Gehl R190
Gehl R220
Gehl R260
Mustang 1900R
Mustang 2200R
Mustang 2600R

SKID-STEER LOADERS

Form No.
50950134
Revision B
06/15

Service Manual





PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

TABLE OF CONTENTS

Specifications **Page**

SPECIFICATIONS 1

Safety **Page**

General Information 7
Signal Words 7
Additional Safety Reminders 7
Mandatory Safety Shutdown Procedure 9
Lift Arm Support Device 9
Lift Arm Support Device Engagement 9
Lift Arm Support Device Disengagement 10
ROPS/FOPS – Raising 10
ROPS/FOPS – Lowering 11
Relieving Hydraulic Pressure - T-Bar Controls - Lift/Tilt/Auxiliary 11
Relieving Hydraulic Pressure - Dual Joystick, Dual Hand and Hand/Foot Controls - Lift/Tilt/Auxiliary 12
Loader Raising Procedure 13
Loader Lowering Procedure 13

Lubrication **Page**

General Information 15
Hydraulic Oil Reservoir 15
Crankcase Oil 16
Chaincases 17
Grease Fitting Locations 18
Cooling System Drain Procedure 19

Mainframe **Page**

Introduction 21
Mainframe (Chassis) Components - R190/1900R Models 21
Mainframe (Chassis) Components - R220/2200R Models 22
Mainframe (Chassis) Components - R260/2600R Models 23
Grille and Engine Cover Components 24
Engine Access Cover - Removal and Installation 25
Roll-Over and Falling Object Protective Structure Components - ROPS/FOPS 26
ROPS/FOPS Removal and Installation 27
Seat Removal and Installation 28
Seat Slide Replacement 29
Side Console Removal and Installation 29
Non-HVAC Assembly - ROPS/FOPS 30
HVAC Assembly - ROPS/FOPS 31
Heater-Only Assembly - ROPS/FOPS 32
Air Duct Louver Replacement 33

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

SPECIFICATIONS

Model	**R190 / 1900R**
Make of Engine	Yanmar
Engine Model (DPF Models)	4TNV98C-NMS
Fuel	Diesel
Displacement	202.6 CID (3,319 L)
Horsepower - Net	68.4 hp (51 kW) @ 2500rpm
Peak Torque	169-178 lbf-ft (229-241 N•m) @ 1625 rpm
Make of Engine	Yanmar
Engine Model (Non-DPF Models)	4TNV98-ZNMS2R
Fuel	Diesel
Displacement	202.1 cu. in. (3,313 L)
Horsepower - Net	69.9 hp (52,1 kW) @ 2500 rpm
Peak Torque	166-180 ft.-lb. (225-244 N·m) @ 1600 rpm
Operating Load - SAE*	1900 lbs (862 kg)
Operating Weight	6880 lbs (3121 kg)
Shipping Weight	6250 lbs (2835 kg)
Capacities	**Capacities**
Engine Oil	9.5 US qts (9,0 L)
Fuel Tank	16.5 US gal (62,5 L)
Chaincase (each)	9.5 US qts (9,0 L)
Hydraulic System (entire) / Bare Reservoir	11.0 US gal (41,6 L) / 8.0 US gal (30,3 L)
Engine Coolant (entire)	6.0 US qts (5,7 L)
Electrical System	**Electrical**
Battery	12-V DC, Group 31, 950 CCA, 170 Reserve
Starter	12-V DC (3,0 kW)
Alternator	95 A
Hydraulic System	**Hydraulic System**
Hydraulic System Pressure	3000 PSI (207 bar): High-Flow 2900 PSI (200 bar)
Standard Auxiliary Flow Rate	18.5 gal/min (70,03 L/min)
High-Flow Auxiliary Flow Rate	31.5 gal/min (119,24 L/min)
Travel Speed - Single-Speed - varies with control type	0 to 7.5 mph (0 to 12 km/h)
Travel Speed - Two-Speed - varies with control type	0 to 12.5 mph (0 to 20 km/h)
Tire Options	**Tire Options Description**
10 X 16.5 Heavy Duty 8-Ply	Flotation Wide Sidewall and Foam-Filled
12 x 16.5 Heavy Duty 10-Ply	Flotation Wide Sidewall, Foam-Filled and Quik Gel
14 x 17.5 Heavy Duty 12-Ply	Flotation Wide Sidewall and Foam-Filled
14 x 17.5 Heavy Duty 14-Ply	Flotation Wide Sidewall and Foam-Filled
33 x 15.50 x 16.5 12-Ply	Extra Wide / Wide Sidewall
31 x 15.50-15 8-Ply	Heavy Duty
10 x 16.5 10-Ply	H/E Severe Duty and Foam-Filled
12 x 16.5 12-Ply	H/E Severe Duty and Foam-Filled
14 x 17.5 12-Ply	H/E Severe Duty and Foam-Filled
14 x 17.5 14-Ply	H/E Severe Duty and Foam-Filled
10 x 16.5	Solid Flex
12 x 16.5	Solid Flex
14 x 17.5	Solid Flex
8.00 x 16	Solid Rubber
Buckets and Capacities	
Width - inches (millimeters) - Description	**Capacity (Heaped)**
66 inches (1676 mm) - Dirt/Construction	15.1 cubic feet : 0,43 cubic meters
70 inches (1778 mm) - Dirt/Construction	16.1 cubic feet : 0,46 cubic meters
70 inches (1778 mm) - Dirt/Construction w/ spillguard	16.1 cubic feet : 0,46 cubic meters
70 inches (1778 mm) - Low Profile/Grading	19.4 cubic feet : 0,55 cubic meters
66 inches (1676 mm) - Utility/Light Material	19.0 cubic feet : 0,43 cubic meters
70 inches (1778 mm) - Utility/Light Material	20.3 cubic feet : 0,46 cubic meters
42 inches and 48 inches (1067-1219 mm) Pallet Forks	NA

* Operating capacity rated with a 66.00" (1676 mm) 15.1 cubic foot (0.43m^3) dirt/construction bucket and 10 x 16.5 NHS tires in accordance with SAE J818, SAEJ732 and ISO 14397-1.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com



General Information

The above safety alert symbol means: ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! It stresses an attitude of "safety awareness" and can be found throughout this service manual and on decals on the machine.

Before operating or working on this machine, read and study the following safety information. In addition, be sure that everyone who operates or works on this equipment is familiar with these safety precautions. It is essential to have competent and careful operators, who are not physically or mentally impaired, and who are thoroughly trained in the safe operation of the machine and the handling of loads. It is recommended that the operator be capable of obtaining a valid motor vehicle operator's license.

The use of skid-steer loaders is subject to certain hazards that cannot be eliminated by mechanical means, but only by exercising intelligence, care and common sense. Such hazards include, but are not limited to, hillside operation, overloading, instability of the load, poor maintenance and using the equipment for a purpose for which it is not intended or designed.

Manitou Americas ALWAYS consider the operator's safety when designing machinery and guards exposed moving parts for the operator's protection. However, some areas cannot be guarded or shielded in order to assure proper operation. The Operator's Manual and the decals on the machine warn of additional hazards and should be read and observed closely.

These topics in the *Safety* chapter of the service manual include procedures, which, when followed, will allow for safe performance of service procedures: Mandatory Safety Shutdown Procedure, Lift Arm Support Device, Roll-Over Protective Structure (ROPS/FOPS)/Falling Object Protective Structure (FOPS) Lock Mechanism, Loader Raising and Lowering Procedures, and Relieving Hydraulic Pressure.

Signal Words

DANGER

"DANGER" indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.

WARNING

"WARNING" indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.

CAUTION

"CAUTION" indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury. May also alert against unsafe practices.

Additional Safety Reminders



Read and understand the Service Manual and all decals before maintaining, adjusting or servicing this equipment.

Doors, Guards and Shields - Some photographs in this manual may show doors, guards and shields open or removed for illustrative purposes only. BE SURE all doors, guards and shields are in their proper operating positions before starting engine to operate unit.

Damaged or Worn-out Parts - For safe operation, replace damaged or worn-out parts with genuine Gehl/ Mustang service parts, before operating this equipment.

Attachments - Gehl and Mustang loaders are designed and intended to be used only with Manitou Americas attachments or approved referral attachments. Manitou Americas cannot be responsible for safety if the loader is used with a non-approved attachment.

Battery Safety - To avoid injury from a spark or short circuit, turn the electrical disconnect switch to the OFF position before servicing any part of the electrical system. Do not tip the battery more than 45º.



PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Mandatory Safety Shutdown Procedure

BEFORE cleaning, adjusting, lubricating or servicing the unit or leaving it unattended:

1. Move drive control handle(s) to the neutral position.

2. Lower the lift arm and attachment completely. If the lift arm *must* be left in the "raised" position, BE SURE to properly engage the lift arm support device.

3. Move the throttle to the low idle position, shut off the engine and remove the key.

4. Before exiting, move the lift/tilt control(s) to verify that controls do not cause movement of the lift arm or hitch.

Only after these precautions can you be sure it is safe to proceed. Failure to follow the above procedure could lead to death or serious injury.

Lift Arm Support Device

WARNING

BEFORE leaving operator's compartment to work on the loader with the lift arm raised, ALWAYS engage the lift arm support device. Turn the keyswitch to OFF, remove the key and take it with you. The safest method of engaging the lift arm support device requires two people - one person inside the loader and another person outside the loader to engage the support device.

Many service procedures require a raised lift arm to allow easier access to loader components. For operator and service personnel safety, a lift arm support device is standard on Gehl and Mustang skid-steer loaders. Used as a cylinder block, it helps prevent a raised lift arm from unexpectedly lowering.

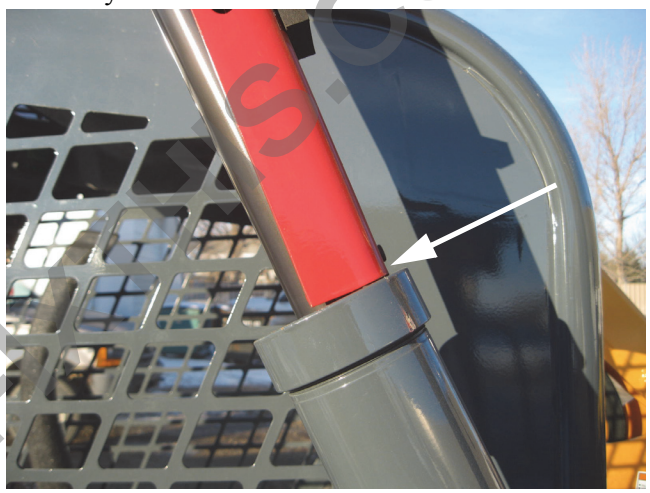
BE SURE to engage the lift arm support device whenever the lift arm is raised. When the device is not being used, secure it to the left rear of the lift arm using the lynch pin provided.

The lift arm support device is a safety device which must be kept in proper operating condition at all times with decals in place.

The following procedures outline the correct way to engage and disengage the lift arm support device.

Lift Arm Support Device Engagement

1. Remove attachment from lift arm.
2. Raise the lift arm fully.
3. Turn keyswitch to OFF position to stop engine.
4. Have an assistant remove the lift arm support device from its storage location on the left side of the machine. Remove the lynch pin holding the support device up against the lift arm. Allow the support device to come down into contact with the lift cylinder.



5. Restart the engine.
6. Use the lift control to raise the lift arm until the support device drops over the end of the lift cylinder and around the cylinder rod. Slowly lower the lift arm until the free-end of the support device contacts the top end of the lift cylinder.
7. Look to be sure the support device is secure against the cylinder end. Then, stop the loader engine, remove the key and leave the operator's compartment.
8. Stop the engine, and exit the machine.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

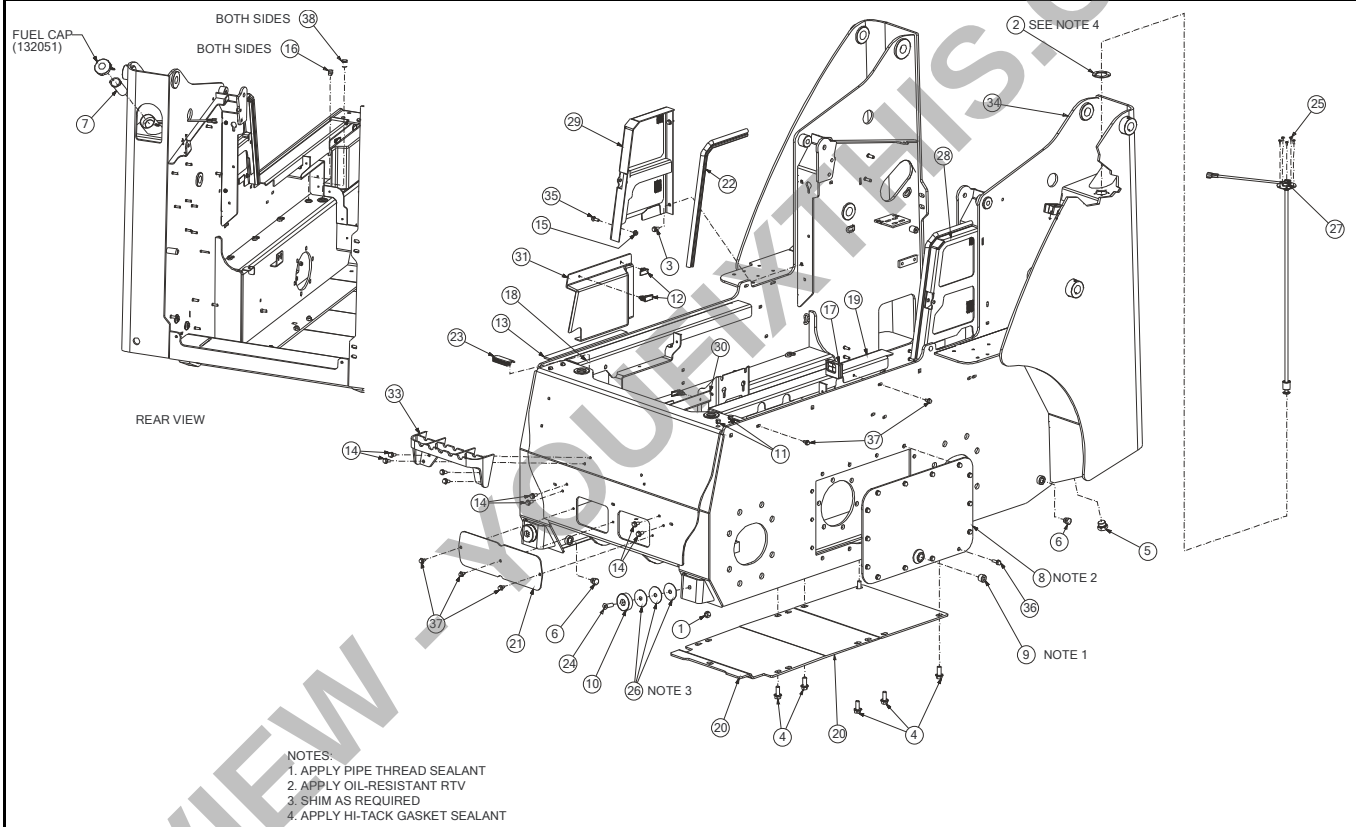
Introduction

Gehl R-Series and Mustang R-Series model skid-steer loaders have a welded steel chassis. Maintenance, service and repair may be performed through standard access panels.

Two side chaincases provide mounting for the drive motors and for the front and rear axles. The side cases also serve as sealed housings for the drive chains and sprockets. Oil is used inside these cases to ensure the chains always receive proper lubrication.

The lift arm and the lift and tilt cylinders are mounted with pivot pins. Capscrews are used to secure the pivot pins. A Rollover Protective Structure/Falling Object Protective Structure (ROPS/FOPS) is standard for operator safety, and both the seat and restraint bar include safety interlock switches.

Mainframe (Chassis) Components - R190/1900R Models

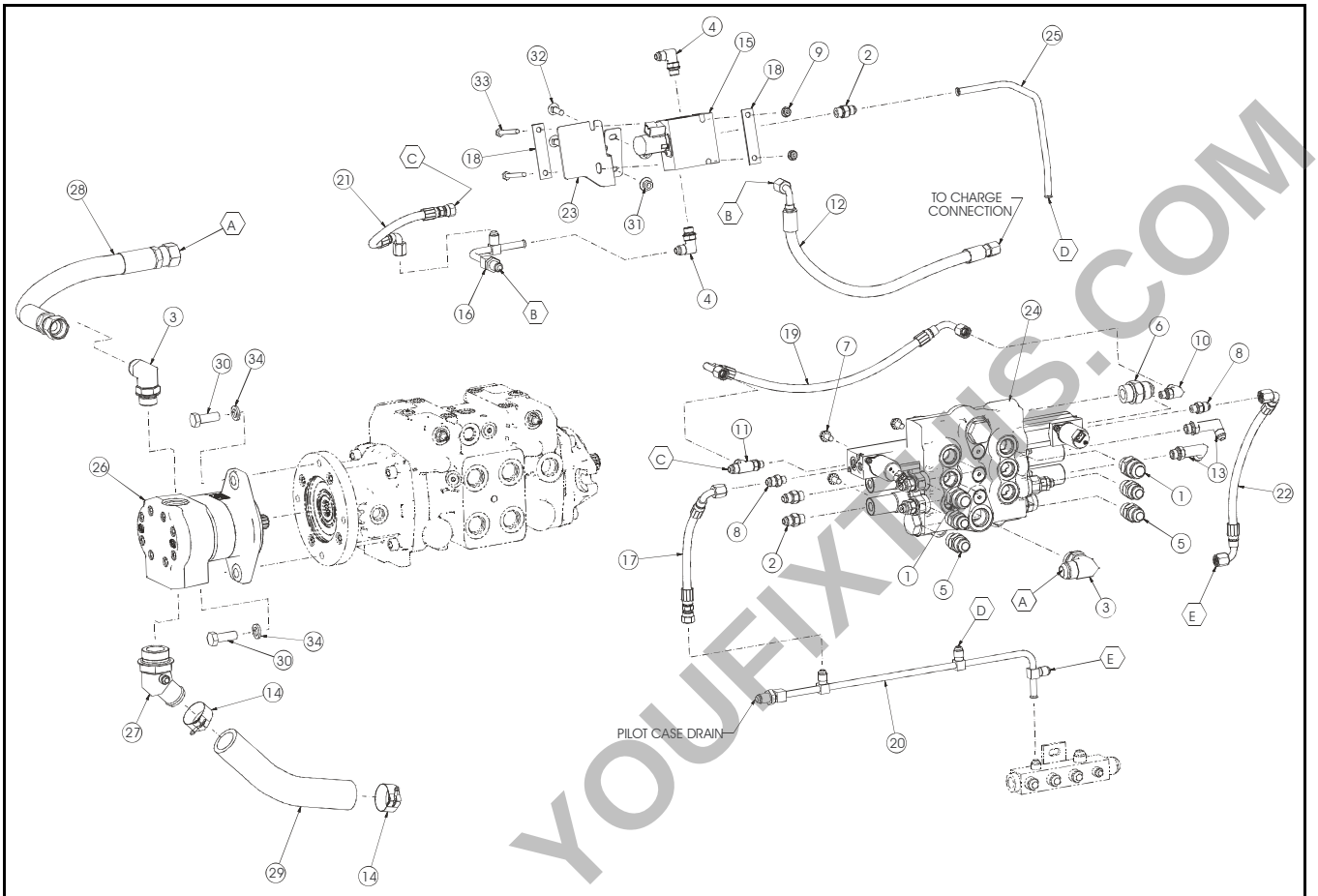


1	NUT/LOCK	20	PAN/BELLY
2	GASKET/FUEL SENDER	21	COVER/CLEAN-OUT
3	SCREW/CAP LOCKING	22	SEAL/BULB 90°
4	SCREW/CAP LOCKING	23	SEAL/FILLER PLATE
5	PLUG	24	SCREW/CAP
6	PLUG	25	SCREW/CAP
7	STRAINER/FUEL FILL	26	SHIM
8	ASSY/CHAINCASE COVER	27	SENDER/FUEL
9	PLUG/PIPE SQUARE SOCKET	28	CHASSIS SIDE COVER/LEFT
10	STOP/DOWN	29	CHASSIS SIDE COVER/RIGHT
11	PLUG/HOLE	30	COVER/LOWER LEFT
12	LATCH/SWELL	31	COVER/LOWER RIGHT
13	STRIP/FOAM	32	COVER/CHASSIS
14	SCREW/TAPPING	33	STEP
15	NUT/HEX LOCK	34	CHASSIS
16	VENT/AIR	35	BOLT/CARRIAGE
17	PLUG/PASS THROUGH	36	SCREW/MACHINE
18	FILLER/ROPS RIGHT	37	SCREW/TAPPING
19	FILLER/ROPS LEFT	38	PLUG

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Hydraulics - Standard Auxiliary Components - R220/2200R Hand/Foot and Dual Joystick



1	FITTING/STRAIGHT	13	FITTING/90°	25	TUBE/HYD/CASE DRAIN
2	FITTING/STRAIGHT	14	CLAMP/T-BOLT	26	PUMP/SINGLE 36CC
3	FITTING/90°	15	VALVE/SOLENOID 3-WAY	27	FITTING/45°
4	FITTING/90°	16	TUBE/PILOT	28	HOSE/PRESSURE
5	FITTING/STRAIGHT	17	HOSE/HYDRAULIC	29	HOSE/SUCTION
6	FITTING/STRAIGHT	18	STRAP	30	SCREW/CAP
7	SCREW/CAP	19	HOSE/PILOT PRESSURE	31	NUT/HEX
8	FITTING/STRAIGHT	20	TUBE/DRAIN	32	BOLT/CARRIAGE
9	NUT/SPIRALOCK™	21	HOSE/HYDRAULIC	33	SCREW/CAP
10	FITTING/90°	22	HOSE/HYDRAULIC	34	WASHER/LOCK
11	FITTING/TEE	23	BRACKET/SUPPLY VALVE		
12	HOSE/PRESSURE	24	VALVE/3-SPOOL PILOT		

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Troubleshooting Guide

The troubleshooting guide lists potential hydrostatic system problems, as well as possible causes and remedies.

If you cannot locate a particular hydrostatic system problem in this chart, consult the troubleshooting chart in the *Hydraulic System* chapter.

When a problem occurs, don't overlook simple causes. A malfunction could be caused by something as simple as low fluid level in the hydraulic reservoir. After a mechanical failure has been corrected, be sure to locate the cause of the problem.

Problem	Possible Cause	Remedy
No response from the hydrostatic drive or the lift/tilt systems	Restraint bar/seat switch malfunction	Check switches and interlock module.
	Hydraulic oil viscosity too high	Allow longer warm-up or replace oil with the proper viscosity oil.
	Hydraulic oil supply too low	Check for low oil level in reservoir. Add oil as needed.
	Hydrostatic pump drive disconnected Drive coupling failure	Check for broken or worn pump Drive Coupling and replace, as needed.
	Blown fuse or relay	Replace fuse or relay.
	Low or no charge pressure	See hydrostatic pump manual.
Traction drive will not operate in either direction	Parking brake engaged	Disengage parking brake.
	Hydraulic oil supply too low	Check for low oil level in reservoir. Add oil if necessary.
	Low or no charge pressure	See hydrostatic pump manual.
	Hydrostatic pump relief valves malfunctioning	Inspect and clean the relief valves. Replace them as needed.
	Inadequate pilot supply oil pressure to joystick control	Check pilot supply oil pressure. Check pilot supply cut-out solenoid.
	Restraint bar raised	Lower the restraint bar.
	Restraint bar or seat switch malfunctioning	Replace malfunctioning switch. Check indicator light on the interlock module.
	T-Bar Models: Control rod linkage disconnected	Check linkage connection at control levers and neutral centering mechanisms. Reconnect linkage.
Drive wheels do not turn in proper direction	High pressure hydraulic hoses between hydrostatic pump and drive motors connected incorrectly	Reconnect hoses to proper ports on the drive motors. Refer to schematic and figures in the *Hydrostatic System* chapter.
	Joystick pilot controller hoses connected incorrectly	Reconnect hoses to proper ports on hydrostatic pump. Refer to schematic and figures.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Introduction

This chapter covers the removal, installation, assembly and adjustment procedures for standard and optional controls on Gehl R-Series and Mustang R-Series model skid-steer loaders.

Equipment Identification

Because there are a variety of control options available for Gehl R-Series and Mustang R-Series models, it is necessary to properly identify the controls before beginning the service procedures. Illustrations and photographs are provided with procedures to aid in servicing this equipment.

Hand/Foot Controls

On loaders with "Hand/Foot controls," left and right drive control handles operate independently of each other. Pushed forward together causes the loader to move forward, but pushing either one farther forward than the other and the loader turns. Separate foot pedals control lift and tilt functions of lift arm and attachment. Engine speed is controlled with a hand throttle dial located in the right instrument panel. A yellow rocker switch in the right control handle controls standard auxiliary hydraulics in tandem with a (red) lock-on button switch. On high-flow models, a rocker switch in the left instrument panel activates the high-flow hydraulics.

T-Bar Controls

On loaders with "T-Bar controls," the left T-Bar handle controls the forward/reverse directions of the hydrostatic drive motors and pumps for both sides of the loader. The right T-Bar handle controls the lift/tilt functions of the lift arm and bucket. Engine speed is controlled with a foot throttle pedal and dial in the right instrument panel. A foot pedal controls the standard auxiliary hydraulics. On high-flow models, a rocker switch in the left instrument panel activates the high-flow hydraulics

Dual Joystick and Dual Hand Controls

On loaders with "Dual Joystick controls," or "Dual Hand controls," the left control handle operates the drive wheels, and the right control handle operates lift and tilt functions of the lift arm and attachment. Engine speed is controlled with a foot throttle pedal and dial in the right instrument panel. A yellow rocker switch in the right control handle controls standard auxiliary hydraulics in tandem with a (red) lock-on button switch. On high-flow models, a rocker switch in the left instrument panel activates the high-flow hydraulics.

Float Control

The float control on skid-steer loaders is controlled by a momentary button switch in the right control handle, which lights a panel indicator light.

Two-Speed Control

Skid-steer loaders have a high and low speed setting. It is controlled by a button switch in the left control handle, which lights a panel indicator light.

Hydraglide™ Ride Control

The Hydraglide™ Ride Control is controlled by a button switch in right control handle, which lights a panel indicator light.

Power-A-Tach® (P-A-T) Hitch Control (Optional)

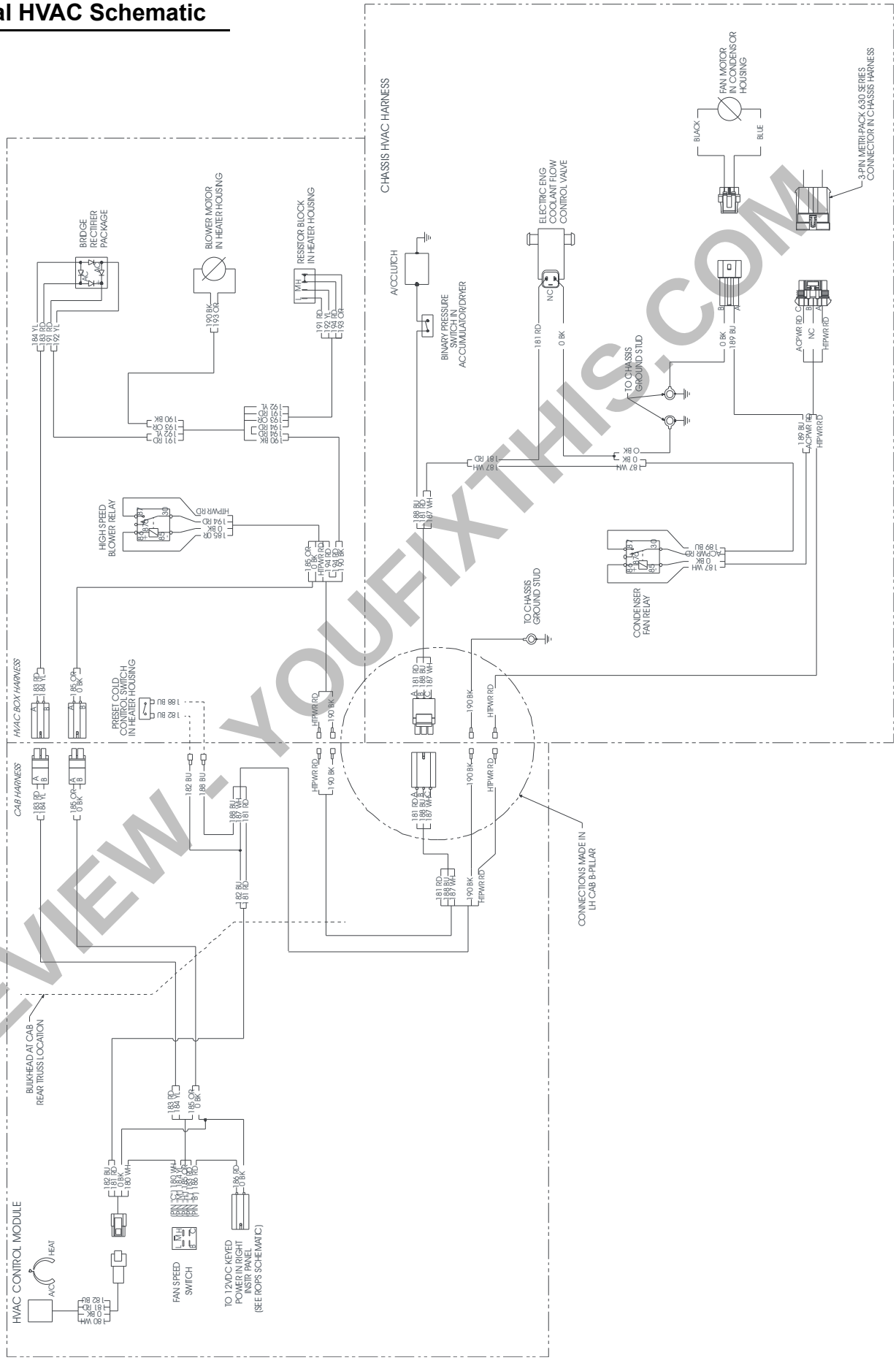
The Power-A-Tach hitch control on skid-steer loaders is controlled by one switch. In the right instrument panel is a two-position switch to engage the system. Press the top of the switch to retract (release) the hitch pins; press the bottom of the switch to extend (engage) the hitch pins.

The Power-A-Tach System is equipped with a warming circuit. The warming circuit reduces the amount of time required to operate the hydraulic cylinder. It is recommended to use this circuit when the temperature is below 32°F (0°C).

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Electrical HVAC Schematic



PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Yanmar 4TNV98C-CT/NMS/T4 Engine Diagnostic Fault Codes (DPF Models)

DTC code				Number of the lamp flashes	Error item	
P code	SPN		FMI		Part	State
	Decima number	Hexadec-imal number	Decima number			
P0193	157	9D	3	MIL + RSL	Rail pressure sensor	Rail pressure sensor fault (High voltage)
P0192			4	MIL + RSL		Rail pressure sensor fault (Low voltage)
P2455	3251	CB3	3	MIL + RSL	DPF differential pressure sensor	DPF differential pressure sensor fault (High voltage)
P2454			4	MIL + RSL		DPF differential pressure sensor fault (Low voltage)
P2452			0	MIL + RSL		DPF differential pressure sensor differential pressure abnormal high
P2453			13	MIL + RSL		DPF differential pressure sensor (Abnormal learning value)
P1455	3609	E19	3	MIL + RSL	DPF high pressure side sensor	DPF high pressure side sensor fault (High voltage)
P1454			4	MIL + RSL		DPF high pressure side sensor fault (Low voltage)
P1428	3242	CAA	3	MIL + RSL	DPF inlet temperature sensor	DPF inlet temperature sensor fault (High voltage)
P1427			4	MIL + RSL		DPF inlet temperature sensor fault (Low voltage)
P1436			0	MIL + AWL		DPF inlet temperature sensor temperature abnormal high
P1434	3250	CB2	3	MIL + RSL	DPF intermediate temperature sensor	DPF intermediate temperature sensor fault (High voltage)
P1435			4	MIL + RSL		DPF intermediate temperature sensor fault (Low voltage)
P0420			1	MIL + AWL		DPF intermediate temperature sensor temperature abnormal low temperature
P1426			0	MIL + RSL		DPF intermediate temperature sensor temperature abnormal high (Post-injection failure)
P2229	108	6C	3	MIL + AWL	Atmospheric pressure sensor	Atmospheric pressure sensor fault (High voltage)
P2228			4	MIL + AWL		Atmospheric pressure sensor fault (Low voltage)
P1231			10	MIL + AWL		Atmospheric pressure sensor characteristic fault
P041D	412	19C	3	MIL + AWL	EGR gas temperature sensor	EGR gas temperature sensor fault (High voltage)
P041C			4	MIL + AWL		EGR gas temperature sensor fault (Low voltage)
P040D	105	69	3	MIL + RSL	Intake manifold temperature sensor	Intake manifold temperature sensor fault (High voltage)
P040C			4	MIL + RSL		Intake manifold temperature sensor fault (Low voltage)
P0546	173	AD	3	MIL + AWL	Exhaust manifold temperature sensor	Exhaust manifold temperature sensor fault (High voltage)
P0545			4	MIL + AWL		Exhaust manifold temperature sensor fault (Low voltage)
P068B	1485	5CD	7	MIL + AWL	Main relay	Main relay contact stuck
P068A			2	MIL + AWL		Main relay early opening
P0543	522243	7F803	5	MIL + AWL	Startup assist relay	Startup assist relay interrupted
P0541			6	MIL + AWL		Startup assist relay GND interrupted
P0204 (4TNV), P0203 (3TNV)	651 (4TNV), 652 (3TNV)	28B (4TNV), 28C (3TNV)	5	MIL + RSL	Injector 1 4TNV: Cyl No. 4 3TNV: Cyl No. 3 Corresponding port 4TNV: 1 - 2 3TNV: 1 - 3	Injector 1 open circuit (Inherent location of the injector)
P0271 (4TNV), P0268 (3TNV)			6	MIL + RSL		Injector 1 coil short circuit
P1271 (4TNV), P1262 (3TNV)			3	MIL + RSL		Injector 1 short circuit
P0202	653	28D	5	MIL + RSL	Injector 2 4TNV: Cyl No. 2 3TNV: Cyl No. 2 Corresponding port 4TNV: 2 - 1 3TNV: 1 - 2	Injector 2 open circuit (Inherent location of the injector)
P0265			6	MIL + RSL		Injector 2 coil short circuit
P1265			3	MIL + RSL		Injector 2 short circuit

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Engine Components - R190/1900R

Parts Listing for R190/1900R Engine Illustration On Previous Page

1	FITTING/STRAIGHT
2	CLAMP/HOSE
3	CLAMP/HOSE
4	NUT/LOCK
5	NUT/LOCK
6	NUT/LOCK
7	FITTING/STRAIGHT
8	SCREW/CAP
9	PLATE/TOP
10	NUT/LOCK
11	NUT/SPIRALOCK™
12	WASHER/HARD
13	WASHER/SNUBBING
14	CLAMP/HOSE
15	ISOLATOR
16	ISOLATOR
17	MOUNT/ENGINE
18	MOUNT/ENGINE
19	BRACKET/ALTERNATOR
20	MOUNT/FILTER
21	ADAPTER/FILTER
22	NUT/LOCK
23	ALTERNATOR
24	SPACER/ALTERNATOR
25	SPACER/ALTERNATOR
26	BOLT/CARRIAGE
27	SPACER/ALTERNATOR
28	MOUNT/ENGINE
29	CLAMP/TUBE
30	COUPLER/FLEX
31	ASSY/DIPSTICK
32	HOSE/FUEL
33	HOUSING/FLYWHEEL
34	FITTING/STRAIGHT
35	HOSE/INLINE FILTER
36	PLATE/FUEL PUMP
37	BRACKET/DIPSTICK
38	COOLER/FUEL
39	BRACKET/FUEL
40	BRACKET/FUEL
41	LINE/FUEL
42	HOSE/FUEL
43	HOSE/FUEL
44	HOSE/FUEL
45	HOSE/FUEL
46	FITTING/90°
47	ENGINE
48	HOSE
49	SLEEVE/NYLON
50	SLEEVE/NYLON
51	SLEEVE/NYLON
52	SLEEVE/NYLON
53	SLEEVE/NYLON
54	HOSE/OIL DRAIN
55	WASHER/FLAT
56	SCREW/CAP
57	SCREW/CAP
58	SCREW/CAP
59	SCREW/CAP
60	SCREW/CAP
61	SCREW/CAP
62	SCREW/CAP
63	SCREW/CAP
64	SCREW/CAP
65	SCREW/CAP
66	SCREW/CAP
67	NUT/HEX

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

ROPS/FOPS Rear Window Removal and Installation . . . 33
Restraint Bar Components . . . 35
Restraint Bar Removal and Installation . . . 36
All-Tach® Hitch Components - R190/1900R Models . . . 37
Actuator Group Components - All-Tach® Hitch - R190/1900R Models . . . 37
All-Tach® Hitch Components - R220/R260/2200R/2600R Models . . . 38
Actuator Group Components - All-Tach® Hitch - R220/R260/2200R/2600R Models . . . 38
Power-A-Tach® Components - R190 Models . . . 39
Power-A-Tach® Components - 1900R Models . . . 40
Power-A-Tach® Components - R220/R260 Models . . . 41
Power-A-Tach® Components - 2200R/2600R Models . . . 42
All-Tach® and Power-A-Tach® Hitch Removal and Installation . . . 43
Lift Arm Components - R190 Models . . . 45
Lift Arm Components - 1900R Models . . . 46
Lift Arm Components - R220/R260 Models . . . 47
Lift Arm Components - 2200R/2600R Models . . . 48
Lift Arm Removal and Installation . . . 49
Lift Arm Bushing Replacement . . . 52
Lift Arm Stop Installation and Adjustment . . . 53
Control Console Removal and Installation . . . 53
Clean-Out Cover, Floor Plate and Kickplate Cover Removal and Installation . . . 55
Crossmember Removal and Installation . . . 56
Hydraulic Oil Reservoir Removal and Installation . . . 59
Fuel Sensor Removal and Installation . . . 60
Rear Grille Removal and Installation . . . 61
Rear Grille Latch Removal and Installation . . . 62

Wheel Drives **Page**

Introduction . . . 63
Wheel Drive Components - R190/1900R Models . . . 63
Wheel Drive Components - R220/R260/2200R/2600R Models . . . 64
Drive Chain Adjustment . . . 65
Axle Housing Assembly Removal and Installation . . . 66
Axle Assembly Components - R220/R260/2200R/2600R Models . . . 68
Axle Assembly Components - R190/1900R Models . . . 69
Drive Chain Removal and Installation . . . 70
Axle and Wheel Bearing Disassembly and Assembly . . . 71

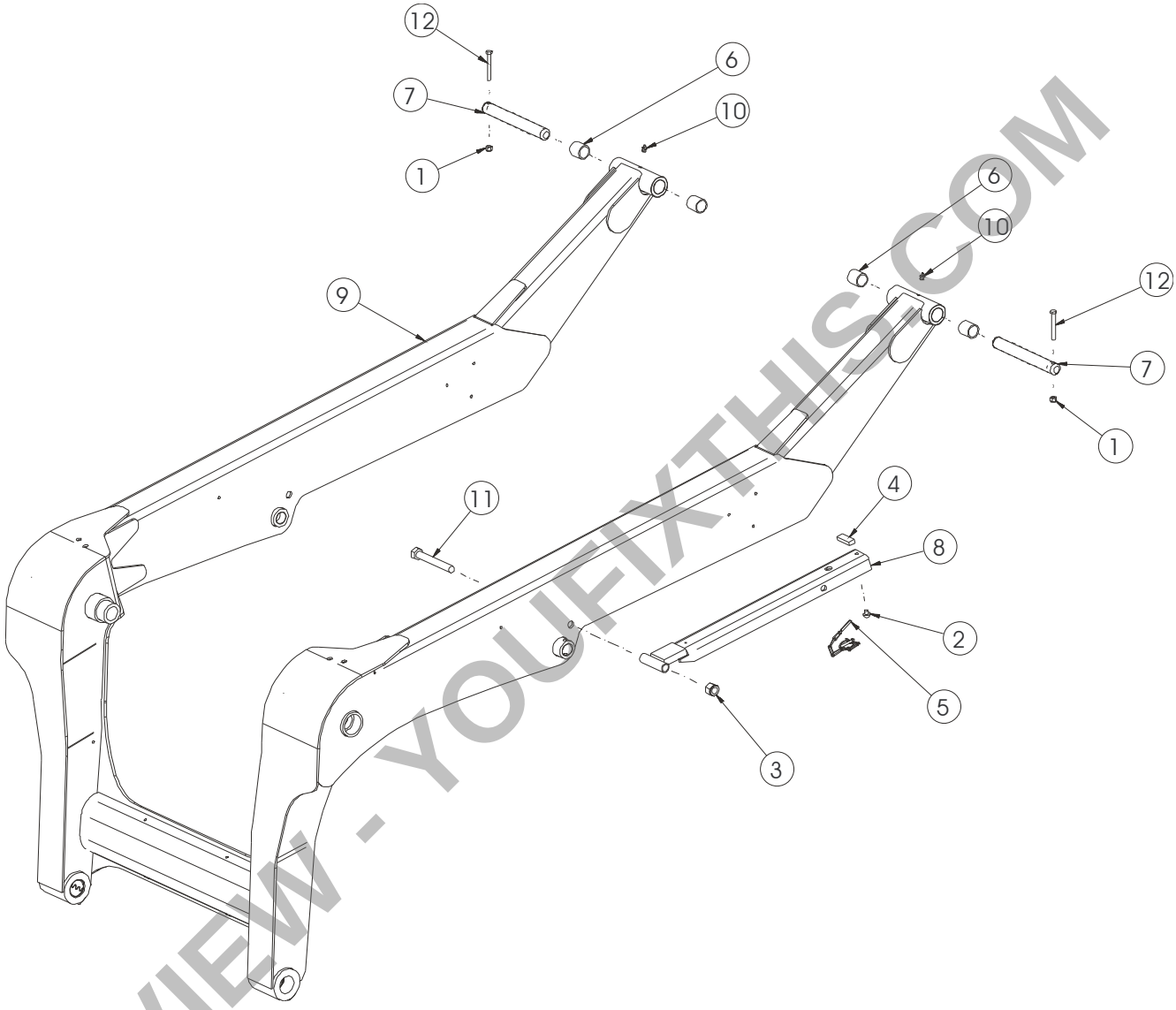
Controls **Page**

Introduction . . . 75
Control Locations - Dual Joystick, Dual Hand and Hand/Foot Controls . . . 76
Control Locations - T-Bar Controls . . . 76
Wheel Drive - Lift/Tilt Components - T-Bar Controls - R190/R220/R260 Models . . . 77
Wheel Drive - Lift/Tilt Components - Hand/Foot Controls - R190/R220/1900R/2200R Models . . . 78
Wheel Drive - Lift/Tilt Components - Hand/Foot Controls - R260/2600R Models . . . 79
Wheel Drive - Lift/Tilt Components - Dual Joystick Controls - R190/R220/1900R/2200R Models . . . 80
Wheel Drive - Lift/Tilt Components - Dual Joystick Controls - R260/2600R Models . . . 81
Wheel Drive - Lift/Tilt Components - Dual Hand Controls - R190/R220/1900R/2200R Models . . . 82
Wheel Drive - Lift/Tilt Components - Dual Hand Controls - R260/2600R Models . . . 83

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Lift Arm Components - R190 Models



1	NUT/HEX LOCK	7	PIN
2	STEM/RUBBER	8	ARM/SAFETY
3	NUT/HEX LOCK	9	LIFT ARM
4	PAD/ARM BRACE	10	FITTING/GREASE
5	PIN/KLIK	11	SCREW/CAP
6	BUSHING	12	SCREW/CAP

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Neutral Centering Test and Adjustment

T-Bar loaders have two neutral centering devices underneath the crossmember. Neutral centering devices allow the control handles and control arm assemblies to automatically return to NEUTRAL when the operator releases the control handles.

Dual Joystick, Dual Hand and Hand/Foot loaders use a control piston which has strong centering springs to ensure that when the hydrostatic pump is adjusted for the NEUTRAL position it will always return to NEUTRAL.

Test and Adjustment Procedure - Dual Joystick, Dual Hand and Hand/Foot Controls

⚠ WARNING

BEFORE beginning this Service procedure, perform the following SAFETY procedures:

• Remove attachment from lift arm.

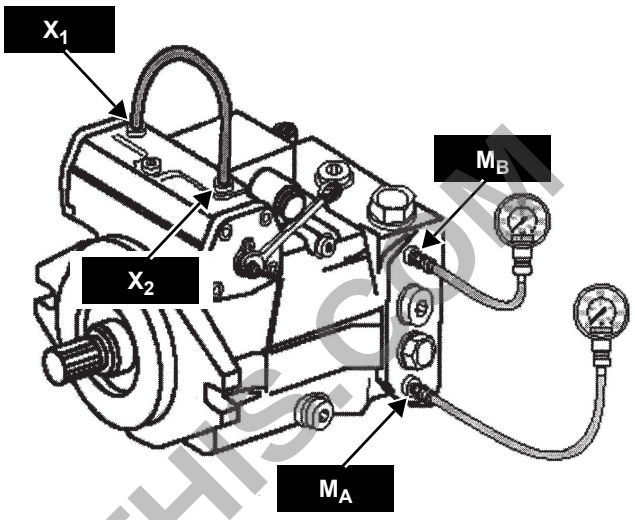
• Raise and block the skid-steer loader so that the tires are off the ground.

• Raise lift arm; engage lift arm support device.

• Tilt back ROPS/FOPS until lock engages.

(For detailed instructions, refer to the *Safety* chapter of the service manual.)

1. Mark and disconnect the pilot lines going into the top of the pump for the section being tested.
2. Plug the end of the hoses. Do not cap the fittings on the transmission.
3. Disconnect the drive hoses from the section being tested.
4. Plug the drive hoses and cap the fittings on the transmission.
5. Connect X_1 and X_2 ports together by means of 1/4" internal diameter hose or tubing.



6. Install 8702 psi (600 bar) pressure gauges in M_A and M_B of the section being tested.
7. Block ports A and B ports blocked (or apply the parking brake).
8. Start the machine observing safety practices.
9. Loosen the jam nuts on the neutral adjustment screws.
10. Turn the mechanical centering adjusting screw until 1000 psi (70 bar) is read on the pressure ports.
11. Turn the screw back, splitting the distance between the previous two positions.

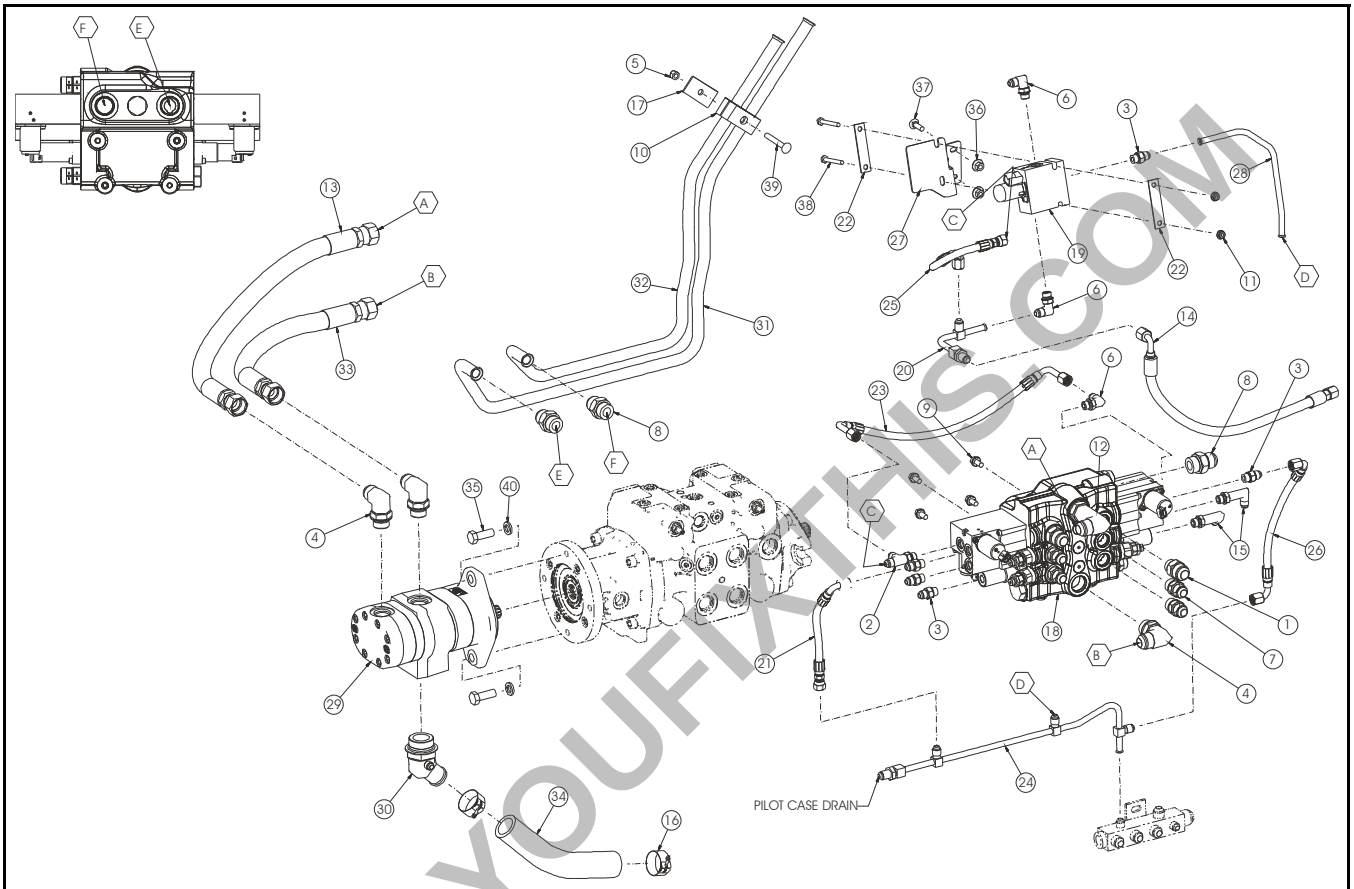
Note: Pressure on M_A and M_B should be equal.

12. Tighten the jam nut on the adjustment screws when equal pressure is measured on both gauges.
13. Stop the pump drive.
14. Remove the hose connecting ports X_1 and X_2. Reinstall plugs where M_A and M_B were checked.
15. Adjust NEUTRAL in the other section, if necessary.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Hydraulics - High-Flow Auxiliary Components - R220/2200R Hand/Foot and Dual Joystick



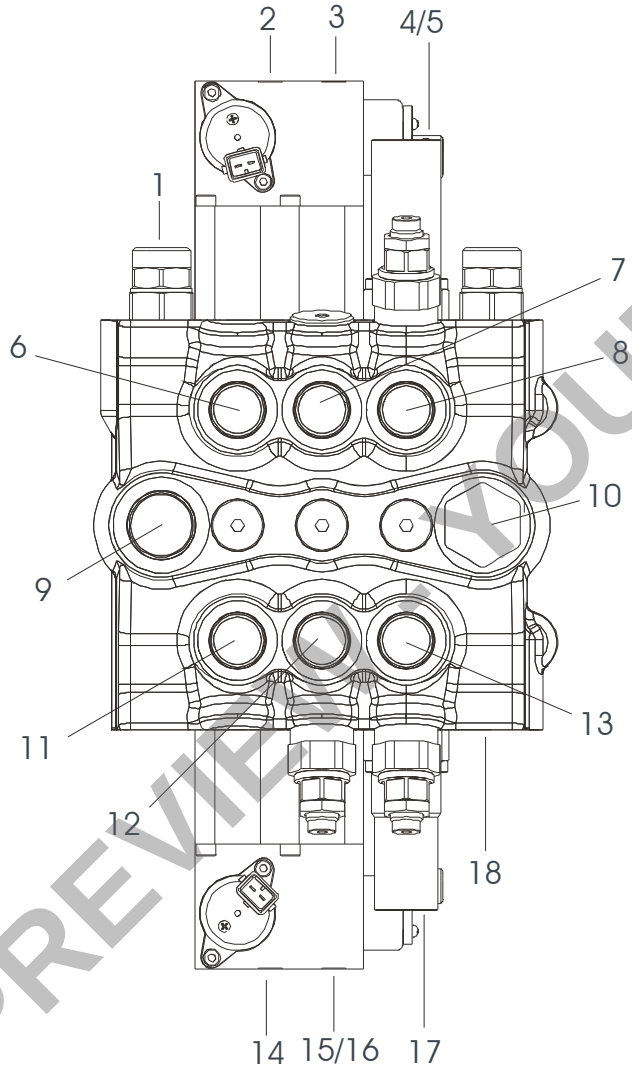
1	FITTING/STRAIGHT	15	FITTING/90°	29	PUMP/GEAR
2	FITTING/TEE	16	CLAMP/T-BOLT	30	FITTING/45°
3	FITTING/STRAIGHT	17	PLATE/TOP FLAT	31	TUBE/HIGH FLOW
4	FITTING/90°	18	VALVE/4-SPOOL PILOT	32	TUBE/HIGH FLOW
5	NUT/HEX	19	VALVE/SOLENOID 3-WAY	33	HOSE/PRESSURE
6	FITTING/90°	20	TUBE/PILOT	34	HOSE/SUCTION
7	FITTING/STRAIGHT	21	HOSE/HYDRAULIC	35	SCREW/CAP
8	FITTING/STRAIGHT	22	STRAP	36	NUT/HEX
9	SCREW/CAP	23	HOSE/PILOT PRESSURE	37	BOLT/CARRIAGE
10	CLAMP/TUBE	24	TUBE/DRAIN	38	SCREW/CAP
11	NUT/SPIRALOCK™	25	HOSE/HYDRAULIC	39	BOLT/CARRIAGE
12	FITTING/90°	26	HOSE/HYDRAULIC	40	WASHER/LOCK
13	HOSE/PRESSURE	27	BRACKET/SUPPLY VALVE		
14	HOSE/PRESSURE	28	TUBE/HYD/CASE DRAIN		

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

10. Port 14: Disconnect the hydraulic hose/tube from its straight fitting on the control valve.
11. Ports 15, 16, 17 and 18: Disconnect the hydraulic hoses from their straight fitting on the control valve.
12. Inside the chassis, remove four capscrews securing the control valve to its welded-on mounting bracket on top of the chaincase.
13. Lift out the control valve. Removal may require loosening the opposite ends of some of the disconnected tubes.

Installation Procedure



DJS High-Flow Valve shown for reference

1. Secure the control valve to its welded-on mounting bracket on top of the chaincase with four capscrews. If straight or 90° fittings are not in the valve, install them at this time.
2. Ports 15, 16, 17 and 18: Connect the hydraulic hoses to their straight fittings on the control valve.
3. Port 14: Connect the hydraulic hose/tube to its straight fitting on the control valve.
4. Ports 9 and 10: Connect the auxiliary pump hydraulic hoses to their 90° fittings on the control valve.
5. Ports 6, 7, 8, 11, 12 and 13: Connect the hydraulic tubes to their straight fittings on the control valve.
6. Port 2, 4 and 5: Connect the hydraulic hose/tubes to their 90° fittings on the control valve.
7. Port 3: Connect the hydraulic hose/tube at its straight fitting on the control valve.
8. Port 1: Connect the hydraulic tube at its straight fitting on the control valve.
9. Install hydraulic reservoir drain plug and refill with correct type of hydraulic oil. Refer to *Lubrication* chapter for hydraulic oil specifications.
10. ALWAYS check for hydraulic fluid leaks after reassembling any component of the hydraulic system.

WARNING



NEVER use your hands to search for hydraulic fluid leaks. Use a piece of cardboard or paper. Escaping fluid under pressure can be invisible and penetrate the skin causing serious injury. If any fluid is injected into your skin, see a doctor at once. Injected fluid MUST be surgically removed by a doctor familiar with this type of injury or gangrene may result.

WARNING



ALWAYS wear safety glasses when checking for hydraulic fluid leaks. Escaping fluid under pressure can be invisible and can cause permanent eyesight damage if safety glasses are not worn.

PREVIEW OF YOUFIXTHIS.COM

Download full manual at youfixthis.com

PREVIEW ONLY

You're viewing 17 of 306 pages

The full manual includes:

- All 306 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

Gehl, Mustang R190, R220, R260, 1900R, 2200R, 2600R Service Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual