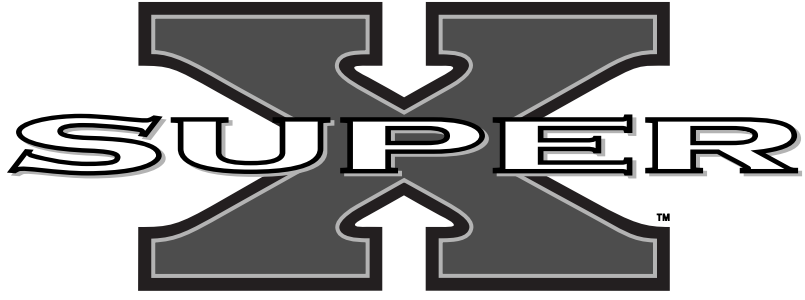

RIDER'S HANDBOOK™

1999 Model HCX

EXCELSIOR-HENDERSON MOTORCYCLE COMPANY

All text, photographs, and illustrations in this handbook are based on the most current product information available at the time of publication. Product improvements or other changes may result in differences between this handbook and the motorcycle. Excelsior-Henderson reserves the right to make production changes at any time, without notice and without incurring any obligation to make the same or similar changes to motorcycles previously built.

EXCELSIOR-HENDERSON MOTORCYCLE MANUFACTURING COMPANY
805 HANLON DRIVE • BELLE PLAINE, MINNESOTA 56011 • TELE: 952.873.7000/FAX: 612.656.4204

Document part no. 6999-0001 Rev. D **Printed in the United States of America**


EXCELSIOR-HENDERSON
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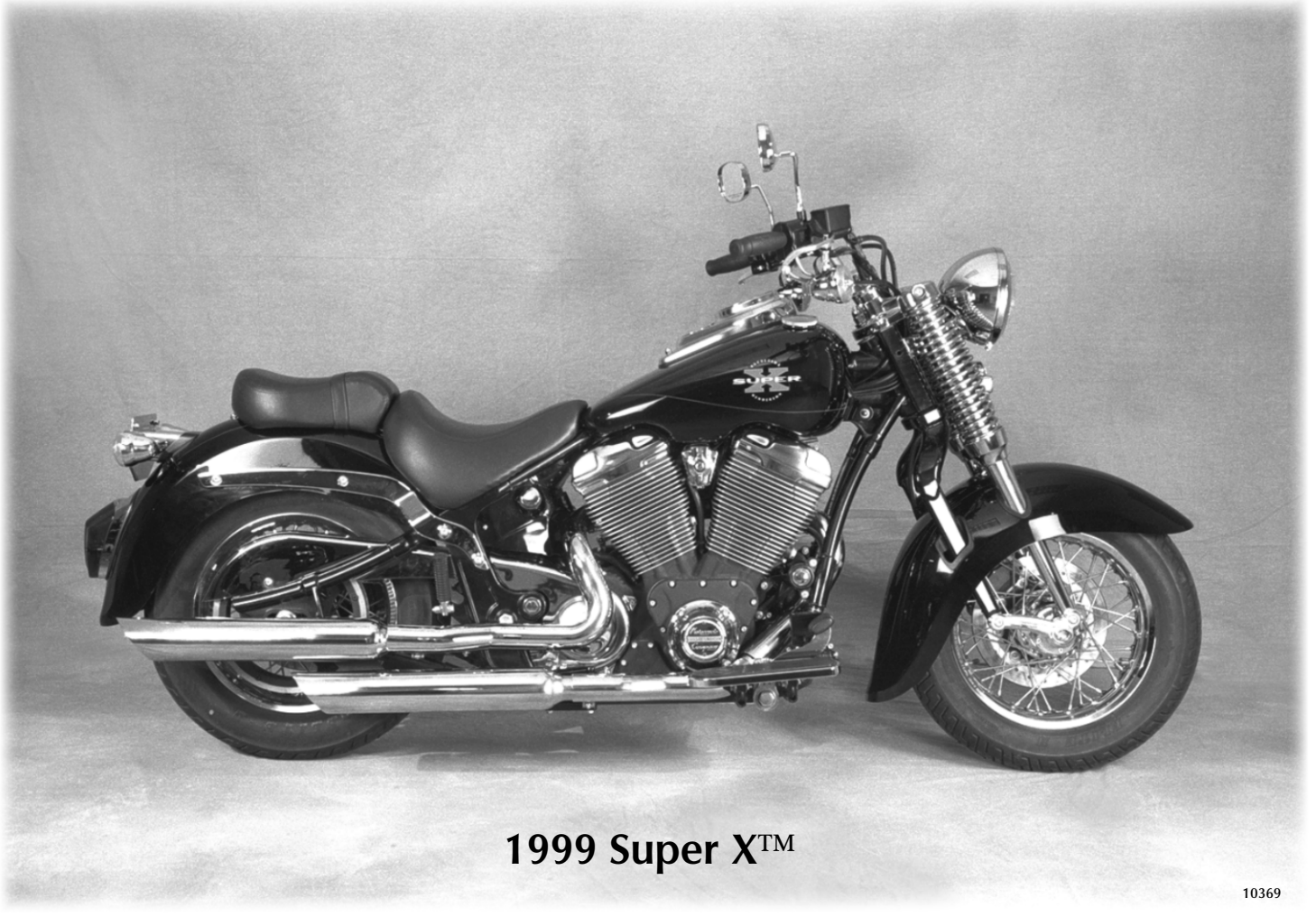

1999 Super X™

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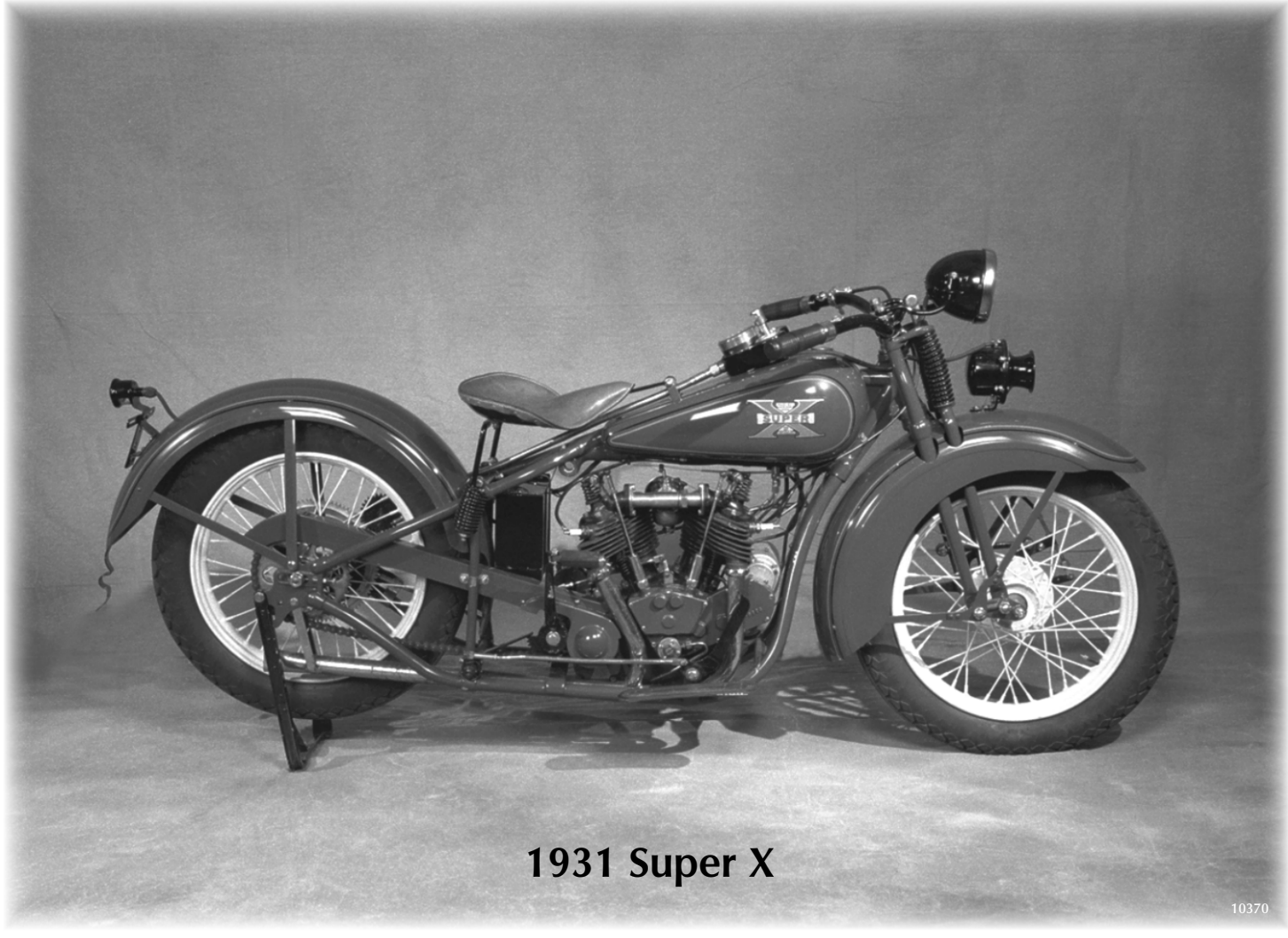

1931 Super X

10370

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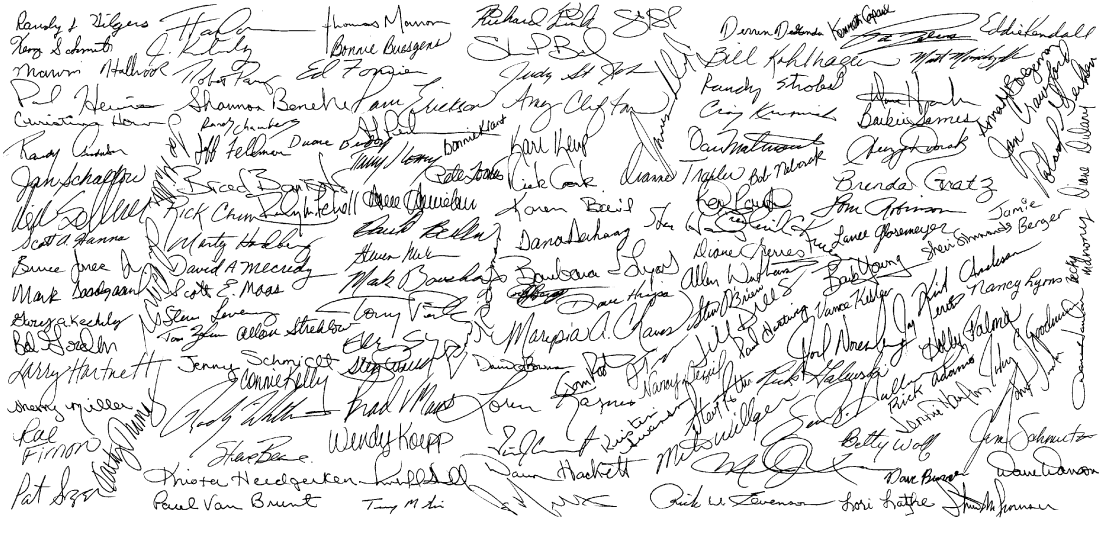
Forward

Thank You!

The people of Excelsior-Henderson thank you for purchasing your new Super X™ motorcycle. We appreciate your enthusiasm and faith in our products and in us. Your new Super X is an American-made, premium-quality, heavyweight cruiser. It combines advanced technologies with a style reminiscent of its ancestors. We have designed, built, and will support your Super X in the tradition of The Excelsior-Henderson Motorcycle Manufacturing Company.



There's More to The Rider's Handbook

The *Super X Rider's Handbook*™ contains information you need to operate your Excelsior-Henderson Super X safely, responsibly, and with maximum enjoyment. It also explains the routine maintenance, cleaning, and storage that will help keep your Super X running and looking great for years to come.

To make the most of your Super X *EXperience*, this *Handbook* also includes stories, photographs, and illustrations from throughout Excelsior-Henderson's history. In the section "The Tradition of the State of the Art" the *Rider's Handbook* introduces you to the heritage that is an essential part of the Excelsior-Henderson *EXperience* and reestablishes our place in the history of American motorcycling.

You, the Super X, and the Excelsior-Henderson Motorcycle Manufacturing Company each have a place in the continuing history of American motorcycling.

- As a Super X owner, you make your own contribution to the Excelsior-Henderson heritage that began over a century ago and continues with today's Excelsior-Henderson Motorcycle Manufacturing Company.
- The 1999 Super X bears the rich heritage of the original Super X and its manufacturer's history and tradition.
- The Excelsior-Henderson Motorcycle Manufacturing Company is the first American manufacturer to successfully revive an original American motorcycle brand.

"It's not so much the destination that matters, but the journey" — motorcyclists may understand this better than anyone. When you twist the throttle of your Super X along an open stretch of highway or through a deep curve, you will discover the roar of the X-twin™ engine as the road disappears behind you. With the images and stories of Excelsior-Henderson's present and past in mind, you will EXperience the spectacular vision of the journey before you. Enjoy the ride!

From the Hanlon Family

On behalf of the entire Excelsior-Henderson Road Crew™, we welcome you to our family. When you own an Excelsior-Henderson Super X, you own much more than just a motorcycle, you own an enduring legacy of quality and performance. You are part of the American dream…and you are part of our dream. Together we will make motorcycling history as we bring back the most legendary brand of the past — Excelsior-Henderson.

The Excelsior-Henderson team members are proud you selected the Super X, as we have designed and manufactured the Super X to the highest standards. This Rider's Handbook has been specially prepared and detailed to show you our commitment to ensure motorcycling fun.

We wish you a safe and pleasurable ride as together we carry forward a proud tradition that dates back to 1876. So, get ready to throw a leg over your Super X and join us on the highways of this great country, the United States of America.

Dan Hanlon Jennie Hanlon Dave Hanlon


EXCELSIOR-HENDERSON
EXCELSIOR-HENDERSON
A PROUD AMERICAN MOTORCYCLE COMPANY
← FORK THIS END
HANDLE WITH CARE
EXCELSIOR-HENDERSON
HANDLE WITH CARE
NO FORKS
FORK OTHER END

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Introduction

Read the Rider's Handbook

The *Rider's Handbook* contains information that is essential to safe riding and proper maintenance of your Super X motorcycle. Read it thoroughly before you ride. Understand and follow the procedures in the *Rider's Handbook* to keep your Super X in top condition on the road or in storage. Failure to follow operation and maintenance procedures may result in injury to you, your passenger, or damage to your Super X. We want you to enjoy motorcycling. Following the safety and maintenance procedures will add to your enjoyment, and keep you riding.

Hazard Symbol and Terms in the Rider's Handbook

The hazard symbol indicates a potential hazard to you, others, or your motorcycle. Pay special attention to information in the *Rider's Handbook* that begins with this symbol.

The following terms have special meaning in the *Rider's Handbook.* Be certain you understand the meaning of each term, as the terms communicate important information about the Super X and its operation and maintenance.

⚠ WARNING

Indicates a potential hazard that could injure you or others.

⚠ Caution

Indicates a potential hazard that could damage the motorcycle.

Notice

Emphasizes important information that might otherwise be overlooked.

Notes:

10376

Safety Information

This section contains information to help you operate your Super X motorcycle safely and enjoyably while minimizing risk to you, your passenger, and others. Your ability to safely operate the Super X depends on your judgment and use of safe riding techniques. Motorcycling has inherent risks. You can minimize those risks, but you can't eliminate them completely.

We want to keep you riding. Take the time to read and understand the following information to help minimize risk and maximize pleasure when operating the Super X. Even if you are an experienced rider, read this section and the rest of the *Rider's Handbook* before riding the Super X.

- Read, understand, and use the information contained in this section. This section contains safety information specific to the Super X, as well as information about general motorcycle safety.
- Read and understand the entire *Rider's Handbook* before operating the Super X; the *Handbook* contains safety information throughout. Also pay attention to the maintenance requirements in this *Handbook*. For professional technical service specified in the *Rider's Handbook* or required by mechanical circumstances, see the *Super X Service Handbook* or your authorized Excelsior-Henderson Dealer.
- Read, understand, and use the information in the booklet you received with your Super X, *You and Your Motorcycle — Riding Tips* (Excelsior-Henderson

document part no. 6999-0008). The booklet contains general information about safe motorcycle operation and tips for developing safe riding habits.

- Take a rider education course from the Motorcycle Safety Foundation (MSF) or another qualified instructor. The course will help you develop or refresh your expertise in safe riding habits through instruction and riding. For information on MSF rider education courses, see the pamphlet you received with your Super X, *Rider Course* (Excelsior-Henderson document part no. 6999-0066).
- Until you are thoroughly familiar with the Super X and all of its controls, practice riding where there is little or no traffic. Practice riding at moderate speed on varying road surfaces and under varying weather conditions.

Safe Riding

Super X Design Characteristics

The following Super X design characteristics affect how you should ride the motorcycle:

- The Super X is designed for on-road use with one rider and one passenger. Do not exceed the gross vehicle weight rating (see *Specifications* or the certification label on the steering head). Riding off-road, riding with more than one passenger, or carrying weight exceeding the maximum weight rating can make handling difficult, which could cause you to lose control of the motorcycle.

- In the first 500 miles, operate the Super X according to the break-in procedures described in “Operating During Break-In Period (First 500 Miles),” page 78. Operating the Super X without following break-in procedures can result in serious engine damage.
- The Super X is designed not to “dive” when the front brake is applied. “Diving” is the tendency for the front suspension to compress rapidly when the front brake is applied. The anti-dive design of the Super X makes braking more positive and stable than on motorcycles without an anti-dive design. If you have ridden motorcycles without an anti-dive design, the Super X may initially feel different when you apply the front brake.

Safe Riding Practices

Follow these general safe riding practices:

- Before you ride, make sure you can operate the Super X safely and properly by following the recommendations given at the beginning of the *Safety Information* section.
- Before you ride each time, make the checks described in the *Pre-Operation Check* section. Operating the Super X without making the pre-operation checks can cause damage to the motorcycle or result in an accident.
- Know your skills and limits, and ride within them.
- Allow only licensed, experienced operators to ride your Super X, and then only after they have become familiar with its controls and operation.

- Do not ride when you are fatigued or under the influence of alcohol, prescription drugs, over-the-counter drugs, or any other drugs. Fatigue, alcohol, and drugs can cause drowsiness, loss of coordination, loss of balance, and can affect your awareness and judgment.
- If your Super X operates abnormally, correct the problem immediately (see the *Super X Service Handbook* or contact your authorized Excelsior-Henderson Dealer). If you continue to operate the Super X in this condition, you are likely to aggravate the initial problem, increase the cost of repairs, and threaten your safety.
- The most common cause of accidents involving a motorcycle and an automobile is the automobile driver's failure to see the motorcycle. Ride defensively, as if you are invisible to other motorists, even in broad daylight. Ride where you are visible to other motorists and observe their behavior carefully, as they may not see or be aware of you.
- Be especially cautious at an intersection, as this is the most likely place for an accident. Remember that you are more vulnerable to injury on a motorcycle than in an enclosed vehicle.
- To prevent loss of control while operating the motorcycle, keep your hands on the handlebars and your feet on the footrests.
- Obey the speed limit and adjust your speed and riding technique based on road, weather, and traffic conditions. As you travel faster, the influence of all other

conditions increases, which can lessen the motorcycle's stability and increase the possibility of your losing control of the motorcycle.

- Do not move or operate the motorcycle with the forks locked, as steering is severely restricted and you could drop or lose control of the motorcycle.
- If in doubt, reduce your speed when:
  - The road has potholes or is otherwise rough or uneven.
  - The road has sand, dirt, gravel or other loose substances on it.
  - The road is wet, icy, or oily.
  - The road contains painted surfaces, manhole covers, metal grating, railway crossings, or other slippery surfaces.
  - The weather is windy, raining, or otherwise causing slippery or rapidly changing conditions.
  - The traffic is heavy, congested, not allowing sufficient space between vehicles, or otherwise not flowing smoothly.
  - You are being passed in either direction by a large vehicle that produces a wind blast in its wake.
- To maximize braking effectiveness, use the front and rear brakes together. Be aware of the following braking facts and practices:
  - The rear brake provides 40% of the motorcycle's stopping power, at most.

  - Consider road conditions before applying the brakes; when the road is wet, rough, or contains loose or other slippery substances, apply the brakes gradually.
  - Bring the motorcycle to upright position before applying the brakes, and avoid applying the brakes in a corner if at all possible. When the motorcycle is leaned, the amount of tire surface contacting the road is reduced, decreasing tire traction and increasing the possibility of the tires skidding when you apply the brakes.
  - Improper braking may cause you to lose control of the motorcycle or may not slow you in time to avoid a collision.
- As you approach a curve, choose a speed and a lean angle that allow you to pass through the curve in your own lane without applying the brakes. Excessive speed, improper lean angle, or braking in a curve can cause you to lose control of the motorcycle.
- Ground clearance is reduced when you lean the motorcycle. Do not allow components to contact the road surface when leaning the motorcycle in a curve, as this could cause you to lose control of the motorcycle.
- Retract the sidestand fully before riding. If the stand is not fully retracted while you are riding, it could contact the road surface and cause you to lose control of the motorcycle.
- Do not tow a trailer. Towing a trailer can make the motorcycle hard to handle and cause you to lose control of the motorcycle.

Carrying a Passenger

To carry a passenger safely, do the following:

- Direct the passenger to hold onto you, or the saddle strap, with both hands and to keep both feet on the passenger footrests. Do not carry a passenger who cannot place both feet firmly on the passenger footrests. A passenger who is not holding on properly or who cannot reach the passenger footrests can shift erratically, which can make the motorcycle hard to handle and cause you to lose control of the motorcycle.
- If necessary, adjust the rear shock absorber preload and damping rate according to the instructions in “Changing Preload Adjustment,” page 54, and “Changing Damping Rate Adjustment,” page 57. Improper preload or damping rate adjustment can make your motorcycle hard to handle and cause you to lose control of the motorcycle.
- Before you ride, be sure your passenger knows safe riding procedures. Discuss any safety information unfamiliar to your passenger. A passenger who is unaware of safe riding procedures may distract you or make movements that make the motorcycle hard to handle and cause you to lose control of the motorcycle.
- Adjust your riding style to compensate for the differences in handling, acceleration, and braking caused by the additional weight of the passenger. Failure to do so can cause you to lose control of the motorcycle.

Transporting the Super X

If you must transport the Super X, do the following:

- Use a truck or trailer. Do not tow the Super X with another vehicle, as the motorcycle's steering and handling will be impaired by towing, which can cause you to lose control of the motorcycle.
- Position and restrain the Super X so it is kept upright on the truck or trailer, as gasoline may leak out of the fuel tank if the motorcycle leans over. Leaked gasoline is a fire hazard and can also damage the finish and components of the Super X.

Protective Apparel

We respect your right to make your own choices. However, we recommend that you wear an approved helmet and eye protection. Some state laws require that you wear an approved helmet, eye protection, or both. In accidents involving motorcycles, head injuries are the leading cause of motorcyclist fatalities, and statistics prove that an approved helmet is the most effective protection in preventing or reducing head injuries. Eye protection reduces the chance that your vision could be impaired by wind or by airborne particles and objects.

You and your passenger should wear bright or light colored and/or reflective clothing to improve your visibility to other motorists. A motorist's failure to see or recognize a motorcycle is the leading cause of automobile/motorcycle accidents.

Wear gloves, heavy boots and pants, and a jacket to prevent or reduce abrasions, lacerations, or burns that you can suffer if you fall. Wear boots with low heels because boots with high heels can catch on pedals or footrests. The combination of your boots and pants should completely cover your legs, ankles, and feet, protecting you from engine and exhaust system heat. The engine and exhaust system get hot soon after the engine is started, and stay hot for about half an hour after the engine is turned off.

Do not wear loose, flowing clothing or long boot laces, as they can catch on components like handlebars, levers, or footrests, or get caught in the wheels, causing you to lose control of the motorcycle.

Product Modifications

Modifying the Super X by removing any equipment or adding equipment not approved by Excelsior-Henderson may void your warranty. Such modifications may also make the motorcycle unsafe to ride and could severely injure you or others or damage the motorcycle. Some modifications may be illegal in some states. If in doubt, contact your authorized Excelsior-Henderson Dealer.

Gross Vehicle Weight Rating

Gross vehicle weight is the total weight of the motorcycle, the rider, and the passenger.

- The weight of the motorcycle includes: the motorcycle and all its fluids; any accessories and their contents; and any additional cargo on the motorcycle.
- The weight of the rider or passenger includes: body weight, all apparel, and objects in or on apparel.

⚠ WARNING

Do not exceed the motorcycle's gross vehicle weight rating. Exceeding the weight rating can lessen stability and handling and could cause you to lose control of the motorcycle.

The gross vehicle weight rating of the Super X is 1140 lb. The total weight of the Super X is approximately 700 lb with a full capacity of all fluids, and without any accessories or cargo. The combined weight of the rider, passenger, accessories, and cargo cannot exceed 440 lb. The following two examples show how to stay within the gross vehicle weight rating.

Example 1: Super X with no accessories or cargo

Item	Weight
Super X with full capacity of all fluids	700 lb
Rider - dressed and ready to ride	260 lb
Passenger - dressed and ready to ride	180 lb
Total gross vehicle weight	1140 lb

Example 2: Super X with all accessories and cargo

Item	Weight
Super X with full capacity of all fluids	700 lb
Excelsior-Henderson accessories	80 lb
Attached cargo	35 lb
Rider - dressed and ready to ride	205 lb
Passenger - dressed and ready to ride	120 lb
Total gross vehicle weight	1140 lb

Loading

⚠ WARNING

Adding additional weight to the Super X can affect its stability, handling characteristics, and safe operating speed.

Use the following guidelines when attaching cargo or accessories to the Super X. Where applicable, these guidelines refer to accessories *and* their contents.

- Keep cargo and accessory weight to a minimum, and keep it as close to the motorcycle as possible, to minimize a change in the motorcycle's center of gravity. Changing the center of gravity can lessen stability and handling and could cause you to lose control of the motorcycle.
- Distribute weight evenly on both sides of the motorcycle. Maintain even weight distribution by checking accessories and cargo to make sure they are securely attached to the Super X before riding and whenever you take a break while riding. Uneven weight distribution, or accessories or cargo that shift suddenly while you are riding, can make the motorcycle hard to handle and cause you to lose control of the motorcycle.
- Do not attach large or heavy cargo such as sleeping bags, duffle bags, or tents to the handlebars, front fork area, or front fender. If you add accessories to the handlebars or the front fork area, they must be as small and as lightweight as possible. Cargo or accessories placed in any of these areas can cause instability due to improper weight distribution or aerodynamic changes, and can cause you to lose control of the motorcycle. Such items can also block air flow to the engine and could cause overheating that can damage the engine.
- Do not exceed the maximum cargo weight limit of any accessory (see accessory instructions and labels), and do not attach cargo to an accessory not designed

for that purpose, as either of these could result in an accessory failure that could cause you to lose control of the motorcycle.

Selecting and Installing Accessories

⚠ WARNING

Adding accessories to the Super X can affect its stability, handling characteristics, and safe operating speed.

Because Excelsior-Henderson cannot test and make specific recommendations concerning every accessory or combination of accessories sold, you are responsible for determining that your Super X can be safely operated with accessories you install or additional weight you carry. Use the following guidelines when choosing and mounting accessories:

- Do not install accessories that impair the stability, handling, or operability of the Super X. Before installing an accessory, be sure that it does not:
  - Reduce ground clearance when the motorcycle is either leaned or in a vertical position.
  - Limit suspension or steering travel or your ability to operate controls.
  - Displace you from your normal riding position.
  - Obscure lights or reflectors.

Bulky or large accessories can make the Super X unstable due to the lifting or buffeting effects of wind and can cause you to lose control of the motorcycle.

- Do not install electrical accessories that exceed the capacity of the Super X's electrical system. An electrical failure could result and cause hazardous loss of engine power or lights, or damage to the electrical system.
- If you want to add a windshield, backrest, or luggage rack, choose one designed and approved by Excelsior-Henderson specifically for the Super X, and follow the instructions for proper installation and use. An improperly designed or installed windshield, backrest, or luggage rack can reduce stability, causing you to lose control of the motorcycle.

Gasoline and Exhaust Gases

For fueling procedures, see "Fueling and Fuel Fill Height," page 79.

Gasoline is highly flammable and can be explosive in certain conditions. Observe the following precautions when you refuel or service the fuel system:

- Turn off the engine.
- Use a well-ventilated area.
- Remove the fuel cap slowly.

- Do not spill gasoline on the engine or the exhaust system. Immediately wipe, or rinse with water, gasoline spilled on any part of the Super X or the surrounding area.
- Do not smoke while fueling.
- Do not fuel in an area where there are sparks or open flame.

Gasoline and gasoline vapors are poisonous and can cause severe injury. Do not swallow gasoline, inhale gasoline vapors, or spill gasoline on yourself or your clothes. If you swallow gasoline, inhale more than a few breaths of gasoline vapor, or get gasoline in your eyes, see a physician immediately. If you spill gasoline on your skin, wash it off immediately with soap and water. If you spill gasoline on your clothes, change your clothes immediately.

Exhaust gases contain carbon monoxide, a colorless, odorless gas that can cause unconsciousness or severe injury. Observe the following precautions to avoid the effects of exhaust gases:

- Do not breathe exhaust gases.
- Do not start or run the engine in a closed area.

Parking

For complete parking procedures, see “Parking,” page 91.

When leaving the Super X unattended, turn the engine off, lock the main switch and the fork lock, and take the main switch key with you.

The engine and exhaust system are very hot after the engine has been running. Therefore, park the Super X where people are not likely to touch the engine or exhaust system or place combustible materials in close proximity to these hot areas.

Do not park near a flammable source such as a kerosene heater or an open flame, as the Super X could catch fire.

Park on a level, firm surface if possible. Sloped or soft surfaces may not support the Super X adequately when it is parked, and it may fall over. If you must park on a sloped or soft surface, reduce the likelihood of the Super X falling over by following the procedures described in “Parking,” page 91.

Maintenance

Maintain the Super X according to the following requirements:

- Before you ride each time, make the checks described in the *Pre-Operation Check* section. Operating the Super X without making the pre-operation checks can cause damage to the motorcycle or result in an accident.
- Perform periodic maintenance according to the intervals specified in “Periodic Maintenance Intervals,” beginning on page 96. Operating the Super X without performing periodic maintenance can damage the motorcycle or injure you.

- Maintain proper tire inflation pressure and tread condition, and proper wheel and tire balance. Inspect tires regularly and replace them if they are worn or damaged. Use only an approved replacement tire and see the *Super X Service Handbook* or your authorized Excelsior-Henderson Dealer for tire replacement. Operating the Super X with improper tire pressure or tread condition, or improper wheel or tire balance, can make the motorcycle hard to handle and cause you to lose control of the motorcycle.
- Check proper steering head bearing adjustment. Regularly inspect the rear shock absorber and the front forks. Check for leaks. Operating the Super X with a loose, worn, or damaged steering system or front or rear suspension system can make the motorcycle hard to handle and cause you to lose control of the motorcycle. To repair steering or suspension system wear or damage, see the *Super X Service Handbook* or contact your authorized Excelsior-Henderson Dealer.
- Keep equipment required by federal, state, and local laws in place and in good working condition. Your license plate must be clean, clearly visible in all conditions, and installed in a position specified by law.
- Each fastener used in the Super X meets our quality specifications for strength, finish, and type. If you need a replacement fastener, use only a genuine Excelsior-Henderson fastener, tightened to the proper torque. A fastener that does not meet original specifications could fail and damage the motorcycle or injure you.

Safety and Vehicle Information Labels

Super X — left side view (all models)

1

VEHICLE EMISSION CONTROL INFORMATION

EXCELSIOR-HENDERSON MOTORCYCLE MANUFACTURING COMPANY

Engine Displacement: 1386CC
Engine Family: XEMCC01.4001
Engine Exhaust Emission Control: SMFI
Engine Tune Up Specifications
Idle Speed: 900 - 950 RPM
Ignition Timing: Fixed
Fuel: Unleaded Gasoline only, 92 pump octane or higher.
Oil: See Rider's Handbook

This vehicle conforms to USEPA Regulations applicable to 1999 Model Year new motorcycles.

2

⚠ WARNING: The rear shock absorber contains nitrogen gas under high pressure. To prevent injury, do not disassemble, rebuild, puncture, or apply heat to the shock absorber. See Rider's Handbook.

(Under seat)

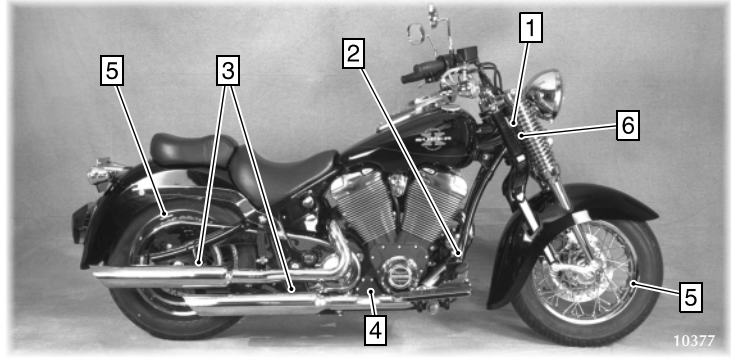
3

WARNING
USE ONLY DOT5 BRAKE FLUID FROM A SEALED CONTAINER. CLEAN FILLER CAP BEFORE REMOVING.

Also on rear brake and clutch reservoirs. (Not shown.)

4

⚠ **WARNING:** Read Rider's Handbook before riding, repairing or adding accessories to this motorcycle. Failure to follow all safety precautions and warnings, especially those in the Rider's Handbook, may result in injury and/or damage to the motorcycle.
The Rider's Handbook is available from your dealer or Excelsior-Henderson Motorcycle Manufacturing Company, 805 Hanlon Drive, Belle Plaine, MN 56011.



Super X—right side view (all models)

1

MFD. BY EXCELSIOR-HENDERSON
MOTORCYCLE MANUFACTURING COMPANY
MADE IN USA
DATE MANUFACTURED
GVWR: 1140 LB
MODEL: SUPER X MODEL YEAR
GAWR: F-394 LB WITH MT90HB16 TIRE*
16 X 3.0 D RIM AT 36 PSI COLD
GAWR: R-746 LB WITH MU90HB16 TIRE*
16 X 3.5 D RIM AT 40 PSI COLD
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.
V.I.N.
MOTORCYCLE *WARNING - SEE RIM LABELS

2

MOTORCYCLE NOISE EMISSION CONTROL INFORMATION

This 1999 Excelsior-Henderson EMC42X1386 motorcycle, 4599-0029, meets USEPA noise emission requirements of 80 dBA at 2750 RPM by the Federal test procedure. Modifications which cause this motorcycle to exceed Federal noise standards are prohibited by Federal law. See Rider's Handbook.

EXCELSIOR-HENDERSON MOTORCYCLE MANUFACTURING COMPANY

3

MOTORCYCLE EXHAUST SYSTEM NOISE CONTROL INFORMATION

THIS EXCELSIOR HENDERSON EXHAUST SYSTEM 4599-0029 MEETS EPA NOISE EMISSION REQUIREMENTS OF 80 dB(A) FOR THE FOLLOWING MOTORCYCLES SUPER X INSTALLATION OF THIS EXHAUST SYSTEM ON MOTORCYCLE MODELS NOT SPECIFIED MAY VIOLATE FEDERAL LAW

4

EXCELSIOR-HENDERSON
U.S. PATENTS
ADDITIONAL PATENTS PENDING

5

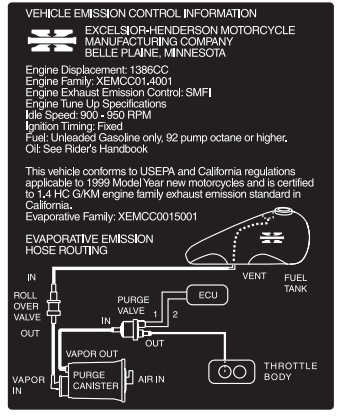
WARNING: Use only correct series tire on this rim. Mount using tire mounting lubricant. Never exceed maximum tire pressure, especially to seat bead, otherwise tire tube or rim could fail resulting in injury. See Rider's Handbook.

6

US Patent No.
Additional Patents Pending

Super X—left side view (California model only)

1



(Under seat)

Reporting Safety Defects

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying the Excelsior-Henderson Motorcycle Manufacturing Company.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or the Excelsior-Henderson Motorcycle Manufacturing Company.

To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-800-424-9393 (or 366-0123 in Washington, DC area) or write to: NHTSA, US Department of Transportation, Washington, DC 20590. You can also obtain other information about motor vehicle safety from the Hotline.

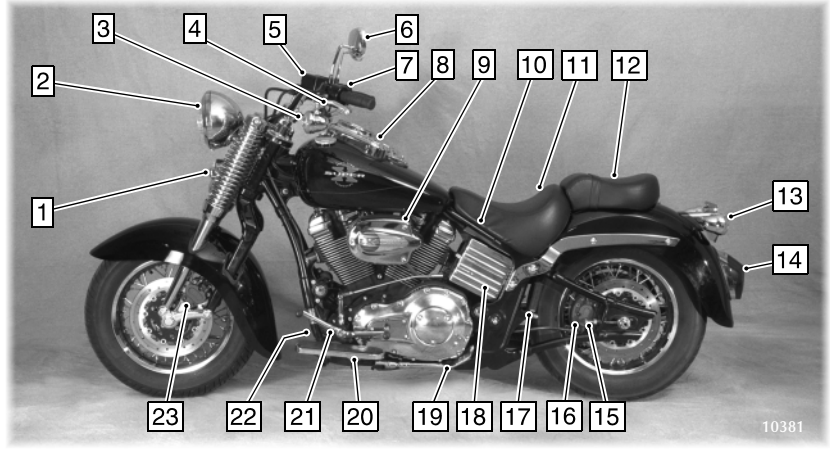
10380

Product Description

This section identifies the main Super X motorcycle components and shows their locations. It gives the locations of the Vehicle Identification Number (VIN), explains the VIN code, and tells you where to find the engine identification number and the key identification number.

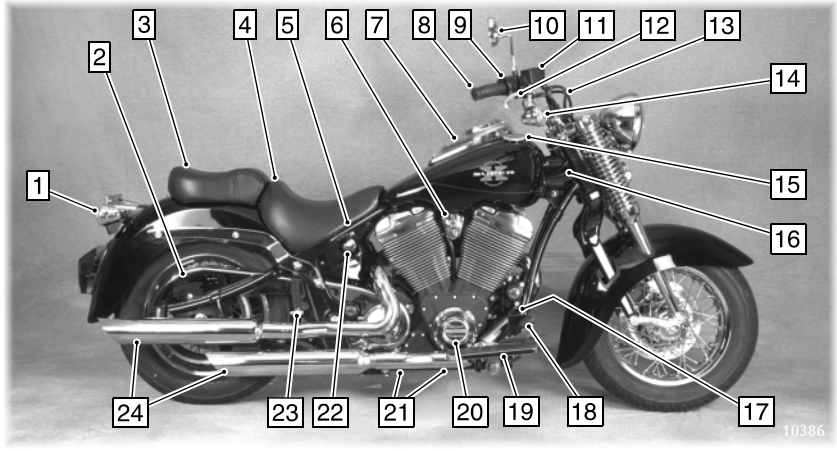
The Super X meets or exceeds applicable US Federal Motor Vehicle Safety Standards and US Environmental Protection Agency regulations.

Vehicle Components



Super X—left side view

1. Horn
2. Headlamp
3. Front left turn signal/running light
4. Clutch Lever
5. Clutch fluid reservoir
6. Left mirror
7. Left handlebar controls
8. Instrument pod
9. Air filter
10. Fuses (under saddle)
11. Rider's saddle
12. Tandem saddle
13. Left rear turn signal
14. Tail light
15. Rear axle adjuster (one each side)
16. Rear brake caliper
17. Passenger footrest
18. Battery
19. Sidestand
20. Rider footrest
21. Gear shift pedal
22. Evaporative canister (California model only)
23. Front brake caliper



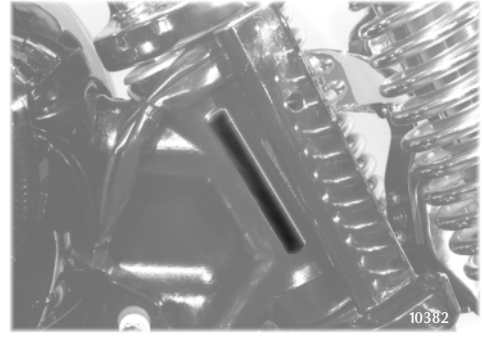
Super X—right side view

1. Right rear turn signal
2. Drive belt (under guard)
3. Tandem saddle
4. Rider's saddle
5. Rear shock absorber (under saddle)
6. Main switch
7. Instrument pod
8. Throttle control grip
9. Right handlebar controls
10. Right mirror
11. Front brake fluid reservoir
12. Front brake lever
13. Throttle cables
14. Front right turn signal/running light
15. Fuel cap
16. Fork lock
17. Rear brake fluid reservoir
18. Rear brake pedal
19. Rider footrest
20. Engine oil filter cover
21. Engine oil drain plugs (under engine)
22. Engine oil fill cap and dipstick
23. Passenger footrest
24. Exhaust mufflers

Vehicle Identification Number (VIN)

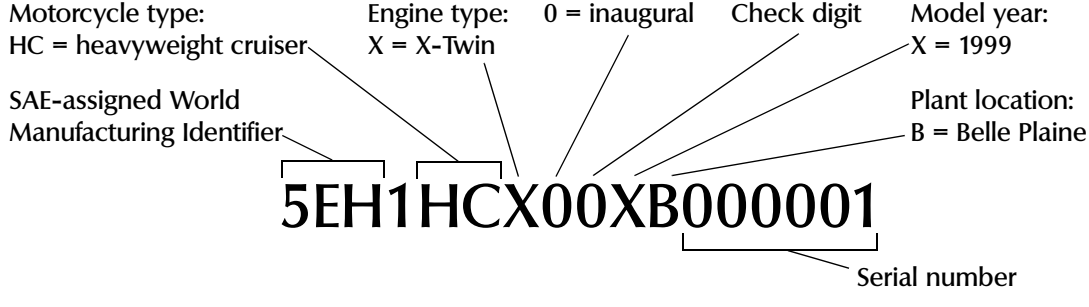
The Vehicle Identification Number (VIN) is a unique 17-character identifier for your Super X. The VIN is stamped on the right side of the steering head and also appears on the certification label on the front of the steering head.

You may need the VIN to title, register, or license the Super X, or to order parts. Record the VIN in the space provided in the *Specifications* section on page 242.



VIN stamped on steering head

The VIN is decoded as follows:

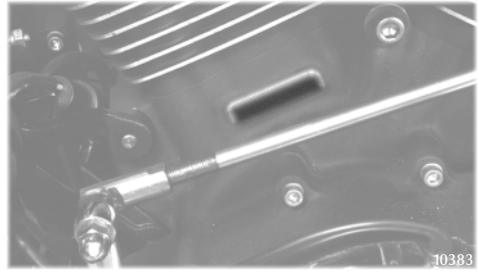


Engine Identification Number

The engine identification number is a unique six-character identifier for your Super X engine, stamped on the left side of the engine.

You may need the engine identification number to title, register, or license the Super X, or to order parts. Record the engine identification number in the space provided in the *Specifications* section on page 242.

The engine identification number is composed of an asterisk (*), followed by the serial number portion of the Super X VIN, followed by another asterisk. For instance, the engine number is *000326* for the Super X with VIN 5EH1HCX06XB000326.

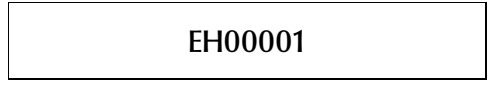


Engine identification number stamped on right side of engine

Key Identification Number

The key identification number is a seven-character identifier for your Super X main switch and fork lock key. The key identification number is located on a key tag supplied with your Super X.

If you need a replacement key, contact your dealer, and have proof of ownership, your VIN, and your key identification number. Record the key identification number in the space provided in the *Specifications* section on page 242.



Sample key identification number

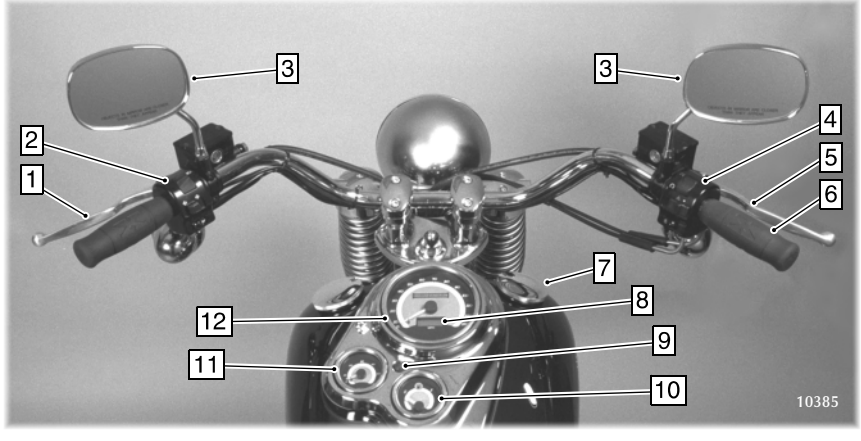
Notes:

10384

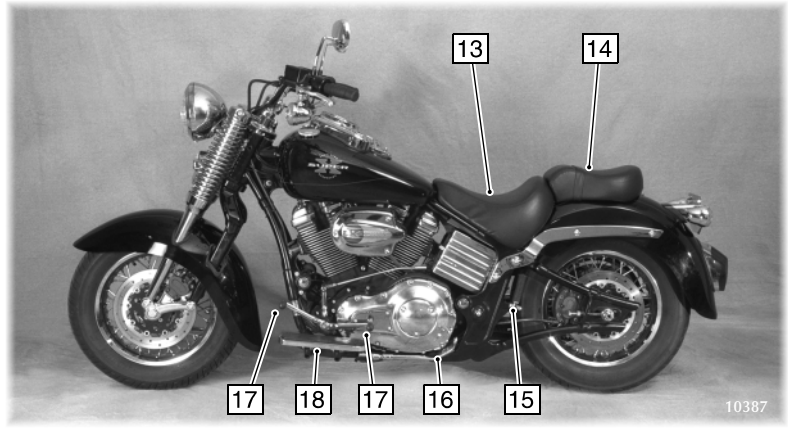
Instruments and Controls

This section shows you where to find the instruments and controls on the Super X motorcycle and explains their function and use.

Location

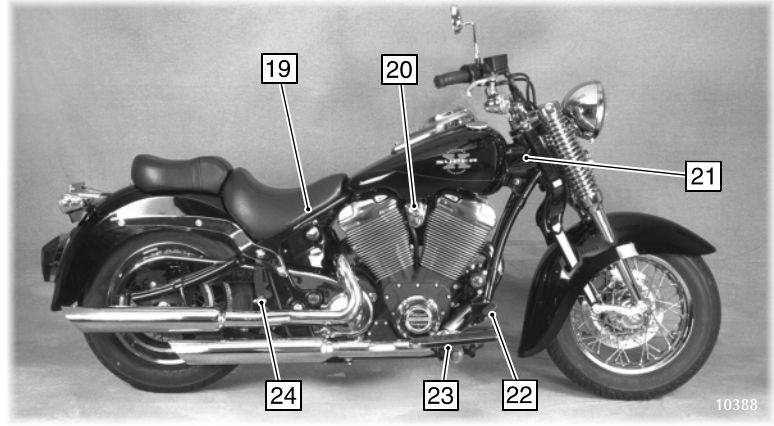


1. Clutch lever
2. Left handlebar switches
3. Mirrors
4. Right handlebar switches
5. Front brake lever
6. Throttle control grip
7. Fuel cap
8. Odometer/trip meter
9. Odometer/trip meter function button
10. Fuel gauge
11. Tachometer
12. Speedometer



13. Rider's saddle
14. Tandem saddle
15. Passenger footrest
16. Sidestand
17. Gear shift pedal
18. Rider footrest

19. Rear suspension adjusters (preload and damping rate adjusters) (under saddles)
20. Main switch
21. Fork Lock
22. Rear brake pedal
23. Rider footrest
24. Passenger footrest



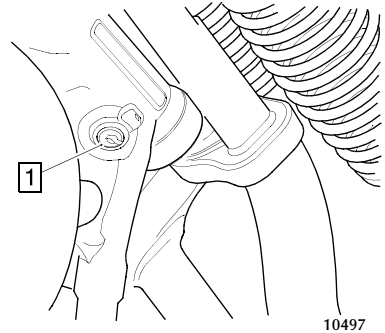
Key

A single key operates the Super X main switch and fork lock. For your convenience, the Super X comes with a spare key.

Fork Lock

The Super X is equipped with a fork lock to deter others from moving or using the motorcycle without your permission while it is parked. The fork lock is on the right side of the steering head.

To lock the fork lock, turn the handlebars fully to the left, insert the key and turn it clockwise. To unlock the fork lock, turn the key counterclockwise. Remove the key after locking or unlocking the forks.



1. Fork lock

⚠ WARNING

Moving or operating the motorcycle with the forks locked severely restricts steering and can cause you to drop or lose control of the motorcycle.

Main Switch

1. Lock
2. Indicator

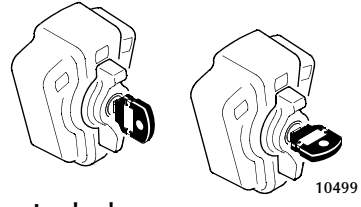
The main switch energizes the ignition, the lighting systems, and all electrical switches and buttons.

The main switch has a key-operated lock and an indicator you use to select a switch setting: **On, Acc,** or **Off.**

To lock or unlock the main switch:

1. Move the indicator to the **Off** position and insert the key into the lock.
2. To lock the switch, turn the key to the vertical position.

   To unlock the switch, turn the key to the horizontal position.
3. After you lock or unlock the main switch, remove the key.



Locked Unlocked

Notice

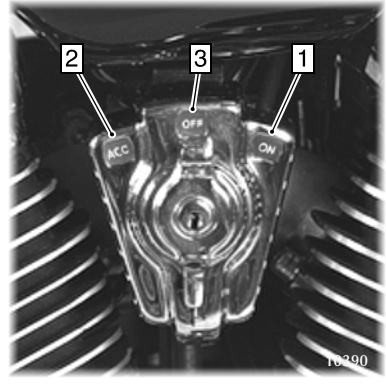
To energize electrical systems, you **must** remove the key from the lock after you unlock the switch. When the main switch is locked, you can move the indicator, but the switch does not energize any electrical systems.

On

When the main switch is unlocked and in the **On** position, all electrical circuits are energized. The headlamp, running lights, tail light, and instrument lights illuminate. With the engine stop/run switch set to the run position (see "Engine Stop/Run Switch," page 48), you can start the engine. You can also activate the emergency flashers, turn signals, and all other switch- and button-operated controls.

⚠ Caution

Before starting the engine, read the instructions for starting the motorcycle.



1. On position
2. Accessories position
3. Off position

Acc (Accessories)

When the main switch is unlocked and in the **Acc** position, all lighting systems come on. You can activate all switch- and button-operated controls except the electric starter button (see "Electric Starter Button," page 49). You cannot start the engine with the switch in the **Acc** position.

Off

When the main switch is in the **Off** position, all electrical circuits are inactive.

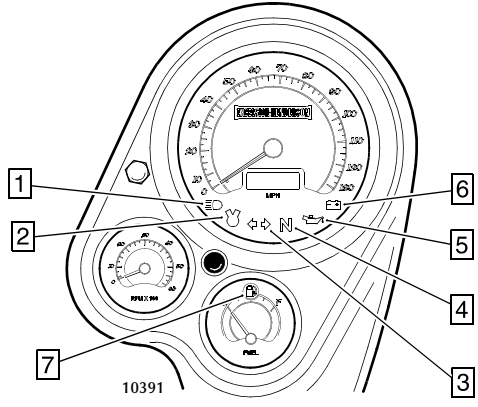
Instrument Pod

The instrument pod includes the indicator lights, instrument gauges, digital odometer/trip odometer, and the odometer/trip meter function button.

Indicator Lights

There are seven indicator lights — six on the speedometer face and one on the fuel gauge face.

1. Headlamp high beam indicator
2. Check engine indicator
3. Turn signal indicator
4. Neutral indicator



5. Low oil pressure indicator
6. Low battery voltage indicator
7. Low fuel indicator

Notice

Instructions for replacing *all* light bulbs are in the *Maintenance* section, beginning on page 95.

⚠ Caution

If an indicator reports a problem, refer to the *Super X Service Manual* or contact your Excelsior-Henderson Dealer as soon as possible.

Headlamp High Beam Indicator

The headlamp high beam indicator illuminates when the headlamp dimmer switch (see "Headlamp Dimmer Switch," page 46) is set to high beam.

Check Engine Indicator

If the check engine indicator illuminates while the engine is running, the Engine Control Module sensors are reporting abnormal sensor or engine operation and a serious engine problem may exist.

The check engine indicator also illuminates when the main switch is in the **On** position, the engine stop/run switch is set to run (see "Engine Stop/Run Switch," page 48), and the engine is not running. This demonstrates that the indicator bulb is functioning properly.

Turn Signal Indicator

The turn signal indicator flashes when either the left or right turn signals are active, or when the emergency flashers are active.

If none of the turn signal bulbs is working, or if there is a short circuit in the turn signal system, the turn signal indicator flashes at twice the normal rate.

Neutral Indicator

N The neutral indicator illuminates when the transmission is in neutral. If the indicator does not illuminate and you are able to roll the motorcycle freely forward and backward with the clutch lever released, the neutral indicator may not be functioning.

Low Oil Pressure Indicator

 If the low oil pressure indicator illuminates while the engine is running, the oil pressure has dropped below the minimum pressure, which indicates either a low oil level or an oil system malfunction. If this indicator illuminates while the engine is running, turn the engine off immediately and check the oil level. Add oil if necessary. If the oil level is correct and the light remains illuminated when the engine is running, turn the engine off immediately.

The low oil indicator also illuminates when the ignition is on and the engine is not running. This demonstrates that the indicator bulb is functioning properly.

Low Battery Voltage Indicator

 The low battery voltage indicator illuminates when the battery voltage drops below the minimum level. See “Battery,” page 119.

Low Fuel Indicator

The low fuel indicator illuminates when approximately 1 gallon of fuel remains.

Speedometer

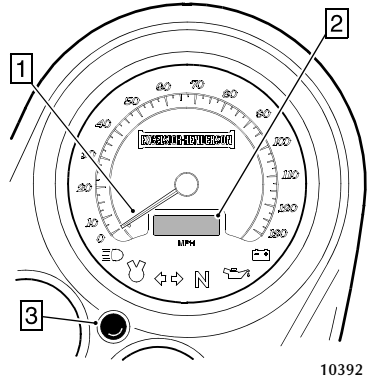
The speedometer indicates riding speed in miles per hour (mph).

Odometer/Trip Meter

A single, digital display on the speedometer face indicates either the odometer or the trip meter mileage.

The digital odometer indicates total miles traveled. When the odometer reading is displayed, “ODO” appears as part of the display.

The digital trip meter indicates total miles traveled since the trip meter was reset. When the trip meter reading is displayed, “TRIP” appears as part of the display. You can use the trip meter to estimate your miles per gallon and calculate the approximate number of miles you can travel on a tank of fuel.



1. Speedometer
2. Odometer/trip meter
3. Odometer /trip meter function button

Odometer/Trip Meter Function Button

The odometer/trip meter function toggles the digital display between the odometer and trip meter. It also resets the trip meter.

To toggle the digital display between the odometer and the trip meter, press and release the odometer/trip meter function button.

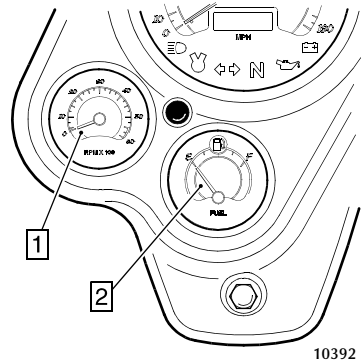
To reset the trip meter, display the trip meter reading. Then press and hold the odometer/trip meter function button for two seconds.

Tachometer

The tachometer indicates the engine speed in revolutions per minute (rpm). A red line on the gauge indicates the rpm in excess of the safe operating range.

⚠ WARNING

Do not operate the engine at or over 5500 rpm. Excessive rpm could cause engine damage or failure which could result in you losing control of the motorcycle.



1. Tachometer
2. Fuel gauge

Fuel Gauge

The fuel gauge indicates the amount of fuel in the fuel tank.

Handlebar Controls

Left Side Handlebar Controls

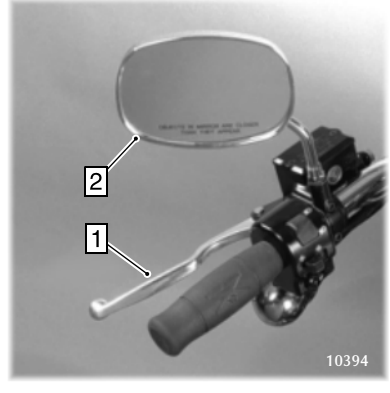
The left side handlebar controls include the clutch lever, the left mirror, the headlamp dimmer switch, the turn signal switch, and the horn button.

Clutch Lever

To disengage the clutch, pull the clutch lever toward the handlebar. To engage the clutch, gradually release the clutch lever. For smooth clutch operation, pull the lever quickly and release it gradually.

Left Mirror

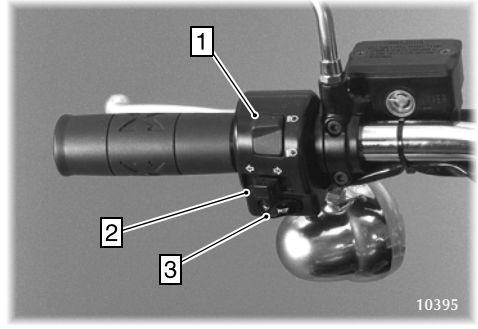
The mirror is convex and therefore objects you see in it are actually closer to you than they appear to be in the mirror.



1. Clutch lever
2. Mirror

Headlamp Dimmer Switch

The headlamp dimmer switch toggles the headlamp between the low beam and the high beam. To activate the low beam, press the lower portion of the switch; to activate the high beam, press the upper portion of the switch.



1. Headlamp dimmer switch
2. Turn signal switch
3. Horn button

Turn Signal Switch

The turn signal switch activates and cancels the turn signals. To activate the left turn signals, push the switch to the left; to activate the right turn signals, push the switch to the right. To cancel the turn signals, push the switch in, toward the handlebar.

The turn signals cancel automatically after you have travelled approximately 1/5 mile.

Horn Button

To sound the horn, press the horn button.

Right Side Handlebar Controls

The right side handlebar controls include the front brake lever, the throttle control grip, the right mirror, the engine stop/run switch, the emergency flasher switch, and the electric starter button.

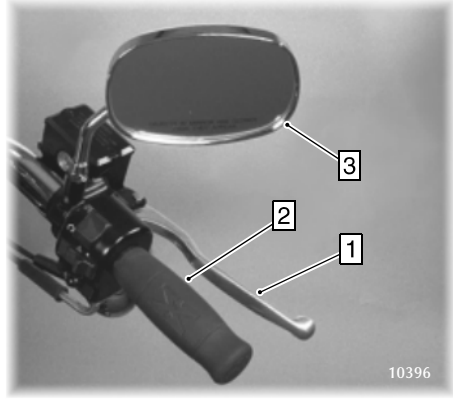
Front Brake Lever

To apply the front brake, pull the front brake lever toward the handlebar.

For braking procedures in various riding conditions, see “Braking,” page 89.

Throttle Control Grip

The throttle control grip controls the engine speed. To increase engine speed, twist the throttle control grip toward you; to decrease engine speed, twist the grip away from you. When you release the grip, it returns to the idle speed position.



1. Front brake lever
2. Throttle control grip
3. Mirror

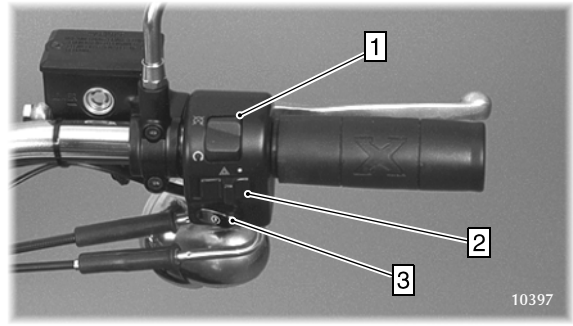
Right Mirror

The mirror is convex and therefore objects you see in it are actually closer to you than they appear to be in the mirror.

Engine Stop/Run Switch

The engine stop/run switch completes or interrupts the ignition and starter circuits. To complete the ignition and starter circuits, allowing the engine to start or run, press the lower portion of the engine stop/run switch. To interrupt the ignition and starter circuits, press the upper portion of the switch; the engine cannot start or run when the switch is in this position.

Use the engine stop/run switch to turn the engine off under normal or emergency conditions.



1. Engine stop/run switch
2. Emergency flasher switch
3. Electric starter button

Emergency Flasher Switch

The emergency flasher switch activates and cancels the emergency flashers. When the emergency flashers are active, the turn signals flash. To activate the emergency flashers, slide the switch to the left; to cancel the flashers, slide the switch to the right.

Electric Starter Button

To start the engine, with the main switch in the **On** position and the engine stop/run switch in the run position, press the right side of the electric starter button.

Foot Controls

Gear Shift Pedal

The gear shift pedal is located on the left side of the motorcycle. To shift to a lower gear, press down on the front of the gear shift pedal. To shift to a higher gear, press down on the rear, or lift up on the front, of the gear shift pedal.

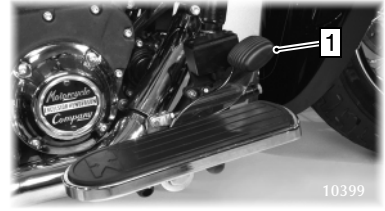
For proper gear shifting procedure, see “Shifting Gears,” page 84.

1. Gear shift pedal

Rear Brake Pedal

The rear brake pedal is on the right side of the motorcycle. To engage the rear brake, press down on the rear brake pedal.

For braking procedures in various riding conditions, see “Braking,” page 89.

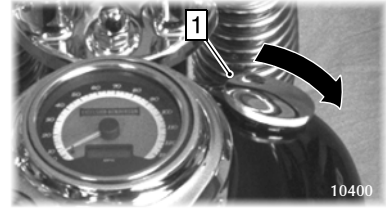


1. Rear brake pedal

Fuel Cap

The Super X fuel cap is vacuum vented. The fuel cap is right-hand threaded (turn clockwise to tighten). When tightening the fuel cap, continue turning the cap until a clicking sound is heard, indicating proper tightness.

For fueling procedure, see “Fueling and Fuel Fill Height,” page 79.



1. Fuel cap

Rear Suspension Adjustment

Proper rear suspension adjustment is essential for a safe and comfortable ride. The Super X rear suspension can be adjusted by changing the setting of either the preload adjuster or the damping rate adjuster, both located on the rear shock absorber. This section identifies the location of the rear shock absorber and the two adjusters. It provides the value set at the factory, the range of settings, and instructions for changing each setting. It also explains how the preload and damping rate adjusters affect shock absorber and rear suspension behavior.

⚠ WARNING

Insufficient preload or damping rate adjustment can reduce ground clearance, which could allow components to come into contact with the ground, causing you to lose control of the motorcycle.

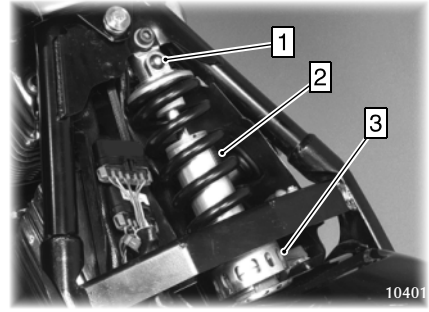
To remove or replace the rear shock absorber, see the *Super X Service Handbook* or contact your authorized Excelsior-Henderson Dealer.

⚠ WARNING

The rear shock absorber contains nitrogen gas under high pressure. To prevent injury, do not disassemble, rebuild, puncture, or apply heat to the shock absorber.

Location of Adjusters

The rear shock absorber is located under the rider's saddle. The damping rate adjuster is at the top of the shock absorber, and the preload adjuster is at the bottom.



1. Damping rate adjuster
2. Rear shock absorber
3. Preload adjuster

Factory Adjustment Settings

Preload and damping rate are set at the factory to provide a rider of average weight a comfortable ride under normal conditions, without passenger, cargo, or accessories on the motorcycle.

- The preload is set to setting 2 at the factory.
- The damping rate is set to detent 6 at the factory.

Adjusters and Their Setting Ranges

The preload adjuster is a cam with seven notches, labeled 1–7. Setting 1 provides the minimum preload; setting 7, the maximum preload.

The damping rate adjuster is a screw head with 14 detents. Each detent is a point of slight resistance that you feel as you turn the damping rate adjusting screw with a screwdriver.

To find detent 1, the minimum damping setting, turn the screw counterclockwise until it stops. Then turn the screw slowly clockwise until you feel it stop at the first detent. Turn the screw approximately 180° to locate the next detent.

Changing Adjustment Settings

Change the preload adjustment setting whenever the current setting is not correct for load you intend to carry (see “Changing Preload Adjustment,” page 54). Adjust the preload before you adjust the damping rate. When you are satisfied that the preload is properly adjusted, change the damping rate setting if necessary (see “Changing Damping Rate Adjustment,” page 57). Changing the damping rate setting is necessary if the rear suspension continues to move up and down after the rear shock absorber has absorbed a shock, or if you are not satisfied with the feel of the rear suspension.

For weight limitations, see “Gross Vehicle Weight Rating,” page 14. For loading considerations, see “Loading,” page 15.

For additional information, see “Effects of Rear Suspension Adjustments,” page 58.

Changing Preload Adjustment

This procedure involves using the Excelsior-Henderson rear shock adjusting wrench (part no. EH-6999-0029), which is designed specifically for changing the preload adjuster setting.

1. In the following table, find the weight closest to your own, including your riding apparel and all its contents, and identify the rider payload. If your weight is between two of the weights in the table, choose the higher rider payload.

Your weight (in pounds)	Rider payload (in pounds)	Your weight (in pounds)	Rider payload (in pounds)	Your weight (in pounds)	Rider payload (in pounds)
100	70	180	126	260	182
110	77	190	133	270	189
120	84	200	140	280	196
130	91	210	147	290	203
140	98	220	154	300	210
150	105	230	161	310	217
160	112	240	168	320	224
170	119	250	175	330	231

2. Determine the weight of your passenger, and cargo and accessories located rear of the rider's saddle, if any. Accessories located forward of the rider's saddle do not affect preload.

3. Calculate the total rear wheel payload:

   total rear wheel payload =rider payload + (weight of passenger + cargo + accessories located rear of the rider's saddle)

   For example, if you weigh 200 lb, the rider payload is 140 lb. If you carry 30 lb of cargo and have 35 lb of accessories located to the rear of the rider's saddle, you would make the following total rear wheel payload calculation:

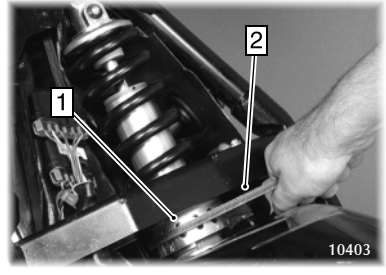
   140 lb + 30 lb + 35 lb = 205 lb rear wheel payload

4. In the following table, find the total rear wheel payload closest to the one you calculated and identify the preload setting. If your total rear wheel payload is exactly halfway between two of the payloads in the table, choose the higher preload setting.

Total rear wheel payload (in pounds)	Preload setting	Total rear wheel payload (in pounds)	Preload setting
125	1	230	5
155	2	260	6
175	3	285	7
205	4		

   If your total rear wheel payload is *over* 285 lb, choose preload setting 7 and be aware that your load will reduce ground clearance, which could cause you to lose control of the motorcycle.

5. If you have not already done so, remove the tandem and rider's saddles (see "Saddles," page 117).
6. Each notch in the preload adjuster is labelled with a number 1–7, indicating the preload adjustment setting. Using the rear shock adjusting wrench, turn the preload adjuster until the notch you need rests on the adjuster setting tab.
7. Test ride the Super X on a road that is in the poorest condition you expect to encounter, carrying your intended load. After the test ride, make additional preload adjustments if necessary.



1. Preload adjuster
2. Rear shock adjusting wrench

8. When you are satisfied that the preload is properly adjusted, if you are going to change the damping rate adjustment, see "Changing Damping Rate Adjustment," page 57. Otherwise, reinstall the rider's and tandem saddles (see "Saddles," page 117).

Changing Damping Rate Adjustment

Adjust the preload setting before you make any adjustment to the damping rate.

1. If you have not already done so, remove the tandem and rider's saddles (see "Saddles," page 117).
2. Using a flat blade screwdriver with the appropriate size blade, turn the damping rate adjustment screw counterclockwise to reduce the damping rate for a softer ride, or clockwise to increase the damping rate for a firmer ride. Each detent is a point of slight resistance that you feel as you turn the damping rate adjusting screw.
3. Reinstall the rider's and tandem saddles (see "Saddles," page 117) and test ride the motorcycle with the load you intend to carry on a road that is in the poorest condition you expect to encounter. During the test ride, if the rear suspension continues to move up and down after the rear shock absorber has absorbed a shock, or if you are not satisfied with feel of the rear suspension, repeat the damping rate adjustment and test riding procedure until you eliminate this condition.

Effects of Rear Suspension Adjustments

⚠ WARNING

Insufficient preload or damping rate adjustment can reduce ground clearance, which could allow components to come into contact with the ground, causing you to lose control of the motorcycle.

A properly adjusted rear suspension travels up and down smoothly because the shock absorber compresses and decompresses at a rate and force that does not jar the rear suspension. Taking road conditions into account, when the rear suspension is properly adjusted, the ride is smooth, the motorcycle's ground clearance is adequate, and steering characteristics are normal. Based on your total rear wheel payload (see calculation, page 55), you can adjust the shock absorber preload and damping rate settings to produce a solid-handling ride that suits your comfort preference.

Preload is a measure of how much the shock absorber spring is compressed when the shock absorber itself is uncompressed. The degree of preload affects the amount of rear suspension travel. It affects how much force is necessary to compress the shock absorber, allowing the rear suspension to move up. The degree of preload also affects how much force is applied to decompress the shock absorber, moving the rear suspension down. The smaller the preload, the lower the motorcycle is to the ground. Smaller preload settings decrease the saddle

height, but also bring the exhaust pipes and other components at or near the bottom of the motorcycle closer to the ground.

The proper preload setting ensures that the rear suspension moves up and down under the total rear wheel payload without causing the motorcycle to “bottom out” or “top out,” either of which produces a jarring sensation. The motorcycle bottoms out when the suspension has completely compressed before it has fully absorbed a shock, causing the upward motion of the rear wheel (downward motion of the motorcycle) to stop abruptly. Similarly, the motorcycle tops out when the suspension has completely extended to its full length, causing the downward motion of the rear wheel (upward motion of the motorcycle) to stop abruptly.

The damping rate affects the smoothness of the ride by determining how quickly and to what degree the shock absorber resists compression and rebound. When the rear wheel moves up, the shock absorber compresses; when the wheel moves down, the shock absorber rebounds. The higher the damping rate, the more quickly and strongly the shock absorber resists compression and rebound, resulting in a “firmer” feel to the ride. Too much damping causes a jarring ride. The lower the damping rate, the less the shock absorber resists compression and rebound, producing a “softer” ride. Too little damping allows the rear suspension to continue moving up and down after the rear shock absorber has absorbed a shock, which can cause instability and, in corners, reduce ground clearance. Damping rate also helps prevent bottoming out and topping out.

When the damping rate is properly adjusted:

- The rear suspension does not continue moving up and down after the rear shock absorber has absorbed a shock.
- The motorcycle has a solid feel going through turns, and during and after bumpy stretches.
- When traveling over a series of bumps, handlebar vibration is minimal and the ride is relatively smooth.

The proper damping rate is also somewhat subjective, depending on your preference for the feel of the ride.

Sidestand

The sidestand is located on the left side of the motorcycle. When the sidestand is extended, it locks into position as long as the motorcycle's weight is on it, preventing it from retracting if the motorcycle moves forward.

⚠ WARNING

Do not operate the motorcycle without the sidestand completely retracted. It could come into contact with the ground and cause you to lose control of the motorcycle.

To extend the sidestand, swing it out from the end until it is fully extended. Lean the motorcycle toward the sidestand until the sidestand supports the motorcycle. The sidestand is now locked in position.

To retract the sidestand, lean the motorcycle away from the sidestand until the motorcycle is fully upright. The sidestand is released from its locked position. Swing the sidestand back into its retracted position.

Saddles

The Super X has a rider's saddle and a tandem saddle. The tandem saddle has a saddle strap for the passenger to hold on to while riding.

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Pre-Operation Check

To keep your Super X motorcycle in good working order, make the checks described in this section before each ride. This is especially important before you make a longer trip or when you remove the Super X from storage. You must be familiar with the Super X instruments and controls to make these checks. You can find additional service information in the *Maintenance* section of the *Rider's Handbook,* in the *Super X Service Handbook,* or from your local authorized Excelsior-Henderson Dealer.

During the pre-operation check you might use products that are potentially hazardous, such as oil. When using any of these products, follow the instructions and warnings on the product packaging.

⚠ WARNING

Failure to perform these checks before you ride may result in injury or damage. Adjust components designed for normal wear adjustment, and repair or replace worn or damaged components, as necessary.

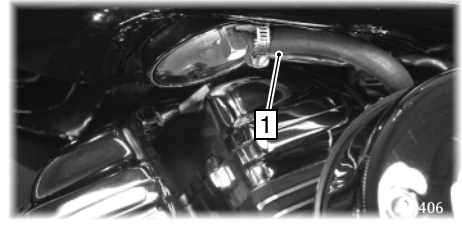
Fuel

Fuel Level

1. Mount the Super X on level ground and bring it to a vertical position.
2. Turn the main switch to the **On** position and note the fuel level once the fuel gauge needle stops moving.
3. Estimate your next fuel stop and plan accordingly.

Fuel Hose, Rail, and Connections

Inspect the fuel hose, and its connection to the fuel pump and to the fuel rail, for dampness or stains from leaking or dried fuel.



1. Fuel hose

Evaporative Emission Control System
(California model only)

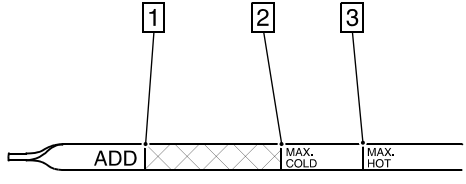
Visually inspect all evaporative emission control system hoses and connections. Make sure all connections are tight. Also, inspect the evaporative canister to make sure it has not been damaged.

Engine Oil Level

A dipstick attached to the oil fill cap registers the engine oil level.

1. With the engine at normal operating temperature, mount the motorcycle and bring it to an upright position on level ground.
2. With the transmission in neutral, start and run the engine at 2500 - 3000 rpm for 30 seconds. Shut the engine while the motorcycle is still in the upright position.
3. Rest the motorcycle on the sidestand and on level ground. Remove the oil fill cap and wipe the dipstick clean. Reinstall the dipstick and turn the cap clockwise until it seats.
4. Remove the dipstick again and note the oil level.

1. fill cap and dipstick



1. ADD mark
2. MAX. COLD mark
3. MAX. HOT mark

5. If necessary, add or remove oil to bring the level into the area on the dipstick above the ADD mark and below the appropriate MAX. mark (see "Engine Oil Specifications," page 239). Repeat steps 3–4 each time you adjust the oil level.

⚠ WARNING

Do not operate the motorcycle with the oil level above the appropriate MAX. mark or below the ADD mark. Operating the engine with too much or too little oil can cause serious engine damage or engine seizure, resulting in you losing control of the motorcycle.

Tires

Tire Pressure

Normal riding warms the tires and increases the tire air pressure. For an accurate reading, check the tire pressure before you ride. Adjust tire pressure as required for the total weight of your intended load.

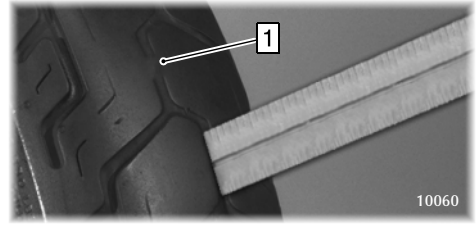
	Up to 200 lb load	**200 lb–440 lb load**
Front: Dunlop® tires 491 Elite II MT90HB16	36 psi (cold)	36 psi (cold)
Rear: Dunlop® tires 491 Elite II MU90HB16	36 psi (cold)	40 psi (cold)

Tire Condition

Inspect the tire sidewalls, road contact surface, and tread base for cuts, punctures, and cracking. Replace damaged tires immediately (see your Super X Service Handbook or an authorized Excelsior-Henderson Dealer).

Tread Depth

Raised areas at the base of the tread, known as wear bars, act as easily-visible tread depth indicators. When the road contact surface has worn to the top of the wear bars, replace the tire.



1. Wear bar

If you have installed tires that do not have wear bars, use an accurate ruler or depth gauge to measure the shallowest tire tread you can find (usually near the center of the tire surface). Replace a tire with a tread depth less than 1/16” (see your Super X Service Handbook or an authorized Excelsior-Henderson Dealer).

Drive Belt

Replace the drive belt if it is cracked or has broken teeth or frayed edges (consult your Super X Service Handbook or an authorized Excelsior-Henderson Dealer).

Steering

Mount the motorcycle and bring it to a vertical position. Turn the handlebars from stop to stop. The action should be smooth but not loose or interfered with by wires or control cables.

Hydraulic Controls — Clutch and Brakes

Check Hoses and Connections

Inspect all brake and clutch hoses and connections for dampness or stains from leaking or dried brake fluid.

Check Front Brake & Clutch Fluid Level

1. To check the front brake or clutch fluid level, mount the motorcycle and bring it to a vertical position. Turn the handlebars until the reservoir is horizontal.
2. View the hydraulic fluid through the sight glass. The fluid should be clear and at a level above the “Lower” marking on the reservoir. Add hydraulic fluid if necessary.

Fluid reservoir with sight glass

Check Rear Brake Fluid Level

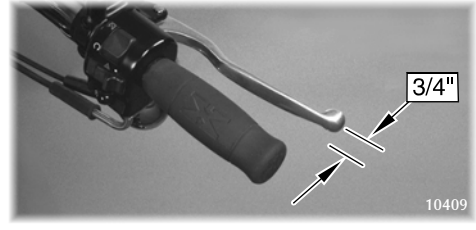
1. To check the rear brake fluid level, bring the motorcycle to a vertical position with an appropriate motorcycle lift or a block of wood or steel placed securely under the frame.
2. View the hydraulic fluid through the sight glass. The fluid should be clear and at a level at or near the top of the sight glass. Add hydraulic fluid if necessary.

Check Clutch Lever Movement

Squeeze the clutch lever toward the handlebar and release it. It should move freely and smoothly and should return to its rest position quickly when released.

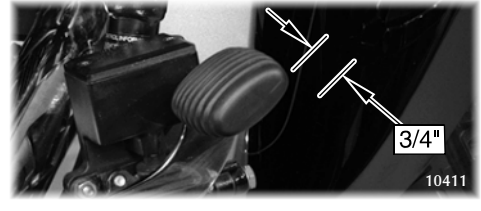
Check Front Brake Lever Movement

Squeeze the front brake lever toward the handlebar and release it. It should move freely and smoothly and should return to its rest position quickly when released. You should feel a firm resistance in the lever within the first 3/4” of lever travel.



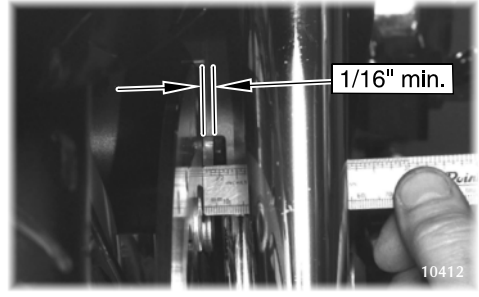
Check Rear Brake Pedal Movement

Press and release the rear brake pedal. It should move freely and smoothly and should return to its rest position quickly when you release it. You should feel a firm resistance in the pedal within the first 3/4” of pedal travel.



Check Brake Pads

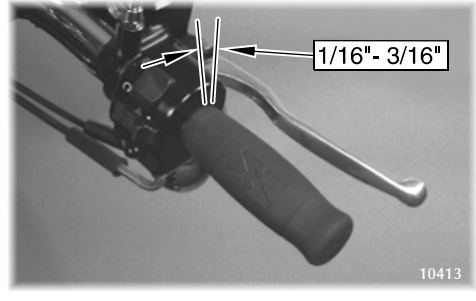
Looking in through the back of the front brake caliper, and down through the top of the rear caliper, you should see at least 1/16” of friction material on the pads. If in doubt, measure remaining friction material. Replace brake pads having less than 1/16” of friction material at their thinnest point. Replace brake pads in pairs.



Throttle Control Grip and Cables

Rotate the throttle control grip. It should rotate smoothly from its rest position to its completely open position and back again. It should return to its rest position quickly when released.

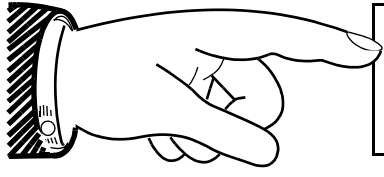
Throttle freeplay — the amount of throttle control grip movement from the rest position to the point of cable resistance — should be between 1/16” and 3/16”.



Electrical Equipment

Engine Stop/Run Switch

Be sure the engine stop/run switch stops the engine. If you regularly use this switch to shut off the engine, you are checking its operation each time you use the motorcycle.



To inspect the remaining electrical items in this section, set the main switch to the On position. When you have completed these checks, set the main switch to the Off position.

Instrument Pod

The odometer/trip meter display should show the mileage reading, and "ODO" or "TRIP" should be part of the display. The low oil pressure indicator should illuminate. If the transmission is in neutral, the neutral indicator should illuminate. The gauge lights under the speedometer, tachometer, and fuel gauge should also illuminate.

Set the engine stop/run switch to the run position. The check engine indicator should illuminate. Return the engine stop/run switch to the stop position.

Press the horn button. The horn should sound.

Press the odometer/trip meter function button. The odometer/trip meter display should change to show the current trip meter reading.

Headlamp

Check the headlamp to see that it is on. Set the headlamp dimmer switch to the high beam position. The headlamp brightness should increase and the high beam indicator in the instrument pod should illuminate.

Brake Light

Apply slight pressure to the front brake lever; tail light brightness should increase. Apply slight pressure to the rear brake pedal; tail light brightness should increase.

Running Lights

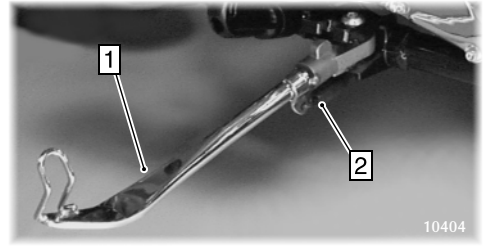
The two amber front running lights and the tail light should illuminate. The license plate light should also illuminate.

Turn Signals

Move the turn signal switch to the left. The front and rear left turn signal lights, and the turn signal indicator, should flash. Push the switch in toward the housing. The turn signals and turn signal indicator should stop flashing. Repeat the operation for the right turn signals.

Sidestand

Move the sidestand to its stored (up) position, then to its fully extended (down) position, and back again. It should move smoothly. When the sidestand is in its stored position, the sidestand return spring should hold the sidestand tightly against the motorcycle.



1. Sidestand
2. Return spring

Fasteners

Visually inspect the entire motorcycle chassis and engine for loose, damaged, or missing fasteners. Each fastener has an important purpose or it wouldn't be there. Tighten loose fasteners to the proper torque (see "Torque Specifications," page 240). Replace stripped, damaged, or broken fasteners immediately.

Some genuine Excelsior-Henderson threaded fasteners are coated with a thread-locking patch. After removing and reinstalling the fastener 2 or 3 times, the thread-locking patch wears away and the fastener should be replaced with the same genuine Excelsior-Henderson fastener.

Notes:

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Operation and Riding

This section describes how to operate the Super X motorcycle for best performance and longevity, including:

- motorcycle break-in period
- starting the engine
- shifting gears
- accelerating
- braking
- stopping the engine
- parking

For safe operation and riding, see *Safety Information*, beginning on page 5.

Operating During Break-In Period (First 500 Miles)

Your new Super X is designed and built with premium-quality materials and expert craftsmanship, providing optimum performance from the first mile. During the first 500 miles, critical parts require special wear-in procedures so they seat and mate properly. Use the following rules for operation during the first 500 miles to ensure your engine's long-term performance and durability.

During the first 500 miles:

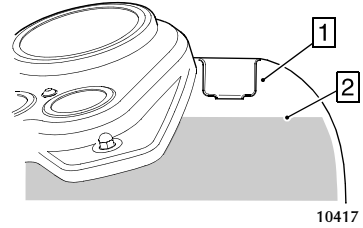
- Vary the engine speed. Do not keep a steady engine speed for an extended time.
- Do not exceed 70 mph. Within this limitation, you can run the engine at speeds up to 3000 rpm. Select gears that prevent lugging the engine.

At 500 miles:

Perform the break-in maintenance after you've ridden your new Super X 500 miles. This maintenance is one of the most important services your motorcycle requires and should be performed by an authorized Excelsior-Henderson Dealer. Break-in maintenance includes servicing all adjustments, tightening all fasteners, and changing engine oil. Performing this maintenance at the required mileage point helps the engine maintain top performance for its entire service life.

Fueling and Fuel Fill Height

Fuel the Super X with the sidestand down and on level ground. Use only the recommended fuel (see "Fuel Specifications," page 238). Fill the fuel tank to a level about 3/4" below the bottom of the fuel filler insert.



1. Fuel filler insert
2. Fuel fill height

⚠ WARNING

- Do not allow gasoline to come into contact with a hot engine or exhaust system. This could cause a fire. Immediately wipe, or rinse with water, gasoline spilled on any part of the Super X or the surrounding area.
- Do not fill the fuel tank above the fuel filler insert. Overfilling the fuel tank may cause fuel to overflow when it expands.
- Fuel may leak from an improperly seated or tightened fuel cap. Tighten the fuel cap until you hear one or more distinct clicks. Be certain the fuel cap is properly seated and tightened before starting the engine.

⚠ Caution

Fuel can damage painted surfaces and plastic parts. Wipe spilled fuel immediately from the motorcycle using a clean, dry, soft cloth.

Starting the Engine

⚠ WARNING

Before you start the engine, shift the transmission to neutral (see “Shifting Gears,” page 84) to prevent a sudden, accidental movement that could injure you or others.

The Super X has a port sequential fuel injection system. There is no choke or fuel shutoff valve. The Engine Control Module (ECM) makes all adjustments necessary for starting and running the engine in all temperatures and other ambient conditions.

Notice

Start the motorcycle with the throttle closed (throttle control grip in the idle speed position), as the ECM adjusts the fuel flow needed to start the engine.

Follow these steps to start the Super X:

1. Perform the pre-operation check described in *Pre-Operation Check*, beginning on page 63. If you are carrying cargo, inspect cargo restraints for tightness.
2. Unlock the fork lock.

3. Unlock the main switch, remove the key, and set the indicator to the **On** position (see “Main Switch,” page 38).

   The low oil pressure indicator illuminates. The neutral indicator illuminates if the transmission is in neutral.

4. Engage the front brake, mount the motorcycle, and place the sidestand in the stored (up) position. If the neutral indicator is not illuminated, shift the transmission to neutral (see “Shifting Gears,” page 84).

   If the neutral indicator still does not illuminate, see “Neutral Indicator,” page 42.

5. Set the engine stop/run switch to the run position.

   The check engine indicator illuminates. You should hear the fuel pump momentarily as it pressurizes the fuel system.

6. Leaving the throttle closed, press and hold the electric starter button for several seconds until the engine starts.

⚠ Caution

Allow the engine to idle for about 30 seconds after a cold or a warm start; do not rev the engine or put the transmission in gear during this idling period. This allows the oil to reach all areas requiring lubrication before the engine is put under load.

If the engine does not start within a few seconds after you press the starter button, release the button and wait several seconds. Then press and hold the starter button again. Hold the starter button for as short a time as possible to minimize battery drain, and do not push the starter button for more than 10 seconds at any one time.

If either the check engine indicator or the low oil pressure indicator does not go out after the engine starts, stop the engine. See either "Check Engine Indicator," page 41 or "Low Oil Pressure Indicator," page 42.

Jump-Starting

Although not recommended, we realize that in an emergency situation jump-starting the motorcycle may be necessary. Please use the following procedure when jump-starting the motorcycle.

⚠ WARNING

The battery may contain explosive gases.

- Keep sparks, cigarettes, or any flame away from the battery.
- Avoid creating sparks by making sure the jumper cable clamps do not come into contact with anything other then the battery terminals or a safe ground.

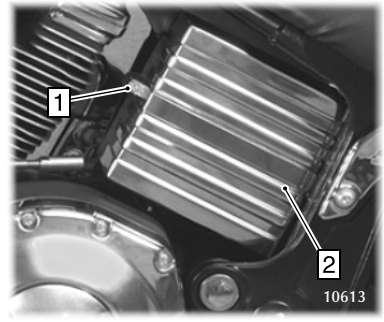
1. Remove the battery box cover strap and the battery box cover. Slide the rubber boot off of the positive (**+**) terminal.
2. Connect the jumper cables in the following order:

   One end of a jumper cable to the positive (**+**) terminal of the discharged battery.

   The other end of the same cable to the positive (**+**) terminal of the booster battery.

   One end of a second jumper cable to the negative terminal of the booster battery.

   The other end of the same cable to a safe ground on the motorcycle being jump-started. The best place to safely ground the Super X is to the front cylinder exhaust stud
3. Start the motorcycle.
4. Disconnect the jumper cables in reverse order
5. Slide the rubber boot over the positive terminal and reinstall the battery cover strap and cover.
6. Properly charge or replace the discharged battery as soon as possible (see “Battery,” page 119).



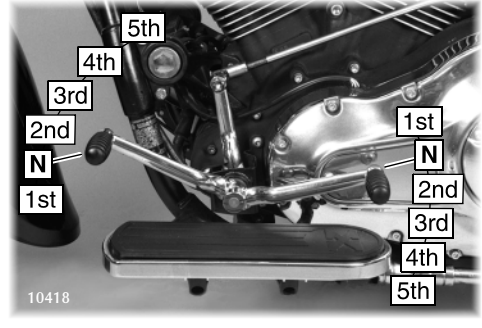
1. Battery cover strap
2. Battery cover

Shifting Gears

⚠ WARNING

The clutch must be fully disengaged (clutch lever pulled completely in toward the handlebars) before you attempt to shift gears. Forced shifting (shifting without the clutch disengaged) may damage the engine, transmission, and drive train, causing you to lose control of the motorcycle.

The Super X is equipped with a five-speed transmission. The gear pattern is shown in the illustration to the right. The Super X has a heel-toe shift pedal which allows you to shift to a higher gear by depressing the rear of the pedal with your heel or by lifting the front of the pedal with your toe. To shift to a lower gear, depress the front of the pedal with your toe.



Neutral position is between first and second gear. The transmission is in neutral when the motorcycle moves forward or backward freely while the clutch is engaged. With the main switch set to either **On** or **Acc,** the neutral indicator illuminates when the transmission is in neutral.

To engage first gear, start the engine (see “Starting the Engine,” page 80). With the engine at idle speed, engage the front brake (squeeze the brake lever) and

disengage the clutch (squeeze the clutch lever). Push the shift pedal down until you feel it stop in first gear. Disengage the front brake (release the brake lever). Simultaneously moving both the clutch lever and the throttle control grip with a smooth, gentle motion, gradually engage the clutch (release the clutch lever) and open the throttle (roll the throttle control grip toward you). As the clutch begins to engage, the motorcycle begins to move forward.

To shift to the next higher gear, accelerate smoothly and easily to the recommended shift point (see “Recommended Shift Points,” page 87). With a quick motion, simultaneously close the throttle completely and disengage the clutch. Raise the shift pedal with your toe, or depress it with your heel, until you feel it stop at the next gear. Simultaneously moving both the clutch lever and the throttle with a smooth, gentle motion, gradually release the clutch lever and open the throttle.

Within the recommended speed ranges (see “Recommended Shift Points,” page 87), you can downshift (shift to a lower gear) to slow the motorcycle or to increase the available power. You may want to downshift when climbing a hill or passing. Downshifting also helps to decrease your speed when combined with closing the throttle.

To shift to a lower gear, simultaneously pull in the clutch lever and close the throttle. Shift into the next lower gear and simultaneously release the clutch lever and open the throttle.

⚠ WARNING

Downshifting at a speed in excess of the recommended downshift point may severely damage the transmission or cause the rear wheel to lose traction. In either case, you could lose control of the motorcycle. It could also result in engine damage from running at excessive rpm. Reduce speed before downshifting and do not downshift at a speed above that in the table of recommended shift points.

⚠ WARNING

Downshifting abruptly on wet, rough, loose, or slippery surfaces can cause the motorcycle to skid. This can cause you to lose control of the motorcycle. When downshifting while passing over such surfaces, release the clutch lever very gradually.

⚠ WARNING

Downshifting in a curve may cause the rear wheel to lose traction, which could cause you to lose control of the motorcycle. Downshift before you enter a curve.

Recommended Shift Points

The following table shows the appropriate speed at which to shift up and shift down to each gear.

Recommended Shift Points (during break-in period)

Upshift (Acceleration) Gear Change	Upshift Speed	Downshift (Deceleration) Gear Change	Downshift Speed
1st to 2nd	20 mph	5th to 4th	45 mph
2nd to 3rd	30 mph	4th to 3rd	35 mph
3rd to 4th	40 mph	3rd to 2nd	25 mph
4th to 5th	55 mph	2nd to 1st	15 mph

Recommended Shift Points (after break-in period)

Upshift (Acceleration) Gear Change	Upshift Speed	Downshift (Deceleration) Gear Change	Downshift Speed
1st to 2nd	15 mph	5th to 4th	50 mph
2nd to 3rd	25 mph	4th to 3rd	40 mph
3rd to 4th	35 mph	3rd to 2nd	30 mph
4th to 5th	50 mph	2nd to 1st	20 mph

Accelerating

⚠ Caution

Do not accelerate beyond 2500 rpm while the engine is cold. To maximize engine life and performance, allow the engine to warm up fully before accelerating beyond 2500 rpm.

To accelerate, open the throttle (roll the throttle control grip toward you). For even acceleration, open the throttle with a smooth, continuous motion. When you reach the recommended speed for upshifting, shift up one gear according to the instructions in “Shifting Gears,” page 84. The more quickly you open the throttle, the more quickly the motorcycle accelerates.

⚠ WARNING

- Abrupt acceleration can cause your body to shift suddenly toward the rear of the motorcycle. This may cause you to lose of control of the motorcycle.
- Accelerating abruptly on wet, rough, loose, or slippery surfaces can cause you to lose of control of the motorcycle. When accelerating on such surfaces, whether you are at a stop or already in motion, open the throttle gradually.

Braking

To slow the motorcycle with the brakes, close the throttle and apply the front and rear brakes evenly. As the motorcycle slows, either disengage the clutch or downshift each time your speed reaches a downshift point. Applying slightly more front brake than rear brake generally gives you the best braking performance. Do not apply the brakes so forcefully or quickly that either wheel stops rotating. Leave sufficient distance so you can apply the brakes gradually if you need to stop.

⚠ WARNING

- Do not apply either brake so strongly that the wheel stops rotating. This may cause you to lose control of the motorcycle.
- Braking hard on wet, rough, loose, or slippery surfaces can cause the motorcycle to skid, and you could lose control of the motorcycle. Apply the brakes lightly on such surfaces.
- Braking while in a curve can cause you to lose control of the motorcycle. Brake before entering a curve.

Stopping the Engine

Before stopping the engine, bring the motorcycle to a complete stop either in neutral or with the clutch disengaged. Once the motorcycle is at a complete stop, if it is not already in neutral, shift into neutral. To stop the engine, set the engine stop/run switch to the stop position and turn the main switch indicator to the **Off** position.

⚠ WARNING

- Stopping the engine while the motorcycle is in motion and the transmission is engaged may damage the engine and the transmission or cause the rear wheel to lose traction. In either case, you may lose control of the motorcycle.
- If the motorcycle is in motion and the engine stops on its own, guide the motorcycle to a safe location off the road and away from traffic.

Parking

When parking the motorcycle, choose a flat, firm surface. Bring the motorcycle to a complete stop and, with the transmission in neutral, stop the engine. Set the main switch indicator to **Off.** Fully extend the sidestand, turn the handlebars fully to the left, and lean the motorcycle to the left until the sidestand locks. Lock the main switch and the fork lock, and take the key with you.

⚠ WARNING

Moving or operating the motorcycle with the forks locked severely restricts steering and can cause you to drop or lose control of the motorcycle.

If you must park on a slope, point the motorcycle toward the top of the slope. Put the transmission in gear and park the motorcycle so that it is stable when it rests on the sidestand.

If you must park on a soft surface, use a sidestand footrest under the foot of the sidestand to provide a firm surface. The sidestand footrest must be strong enough and large enough to support the motorcycle's weight without sinking into the parking surface. Many motorcyclists carry a sidestand footrest.

⚠ Caution

Asphalt pavement can become soft in hot weather. The sidestand can sink into soft asphalt until the motorcycle falls over. When parking on asphalt in hot weather, use a sidestand footrest under the foot of the sidestand to prevent the sidestand from sinking into the asphalt.

⚠ WARNING

A hot engine or hot exhaust pipes can be hazardous. The engine and exhaust pipes are hot for some time after the engine is stopped. Touching the engine or exhaust pipes while hot can cause serious burns. Allowing flammable materials to contact a hot engine or exhaust pipes may cause a fire. Park the motorcycle where people will not touch the engine or exhaust pipes and where it is not near flammable materials.

Notes:

10419

Maintenance

This section includes information for maintaining your Super X motorcycle. It also includes recommended periodic maintenance intervals. “Periodic maintenance” means performing the regular service required to keep your Super X in top working condition. Regular service increases motorcycle durability, safety, and dependability, and provides greater riding pleasure.

Also see *Safety Information,* “Maintenance,” page 20.

Before you begin any maintenance procedure, read the instructions for the entire procedure in this section of the *Rider’s Handbook.* Choose a flat, firm surface for servicing the Super X. Make sure you have the time, tools, and expertise to complete a procedure properly.

During maintenance you might use products that are potentially hazardous; such as oil or hydraulic fluid. When using any of these products, follow the instructions and warnings on the product packaging.

For information on major repairs, see the *Super X Service Handbook.* Major repairs typically require the technical skills and specially designed tools available from your authorized Excelsior-Henderson Dealer.

To comply with emission regulations and to ensure proper engine function, we advise that all emission system maintenance and repair be performed by an authorized Excelsior-Henderson Dealer.

New Motorcycle Break-In Maintenance

Perform the break-in maintenance after you've ridden your new Super X 500 miles. This maintenance is one of the most important services your motorcycle requires and should be performed by an authorized Excelsior-Henderson Dealer. Break-in maintenance includes servicing all adjustments, tightening all fasteners, and changing engine oil. Performing this maintenance at the required mileage point helps the engine maintain top performance for its entire service life.

Periodic Maintenance Intervals

Use the following periodic maintenance interval table to determine how often you should perform maintenance on various Super X components. For additional information on maintenance operations for each component listed in the table, refer to the instructions in this section.

⚠ Caution

If you regularly ride your Super X at high or low speed for an extended time, or in dusty or other adverse conditions, perform the required maintenance at more frequent intervals to help keep your motorcycle in safe operating condition.

Periodic Maintenance Intervals

Component (See operation codes below.)	500 mi	2,500 mi	5,000 mi	7,500 mi	10,000 mi	12,500 mi	15,000 mi	17,500 mi	20,000 mi	22,500 mi	25,000 mi	27,500 mi	30,000 mi	32,500 mi	35,000 mi	37,500 mi	40,000 mi	42,500 mi	45,000 mi	47,500 mi	50,000 mi
Engine oil*	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Engine oil filter*	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Air filter element	I		I		I		I		R		I		I		I		R		I		I
Drive belt	A		A		A		A		A		A		A		A		A		A		A
Throttle cables	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Clutch fluid**	I		I		I		I		I		I		I		I		I		I		I
Brake fluid**	I		I		I		I		I		I		I		I		I		I		I
Brake pads	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Fuel delivery system	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Evaporative emission control system (California model only)		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Oxygen sensor									R								R				
Spark plugs			I		R		I		R		I		R		I		R		I		R
Battery	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Electrical equipment	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Steering head bearings	A		A		A		A		A		A		A		A		A		A		A

Operation Codes

I - Inspect (correct, clean, or replace if necessary) **A** - Adjust **R** - Replace or change

L - Lubricate with proper lubricant **P** - Perform

* - at specified interval or annually ** - replace every three years *** - inspect during tire replacement

Periodic Maintenance Intervals (Continued)

Component (See operation codes below.)	500 mi	2,500 mi	5,000 mi	7,500 mi	10,000 mi	12,500 mi	15,000 mi	17,500 mi	20,000 mi	22,500 mi	25,000 mi	27,500 mi	30,000 mi	32,500 mi	35,000 mi	37,500 mi	40,000 mi	42,500 mi	45,000 mi	47,500 mi	50,000 mi
Tires	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Wheel spokes			I		I		I		I		I		I		I		I		I		I
Wheel bearings***					I				I				I				I				I
Sidestand			L		L		L		L		L		L		L		L		L		L
All visible fasteners	I		I		I		I		I		I		I		I		I		I		I
Road test	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

Operation Codes
I - Inspect (correct, clean, or replace if necessary) **A** - Adjust **R** - Replace or change
L - Lubricate with proper lubricant **P** - Perform
* - at specified interval or annually ** - replace every three years *** - inspect during tire replacement

Record information about periodic maintenance in the areas provided in the *Rider's Warranty and Service Records* booklet (Excelsior-Henderson document part no. 6999-0002) you received with your Super X.

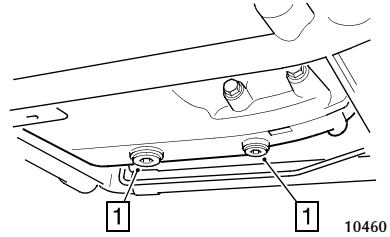
Engine Oil

Change Oil and Oil Filter

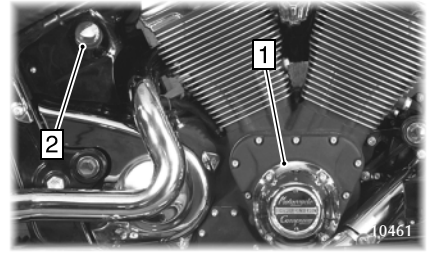
This procedure involves using the Excelsior-Henderson oil filter wrench, part no. EH-6999-0033, which is designed specifically for removing the oil filter.

1. Start and run the engine until it reaches normal operating temperature.
2. Stabilize the motorcycle in an upright position by using an appropriate motorcycle lift or a block of wood or steel placed securely under the frame.
3. Place an oil drain pan under the drain plugs.
4. Remove both drain plugs and their sealing washers, allowing the oil to drain into the pan.
5. Reinstall both drain plugs and sealing washers.

   Torque: 30 ft-lbs
6. Remove the oil filter cover and move the drain pan under the oil filter.

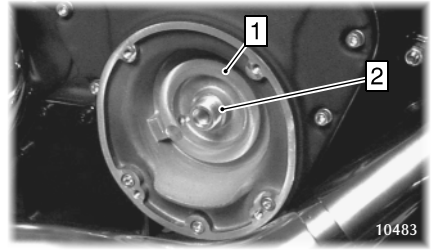


1. Drain plugs



1. Oil filter cover
2. Oil fill cap

7. Use an oil filter wrench to loosen the oil filter slowly, allowing any oil in the filter to drain into the pan before removing the filter.
8. Clean any residue or debris from the oil filter mounting plate and threads.
9. Apply a thin film of clean engine oil to the new oil filter gasket. Screw the new filter on until the gasket contacts the filter mounting plate. Tighten the filter *by hand* an additional 1/2 to 3/4 turn.



1. Mounting plate
2. Mounting plate thread

10. Fill the crankcase through the oil fill cap with 3-1/2 quarts of the proper grade and viscosity oil (see “Engine Oil Specifications,” page 239).
11. Reinstall the oil fill cap and then start and run the engine until it reaches normal operating temperature.

⚠ Caution

After an oil change, the low oil pressure indicator remains illuminated longer than usual before going out. Revving the engine while the low oil pressure indicator is illuminated can damage the engine.

12. Stop the engine and make sure there are no leaks around the drain plugs and oil filter. Reinstall the oil filter cover. Check the oil level using the recommended procedure and adjust if needed.

Notice

Recycle used oil and oil filters in accordance with local regulations.

Check Oil Level

1. With the engine at normal operating temperature, mount the motorcycle and bring it to an upright position on level ground.
2. With the transmission in neutral, start and run the engine at 2500 - 3000 rpm for 30 seconds. Shut the engine while the motorcycle is still in the upright position.

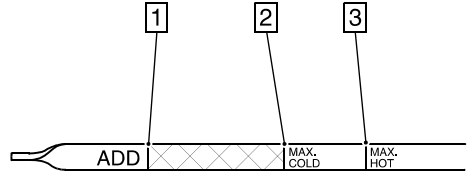
1. Fill cap and dipstick

3. Rest the motorcycle on the sidestand and on level ground. Remove the oil fill cap and wipe the dipstick clean. Reinstall the dipstick and turn the cap clockwise until it seats.

4. Remove the dipstick again and note the oil level.
5. If necessary, add or remove oil to bring the level into the area on the dipstick above the ADD mark and below the appropriate MAX. mark (see “Engine Oil Specifications,” page 239). Repeat steps 3–4 each time you adjust the oil level.

⚠ WARNING

Do not operate the motorcycle with the oil level above the appropriate MAX. mark or below the ADD mark. Operating the engine with too much or too little oil can cause serious engine damage or engine seizure, resulting in you losing control of the motorcycle.

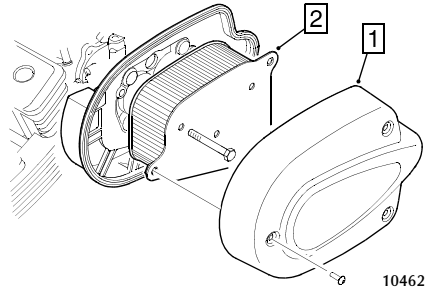


1. ADD mark
2. MAX. COLD mark
3. MAX. HOT mark

Air Filter Element

The standard Excelsior-Henderson air filter element is a dry paper/wire mesh design and does not require the use of air filter oil.

1. Remove the air filter cover and the air filter element.
2. To remove large debris particles from the element, strike the open face of the element squarely against a solid, clean, flat surface, using a short, sharp motion.
3. To remove smaller debris particles from the element, use low-pressure air and blow from the inside out.



1. Air filter cover
2. Air filter element

⚠ WARNING

Wear face protection since low-pressure air can blow debris into your eyes and face.

4. Reinstall the air filter element and the air filter cover.

Drive Belt

Check Drive Belt Tension

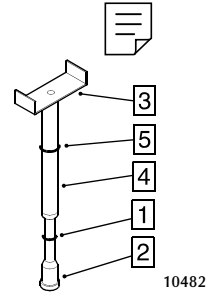
This procedure involves using the Excelsior-Henderson belt tension gauge, part no. EH-6999-0038, which is designed specifically for measuring drive belt tension. This procedure can be performed from either the right or left side of the motorcycle.

Before beginning this procedure:

- Make sure the Super X is dry and at room temperature.
- Make sure the rear suspension is properly adjusted (see "Rear Suspension Adjustment," page 51).

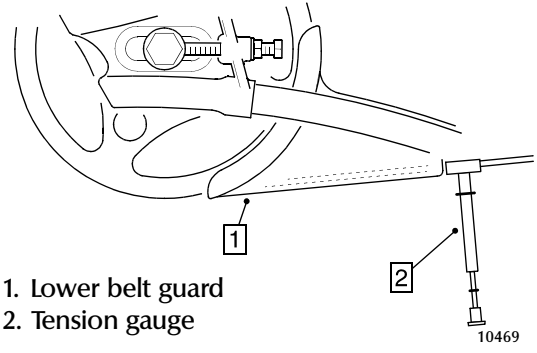
1. Mount the Super X and bring it to a vertical position.
2. Position the small O-ring on the belt tension gauge (as shown) directly over the 10 lb mark on the plunger.

   Have an assistant complete steps 3–5.
3. Place the base of the tension gauge bracket squarely against the lower strand of the drive belt at the front of the lower belt guard. On the lower belt guard, mark the position of the base of the tension gauge bracket. This mark represents *zero force.*

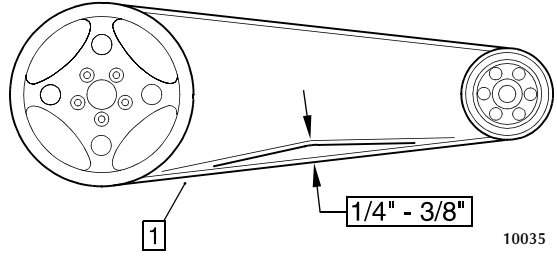


1. Small O-ring
2. Plunger
3. Base of bracket
4. Body
5. Large O-ring

4. Push the plunger upward until the small O-ring touches the tension gauge body. Make sure the tension gauge is seated squarely against the drive belt, and move the large O-ring until it aligns with the *zero force* mark you made on the lower belt guard.
5. Remove the belt tension gauge and measure the distance between the base of the tension gauge bracket and the large O-ring. If the measurement is between 1/4" and 3/8", the drive belt tension is correct.
6. Adjust belt tension as necessary.



1. Lower belt guard
2. Tension gauge



1. Drive belt

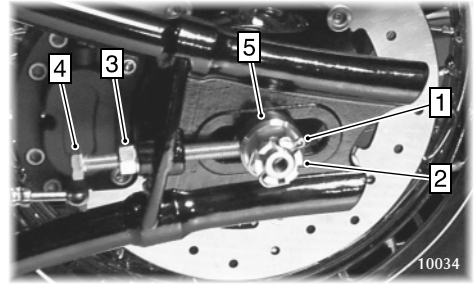
Adjust Drive Belt Tension

Notice

Before adjusting drive belt tension, be sure the rear axle is properly aligned (see "Align Rear Wheel," page 139).

1. Remove and discard the rear axle cotter pin. Loosen the rear axle castle nut and the rear axle adjuster jam nuts.
2. Turn both rear axle adjusters an equal amount until the drive belt tension is correct (see "Check Drive Belt Tension," page 104), making sure the adjusters are firmly seated against the adjuster collars.
3. Tighten the adjuster jam nuts.
4. Tighten the rear axle castle nut.

   Torque: 111 ft-lbs



1. Cotter pin
2. Castle nut
3. Adjuster jam nut
4. Rear axle adjuster
5. Adjuster collar

5. Recheck drive belt tension, and install a new rear axle cotter pin.

⚠ WARNING

Do not reuse a cotter pin because it may fail, causing the wheel to loosen and you to lose control of the motorcycle.

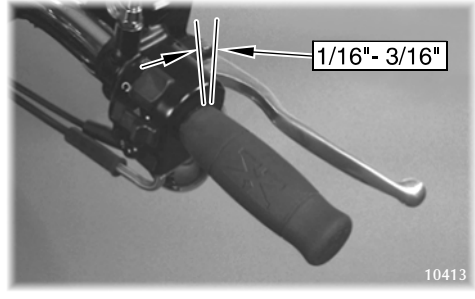
Check Drive Belt Condition

Replace the drive belt if it is cracked or has broken teeth or frayed edges (consult your *Super X Service Handbook* or an authorized Excelsior-Henderson Dealer).

Throttle

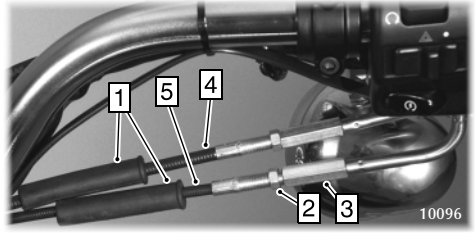
Check Throttle Control Grip and Cables

1. Rotate the throttle control grip. It should rotate smoothly from its rest position to its completely open position and back again. It should return to its rest position quickly when released.
2. Throttle freeplay — the amount of throttle control grip movement from the rest position to the point of cable resistance — should be between 1/16” and 3/16”.
3. Adjust throttle freeplay as necessary.



Adjust Throttle Freeplay

1. Slide the rubber covers off both cable adjusters, and loosen both adjuster jam nuts.
2. Turn both cable adjusters into the cable as far as possible.

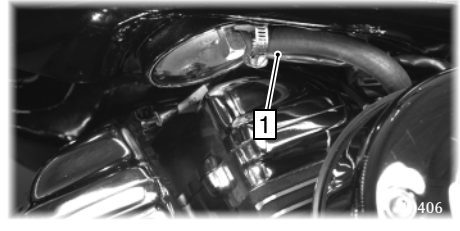


1. Rubber cover
2. Adjuster jam nut
3. Cable adjuster
4. Throttle opening cable
5. Throttle closing cable

3. Turn the cable adjuster on the throttle opening cable out until the throttle freeplay is between 1/16” and 3/16”.
4. Hold the throttle control grip at the fully closed position and turn the cable adjuster on the throttle closing cable out until resistance is felt.
5. Tighten the adjuster jam nuts on both cables, and reinstall both rubber covers.

Fuel Hose, Rail, and Connections

Inspect the fuel hose, and its connection to the fuel pump and to the fuel rail, for dampness or stains from leaking or dried fuel. Tighten any leaking connections and replace components if necessary.



1. Fuel hose

Evaporative Emission Control System

(California model only)

Visually inspect all evaporative emission control system hoses and connections. Make sure all connections are tight. Also, inspect the evaporative canister to make sure it has not been damaged.

Oxygen Sensor

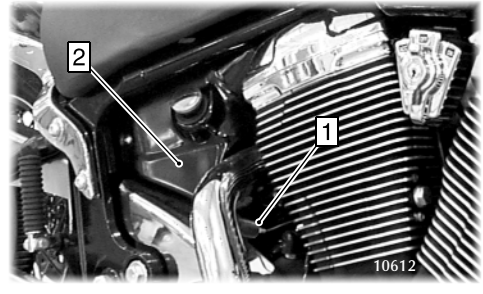
The oxygen sensor is located in the exhaust header of the rear cylinder. Over time and miles the sensor tip becomes dirty, reducing its ability to monitor exhaust gases accurately. Replace the oxygen sensor at the prescribed intervals.

⚠ WARNING

Under normal operating conditions, exhaust system components can be extremely hot. Allow the engine to cool before replacing the oxygen sensor.

1. Gently pull the sensor wire and connector out from under the electronics cover and disconnect the wire.
2. Remove and discard the existing sensor and sealing washer.
3. Install the new sensor with a new sealing washer.

   Torque: 20 ft-lbs
4. Reconnect the sensor wire and gently feed the connector and wire under the electronics cover.



1. Oxygen sensor
2. Electronics cover

Hydraulic Controls — Clutch and Brakes

If the hydraulic fluid is dark or cloudy, or has been in service for three or more years, see the *Super X Service Handbook*, or contact an Excelsior-Henderson Dealer, for fluid replacement.

Check Hoses and Connections

Inspect clutch and brake hoses and connections for dampness or stains from leaking or dried fluid. Tighten any leaking connections and replace components as necessary.

Check Front Brake & Clutch Fluid Level

1. To check the front brake or clutch fluid level, mount the motorcycle and bring it to a vertical position. Turn the handlebars until the reservoir is horizontal.
2. View the hydraulic fluid through the sight glass. The fluid should be clear and at a level above the “Lower” marking on the reservoir. Add hydraulic fluid if necessary.

Fluid reservoir with sight glass

Check Rear Brake Fluid Level

1. To check the rear brake fluid level, bring the motorcycle to a vertical position with an appropriate motorcycle lift or a block of wood or steel placed securely under the frame.
2. View the hydraulic fluid through the sight glass. The fluid should be clear and at a level at or near the top of the sight glass. Add hydraulic fluid if necessary.

Add Hydraulic Fluid

1. To add hydraulic fluid to the front brake or the clutch, mount the motorcycle and bring it to a vertical position. Turn the handlebars until the reservoir is horizontal.

   To add hydraulic fluid to the rear brake, bring the motorcycle to a vertical position with an appropriate motorcycle lift or a block of wood or steel placed securely under the frame.
2. Wipe the area around the reservoir cover with a clean cloth.
3. Wipe the hydraulic fluid container with a clean cloth.
4. Remove the cover and gasket.

⚠ WARNING

Do not operate the front brake, clutch, or rear brake while its reservoir cover is removed. Fluid could overflow from the reservoir and cause air to enter the fluid system. Air in the hydraulic fluid system could cause a system malfunction and you could lose control of the motorcycle.

5. Carefully add enough fluid to bring the level above the “Lower” mark on the reservoir.

⚠ WARNING

Use only DOT 5 hydraulic fluid from a sealed, clean container. Using the wrong hydraulic fluid, or allowing contaminants into the hydraulic system, can damage the system seals, resulting in a system malfunction that could cause you to lose control of the motorcycle.

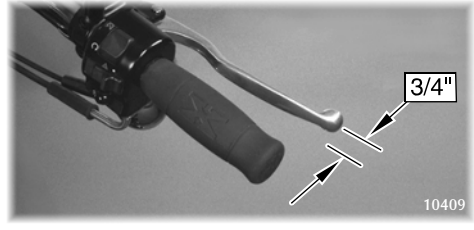
6. Reinstall the reservoir gasket and cover.

Check Clutch Lever Movement

Squeeze the clutch lever toward the handlebar and release it. It should move freely and smoothly and should return to its rest position quickly when released. If the clutch lever does not travel all the way to the handlebar, or the clutch slips during normal motorcycle operation, see the *Super X Service Handbook*, or contact an Excelsior-Henderson Dealer for service.

Check Front Brake Lever Movement

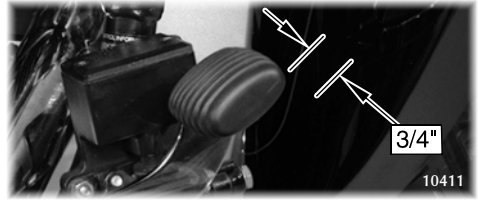
Squeeze the front brake lever toward the handlebar and release it. It should move freely and smoothly and should return to its rest position quickly when released. You should feel a firm resistance in the lever within the first 3/4” of lever travel.



If the brake lever travels too far before beginning to engage the brake, see the *Super X Service Handbook*, or contact an Excelsior-Henderson Dealer for service.

Check Rear Brake Pedal Movement

Press and release the rear brake pedal. It should move freely and smoothly and should return to its rest position quickly when you release it. You should feel a firm resistance in the pedal within the first 3/4” of pedal travel.

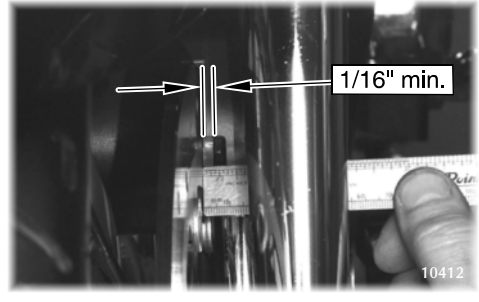


If the brake pedal travels too far before beginning to engage the brake, see the *Super X Service Handbook*, or contact an Excelsior-Henderson Dealer for service.

Check Brake Pads

If brake pads require replacement, see the *Super X Service Handbook* or an authorized Excelsior-Henderson Dealer for assistance.

Looking in through the back of the front brake caliper, and down through the top of the rear caliper, you should see at least 1/16” of friction material on the pads. If in doubt, measure remaining friction material. Replace brake pads having less than 1/16” of friction material at their thinnest point. Replace brake pads in pairs.



Spark Plugs

Inspect Spark Plugs

The spark plugs must be removed from the engine to inspect them. Spark plugs with bright white deposits, sooty black deposits, or with damaged electrodes can indicate engine problems. If these conditions exist, or if the condition of one plug is markedly different from the other, see the *Super X Service Handbook* or an authorized Excelsior-Henderson Dealer for assistance.

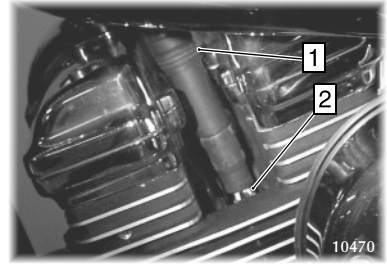
Remove Spark Plugs

1. Disconnect the spark plug wire/coil by pulling upward on the coil.
2. To prevent any debris from entering the engine through the spark plug hole, use pressurized air to blow clean the area around each spark plug before removing it.

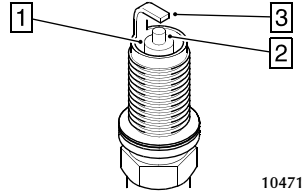
⚠ WARNING

Wear face protection since low-pressure air can blow debris into your eyes and face.

3. Remove the spark plug from the cylinder head with a spark plug socket.



1. Spark plug wire/coil
2. Spark plug



1. Insulator
2. Electrode tip
3. Electrode bridge

Both spark plugs should have the same light or medium tan color deposits on the insulator around the electrode tip. The spark plug electrode tip and bridge should have sharp, square edges.

If spark plugs are in good condition and are not due for replacement, you can clean them with a stiff bristle brush, set the gap and reinstall them.

Torque: 15 ft-lbs

Replace Spark Plugs

Replace Excelsior-Henderson spark plugs (Excelsior-Henderson part no. 3199-0030) at the recommended intervals. Replace spark plugs in pairs.

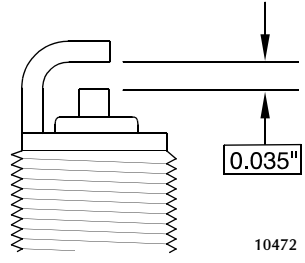
1. Set the electrode gap with a spark plug gauge.

   Gap: 0.035″

2. Clean the mating surface on the cylinder head.
3. Install the spark plug with a spark plug socket.

   Torque: 15 ft-lbs

4. Reconnect both spark plug wires/coils.



Saddles

The Super X has two saddles — the rider's saddle and the tandem saddle. This section explains how to remove and install the saddles.

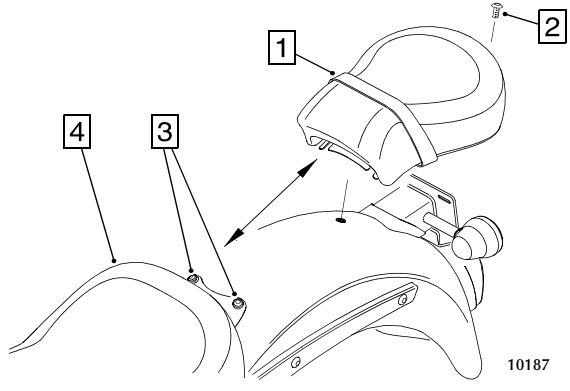
Tandem Saddle

To remove the tandem saddle:

1. Remove the tandem saddle screw.
2. Lift the back of the tandem saddle slightly and pull it to the rear, out from the tandem saddle posts.

To install the tandem saddle:

1. Install the rider's saddle (see "Rider's Saddle," page 118)
2. Slide the front of the tandem saddle into the tandem saddle posts at the rear of the rider's saddle.
3. Install the tandem saddle screw.



1. Tandem saddle
2. Tandem saddle screw
3. Tandem saddle posts
4. Rider's saddle

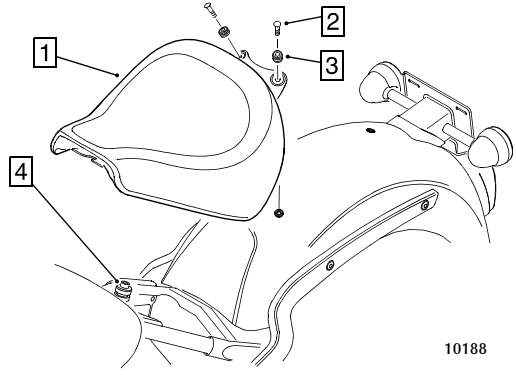
Rider's Saddle

To remove the rider's saddle:

1. Remove the tandem saddle (see "Tandem Saddle," page 117).
2. Remove the rider's saddle screws and tandem saddle posts.
3. Lift the back of the rider's saddle slightly and pull it to the rear, out from the rider's saddle post.

To install the rider's saddle:

1. Slide the front of the saddle into the rider's saddle post at the rear of the fuel tank.
2. Install the tandem saddle posts and the rider's saddle screws.



1. Rider's saddle
2. Rider's saddle screws
3. Tandem saddle posts
4. Rider's saddle post

Battery

The 1999 Super X uses a permanently sealed, maintenance-free battery. Do not remove the battery cap strip for any reason. Keep battery connections clean and tight at all times.

⚠ WARNING

The battery contains sulfuric acid, which can cause severe burns. Do not allow sulfuric acid to contact skin, eyes, or clothing.

Antidotes:

- External: Flush with water.
- Internal: Drink large quantities of water or milk. Follow with milk of magnesia, beaten eggs, or vegetable oil. Call physician immediately.
- Eyes: Flush with water for 15 minutes and get prompt medical attention.

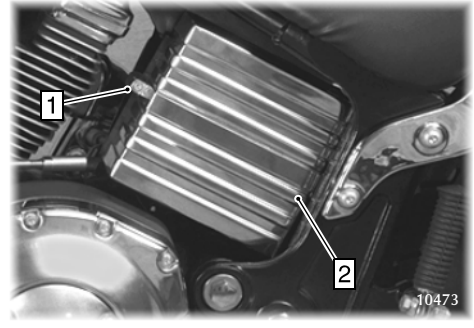
Remove Battery

1. Remove the battery box cover strap and the battery box cover.
2. Disconnect the negative (**–**) battery cable (black with an exposed connector).
3. Disconnect the positive (**+**) cable (black with a plastic boot covering a red sleeve and the connector).

⚠ WARNING

Disconnecting the positive cable first can produce an electric shock that could result in damage or injury.

4. Slide the battery out.



1. Battery cover strap
2. Battery cover

Charge Battery

⚠ WARNING

The battery may contain explosive gases.

- Keep sparks, cigarettes, or any flame away from the battery.
- Shield eyes and protect skin and clothing when handling or working near the battery.
- Make sure ventilation is adequate when charging or using the battery in an enclosed space.
- During charging, if the battery gets very hot to the touch, cease charging and let the battery cool down before continuing.

---

1. If necessary, clean oxidation from the cable connectors with a wire brush.
2. Following the charger manufacturer's instructions, use a 12 volt, 1 amp battery charger to charge the Super X battery, charging at a rate of 1.8 amps for approximately 16 hours. If you use a taper or trickle charger, it will take longer to charge the battery.
3. After charging the battery, use a voltmeter to check the charge. Allow battery to sit 1-2 hours before checking the charge. The charge should be a minimum of 12.8 volts. Repeat the charging cycle if the charge is less than the minimum.

Install Battery

Before installing the battery, make sure it is fully charged and clean.

1. If you have not already done so, remove the tandem and rider's saddles (see "Saddles," page 117).
2. If necessary, clean oxidation from the cable connectors with a wire brush. Apply a thin coat of grease to the cable connectors.
3. Put the battery in the battery box and slide it into position in the frame.
4. Connect the positive (**+**) battery cable (black with a plastic boot covering a red sleeve and the connector).
5. Connect the negative (**–**) cable (black with an exposed connector).

⚠ WARNING

- Connecting the negative cable first can produce an electric shock that could result in damage or injury.
- Connecting the battery cables to the wrong terminals can damage the electrical system.

6. Install the battery box cover and the battery box cover strap.
7. Replace the saddles.

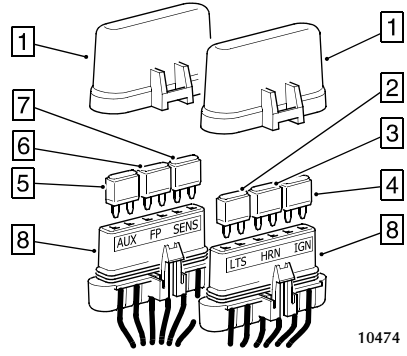
Electrical Equipment

Replace Fuse

⚠ Caution

Use only recommended amperage fuses or you can damage the electrical system.

1. Remove the tandem and rider's saddles (see "Saddles," page 117).
2. Pull the fuse block from the frame and remove the fuse block cover.
3. Gently remove the fuse from the fuse block.
4. Seat the new fuse firmly in the fuse block.
5. Replace the cover and reattach the fuse block to the frame.
6. Replace the saddles.

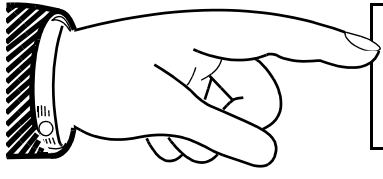


1. Fuse block cover
2. Lights fuse (15 amps)
3. Horn fuse (10 amps)
4. Ignition fuse (5 amps)
5. Auxiliary lights (10 amps) (see accessory instructions)
6. Fuel pump fuse (10 amps)
7. Electronic Fuel Injection (EFI) fuse (15 amps)

Check Engine Stop/Run Switch

Be sure the engine stop/run switch stops the engine. If you regularly use this switch to shut off the engine, you are checking its operation each time you use the motorcycle.

Check Instrument Pod Lights



To inspect the remaining electrical items in this section, set the main switch to the On position. After you complete these inspections, set the main switch to the Off position.

The odometer/trip meter display should show the mileage reading, and "ODO" or "TRIP" should be part of the display. The low oil pressure indicator should illuminate. If the transmission is in neutral, the neutral indicator should illuminate. The gauge lights under the speedometer, tachometer, and fuel gauge should also illuminate.

Set the engine stop/run switch to the run position. The check engine indicator should illuminate. Return the engine stop/run switch to the stop position.

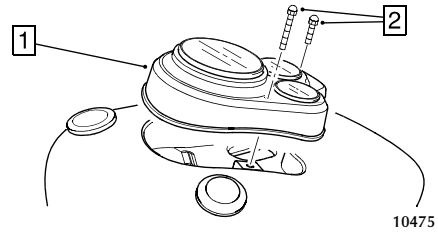
Press the horn button. The horn should sound.

Press the odometer/trip meter function button. The odometer/trip meter display should change to show the current trip meter reading.

Replace Instrument Pod Light Bulb

The instrument pod uses a variety of light bulbs. Use only the recommended replacement bulb (see “Electrical,” page 237).

1. Remove the acorn bolts securing the instrument pod to the fuel tank.
2. Cover the fuel tank with a clean cloth. Lift the instrument pod and place it face down on the cloth.
3. Gently pull the rubber bulb socket from the back of the instrument pod and remove the bulb.
4. Install the new bulb and test for proper operation.
5. Reinstall the instrument pod.



1. Instrument pod
2. Acorn bolts

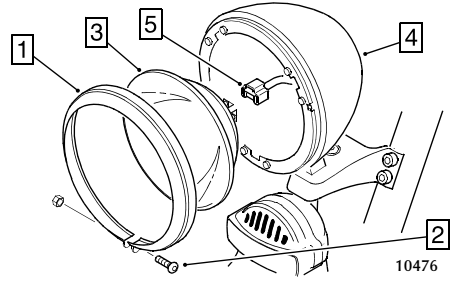
Check Headlamp

Check the headlamp to see that it is on. Set the headlamp dimmer switch to the high beam position. The headlamp brightness should increase and the high beam indicator in the instrument pod should illuminate.

Replace Headlamp Sealed Beam Lamp

The Super X headlamp uses a halogen sealed beam lamp. Use only the recommended replacement lamp (see “Electrical,” page 237).

1. Remove the headlamp bezel screw and the headlamp bezel.
2. Lift the lamp from the headlamp bucket, and disconnect the wire terminal from the back of the lamp.
3. Connect the new lamp and test for proper operation.
4. Reinstall the headlamp.



1. Headlamp bezel
2. Headlamp bezel screw
3. Lamp
4. Bucket
5. Wire terminal

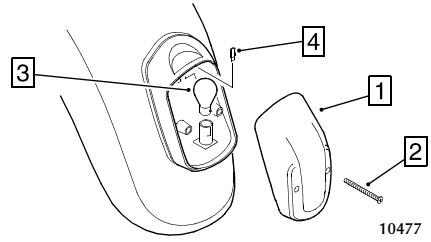
Check Brake Light

Apply slight pressure to the front brake lever; tail light brightness should increase. Apply slight pressure to the rear brake pedal; tail light brightness should increase.

Replace Brake/Tail or License Plate Light Bulb

The Super X uses a dual element bulb for the brake/tail light and a separate single element bulb for the license plate light. Use only the recommended replacement bulb (see *Specifications*, "Electrical," page 237).

1. Remove the lens screws and lens from the brake light housing.
2. Remove the brake light bulb with a push-twist-lift motion. Remove the license plate light bulb by pulling it up and out of its socket.
3. Install the new bulb(s) and test for proper operation.
4. Reinstall the lens. Do not overtighten the lens screws as this could crack the lens.



1. Lens
2. Lens screw
3. Brake/tail light bulb
4. License plate light bulb

Check Running Lights

The two amber front running lights and the tail light should illuminate. The license plate light should also illuminate.

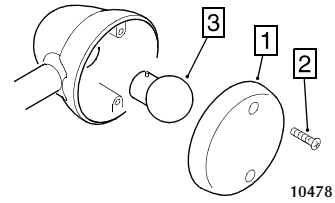
Check Turn Signals

Move the turn signal switch to the left. The front and rear left turn signal lights, and the turn signal indicator, should flash. Push the switch in toward the housing. The turn signals and turn signal indicator should stop flashing. Repeat the operation for the right turn signals.

Replace Turn Signal/Running Light Bulb

The Super X uses dual element bulbs for the front turn signal/running lights, and single element bulbs for the rear turn signals. Use only the recommended replacement bulbs (see *Specifications,* "Electrical," page 237).

1. Remove the lens screws and the lens from either the front turn signal/running light bucket or the rear turn signal light bucket.
2. Remove the light bulb with a push-twist-lift motion.
3. Install the new bulb and test for proper operation.
4. Reinstall the lens. Do not overtighten the lens screws as this could crack the lens.

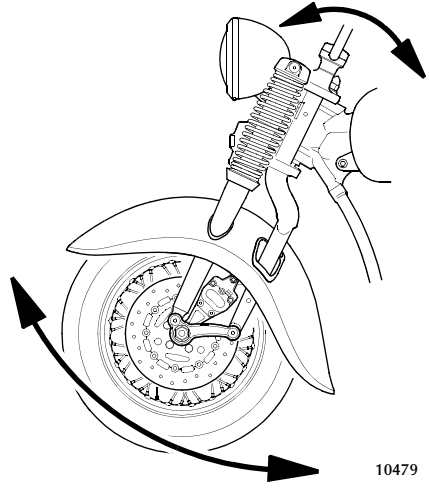


1. Lens
2. Lens screw
3. Bulb

Steering

Inspect Steering Movement

Mount the motorcycle and bring it to a vertical position. Turn the handlebars from stop to stop. The action should be smooth but not loose or interfered with by wires or control cables.



Inspect Steering Head Bearings

1. Position the motorcycle on level ground in an upright position. Raise the front wheel off the ground with an appropriate motorcycle lift or by placing a block of wood or steel securely under the frame.
2. With the front wheel straight, hold the lower end of the front forks near the axle and try to move the forks forward and backward. The forks should have no freeplay (forward and backward movement).
3. If any freeplay is present, the steering head bearings should be adjusted. See the *Super X Service Handbook* or an authorized Excelsior-Henderson Dealer for assistance.

Tires

Check Tire Pressure

Normal riding warms the tires and increases the tire air pressure. For an accurate reading, check the tire pressure before you ride. Adjust tire pressure as required for the total weight of your intended load.

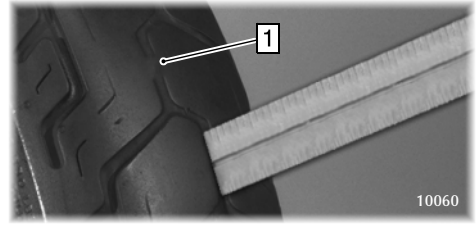
	Up to 200 lb load	200 lb–440 lb load
Front: Dunlop® tires 491 Elite II MT90HB16	36 psi (cold)	36 psi (cold)
Rear: Dunlop® tires 491 Elite II MU90HB16	36 psi (cold)	40 psi (cold)

Check Tire Surface Condition

Inspect the tire sidewalls, road contact surface, and tread base for cuts, punctures, and cracking. Replace damaged tires immediately (see your *Super X Service Handbook* or an authorized Excelsior-Henderson Dealer).

Check Tread Depth

Raised areas at the base of the tread, known as wear bars, act as easily-visible tread depth indicators. When the road contact surface has worn to the top of the wear bars, replace the tire.



1. Wear bar

If you have installed tires that do not have wear bars, use an accurate ruler or depth gauge to measure the shallowest tire tread you can find (usually near the center of the tire surface). Replace a tire with a tread depth less than 1/16" (see your *Super X Service Handbook* or an authorized Excelsior-Henderson Dealer).

Wheels

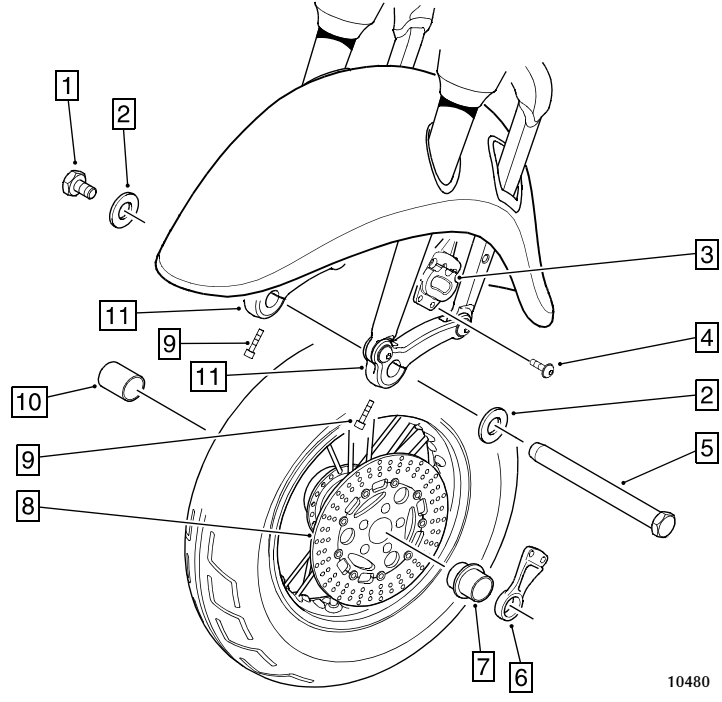
Check Spokes

Inspect both wheels for loose, bent, broken, or missing spokes. To identify loose spokes, grasp each spoke and try to move it side to side or up and down. All spokes should be equally tight and have the same amount of flex. Tighten loose spokes or replace bent, broken, or missing spokes (see your *Super X Service Handbook* or an authorized Excelsior-Henderson Dealer).

⚠ WARNING

Spokes adjusted or replaced improperly could distort the wheel, making the motorcycle difficult to handle and causing you to lose control of the motorcycle.

Remove Front Wheel



1. Axle bolt
2. Bevel washer (2)
3. Brake caliper
4. Caliper screw (2)
5. Axle
6. Caliper bracket
7. Left wheel spacer
8. Brake disc
9. Pinch bolt (2)
10. Right wheel spacer
11. Rocker (2)

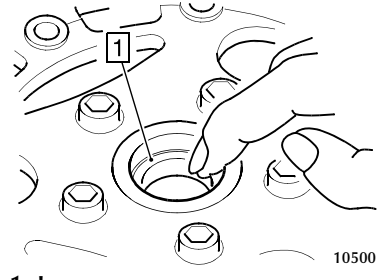
1. Position the motorcycle on level ground in an upright position. Raise the front wheel off the ground with an appropriate motorcycle lift or by placing a block of wood or steel securely under the frame.
2. Loosen both pinch bolts. Remove the right side axle bolt and bevel washer.
3. Remove the brake caliper mounting screws.
4. Support the wheel from underneath, and carefully push or pull the axle out to the left. Remove the remaining bevel washer.
5. Slide the brake caliper out of the way as you remove the wheel, wheel spacers, and the caliper bracket.

Notice

Do not operate the front brake while the front wheel is removed. Doing so will cause difficulty reinstalling the brake disc between the brake pads.

Inspect Front Wheel Bearings

After removing the wheel, turn each bearing inner race with your finger. If the race does not turn smoothly and quietly, the wheel bearings must be replaced. See the *Super X Service Handbook* for replacement instructions, or contact your Excelsior-Henderson Dealer.



1. Inner race

Install Front Wheel

1. Place both wheel spacers and the caliper bracket in position on the wheel.
2. Being careful to avoid damaging the brake pads, lift the front wheel, spacers, and bracket up between the rockers. Guide the caliper over the brake disc. Support the wheel from underneath.
3. Coat the axle with a thin film of molybdenum grease. Slide the axle all the way through the bevel washer, rockers, spacers, bracket, and wheel from the left side of the motorcycle.

Notice

Be careful not to contaminate the surface of the brake rotor with grease.

4. Install both brake caliper mounting screws.

   Torque: 35 ft-lbs

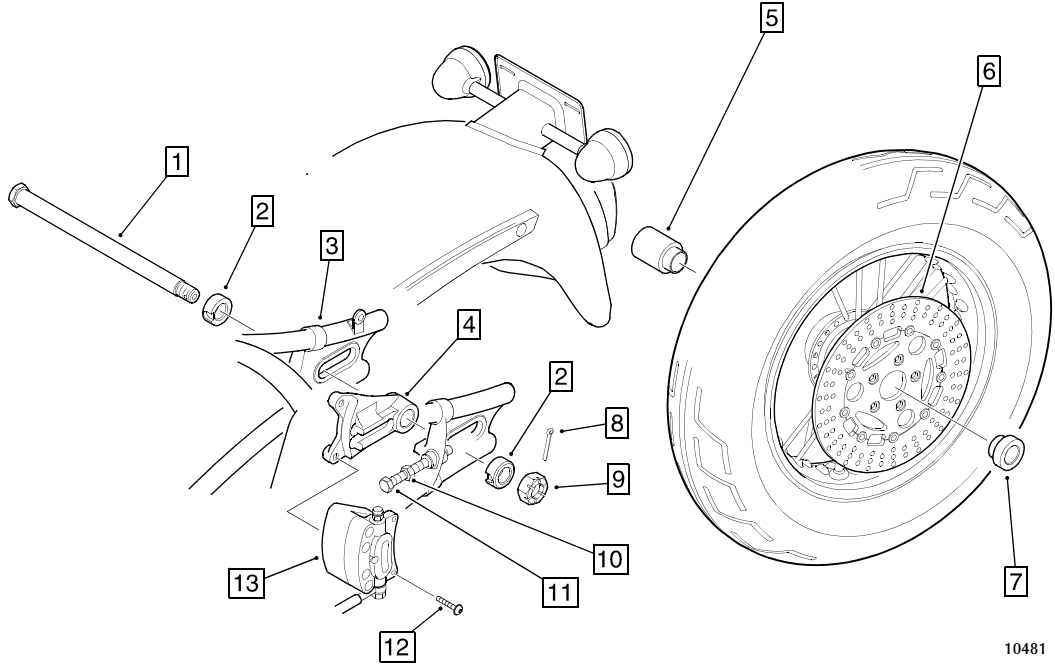
5. Install and tighten the bevel washer and axle nut.

   Torque: 79 ft-lbs

6. Tighten both pinch bolts.

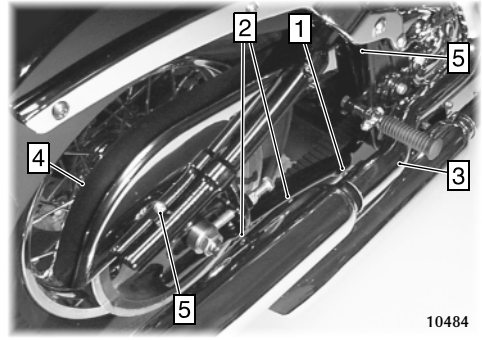
   Torque: 18 ft-lbs

Remove Rear Wheel



1. Axle
2. Adjuster collar (2)
3. Swing cage
4. Brake caliper bracket
5. Right wheel spacer
6. Brake disc
7. Left wheel spacer
8. Cotter pin
9. Castle nut
10. Adjuster jam nut (2)
11. Rear axle adjuster (2)
12. Brake caliper mounting screws (2)
13. Brake caliper

1. Position the motorcycle on level ground in an upright position. Raise the rear wheel off the ground with an appropriate motorcycle lift or by placing a block of wood or steel securely under the frame.
2. Loosen the muffler clamp for the rear muffler.
3. Remove the rear muffler mounting bolts. Support the header pipe and slide the muffler off.
4. Remove the rear belt guard mounting screws and the rear belt guard.
5. Remove and discard the rear axle cotter pin.
6. Remove the castle nut.
7. Loosen the rear axle adjuster jam nuts and turn the adjusters out as far as possible. Slide the rear wheel and axle all the way forward in the swing cage axle slots.



1. Rear muffler clamp
2. Rear muffler mounting bolts
3. Header pipe
4. Rear belt guard
5. Belt guard mounting screws (2)

8. Lift the drive belt off the rear sprocket to the outside of the motorcycle.
9. Remove both brake caliper mounting screws. Slide the brake caliper from the brake disc. Do not allow the brake caliper to hang from the brake hose.

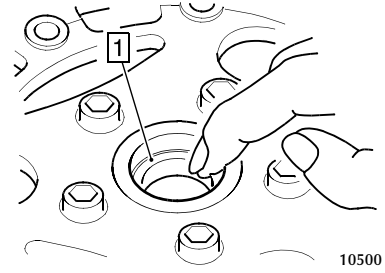
10. Support the rear wheel from underneath and carefully push or pull the axle out to the right.
11. Hold the brake caliper bracket in position and pull the wheel to the rear until the wheel spacers clear the swing cage. Remove both wheel spacers.
12. Remove the rear wheel.

Notice

Do not operate the rear brake while the rear wheel is removed. Doing so will cause difficulty reinstalling the brake disc between the brake pads.

Inspect Rear Wheel Bearings

After removing the wheel, turn each bearing inner race with your finger. If the race does not turn smoothly and quietly, the wheel bearings must be replaced. See the *Super X Service Handbook* for replacement instructions, or contact your Excelsior-Henderson Dealer.



1. Inner race

Install Rear Wheel

1. Position the rear wheel between the swing cage, underneath the rear fender.
2. Make sure the brake caliper bracket is in position on the swing cage.
3. Place both spacers in position on the wheel. Lift the rear wheel and spacers into the swing cage from behind. Support the wheel from underneath.
4. Coat the rear axle with a thin film of molybdenum grease and slide it all the way through the right adjuster collar, swing cage, spacers, wheel, and the brake caliper bracket from the right side of the motorcycle.

Notice

Be careful not to contaminate the surface of the brake rotor with grease.

5. Slide the rear wheel and axle all the way forward in the swing cage axle slots.
6. Guide the caliper over the brake disc and install the caliper mounting screws. **Torque: 35 ft-lbs**
7. Place the drive belt on the rear sprocket and install the rear belt guard.
8. Install the left adjuster collar and castle nut. Tighten the castle nut finger tight.
9. Turn the rear axle adjusters in until they seat into the adjuster collars.
10. Install the rear muffler and muffler clamp.
11. Align the rear wheel.

Align Rear Wheel

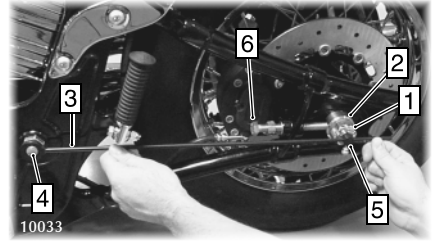
This procedure involves using the Excelsior-Henderson rear wheel alignment gauge, part no. EH-6999-0037, which is designed specifically for aligning the rear wheel.

Before aligning the rear wheel, loosen the rear axle castle nut, and make sure the rear axle moves easily from front to back. Whenever you turn the rear axle adjusters during this procedure, push the rear wheel forward to keep the adjuster collars seated against the rear axle adjusters.

⚠ WARNING

A skewed rear axle can damage the drive belt, causing it to fail and you to lose control of the motorcycle.

1. Place the open end of the rear wheel alignment gauge over the exposed end of either swing cage pivot bolt.
2. Loosen the pointer thumb screw and slide the pointer along the rod until pointer tip rests in the center dimple of the rear axle. Tighten the pointer thumb screw.



1. Castle nut
2. Adjuster collar
3. Alignment gauge
4. Swing cage pivot bolt
5. Pointer
6. Rear axle adjuster

3. Move the alignment gauge to the opposite location on the other side of the motorcycle.
4. Without moving the alignment gauge pointer, turn the rear axle adjuster in or out until the center dimple in the rear axle aligns with the pointer tip.
5. Repeat steps 1-4 on alternate sides of the wheel until the distance from the swing cage pivot bolt to the rear axle center dimple is equal on both sides of the motorcycle.
6. Check the drive belt tension and adjust it if necessary (see “Check Drive Belt Tension,” page 104).
7. Tighten the adjuster jam nuts.
8. Tighten the rear axle castle nut.

   Torque: 111 ft-lbs

9. Recheck drive belt tension, and install a new rear axle cotter pin.

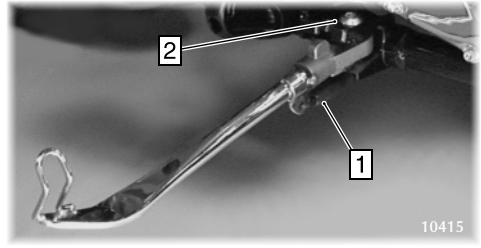
⚠ WARNING

Do not reuse a cotter pin because it may fail, causing the wheel to loosen and you to lose control of the motorcycle.

Sidestand

Move the sidestand to its stored (up) position, then to its fully extended (down) position, and back again. It should move smoothly. When the sidestand is in its stored position, the sidestand return spring should hold the sidestand tightly against the motorcycle.

Lubricate the sidestand pivot with a few drops of clean engine oil or with a spray lubricant designed for drive chains or cables.



1. Return spring
2. Pivot

Fasteners

Visually inspect the entire motorcycle chassis and engine for loose, damaged, or missing fasteners. Each fastener has an important purpose or it wouldn't be there. Tighten loose fasteners to the proper torque (see "Torque Specifications," page 240). Replace stripped, damaged, or broken fasteners immediately.

Some genuine Excelsior-Henderson threaded fasteners are coated with a thread-locking patch. After removing and reinstalling the fastener 2 or 3 times, the thread-locking patch wears away and the fastener should be replaced with the same genuine Excelsior-Henderson fastener.

Road Test

Before returning the motorcycle to regular use, road test it in a safe environment. Pay special attention to the proper fit and operation of all serviced components. Make any corrections or additional adjustments as necessary to ensure safe and enjoyable vehicle performance.

⚠ WARNING

Improperly installed or adjusted components can make the motorcycle unstable or hard to handle. Improperly installed electrical components can cause engine or electrical system failure. In either case, damage or injury could result.

Notes:


SUPER
10420

Cleaning and Storage

This section explains how to properly clean the various parts of your Super X and how to store the motorcycle to keep it in good working order and appearance.

Cleaning

Clean your Super X regularly to protect it from corrosion and to keep it looking new. Clean the motorcycle if it is dusty or muddy, or if it has picked up foreign material such as road salt, insects, oil, tar, or tree sap. If you ride in an area with salty or polluted air, wash your motorcycle frequently. Proper cleaning requires washing and drying the motorcycle, and then applying wax, polish, and protectants to extend the service life and appearance of various components.

During cleaning and storage you might use products that are potentially hazardous; such as polishing compounds and fuel stabilizer. When using any of these products, follow the instructions and warnings on the product packaging.

Some foreign materials are corrosive to the motorcycle’s finish, and you should remove these materials as soon as possible. Road salt is particularly corrosive. If you have been riding on salted roads, wash the motorcycle immediately with cold water. Do not use warm or hot water for this purpose, as increased water temperature increases the corrosive effect of salt. Oil, tar, and tree sap may also damage the motorcycle’s finish. If normal washing does not remove these materials, you may need to use a special cleaner. Choose a cleaner designed for use on the type of surface you need to clean.

Washing and Drying

Before washing the motorcycle, make sure the exhaust pipes are not hot. Cover each exhaust pipe opening with a plastic bag and attach the bag to the pipe with a strong rubber band. To prevent contamination from water, check that the spark plugs, spark plug wire caps, oil fill cap, and fuel caps are properly seated.

The following instructions explain the proper procedure for washing and drying the motorcycle.

1. Park the motorcycle in the shade to prevent water spotting.
2. The Super X engine cases are painted. If you choose to use a degreaser, follow the degreaser manufacturer's instructions.
3. Rinse off as much dirt and mud as possible with water running at low pressure.

⚠ Caution

- Do not use excessive water pressure or high-pressure sprayers such as those found at coin-operated car washes. Excessive water pressure may allow water to seep into and deteriorate such components as wheel bearings, brake caliper assemblies, brake master cylinders, and transmission seals.
- Electrical components may be damaged by contact with water. Do not spray or allow water to come into contact with electrical components or connectors.

4. Wash the entire motorcycle using a soft cloth or sponge soaked in a solution of mild detergent and warm water, applying minimal pressure as you wash. Let the detergent do the cleaning, not the pressure you apply. Excessive washing pressure may cause dirt, sand, or other foreign materials on the motorcycle to scratch the finish. Keep the cloth or sponge clean by rinsing it frequently, and soak it in the detergent and water solution to provide plenty of soapy water for washing. A toothbrush or bottle brush can help you wash places that are difficult to reach with a cloth or a sponge.

Notice

Use as little water as possible when washing near the air cleaner or the exhaust pipe openings. An excessively wet air cleaner, or water in the exhaust pipes, may cause the engine to start and run poorly. Dry these components thoroughly before using the motorcycle.

If oil, tar, tree sap, or other foreign material is difficult to remove by applying gentle pressure using the warm water and mild detergent mixture, you may need to use a special cleaner. See “Cleaning,” page 145.

5. Rinse the motorcycle with water running at low pressure.
6. Remove the rubber bands and plastic bags from the exhaust pipes, and wipe the motorcycle dry with a soft cloth or chamois.
7. After washing the motorcycle, start the engine and let it idle for a few minutes. Make sure the brakes are functioning properly before riding.

Notice

Excessively wet brake pads or discs may diminish braking effectiveness. Dry these components thoroughly before using the motorcycle.

Waxing, Polishing, and Applying Protectants

After washing and drying the motorcycle, you can help extend the life and appearance of its components by waxing painted surfaces, polishing chrome surfaces, and applying a protectant to exposed rubber, vinyl, and plastic parts. Avoid cleaning-waxing compounds, as they may contain abrasives that may damage the finish of painted parts. For chrome surfaces, use either a window-cleaning solution or a polish specifically designed for chrome. Follow manufacturer's instructions for proper application and use of wax, polish, or protectants.

After washing and drying the motorcycle, to help extend the life and appearance of its components:

- Wax painted surfaces. Avoid cleaning-waxing compounds, as they may contain abrasives that may damage the finish of painted surfaces.
- Polish chrome surfaces. Use either a window-cleaning solution or a polish specifically designed for chrome.
- Apply a protectant to exposed rubber, vinyl, and plastic components.

⚠ WARNING

- Do not use a protectant on the saddles, footboard inserts, or handgrips that leaves a slippery coating after it dries. If these surfaces are slippery, you may have difficulty holding your position on the motorcycle while riding, which may cause you to lose control of the motorcycle.
- Follow manufacturer's instructions and safety precautions on wax, polish, and protectant labels to prevent injury or damage.

Repairing Painted Surface Damage

After cleaning the motorcycle, inspect it for damage to the painted surfaces. If you discover chips or scratches in the paint, apply genuine Excelsior-Henderson touch-up paint as soon as possible to prevent corrosion.

Storage

If you will not operate the Super X for several months, such as during the winter, store the motorcycle to prevent damage to the fuel system and the battery, and to protect components from corrosion or deterioration. This section includes instructions for preparing the Super X for storage, maintaining it during storage, and removing it from storage.

Preparing for Storage

Choose an Adequate Storage Location

Choose a dry, well-ventilated storage location, inside a garage or other structure if possible. The location should have a firm, flat surface and allow enough space that the Super X does not come into contact with other objects and other objects are not likely to come into contact with it.

To best preserve tire condition:

- The storage area should have a relatively constant and moderate temperature.
- The motorcycle should not be near a radiator or other heat source, or any type of electric motor.
- The storage surface should be free of oil and gasoline.

For further information on proper tire storage, see the *Dunlop Maintenance & Tire Care Booklet* you received with the Super X.

Clean and Protect the Motorcycle

To prepare the Super X for storage, begin by cleaning it (see “Cleaning,” page 145). Wax painted surfaces and polish chromed surfaces. Apply protectant to exposed rubber, vinyl, and plastic parts.

Stabilize Fuel

1. Using a mixture of fuel and the amount of gasoline stabilizer recommended by the stabilizer manufacturer, fill the fuel tank only to the top of the filler insert.
2. Start and run the engine for a few minutes to pass the stabilized fuel through entire fuel injection system.

Protect Engine Components

1. Change the engine oil (see "Change Oil and Oil Filter," page 99). You do not need to replace the oil filter at this time, but you must replace the oil filter when you remove the Super X from storage.

⚠ Caution

Carbon deposits, normally suspended in engine oil that is in service, settle on internal engine components during storage. Settled carbon deposits can cause engine damage.

2. Using pressurized air, blow any debris from the area around each spark plug.

⚠ WARNING

Wear face protection since low-pressure air can blow debris into your eyes and face.

3. Remove the spark plugs (see “Remove Spark Plugs,” page 115). Pour one tablespoon of clean motor oil into each spark plug hole.
4. Reinstall the spark plugs without reconnecting the coils (see “Replace Spark Plugs,” page 116). With the main switch in the **On** position, the stop/run switch set to run, and the transmission in neutral, press the electric starter button to crank the engine a few times. This procedure inhibits corrosion by coating the cylinder walls with the oil you poured in the spark plug holes.
5. Set the main switch to the **Off** position and reconnect the coils.

Inflate Tires

Inflate the tires to normal pressure.

Remove, Clean, and Store Battery

1. Remove the battery (see “Remove Battery,” page 120).
2. Clean corrosion from the battery terminal connectors and the battery terminals. Clean the outside of the battery with a solution of mild detergent and warm water.
3. Store the battery in a dry location that maintains a temperature of 32°–90°F.
4. While in storage, fully charge the battery once a month (see “Charge Battery,” page 121).

Park and Cover the Motorcycle

Park the Super X in its storage location and lock the forks. Cover the motorcycle with a durable, breathable material or with a high-quality motorcycle cover designed for storage. Covering the Super X helps protect it from dust and other airborne materials. The cover must be of a breathable material to prevent moisture from building up on the motorcycle.

Maintaining During Storage

Check and maintain normal tire pressure during storage.

Removing from Storage

1. Remove the cover and unlock the front forks.
2. Check the tire pressure and inflate the tires if necessary.
3. Reinstall the battery (see “Install Battery,” page 122).
4. Wash and dry the entire motorcycle (see “Washing and Drying,” page 146).
5. Without first starting the engine and bringing it to normal operating temperature, change the engine oil and filter (see “Change Oil and Oil Filter,” page 99, beginning with step 2).

⚠ Caution

During storage, temperature and humidity changes can cause condensation to form in the crankcase and mix with engine oil. Running the engine with oil that contains condensation can cause engine damage.

6. Wax, polish, or apply protectant to the appropriate motorcycle components (see “Waxing, Polishing, and Applying Protectants,” page 148).
7. Perform the pre-operation check described in *Pre-Operation Check*.
8. Test ride the Super X before returning it to regular use (see “Road Test,” page 142).

Notes:

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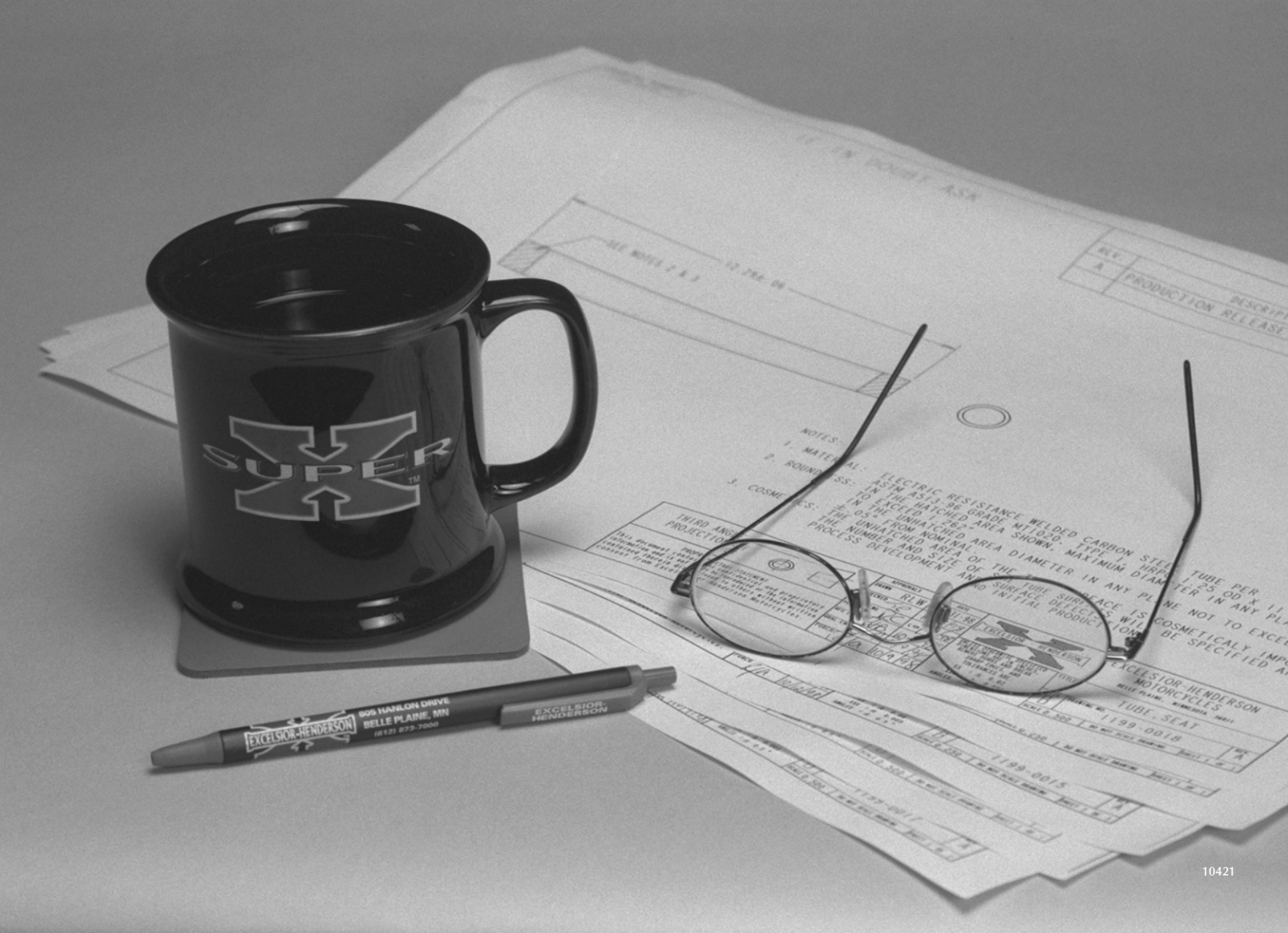

SUPER X
EXCELSIOR-HENDERSON
805 HANLON DRIVE
BELLE PLAINE, MN
(612) 873-7000
EXCELSIOR-HENDERSON
10421

Specifications

Dimensions

Overall length	92.5"
Overall width	39.5"
Overall height	52.5"
Saddle height	26.5"
Wheelbase	62.9"
Ground clearance	5.9"

Weight

Dry weight	675 lbs
Gross Vehicle Weight Rating (GVWR)	1140 lbs
Gross Axle Weight Rating – front	394 lbs
Gross Axle Weight Rating – rear	746 lbs

Engine

Type	50° X-Twin™
Number of cylinders	2
Bore	3.66"
Stroke	4.02"
Displacement	85 cu. in. (1386 cc)
Compression ratio	9.2 : 1
Fuel system	port sequential, closed loop fuel injection
Starting system	electric
Lubrication system	pressure lubrication, dual scavenge
Air cleaner	dry paper/wire mesh

Transmission

Type	5 speed, constant mesh
Primary reduction system	wet multi-gear drive
Primary reduction ratio	1.75 : 1
Gear shift pattern	1 down, 4 up
Gear ratios: 1st	2.53 : 1
2nd	1.77 : 1
3rd	1.35 : 1
4th	1.00 : 1
5th	0.80 : 1
Clutch	wet multi-disk
Drive belt	high performance synchronous

Chassis

Frame type	tubular steel, double cradle
Front suspension	leading link, double strut system
Rear suspension	adjustable, gas charged system
Caster angle	30°
Trail	6.25"
Steering angle	±43°
Turning radius	7.6'
Brakes (diameter X width):	
Front	11.5" X 0.236" floating disc, 4 piston caliper
Rear	11.5" X 0.236" floating disc, 4 piston caliper

Wheels

Type:	
Front	stainless steel 40 spoke
Rear	stainless steel 40 spoke
Size:	
Front	3.0 X 16
Rear	3.5 X 16

Tires

Type	tube
Size:	
Front	MT90HB16
Rear	MU90HB16
Manufacturer and model	Dunlop 491 Elite II
Maximum load:	
Front	770 lbs
Rear	930 lbs
Air pressure (cold):	
Up to 200 lb. load:	
Front	36 psi (cold)
Rear	36 psi (cold)
200 lb. – 440 lb. load:	
Front	36 psi (cold)
Rear	40 psi (cold)

Electrical

Ignition system:
- Type. . . . . inductive coil
- Timing. . . . . ECM-driven

Spark plug:
- Type. . . . . Excelsior-Henderson part no. 3199-0030
- Gap . . . . . 0.035 in.

Battery . . . . . sealed 18AH

Generator. . . . . 35 amp regulator

Light bulbs (voltage, wattage X quantity):
- Headlamp. . . . . halogen sealed beam, ANSI #H6024
- Running light/Front turn signal. . . . . ANSI #198
- Rear turn signal . . . . . ANSI #199
- Tail/brake light. . . . . ANSI #198
- License plate light . . . . . ANSI #193
- Speedometer. . . . . ANSI #161
- Tachometer . . . . . ANSI #74
- Fuel gauge . . . . . ANSI #74

Instrument Pod Indicators:
- Headlamp high beam. . ANSI #74
- Check engine. . . . . ANSI #74
- Turn signal . . . . . ANSI #74
- Neutral . . . . . ANSI #74
- Low oil pressure . . . . . ANSI #74
- Low battery voltage . . . LED
- Low fuel . . . . . ANSI #74

Fuses:
- Auxiliary lights. . . . . 10 amps
- Fuel pump . . . . . 10 amps
- EFI . . . . . 15 amps
- Lights. . . . . 15 amps
- Horn . . . . . 10 amps
- Ignition . . . . . 5 amps

Fluids

Capacities:
- Fuel tank. . . . . 5.75 gal
- Engine oil (with filter). . 3.5 qt (US)

Fuel . . . . . unleaded gasoline only, 92 pump octane minimum

Engine oil:
- Classification . . . . . API-rated SF or SG
- Viscosity. . . . . 25W-50 (+40°F)

Brake and clutch fluid . . . . DOT 5 hydraulic fluid

Fuel Specifications

Use only unleaded gasoline, 92 pump octane minimum.

- DO NOT USE GASOLINE CONTAINING METHANOL.
  Using gasoline/methanol blends can result in poor starting and drivability, and may damage critical fuel system components.
- Gasoline containing up to 15% Methyl Tertiary Butyl Ether (MTBE) can be used.
- Gasoline containing up to 10% Ethanol can be used.
- Gasoline that has been Reformulated or Oxygenated can be used.

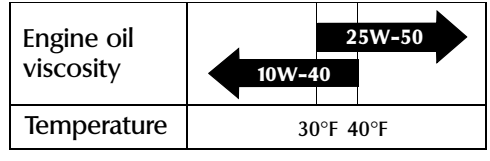
Engine Oil Specifications

Notice

Use only API-rated SF or SG grade oil. Use the appropriate viscosity oil for the lowest ambient temperature you expect to encounter before the next scheduled oil change.

In the first 500 miles, use only a mineral-base engine oil with 10W-40 viscosity rating.

After the first 500 miles, use an engine oil of appropriate viscosity rating for the lowest ambient temperature you expect to encounter before the next scheduled oil change.



Engine oil viscosity chart

⚠ Caution

Do not combine mineral-base and synthetic oil in the crankcase at the same time, as this can cause serious engine damage.

Torque Specifications

Engine

Spark plug	15 ft-lbs
Upper cam cover screw	12 ft-lbs
Air cleaner cover screw	8 ft-lbs
Air cleaner element screw	8 ft-lbs
Throttle body bracket screw	8 ft-lbs
Exhaust flange nut	20 ft-lbs
Exhaust clamp	55 ft-lbs
Oxygen sensor	20 ft-lbs
Heat shield clamp	8 ft-lbs
Muffler mounting screw	30 ft-lbs
Timing gear cover screw	8 ft-lbs
Oil filter cover screw	8 ft-lbs
Oil pump cover screw	8 ft-lbs
Crankcase:	
3/8-16	25 ft-lbs
5/16-18	18 ft-lbs
Oil drain plugs	30 ft-lbs
Starter motor mounting screw	8 ft-lbs
Starter terminal nut	5 ft-lbs
Primary drive cover screw	8 ft-lbs
Primary drive cover insert screw	8 ft-lbs
Clutch access cover screw	8 ft-lbs

Chassis

Front engine flange to frame	20 ft-lbs
Front engine brackets to frame:	
3/8-16	35 ft-lbs
5/16-18	20 ft-lbs
Rear engine mount rod to engine	60 ft-lbs
Isolation mount to engine	55 ft-lbs
Isolation mount cap nut	50 ft-lbs
Footboard support screw	25 ft-lbs
Footboard pivot screw	8 ft-lbs
Passenger foot peg post screw	50 ft-lbs
Passenger foot peg pivot screw	25 ft-lbs
Shifter bracket screw	14 ft-lbs
Shifter lever pinch screw	8 ft-lbs
Shifter rod acorn nut	25 ft-lbs
Rear brake master cylinder adapter screw	10 ft-lbs
Rear brake master cylinder screw	18 ft-lbs
Rear brake reservoir screw	18 ft-lbs
Rear brake pedal post	50 ft-lbs
Swing cage pivot:	
Bolt	80 ft-lbs
Nut	79 ft-lbs
Rear shock absorber	72 ft-lbs

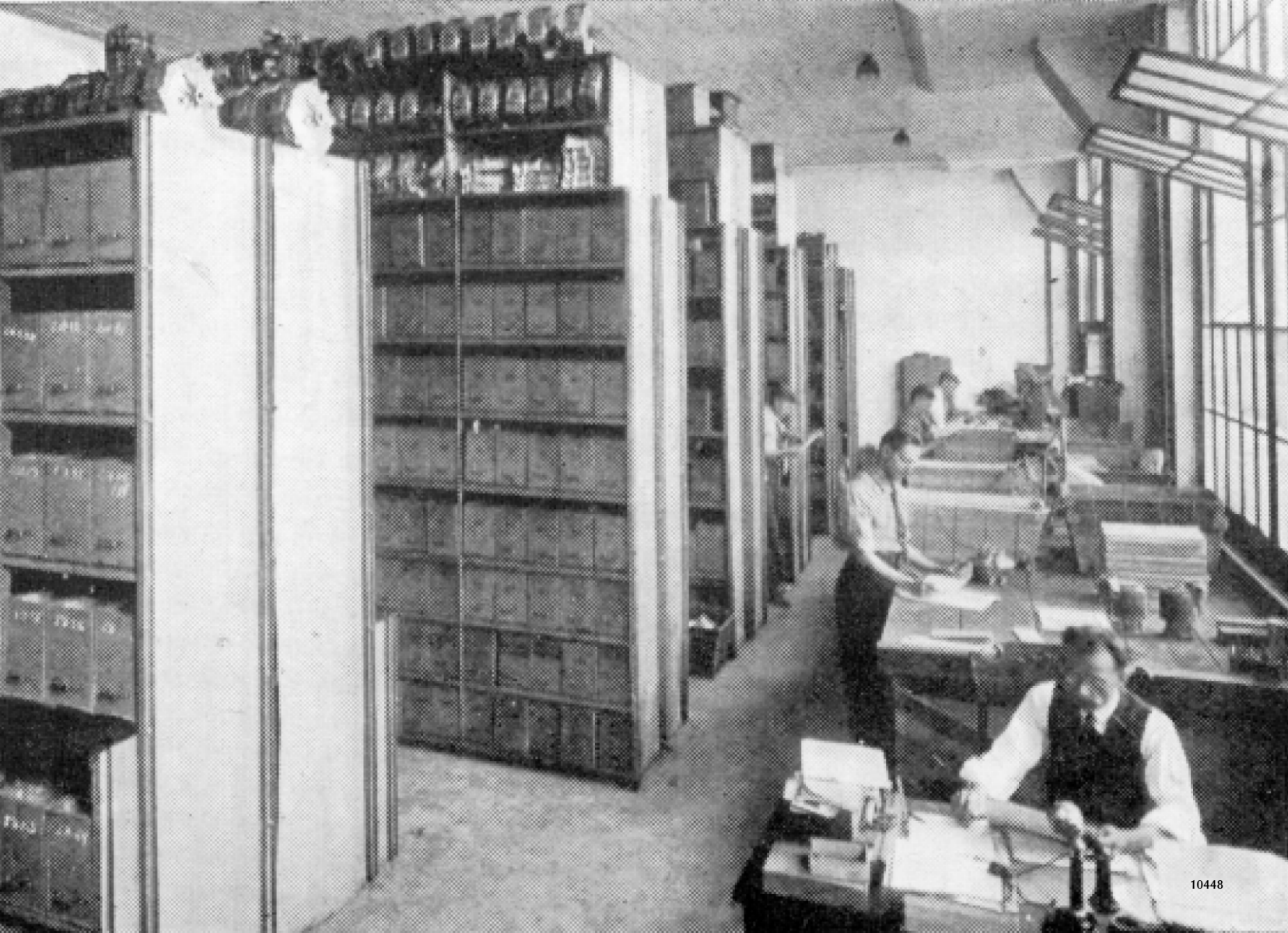
Chassis (continued)

Battery cover strap screw	7 ft-lbs
Voltage regulator screw	7 ft-lbs
Rear electronics cover screw	7 ft-lbs
Electronics/oil fill cover screw	7 ft-lbs
Main switch bracket screw	7 ft-lbs
Main switch screw	7 ft-lbs
Rear axle nut	111 ft-lbs
Rear brake caliper bracket screw	35 ft-lbs
Rear brake rotor screw	50 ft-lbs
Rear sprocket screw	55 ft-lbs
Front axle bolt	79 ft-lbs
Front brake caliper bracket screw	35 ft-lbs
Front caliper rod	30 ft-lbs
Front caliper rod bracket screw	35 ft-lbs
Front brake rotor screw	50 ft-lbs
Front hub cap screw	10 ft-lbs
Rocker pivot screw	25 ft-lbs
Rocker pinch screw	18 ft-lbs
Front strut pivot shaft screw	55 ft-lbs
Front strut cap screw	10 ft-lbs
Top triple clamp acorn nut	25 ft-lbs
Handlebar riser post	50 ft-lbs
Handlebar riser screw	17 ft-lbs
Handlebar riser cap screw	17 ft-lbs
Hydraulic reservoir clamp screw	10 ft-lbs
Hydraulic line banjo bolt	18 ft-lbs
Switch cluster mounting screw	20 in-lbs
Throttle cable retainer screw	20 in-lbs
Headlamp/horn bracket screw	10 ft-lbs
Horn screw	22 in-lbs
Headlamp post screw	25 ft-lbs
Headlamp mounting screw	35 ft-lbs
Front fender screw	35 ft-lbs
Instrument pod mounting screw	12 ft-lbs
Fuel tank mounting screw	20 ft-lbs
Rider seat screw	18 ft-lbs
Tandem seat screw	18 ft-lbs
Rear fender support screw	50 ft-lbs
Rear fender screw	35 ft-lbs
Rear fender extension:	
Nut	10 ft-lbs
Screw	7 ft-lbs
License plate bracket screw	7 ft-lbs
Tail light housing screw	5 ft-lbs
Front belt guard screw	7 ft-lbs
Rear upper belt guard	10 ft-lbs
Rear lower belt guard	5 ft-lbs

Identification Numbers for Your Super X

Vehicle Identification Number	
Engine identification number	
Key identification number	

Notes: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* See the *Super X Service Handbook* or your Excelsior-Henderson Dealer.
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