SKID STEER LOADERS
COMPACT TRACK LOADERS

SR130 I SR160 I SR175 I SV185 I SR210 I SR240 I SR270
SV280 I SV340 I TR270 I TR310 I TR340 I TV380

CASE
CONSTRUCTION



POWER OUTSIDE, COMFORT INSIDE

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SINCE 1842

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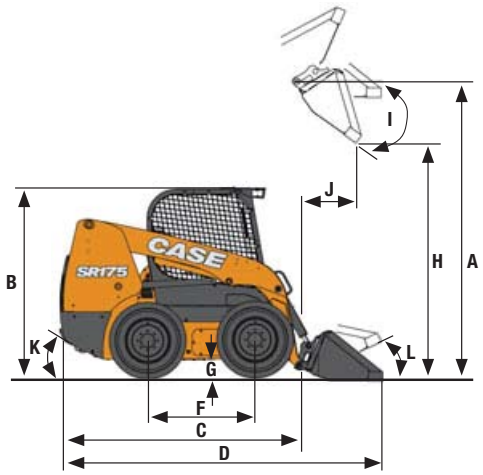
OPERATOR'S SEAT

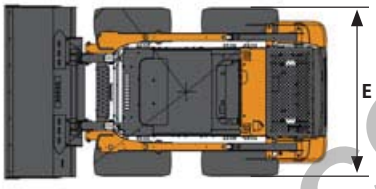
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SKID STEER LOADERS
COMPACT TRACK LOADERS





GENERAL DIMENSIONS

		SR130	SR160	SR175	SV185	SR210	SR240	SR270	SV280	SV340
A - Height to bucket hinge pin	mm	2845	2845	3099	3048	3124	3175	3175	3302	3343
B - Height to top of ROPS	mm	1919	1919	1974	1974	1998	2002	2002	2002	2042
C - Length without attachment	mm	2435	2435	2685	2685	2669	2981	3016	2990	3025
D - Length with bucket *	mm	3028	3028	3305	3345	3292	3611	3646	3604	3657
E - Overall width	mm	1518	1518	1678	1678	1755	1768	1768	1768	1930
F - Wheelbase	mm	941	941	1128	1128	1128	1322	1322	1322	1322
G - Ground clearance	mm	178	178	178	178	203	203	203	203	243
H - Dump height *	mm	2246	2246	2470	2380	2495	2562	2562	2629	2671
I - Dump angle	°	40	40	40	52	40	38	38	54	47
J - Dump reach @ max height	mm	469	469	542	783	517	575	575	744	630
K - Angle of departure	°	22	22	23	23	25	24	24	24	27
L - Rollback angle (bucket on ground)	°	26	26	32	35	31	31	31	35	35

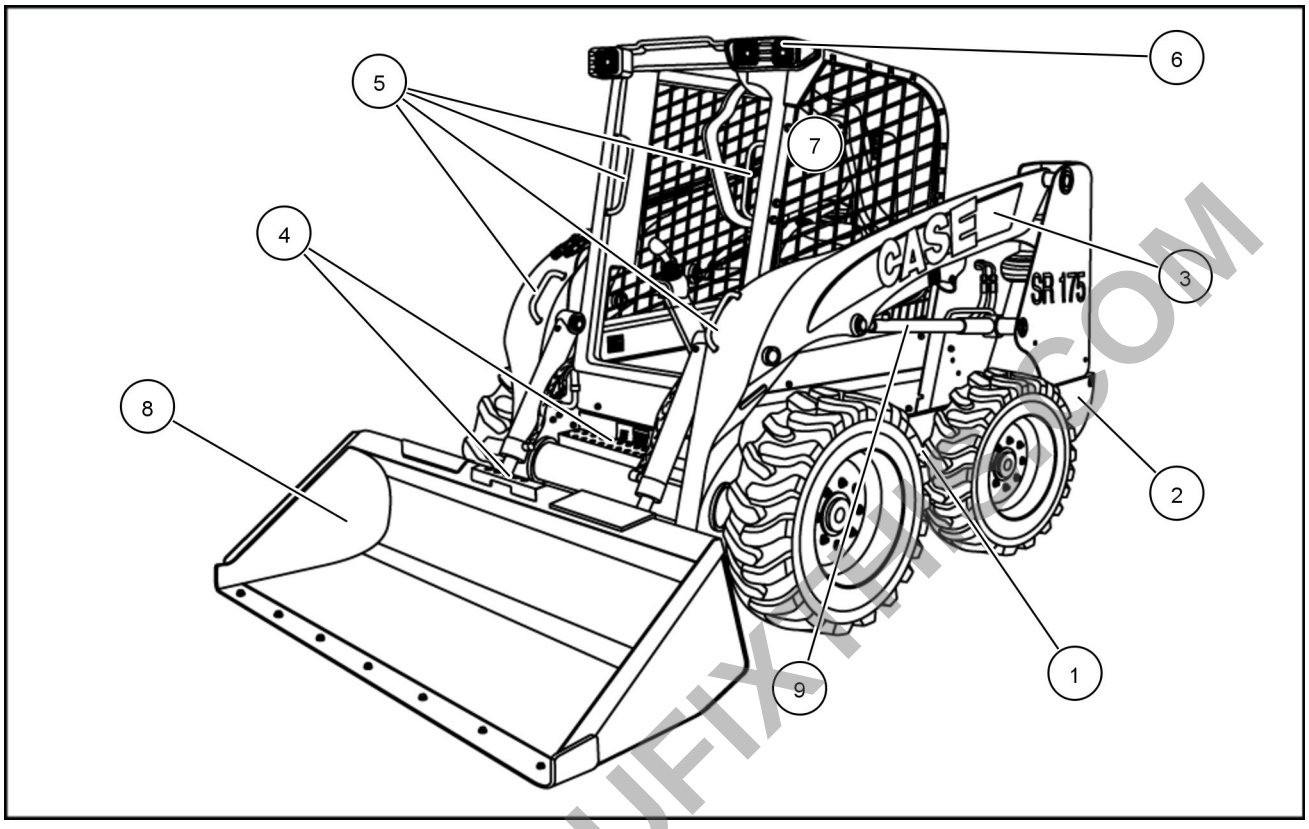
SPECIFICATIONS

		SR130	SR160	SR175	SV185	SR210	SR240	SR270	SV280	SV340
FRAME SIZE		Small	Small	Medium	Medium	Medium	Large	Large	Large	Large
EMISSIONS LEVEL		Tier 4i Stage IIIA	Tier 4F Stage IIIB	Tier 4F Stage IIIB	Tier 4F Stage IIIB	Tier 4F Stage IIIB	Tier 4F Stage IIIB	Tier 4F Stage IV	Tier 4F Stage IIIB	Tier 4F Stage IV
PERFORMANCE SPECS										
Rated Operating Capacity 50%	kg	590	725	790	840	905	1088	1225	1270	1545
ROC with counterweights 50%	kg	635	770	835	885	950	1178	1315	1360	1635
Tipping load	kg	1179	1455	1588	1678	1814	2177	2450	2540	3090
Lift cylinder breakout force**	kN	13.0	15.0	17.0	15.3	20.3	25.0	27.1	25.0	30.3
Bucket cylinder breakout force**	kN	19.0	23.4	32.3	24.7	32.3	39.4	38.6	33.7	42.4
ENGINE										
Engine make - Model		ISM N844L-D (Nat. Asp.)	ISM N844LT-F (Turbo)	ISM N844LTA-DI-F (Turbo)	ISM N844LTA-DI-F (Turbo)	FPT F5H (Turbo)	FPT F5H (Turbo)	FPT F5H (Turbo)	FPT F5H (Turbo)	FPT F5H (Turbo)
Displacement	l	2.2	2.2	2.2	2.2	3.4	3.4	3.4	3.4	3.4
Horsepower	hp/rpm	49 @ 2800	60 @ 2800	67 @ 2800	60 @ 2900	74 @ 2500	74 @ 2500	90 @ 2500	74 @ 2500	90 @ 2500
Peak torque	Nm/rpm	143 @ 1800	188 @ 1800	208 @ 1800	183 @ 1800	314 @ 1400	314 @ 1400	383 @ 1400	314 @ 1400	383 @ 1400
TRAVEL SPEED										
Low range	km/h	12.7	11.9	11.9	11.9	11.4	12.4	11.3	12.4	12.4
High range (optional)	km/h	NA	NA	18.5	18.5	16.9	18.5	18.5	18.5	18.5
HYDRAULIC SYSTEM										
Pump flow	LPM	59	70	78	78	92	92	92	92	92
Optional high flow	LPM	N/A	N/A	116	116	126	143	143	143	150
Relief pressure	bar	210	210	210	210	210	210	210	210	210
Optional enhanced high flow	bar	N/A	N/A	N/A	N/A	N/A	N/A	277	N/A	277
WEIGHTS										
Operating weight	kg	2300	2505	2842	2980	3160	3350	3681	3670	4136
Shipping weight	kg	2160	2370	2705	2840	3025	3200	3531	3475	3890
SERVICE CAPACITY										
Fuel tank	l	60.5	60.5	73.8	73.8	73.8	96.5	96.5	96.5	96.5

* With D&F Bucket - ** Breakout forces estimated considering both tip and hydraulic limits.

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Machine components



93106896 1

(1) Chain compartment access
(2) Service access cover
(3) Loader lift arm
(4) Steps
(5) Hand holds
(6) Front light
(7) Operator's compartment
(8) Bucket
(9) Loader arm lift cylinder

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2 - SAFETY INFORMATION

Signal word definitions

Personal safety



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.

Throughout this manual and on machine decals, you will find the signal words DANGER, WARNING, and CAUTION followed by special instructions. These precautions are intended for the personal safety of you and those working with you.

Read and understand all the safety messages in this manual before you operate or service the machine.

⚠ DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury. The color associated with DANGER is RED.

⚠ WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury. The color associated with WARNING is ORANGE.

⚠ CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. The color associated with CAUTION is YELLOW.

FAILURE TO FOLLOW DANGER, WARNING, AND CAUTION MESSAGES COULD RESULT IN DEATH OR SERIOUS INJURY.

Machine safety

NOTICE: *Notice indicates a situation which, if not avoided, could result in machine or property damage.*

Throughout this manual you will find the signal word Notice followed by special instructions to prevent machine or property damage. The word Notice is used to address practices not related to personal safety.

Information

NOTE: *Note indicates additional information which clarifies steps, procedures, or other information in this manual.*

Throughout this manual you will find the word Note followed by additional information about a step, procedure, or other information in the manual. The word Note is not intended to address personal safety or property damage.

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CONTROL HANDLES

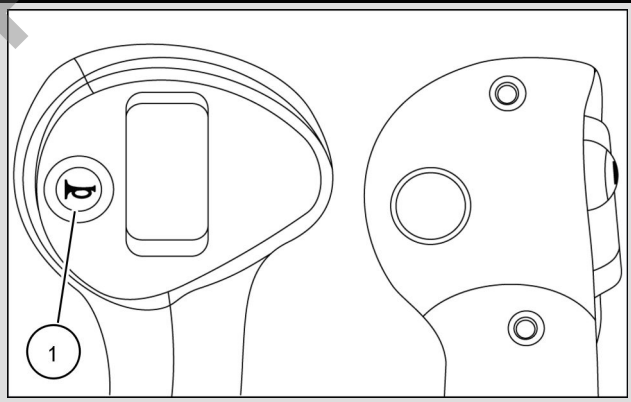
Switch configurations

The following functions can be activated from the control handles depending on your machine's configuration.

- Horn — Press the horn button to sound the horn.
- Park — Press the park button to activate or deactivate the parking brake. The park symbol on the instrument panel will illuminate red when the parking brake is on.
- Proportional aux — Activate the hydraulic component attached to the standard or high flow auxiliary hydraulic ports.
- 2nd aux HYD — Activate the hydraulic component attached to the enhanced high flow or high flow auxiliary hydraulic ports.
- 2 Speed — Press once to downshift from 2nd gear to 1st gear. Press again to shift back to 2nd gear. For more details refer to **3-26**.
- Ride control — Press to activate or deactivate the ride control. Ride control reduces machine rocking motion during transport and material hauling operations. When engaged, loader down pressure is limited to the weight of the loader plus the attachment, and also reduces shock loads to the machine. The weight of the attachment is hydraulically cushioned during transport.
- Float — Press to activate or deactivate the lift arm float function. When float is activated the lift arm will float over the ground contour the machine is travelling over. For more details refer to **3-20**.
- Multi func #1, #2, #3, and #4 — Press to control additional components attached to the machine. Refer to attachment's owners manual for operating functions.

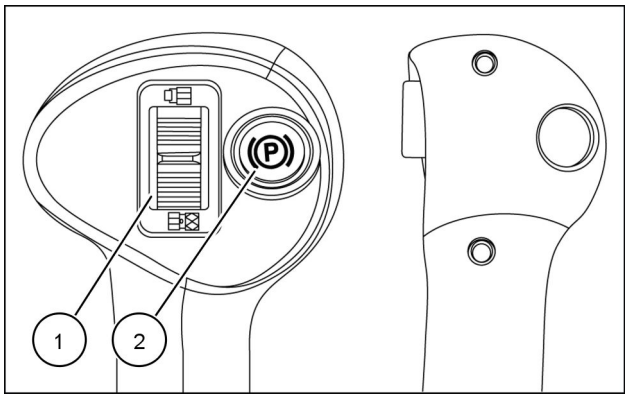
Level 100

Left side
(1) Horn



93109389 1

Right side
(1) Proportional aux
(2) Park brake



93109390 2

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Mechanical lift arm lock procedure - radial lift machines

⚠ DANGER

Crushing hazard!
Loader lift arm is unsupported during support strut removal. Do not enter or exit the operator's compartment with an unsupported loader lift arm. Two persons are required during storage. One person should remove and store the support strut while the operator remains in the operator's compartment. Failure to comply will result in death or serious injury.

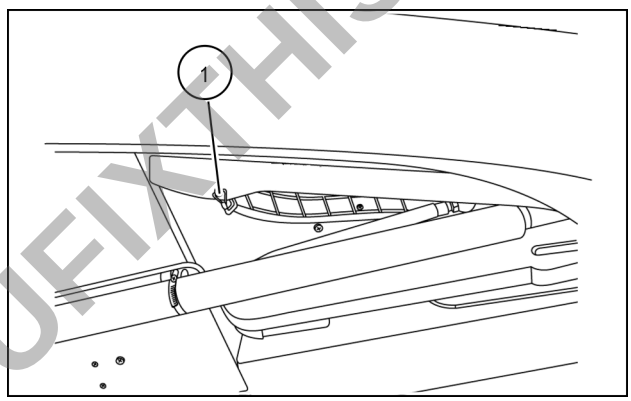
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⚠ WARNING

Crushing hazard!
If you service the machine with the loader lift arms raised, always use the support strut. Remove the retaining pin and place the support strut onto the cylinder rod. Install the retaining pin into the support strut. Lower the lift arms onto the support strut.
Failure to comply could result in death or serious injury.

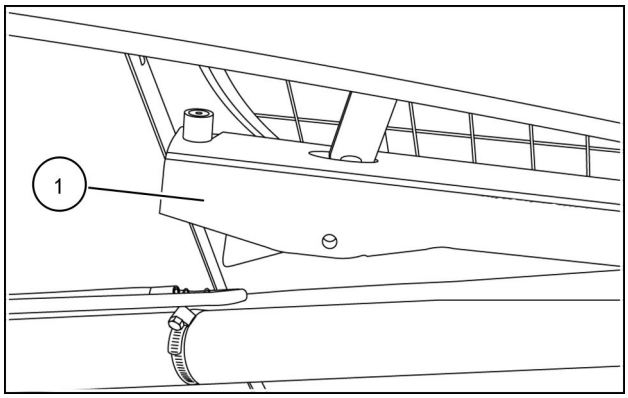
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1. Remove any attachment.
2. Park the machine on firm and level surface.
3. See the instructional decal on the inside of the right lift arm, just above the support strut. Read and understand these instructions before you perform this procedure.
4. Remove the retaining clip **(1)** that secures the lift arm support strut.



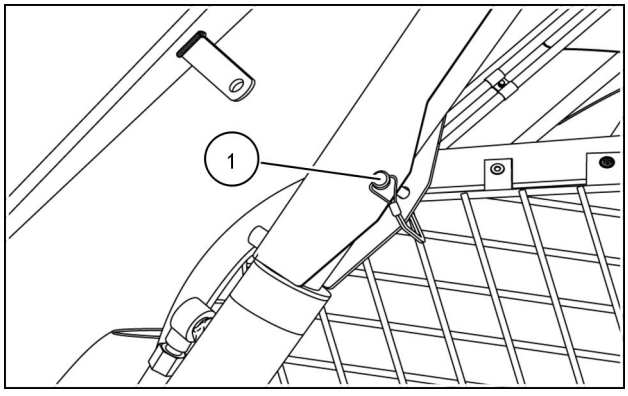
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5. Lay the support **(1)** down on the lift arm tubing and cylinder, as shown.



93106850 2

6. Slowly raise the lift arms until the support bracket drops down onto the cylinder rod, as shown.
7. Install retaining clip **(1)** to secure support strut to the lift arm cylinder rod. Gently, lower the lift arms down until the support strut is in contact with the cylinder.
8. To place support strut in storage requires a second person. Operator MUST remain in the seat during this procedure! Lift the working arm up off the strut. Instruct the second person to place strut in the stowed position and apply the retaining clip **(1)**. Once the second person has cleared the area, then the working arm can be lowered.



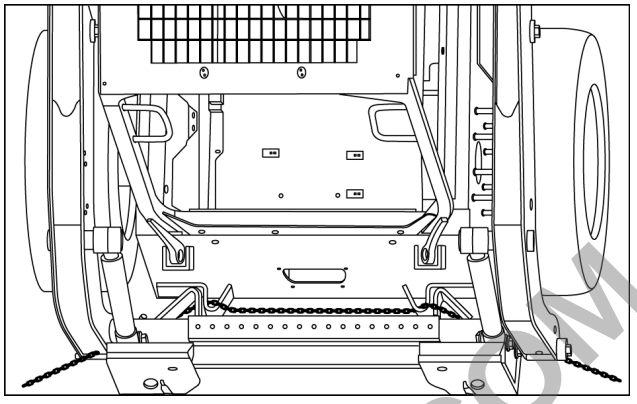
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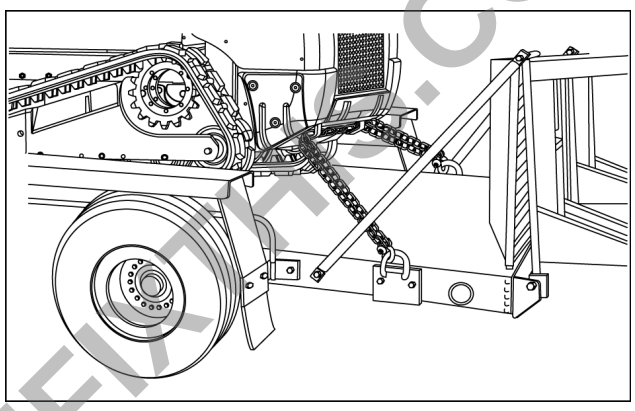
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You must know the rules or laws for safety that are used in each area that you will be in. Make sure that your truck and skid steer are equipped with the correct safety equipment.

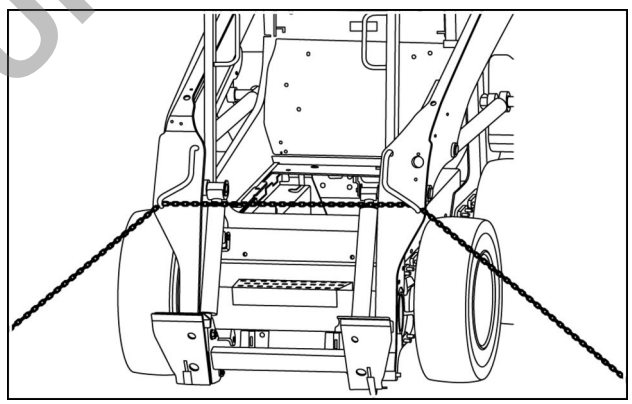
1. Put a chock block to the front and rear of all trailer wheels.
2. Be careful. Using low speed, move the skid steer slowly onto the trailer, keeping the machine centered on the ramp and trailer.
3. Lower the bucket, attachment or loader arms down completely.
4. Shut the engine off.
5. Remove the key.
6. Use chains to fasten the skid steer to the trailer. Small frame units should route chain as the top image shows. Medium and large frame units should route the chain as the third image shows, through the hand holds or use the key hole available on the lift arm stops. Use the tie down locations, in the front and rear.
7. Put chock blocks at both ends of the wheels or tracks of the machine.
8. Remove the chock blocks from the trailer wheels.
9. When moving the skid steer off the trailer, use a low drive speed.
10. Drive slowly and keep the machine centered on the trailer and ramp.



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93109385 2



93109386B 3

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Wheel torque

Wheel taper nut torque	**169.5 N·m** (**125 lb ft**)
Flange nut	**203.5 N·m** (**150 lb ft**)

This procedure is only for adding air to the tire. If the tire has lost most or all of the air, do the following.

1. Before you add air, have the wheel correctly installed on the machine or put the wheel in a restraining device (tire inflation cage).
2. Use an air hose with a remote shutoff valve, self-locking air chuck and wear eye protection.
3. Stand BEHIND the tread of the tire and make sure ALL persons are away from the side of the tire before you start to add air.
4. Inflate the tire to the recommended air pressure. DO NOT inflate the tire more than the recommended maximum pressure given on the tire.

⚠ WARNING

Explosion hazard!
Tires must be replaced by skilled personnel with the proper tools and technical knowledge. Unskilled personnel replacing wheels or tires could result in serious physical injuries, tire damage, and/or wheel distortion. Always have a qualified tire mechanic service wheels and tires.
Failure to comply could result in death or serious injury.

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8 - TROUBLESHOOTING

FAULT CODE RESOLUTION

Error code index

NOTE: *If you have a fault code associated with a red light flashing and an audible alarm shut the unit down and call your dealer for support. A fault code associated with a yellow amber light, record the code number and use the Aux Override button to move past this fault code. If the code appears again contact your dealer for support.*

Display of error codes and associated functions.

1000 to 1999 (vehicle errors)

Code	Function	Description	Code	Function	Description
1002	Engine Coolant Temperature	High Temperature	1350	Hydraulics Enable	Switch Implausible State
1004	Hydraulic Oil Filter Restriction	Filter Restricted	1511	Right Brake Light Actuation	Open Circuit
1009	Hydraulic Oil Temperature	High Temperature	1512	Right Brake Light Actuation	Short Circuit
1014	Cluster System Voltage	Over Voltage	1513	Right Brake Light Actuation	Short Circuit to Ground
1015	Cluster System Voltage	Under Voltage	1521	Left Brake Light Actuation	Open Circuit
1025	Load Control	Short Circuit	1522	Left Brake Light Actuation	Short Circuit to Ground
1030	Load Control	Open Circuit	1523	Left Brake Light Actuation	Short Circuit
1041	RPM Monitoring (Mechanical Machines)	Over Speed	1531	Backup Alarm Activation	Open Circuit
1045	Fuel Level Monitoring	Open Circuit	1532	Backup Alarm Activation	Short Circuit to Ground
1201	Hydraulic Oil Filter Restriction	Open Circuit	1533	Backup Alarm Activation	Short Circuit
1202	RPM Monitoring (Mechanical Machines)	Over Speed	1901	Power Supply	Supply Voltage High
1203	RPM Monitoring (Mechanical Machines)	Open / Short Circuit	1903	Power Supply	Low Voltage
1204	Start Sequence	Engine State Plausibility Check	1904	Power Supply	Input Voltage Out of Range
1205	Hydraulic Enable (EH Machines)	Short Circuit to Power	1905	Power Supply	Supply Voltage Out of Range
1206	UCM	Configuration Time out	1906	Power Supply	Supply Voltage Out of Range
1207	UCM	Invalid Configuration	1907	Power Supply	Aux Retract Input Power OFF
1208	Seat Switch Validation (EH Machines)	Switch Plausibility Check	1908	Power Supply	Bucket Extend Input Power OFF

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CLEAN POWER,
MAXIMISED PRODUCTIVITY



Compact HI-eSCR

Model	Power HP (kW)	Engine	Tier 4 Technology
SR130	49 (36)	ISM N844L-F IDI	Stage 3A / Tier 4i
		2.2 L	-
SR160	60 (45)	ISM N844LT-F IDI	Stage 3B / Tier 4F
		2.2 L	CEGR + DPF + DOC
SR175	67 (50)	ISM N844LTA-DI-F	Stage 3B / Tier 4F
		2.2 L (HPCR)	CEGR + DOC
SV185	60 (45)	ISM N844LTA-DI-F	Stage 3B / Tier 4F
		2.2 L (HPCR)	CEGR + DOC
SR210	74 (55)	FPT F5H HPCR	Stage 3B / Tier 4F
		3.4 L	CEGR + DOC
SR240	74 (55)	FPT F5H HPCR	Stage 3B / Tier 4F
		3.4 L	CEGR + DOC
SR270	90 (67)	FPT F5H HPCR	Stage IV / Tier 4F
		3.4 L	CEGR + SCR
SV280	74 (55)	FPT F5H HPCR	Stage 3B / Tier 4F
		3.4 L	CEGR + DOC
SV340	90 (67)	FPT F5H HPCR	Stage IV / Tier 4F
		3.4 L	CEGR + SCR
TR270	74 (55)	FPT F5H HPCR	Stage 3B / Tier 4F
		3.4 L	CEGR + DOC
TR310	74 (55)	FPT F5H HPCR	Stage 3B / Tier 4F
		3.4 L	CEGR + DOC
TR340	90 (67)	FPT F5H HPCR	Stage 3IV / Tier 4F
		3.4 L	CEGR + SCR
TV380	90 (67)	FPT F5H HPCR	Stage 3IV / Tier 4F
		3.4 L	CEGR + SCR

LOW EMISSIONS

Low-to-no-maintenance T4 technology

The electronic engine control enhances precision and responsiveness to operator commands.

All models with ROC higher than 1700 lb (SR175 and bigger) are equipped with High Pressure Common Rail (HPCR) technology, which regulates fuel pressure and injection timing ensuring extremely high injection precision in all engine operating conditions. This results in more torque output and allows to get more useful power from every drop of fuel.

- Cooled Exhaust Gas Recirculation (CEGR) process is now controlled electronically to achieve greater performance and fuel efficiency, as well as even greater reliability - for example, to help protect the engine from overheating.
- SCR- technology on all 90 hp models; a liquid-reductant agent (ammonia) is injected into the exhaust stream to reduce the level of NOx. For the customer, SCR means high performance, ease of maintenance and low operating costs.
- Diesel Oxidation Catalyst (DOC) utilizes a chemical process in order to break down pollutants from diesel engines in the exhaust stream, turning them into less harmful components. DOC is a maintenance-free component.
- Diesel Particulate Filter (DPF) physically traps particulate matter from the engine exhaust. Electronic controls will trigger an automatic regeneration of the DPF system. Additionally, the system can notify the machine operator to manually regenerate the DPF system occasionally when the soot load in the DPF exceeds the range defined for automatic regeneration.

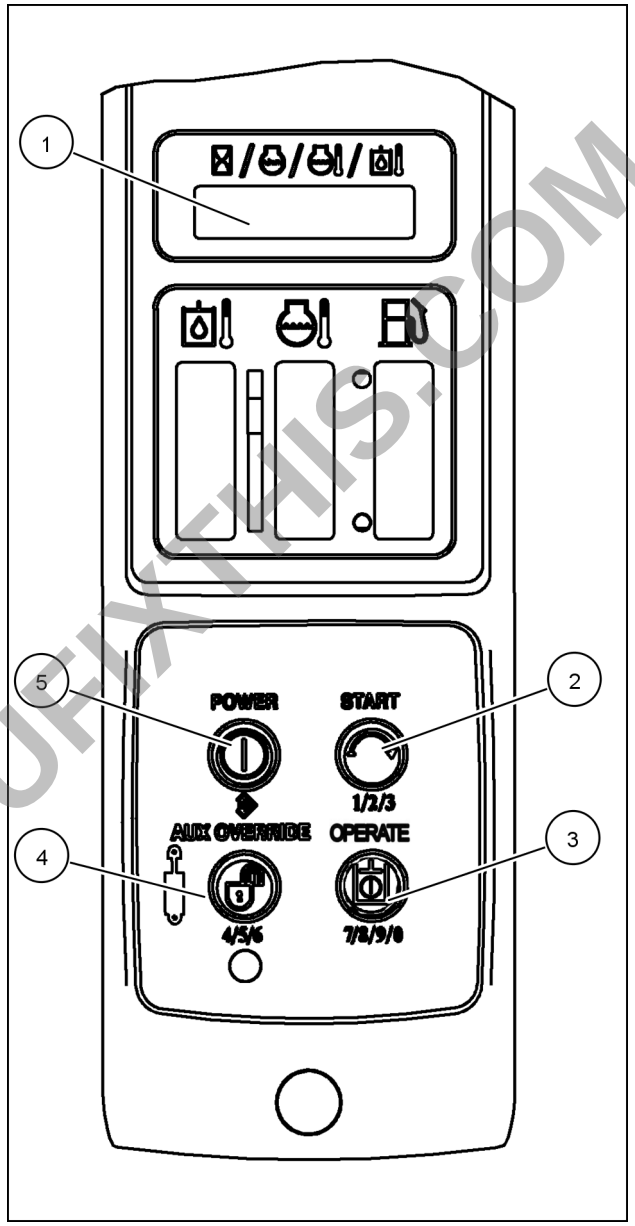
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Instrument cluster

Menu navigation controls

Use the four switch buttons to navigate through the instrument cluster Menu by following the setup menu functions. Many of the setup menu functions are intended for service technicians and owners. Contact your dealer for the service manual or security code information.



931002267 1

(1) TEXT DISPLAY

Displays the menu text.

(2) START

Navigates selections on every menu level.

Certain menus will prompt the user to enter an access code or allow the user to change a numerical value.

NOTE: *Pushing the start button will increment the flashing digit 1,2,3 for number entry.*

(3) OPERATE

Increments the flashing digit 7,8,9,0 for number entry.

(4) AUX OVERRIDE:

Exits the sub-menu and moves top level to the next option.

Increments the flashing digit 4,5,6 for number entry.

(5) POWER

For number entry, moves flashing digit to the next place.

Saves entry.

Enters the sub-menu.

Top level menu options

- EXIT — Exit the setup menu.
- LOCK — Used to create/change owner and user codes
- EH — Customize the speed of the machine's Electro hydraulic controls (if equipped).
- dSPLY — Alternate method to select between the selected display parameters.
- UNITS — Allows the operator to select between Fahrenheit/Imperial units and Celsius/SI units.
- JTIME — Job timer. Timer that displays engine operating hours since last reset. Ideal for rentals or job tracking.

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