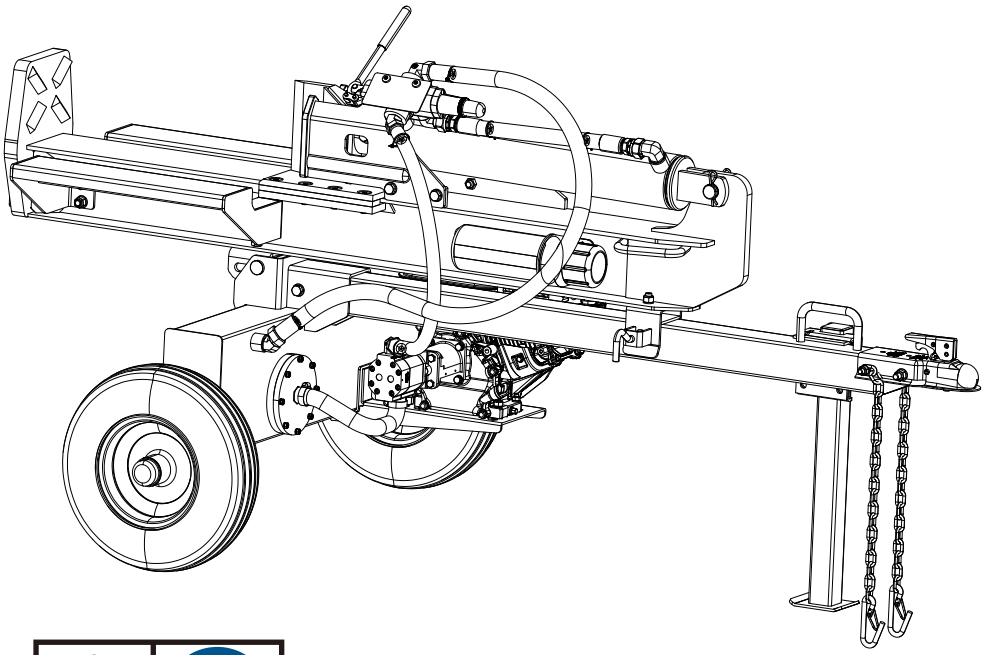
FIRMAN®

# OPERATOR'S MANUAL
# 22 TON GASOLINE LOG SPLITTER



**GS2206**

**Record product information to reference when ordering parts or obtaining warranty coverage.**

STOP **DO NOT RETURN TO STORE!**

CALL US FIRST
**1-844-347-6261**

FOR QUESTIONS
OR SERVICE INFORMATION

**SERIAL NUMBER:** _____

**PURCHASE DATE:** _____

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## REGISTER YOUR PRODUCT

Register your product using the QR code provided or at www.firmanpowerequipment.com .

## INTRODUCTION

Thank you for purchasing a FIRMAN log splitter. You have selected a high-quality, precision engineered log splitter designed and tested to give you years of satisfactory service.

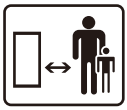
This manual contains safety information to make you aware of the hazards and risks associated with log splitter products and how to avoid them. It is important that you read and understand these instructions thoroughly before attempting to start or operate log splitter. Save these original instructions for future reference.

All information in this publication is based on the latest production information available at the time of approval for printing. The manufacturer reserves the right to change, alter or otherwise improve the log splitter and this documentation at any time without prior notice.

| SIGNAL WORDS | | | |
|---|---|---|---|
| ⚠ DANGER | ⚠ WARNING | ⚠ CAUTION | *NOTICE* |
| Indicates a hazard which, if not avoided, will result in death or serious injury. | Indicates a hazard which, if not avoided, could result in death or serious injury. | Indicates a hazard which, if not avoided, could result in minor or moderate injury. | Indicates information considered Important, but not hazard-related. |

| | |
|---|---|
|  | Operator's Manual- Failure to follow warnings, instructions and operator's manual could result in death or serious injury. |
|  | Eye and Ear Protection - Always wear safety goggles or safety glasses with side shields, and as necessary a full face-shield as well as full ear protection when operating this product. |
|  | Footwear - Always wear safety shoes or heavy boots when operating the machine. |
|  | Gloves - Always wear nonslip, heavy-duty protective gloves when operating this product. |
|  | Safety Alert Symbol - Indicates a potential personal injury hazard. |
|  | Fire- Fuel and its vapors are extremely flammable which could cause burns or fire resulting in death or serious injury.Engine exhaust could cause fire resulting in death or serious injury. |
|  | Skin Injection Hazard - High pressure hydraulic oil can inject under your skin. Make sure all fittings are tightly secure before applying pressure. Relieve system pressure before servicing. |
|  | Always keep hands away from the wedge and the hydraulic cylinder. Moving parts can crush or cut. |

# INTRODUCTION

| | |
|---|---|
|  | Always keep feet away from the wedge slide and the hydraulic cylinder. Moving parts can crush or cut. |
|  | Hot Surface- Muffler could cause burns resulting in serious injury. |
|  | Open Flame alert - Fuel and its vapors are extremely flammable and explosive. Keep fuel away from smoking, open flames, sparks, pilot lights, heat, and other ignition sources. |
|  | Hold logs on sides when loading. Keep hands and feet away from cylinder, wedge, and partially split logs. |
|  | Never place hands or any part of the body between a log and any part of the log splitter.Do not split logs against the grain. Split logs end to end in the direction of the grain only. |
|  | Toxic Fumes- Engine exhaust contains carbon monoxide, a poisonous gas that will kill you in minutes. You cannot smell it or see it. |
|  | Clearance - Keep all objects including others at least 10 feet (3m) from this machine. Only one person should operate the log splitter and load the logs. |
|  | Never operate on an incline. Make sure the log splitter is on a level surface. Block tires and ensure support leg is secure to prevent unintended movement of the log splitter during operation. |



WARNING! This product can expose you to chemicals including gasoline engine exhaust and lead and lead compounds, which are known to the state of California to cause cancer, and carbon monoxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warning.ca.gov.

## Training

1. Read the Operator's Manual completely before attempting to use this log splitter.
2. Do not allow anyone to operate your log splitter who has not read the Operator's Manual or has not been instructed on the safe use of the log splitter.
3. Never allow children or untrained adults to operate this machine.
4. Many accidents occur when more than one (1) person operates the log splitter. If a helper is assisting in loading logs to be split, never actuate controls until helper is clear of the area.
5. Never allow anyone to ride on the machine.
6. Never transport cargo on the log splitter.
7. High fluid pressures are developed in hydraulic log splitters. Pressurized hydraulic fluid escaping through a pin hole opening can puncture skin and cause sever blood poisoning. Therefore, the following instructions should be heeded at all times.
7a. Do not operate the unit with frayed, kinked, cracked or damaged hoses, fittings, or tubing.
7b. Stop the engine and relieve hydraulic system pressure before changing or adjusting fittings, hoses, tubing, or other system components.
7c. Do not adjust the pressure settings of the pump or valve.
7d. Do not check for leaks with your hand. Leaks can be detected by passing cardboard or wood over the suspected area. Look for discoloration. If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.
8. Keep the operator zone and adjacent area clear for safe, secure footing.
9. The log splitter is equipped with a spark arrestor for use near unimproved forest, brush, or grass covered land. Make sure you comply with local, state, and federal codes. Take appropriate fire-fighting equipment with you.
10. Log splitters should be used only for splitting wood. Do not use for other purposes unless the manufacturer provides attachments and instructions.
11. Only split wood with the grain. NEVER split perpendicular to the grain.
12. Keep the area of operation clear of all persons, particularly small children.

## Preparation

1. Be thoroughly familiar with all controls and with proper use of the equipment.
2. Safety Gear:
2a. Always wear safety shoes or heavy boots when operating the machine.
2b. Always wear safety goggles or safety glasses with side shields, and as necessary a full face-shield when operating or servicing the machine.
2c. Never wear jewelry or loose-fitting clothing that might become entangled in moving or rotating parts of the machine.
2d. Always wear full ear protection when operating the machine.
3. Make sure the log splitter is on a level surface. Block tires and ensure support leg is secure to prevent unintended movement of the log splitter during operation.
3a. Always operate the log splitter from the manufacturer's indicated operator zone.
4. Logs should be cut as squarely as possible.

5. Fuel:
5a. Use an approved fuel container.
5b. Never add fuel to a running or hot engine.
5c. Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors.
5d. Replace gasoline cap securely and clean up any spilled fuel. If fuel is spilled on clothing, change clothing immediately.
5e. Never fill fuel containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place container on the ground away from your vehicle before filling.
5f. Keep the fuel nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock open device.

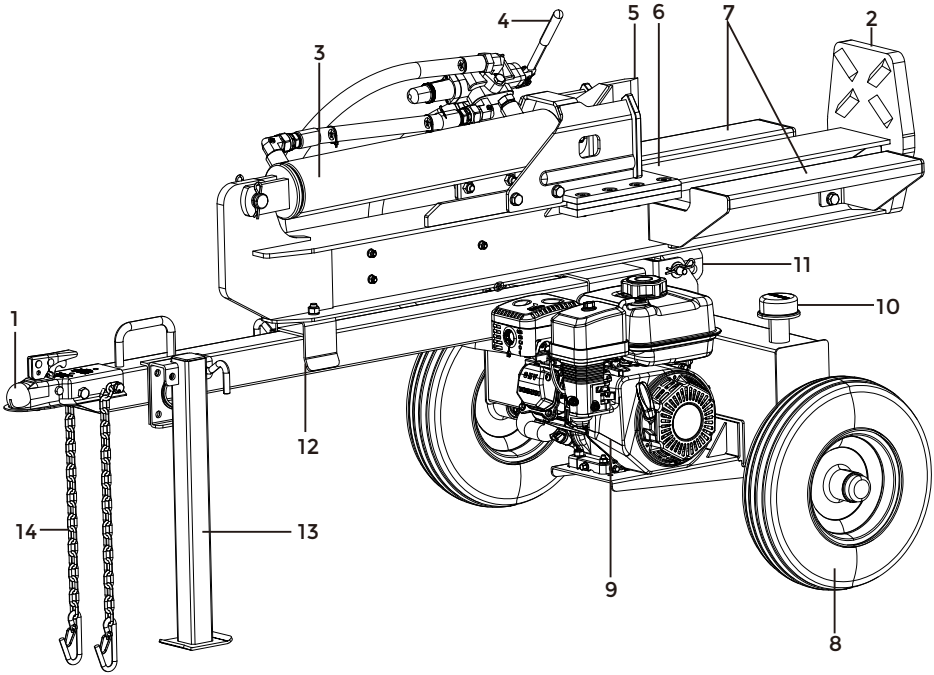
## Operation

WARNING! Before starting and using this log splitter, read and follow all the on product labels and safety information contained in the Operator's manual. Failure to follow all on product labels and Operator's manual could result in death or serious injury to the operator or bystanders.
1. Be sure to confirm all hose connections and hose clamps are tight before each use. It is possible for connections to vibrate loose over time.
2. Never leave the machine unattended with the engine operating.
3. Never operate the machine when under the influence of alcohol, drugs or medication.
4. The machine owner shall instruct all operators to read and understand the operators manual to ensure safe log splitter operation.
5. Always operate the log splitter with all safety equipment in place and all controls properly adjusted for safe operation.
6. Always operate the log splitter at manufacturer's recommended speed.
7. Always keep hands and feet clear of moving parts and partially split logs during the splitting operation.
8. When loading a ram-type log splitter, place your hands on the sides of the log, not the ends. Never place your hands or any part of your body between a log and any part of the log splitter.
9. On ram-type log splitters, never attempt to split more than one (1) log at a time unless the ram has been fully extended and a second log is needed to complete the separation of the first log.
10. On ram-type log splitters on which the logs are not cut square, the longest portion of the log should be rotated down and the most square end placed against the foot plate.
11. Only split logs with the grain of the wood.
12. Use only your hand to operate the log splitter controls.
13. Do not refuel until the engine has been turned off and cooled for at least 2 minutes.

## Maintenance and Storage

1. Always shut off the engine while repairing or adjusting the log splitter except as recommended by the manufacturer.
2. Clean debris and chaff from the engine cylinder, cylinder head fins, recoil starter cover, and muffler areas. Clean engine muffler spark arrestor and inspect it regularly (follow manufacturer's service instructions). Replace, if damaged.
3. Never store the unit indoors with fuel in the tank. Fumes might reach an open flame spark. Allow the engine to cool before storing in any enclosure.
4. Clear debris from movable parts, but only when the engine is shut off.
5. Check to be sure all nuts and bolts are tight to ensure the equipment is in safe working condition.

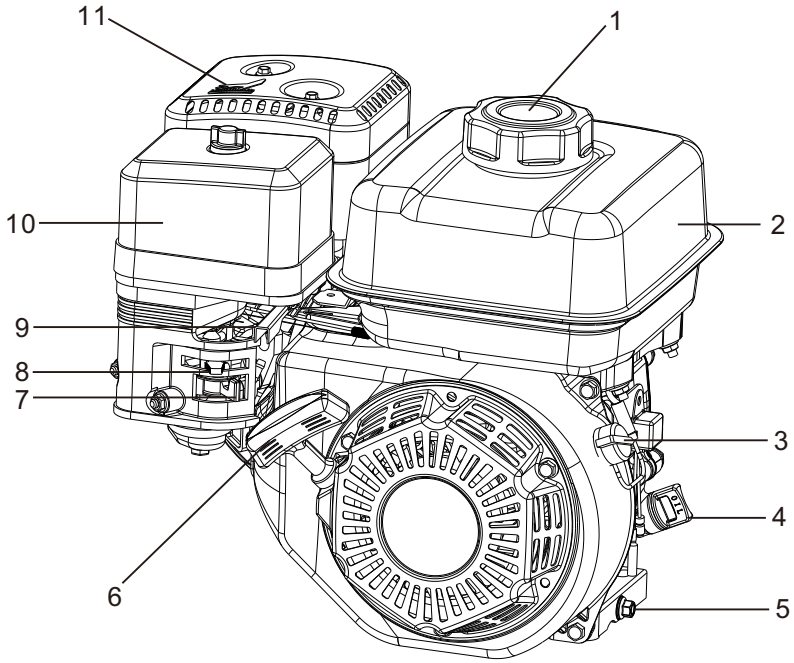
## Log Splitter




1. **2 in. (5.1 cm) Ball Coupler**
2. **Foot Plate**
3. **Hydraulic Cylinder**
4. **Control Valve Handle**
5. **Wedge**
6. **Beam**
7. **Log Cradle**
8. **Tires**
9. **208cc FIRMAN Engine**
10. **Vent Cap**
11. **Beam Pivot**
12. **Beam Lock Assembly**
13. **Tongue Stand**
14. **Safety Chains with Hooks**

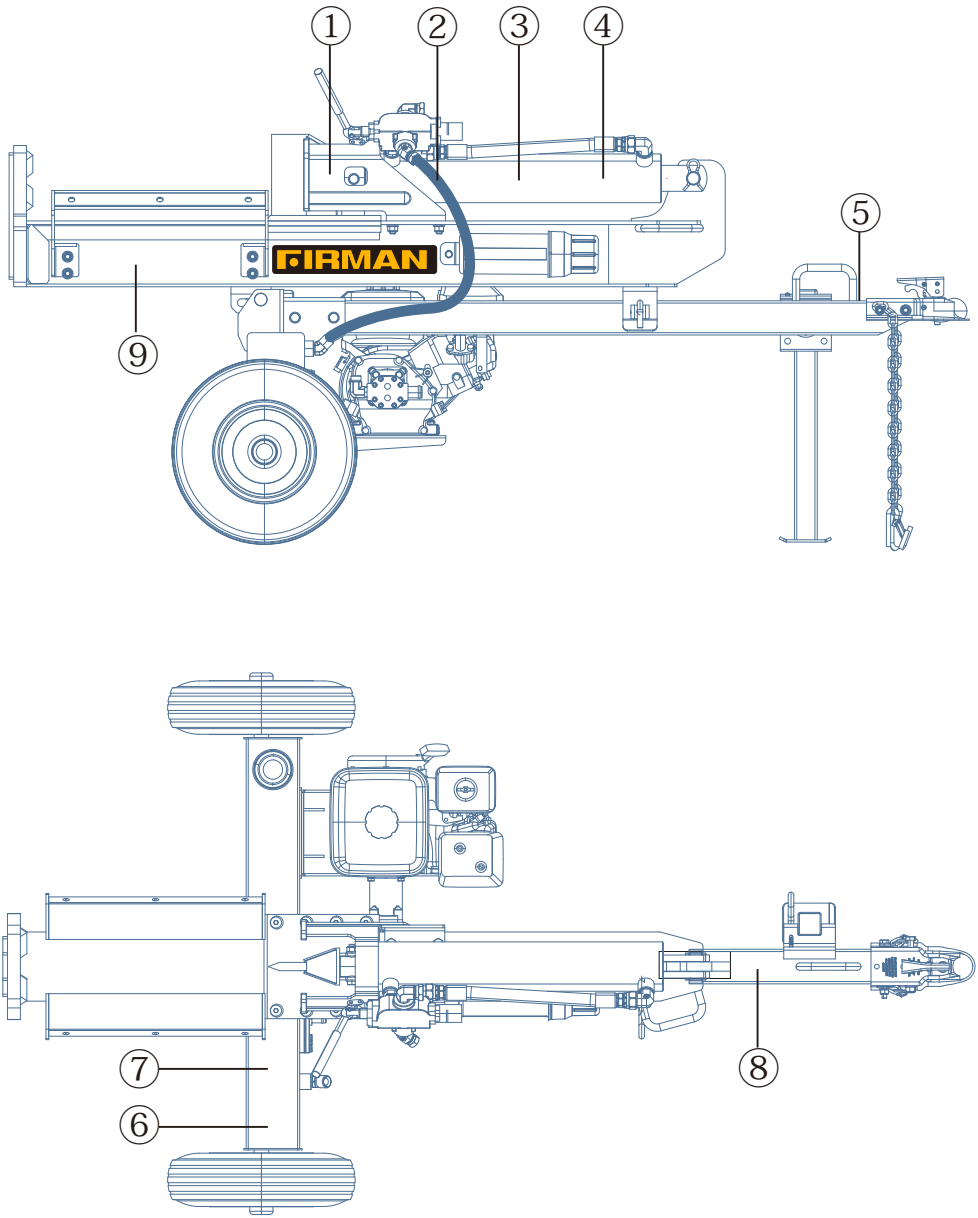
***We are always working to improve our products. Therefore, the enclosed product may differ slightly from the image on this page.**

# FEATURES, CONTROLS AND ON -PRODUCT HAZARD LABELS




**1. Fuel Cap**
**2. 0.9 Gal (3.2L) Fuel Tank**
**3. Engine Switch**
**4. Oil Fill Cap/Dipstick**
**5. Oil Drain Bolt**
**6. Recoil Starter**
**7. Fuel Valve**
**8. Choke Lever**
**9. Throttle**
**10. Air Filter**
**11. Muffler**

# FEATURES, CONTROLS AND ON -PRODUCT HAZARD LABELS



# FEATURES, CONTROLS AND ON -PRODUCT HAZARD LABELS

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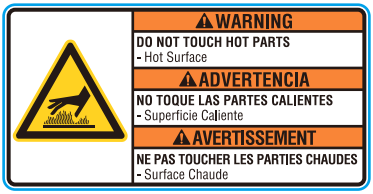

②




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⑤

| WARNING | ADVERTENCIA | AVERTISSEMENT |
|---|---|---|
| Before towing check that beam latch pin is completely locked. | Antes de enganchar el remolque, compruebe que el pasador de enganche de la viga está completamente bloqueado. | Avant de remorquer, vérifiez que la goupille de verrouillage de la poutre est complètement verrouillée. |
| **FOR RESIDENTS OF CALIFORNIA**<br>This product can expose you to chemicals including gasoline engine exhaust and lead and lead compounds, which are known to the State of California to cause cancer, and carbon monoxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov. | **PARA LOS RESIDENTES DE CALIFORNIA**<br>Este producto puede exponerlo a productos químicos, incluidos los gases del motor de gasolina, plomo y compuestos de plomo, que el estado de California reconoce como causantes de cáncer y el monóxido de carbono, que el estado de California reconoce como causante de defectos de nacimiento y otros daños reproductivos. Para obtener más información, visite www.P65Warnings.ca.gov. | **POUR LES RÉSIDENTS DE LA CALIFORNIE**<br>Ce produit peut vous exposer à des produits chimiques y compris les gaz d'échappement des moteurs à essence, le plomb et les composés de plomb, qui sont connus dans l'Etat de California pour provoquer le cancer et le monoxyde de Carbonne, connu dans l'Etat de Californie pour causer des malformations congénitales ou d'autres troubles de la reproduction. Pour plus d'informations, rendez-vous sur www.P65Warnings.ca.gov. |

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**⚠WARNING**

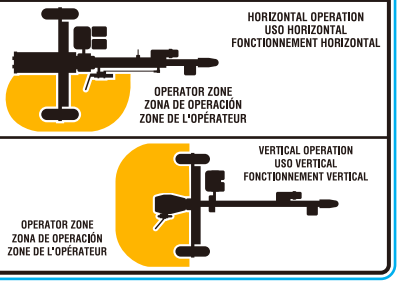
EQUIPMENT OPERATION SHALL ONLY BE PERFORMED IN THE DESIGNATED OPERATOR ZONE BY ONE PERSON

**⚠ADVERTENCIA**

EL MANEJO DEL EQUIPO SÓLO PODRÁ SER REALIZADO EN LA ZONA DESIGNADA PARA EL OPERADOR Y POR UNA SOLA PERSONA

**⚠AVERTISSEMENT**

L'UTILISATION DE L'ÉQUIPEMENT NE DOIT ÊTRE EFFECTUÉE QUE PAR UNE SEULE PERSONNE DANS LA ZONE RÉSERVÉE À L'OPÉRATEUR.




⑦

## OPERATING INSTRUCTIONS

**• SPLITTING LOGS**

1. Ensure that the log splitter is on a stable, flat surface.
2. Start the engine and advance throttle to the maximum.
3. Position log onto the beam up against the foot plate. NOTE: Always split log in the direction of the grain.
4. Move the control handle toward the foot plate to extend the wedge or move the control handle away from the foot plate to retract the wedge.

**• IF LOG BECOMES STUCK ON WEDGE**

A log can become stuck to wedge if the wedge becomes embedded in the log and the log doesn't split and separate. If this happens NEVER attempt to remove a stuck log by:
- Relying on the hydraulic force of the log splitter.
- Adding attachments to the log splitter.

**• ALWAYS REMOVE THE LOG MANUALLY BY FOLLOWING THIS PROCEDURE:**

1) Ram should be fully retracted.
2) Remove stuck log from wedge manually with a pry bar or sledge hammer. CAUTION: log pieces can fly off as they separate from the wedge.
3) DO NOT attempt to re-split a stuck log once it has been removed from wedge.

## INSTRUCCIONES DE USO

**• ABRIENDO TRONCOS**

1. Asegúrese de que la cortadora de troncos se encuentra sobre una superficie estable y plana.
2. Arranque el motor y ponga la marcha al máximo.
3. Coloque el tronco en la viga contra el reposapiés.
NOTA: Abra siempre el tronco en la dirección de la veta.
4. Mueva la palanca de control hacia el reposapiés para extender la cuña o aleje la palanca de control del reposapiés para retraer la cuña.

**• SI EL TRONCO QUEDA ATASCADO EN LA CUÑA**

Un tronco puede atascarse en la cuña si ésta se incrusta en el tronco y éste no se parte y separa. Si esto ocurre, NUNCA intente desmontar un tronco atascado:
- Utilizando la fuerza hidráulica de la cortadora de troncos.
- Añadiendo accesorios a la cortadora de troncos.

**• SIEMPRE RETIRE EL REGISTRO MANUALMENTE SEGÚN EL SIGUIENTE PROCEDIMIENTO:**

1) El cilindro debe estar totalmente retraído.
2) Retire manualmente el tronco atascado de la cuña con una palanca o un mazo.
PRECAUCIÓN: los trozos de tronco pueden salir volando al separarse de la cuña.
3) NO intente volver a separar un tronco atascado una vez que se haya retirado de la cuña.

## INSTRUCTIONS D'UTILISATION

**• FENDRE DES BÛCHES**

1. Assurez-vous que le fendeur de bûches se trouve sur une surface stable et plane.
2. Démarrez le moteur et avancez la manette des gaz au maximum.
3. Placez la bûche sur la poutre, contre la plaque de base. REMARQUE: fendez toujours la bûche dans le sens du grain.
4. Déplacez la poignée de commande vers la plaque de pied pour étendre la cale ou éloignez la poignée de commande de la plaque de pied pour rétracter la cale.

**• SI LA BÛCHE RESTE COINCÉE SUR LA CALE**

Une bille peut rester coincée sur la cale si la cale s'enfonce dans la bille et que celle-ci ne se fend pas et ne se sépare pas. Si cela se produit, ne tentez JAMAIS de retirer une bille coincée en:
- En vous fiant à la force hydraulique de la fendeuse de bûches.
- Ajoutant des accessoires à la fendeuse de bûches.

**• RETIREZ TOUJOURS LA BÛCHE MANUELLEMENT EN SUIVANT CETTE PROCÉDURE:**

1) Le vérin doit être complètement rétracté.
2) Retirez manuellement la bûche de la cale à l'aide d'un levier ou d'un marteau de forgeron.
ATTENTION: des morceaux de bûche peuvent s'envoler lorsqu'ils se séparent de la cale.
3) N'essayez PAS de retendre une bûche coincée une fois qu'elle a été retirée de la cale.

⑧

| ⚠WARNING | ⚠ADVERTENCIA | ⚠AVERTISSEMENT |
|---|---|---|
| **TO AVOID SERIOUS INJURY OR DEATH** | **EVITE LESIONES GRAVES O LA MUERTE** | **POUR ÉVITER DES BLESSURES GRAVES VOIRE LA MORT** |
| • Read the Operation Manual on how to attach the coupler to the hitch ball and how to tow safely.<br>• DO NOT tow log splitter at night or in low-visibility conditions.<br>• Ensure the correct ball size is being used.<br>• Do not exceed hitch ball or coupler load limits.<br>• Attach and secure safety chains prior to towing.<br>• Do not exceed max towing speed of 45 mph.<br>• Avoid sharp turns and steep angles.<br>• Check tightness of coupler before towing.<br>• Replace hitch ball or coupler if damaged. | • Lea el Manual de instrucciones para saber cómo acoplar el enganche a la bola de enganche y remolcar con seguridad.<br>• NO remolque la partidora de troncos por la noche ni en condiciones de baja visibilidad.<br>• Asegúrese de utilizar el tamaño de bola correcto.<br>• No exceda los límites de carga de la bola de enganche o del acoplador.<br>• Sujete y asegure las cadenas de seguridad antes de remolcar.<br>• No exceda la velocidad máxima de remolque de 45 mph. Evite curvas cerradas y ángulos pronunciados.<br>• Verifique el apriete del enganche antes de remolcar.<br>• Sustituya la bola de enganche o el enganche si presentan daños. | • Lisez le manuel d'utilisation pour savoir comment attacher le coupleur à la boule d'attelage et comment remorquer en toute sécurité.<br>• NE PAS remorquer la fendeuse de bûches la nuit ou dans des conditions de faible visibilité.<br>• Assurez-vous que la bonne taille de balle est utilisée.<br>• Ne dépassez pas les limites de charge de la boule d'attelage ou de l'attelage.<br>• Attachez et fixez les chaînes de sécurité avant le remorquage.<br>• Ne dépassez pas la vitesse maximale de remorquage de 45 mph.<br>• Évitez les virages serrés et les angles prononcés.<br>• Vérifiez le serrage de l'attelage avant le remorquage.<br>• Remplacez la boule d'attelage ou le coupleur s'ils sont endommagés. |

⑨

FIRMAN®

| | | | |
|---|---|---|---|
| MODEL:<br>MODELO:<br>MODÈLE: | GS2206 REV00 | NET WEIGHT:<br>PESO NETO:<br>POIDS NET: | 454 LBS (206 KG) |
| DOM:<br>DOM:<br>DATE FAB.: | | SERIAL #:<br>SERIAL #:<br>NO SÉRIE: | |
| FIRMAN POWER EQUIPMENT INC.<br>8644 W. Ludlow Dr. Peoria, AZ 85381<br>1-844-347-6261 | | MADE IN CHINA<br>HECHO EN CHINA<br>FABRIQUÉ EN CHINE | |

# ASSEMBLY

Your log splitter requires some assembly. If you have any questions regarding the assembly of your log splitter, call our help line at 1-844-347-6261. Please have your serial number and model number available.

## Tools

- Flat Screw Driver
- Hammer or Crowbar
- Band Cutter
- 8mm, 10mm, 13mm,14mm, 17mm,18mm, 19mm, 27mm and 32mm Wrenches
- Torque Wrench

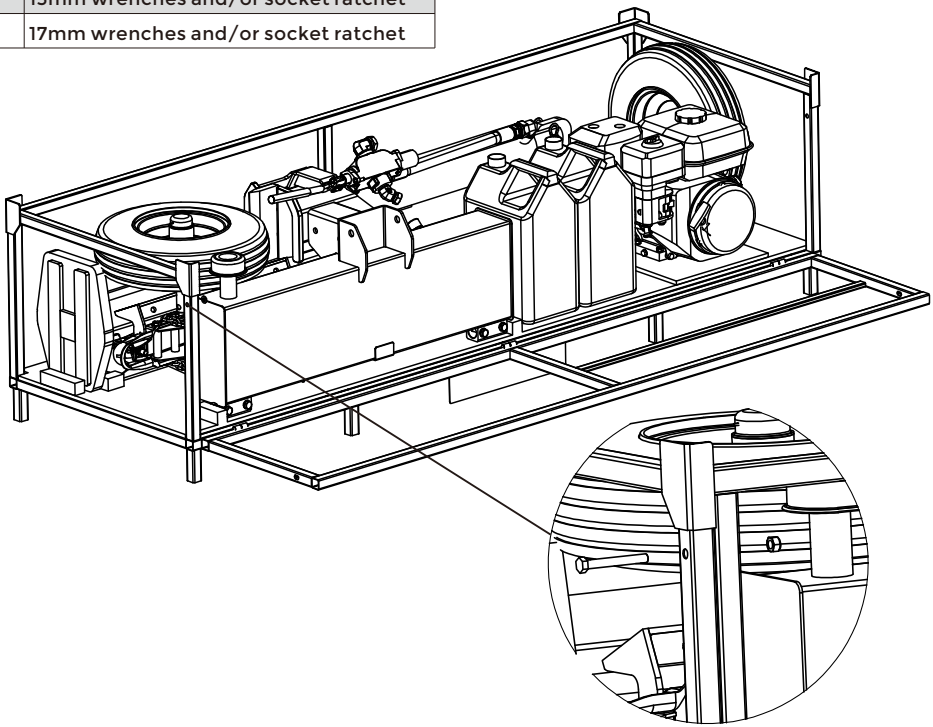
## STEP 1: Unpack Unit

1.1 Set the shipping crate on a solid, flat surface.

1.2 Carefully cut the shipping bands and remove the bolted side of the shipping crate.

1.3 Locate all hardware and components on GS2206 Parts Diagram and Parts List before beginning assembly.

| Tool | |
|---|---|
| Ref. # | Description |
| 1 | Band Cutter |
| 2 | 10mm wrenches and/or socket ratchet |
| 3 | 13mm wrenches and/or socket ratchet |
| 4 | 17mm wrenches and/or socket ratchet |



## Step 2: Install the Wheels

2.1 Remove the oil tank (32) and wheel assembly (85) from the steel pallet and place them on a horizontal surface.

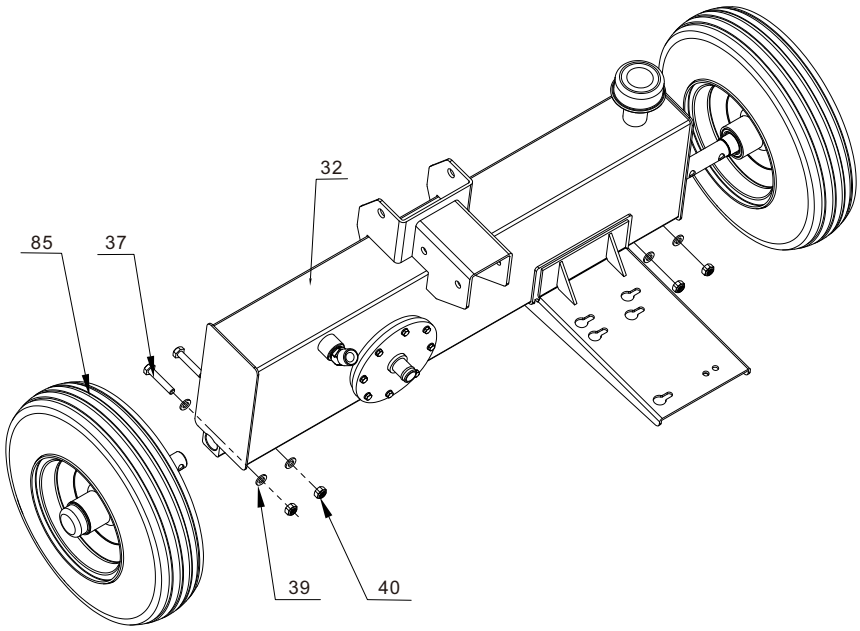
2.2 Install the wheel axle of the wheel into the bushing at the bottom of the oil tank, aligning it with the mounting holes.

2.3 Secure the wheel with the M10*55 bolts(37) (Torque to 35.4 lbf-ft (48 N·m)), flat washers Ø10 (39), and M10 nylock nuts (40).

2.4 Complete the installation of the wheel on the other side by following the above operations.

| Parts List | | | |
|---|---|---|---|
| Ref. # | Description | Part # | QTY. |
| 37 | Bolt M10*55 | 710718008 | 4 |
| 39 | Washer Ø10 | 710717003 | 8 |
| 40 | Lock Nut M10 | 710717075 | 4 |

| Tool | |
|---|---|
| Ref. # | Description |
| 1 | 2*17mm wrenches and/or socket ratchet |

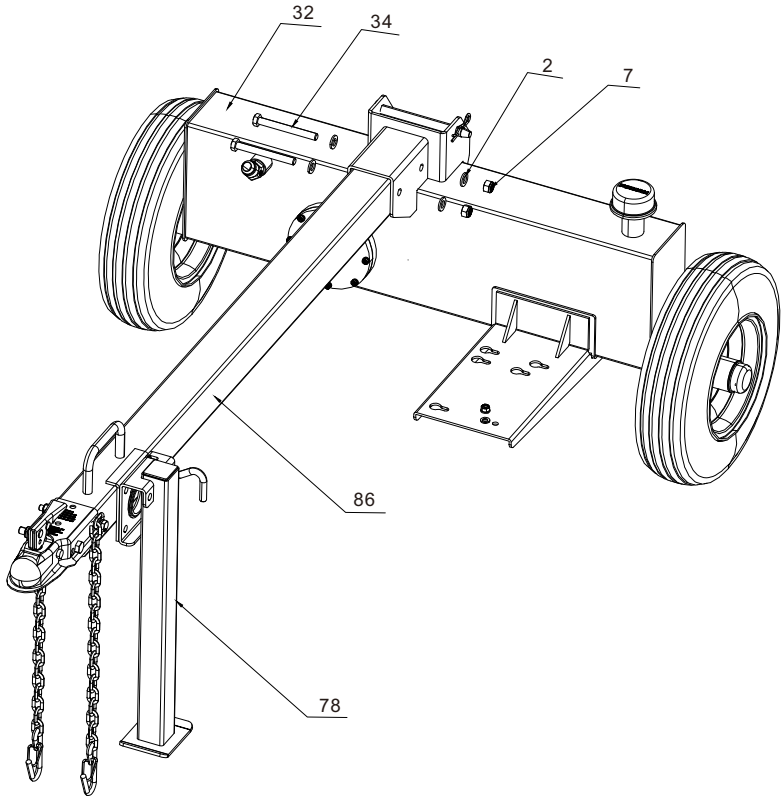


## Step 3: Install The Tongue

3.1 Rotate tongue stand (78)down and verify the pull pin is engaged. Secure the tongue assembly(86) to the hydraulic tank (32) using M12*110 screws (34)(Torque to 61.2 lbf-ft (83 N·m)), M12 flat washers (2) and M12 nylock nuts (7).

| Parts List | | | |
|---|---|---|---|
| Ref. # | Description | Part # | QTY. |
| 34 | Bolt M12 * 110 | 710717133 | 2 |
| 2 | Washer Ø12 | 710717007 | 4 |
| 7 | Lock Nut M12 | 710717008 | 2 |

| Tools | |
|---|---|
| Ref. # | Description |
| 1 | 18mm wrenches and/or socket ratchet |
| 2 | 19mm wrenches and/or socket ratchet |

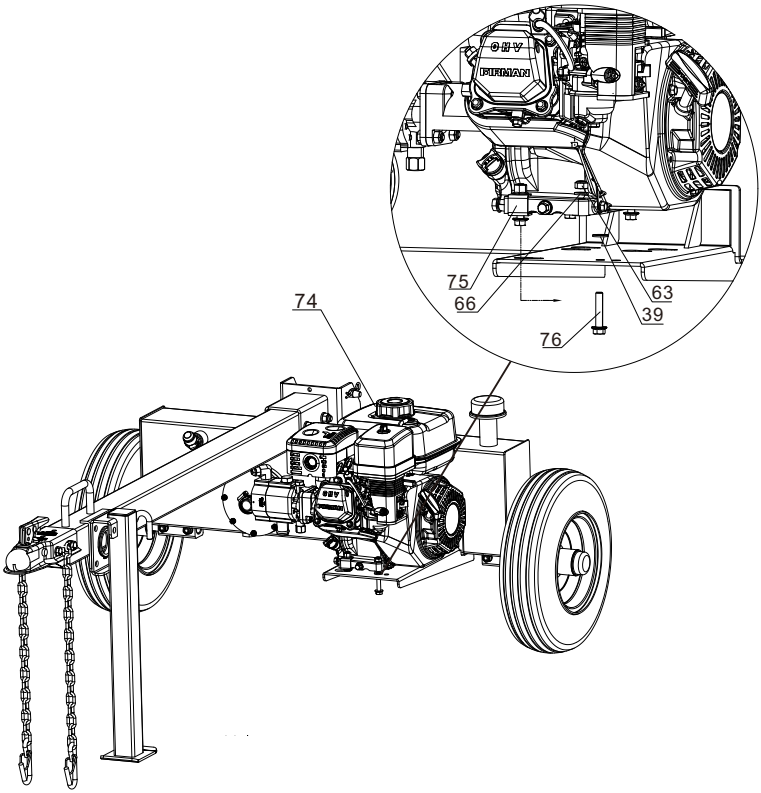


## Step 4: Install The Engine

4.1 Remove the Engine (74) from the wooden board by removing the red color bracket and red colored bolt.
4.2 Set the engine on the platform, dropping the bolt heads through the tear drop hole.
4.3 Slide the engine to align the 4th hole.
4.4 At this point the user can place a single washer under the engine to ensure equal pressure on the base of the engine.
4.5 Tighten all the hardware.

| Parts List | | | |
|---|---|---|---|
| Ref. # | Description | Part # | QTY. |
| 76 | Bolt M8 * 40 | 710718006 | 4 |
| 66 | Washer Ø8 | 710717045 | 1 |
| 63 | Lock Nut M8 | 710717044 | 1 |
| 39 | Washer Ø10 | 710717003 | 1 |

| Tools | |
|---|---|
| Ref. # | Description |
| 1 | 13mm wrenches and/or socket ratchet |



## Step 5: Install Beam Pivot/Beam Lock

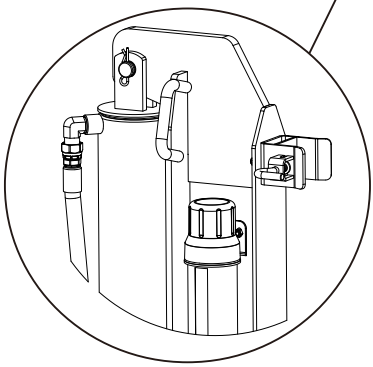
5.1 Remove the beam from the pallet by removing two red colored bolts. This step requires multiple people to ensure safety and avoid injury. Use a hammer or crowbar to remove the wooden block attached to the base of the pallet so that the beam can be slid out.

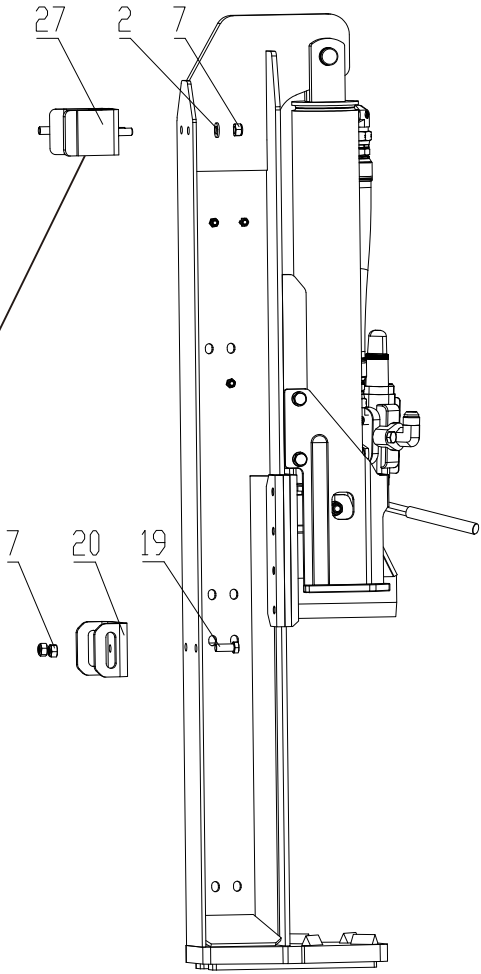
5.2 Stand the beam upright.

***NOTICE*** Stand the beam up vertically using 2 or more people.

| Parts List | | | |
|---|---|---|---|
| Ref. # | Description | Part # | QTY. |
| 2 | Washer Ø12 | 710717007 | 2 |
| 7 | Lock Nut M12 | 710717008 | 4 |
| 19 | Bolt M12*30 | 710718002 | 2 |
| 20 | Beam Pivot | 710718252 | 1 |
| 27 | Assy, Beam Lock | 710418026 | 1 |

| Tools | |
|---|---|
| Ref. # | Description |
| 1 | 18mm wrench and/or socket ratchet |
| 2 | 19mm wrench and/or socket ratchet |





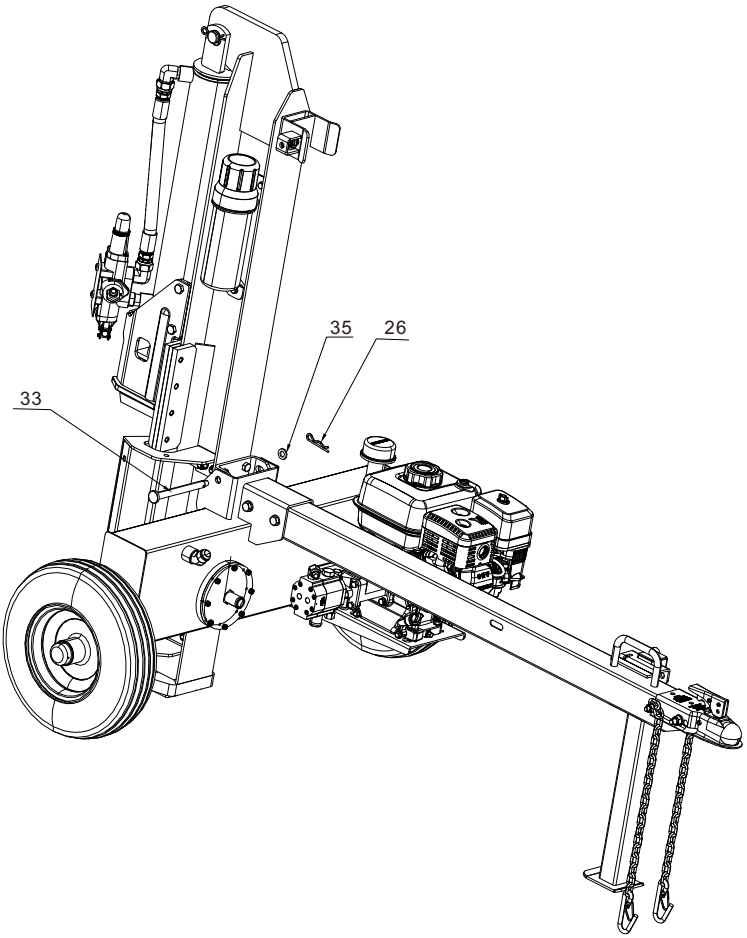

***NOTICE*** When fully assembled, the pull pin of the beam lock must be positioned on the same side as the slot in the tongue.

## Step 6: Install the Beam

6.1 Roll the tank into position so the pivot holes of the tank and beam are aligned.

6.2 Insert the beam pin (33) and secure with Ø16 washer (35) and R-pin (26).

| Parts List | | | |
|---|---|---|---|
| Ref. # | Description | Part # | QTY. |
| 33 | Beam Pin | 710718317 | 1 |
| 35 | Washer Ø16 | 710718032 | 1 |
| 26 | R-Pin | 710717113 | 1 |




**WARNING!** The beam is extremely heavy and shall only be handled with 2 or more people.
To avoid muscle strain or back injury DO NOT try and lift or handle the beam without assistance.

## Step 7: Install the Hoses

***NOTICE*** Red shipping plugs must be removed from hydraulic pump prior to installing hoses. The operating handle of the hydraulic valve may be tied during transportation, and the straps need to be removed before installing the handle with the clevis pin.

***NOTICE*** The Pump-Valve Hydraulic Hose(High Pressure) and Valve-Tank Hydraulic Hose(Low Pressure) may be preassembled by the factory, check your hoses per below instructions to ensure proper assembly.

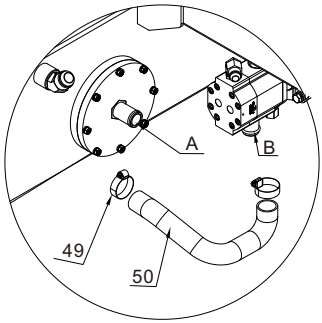
### Oil Inlet Hose

7.1 Using the provided hose clamps, connect one end of the clear suction hose (50) to the suction fitting port (A) and the other end to the pump inlet (B).Securely tighten the clamps on both ends of the suction hose with either a flat head screw driver or 8mm socket. Torque to 2.9 lbf-ft - 4.4 lbf-ft (4-6 N.m).

***NOTICE*** After running the log splitter and the fluid has heated up the user should verify that the hose clamps are secure and remain tight.

| Parts List | | | |
|---|---|---|---|
| Ref. # | Description | Part # | QTY. |
| 49 | Worm Gear Hose Clamp | 710718033 | 2 |

| Tool | |
|---|---|
| Ref. # | Description |
| 1 | Flat Head Screw Driver or 8mm socket |



### Hydraulic Hose (Pump-Valve)

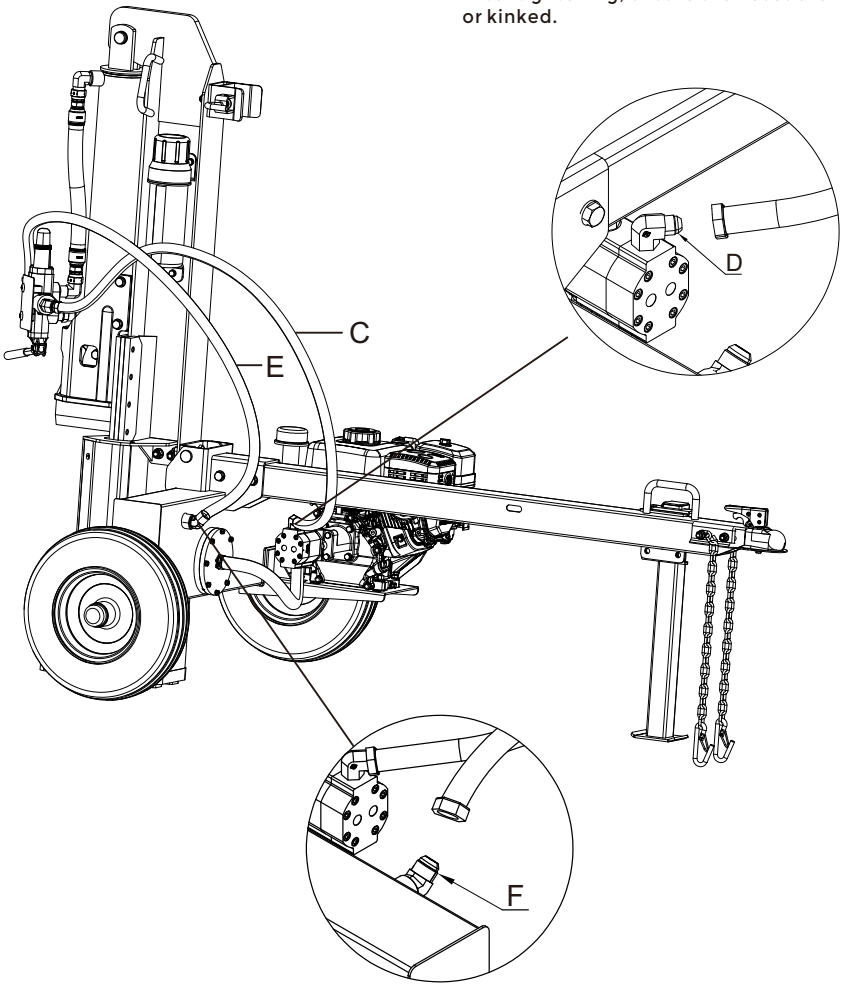
7.2 Connect the loose end of the pump-valve hydraulic hose (C) to the pump outlet (D). Securely tighten the high pressure hydraulic hose with a 27mm wrench. Tighten to 44 lbf-ft – 52 lbf-ft (60-71 N.m).

### Hydraulic Hose (Valve-Tank)

7.3 Connect the loose end of the valve-tank hydraulic hose (E) to the tapered hydraulic fitting (F). The valve-tank hydraulic hose will only fit on this fitting to ensure correct connection. Securely tighten the hydraulic hose with a 32mm wrench. Tighten to 52 lbf-ft - 66 lbf-ft (71-90 N.m).

| Tool | |
|---|---|
| Ref. # | Description |
| 1 | 27mm, 32mm wrench |

***NOTICE***
Assemble the hoses with the log splitter beam in the vertical position as shown in the diagram below.
After tightening, ensure the hoses are not twisted or kinked.

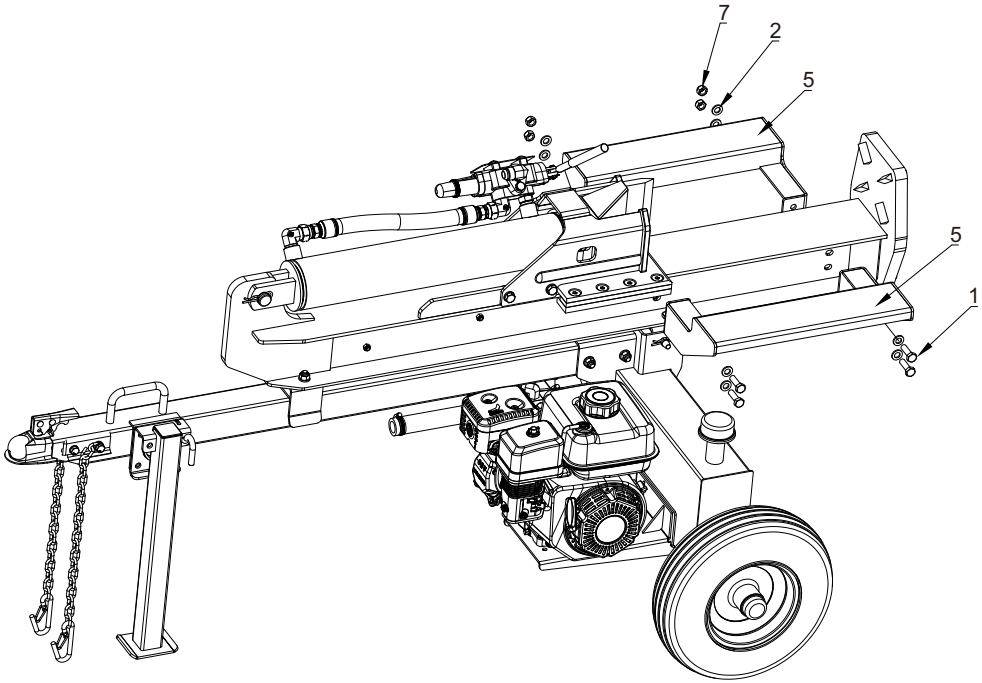


## Step 8: Install the Log Cradle

Attach the Log Cradles (5) to the beam, secure the log cradles using M12 lock nuts (7) (torque to 51.63 lbf·ft(70N.m)) and 12mm flat washers (2).

| Parts List | | | |
|---|---|---|---|
| Ref. # | Description | Part # | QTY. |
| 2 | Washer Ø12 | 710717007 | 4 |
| 7 | Lock Nut M12 | 710717008 | 8 |
| 1 | Bolt M12*35 | 710717103 | 4 |
| 5 | Log Cradle | 710718286 | 2 |

| Tools | |
|---|---|
| Ref. # | Description |
| 1 | 19mm wrench and/or socket ratchet |



## 1.Location

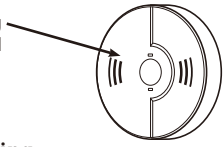


DANGER! Engine exhaust contains carbon monoxide, a poisonous gas that could kill you in minutes. You CANNOT smell it, see it, or taste it. Even if you do not smell exhaust fumes, you could still be exposed to carbon monoxide gas.

- Operate log splitter only outdoors and downwind at least 20 ft.(6 m) from occupied spaces with exhaust pointed away to reduce the risk of carbon monoxide accumulating.
- Install battery-operated carbon monoxide alarms or plug-in carbon monoxide alarms with battery back-up according to the manufacturer's instructions. Smoke alarms cannot detect carbon monoxide gas.
- Do not run this log splitter inside homes, garages, basements, crawlspaces, sheds, or other partially enclosed spaces even if using fans or opening doors and windows for ventilation. Carbon monoxide can quickly build up in these spaces and can linger for hours, even after this product has shut off.
- If you start to feel sick, dizzy, weak or your home's carbon monoxide alarm sounds, get to fresh air right away. Call emergency services. You may have carbon monoxide poisoning.

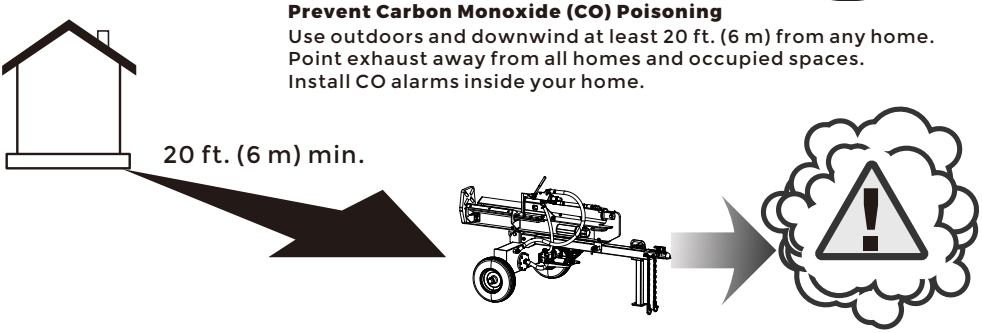
**Carbon Monoxide Alarm(s)**

Install carbon monoxide alarms inside your home. Without working carbon monoxide alarms, you will not realize you are getting sick and dying from carbon monoxide poisoning.



**Prevent Carbon Monoxide (CO) Poisoning**

Use outdoors and downwind at least 20 ft. (6 m) from any home.
Point exhaust away from all homes and occupied spaces.
Install CO alarms inside your home.

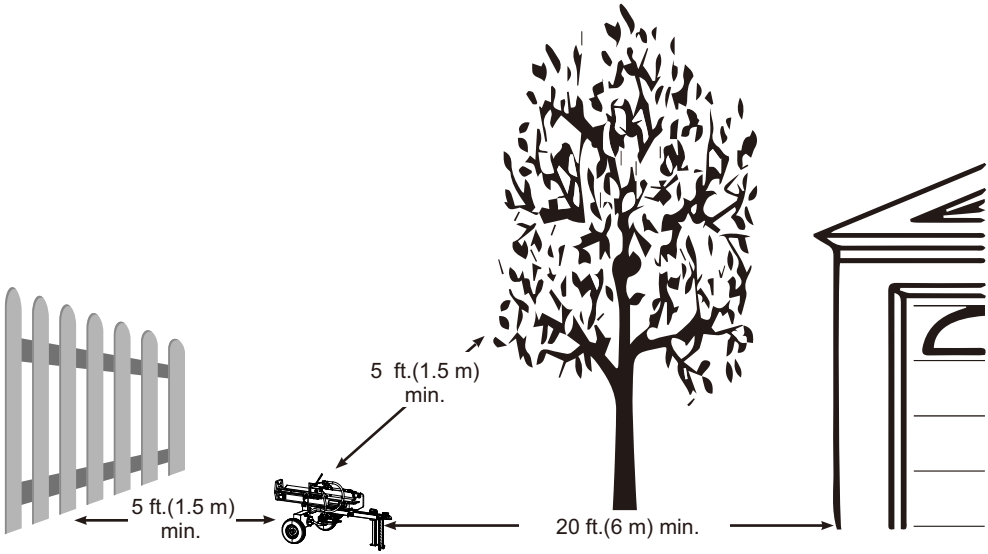


## Reduce Risk of Fire



**WARNING!** Exhaust heat/gases could ignite combustibles, structures or damage fuel tank causing a fire, resulting in death or serious injury.

- Keep log splitter at least 5 ft. (1.5 m) from any structure, trees or vegetation over 12 in. (30 cm) in height.
- Select an outdoor site that is dry and protected from the weather. Do not move log splitter indoors to protect it from the weather.
- Do not locate the log splitter under a deck or other similar structure that may confine heat and airflow.

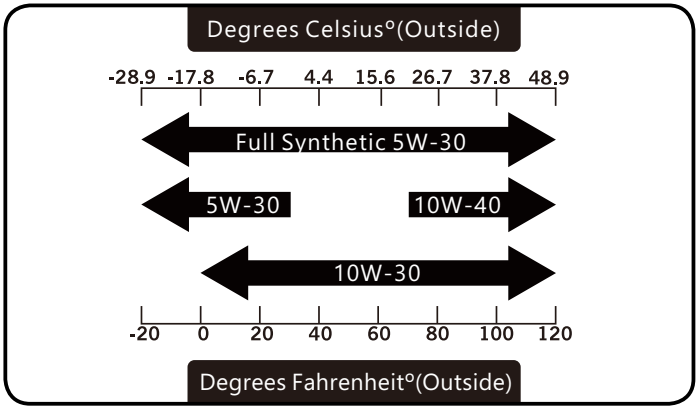


# 2. Oil and Gasoline

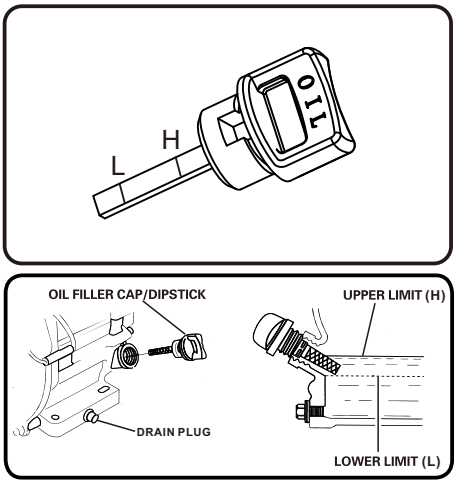
## Add Engine Oil

We recommend using SAE 10W-30 API SJ or higher oil for best performance. Do not use special additives. Ambient temperature determines the proper oil viscosity for the engine. Use the chart to select the proper oil for the outdoor temperature range expected.

***NOTICE*** Do not attempt to crank or start the engine before it has been properly filled with the recommended type and amount of oil. Damage due to operation with no oil will void your warranty.




1.Place log splitter on a flat, level surface.
2.Clean area around oil fill and remove yellow oil fill cap/dipstick.
3.Wipe dipstick clean.



4. Using oil funnel, slowly pour contents of provided oil bottle into oil fill opening until oil reaches upper limit "H" mark on the dipstick. Be careful not to overfill. Overfilling could cause engine starting problems or engine damage.

5.Replace oil fill cap/dipstick and fully tighten.

6.Oil level should be checked prior to each use or at least every 8 hours of operation. Keep oil level maintained.

## Low Oil Shutdown

The log splitter is equipped with a low oil shutdown. If the oil level drops below the minimum required level, a sensor will activate an internal switch stopping the engine. If the engine shuts off and the oil level is within specifications, check to see if log splitter is sitting at an angle. Place log splitter on an even surface to correct this. If engine fails to start, the oil level may not be high enough to deactivate the internal low oil level switch. Make sure the sump is completely full of oil to the upper limit (H). Do not operate engine until oil level issue is corrected. Contact FIRMAN customer service.

## Add Gasoline



**WARNING!** Fuel and its vapors are extremely flammable which could cause burns or fire resulting in death or serious injury.

- Turn engine OFF and let it cool at least 2 minutes before removing fuel cap.
- Do Not refuel or move log splitter when engine is running.
- Move log splitter outdoors prior to adding or draining fuel.
- Keep fuel away from any ignition sources.
- Do not overfill tank, allow space for fuel expansion.
- If any fuel spills, wait until it evaporates before starting engine.
- Check and replace fuel lines, tank, cap, and fittings prior to each use if any damage or leaks are found.

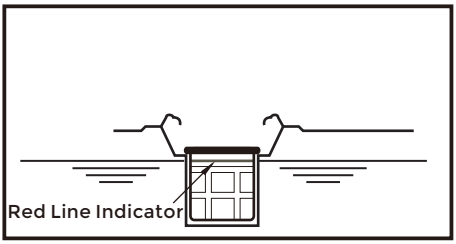
Fuel must meet these requirements:

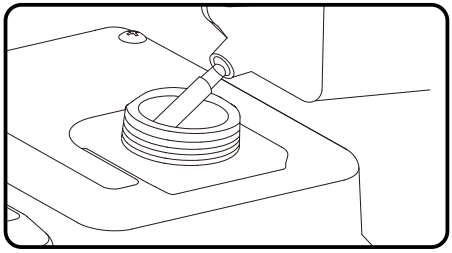
- Clean, fresh, unleaded gasoline with a minimum of 87 octane.
- For high altitude use, see Operation at High Altitude.
- Gasoline with no more than 10% ethanol is acceptable.



***NOTICE*** Do not mix oil in gasoline or modify engine to run on alternate fuels not described in this manual. Use of unapproved fuels could damage engine and will not be covered under warranty.

1. Clean area around fuel fill cap, remove cap.
2. Slowly add unleaded fuel to fuel tank. Be careful not to fill above the RED fuel level indicator. This allows adequate space for fuel expansion.



3. Install fuel cap and let any spilled fuel evaporate before starting engine.

## Operation at High Altitude

At altitudes over 5,000 feet (1524 meters), a minimum 85 octane gasoline is acceptable. Engine power will be reduced approximately 3.5% for every 1000 feet (305 m) of elevation above sea level. High altitude may cause hard starting, increased fuel consumption and spark plug fouling. To operate at high altitudes FIRMAN can provide a high altitude carburetor main jet. The alternative main jet and installation instructions can be obtained by contacting Customer Support.

| | 208cc | Altitude |
|---|---|---|
| Altitude main jet 1 | 346713001 | 3000-6000Feet (914-1828 m) |
| Altitude main jet 2 | 346713002 | 6000-8000Feet (1828 - 2438 m) |

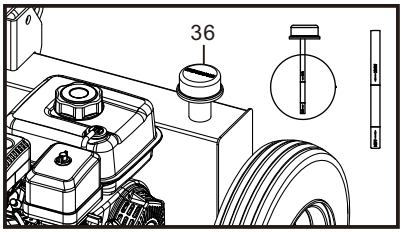
***NOTICE*** Operation using an alternative main jet at elevations lower than the recommended minimum altitude can damage the engine. For operation at lower elevations, the standard main jet supplied must be used. Operating the engine with the wrong main jet may increase exhaust emissions, fuel consumption and reduce performance.

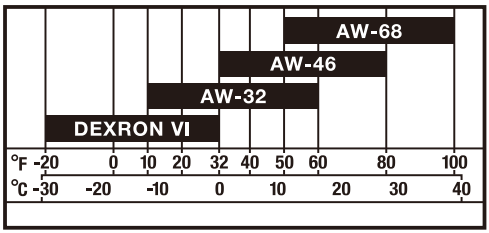
## Operation at High Ambient conditions

Your FIRMAN Power Equipment product is designed and rated for continuous operation at ambient temperatures up to 104°F (40°C). The log splitter may be operated at temperatures ranging from 5°F(-15°C) to 122°F(50°C) for short periods. If the log splitter is exposed to temperatures outside this range during storage, the log splitter should be brought back within this range before operation. When operated above 77°F(25°C) there may be a decrease in power. Log splitter cycle time and ram force are subject to and limited by such factors as ambient temperature, altitude, engine conditions etc.

## Add Hydraulic Oil

1.Make sure the log splitter is on a flat, level surface.
2.Remove vent cap (36) from the hydraulic oil tank.
3. Add 4.75 gal. (18 L) of hydraulic oil. AW32, AW46 & universal hydraulic oil are all acceptable types of fluid. Automatic transmission fluid can be used when operating in temperatures below 32°F (0°C).
4. Reinstall vent cap (36)
5.Start engine and use the control valve handle to extend and retract wedge several times to remove air from the lines.
6. Remove the vent cap and confirm that the hydraulic oil level is at the upper-middle position on the dipstick. An additional 0.5 gal. (1.9 L) of hydraulic fluid can be added. Do Not overfill.
7.Check oil level daily and add as needed.




**WARNING!** Failure to follow these instructions could result in death or serious injury.

- DO NOT remove the hydraulic oil vent cap (36) when the engine is running or oil is hot. Hot oil can escape causing severe burns. Always allow the log splitter to cool completely before removing the hydraulic oil vent cap.
- High fluid pressure and temperatures are created in the hydraulic log splitter. Hydraulic fluid will escape through a pin-size hole opening and can puncture skin and cause severe blood poisoning.
- Inspect hydraulic system regularly for possible leaks. Never check for leaks with your hand while the system is pressurized. Seek medical attention immediately if injured by escaping fluid.
- Make sure all fittings are tight and secure before applying pressure. Relieve system pressure before servicing.
- Make sure the hydraulic hoses do not touch any hot surfaces or cutting areas.
- Hoses need to be positioned were they are clear from the engine and cutting wedge. To avoid death or serious injury always inspect the hoses before operating the log splitter.

## Before Each Use Inspect the Log Splitter



WARNING! Before operating or using the log splitter, read and follow the instructions below and all safety information. Failure to follow these instructions could result in death or serious injury.

- ALWAYS use the log splitter for its intended use.
- ONLY use the log splitter to split wood logs, length wise with the grain.
- NEVER modify, alter or change the log splitter in any way, modifications will void the warranty.
- NEVER attach a rope, cable or other device to the control lever on the log splitter.
- Only operate the log splitter in daylight or good artificial light.
- NEVER leave the log splitter unattended while the engine is running.
- DO NOT change the splitting position with the engine running. Contact with the muffler can cause serious burns.
- ALWAYS make sure the beam is in the locked position when splitting in the horizontal or vertical orientation.
- DO NOT let the beam drop as it could crush fingers or cause damage to the log splitter.
- NEVER operate or let anyone else operate, the log splitter while under the influence of alcohol, drugs, or medication.

1. Check the hydraulic oil level and visually inspect all hoses, attachments and cylinder for loose fittings, leaks, cracks, fraying or other damage.
2. DO NOT operate the log splitter if there is any indication of damage.
3. Inspect the engine and make sure the oil level is correct before operating. Clean and Inspect the spark arrestor regularly (follow spark arrestor maintenance schedule).
4. The tires need to be fully inflated and in good condition. Reference the tire sidewall for recommended tire pressure.

**WARNING!** Before towing the log splitter, read and follow the instructions below and all safety information. Failure to follow these instructions could result in death or serious injury.

- DO NOT tow log splitter at night or in low-visibility conditions, including fog,rain, snow,or poor lighting.
- Making sure the Log Splitter is securely attached to the vehicle is the responsibility of the owner/operator.
- Failure to securely attach the Log Splitter can cause loss of control of the vehicle or the log splitter being separated from the towing vehicle.
- Move the fuel shutoff to “OFF” before towing the log splitter.
- DO NOT over inflate tires. Serious injury can result if tires fail.
- DO NOT tow the log splitter if the tires are worn or will not hold air.
- DO NOT exceed the maximum 45 MPH (72 KM/H) towing speed and check local, state, and federal requirements before towing on any public road.
- Always use safety chains. Secure and lock the log splitter to the vehicle hitch before moving.
- Drive safely. Be aware of the added length of the log splitter. When backing up, using a spotter outside the vehicle is recommended.
- Never ride or transport cargo on the log splitter.
- Turn off the vehicle before leaving the log splitter unattended.
- Block the log splitter wheels to prevent unintended movement.
- ALWAYS disconnect your log splitter from the towing vehicle before operating it.
- Do not tow the log splitter at night or in low visibility.

## Transporting the Log Splitter

1. Lower the beam to its horizontal position. Make certain the beam is locked securely with the horizontal beam pin.
2. Rotate the tongue stand to the horizontal position for transportation.
a) Disengage the tongue stand pin .
b) With the help of another person, support the tongue and pivot the tongue stand up to the transporting position.
c) Verify that the tongue stand pull pin is engaged in the tongue and will not rotate down inadvertently during towing.
3. Pull the Latch Assembly on the Receiver up and into the open position. Position the Receiver of the Log Splitter over and onto the tow vehicle's 2" (51 mm) tow ball.
4. Close the Latch Assembly on the Receiver to lock it onto the Tow Ball. Attach the towing Safety Chains (81) to the tow vehicle ensuring there is enough slack for turning.

***NOTICE*** When attaching the Safety Chains, Attach the left chain to the right anchor of the tow vehicle and the right chain to the left anchor of the tow vehicle so that that the Safety Chains cross each other under the Ball Hitch.

When you place the receiver onto the ball and lock into place, the receiver should not have vertical movement. There should be resistance to the latch assembly when locking.

5. Insert a receiver Locking Pin, not provided, into the hole in the Latch Assembly.

## Changing Beam from Horizontal to Vertical Orientation

When logs are too heavy to lift, the log splitter beam can be changed to the vertical orientation. Always allow the log splitter to cool completely before changing from horizontal to vertical orientation.

To change from horizontal to vertical orientation:

1. Disengage horizontal beam pin that locks the beam to the tongue (figure A).
2. Standing alongside the hydraulic cylinder, (opposite side from the engine) firmly grasp the handle on the beam and lift upward while pushing the beam back until upright. Once the beam is upright, lock the beam (figure B).

***NOTICE*** The beam should only be in the vertical position on flat ground. Uneven ground can cause the beam to be unstable.

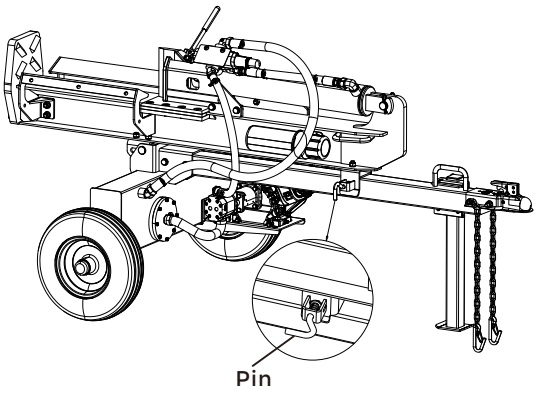



Figure A

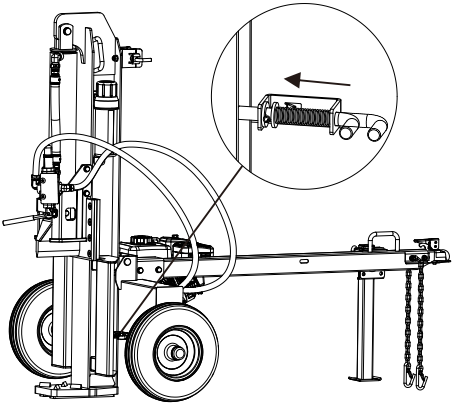


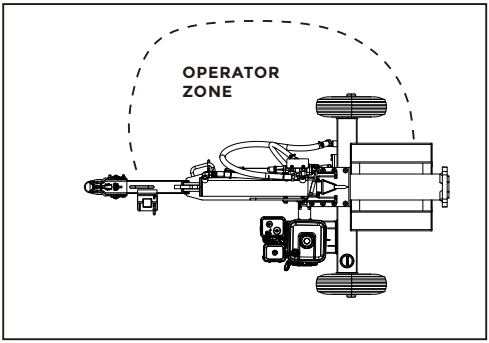
Figure B

To change from vertical to horizontal orientation, reverse steps.

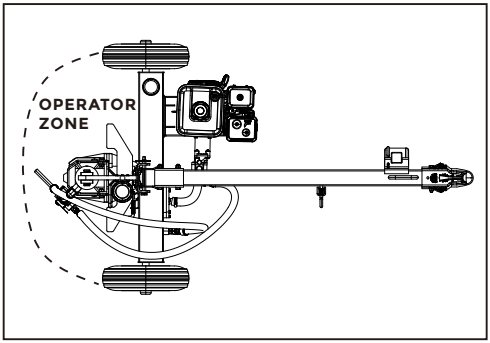
## Starting the Engine

The log splitter must have at least 5 feet of clearance from combustible material. The log splitter needs to be on a dry and level surface with good footing. Do not work in mud, ice, brush or snow. When using the log splitter the operator zone must be maintained at all times.

Only operate log splitter from operator zone shown below.

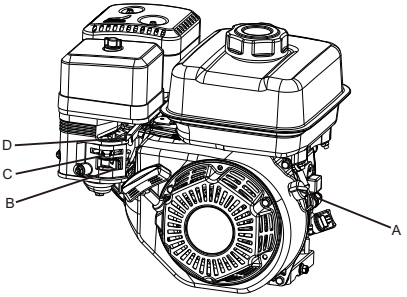



Horizontal

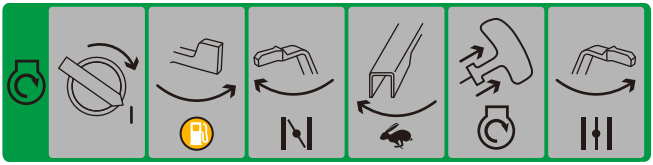



Vertical

1. Before using the log splitter, check for loose or missing parts and for any damage which may have occurred during shipment. Ensure spark plug, muffler, fuel cap, and air cleaner are all in place.
2. Move log splitter outdoors to safe operating location downwind and at least 20 feet from any occupied spaces.




3. Rotate engine switch (A) to “ON”(I) position.
4. Move the fuel valve (B) to the “ON” position.
5. Move the choke lever (C) to the “Choke” position.
6. Move the throttle lever (D) to the “Fast” position.
7. Pull the starter cord slowly until resistance is felt and then pull rapidly.
8. As engine warms up, move the choke lever (C) to “Run” position.



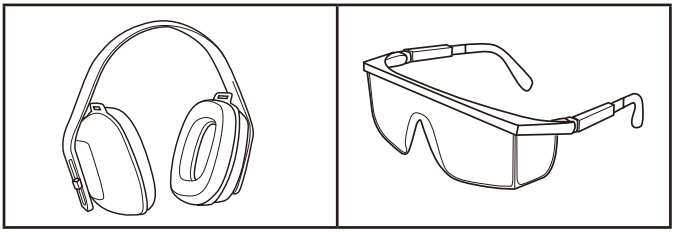
## Stopping the Engine

1. Rotate the engine switch(A) to the"OFF" position.
2. Move the fuel valve(B) to the "OFF" position.

Always ensure that the Fuel Valve and the Engine Switch are in the “OFF” position when the engine is not in use.

## Log Splitter Operation

1. ALWAYS wear eye and ear protection, safety shoes or heavy boots, gloves, and protective clothing.



2. Block tires and ensure support leg is secure to prevent unintended movement of the log splitter during operation.
3. Set log splitter in either the horizontal or vertical position.

***NOTICE*** HORIZONTAL position is used for lighter logs that can easily be loaded onto the beam. VERTICAL position is used for light logs as well as heavy logs that are difficult to load onto the beam. Back injury can result from lifting logs onto the log splitter if proper lifting techniques are not used.

4. Before use, verify that the beam is locked in the horizontal or vertical position. The pin on the beam lock must be engaged with the tongue to prevent the beam from inadvertently rotating.
5. Load a log onto the beam against the foot plate (MAX LOG LENGTH – 20.5 in.[52 cm]).
6. Make sure all limbs are clear of crush zones.
7. Push the control valve handle forward (towards the foot plate) to split the log.
8. Push the auto control valve handle backward to return the wedge to its original position.
9. Clear the split wood from the operator zone.

- If the oil is foamy that means there is air mixed in with the oil. Not enough fluid in the tank and the splitting will not be consistent, loss of splitting power can result.
- If a log gets stuck, embedded or will not split completely, push the control handle in the reverse direction and allow the log splitter to strip the log from the wedge.
- ALWAYS keep hands clear of the log and wedge while it is retracting.
- The hydraulic cylinder stroke is designed so the wedge stops approximately 1.2 in.(3.0 cm) from the foot plate.

## MAINTENANCE SCHEDULE

Follow the service intervals indicated in the following maintenance schedule.
Service your log splitter more frequently when operating in adverse conditions.
Contact our Technical Support Team at 1-844-347-6261 to locate the nearest FIRMAN service dealer for your log splitter or engine maintenance needs.

**EVERY 8 HOURS OR DAILY**

- Check engine and hydraulic oil levels
- Clean around air intake and muffler
- Remove debris from the beam surface. Apply a thin layer of grease or oil to the beam surface to improve wedge movement and reduce surface rusting.

**FIRST 25 HOURS**

- Change engine oil

**FIRST 50 HOURS**

- Change the hydraulic oil and oil filter

**EVERY 50 HOURS OR EVERY YEAR**

- Clean air filter foam element
- Change engine oil if operating under heavy load or in hot environments

**EVERY 100 HOURS OR EVERY YEAR**

- Replace air filter
- Change engine oil
- Clean/adjust spark plug
- Check/adjust valve clearance*
- Clean spark arrestor
- Clean fuel tank and filter*
- Change hydraulic oil
- Change hydraulic oil filter

**EVERY 250 HOURS**

- Clean combustion chamber*
- Inspect wheel bearings and repack bearing grease as needed.

**EVERY 3 YEARS**

- Replace fuel line*

* To be performed by knowledgeable/experienced owner or by authorized service center.

## General Recommendations

Regular maintenance will improve the performance and extend the life of the log splitter. See any authorized dealer for service.
The log splitter's warranty does not cover items that have been subjected to operator abuse or negligence. To receive full value from the warranty, the operator must maintain the log splitter as instructed in this manual.
Some adjustments will need to be made periodically to properly maintain your log splitter.
All service and adjustments should be made at least once every year. Follow the requirements in the maintenance schedule above.

***NOTICE*** Once a year you should clean or replace the spark plug and replace the air filter. New spark plug and clean air filter assure proper fuel-air mixture and help your engine run at peak performance and last longer.

# ENGINE MAINTENANCE

To prevent accidental starting, remove and ground spark plug wire before performing any service.

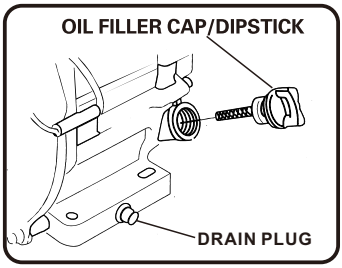
## Change Engine Oil

Change engine oil every 100 hours. (for a new engine, change oil after 25 hours.)
If you are using your log splitter under extremely dirty or dusty conditions, or in extremely hot weather change the oil more often.

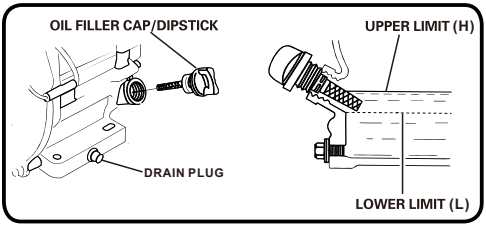
CAUTION! Avoid prolonged or repeated skin contact with used motor oil. Used motor oil has been shown to cause skin cancer in certain laboratory animals. Thoroughly wash exposed areas with soap and water.

KEEP OUT OF REACH OF CHILDREN. DON'T POLLUTE. CONSERVE RESOURCES. RETURN USED OIL TO COLLECTION CENTERS.

(a) On a level surface drain oil into a suitable container by removing the drain plug and the oil filler cap while the engine is warm.



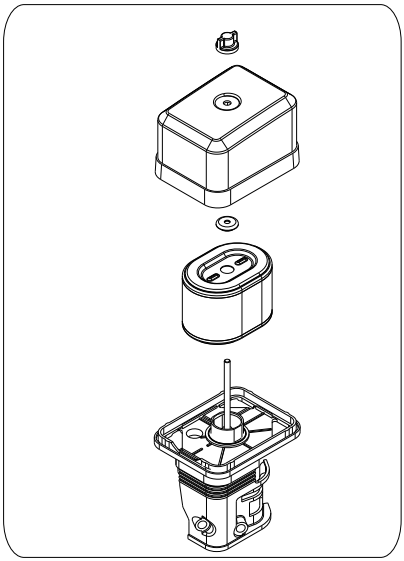

(b) Reinstall the drain plug and fill the engine with oil until it reaches the HIGH(H) level on the oil filler dipstick.



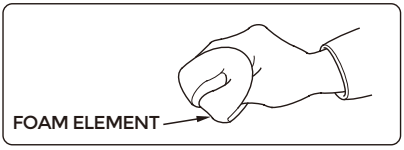

***NOTICE*** We recommend using SAE 10W-30 API SJ oil for best performance. Other high-quality detergent oils (API SJ or higher) are acceptable. See ***Oil and Gasoline***

## Air Filter Maintenance

(a) Unscrew wing nut to remove the air filter cover.
(b)Remove the foam element from the air filter and wash in liquid detergent and water. Squeeze dry in a clean cloth.



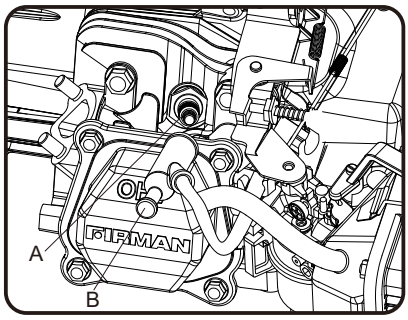
( c) Saturate foam element with clean engine oil and squeeze in a clean cloth to remove excess oil.




(d) Reassemble the element. Reattach the air filter cover and tighten wing nut.

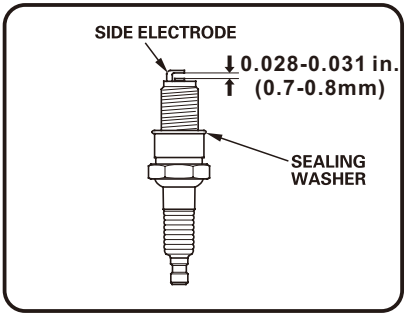
## Spark Plug Maintenance

Changing the spark plug will help your engine start easier and run at peak performance.
(a) Remove the spark plug boot.
(b) Remove spark plug using provided wrench.




A- Spark plug
B- Spark plug boot

( c) Inspect spark plug for damage and clean with a wire brush before reinstalling. Replace if damaged.
(d) Adjust the electrode gap to 0.028 - 0.031 in. ( 0.7 - 0.8 mm).
(e) Seat spark plug in position and thread by hand to prevent cross threading.
(f) Tighten plug with provided wrench and put the spark plug boot back on spark plug.




SPARK PLUG: TORCH F6RTC or equivalent

## Maintenance Valve Clearance

Intake: 0.004 – 0.006 in. (0.10 – 0.15 mm)
Exhaust: 0.004 – 0.006 in. (0.10 – 0.15 mm)

## Muffler and Spark Arrester

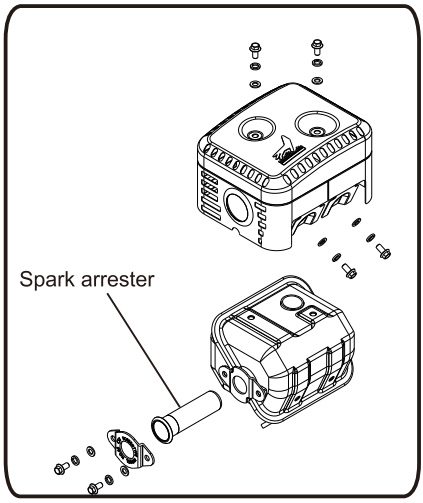


**WARNING!** Contact with muffler area could cause burns resulting in serious injury.

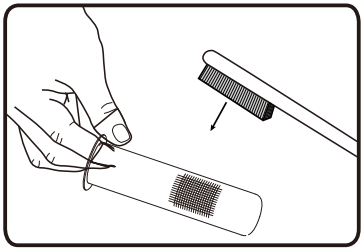
- Do not touch hot parts.
- It is a violation of California Public Resource Code, Section 4442, to use or operate the engine on any forest-covered, brush-covered, or grass-covered land unless the exhaust system is equipped with a spark arrester, as defined in Section 4442, maintained in effective working order. Other states or federal jurisdictions may have similar laws, reference Federal Regulation 36 CFR Part 261.52.

### Inspect Muffler and Spark Arrester

1.Inspect the muffler for cracks, corrosion, or other damage.
2.Remove the screws securing the spark arrester in place and the remove it from muffler.




3. Carefully remove the carbon deposits from the spark arrester screen with a wire brush.



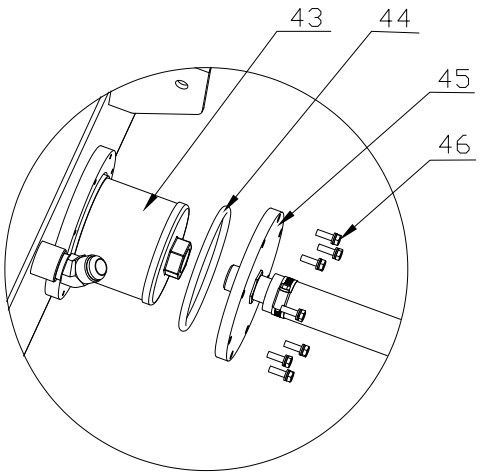
4. Replace the spark arrester if it is damaged. If replacement parts are required, make sure to use only FIRMAN original equipment replacement parts.
5. Position the spark arrester in the muffler and attach with the screws.
***NOTICE*** Failure to clean or replace spark arrester may result in decreased engine performance.

### Changing the Hydraulic Oil and Oil Filter

WARNING! Always shut off the engine, disconnect the spark plug, and relieve system pressure before cleaning, adjusting, or servicing the log splitter. Relieve system pressure by moving control valve handle back and forth several times.

Change the oil and filter after the first 50 hours of use. Then every 100 hours or annually.

1. Confirm that the piston rod of the hydraulic cylinder is fully retracted into the cylinder and the engine is in the "off" state; close the fuel valve to prevent fuel leakage or accidental startup; move the control valve handle back and forth several times to release the accumulated pressure in the system; place a container with a capacity of not less than 4.75 gallons (18 L) under the hydraulic oil tank.
2. Locate the oil drain plug (41) at the bottom of the hydraulic oil tank, unscrew and remove it slowly, and wait for the oil to drain completely into the container. During the drainage process, observe the oil flow to avoid any spillage.
3. Unscrew the M6 screw (46) that fixes the filter flange weldment (45), carefully remove the old hydraulic oil filter (43) and O-ring (44) from the filter flange (45), and properly dispose of the old parts in accordance with regulations to avoid pollution.
4. Install the new filter and new O-ring on the filter flange (45) in the correct direction; use a 10mm wrench to tighten the M6 screw (46) to a torque of 7.38 lbf·ft(10 N.m), avoiding component damage due to improper torque.
5. Wrap 2-3 turns of new Teflon tape around oil tank drain plug (41) and reinstall. See OPERATION add hydraulic oil for hydraulic oil specifications and filling instructions.



## Long Term Storage

If the log splitter will not be used for more than 30 days, prepare it for long term storage as follows:
1. Retract the wedge to protect the rod from corrosion.The rod should be retracted after every use.
2. Never store the machine with fuel in the fuel tank inside a building where ignition sources are present.
3. Drain all fuel completely from the tank, fuel line and carburetor to prevent gum from forming. If log splitter is stored with fuel in the fuel tank, we recommend using a gas stabilizer to prevent sediment from gumming up the carburetor. If there is dirt or moisture in the fuel, drain the fuel tank. Completely fill the tank with fresh, unleaded gas and add the appropriate amount of fuel stabilizer. Run the engine for a short time to allow the stabilizer to circulate.
4. Before storing the log splitter, stop the engine, wait at least five minutes to allow all parts to cool.
5. Change the engine oil.
6. Remove the spark plug and pour about ½ ounce (14.8 ml) of oil into the cylinder. Pull the engine recoil slowly to distribute the oil and lubricate the cylinder. Reinstall the spark plug.
***NOTICE*** The use of a pressure washer or a garden hose to clean the log splitter is not recommended. The use of water will result in corrosion, shortening life and reducing serviceability.
7.Check the wedge slide for nicks and wear. Sharpen if needed.
8.Apply a rust preventative (oil film or equivalent) to any bare metal areas on the wedge slide and on top of the beam.
9.Using a soft bristle brush, clean the exterior of the unit removing all dirt, grease, or other foreign material. Remove dirt and debris from the cylinder head cooling fins and muffler area.
10.To prevent rust, touch up painted surfaces if scratched or chipped.
11.Be sure all hoses, nuts, bolts, and screws are securely fastened.
12.Store the log splitter in a dry, protected place. If it is necessary to store outside, cover it with a tarp of similar protective material (especially the Engine). Avoid storage near corrosive materials.

| Problem | Possible cause | Solution |
|---|---|---|
| Engine does not start | Engine switch in “OFF” position; Engine fuel shut-off valve closed | Set switch in “ON” position. Open fuel valve. |
| | Engine is out of fuel | Add fuel (High octane, low ethanol) |
| | Unit under load during start-up | Cycle valve handle (move back and forth) to remove load; set valve to neutral position. |
| | Faulty spark plug; spark plug disconnected | Check the spark plug. |
| Engine starts but runs roughly | Oil level is low | Add oil |
| | Choke in wrong position | Adjust choke |
| | Spark plug wire loose | Attach spark-plug wire securely |
| Engine stops suddenly during operation | Engine is out of fuel | Add fuel |
| | Oil level is low - oil sensor may shutoff engine | Fill crank case to level indicated; Set up log splitter in flat, level surface. |
| | Valve bypass pressure set too high | Adjust valve bypass setting |
| Engine power level low; Engine overheats | Insufficient air intake | Check air filter; if needed clean or replace air filter. Check for blockage in air intake system. |
| Engine runs as if under load | Faulty pump or valve | Hydraulic fluid is not flowing smoothly through the system; check components |
| Ram/wedge moves slowly or unevenly | Air in the hydraulic system | Purge air by extending and retracting the wedge several times until the motion is smooth. |
| | Debris lodged in beam guides | Clear debris from beam. |
| | Low hydraulic fluid | Check oil level; add oil as needed. |
| | Pump stuck in 2nd stage | Contact customer service. |
| Oil leaking from fittings or hoses | Loose hydraulic fitting | Inspect fitting and install correctly. |
| | Faulty O-ring | Check O-ring fittings, Replace faulty or missing O-rings |
| Oil leaking from front of cylinder | Faulty cylinder seals | Recondition cylinder |
| | Scored or bent cylinder rod | Contact customer service |
| Wedge will not extend or retract | Control valve is faulty | Contact customer service. |
| | Hydraulic pump is faulty | Contact customer service. |
| | Low hydraulic oil | Check oil level; add oil as needed. |
| | Hydraulic cylinder is faulty | Replace cylinder seals |
| Wedge extends and retracts but will not build pressure to split wood | Faulty cylinder seal;<br>Key has fallen out of pump or engine | Check drive keys in pump and engine; recondition cylinder |
| Wedge does not auto-return | Low hydraulic fluid | Check oil level; add oil as needed. |
| | Faulty control valve | Contact customer service. |
| Wedge extends but will not return | Faulty cylinder | Contact customer service. |
| Excessive bouncing while towing | Tires under-inflated | Inflate tires to pressure indicated on sidewalls. |

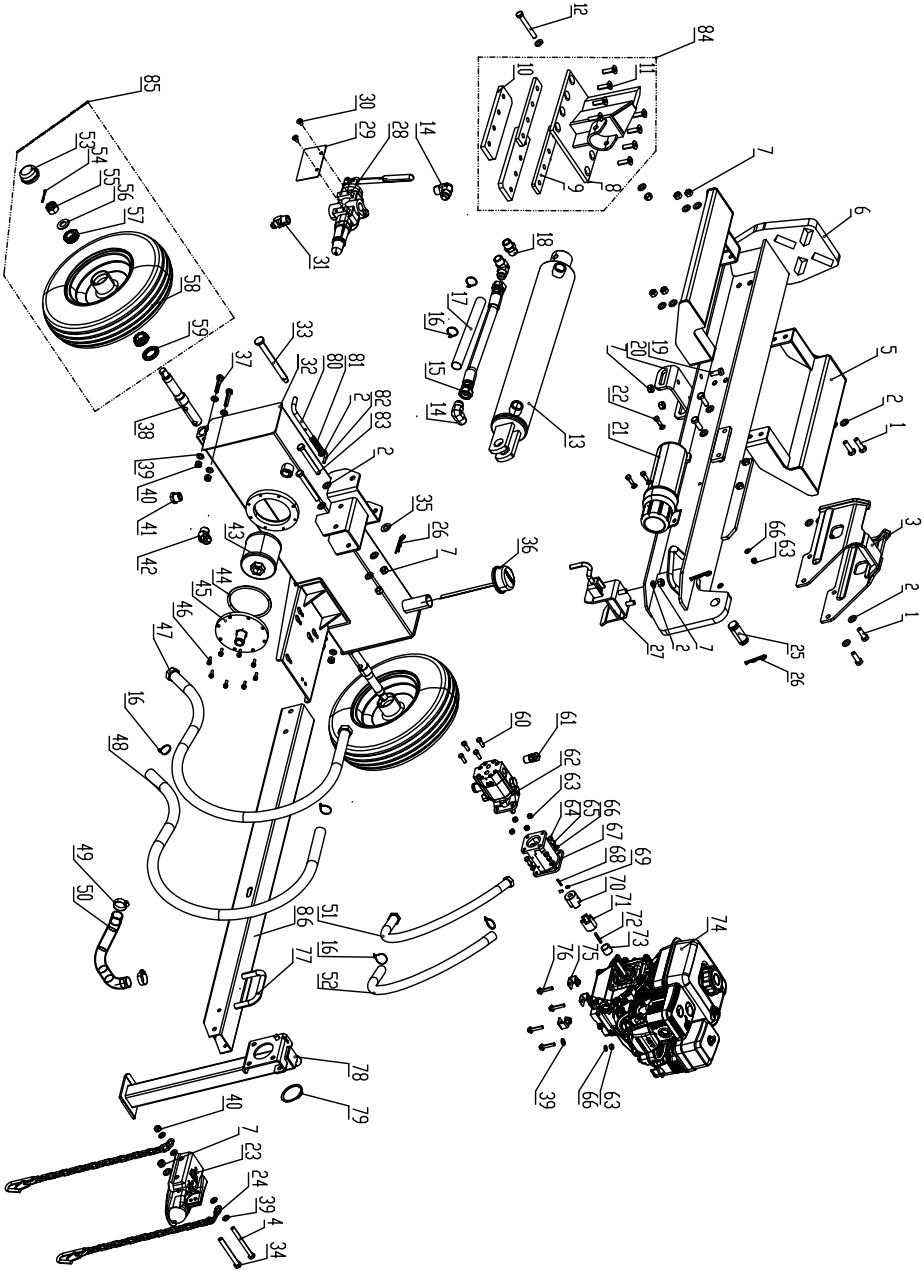
**For all other issues, contact authorized dealer or Firman customer service.**

## SPECIFICATIONS

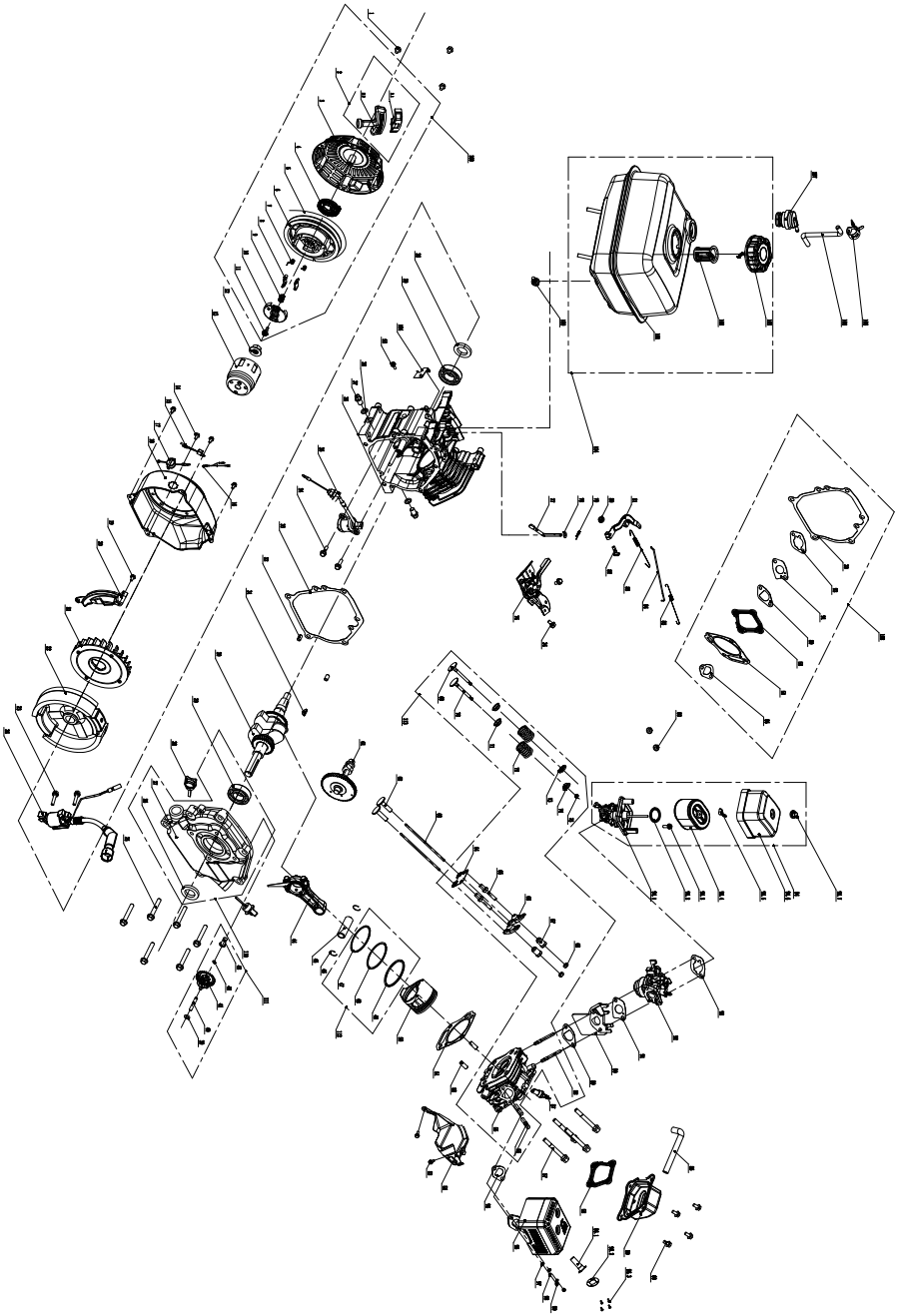
| Model | GS2206 |
|---|---|
| Ram Force | 22 Ton |
| Cycle Time | 6.6 seconds |
| Hydraulic Tank Capacity | 5 gal (19 L) |
| Max Log Length | 20.5 in. (52 cm) |
| Coupler Ball Size | 2 in. (5.1 cm) |
| Tire Size | 16 in. (40.6 cm) |
| Max towing speed | 45 MPH (72 KM/H) |
| Cylinder size | 3.75 in. (9.5 cm ) |
| Gear Pump | 2-stage |
| Control Valve | Detent (auto-return) |
| Net Weight | 454 lb. (206 kg) |
| Height | 40.6 in. (103 cm) |
| Width | 46.2 in. (117.3 cm) |
| Length | 83 in. (210.8 cm) |
| **Engine** | |
| Model | SPE210 |
| Displacement | 208 cc |
| Type | 4-Stroke OHV |
| Start Type | Recoil |
| Oil Capacity | 20.3 fl. oz (600ml) |
| Gasoline Capacity | 0.9 gal (3.2L) |

# PARTS DIAGRAM AND PART LIST

## GS2206 PARTS DIAGRAM



## 208cc ENGINE PARTS DIAGRAM



## GS2206 LOG SPLITTER

| NO. | Part Number | Description | Qty. |
|---|---|---|---|
| 1 | 710717103 | Bolt M12×35 | 6 |
| 2 | 710717007 | Washer Ø12 | 23 |
| 3 | 710718290 | Weldment, Stripper Cradle | 1 |
| 4 | 710718077 | Bolt M10×115 | 1 |
| 5 | 710718286 | Log Cradle | 2 |
| 6 | 710718241 | Beam | 1 |
| 7 | 710717008 | Lock Nut M12 | 12 |
| 8 | 710718253 | Weldment, Wedge, Medium | 1 |
| 9 | 710718263 | Plate, Wedge Spacer | 2 |
| 10 | 710718262 | Plate, Wedge Lower Mount | 2 |
| 11 | 710718000 | Bolt M12×40 | 8 |
| 12 | 710718009 | Bolt M12×90 | 1 |
| 13 | 710418003 | Hydraulic Cylinder | 1 |
| 14 | 710718201 | Hydraulic Fitting(3/4"NPT-3/4"JIC) | 3 |
| 15 | 710728001 | Hydraulic Pressure Hose | 1 |
| 16 | 710728016 | Cable Tie | 6 |
| 17 | 710728020 | Hydraulic Hose Sheath | 1 |
| 18 | 710717059 | Hydraulic Fitting(3/4"NPT-3/4"NPT) | 1 |
| 19 | 710718002 | Bolt M12×30 | 2 |
| 20 | 710718252 | Beam Pivot Bracket | 1 |
| 21 | 710728043 | Manual Canister | 1 |
| 22 | 710718003 | Bolt M8×25 | 3 |
| 23 | 710418001 | 2-in. Ball Coupler | 1 |
| 24 | 710717137 | Safety Chain with Hook | 2 |
| 25 | 710718284 | Hydraulic Cylinder Pin | 1 |
| 26 | 710717113 | Pin Clip | 3 |
| 27 | 710418026 | Beam Locking Assy. | 1 |
| 28 | 710418002 | Control Valve | 1 |
| 29 | 710717094 | Valve Instruction plate | 1 |
| 30 | 710718041 | Bolt M8×12 | 2 |
| 31 | 710718202 | Hydraulic Fitting(3/4"NPT-1/2"JIC) | 1 |
| 32 | 710718296 | Hydraulic Oil Tank | 1 |
| 33 | 710718317 | Beam Pin | 1 |
| 34 | 710718078 | Bolt M12×105 | 2 |
| 35 | 710718032 | Washer Ø16 | 1 |
| 36 | 710418032 | Vent Cap | 1 |
| 37 | 710718008 | Bolt M10×55 | 4 |
| 38 | 710718314 | Axle | 2 |
| 39 | 710717003 | Washer Ø10 | 13 |
| 40 | 710717075 | Lock Nut M10 | 5 |
| 41 | 710718013 | Tank Drain Plug | 1 |
| 42 | 710718205 | Hydraulic Fitting(3/4"NPT-3/4"JIC) | 1 |
| 43 | 710718362 | Suction Filter | 1 |
| 44 | 710728007 | O-Ring | 1 |
| 45 | 710718309 | Filter Mounting Plate | 1 |
| 46 | 710718014 | Bolt M6×20 | 8 |
| 47 | 710728003 | Hydraulic Return Hose | 1 |
| 48 | 710728002 | Hydraulic Hose Sheath | 1 |
| 49 | 710718033 | Clamp | 2 |
| 50 | 710728006 | Suction Hose | 1 |
| 51 | 710728004 | Hydraulic Pressure Hose | 1 |
| 52 | 710728005 | Hydraulic Hose Sheath | 1 |
| 53 | 710717024 | Axle Cap | 2 |
| 54 | 710717023 | Cotter Pin 4×36 | 2 |

| NO. | Part Number | Description | Qty. |
|---|---|---|---|
| 55 | 710718097 | Castle Nut M20×2.5 | 2 |
| 56 | 710717032 | Washer Ø20 | 2 |
| 57 | 710717025 | Wheel Bearing | 4 |
| 58 | 710727001 | Wheel | 2 |
| 59 | 710717026 | Grease Seal | 2 |
| 60 | 710717039 | Bolt M8× 30 | 4 |
| 61 | 710718207 | Hydraulic Fitting (1/2"NPT-1/2"JIC) | 1 |
| 62 | 710418000 | Pump | 1 |
| 63 | 710717044 | Lock Nut M8 | 8 |
| 64 | 710717041 | Bolt 5/16 in.-24×1 in. | 4 |
| 65 | 710717048 | Lock Washer Ø8 | 4 |
| 66 | 710717045 | Washer Ø8 | 11 |
| 67 | 710718221 | Pump Mount | 1 |
| 68 | 710717054 | Flat Key 3.2×3.2×25 | 1 |
| 69 | 710717053 | Set Screw M6×10 | 2 |
| 70 | 710718316 | Pump Coupler | 1 |
| 71 | 710717043 | Engine Coupler | 1 |
| 72 | 710717047 | Flat Key 4.78×4.78×35 | 1 |
| 73 | 710717046 | Engine Bushing | 1 |
| 74 | 710467002 | Engine | 1 |
| 75 | 710718224 | Engine Mounting Bracket | 3 |
| 76 | 710718006 | Bolt M8×40 | 4 |
| 77 | 710718230 | Tongue | 1 |
| 78 | 710418028 | Tongue Stand Assy. | 1 |
| 79 | 710717065 | Retaing Ring | 1 |
| 80 | 710718471 | Pull Pin, Vertical Beam Lock | 1 |
| 81 | 710718472 | Compression Spring, Vertical Pull Pin | 1 |
| 82 | 710717064 | Spring Pin, 6×35 | 1 |
| 83 | 710717133 | Bolt M12×110 | 2 |
| 84 | 710418029 | Wedge Assy. | 1 |
| 85 | 710418034 | Wheel Assy. | 1 |
| 86 | 710418049 | Complete Tongue Assy. | 1 |

## FIRMAN 208cc Engine

| NO. | Part Number | Description | Qty. |
|---|---|---|---|
| 1 | 336718308 | Flange. Bolt M6×8 | 3 |
| 2 | 302423001 | Grip,starter | 1 |
| 2.1 | 335725581 | Handle Croe | 1 |
| 2.2 | 335725582 | Recoil Starter Knob | 1 |
| 3 | 302467013 | Case Comp.,recoil Starter | 1 |
| 4 | 336723586 | Reciol Starter Spring | 1 |
| 5 | 336723587 | Cord | 1 |
| 6 | 336723588 | Pulley,recoil Starter | 1 |
| 7 | 336723589 | Spring,patchet | 2 |
| 8 | 336723590 | Patchet,starter | 2 |
| 9 | 336723592 | Clip Sprg.,pawl Guide | 1 |
| 10 | 336723591 | Pawl Guide | 1 |
| 11 | 336723593 | Screw,pawl Guide | 1 |
| 12 | 330713555 | Nut M14 | 1 |
| 13 | 302467002 | Pulley,starter | 1 |
| 14 | 336718302 | Bolt M6x12 | 4 |
| 15 | 312715031 | Diode Assy. | 1 |
| 16 | 302457001 | Harness Subassembly | 1 |
| 17 | 302767004 | Engie Switch | 1 |
| 18 | 710467003 | Engine Cover Assy. | 1 |
| 19 | 336723577 | Bolt M6×20 | 1 |
| 20 | 336723578 | Air Guide, Right Side | 1 |
| 21 | 302467001 | Cooling Fan | 1 |
| 22 | 710467004 | Flywheel Comp | 1 |
| 23 | 336718311 | Bolt | 2 |
| 24 | 710467005 | Ignition Coil | 1 |
| 25 | 336723514 | Flg. Bolt M8×32 | 6 |
| 26 | 336723513 | Seal, Oil | 2 |
| 27 | 302467005 | Crankcase Cover | 1 |
| 28 | 336723511 | Oil Dipstick Assy | 2 |
| 29 | 336723505 | Bearing 6205 | 2 |
| 30 | 302467006 | Crankshaft | 1 |
| 31 | 336723507 | Woodruff Key | 1 |
| 32 | 317723516 | Dawl Pin | 2 |
| 33 | 336723510 | Gasket, Crankcase | 1 |
| 34 | 336718301 | Bolt M6x12 | 4 |
| 35 | 340718300 | Sensor, Engine Oil | 1 |
| 36 | 710767001 | Crankcase | 1 |
| 37 | 330723536 | Bolt, Drain | 2 |
| 38 | 336723545 | Washer,drain Bolt | 2 |
| 39 | 336723595 | Inner Washer,gear | 1 |
| 40 | 336723594 | Gov.,gear Shaft | 1 |
| 41 | 336723596 | Gear, Governor | 1 |
| 42 | 336723597 | Clip, Govorner Gear | 1 |
| 43 | 336723598 | Bushing, Govorner Gear | 1 |
| 44 | 336723515 | Rod, Connecting | 1 |
| 45 | 336723517 | Pin, Piston | 1 |
| 46 | 336723516 | Clip, Piston Pin | 2 |
| 47 | 336723519 | Oil Ring | 1 |
| 48 | 336723520 | Piston Ring 2 | 1 |

| NO. | Part Number | Description | Qty. |
|---|---|---|---|
| 49 | 336723521 | Piston Ring 1 | 1 |
| 50 | 336723518 | Piston | 1 |
| 51 | 336723003 | Cylinder Head Gasket | 1 |
| 52 | 330723548 | Locating Pins | 2 |
| 53 | 336723522 | Flg. Bolt M6×8 | 3 |
| 54 | 336723523 | Air Guide Lower | 1 |
| 55 | 710467006 | Cylinder Head Assy. | 1 |
| 56 | 336723539 | Exhaust Valves Stud Bolt | 2 |
| 57 | 336723527 | Flg. Bolt M8×55 | 4 |
| 58 | 336723524 | Cylinder Head Cover Gasket | 1 |
| 59 | 336723525 | Cover Subassembly, Cylinder Head | 1 |
| 60 | 336723526 | Bolt M6×15 | 4 |
| 61 | 302467018 | Gear Assy, Governor | 1 |
| 62 | 340718301 | Tappet, Valve | 2 |
| 63 | 340718302 | Push Rod | 2 |
| 64 | 336723538 | Plate Subassembly, Lifter Stopper | 1 |
| 65 | 336723537 | Bolt, Valve Adjusting | 2 |
| 66 | 336723531 | Rocker, Valve | 2 |
| 67 | 336723529 | Nut Valve Adjusting | 2 |
| 68 | 336723528 | Nut, Valve Lock | 2 |
| 69 | 336723541 | Valve,in.take | 1 |
| 70 | 336723542 | Valve, Exhaust | 1 |
| 71 | 336723536 | Oil Seal,valve | 2 |
| 72 | 336723535 | Spring,valve | 2 |
| 73 | 336723533 | Retainer, Intake Valve | 1 |
| 74 | 340718303 | Retainer, Exhaust Valve | 1 |
| 75 | 336723532 | Rotator, Valve | 1 |
| 76 | 302767017 | Governor Assy. | 1 |
| 77 | 336723563 | Shaft, Governor Arm | 1 |
| 78 | 336723564 | Rocker Shim | 1 |
| 79 | 336713590 | Pin, Shaft | 1 |
| 80 | 336723555 | Nut M6 | 3 |
| 81 | 336723005 | Arm, Governor | 1 |
| 82 | 336723567 | Bolt,governor Arm | 1 |
| 83 | 336723568 | Spring,governor | 1 |
| 84 | 336723569 | Rod, Governor | 1 |
| 85 | 336723570 | Spring, Throttle Valve Returning | 1 |
| 86 | 312725016 | Breather Tube | 1 |
| 87 | 336723556 | Spark Plug | 1 |
| 88 | 302467009 | Stud, Intake | 2 |
| 89 | 336723550 | Gasket, Inlet | 1 |
| 90 | 336723551 | Plate, Carburetor Insulator | 1 |
| 91 | 336723004 | Gasket, Carburetor | 1 |
| 92 | 710467007 | Carburetor | 1 |
| 93 | 302767019 | Air Cleaner Gasket | 1 |
| 94 | 302467021 | Air Cleaner | 1 |
| 94.1 | 302467022 | Air Cleaner Base | 1 |
| 94.2 | 302767022 | Gasket | 1 |
| 94.3 | 336723577 | Bolt M6×20 | 1 |
| 94.4 | 302767023 | Eement Assy. | 1 |

| NO. | Part Number | Description | Qty. |
|---|---|---|---|
| 94.5 | 357713550 | Wing Nut M6 | 1 |
| 94.6 | 302467023 | Air Cleaner Cover | 1 |
| 94.7 | 302767025 | Nut | 1 |
| 95 | 302467016 | Muffler Gasket | 1 |
| 96 | 710467008 | Muffler Assy. | 1 |
| 96.1 | 710767002 | Arrester,spark | 1 |
| 96.2 | 710767003 | Holder,spark Arrester | 1 |
| 96.3 | 336718359 | Screw St4.2×9.5 | 4 |
| 97 | 336713533 | Flat Washer Ø8 | 2 |
| 98 | 336713509 | Lock Washer Ø8 | 2 |
| 99 | 336713534 | Nut M8 | 2 |
| 100 | 336713807 | Tank Fitting With Filter | 1 |
| 101 | 302467024 | Fuel Tank | 1 |
| 102 | 360725512 | Fuel Filter,wire Mesh | 1 |
| 103 | 302467029 | Fuel Cap | 1 |
| 104 | 336723571 | Diode Bracket | 1 |
| 105 | 302467025 | Pipe | 1 |
| 106 | 317713553 | Clamp Ø8×6 | 2 |
| 107 | 710467009 | Flip Valve Assembly | 1 |
| 108 | 302467036 | Gasket Assy. | 1 |
| 109 | 710467010 | Starting Cover Assy. | 1 |
| 110 | 302467042 | Crankcase Assy. | 1 |
| 111 | 302467039 | Governing Gear Set | 1 |
| 112 | 336423504 | Ring Set Assy. | 1 |
| 113 | 302467037 | Cylinder Head Assy. | 1 |
| 114 | 710467011 | Fuel Tank Assy. | 1 |

SERVICE INFORMATION CONTACT FIRMAN PRODUCT SERVICE DEPARTMENT AT 1-844-347-6261 or at www.firmanpowerequipment.com to obtain warranty service information or to order replacement parts or accessories.

## HOW TO ORDER REPLACEMENT PARTS

Even quality-built equipment such as this log splitter may need occasional replacement parts to maintain it in good condition over the years. To order replacement parts, please give the following information:

- Model No. Rev. Level and Serial No. found on the Data Decal.
- Parts number or numbers as shown in the Parts List section.
- A brief description of the trouble with the log splitter.

## FIRMAN 3 Years Limited Warranty

### Warranty Qualifications

Register your product using the QR code provided or at www.firmanpowerequipment.com. FIRMAN will also register the warranty upon receipt of your Warranty Registration Card and a copy of your sales receipt from one of FIRMAN's retail locations as proof of purchase. Please submit your warranty registration and your proof of purchase within ten(10) days of the date of purchase.

### Repair/Replacement Warranty

FIRMAN warrants to the original purchaser that the mechanical and electrical components will be free of defects in material and workmanship for a period of one (1) year(parts and labor) and 3 years (parts and technical support) from the original date of purchase 90 days [parts and labor] and 180 days [parts] for commercial & industrial use. Transportation charges on product submitted for repair or replacement under this warranty are the sole responsibility of the purchaser . This warranty only applies to the original purchaser and is not transferable.

### Do Not Return the Unit to the Place of Purchase

Contact the FIRMAN Service Center and FIRMAN will troubleshoot any issue via phone or e-mail. If the problem is not corrected by this method, FIRMAN will, at its option, authorize evaluation, repair or replacement of the defective part or component at a FIRMAN Service Center. FIRMAN will provide you with a case number for warranty service. Please keep it for future reference. Repairs or replacements without prior authorization, or at an unauthorized repair facility, will not be covered by this warranty.

### Warranty Exclusions

This warranty does not cover the following repairs and equipment.

#### Normal Wear

Your product needs periodic parts and service to perform well. This warranty does not cover repair when normal use has exhausted the life of a part or the equipment as a whole.

## Installation, Use and Maintenance

This warranty will not apply to parts and/or labor if your product is deemed to have been misused, neglected, involved in an accident, abused, modified, installed improperly or connected incorrectly. Normal maintenance is not covered by this warranty.

**Other Exclusions**

This warranty excludes:

- Cosmetic defects such as paint, decals, etc.
- Wear items such as filter elements, seals, etc.
- Accessory parts such as hoses, hose fittings, etc.
- Failures due to acts of God and other force majeure events beyond the manufacturer's control.
- Problems caused by parts that are not original FIRMAN parts.

## Limits of Implied Warranty and Consequential Damage

FIRMAN disclaims any obligation to cover any loss of time, use of this product, freight, or any incidental or consequential claim by anyone from using this product. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABLILITY OR FITNESS FOR A PARTICULAR PURPOSE.

A unit provided as an exchange will be subject to the warranty of the original unit. The length of the warranty governing the exchanged unit will remain calculated by reference to the purchase date of the original unit.
This warranty gives you certain legal rights which may change from state to state. Your state may also have other rights you may be entitled to that are not listed within this warranty.

## Contact Information

You may contact FIRMAN at:

## Address

Firman Power Equipment Inc.
Attn: Customer Service
8644 W. Ludlow Dr.
Peoria, AZ 85381
www.firmanpowerequipment.com

We are FIRMAN POWER - And we are here for you.

# FIRMAN POWER EQUIPMENT INC.
# EMISSION CONTROL WARRANTY STATEMENT

**YOUR WARRANTY RIGHTS AND OBLIGATIONS**

The United States Environmental Protection Agency (EPA) and FIRMAN POWER EQUIPMENT INC. (FIRMAN) are pleased to explain the emission control system warranty on your [2026-2027] model year small off-road engine/equipment. In the United States, new small off-road engine/equipment must be designed, built and equipped to meet the State's stringent anti smog standards. FIRMAN must warrant the emission control system on your small off-road engine/equipment for the period listed below provided there has been no abuse, neglect or improper maintenance of your small off-road engine/equipment leading to the failure of the emission control system. Your emissions control system may include parts such as the carburetor or fuel-injection system, the ignition system, catalytic converter, fuel tanks, fuel lines (for liquid fuel and fuel vapors), fuel caps, valves, canisters, filters, clamps and other associated components. Also included may be hoses, belts, connectors, and other emission-related assemblies. Where a warrantable condition exists, FIRMAN will repair your small off-road engine/equipment at no cost to you including diagnosis, parts and labor.

**MANUFACTURER'S WARRANTY COVERAGE:**

This emission Control System is warranted for two years. If any emission-related part on your engine/equipment is defective, the part will be repaired or replaced by FIRMAN.

**OWNER'S WARRANTY RESPONSIBILITIES:**

As the small off-road engine/equipment owner, you are responsible for the performance of the required maintenance listed in your owner's manual. FIRMAN recommends that you retain all receipts covering maintenance on your small off-road engine/equipment, but FIRMAN cannot deny warranty coverage solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance. As the small off-road engine/equipment owner, you should however be aware that FIRMAN may deny you warranty coverage if your small off-road engine/equipment or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications. You are responsible for presenting your small off-road engine/equipment to FIRMAN distribution center as soon as a problem exists. The warranty repairs shall be completed in a reasonable amount of time, not to exceed 30 days. If you have any questions regarding your warranty rights and responsibilities, you should contact FIRMAN at 1-844-347-6261 or www.firmanpowerequipment.com .

**DEFECTS WARRANTY REQUIREMENTS:**

(a) The warranty period begins on the date the engine/equipment is delivered to an ultimate purchaser.

(b) General Emissions Warranty Coverage. FIRMAN warrants to the ultimate purchaser and each subsequent owner that the engine/equipment is:

(1) Designed, built, and equipped so as to conform with all applicable regulations adopted by the Environmental Protection Agency; and

(2) Free from defects in materials and workmanship that causes the failure of a warranted part for a period of two years.

(c) The warranty on emissions-related parts will be interpreted as follows:

(1) Any warranted part that is not scheduled for replacement as required maintenance in the written instructions required by subsection (d) must be warranted for the warranty period defined in Subsection (b)(2). If any such part fails during the period of warranty coverage, it must be repaired or replaced by FIRMAN according to Subsection (4) below. Any such part repaired or replaced under the warranty must be warranted for the remaining warranty period.

(2) Any warranted part that is scheduled only for regular inspection in the written instructions required by subsection (d) must be warranted for the warranty period defined in Subsection (b)(2). A statement in such written instructions to the effect of “repair or replace as necessary” will not reduce the period of warranty coverage. Any such part repaired or replaced under warranty must be warranted for the remaining warranty period.

(3) Any warranted part that is scheduled for replacement as required maintenance in the written instructions required by subsection (d) must be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part must be repaired or replaced by FIRMAN according to Subsection (4) below. Any such part repaired or replaced under warranty must be warranted for the remainder of the period prior to the first scheduled replacement point for the part.
(4) Repair or replacement of any warranted part under the warranty must be performed at no charge to the owner at a warranty station.
(5) Notwithstanding the provisions of Subsection (4) above, warranty services or repairs must be provided at all FIRMAN distribution centers that are franchised to service the subject engine/equipment.

(6) The owner must not be charged for diagnostic labor that leads to the determination that a warranted part is in fact defective, provided that such diagnostic work is performed at a warranty station.
(7) FIRMAN is liable for damages to other engine/equipment components proximately caused by a failure under warranty of any warranted part.
(8) Throughout the emissions warranty period defined in Subsection (b)(2), FIRMAN must maintain a supply of warranted parts sufficient to meet the expected demand for such parts.
(9) Any replacement part may be used in the performance of any warranty maintenance or repairs and must be provided without charge to the owner. Such use will not reduce the warranty obligations of FIRMAN.
(10) Add-on or modified parts that are not exempted by the Environmental Protection Agency may not be used. The use of any non-exempted add-on or modified parts will be grounds for disallowing a warranty claim. FIRMAN will not be liable to warrant failures of warranted parts caused by the use of a non-exempted add-on or modified part.
(11) FIRMAN issuing the warranty shall provide any documents that describe that manufacturer's warranty procedures or policies within five working days of request by the Environmental Protection Agency.

(d) Emission Warranty Parts List for exhaust (for all displacements).

1. Ignition system including:
 - Spark plug
 - Ignition coil
2. Fuel metering system:
 - Fuel tank
 - Fuel cap
 - Fuel lines（for liquid fuel and fuel vapors) and related fittings/clamps
 - Fuel regulator, carburetor and internal parts.
3. Catalytic muffler assembly including:
 - Exhaust manifold
 - Catalytic converter
 - Muffler gasket
 -pulse valve
4. Air induction system including:
 - Intake pipe/manifold
 - Air cleaner
5. Crankcase breather assembly including:
 - Breather connection tube
6. Fuel tank evaporative emission control system including:
 - Purge valves
 - Carbon canister
 - Vapor hoses and fitting/clamps

FIRMAN will furnish with each new engine/equipment written instructions for the maintenance and use of the engine/equipment by the owner.

**Limitations**

This Emission Control System Warranty shall not cover any of the following:
(a) Consequential damages such as loss of time, inconvenience, loss of use of the engine or equipment, etc.
(b) Diagnosis and inspection fees that do not result in eligible warranty service being performed.

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**FIRMAN POWER EQUIPMENT**
**8644 W. LUDLOW DR.**
**PEORIA, AZ 85381**
**1-844-347-6261**
**WWW.FIRMANPOWEREQUIPMENT.COM**

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