal	1034200
	1	Spindle/Yoke Assembly RH Universal	1034100
3	2	Insert, Steering	1503875
4	2	End, Tie Rod, ES330 RH HD	5251330
5	2	Nut, Hex Jam 1 1/16"-12 RH	7565342
6	2	Steering Extension Case-IH 1844 SR	1273901
7	8	Bolt, 12 pt, Yoke Mounting	7750326
8	2	Guide, Hose	1458501
9	4	Washer, Lock 5/16" Med	7962254
10	4	Bolt, Hex, 5/16"-18 x 3/4" G8P	7721519

PUSHER$_{TM}$ DRIVE SYSTEMS
CASE-IH 616/782 3WD COTTON PICKER

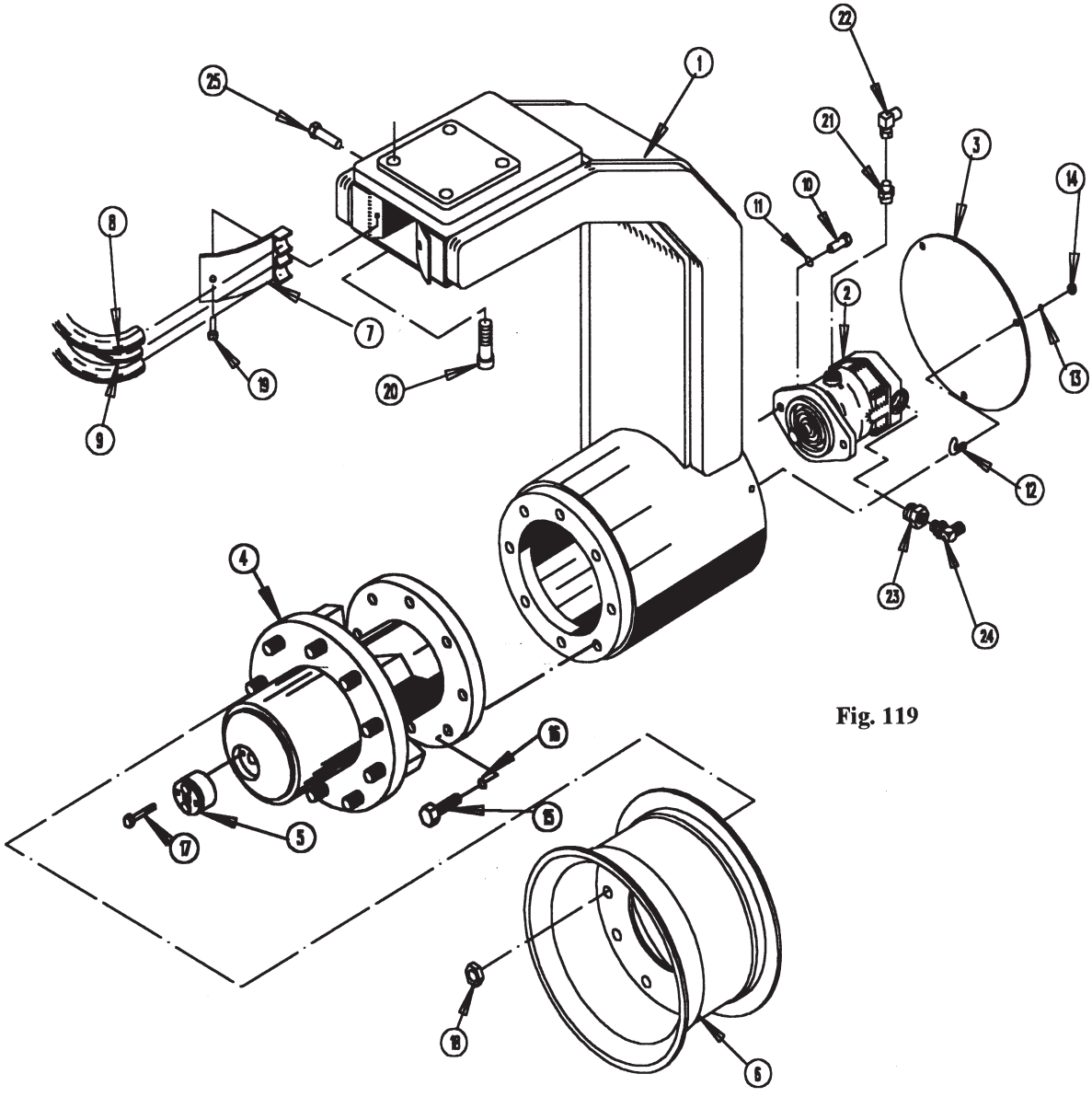


Fig. 119

PARTS LIST

ITEM	REQ'D	DESCRIPTION	PART NO.
1	1	Assembly, Axle Case IH 616/782	1038278
2	1	Motor, Hydraulic, Cessna-New(shown)	3549600
	1	Motor, Hydraulic, Sunstrand-New	3549500
3	1	Plate, Motor Access	1646910
4	1	Hub, Assembly, Auburn Gear Power Wheel	4496015
5	1	Assembly, Lockout Body	1533738
6	1	Wheel, 14 x 16.1	4982716
7	1	Bracket, Hose Clamp	1458895
8	2	Hose, Axle	1482403-1340
9	1	Hose, Drain	1481510-1345
10	3	Bolt, Hex, 1/2"-13 x 1 3/4" G8P	7721654
11	2	Washer, Lock 1/2" Med	7962278
12	3	Bolt, "J", 5/16"-18	7120400
13	3	Washer, Lock 5/16" Med	7962254
14	3	Nut, 5/16"-18	7561254
15	8	Bolt, Hex, 5/8"-11 X 2" G8P	7721755
16	8	Washer, Lock 5/8" Med	7962294
17	2	Bolt, HHCS, 5/16"-18 x 2" G8P	7721531
18	9	Nut, Wheel, 9/16"-18 Heavy	7574280
19	1	Bolt, Hex 5/16"-18 x 1" G8P	7721523
20	4	Bolt, SHCS, 3/4"-10x2.25 G8P (install with locktite)	7739799
21	1	Fitting, Hyd Adpt 6MJ-6MOR	3300375
22	1	Fitting, Hyd El90 6MJ-6FJS	3337345
23	2	Fitting, Hyd Adpt 12MOR-8FOR	3372585
24	2	Fitting, Hyd El90 8MJ-8MOR	3300415
25	1	Bolt, Special Hose Clamping	1121850

PUSHER$_{TM}$ DRIVE SYSTEMS
JOHN DEERE 9940/9950 SKIPROW 4WD COTTONPICKER

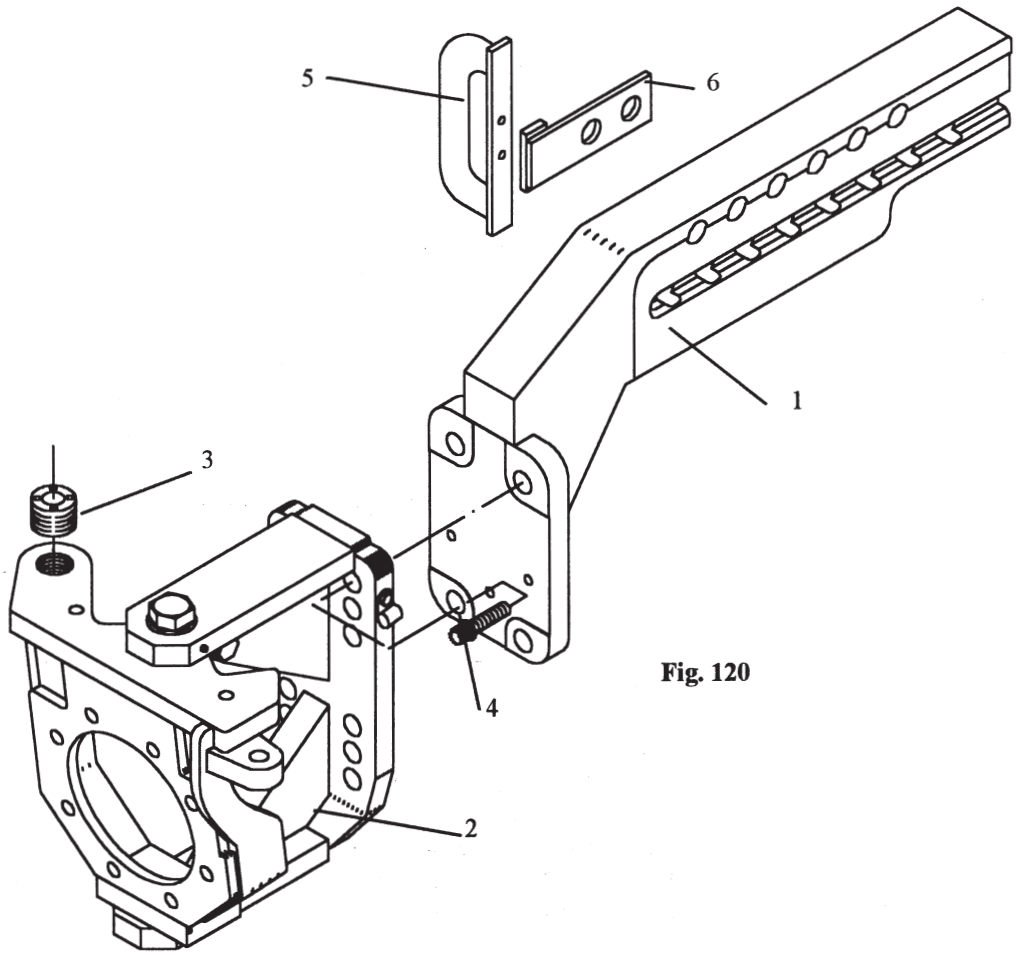


Fig. 120

PARTS LIST

ITEM	REQ'D	DESCRIPTION	PART NO.
1	1	Axle Stub, John Deere, Adjustable CP LH	1039864
	1	Axle Stub, John Deere, Adjustable CP RH	1039863
2	1	Spindle/Yoke Assembly LH Universal	1034200
	1	Spindle/Yoke Assembly RH Universal	1034100
3	2	Insert, Steering	1503868
4	8	Bolt, 12 pt, Yoke Mounting	7750326
5	2	Guide, Hose	1458501
6	2	Bracket, Hose Guide Mounting	1136780
NS	4	Washer, Lock 5/16" Med	7962254
NS	4	Bolt, Hex, 5/16"-18 x 3/4" G8P	7721519

PUSHER$_{TM}$ DRIVE SYSTEMS
JOHN DEERE 9960 4WD COTTONPICKER

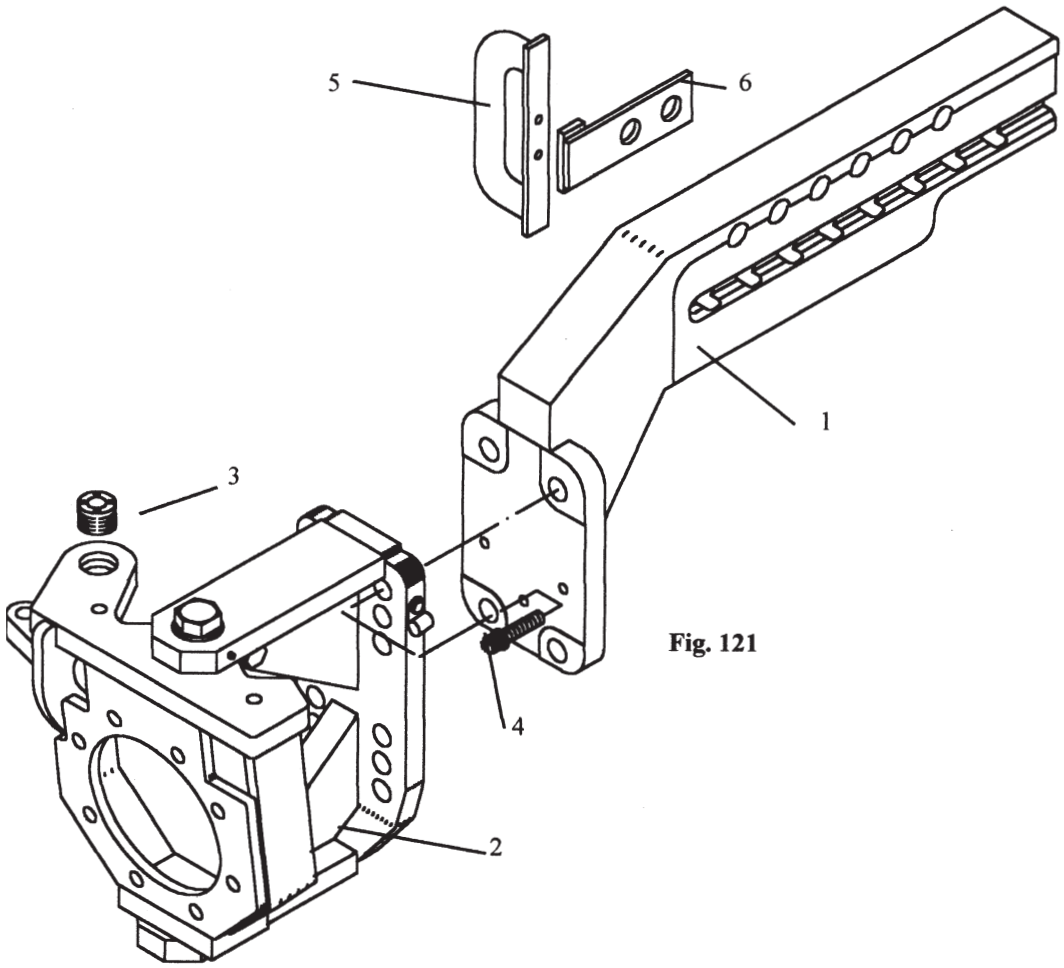


Fig. 121

PARTS LIST

ITEM	REQ'D	DESCRIPTION	PART NO.
1	1	Axle Stub, John Deere, Adjustable CP RH	1039863
	1	Axle Stub, John Deere, Adjustable CP LH	1039864
2	1	Spindle/Yoke Assembly RH JD 9960	1794520
	1	Spindle/Yoke Assembly LH JD 9960	1794521
3	2	Insert, Steering	1503875(E)
4	8	Bolt, 12 pt, Yoke Mounting	7750326
5	2	Guide, Hose	1458501
6	2	Bracket, Hose Guide Mounting	1136780
NS	4	Washer, Lock 5/16" Med	7962254
NS	4	Bolt, Hex, 5/16"-18 x 3/4" G8P	7721519

PUSHER$_{TM}$ DRIVE SYSTEMS
JOHN DEERE 9900/9910/9920 4WD COTTON PICKER

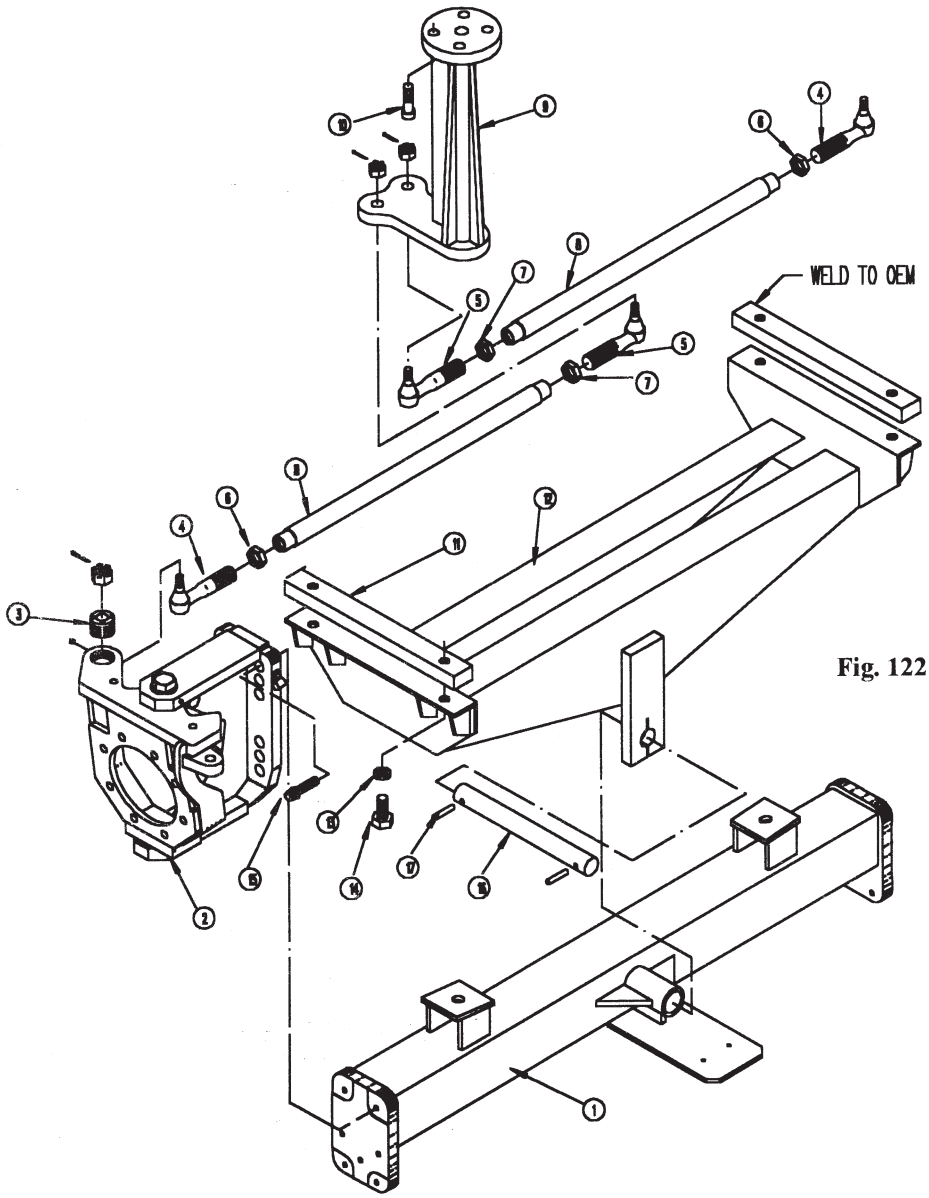


Fig. 122

PARTS LIST

ITEM	REQ'D	DESCRIPTION	PART NO.
1	1	Assembly, Axle 9900/9910/9920	1039829
2	1	Spindle\Yoke Assembly LH Universal	1034200
	1	Spindle\Yoke Assembly RH Universal	1034100
3	2	Insert, Steering	1503866
4	2	End, Tie Rod, ES330 LH HD	5251331
5	2	End, Tie Rod, ES330 RH HD	5251330
6	2	Nut, Hex Jam 1 1/16"-12 LH	7565343
7	2	Nut, Hex Jam 1 1/16"-12 RH	7565342
8	2	Assembly, Tie Rod	1883101-0570
9	1	Arm, Steering	1029921
10	4	Bolt, SHCS, 3/4"-10 x 2.25" G8P (install with locktite)	7739799
11	2	Strap, Mounting Pivot Frame	1854200
12	1	Assembly, Pivot Frame	1033830
13	4	Washer, Lock 5/8" Med	7962254
14	4	Bolt, Hex, 5/8"-11 x 1.75" G8P	7721753
15	4	Bolt, 12 pt, Yoke Mounting	7750326
16	1	Pin, Pivot	1636560

PUSHER$_{TM}$ DRIVE SYSTEMS
JOHN DEERE 9900/9910/9920/9930 3WD COTTON PICKER

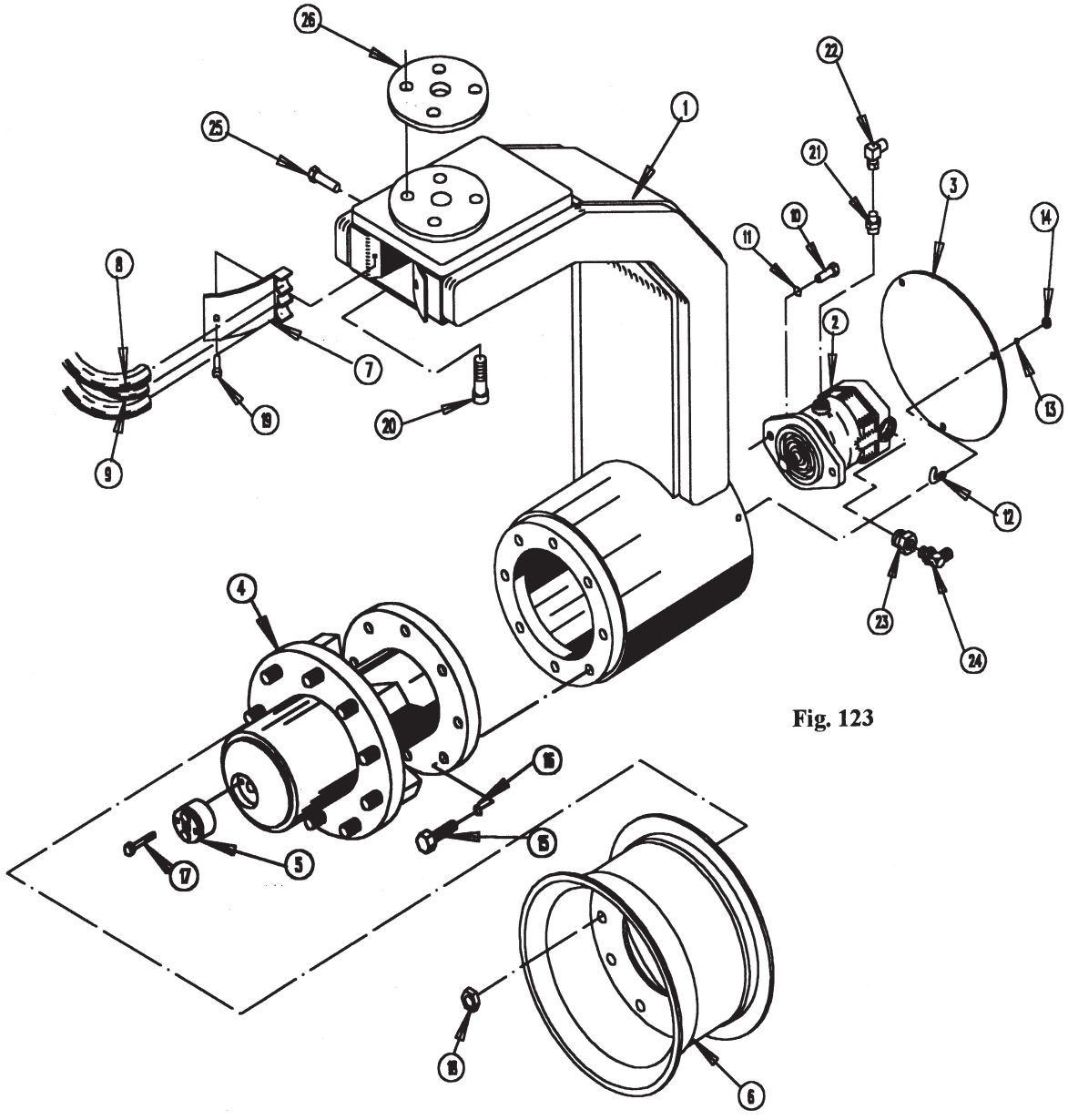


Fig. 123

PARTS LIST

ITEM	REQ'D	DESCRIPTION	PART NO.
1	1	Assembly, Axle JD 3WD	1039392
2	1	Motor, Hydraulic, Cessna-New(shown)	3549600
	1	Motor, Hydraulic, Sunstrand-New	3549500
3	1	Plate, Motor Access	1646910
4	1	Hub, Assembly, Auburn Gear Power Wheel	4495014
5	1	Assembly, Lockout Body	1533738
6	1	Wheel, 14 x 16.1	4982716
7	1	Bracket, Hose Clamp	1458895
8	2	Hose, Axle	1482403-1340
9	1	Hose, Drain	1481510-1345
10	3	Bolt, Hex, 1/2"-13 x 1 3/4" G8P	7721654
11	2	Washer, Lock 1/2" Med	7962278
12	3	Bolt, "J", 5/16"-18	7120400
13	3	Washer, Lock 5/16" Med	7962254
14	3	Nut, 5/16"-18	7561254
15	8	Bolt, Hex, 5/8"-11 X 2" G8P	7721755
16	8	Washer, Lock 5/8" Med	7962294
17	2	Bolt, HHCS, 5/16"-18 x 2" G8P	7721531
18	9	Nut, Wheel, 9/16"-18 Heavy	7574280
19	1	Bolt, Hex 5/16"-18 x 1" G8P	7721523
20	4	Bolt, SHCS, 3/4"-10 x 2.75 G8P (install with locktite)	7739800
21	1	Fitting, Hyd Adpt 6MJ-6MOR	3300375
22	1	Fitting, Hyd El90 6MJ-6FJS	3337345
23	2	Fitting, Hyd Adpt 12MOR-8FOR	3372585
24	2	Fitting, Hyd El90 8MJ-8MOR	3300415
25	1	Bolt, Special Hose Clamping	1121850
26	1	Plate, Spacer JD 3WD	1646965

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GILCREST PUSHER™ G

MISCELLANEOUS ACCESSORIES

MISCELLANEOUS ACCESSORIES for CASE-IH

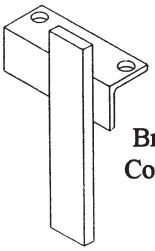


Fig. 124
IH715
Bracket, Directional
Control Valve Mount
PN 1136264

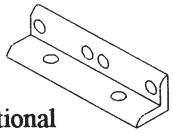


Fig. 125
Bracket, Directional
Control Valve Mount
PN 1136500

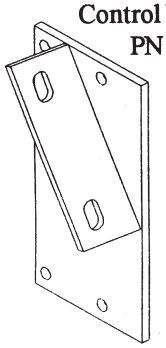


Fig. 126
IH Heavy Duty
Bracket, Directional
Control Valve Mount
PN 1136505

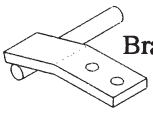


Fig. 127
Bracket, Chaf Shield
PN 1136590

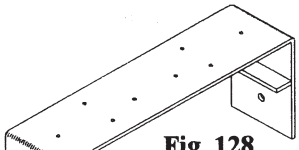


Fig. 128
IH Combine
Bracket, Directional
Control Valve Mount
PN 1136600

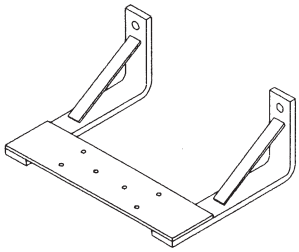
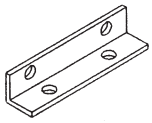


Fig. 129
IH 1844 & 2055
Bracket, Direct Trac
Valve Mount
PN 1136620

Fig. 130
IH782
Bracket, Directional
Control Valve Mount
PN 1136650



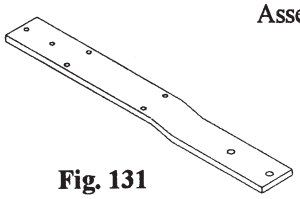


Fig. 131
Bracket, Directional
Control Valve Mount
PN 1136901

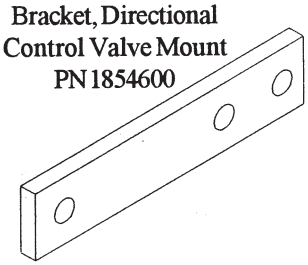


Fig. 132
Bracket, Directional
Control Valve Mount
PN 1854600

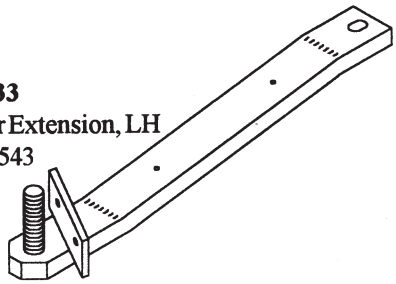


Fig. 133
Assembly, Stabilizer Extension, LH
PN 1803543

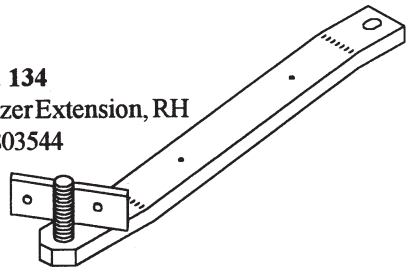


Fig. 134
Assembly, Stabilizer Extension, RH
PN 1803544

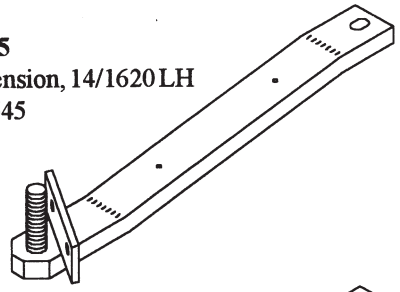


Fig. 135
Assembly, Stabilizer Extension, 14/1620 LH
PN 1803545

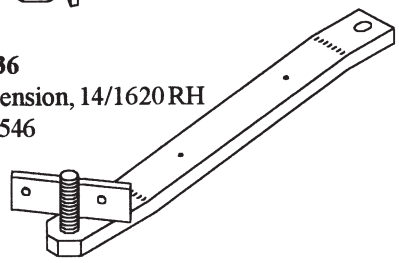


Fig. 136
Assembly, Stabilizer Extension, 14/1620 RH
PN 1803546

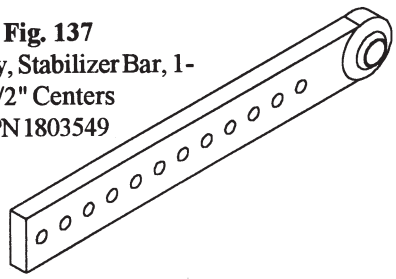


Fig. 137
Assembly, Stabilizer Bar, 1-1/2" Centers
PN 1803549

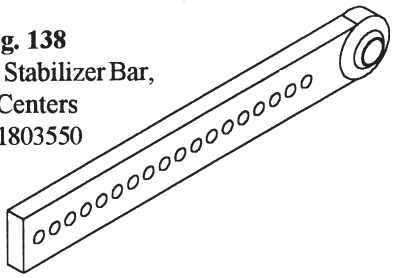


Fig. 138
Assembly, Stabilizer Bar,
1" Centers
PN 1803550

MISCELLANEOUS ACCESSORIES
for CLAAS

Fig. 139
Bracket, Directional
Control Valve Mount
PN1136500

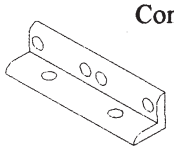
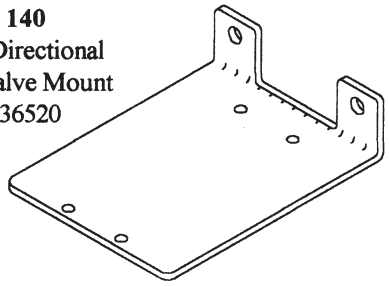


Fig. 140
Bracket, Directional
Control Valve Mount
PN1136520



MISCELLANEOUS ACCESSORIES
for DEUTZ-ALLIS/ALLIS CHALMERS

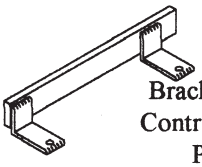


Fig. 141
Bracket, Directional
Control Valve Mount
PN1136017

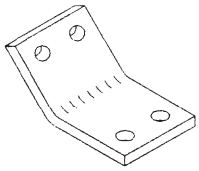


Fig. 145
Bracket, Front Hose Mount
PN1136571

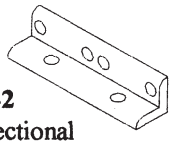


Fig. 142
Bracket, Directional
Control Valve Mount
PN1136500

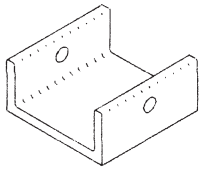


Fig. 146
Bracket, Rear Hose Mount
PN1136572

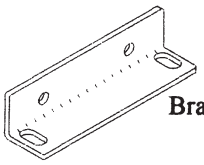
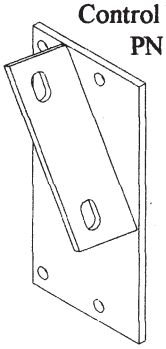


Fig. 147
Bracket, Directional Control Valve Mount
PN1136575

Fig. 143
Bracket, Directional
Control Valve Mount
PN1136505



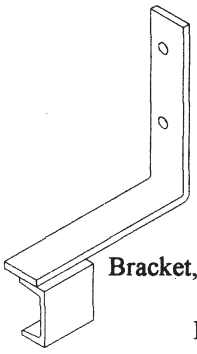


Fig. 148
Bracket, Front Hose Mount
DAR50
PN1136580

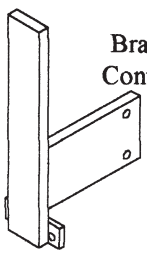


Fig. 144
Bracket, Directional
Control Valve Mount
PN1136570

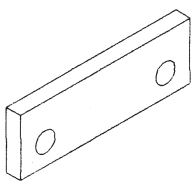


Fig. 149
Bracket, Directional
Control Valve Mount
PN1854500

MISCELLANEOUS ACCESSORIES for JOHN DEERE

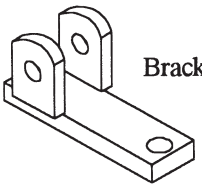


Fig. 150
Bracket, Axle Stabilizer
PN1136358

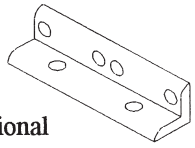


Fig. 151
Bracket, Directional
Control Valve Mount
PN1136500

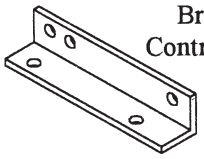


Fig. 152
Bracket, Directional
Control Valve Mount, RH
PN1136640

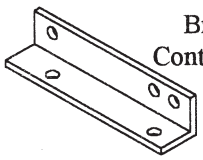


Fig. 153
Bracket, Directional
Control Valve Mount, LH
PN1136641

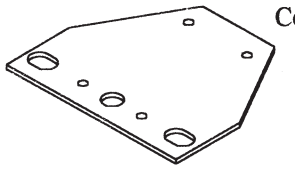


Fig. 154
Bracket, Traction
Control Valve Mount
PN1136749

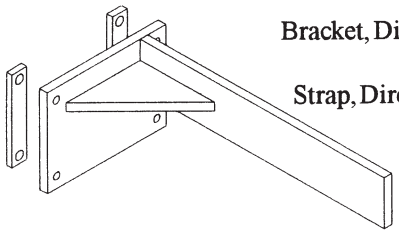


Fig. 155
Bracket, Directional Control Valve Mount
PN1136753
Strap, Directional Control Valve Mount
PN1854905

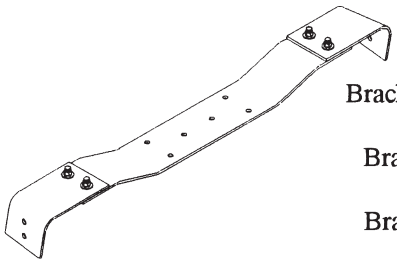


Fig. 156
Bracket, Directrac Valve Mount, Center
PN1136755
Bracket, Directrac Valve Mount, RH
PN1136756
Bracket, Directrac Valve Mount, LH
PN1136757

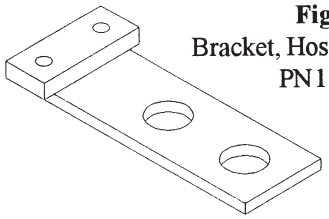


Fig. 157
Bracket, Hose Guide Mount
PN1136780

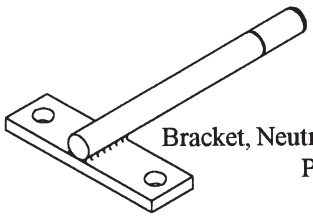


Fig. 158
Bracket, Neutral Safety Switch Mount
PN1136850

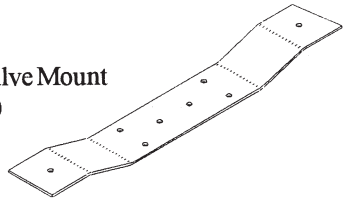


Fig. 159
Bracket, Directrac Valve Mount
PN1136920

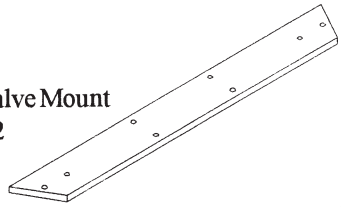


Fig. 160
Bracket, Directrac Valve Mount
PN1136922

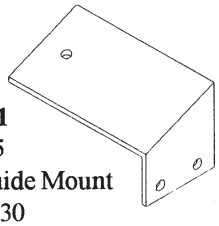


Fig. 161
JD4435
Bracket, Hose Guide Mount
PN1136930

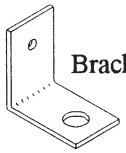
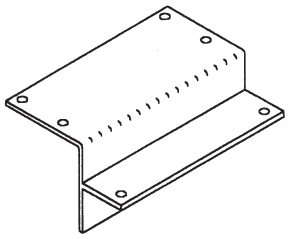


Fig. 162
Bracket, Hose Guide Mount
PN1136950

Fig. 163
Bracket, Directional Control Valve Mount
PN1136957



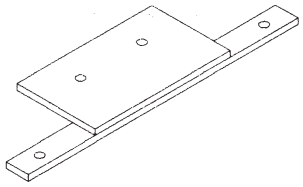


Fig. 164
JD 9930
Bracket, Traction Control Valve Mount
PN 1136993

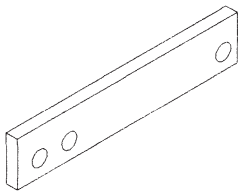


Fig. 165
Bracket, Directional Control Valve Mount
PN 1854642

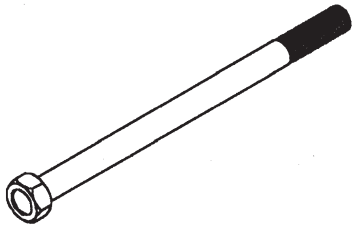


Fig. 166
Bolt, Special John Deere Pivot
PN 1126905

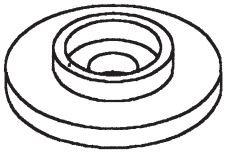


Fig. 167
Washer, Special John Deere
PN 1976500

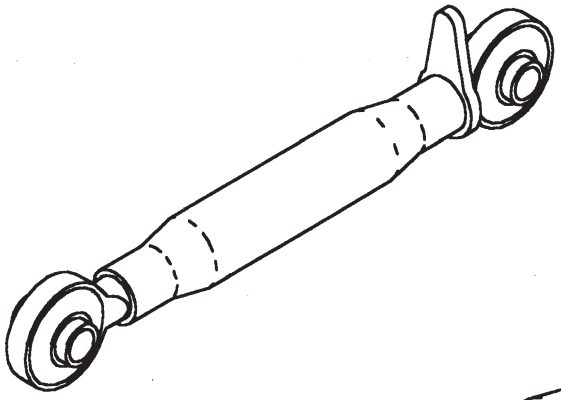


Fig. 168
JD 6600 (Old Style)
Stabilizer Bar
PN 1803505

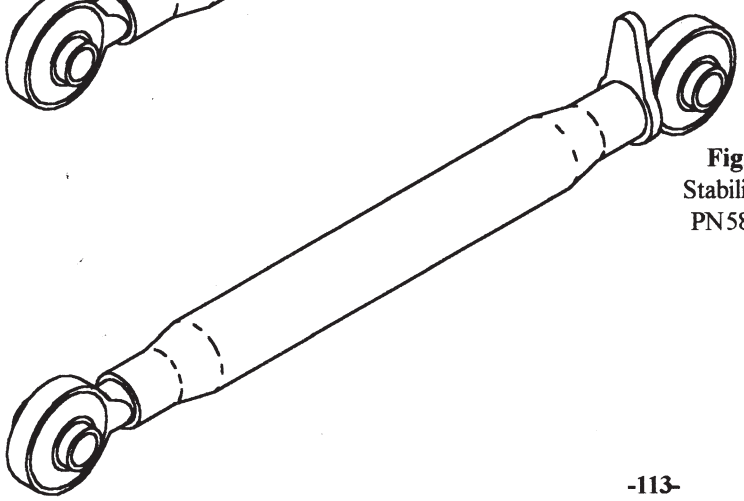


Fig. 169
Stabilizer Bar
PN 5803500

MISCELLANEOUS ACCESSORIES for MASSEY-FERGUSON

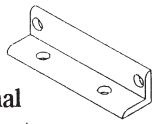


Fig. 170
Bracket, Directional
Control Valve Mount
PN 1136500

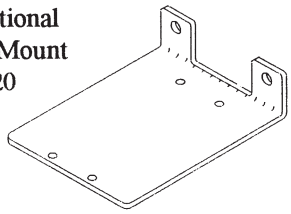


Fig. 171
Bracket, Directional
Control Valve Mount
PN 1136520

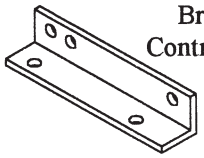


Fig. 172
Bracket, Directional
Control Valve Mount, RH
PN 1136640

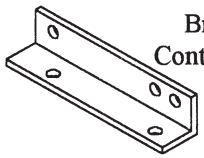


Fig. 173
Bracket, Directional
Control Valve Mount, LH
PN 1136641

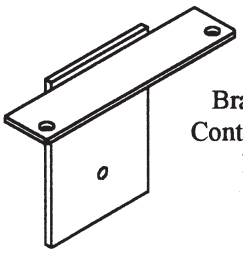


Fig. 174
Bracket, Traction
Control Valve Mount
PN 1136938

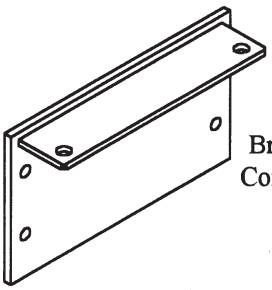


Fig. 175
Bracket, Directional
Control Valve Mount
PN 1136939

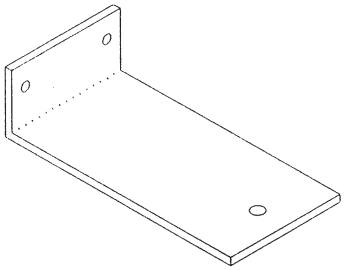


Fig. 176
Bracket, Directional
Control Valve Mount
PN 1136940

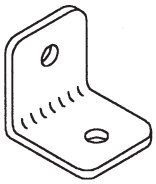


Fig. 177
Bracket, Hose Mount
PN 1136945

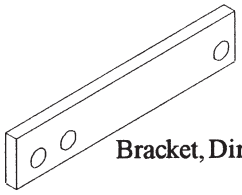


Fig. 178
Bracket, Directional Control Valve Mount
PN 1854642

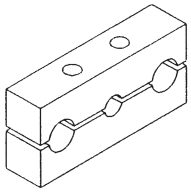


Fig. 179
Bracket, Crossover Tube Clamp
PN 1183900

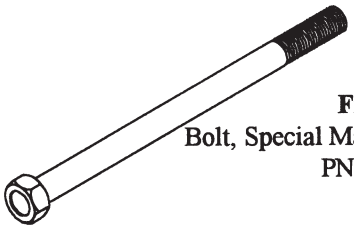


Fig. 180
Bolt, Special Massey-Ferguson Pivot
PN 1126905

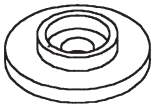


Fig. 181
Washer, Special Massey-Ferguson
PN 1976500

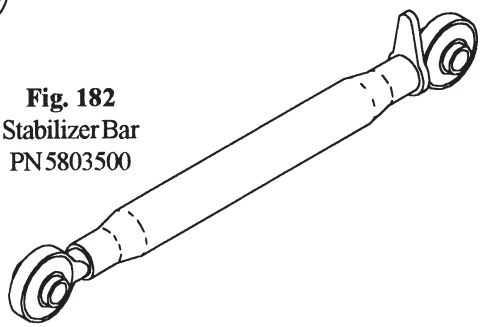


Fig. 182
Stabilizer Bar
PN 5803500

MISCELLANEOUS ACCESSORIES for NEW HOLLAND

Fig. 183
Bracket, Directional
Control Valve Mount
PN1136500

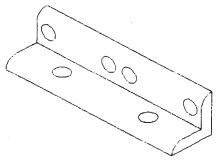


Fig. 184
Bracket, Directional
Control Valve Mount
PN1136520

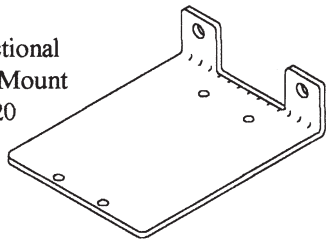


Fig. 185
Bracket, Directional
Control Valve Mount, RH
PN1136640

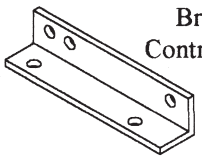


Fig. 186
Bracket, Directional
Control Valve Mount, LH
PN1136641

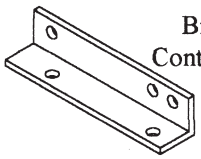
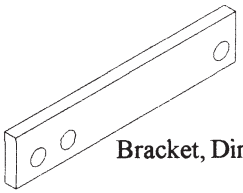


Fig. 187
Bracket, Directional Control Valve Mount
PN1854642



MISCELLANEOUS ACCESSORIES for WHITE

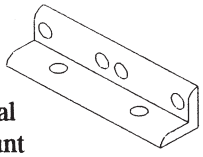
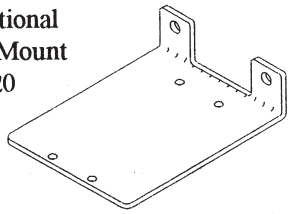


Fig. 188
Bracket, Directional
Control Valve Mount
PN1136500

Fig. 189
Bracket, Directional
Control Valve Mount
PN1136520



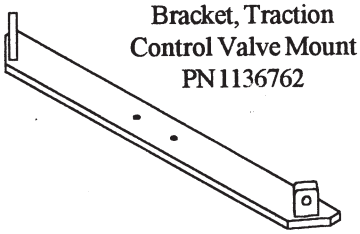


Fig. 190
Bracket, Traction
Control Valve Mount
PN1136762

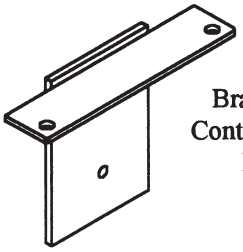


Fig. 191
Bracket, Traction
Control Valve Mount
PN1136938

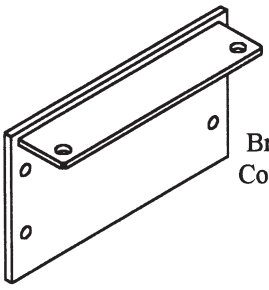


Fig. 192
Bracket, Directional
Control Valve Mount
PN1136939

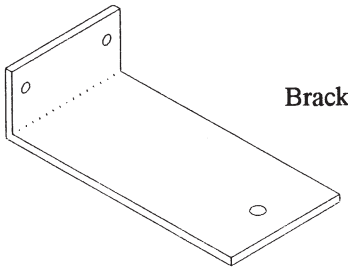


Fig. 193
Bracket, Crossover Tube Clamp
WH9700-MF8590
PN1136940

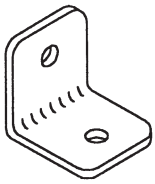


Fig. 194
Bracket, Hose Mount
PN1136945

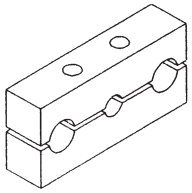


Fig. 195
Bracket, Crossover Tube Clamp
PN1183900

MISCELLANEOUS ACCESSORIES
UNIVERSAL EXTENSION PACKAGE

Kit, Universal Extension, SN 5000 & up
PN 1517800

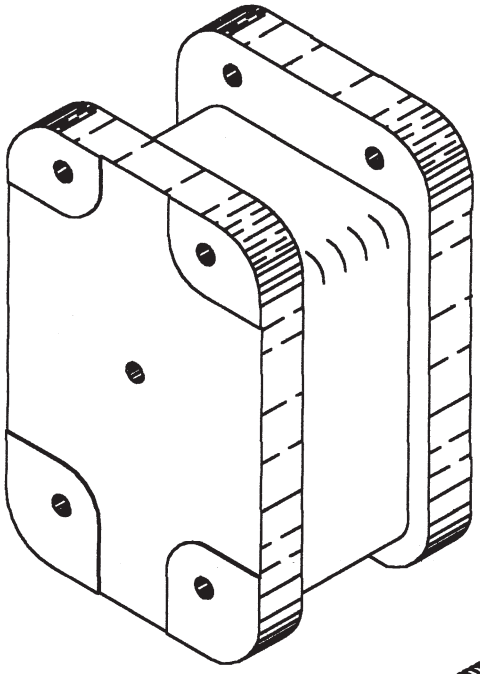


Fig. 196
Spacer, Universal Axle Extension
PN 1791971
Qty. Req'd 2

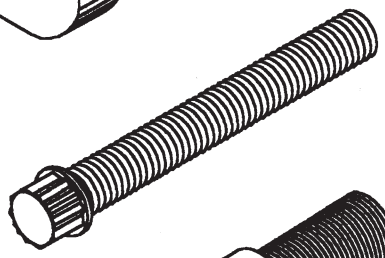


Fig. 197
Bolt, 12 pt, Yoke Mounting Extension
PN 7750330
Qty. Req'd 8

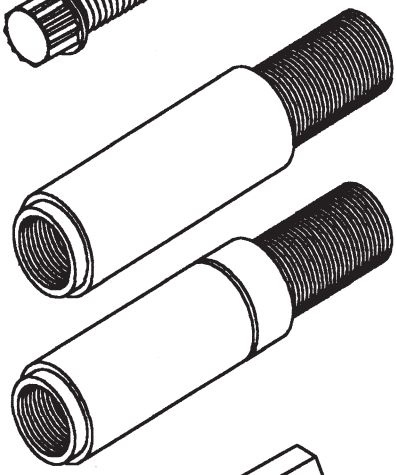


Fig. 198
Extension, Tie Rod RH Universal
PN 1273972
Qty. Req'd 1

Fig. 199
Extension, Tie Rod LH Universal
PN 1273973
Qty. Req'd 1

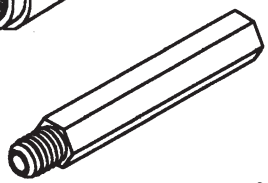


Fig. 200
Extension, Axle Hose
PN 1273550
Qty. Req'd 4

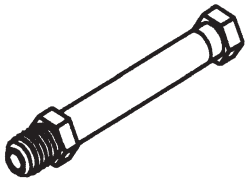


Fig. 201
Extension, Drain Hose
PN 1481508-0050
Qty. Req'd 2

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GILCREST

PUSHER™ G

OLD STYLE SYSTEMS

MOTOR AND HUB ASSEMBLY

SERIAL NUMBERS 2665 to 4000

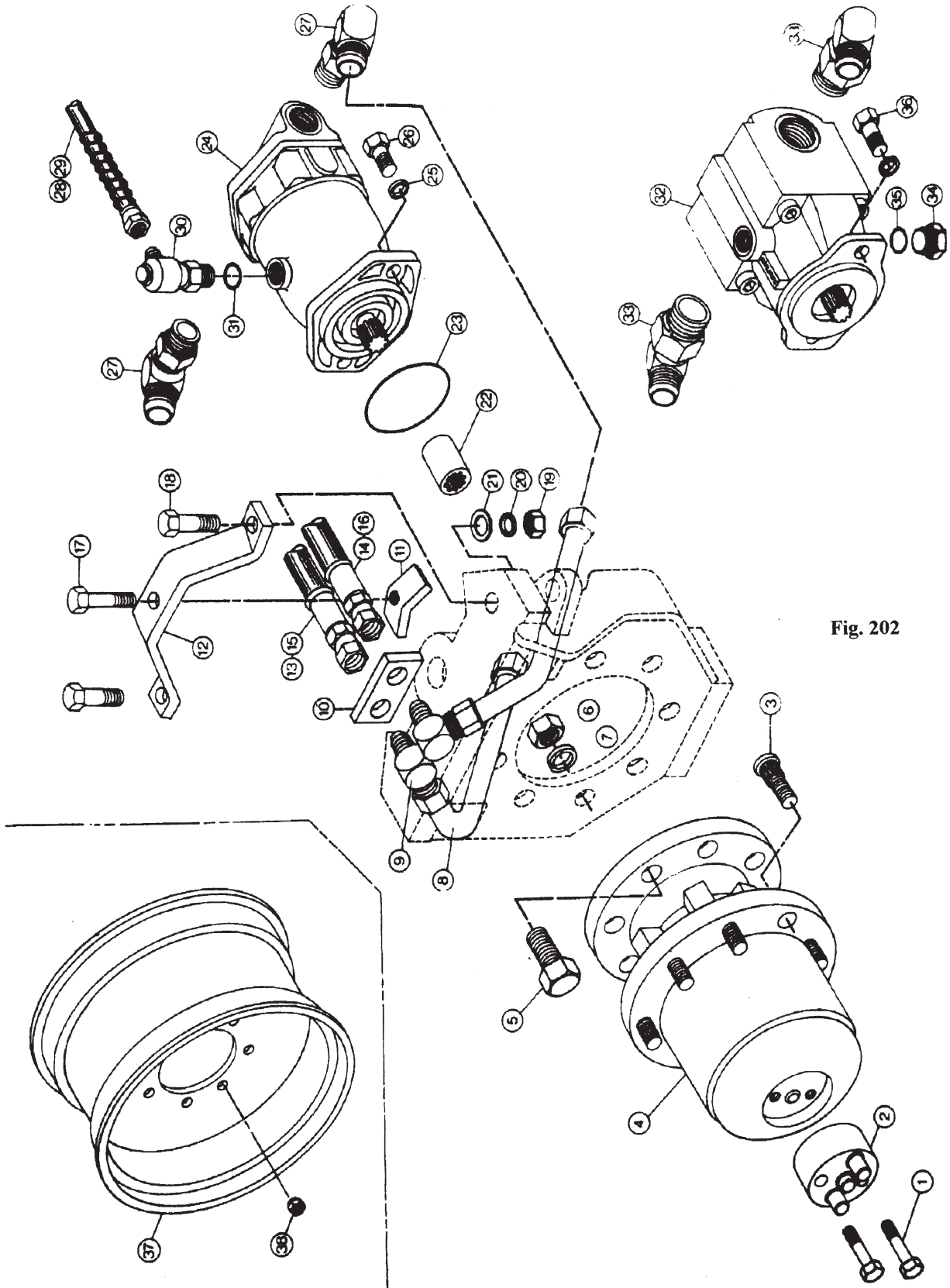


Fig. 202

PARTS LIST

ITEM	REQ'D	DESCRIPTION	PART NO.
1	4	Bolt, Hex, 5/16"-18 x 2" G8P	7721531
2	2	Pushbutton Lockout Assembly	1533738
3	18	Bolt, Wheel 1/2"-20 splined	7121655
4	2	Hub, Power Wheel 19.0:1	4495015
	2	Hub, Power Wheel 21.7:1	4495010
	2	Hub, Power Wheel 24.5:1	4495005
	2	Hub, Power Wheel 28.4:1	4495019
5	16	Bolt, Hex, 5/8"-11 x 2" G8P	7721755
6	16	Nut, Hex, 5/8"-11	7562294
7	16	Washer, Lock 5/8" Med	7962294
8	4	Tube, High Pressure	1909650
9	4	Fitting, Tube, Elbow	3320455
10	2	Bracket, Tube Seperator	1136669
11	2	Bracket, Threaded Clamp	1136667
12	2	Bracket, Tube Support	1136666
13	1	Hose, LH Motor Forward	1482800-****
14	1	Hose, LH Motor Reverse	1482800-****
15	1	Hose, RH Motor Forward	1482800-****
16	1	Hose, RH Motor Reverse	1482800-****
17	2	Bolt, Hex, 5/16"-18 x 1 3/4" G8P	7721529
18	4	Bolt, Hex, 3/8"-16 x 2" G8P	7721571
19	4	Nut, Hex, 3/8"-16	7561262
20	4	Washer, Lock 3/8 Med	7962262
21	4	Washer, Flat 3/8	7958262
22	2	Connector, Splined, Motor to Hub	4205500
23	2	O'Ring, Motor to Hub	4584155
24	2	Motor, Hydraulic, Cessna	3949600
25	4	Washer, Lock 1/2" Med	7962278
26	4	Bolt, Hex, 1/2"-13 x 1 3/4" G8P	7721654
27	4	Fitting, Tube, Elbow-metal O'Ring	3341595
28	1	Hose, RH Motor Drain	1481600-****
29	1	Hose, LH Motor Drain	1481600-****
30	2	Fitting, Hydraulic Swivel	3435375
31	2	O'Ring For #8 Tube Fitting	4591908
Note: On axles equiped with Sunstrand motors items 24, 26, & 27 will be replaced by items 32-36.			
32	2	Motor, Hydraulic, Sunstrand	3949500
33	2	Fitting, Tube Elbow-metal O'Ring	3341605
34	2	Fitting, Tube Plug	3366415
35	2	O'Ring for #8 Tube Fitting	4591908
36	4	Bolt, Hex 1/2"-13 x 2" G8P	7721656
37	2	Wheel, 15 x 24	4982524
	2	Wheel, 16 x 26	4982626
	2	Wheel, 15 x 28	4982225
38	18	Nut, Wheel 1/2"-20, 13/16" Hex	7574278
	1	Kit, Motor O'Ring (not shown)	1517425

**** Hose part numbers have a four digit suffix indicating the length of the hose assembly in inches.

MOTOR AND HUB ASSEMBLY
SERIAL NUMBERS to 2665

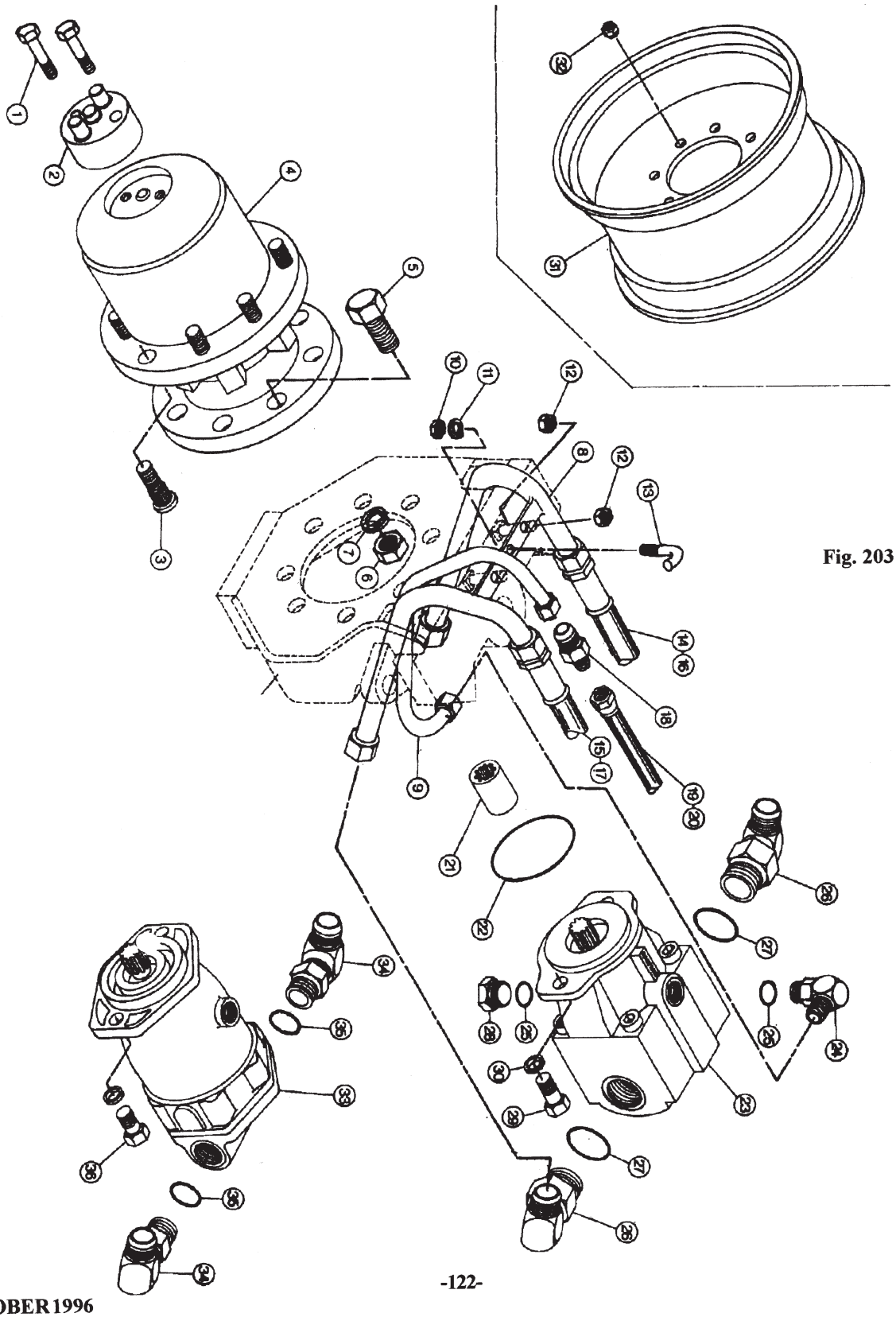


Fig. 203

PARTS LIST

ITEM	REQ'D	DESCRIPTION	PART NO.
1	4	Bolt, Hex, 5/16"-18 x 2" G8P	7721531
2	2	Pushbutton Lockout Assembly	1533738
3	18	Bolt, Wheel 1/2" splined	7121655
4	2	Hub, Power Wheel 19.0:1	4495015
	2	Hub, Power Wheel 21.7:1	4495010
	2	Hub, Power Wheel 24.5:1	4495005
	2	Hub, Power Wheel 28.4:1	4495019
5	16	Bolt, Hex, 5/8"-11 x 2" G8P	7721755
6	16	Nut, Hex, 5/8"-11	7562294
7	16	Washer, Lock 5/8" Med	7962294
8	2	Tube, High Pressure, Assembly	1908500
9	2	Tube, Motor Drain Sunstrand	1908300
10	2	Nut, Hex 5/16"-18	7561254
11	2	Washer, Lock, 5/16" Med	7962254
12	8	Nut, Hex, 3/8"-16 (prior to Serial # 0567)	7561262
	8	Nut, Hex, 7/16"-14	7561270
13	2	Bolt, "J"	7126500
14	1	Hose, LH Motor Forward	1482500-****
15	1	Hose, LH Motor Reverse	1482500-****
16	1	Hose, RH Motor Forward	1482500-****
17	1	Hose, RH Motor Reverse	1482500-****
18	2	Fitting, Tube, Union	3398440
19	1	Hose, RH Motor Drain	1481500-****
20	1	Hose, LH Motor Drain	1481500-****
21	2	Connector, Splined, Motor to Hub	4205500
22	2	O'Ring, Motor to Hub Seal	4584155
23	2	Motor, Hydraulic, Sunstrand	3949500
24	2	Fitting, Tube, Elbow	3340415
25	4	O'Ring For #8 Tube Fitting	4591908
26	4	Fitting, Tube, Elbow	3340605
27	1	O'Ring For #16 Tube Fitting	4591916
28	1	Fitting, Tube, Plug	3366415
29	2	Bolt, Hex, 1/2"-13 x 2" G8P	7721656
30	2	Washer, Lock, 1/2" Med	7962278
31	2	Wheel, 15 x 24	4982524
	2	Wheel, 16 x 26	4982626
	2	Wheel, 15 x 28	4982225
32	18	Nut, Wheel 1/2"-20, 13/16" Hex	7574278

Note: On axles equiped with Cessna motors items 9, 23, 26, 27, 28, & 29 will be replaced by items 33-37.

33	2	Motor, Hydraulic, Cessna	3949600
34	4	Fitting, Tube Elbow	3340595
35	4	O'Ring for #12 Tube Fitting	4591912
36	4	Bolt, Hex 1/2"-13 x 1 3/4" G8P	7721654
37	2	Tube, Motor Drain, Cessna (not shown)	1909610
38	1	Kit, Motor O'Ring (not shown)	1517425

**** Hose part numbers have a four digit suffix indicating the length of the hose assembly in inches.

AXLE ASSEMBLY
SERIAL NUMBERS 2665 to 4000

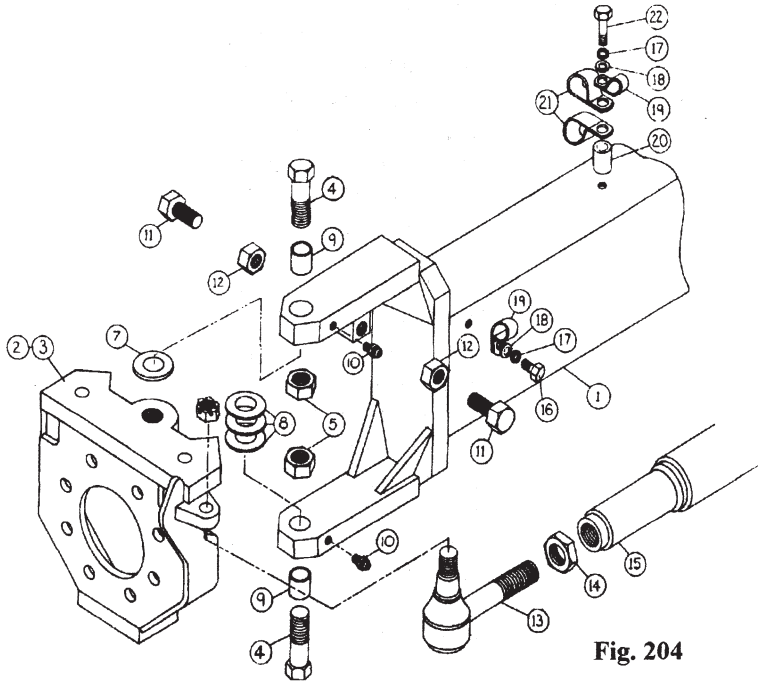


Fig. 204

PARTS LIST

ITEM	REQ'D	DESCRIPTION	PART NO.
1	1	Axle Weldment	*
2	1	Spindle, RH	*
3	1	Spindle, LH	*
4	4	Bolt, Kingpin	1122900
5	4	Nut, Hex Jam	7566342
6	A/R	Locktite, Type 271 (not shown)	
7	2	Washer, Hardened Thrust	7976700
8	A/R	Washer, Spacer	7976600
9	4	Bushing, Kingpin	1149500
10	4	Zerk, Straight, 1/4"-28	5997500
11	4	Bolt, Hex, 5/8-11 x 1 3/4" G8P	7721753
12	4	Nut, Hex Jam, 5/8"-11	7565294
13	1	End, Tie Rod, LH	5251331
	1	End, Tie Rod, RH (not shown)	5251330
14	2	Nut, Hex Jam	7565342
15	1	Assembly, Tie Rod	1883100-****
16	2	Bolt, Hex, 5/16-18 x 3/4" G8P	7721519
17	4	Washer, Lock 5/16" Med	7962254
18	4	Washer, Flat 5/16" Med	7958254
19	4	Adel Clamp, .62 ID	5183600
20	2	Spacer, Axle Hose Clamp	5791400
21	4	Adel Clamp, .94 ID	5183729
22	2	Bolt, Hex, 5/16-18 x 2 1/4" G8P	7721532

* To order parts with an astrick, call factory with serial number.

**** Tie Rod part numbers have a four digit suffix to indicate length.

AXLE ASSEMBLY
SERIAL NUMBERS to 2665

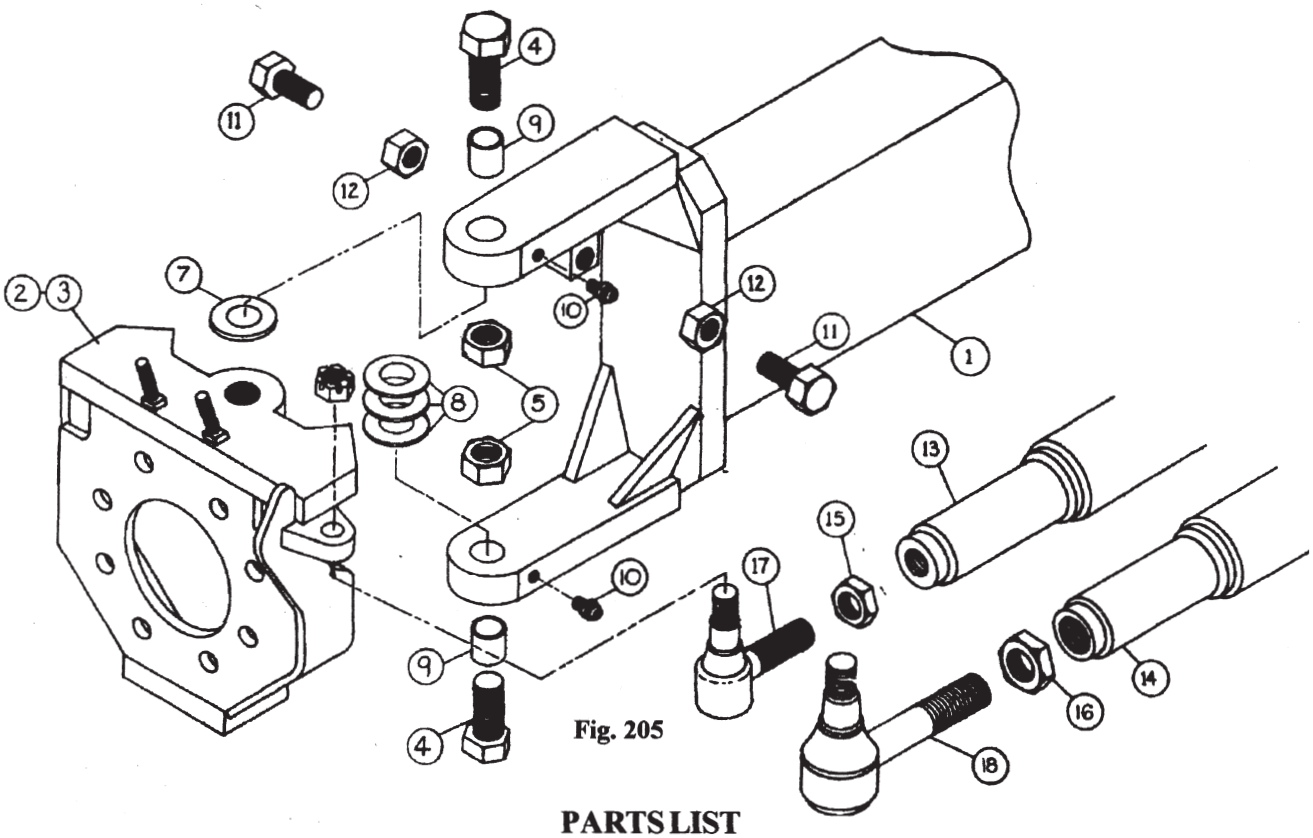


Fig. 205

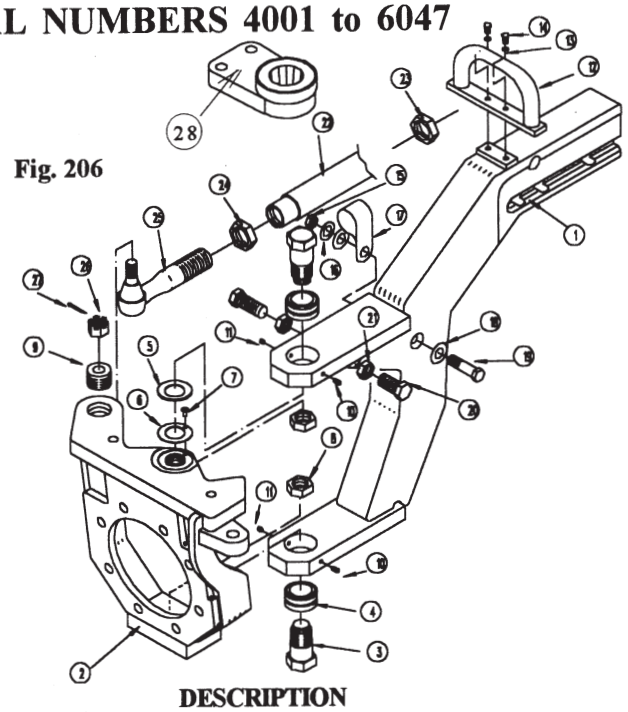
PARTS LIST

ITEM	REQ'D	DESCRIPTION	PART NO.
1	1	Axle Weldment	*
2	1	Spindle, RH	*
3	1	Spindle, LH	*
4	4	Bolt, Kingpin	1122900
5	4	Nut, Hex Jam	7566342
6	A/R	Locktite, Type 271 (not shown)	
7	2	Washer, Hardened Thrust	7976700
8	A/R	Washer, Spacer	7976600
9	4	Bushing, Kingpin	1149500
10	4	Zerk, Straight, 1/4"-28	5997500
11	4	Bolt, Hex, 5/8-11 x 1 3/4" G8P	7721753
12	4	Nut, Hex Jam, 5/8"-11	7565294
13	1	Assembly, Tie Rod	1883120-****
14	1	Assembly, Tie Rod	1883591-****
15	2	Nut, Hex Jam	7566326
16	2	Nut, Hex Jam	7565342
17	2	End, Tie Rod	5251400
18	2	End, Tie Rod	5251330

* To order parts with an astrick, call factory with serial number.
**** Tie Rod part numbers have a four digit suffix to indicate length.

SPINDLE AND YOKE ASSEMBLY
JOHN DEERE 9940/9950 COTTON PICKER
SERIAL NUMBERS 4001 to 6047

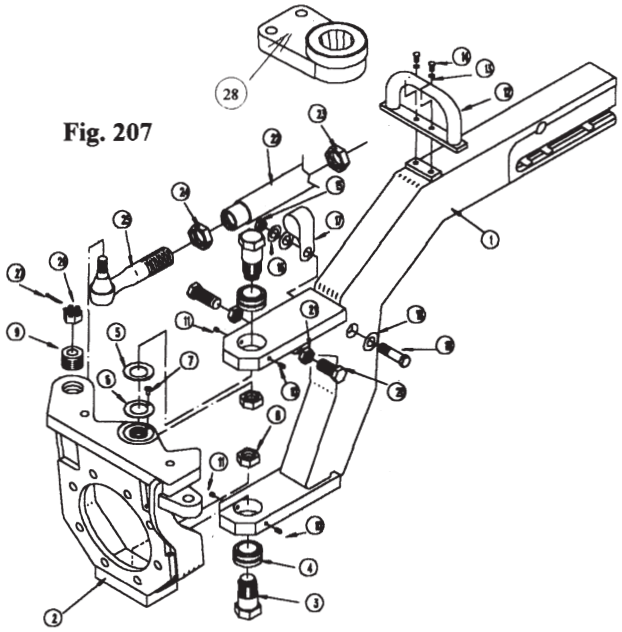
Fig. 206



NO.	REQ'D	DESCRIPTION	PART NO.
1	1	YOKE ASSEMBLY LH JOHN DEERE 9940/9950 CP	1994501
	1	YOKE ASSEMBLY RH JOHN DEERE 9940/9950 CP	1994500
2	1	SPINDLE ASSEMBLY LH UNIVERSAL	1793852
	1	SPINDLE ASSEMBLY RH UNIVERSAL	1793788
3	2	PIN, KINGPIN BOLT	1636793
4	2	BEARING, SPHERICAL KINGPIN	4075100
5	1	WASHER, SPHERICAL	7970100
6	1	WASHER, TEFLON THRUST	1971851
7	1	SCREW, FLAT HEAD, 8-32 x 3/8"	7730262
8	2	NUT, HEX JAM, 1 1/8"-12 LH	7565359
9	1	INSERT, STERING ARM	1503868
10	2	ZERK, GREASE-STR, 1/4"-28	5997500
11	3	SCREW, SET, ALLEN, 1/4"-28 x 1/4"	7744470
12	1	HOSE GUIDE	1458501
13	2	WASHER, LOCK, 1/4" MED	7962246
14	2	BOLT, HEX, 1/4"-20 x 1/2" G8P	7721474
15	1	NUT, HEX, 3/8"-16 PLTD	7561262
16	1	WASHER, LOCK, 3/8" MED	7962262
17	1	CLAMP, ADEL, .62 ID	5183600
18	2	WASHER, FLAT, 3/8" MED	7958262
19	1	BOLT, HEX, 3/8"-16 x 3" G8P	7721575
20	2	BOLT, HEX, 5/8"-11 x 1 3/4" G8P	7721753
21	2	NUT, HEX JAM, 5/8"-11	7565294
22	1	TIE ROD ASSEMBLY, 64" OAL	1883101-057
23	1	NUT, HEX JAM, 1"-16 RH	7565342
24	1	NUT, HEX JAM, 1"-16 LH	7565343
25	2	END, TIE ROD, ES330 LH HD	1251331
26	1	NUT, HEX, CASTLE (INCLUDED w/TIE ROD END)	
27	1	COTTER PIN (INCLUDED w/TIE ROD END)	
28	1	ARM, SPLINED HUB STEERING	1029931

SPINDLE AND YOKE ASSEMBLY
JOHN DEERE 9940/9950 SKIP ROW COTTON PICKER
SERIAL NUMBERS 4001 to 6047

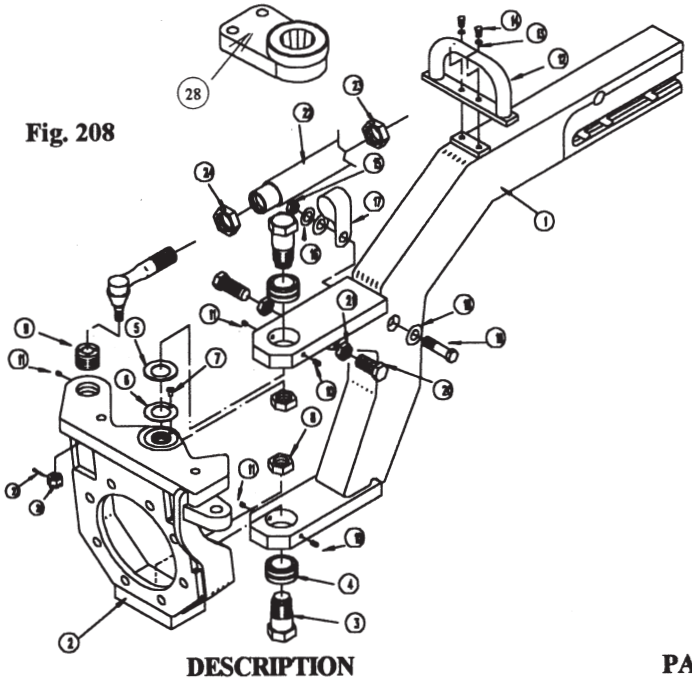
Fig. 207



NO.	REQ'D	DESCRIPTION	PART NO.
1	1	YOKE ASSEMBLY LH JOHN DEERE 9940/9950 CP	1994505
	1	YOKE ASSEMBLY RH JOHN DEERE 9940/9950 CP	1994504
2	1	SPINDLE ASSEMBLY LH UNIVERSAL	1793852
	1	SPINDLE ASSEMBLY RH UNIVERSAL	1793788
3	2	PIN, KINGPIN BOLT	1636793
4	2	BEARING, SPHERICAL KINGPIN	4075100
5	1	WASHER, SPHERICAL	7970100
6	1	WASHER, TEFLON THRUST	1971851
7	1	SCREW, FLAT HEAD, 8-32 x 3/8"	7730262
8	2	NUT, HEX JAM, 1 1/8"-12 LH	7565359
9	1	INSERT, STERING ARM	1503868
10	2	ZERK, GREASE-STR, 1/4"-28	5997500
11	3	SCREW, SET, ALLEN, 1/4"-28 x 1/4"	7744470
12	1	HOSE GUIDE	1458501
13	2	WASHER, LOCK, 1/4" MED	7962246
14	2	BOLT, HEX, 1/4"-20 x 1/2" G8P	7721474
15	1	NUT, HEX, 3/8"-16 PLTD	7561262
16	1	WASHER, LOCK, 3/8" MED	7962262
17	1	CLAMP, ADEL, .62 ID	5183600
18	2	WASHER, FLAT, 3/8" MED	7958262
19	1	BOLT, HEX, 3/8"-16 x 3" G8P	7721575
20	2	BOLT, HEX, 5/8"-11 x 1 3/4" G8P	7721753
21	2	NUT, HEX JAM, 5/8"-11	7565294
22	1	TIE ROD ASSEMBLY, 64" OAL	1883101-057
23	1	NUT, HEX JAM, 1"-16 RH	7565342
24	1	NUT, HEX JAM, 1"-16 LH	7565343
25	2	END, TIE ROD, ES330 LH HD	1251331
26	1	NUT, HEX, CASTLE (INCLUDED w/TIE ROD END)	
27	1	COTTER PIN (INCLUDED w/TIE ROD END)	
28	1	ARM, SPLINED HUB STEERING	1029931

SPINDLE AND YOKE ASSEMBLY
JOHN DEERE 9940/9950 SKIP ROW COTTON PICKER
SERIAL NUMBERS 6048 to 7214

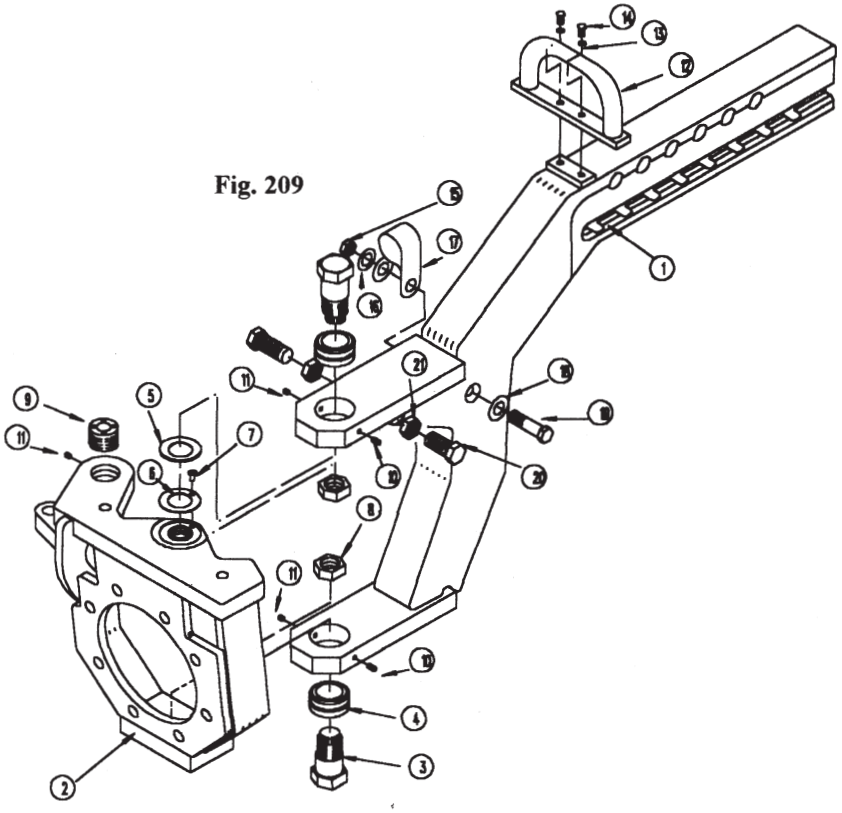
Fig. 208



NO.	REQ'D	DESCRIPTION	PART NO.
1	1	YOKE ASSEMBLY LH JOHN DEERE 9940/9950 CP	1994505
	1	YOKE ASSEMBLY RH JOHN DEERE 9940/9950 CP	1994504
2	1	SPINDLE ASSEMBLY LH UNIVERSAL	1793852
	1	SPINDLE ASSEMBLY RH UNIVERSAL	1793788
3	2	PIN, KINGPIN BOLT	1636793
4	2	BEARING, SPHERICAL KINGPIN	4075100
5	1	WASHER, SPHERICAL	7970100
6	1	WASHER, TEFLON THRUST	1971851
7	1	SCREW, FLAT HEAD, 8-32 x 3/8"	7730262
8	2	NUT, HEX JAM, 1 1/8"-12 LH	7565359
9	1	INSERT, STERING ARM	1503875
10	2	ZERK, GREASE-STR, 1/4"-28	5997500
11	3	SCREW, SET, ALLEN, 1/4"-28 x 1/4"	7744470
12	1	HOSE GUIDE	1458501
13	2	WASHER, LOCK, 1/4" MED	7962246
14	2	BOLT, HEX, 1/4"-20 x 1/2" G8P	7721474
15	1	NUT, HEX, 3/8"-16 PLTD	7561262
16	1	WASHER, LOCK, 3/8" MED	7962262
17	1	CLAMP, ADEL, .62 ID	5183600
18	2	WASHER, FLAT, 3/8" MED	7958262
19	1	BOLT, HEX, 3/8"-16 x 3" G8P	7721575
20	2	BOLT, HEX, 5/8"-11 x 1 3/4" G8P	7721753
21	2	NUT, HEX JAM, 5/8"-11	7565294
22	1	TIE ROD ASSEMBLY, 64" OAL	1883101-057
23	1	NUT, HEX JAM, 1"-16 RH	7565342
24	1	NUT, HEX JAM, 1"-16 LH	7565343
25	2	END, TIE ROD, ES330 LH HD	5251331
26	1	NUT, HEX, CASTLE (INCLUDED w/TIE ROD END)	
27	1	COTTER PIN (INCLUDED w/TIE ROD END)	
28	1	ARM, SPLINED HUB STEERING	1029931

SPINDLE AND YOKE ASSEMBLY
JOHN DEERE 9960 COTTON PICKER
SERIAL NUMBERS 6048 to 7214

Fig. 209



NO.	REQ'D	DESCRIPTION		PART NO.
1	1	YOKE ASSEMBLY JOHN DEERE 9960	RH	1994504
	1	YOKE ASSEMBLY JOHN DEERE 9960	LH	1994505
2	1	SPINDLE ASSEMBLY RH JD 9960		1793950
	1	SPINDLE ASSEMBLY LH JD 9960		1793951
3	2	PIN, KINGPIN BOLT		1636793
4	2	BEARING, SPHERICAL KINGPIN		4075100
5	1	WASHER, SPHERICAL		7970100
6	1	WASHER, TEFLON THRUST		1971851
7	1	SCREW, FLAT HEAD 8-32 x 3/8"		7730262
8	2	NUT, HEX JAM 1 1/8"-12, LH		7565359
9	1	INSERT, STEERING ARM		1503875
10	2	ZERK, GREASE-STR 1/4"-28		5997500
11	3	SCREW, SET ALLEN 1/4"-28 x 1/4"		7744470
12	1	HOSE GUIDE		1458501
13	2	WASHER, LOCK, 1/4" MED		7962246
14	2	BOLT, HEX, 1/4"-20 x 1/2" G8P		7721474
15	1	NUT, HEX, 3/8"-16 PLTD		7561262
16	1	WASHER, LOCK, 3/8" MED		7962262
17	1	CLAMP, ADEL .62" ID		5183600
18	2	WASHER, FLAT, 3/8" MED		7958262
19	1	BOLT, HEX, 3/8"-16 x 3" G8P		7721575
20	2	BOLT, HEX, 5/8"-11 x 1 3/4" G8P		7721753
21	2	NUT, HEX, JAM, 5/8"-11		7565294

FLOW DIVIDER ASSEMBLY
SERIAL NUMBERS to 4000

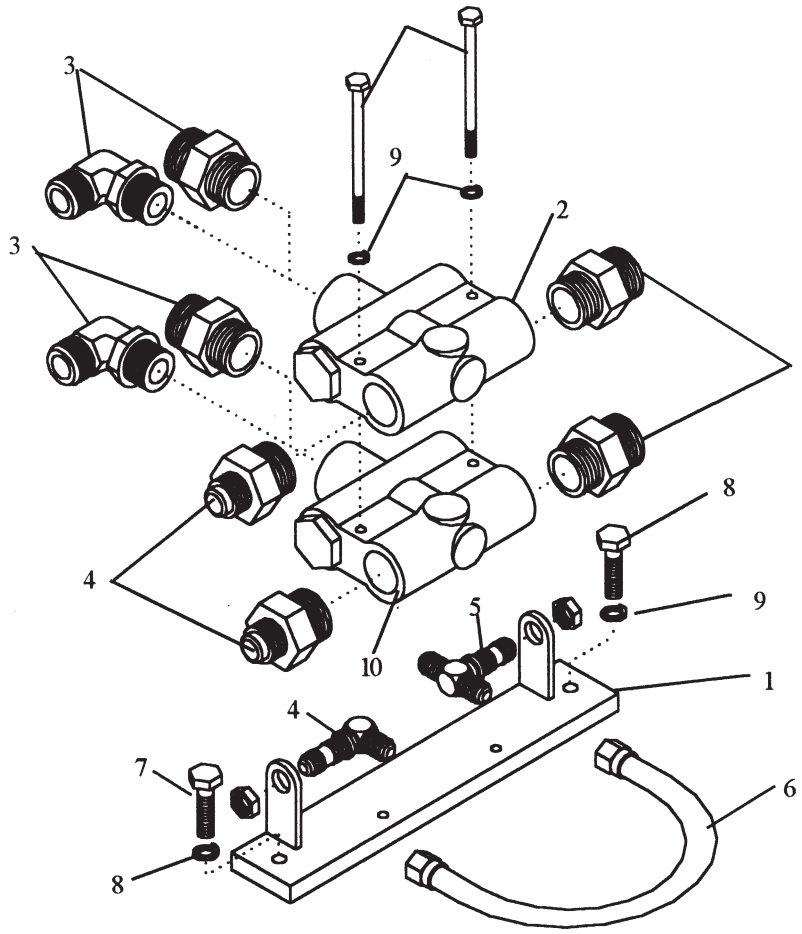


Fig. 210

PARTS LIST

ITEM	REQ'D	DESCRIPTION	PART NO.
1	1	Bracket, Flow Divider Mount	1136510
2	1	Valve, Flow Divider (Forward)	3937100
3	2	Fitting, Tube, Elbow	3340555
	2	Fitting, Tube, Straight	3300555
4	4	Fitting, Tube, Straight	3300455
5	1	Fitting, Tube, Elbow	3326345
6	1	Fitting, Tube, Tee	3385345
7	1	Hose, Drain Crossover	1481510-0135
8	2	Bolt, Hex, 5/16"-18 x 1" G8P	7721523
9	2	Washer, Lock, 5/16" Med	7962254
10	2	Bolt, Hex, 1/4"-20 x 4" G5P	7721498
11	2	Washer, Lock, 1/4" Med	7962246
12	1	Valve, Flow Divider (Reverse)	3937050

GILCREST

PUSHER™ G

BASIC TROUBLE SHOOTING

GENERAL INFORMATION

Gilcrest Equipment Company has been manufacturing drive conversions for heavy farm equipment since 1977. This section is an excrpt from the "Service and Warranty Manual" for **Gilcrest Equipment Company's "PUSHER$_{TM}$"** rear wheel assist conversions for agricultural harvesting equipment.

The Gilcrest **PUSHER$_{TM}$** is a valuable investment, and its' proper maintance and servicing will prolong its life and servicability. Please refer to the "Service and Warranty Manual" for detailed servicing instructions. All page references in this section refer to the "Service and Warranty Manual" unless otherwise specified.

WARRANTY ITEMS REQUIRING SPECIAL HANDLING

MOTORS: Hydraulic motors under warranty shall not be serviced in the field. If any problem other than output shaft seal replacement occurs, return the unopened motor to the factory for full credit. If upon examination at the factory, it is determined that the motor had been opened, it will be returned to the customer and any credit will be disallowed.

DO NOT PERFORM INTERNAL SERVICING ON MOTORS UNDER WARRANTY!

TROUBLE SHOOTING

1. HUB PROBLEMS

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
GEAR GREASE IS LEAKING BETWEEN THE WHEEL AND THE SPINDLE.	THE HUB-SPINDLE IS FAULTY AND NEEDS REPLACING.	REPLACE THE HUB-SPINDLE SEAL. **(SEE PG. II-19)**
HYDROSTATIC OIL LEAKING BETWEEN THE WHEEL AND THE SPINDLE.	THE MOTOR SEAL HAS BLOWN AND HAS IN TURN PRESSURISED THE HUB AND BLOWN THE HUB-SPINDLE SEAL.	REPLACE THE MOTOR OUTPUT SEAL AND THE HUB-SPINDLE SEAL. **(SEE PGS. II-2 & II-19)**
GEAR GREASE LEAKING BETWEEN THE MOTOR AND THE HUB.	FAULTY MOTOR TO HUB O-RING.	REPLACE THE FAULTY MOTOR TO HUB O-RING. **(SEE PG. II-1)**
HYDROSTATIC OIL LEAKING BETWEEN THE MOTOR AND THE HUB.	OUTPUT SHAFT SEAL ON THE MOTOR IS FAULTY AND MOTOR TO HUB O-RING IS FAULTY.	REPLACE THE MOTOR OUTPUT SHAFT SEAL AND REPLACE THE MOTOR TO HUB O-RING. **(SEE PGS. II-1 & II-2)**
HUB CAP IS LEAKING.	THE SILICON RUBBER ADHESIVE SEAL BETWEEN THE HUB CAP AND HUB IS DEFECTIVE.	RENEW THE SILICON SEALANT BETWEEN THE HUB CAP AND THE HUB. **(SEE ASSEMBLY/DIS-ASSEMBLY APPLICABLE POWER WHEEL MODEL; PGS. II-6 TO II-18)**

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
THE FILLER PLUG HOLE IS LEAKING.	THE FILLER PLUG IS NOT SEATING PROPERLY.	APPLY SOME PIPE COMPOUND OR TEFLON TAPE TO THE PLUG AND REINSTALL. **NOTE: DO NOT TIGHTEN THE PLUG EXCESSIVELY, AS THIS CAN BREAK THE ALUMINUM HUB CAP.**
HUB IS GRINDING OR SLIDING.	INTERNAL SNAP RING, GEAR, OR BEARING FAILURE.	REPLACE GEAR SETS, SNAP RINGS AND BEARINGS. **(SEE ASSEMBLY/DIS-ASSEMBLY APPLICABLE POWER WHEEL MODEL; PGS. II-6 TO II-18)**
HUB WILL NOT DISENGAGE/ ENGAGE.	1) TOO MUCH TORQUE ON PLANETARY UNIT.	1) TURN 4WD SWITCH OFF AND ROCK MACHINE TO RELEASE PRESSURE FROM GEAR SETS.
	2) INTERNAL SNAP RING FAILURE ON INPUT SHAFT.	2) REPLACE SNAP RING ON INPUT SHAFT. **(SEE ASSEMBLY/DIS-ASSEMBLY APPLICABLE POWER WHEEL MODEL; PGS. II-6 TO II-18)**
	3) EXCESSIVE MUD, DIRT, etc., BUILD-UP IN LOCKOUT ASSEMBLY. **(APPLICABLE TO STANDARD LOCKOUT SYSTEM ONLY)**	3) REMOVE AND CLEAN LOCKOUT ASSEMBLY; RE-INSTALL. **(SEE PG. 5 OF 1989 OWNERS MANUAL OR PG. 6 OF 1991 OWNERS MANUAL FOR ASSEMBLY DIAGRAM OF LOCKOUT.**

2. HYDROSTATIC SYSTEM PROBLEMS

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
DIRECTIONAL CONTROL VALVE LEAKING BETWEEN TOP-PLATE AND MANIFOLD.	1) THE BOLTS HAVE LOOSENED HOLDING THE TWO PIECES TOGETHER AND HAVE BLOWN THE O-RINGS.	REPLACE THE DIRECTIONAL CONTROL VALVE O-RINGS. **(SEE PG. II-21)**
	2) THE MACHINE HAS BEEN DRIVEN DOWN THE ROAD OR AT HIGH SPEED (OVER 10 MPH) WITH THE HUBS ENGAGED, AND HAS BLOWN THE MANIFOLD O-RINGS. **(APPLICABLE TO STANDARD LOCKOUT SYSTEM ONLY. SEE NOTE 4 BELOW)**	DIS-ENGAGE HUBS WHEN ROAD TRAVELING. REPLACE THE DIRECTIONAL CONTROL VALVE O-RINGS. **(SEE PG. II-21)**
HYDROSTATIC OIL LEAKING AROUND THE SWIVEL DRAIN FITTING ON TOP OF THE MOTOR.	THE O-RING PACKAGE IN THE SWIVEL DRAIN FITTING IS EITHER WORN OUT OR IS FAULTY.	REPLACE THE O-RING PACKAGE IN THE FITTING, OR REPLACE ENTIRE FITTING, WHICHEVER IS APPLICABLE. **(SEE PG. II-36)**
HYDROSTATIC OIL LEAKING AT ANY FITTING.	BLOWN O-RING ON FITTING. CHECK FITTING FOR TIGHTNESS.	REPLACE THE FAULTY O-RING SEAL. **(SEE PG. II-36)**
HYDROSTATIC OIL HEATING UP EXCESSIVELY OR BLOWING THE POSITIVE TRACTION VALVE O-RINGS.	1) HYDROSTATIC OIL IN RESERVOUIR IS LOW.	1) ADD APPROPRIATE HYDROSTATIC OIL.
	2) POSITIVE TRACTION VALVE IS NOT FUNCTIONING PROPERLY. **(APPLICABLE TO STANDARD LOCKOUT SYSTEM ONLY)**	2) REPLACE THE FAULTY POSITIVE TRACTION VALVE. **(APPLICABLE TO STANDARD LOCKOUT SYSTEM ONLY)**

IMPORTANT NOTES:

1. WHEN RE-TIGHTENING ANY BOLTS OR FITTINGS, NEVER TIGHTEN OVER THE RECOMMENDED STANDARD TORQUE RATING FOR THAT SIZE OF BOLT.

2. ANY REPLACEMENT O-RINGS MUST BE GILCREST EQUIPMENT COMPANY O-RINGS. THESE O-RINGS ARE OF A SPECIAL COMPOUND AND HARDNESS. ONLY THESE O-RINGS ARE RECOMMENDED TO WITH-STAND THE DAY IN, DAY OUT STRAINS OF 6,000 psi.

3. ANY INTERNAL SERVICING OF ANY VALVE CARTRIDGE WILL VOID WARRANTY.

4. ROADING THE MACHINE OR DRIVING AT HIGH SPEEDS WITH HUBS ENGAGED FALLS UNDER THE MISUSE CLAUSE IN THE WARRANTY AND WILL VOID YOUR WARRANTY. (APPLICABLE TO STANDARD LOCKOUT SYSTEM ONLY)

3. OPERATING PROBLEMS

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
4WD WILL NOT ENGAGE.	1) THE FUSE IS BLOWN, AND NEEDS REPLACING.	1) CHECK WIRE AND SOLENOID COIL FOR ELECTRICAL SHORTS, AND REPLACE FUSE (IF NEEDED), WITH A FUSE OF AT LEAST 12 AMP, BUT NO MORE THAN 20 AMP.
	2) THE SOLENOID VALVE (SWITCH) ON THE DIRECTIONAL CONTROL VALVE IS FAULTY AND NEEDS REPLACING.	2) REPLACE SOLENOID VALVE (SWITCH) ON DIRECTIONAL CONTROL VALVE. **(SEE PG II-34)**
	3) THE HUBS ARE NOT ENGAGED. THIS ALLOWS ALL OIL TO BYPASS. **(APPLICABLE TO STANDARD LOCKOUT SYSTEM ONLY)**	3) ENGAGE HUBS. **(APPLICABLE TO STANDARD LOCKOUT SYSTEM ONLY)**
	4) LOW CHARGE PRESSURE	4) CHANGE THE CHARGE FILTER
4WD WILL NOT DIS-ENGAGE.	DIRECTIONAL CONTROL VALVE TOP-PLATE IS FAULTY.	REPLACE THE DIRECTIONAL CONTROL VALVE TOP-PLATE. **(SEE PG II-21)**
MACHINE IS SLUGGISH OR NOT AGGRESSIVE WHEN 4WD IS ENGAGED.	1) ONE OR BOTH HUBS ARE NOT ENGAGED. **(APPLICABLE TO STANDARD LOCKOUT SYSTEM ONLY)**	1) CHECK LOCKOUTS ON HUBS, IF NOT ENGAGED DO SO. **(APPLICABLE TO STANDARD LOCKOUT SYSTEM ONLY)**
	2) FAULTY MOTOR ON 4WD.	2) CHECK CASE DRAIN ON MOTORS. THIS CAN BE DONE BY USING A FLO-METER IN THE MOTOR'S RETURN LINE. THERE SHOULD BE NO MORE THAT 2 GPM AND 25 PSI MAXIMUM CASE DRAIN UNDER LOAD. CHECK BOTH MOTORS SEPARATELY. IF EXCESSIVE CASE DRAIN OCCURS, REPLACE MOTOR. **(SEE PGS. II-1 & II-4)**

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
◎ cont. MACHINE IS SLUGGISH OR NOT AGGRESSIVE WHEN 4WD IS ENGAGED.	3) FAULTY DIRECTIONAL CONTROL VALVE TOP-PLATE.	3) REPLACE DIRECTIONAL CONTROL VALVE TOP-PLATE. **(SEE PG II-21)**
	4) LOW CHARGE PRESSURE.	4) CHECK MACHINES OPERATING PRESSURES ON THE HIGH PRESSURE SIDE AND THE CHARGE PRESSURE SIDE. MOST MACHINES NEED TO DEVELOP ABOUT 5000 PSI AT STALL ON THE HIGH PRESSURE SIDE AND ABOUT 250 PSI ON THE CHARGE PRESSURE SIDE. IT TAKES A MINIMUM OF 160 PSI ON THE CHARGE PRESSURE SIDE TO MAKE THE 4WD FUNCTION PROPERLY. IF THESE PRESSURES ARE LOWER THAN THE FACTORY RECOMMENDED, FURTHER CHECKS ON THE HYDROSTAT SYSTEM MUST BE MADE AND CORRECTED.
◎ MACHINE JUMPS AND SURGES ERRATICALLY WHEN 4WD IS ENGAGED.	1) HUBS ARE DIS-ENGAGED. **(APPLICABLE TO STANDARD LOCKOUT SYSTEM ONLY)**	1) CHECK TO SEE IF HUBS ENGAGED, IF NOT DO SO. **(APPLICABLE TO STANDARD LOCKOUT SYSTEM ONLY)**
	2) MOTOR ON 4WD FAULTY, AND NEEDS REPLACED.	2) CHECK CASE DRAIN ON EACH MOTOR SEPARATELY UNDER LOAD. IF EXCESSIVE CASE DRAIN OCCURS, REPLACE MOTOR. **(SEE PGS. II-1 & II-4)**
	3) NOT ENOUGH CHARGE PRESSURE TO KEEP 4WD ACTIVATED.	3) CHECK CHARGE PRESSURE. 160 PSI MINIMUM IS NEEDED TO KEEP 4WD ACTIVATED UNDER LOAD. IF LOW PRESSURES OCCUR, HYDROSTAT SYSTEM PROBLEM IN EVIDENT AND MUST BE CORRECTED.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
4WD OVER SPINNING, TOO AGGRESSIVE.	1) BRAKES ARE ON.	1) MAKE SURE BRAKES ARE OFF.
	2) TOO MUCH TORQUE BEING DELIVERED BY 4WD UNIT FOR MACHINE TO OPERATE PROPERLY.	2) REPLACE THE HUB WITH ONE WITH A HIGHER SPEED/LOWER TORQUE OPTION OR CHANGE GEAR RATIO IN HUBS TO A HIGHER SPEED/LOWER TORQUE OPTION. **(SEE PG II-19)**
FRONT DRIVES SPINNING, 4WD NOT AGGRESSIVE AT ALL.	WHEN THE FRONT DRIVERS SPIN FREE, THEY CAN TAKE ALL OIL SUPPLIED BY THE HYDROSTAT SYSTEM. THE REAR TIRES CAN NOT DO THIS BECAUSE THE SYSTEM IS DESIGNED WITH FLO CONTROLS TO KEEP THIS FROM HAPPENING. BECAUSE OIL TRAVELS THE PATH OF LEAST RESISTANCE, WHEN THE FRONT TIRES SPIN, THERE IS NOT ENOUGH OIL FLOW LEFT TO OPERATE THE 4WD UNIT.	1) WHEN THE FRONT TIRES BEGIN TO SPIN FREE, DEPRESS THE BRAKES ON THE MACHINE. THIS WILL FORCE OIL TO THE REAR TIRES AND THEY WILL PUSH MORE AGGRESSIVELY. 2) SHIFT UP ONE GEAR TO DEVELOP MORE PRESSURE.
4WD UNIT DOES NOT STEER PROPERLY.	1) IMPROPER TOE-IN.	1) CHECK AND ADJUST TOE-IN SHOULD BE 0 TO 1/2".
	2) IMPROPER STEERING STOP ADJUSTMENT.	2) CHECK AND ADJUST STEERING STOP SHOULD BE 1" FROM YOKE EAR ON FRONT OF AXLE.
	3) LOW STEERING PRESSURE.	3) CHECK AND ADJUST STEERING CYLINDER AND STEERING PRESSURE.
TIRES WEARING AND/OR CUPPING ERATICLY.	THE MACHINE HAS BEEN DRIVEN DOWN THE ROAD OR AT HIGH SPEED (OVER 10 MPH) WITH THE HUBS ENGAGED, AND HAS BLOWN THE MANIFOLD O-RINGS. **(APPLICABLE TO STANDARD LOCKOUT SYSTEM ONLY. SEE NOTE 3 ON PG III-7)**	DIS-ENGAGE HUBS WHEN ROAD TRAVELING. **(APPLICABLE TO STANDARD LOCKOUT SYSTEM ONLY)**

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
BREAKING TIE ROD ENDS	1) IMPROPER STEERING ADJUSTMENT.	1) CHECK AND ADJUST STEERING STOPS AND TOE-IN.
	2) TIE ROD END NUTS ARE NOT TIGHT ENOUGH.	2) TIGHTEN TIE ROD END NUTS.
BLOWING HIGH PRESSURE OR AXLE HOSES	1) FAULTY HOSE.	1) REPLACE HOSE. **(SEE NOTE 1 BELOW)**
	2) IMPROPER HOSE.	2) REPLACE HOSE. **(SEE NOTE 1 BELOW)**
	3) THE MACHINE HAS BEEN DRIVEN DOWN THE ROAD OR AT HIGH SPEED (OVER 10 MPH) WITH THE HUBS ENGAGED, AND HAS BLOWN THE MANIFOLD O-RINGS. **(APPLICABLE TO STANDARD LOCKOUT SYSTEM ONLY. SEE NOTE 3 BELOW)**	3) DIS-ENGAGE HUBS WHEN ROAD TRAVELING. **(APPLICABLE TO STANDARD LOCKOUT SYSTEM ONLY)**
BLOWING RETURN (DRAIN) HOSES	1) MOTOR FAILURE.	1) REPLACE HOSE. REPLACE MOTOR. **(SEE PGS II-1 & II-4)**
	2) RESTRICTION IN RETURN LINE.	2) REPLACE HOSE. CHECK HOSES TO VALVE TO BE SURE THEY ARE NOT CRIMPED

IMPORTANT NOTES:

1. ANY REPLACMENT HIGH PRESSURE HOSES MUST COME FROM GILCREST EQUIPMENT COMPANY, THESE HOSES ARE SPECIAL HIGH PRESSURE HOSES AVAILABLE THROUGH GEC ONLY.

2. DO NOT REPLACE RETURN HOSES WITH ANY THING SMALLER THAN 3/8" ID HOSES, AS THIS WILL BLOW THE SEALS OUT OF THE MOTORS.

3. ROADING THE MACHINE OR DRIVING AT HIGH SPEEDS WITH HUBS ENGAGED FALLS UNDER THE MISUSE CLAUSE IN THE WARRANTY AND WILL VOID YOUR WARRANTY. (APPLICABLE TO STANDARD LOCKOUT SYSTEM ONLY)

NOTES