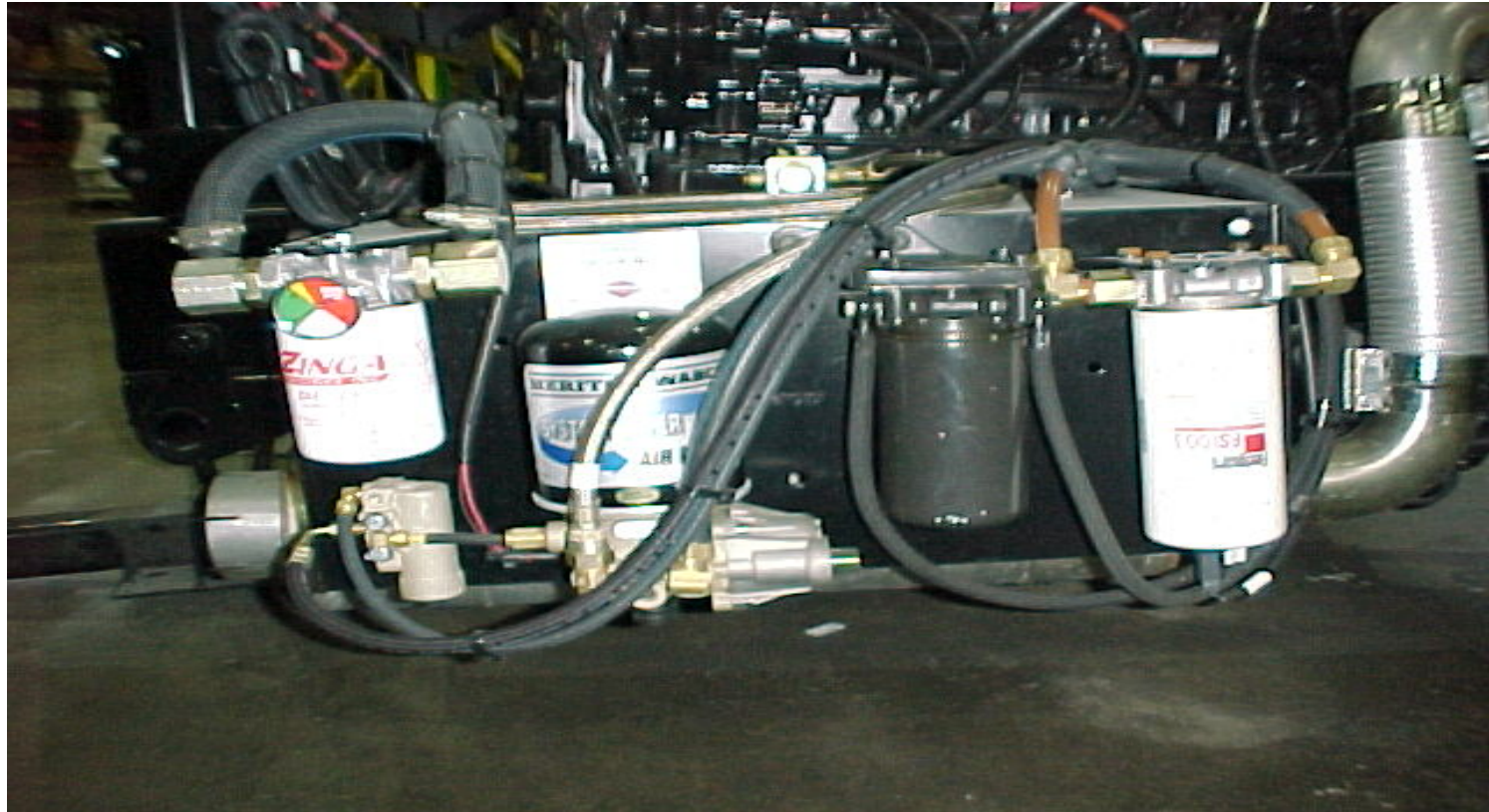


# MOTOR HOME MAINTENANCE

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# Motor Home Maintenance

- Proper Maintenance is important to the longevity of your motorhome.
- Secure the copy of the Recommended Scheduled Maintenance Chart from your Owner's Manual.
- Sit down with the Service Advisor after the work is done to ensure that all maintenance was performed.



# Engine Oil Change



| ENGINE                 |                    |
|------------------------|--------------------|
| ISC 270-380 HP         |                    |
| SERVICE                | OIL FILTER         |
| 15,000 miles or yearly | Fleetguard LF-9009 |
| OIL TYPE               | 2010 Engines       |
| SAE 15W40              |                    |



# Engine Oil Change



| ENGINE                |                    |
|-----------------------|--------------------|
| ISL 345-450 HP        |                    |
| SERVICE               | OIL FILTER         |
| 15,000miles or yearly | Fleetguard LF-9009 |
| OIL TYPE              | 2010 Engines       |
| SAE 15W40             |                    |



# Engine Oil Change



| ENGINE                 |                    |
|------------------------|--------------------|
| ISM 400-500 HP         |                    |
| SERVICE                | OIL FILTER         |
| 15,000 miles or yearly | Fleetguard LF-9001 |
| OIL TYPE               |                    |
| SAE 15W40              |                    |



# Engine Oil Change



| ENGINE                 |                    |
|------------------------|--------------------|
| ISX 500-650 HP         |                    |
| SERVICE                | OIL FILTER         |
| 15,000 miles or yearly | Fleetguard LF-9001 |
| OIL TYPE               |                    |
| SAE 15W40              |                    |



# Engine Oil Change



| ENGINE                 |                |
|------------------------|----------------|
| C7 300-350 HP          |                |
| SERVICE                | OIL FILTER     |
| 11,000 miles or yearly | 1R-1807        |
| OIL TYPE               | OIL CAPACITY   |
| SAE 15W40              | 19 Quarts (US) |



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# Engine Oil Change



| ENGINE                 |                |
|------------------------|----------------|
| C9 400 HP              |                |
| SERVICE                | OIL FILTER     |
| 20,000 miles or yearly | 1R-1808        |
| OIL TYPE               | OIL CAPACITY   |
| SAE 15W40              | 34 Quarts (US) |





# Engine Oil Change



| ENGINE                 |                |
|------------------------|----------------|
| C13 470-525 HP         |                |
| SERVICE                | OIL FILTER     |
| 20,000 miles or yearly | 1R-1808        |
| OIL TYPE               | OIL CAPACITY   |
| SAE 15W40              | 36 Quarts (US) |



# Oil Check and Fill



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# Air Filters

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- Check the service indicator regularly.

5-10" is normal

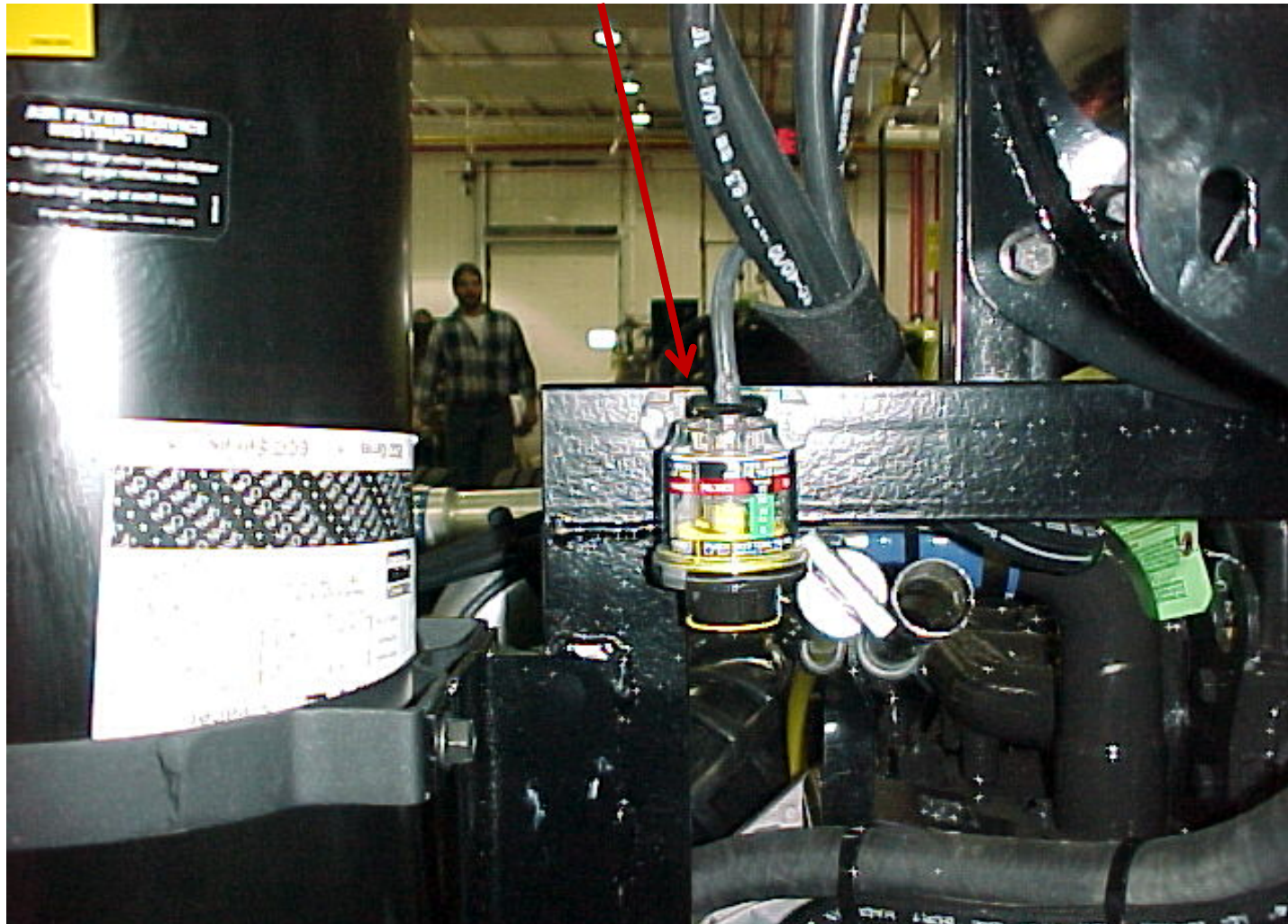
15-18" OK, but nearing service

20-25" is out of service



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# Air Filter Minder



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# Fuel Filters



| ENGINE  |   |
|---|---|
| ISC   |   |
| FILTER TYPE   | PRIMARY FILTER  |
| Fleetguard  | FS-1003/ FS-1065 <u>Pre-fill</u>  |
| SERVICE   | SECONDARY FILTER  |
| Filter should be changed at <u>every</u> oil change | FF-5488/FS-5636 <u>Install Dry</u><br>2010 Engines change every other oil change <u>Install Dry</u> |



# Fuel Filters



| ENGINE  |  |
|---|--|
| ISL   |  |
| FILTER TYPE   | PRIMARY FILTER   |
| Fleetguard  | FS-1003/FS-1065 <u>Pre-fill</u>  |
| SERVICE   | SECONDARY FILTER   |
| Filter should be changed at <u>every</u> oil change | FF-5488/FF-5636 <u>Install Dry</u><br>2010 Engines change every other oil change. <u>Install Dry</u> |



# Fuel Filters



| ENGINE  |                                     |
|---|-------------------------------------|
| ISX12   |                                     |
| FILTER TYPE   | PRIMARY FILTER                      |
| Fleetguard  | FF5756 <u>Pre-Fill</u>              |
| SERVICE   | SECONDARY FILTER                    |
| Filter should be changed at <u>every</u> oil change | <u>S3238 Raycor</u> <u>Pre-Fill</u> |



# Fuel Filters



| ENGINE  |                               |
|---|-------------------------------|
| ISX15   |                               |
| FILTER TYPE   | PRIMARY FILTER                |
| Fleetguard  | FF2200/FF5686 <u>Pre-Fill</u> |
| SERVICE   | SECONDARY FILTER              |
| Filter should be changed at <u>every</u> oil change | <u>S3238 Raycor Pre-Fill</u>  |





# 2010 Engine Filters



| ENGINE                         |  |
|--------------------------------|--|
| All 2010 Emission              |  |
| FILTER TYPE                    | Coalescing Filter  |
| Fleetguard                     | Every 3 <sup>rd</sup> or 4 <sup>th</sup> oil change        |
| DEF Filter                     | DEF Fluid  |
| Every 200,000 miles or 2 years | If not used, should be drained and install new every year. |



# Fuel Filters



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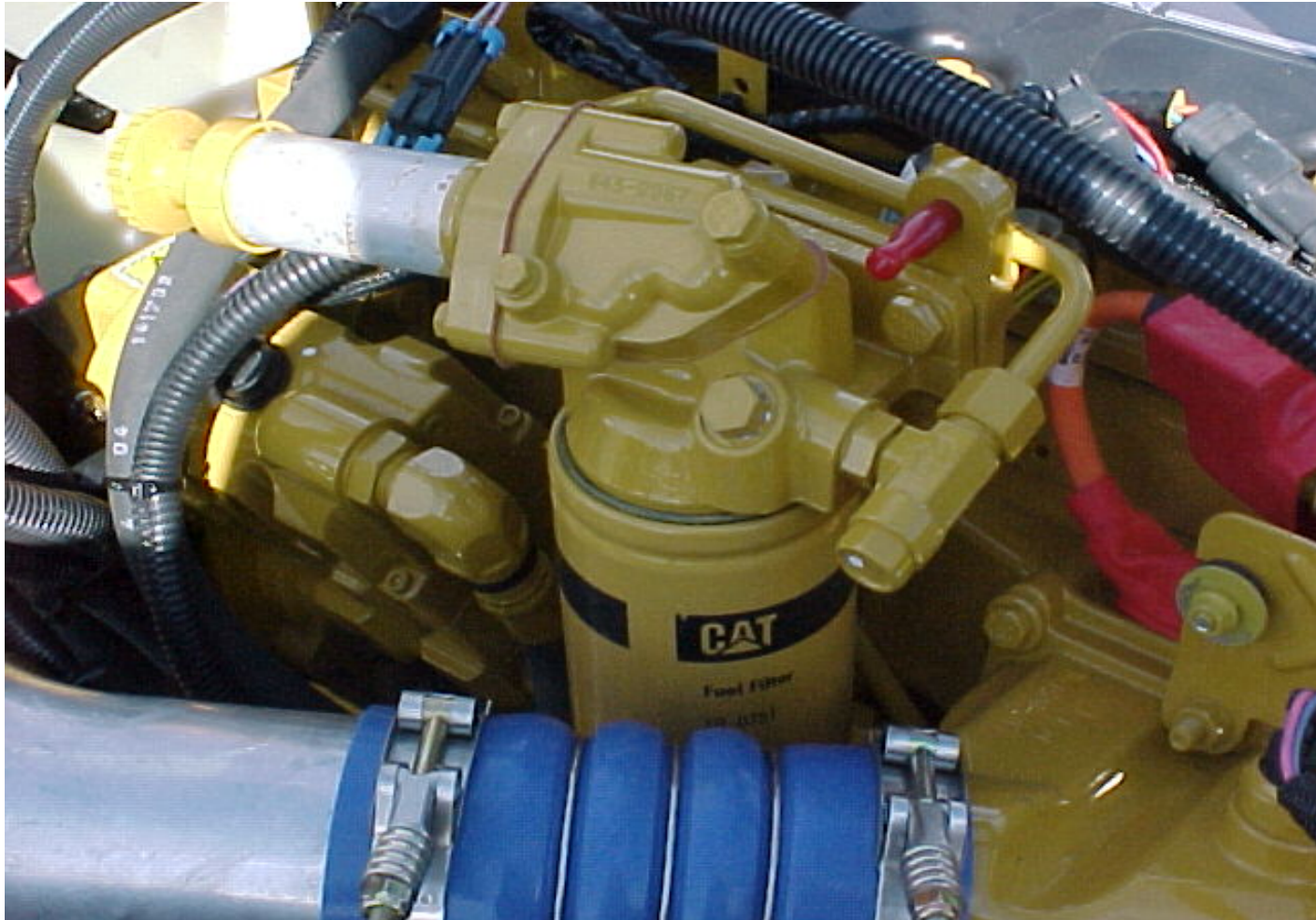
# Fuel Filters



| ENGINE                  | FILTER TYPE   | SERVICE                                     |
|-------------------------|---|---|
| <b>Cummins ISM</b>      | FLEETGUARD<br>FS-1003, Pre-fill<br>FS1242B, Pre-fill<br>RAYCOR Pre-fill | Every 15,000 miles                          |
| <b>CAT 3126E 330 HP</b> | CAT 1R-0751<br>Install Dry  | Change filter at<br><u>every</u> oil change |
| <b>CAT C7 &amp; C9</b>  | CAT 1R-0751<br>Install Dry  | Every 11,000 miles<br>or 6 months           |
| <b>CAT C13</b>          | CAT 1R-0749<br>Install Dry  | Every 30,000 miles<br>or 600 hours          |



# Fuel Filters



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# Transmission Service

| TRANSMISSION                     |   |
|----------------------------------|---|
| 3000 MH – (2 Internal Filters)   |   |
| FLUID TYPE                       | CAPACITY  |
| Transynd                         | Appx. 26 Quarts (US)  |
| FILTERS                          | SERVICE   |
| Allison<br>High Capacity Filters | Transynd:Main and Lube<br>filters 3 years or 75,000.<br>Fluid 150,000 or 4 years. |







# Transmission Service

| TRANSMISSION                     |  |
|----------------------------------|--|
| 4000 MH – (2 Internal Filters)   |  |
| FLUID TYPE                       | CAPACITY   |
| Transynd                         | Appx. 37 Quarts (US)   |
| FILTERS                          | SERVICE  |
| Allison<br>High Capacity Filters | Transynd: Main and Lube<br>filters 3 years or 75,000.<br>Fluid 150,000 or 4 years. |



# Transmission Service



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# Air System

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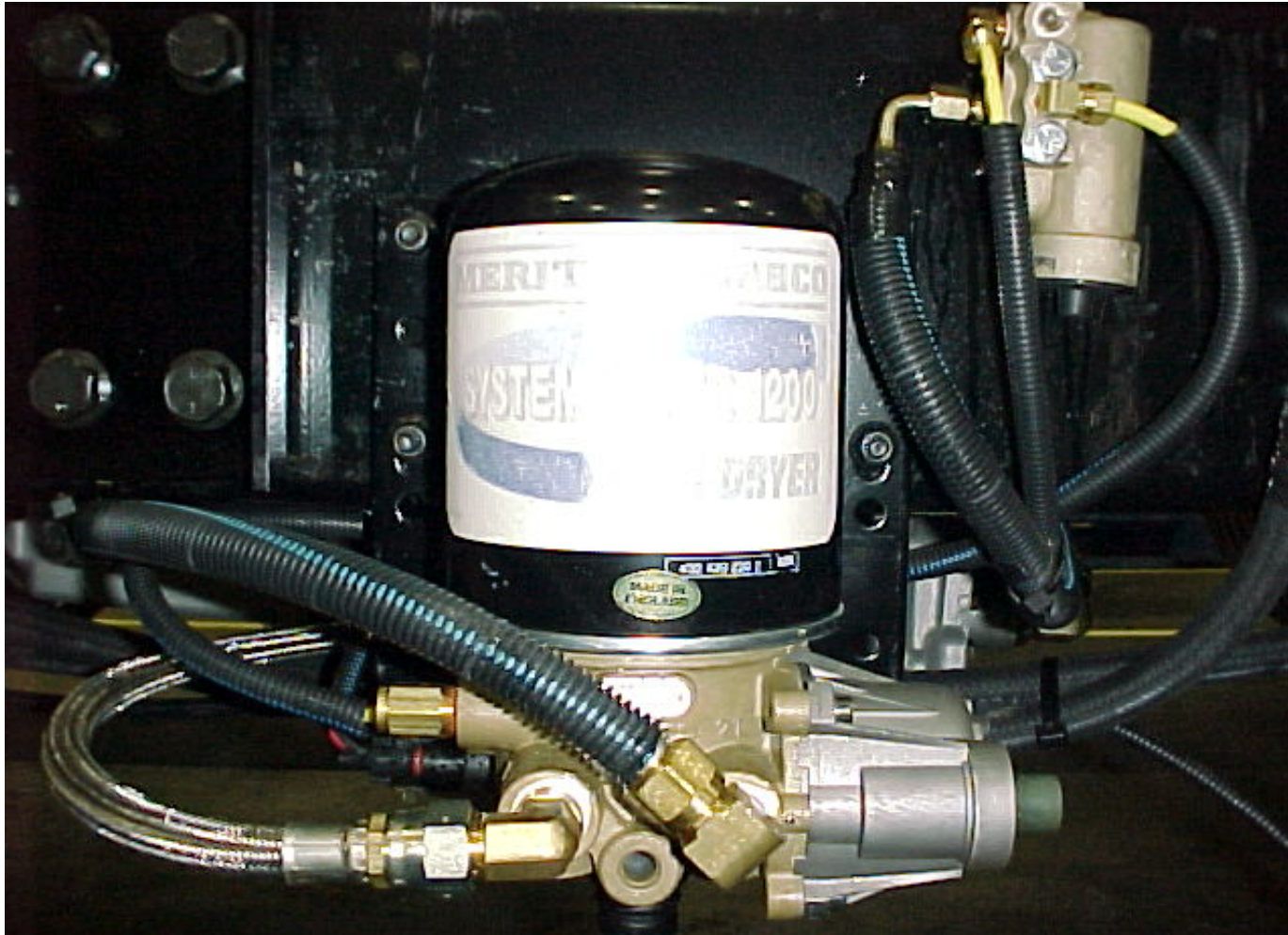
| AIR DRYER   |   |
|---|---|
| Wabco – Filter R950011                                |   |
| 2-3 years service interval for preventive maintenance | Check tanks if water is present and change filter (Likely contaminated) |





# Air System

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# Air System

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- Remove moisture in the air reservoir by opening the valves once a month with auto moisture ejectors.



# Suspension

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**IMPORTANT!**

## AIR SUSPENSION

Ride height should be checked at every oil change.

Incorrect ride height will affect front end alignment and rear driveline angles.

Ride height tolerance  
+/- 1/8"



# Suspension

---

| AIR SUSPENSION   |   |
|--|---|
| Reyco  |   |
| Torque on the suspension hardware should be rechecked at 1,000 to 3,000 miles. | Granning IFS ( <i>Independent Front Suspension</i> ):<br>Lubricate every 50,000 miles or once a year. |



# Suspension

---

| AIR SUSPENSION  |   |
|---|---|
| HENDRICKSON   |   |
| A visual inspection of fasteners and components is required every 6 months or 25,000 miles. | IFS, AIRTEK. Lubricate every 25,000 miles or 90 days. |



# Axles

---

|   |                        |
|---|------------------------|
| WHEEL SEAL OIL LEVEL<br>FRONT AXLE AND TAG AXLE |                        |
| Fill to oil-fill line on hub oiler              |                        |
| LUBE TYPE:<br>80-90 Gear Lube                   | Change lube every year |



# Axles

---

| MERITOR REAR AXLES     |  |
|------------------------|--|
|                        |  |
| FLUID TYPE             | MODEL # RS-19-145  |
| 85W140                 | Capacity 33.2 pints  |
| SERVICE                | MODEL # RS-23-160  |
| 50,000 miles or yearly | Capacity 41-43 pints<br><i>(Proper oil level to be level with bottom of fill hole plug.)</i> |



# Cooling System

---

- Extended Life Coolant (ELC)
- Check coolant quality by taking sample from coolant surge tank and visually inspecting for any deposits. If color is close to the original “red” and no deposits are found, coolant is suitable to be run to the next maintenance interval.





# Cooling System

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- Extended Life Coolant (ELC)
- 12 months check
- 24 months check
- 36 months add extender
- 48 months check
- 60 months check
- 72 months replace



# Cooling System

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- Radiator should be cleaned out yearly. Spray out with water, then use low pressure air to blow out the fins of coolers.



# Cooling System

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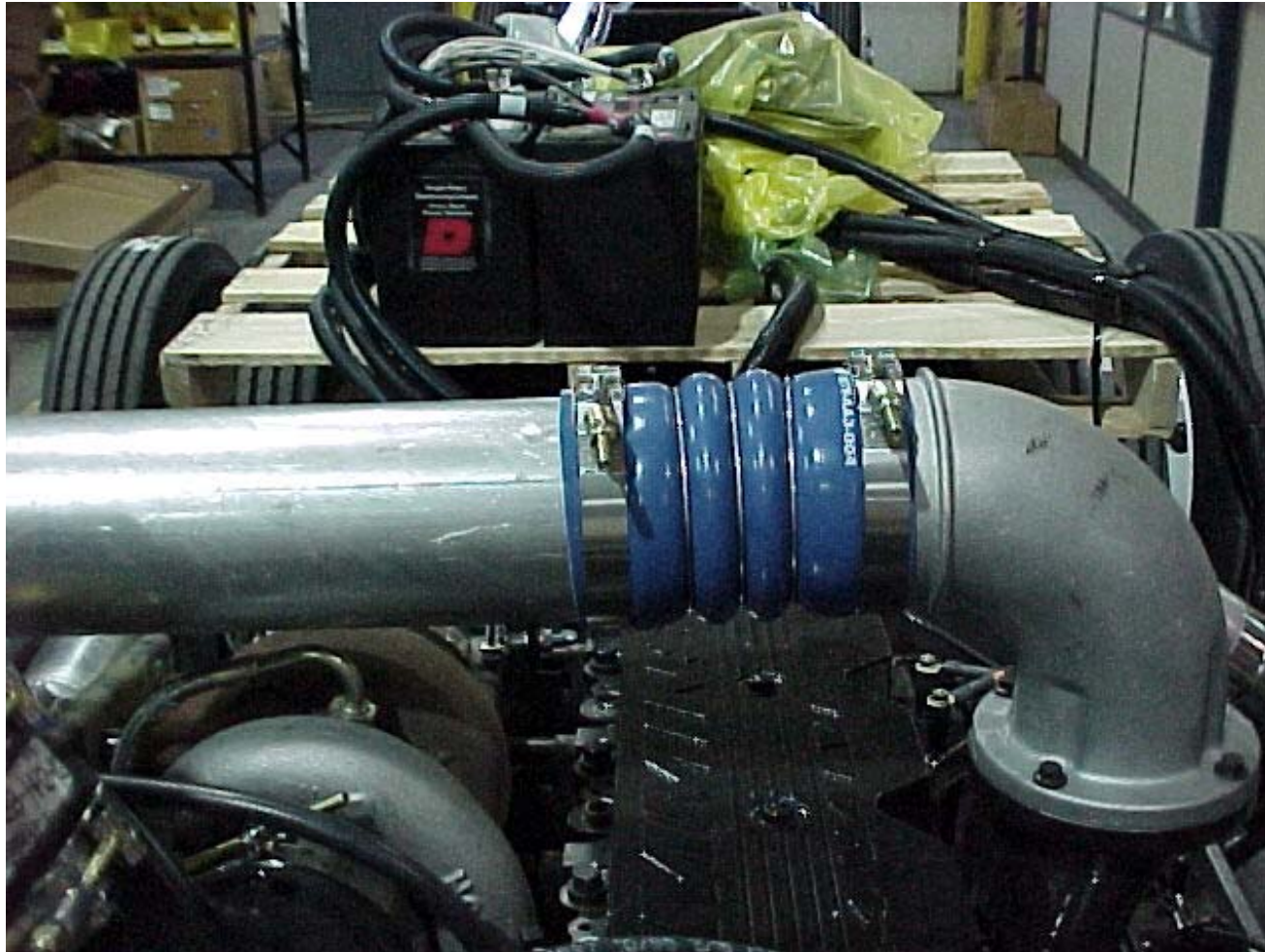


- Check the torque on CAC hose clamps at every oil change.
- Recommended torque is 45-50 lbs/in.



# Cooling System

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# Hydraulic System

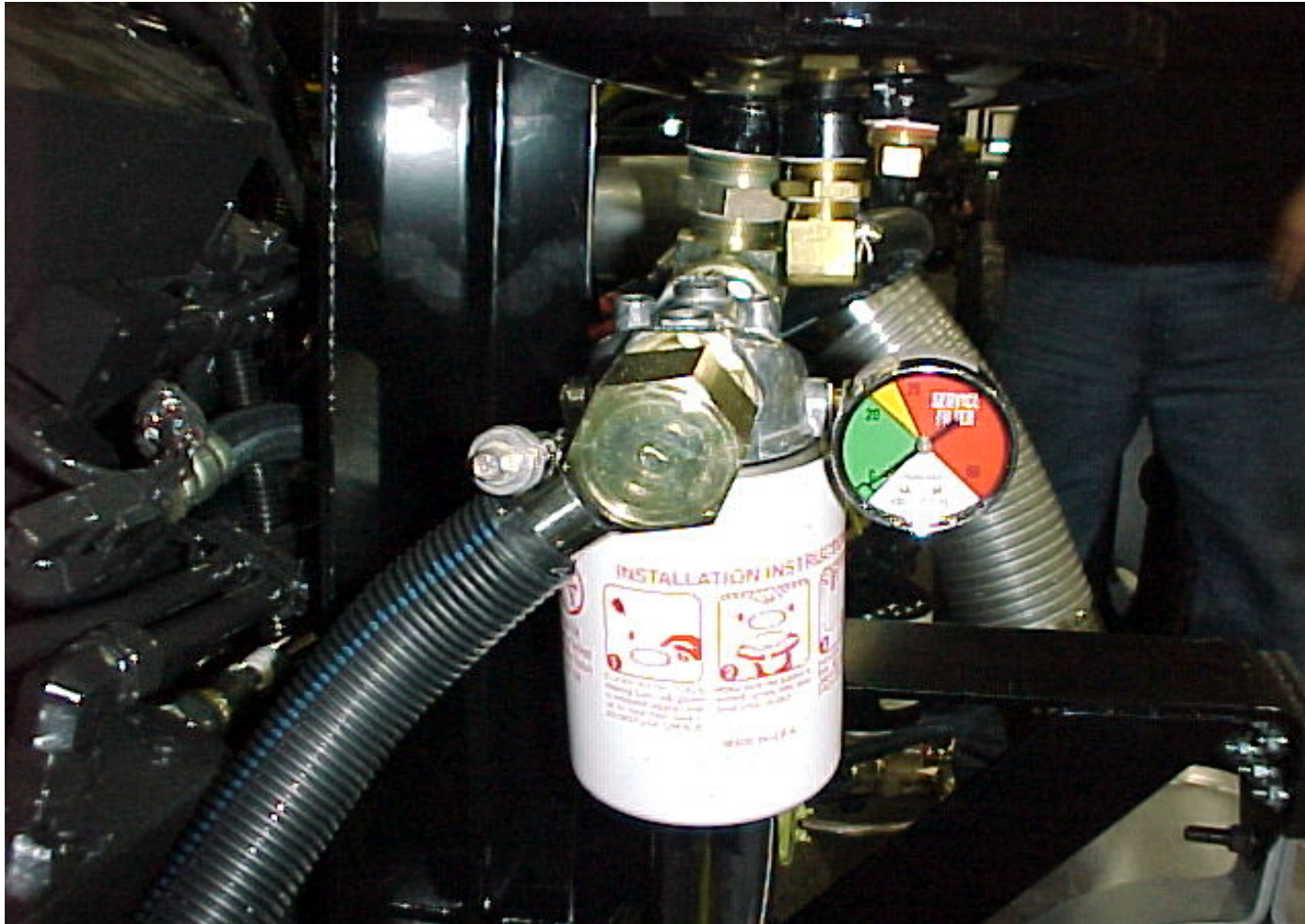
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- Change spin on synthetic filter every 12,000 miles or yearly.
- Change in-tank filter every 24,000 miles or 2 years.
- All current production uses AW32 or AW 46 hydraulic oil.





# Hydraulic System



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# Hydraulic System

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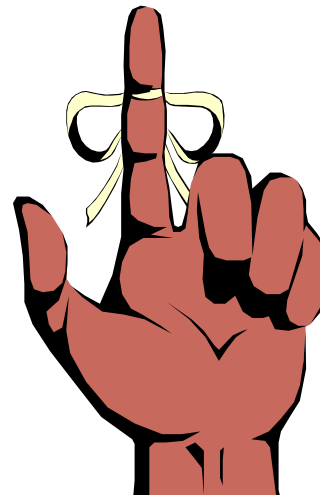
- In-tank filter should be changed with the fluid change. Every 2 years or 24,000 miles. Filter part #87610A Nelson.
- Filter is in the bottom of the reservoir.



# Hydraulic System

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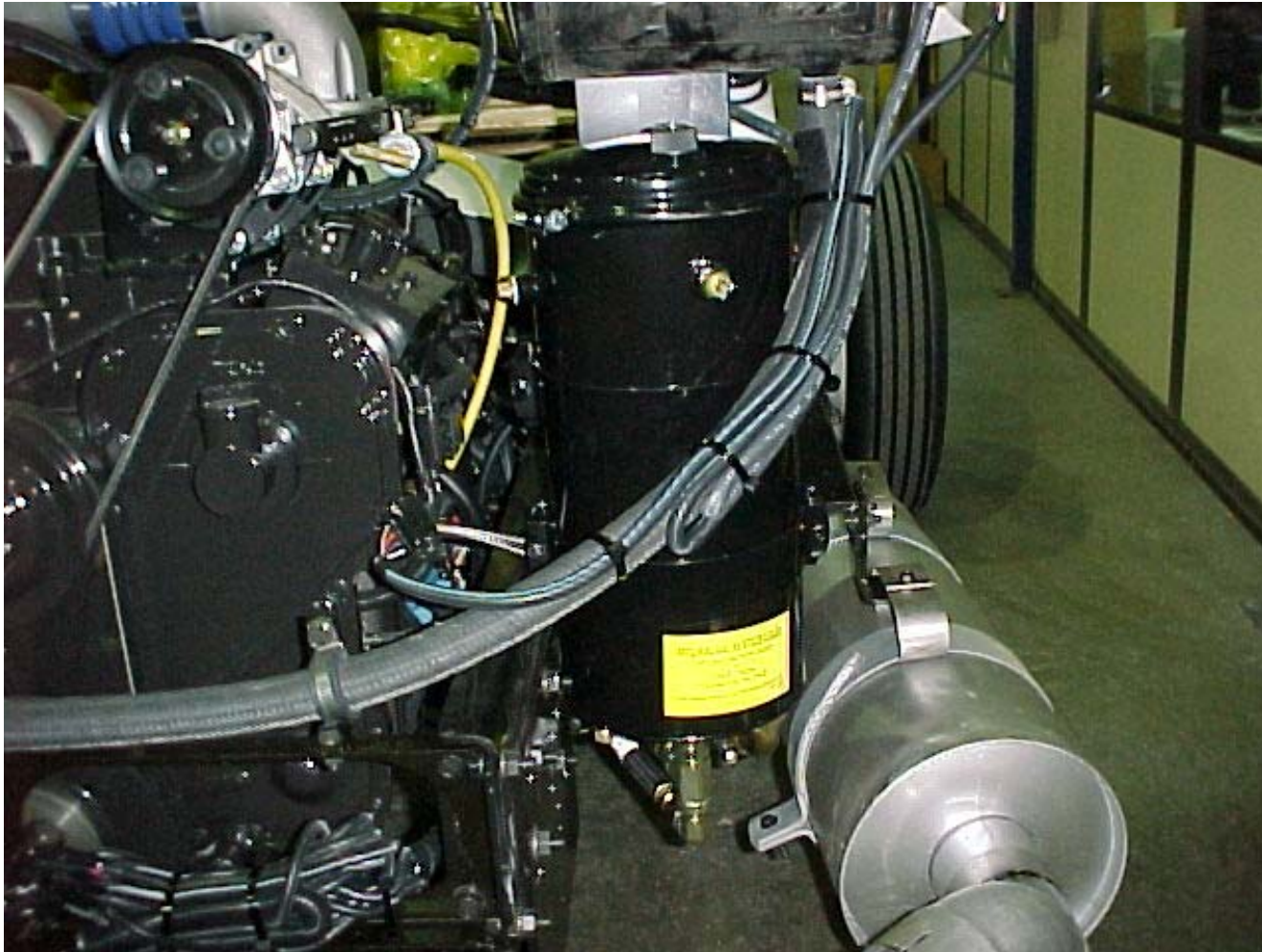
- If your chassis does not have the spin on filter, you must change the filter and fluid every 12,000 miles or yearly.





# Hydraulic System

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# Hydraulic System

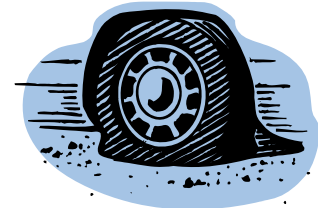
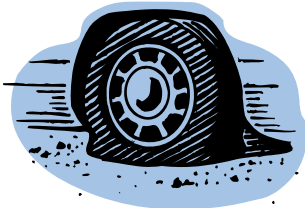
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# Tire Maintenance

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- Check tire pressure as part of every service.
- Have motor home weighted like you travel.
- Adjust tire pressure to the axle weight.



# Tire Maintenance

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- Proper weight distribution will result in optimum performance and improved handling.
- Load unit equally side-to-side and front-to-rear.



# G.V.W. R.

---

## ***(Gross Vehicle Weight Rating)***

- If a motorhome is rated at 23,000 pounds, then you have 23,000 pounds of stopping power.
- Spartan Chassis requires any object in tow to have its own braking system.





# G.C.W.R.

---

***(Gross Combined Weight Rating)***

- Spartan policy G.C.W.R.:

(G.V.W.R.) + up to 15,000 pounds for Mountain Master and K2 Chassis.



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# DPF Lamps

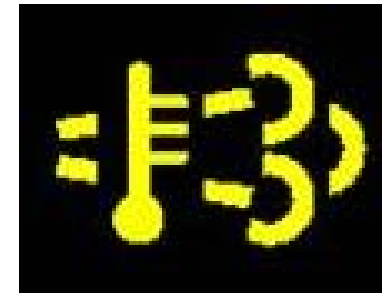
- DPF

- Diesel Particulate Filter
- Indicates Regeneration required



- HEST

- High Exhaust System Temperature



- MIL

- Malfunction Indicator Lamp



# DPF Lamp

---

- Indicates need to regenerate DPF
  - Steady on indicates need to perform regeneration
    - Least serve level
    - Drive it hard





# DPF Lamp

---

- Indicates need to regenerate DPF
  - Flashing indicates need to perform regeneration
    - Moderately severe level
    - Failure to regen will lead to potential engine derate



# DPF Lamp & Check Engine Lamp

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- Indicates **IMMEDIATE** need to regenerate DPF
  - High severity level
  - Failure to regen will lead to potential severe engine derate



# Stop Engine Lamp

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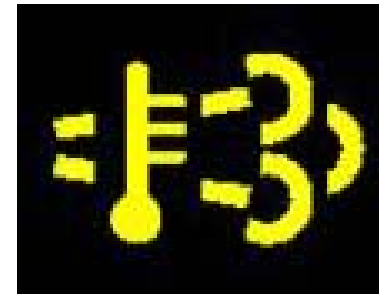
- Indicates DPF cannot be regenerated
  - DPF is too restricted to be regenerated
  - Must be serviced by authorized engine service center.



# HEST Lamp

---

- Indicates high exhaust temperatures
- Temperatures vary with engine model
- Can come on during normal operation
- Will come on during regeneration



# DEF Lights

| % of Fluid Needed<br>(Less Than or<br>Equal To)                                   | LED Indication | Message on LCD                             | Additional<br>Notifications   | Audible Alarm (active<br>when DEF trigger is<br>present)       |
|---|----------------|--|---|--|
| 100%  |                |  |   |  |
| 75%   |                |  |   |  |
| 50%   |                |  |   |  |
| 25%   |                |  |   |  |
| 10% Solid   |                | "LOW DEF"                                  | DEF Lamp-solid on & Amber in color  | Gauge Audible Alarm becomes active, but it is acknowledgeable. |
| 5% Solid  |                | "ENG PERFORMANCE DERATE IMMINENT,LOW DEF"  | DEF Lamp-flash on & off at 1 Hz & Amber in color  | Gauge Audible Alarm becomes active, but it is acknowledgeable  |
| 3.0% Flashing 1 Hz on/off   |                | "ENG PERFORM DERATE ACTIVATED, LOW DEF"*** | DEF Lamp-flash on & off at 1 Hz & Amber in color<br>Check Engine Lamp solid on & Amber in color   | Gauge Audible Alarm becomes active, but it is acknowledgeable  |
| 0% Flashing 1 Hz on/off   |                | "ENG PERFORM DERATE ACTIVATED, DEF REQ"*** | DEF Lamp-flash on & off at 1 Hz & Amber in color<br>MIL Lamp solid on & Amber in color & Check Engine Lamp solid on & Amber in color  | Gauge Audible Alarm becomes active, but it is acknowledgeable  |
| 0% Flashing 1 Hz on/off   |                | "SPEED RESTRICTION ON, DEF REQUIRED"       | DEF Lamp-flash on & off at 1 Hz & Amber in color<br>MIL Lamp solid on & Amber in color & Check Engine Lamp solid on & Amber in color & Stop Engine Lamp solid on & Red in color | Gauge Audible Alarm becomes active, but it is acknowledgeable  |
| *Speed Restriction will limit to 1000, 5 MPH vehicle speed, and 40% Torque Derate |                |  |   |  |
| ** Engine Performance Derate begins at 25%  |                |  |   |  |
| ***Engine Performance Torque Derate to 40% ramped at 1% per minute                |                |  |   |  |



# On The Road

---

If the motor home is parked at the campground:

1. Start every 30 days.
2. Operate long enough to fully charge the air system and bring engine to operating temperature (180 to 190 degrees).
3. Release park brake and roll 25 ft. forward and then backwards 25 ft. to insure axle seals are fully lubricated.





# Spartan Chassis Customer Service

*(Information required by Spartan's Customer Service Representative)*

|  |  |
|--|--|
| <b><u>TOLL FREE:</u></b><br>(800) 543-4277 | <b><u>HOURS:</u></b><br>24 hours 7 days a week |
|--|--|

- Owner's Name
- Description of Problem
- SO# (Last 8 digits of chassis VIN)
- VIN# (17 Characters and starts with 4VZ or 4S7)
- Current Mileage
- Date of Purchase



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Thank you for your time

Any Questions



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