

# Practical Exercise for Instruction Pack 6

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# Practical Exercise for Instruction Pack 6

## INTRODUCTION

The purpose of this practical exercise is to help you apply your knowledge of motorcycle and ATV frames, suspensions, brake systems, and wheel assemblies to some real-life examples. This exercise contains several suggested activities that are designed to help you gain a better understanding of the study unit material by using a hands-on approach. The activities are intended to be fun, and at the same time they'll reinforce your understanding of the material presented in this Instruction Pack.

Note that the suggested activities contained in this practical exercise are optional, but the examination at the end of the exercise is required and must be submitted to the school for grading. However, because the suggested activities are designed to enhance your learning, we strongly recommend that you attempt to complete as many of the activities as possible.

In the first activity, you'll research and record information about the different types of suspension systems that are found on motorcycles and ATVs. You'll also find out how often each of the components and systems you've covered are repaired in a typical dealership. In the second activity, you'll get some experience in working on frame, suspension, and steering assemblies. The third activity will get you involved with brake systems. You'll learn more about mechanical brakes, hydraulic brakes, and antilock braking systems, and you'll do some brake inspections and adjustments. In the fourth activity, you'll get some hands-on experience with wheel assemblies, including tire replacement and servicing wire-spoke wheels.

If you wish to review the material that's contained in this practical exercise, refer to the following study units:

- *Frames, Steering, and Suspension* (03301600)
- *Brakes, Wheel Assemblies, and Tires* (03301700)

Now, when you're ready, complete the practical exercise. Then, submit only your answers to the school headquarters for grading, using one of the answer options described in your first shipment.

Remember, even though this exercise contains examination questions, we've designed it to be fun, challenging, and interesting. Applying your knowledge to real-life situations will help you realize how much you've learned. It will be a rewarding experience that will give you confidence in your newly acquired skills.

We hope you enjoy this practical exercise!



## Activity 2

Go to several dealerships and identify the different types of front and rear braking systems that are used on various motorcycle makes and models. Record your findings in the following table. While you're at each dealership, talk to personnel in the service department to find out what type of work is needed to service different braking systems. Also, find out how many motorcycle manufacturers are using anti-lock braking systems (ABS) on selected motorcycles. You may be surprised at how many motorcycles can be purchased with ABS as an option!

Manufacturer	Model	Type of Front Brakes	Type of Rear Brakes

Next, ask the service manager at each motorcycle dealership about the types of services that are performed in their shops, and how often each service is performed. Record your findings in the table provided here. You may also want to ask if any of these services are performed more during some seasons of the year than others. If you intend to open your own motorcycle repair business at some time in the future, this information may be very useful to you. This information can give you a good idea of the areas that you should be the most proficient in when working in a motorcycle repair shop.

Dealership Name	When and How Often Is Each Service Performed?				
	Steering-Head Service	Fork-Seal Replacement	Swing-Arm Service	Wheel-Bearing Replacement	Tire Changes

## Activity 3

This activity will give you some hands-on experience with motorcycle frames, steering, suspension, and wheel assemblies. In order to do this activity, you'll need a motorcycle to work on. This may be your own motorcycle or perhaps you would prefer to obtain a well-used model from a dealer or local salvage yard. Also, if you don't already have one, you'll need to obtain a service manual for the model you'll be working on.

Before you begin to work on your motorcycle, examine the frame, steering mechanism, suspension, and wheel assemblies. If necessary, review your study units to help you determine the types of systems and components that are used and how they operate on this particular motorcycle.

Next, using the service manual and what you've learned in the previous study units, disassemble and service the steering-head bearings. Note whether the motorcycle uses the loose ball-bearing design or a tapered-bearing design. While you have the front-fork assemblies removed from the motorcycle, change the front-fork oil and clean the inside components. Remove the fork seals while the forks are disassembled, and replace them if needed.

While you're working on the suspension components, disassemble and reinstall the motorcycle's swing arm. Check the swing arm for damage, especially if you're working on a salvaged motorcycle. Note any damage it may have sustained before you purchased it. After you're certain that the motorcycle is in good working condition, reassemble all parts.

After you've reassembled all of the motorcycle components, make your own tool and check the wheel alignment, using the method described in your study unit. Remember to check the forks and axle to be sure they're straight. If they're bent, your wheels can't be properly aligned. Note anything out of the ordinary. If the wheel alignment can't be corrected, try to determine the cause of misalignment, based on what you've learned.

## Activity 4

This activity will give you some hands-on experience with motorcycle brake systems. As in the previous hands-on activity, you'll need one or more motorcycles to work on. You'll also need the service manuals for the models you'll be working on.

Try to find a motorcycle that's equipped with mechanical brakes. Disassemble and inspect the brakes. Measure the thickness of the brake shoes and replace them if necessary. Note the brake cam arrangement. Check the lubrication of the brake cams and adjust the

brake system as needed. When you're satisfied the brakes are in good condition, reassemble the motorcycle, using your knowledge obtained from the study unit material and the appropriate service manual.

Next, try to find a motorcycle that uses hydraulic brakes, and, if possible, change and bleed the brake system using new DOT brake fluid as recommended by the manufacturer. While working on the brake system, locate and examine the brake lever, master cylinder, brake-fluid line, caliper assembly, pads, and disc. Remember to take precautions to prevent moisture from mixing with or being absorbed by the fluid. Also, be careful when working with brake fluid. It can ruin painted surfaces it touches.

## Activity 5

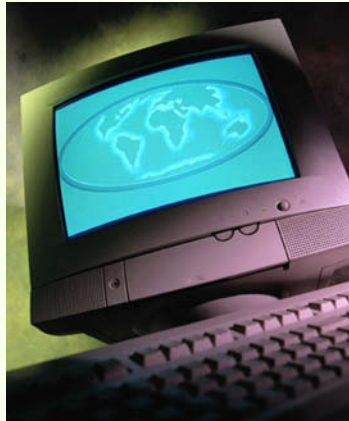
This activity will give you some hands-on experience with motorcycle wheel and tire service. If you don't already have a motorcycle stand or lift, refer to your study unit material and build a center stand as described. Being able to raise a motorcycle to remove and install wheel assemblies will be a necessary part of your service as a motorcycle technician.

Go to your local motorcycle dealership and ask if you can observe technicians changing and balancing tube-type and tubeless-type tires. After watching them work on several tires, ask if they would allow you to change and balance a tire. With a professional technician's assistance, you'll soon be able to change tires in a minimum amount of time.

Next, try this challenging activity. Obtain an unusable wire-spoke wheel from a dealer's service department or from a salvage yard. Note the wheel's spoke pattern to help you successfully reassemble the wheel. Completely disassemble the wheel so that the spokes, hub, and rim are separated. Now, reassemble the wheel, using the procedure described in your study unit. Be patient, as it will most likely take many attempts to reassemble the wheel properly. Remember that you shouldn't have to bend any of the spokes during assembly.

## Conclusion

We hope you've enjoyed these practical exercises. When you're ready, proceed to the graded portion of the practical exercise. Complete this part of the exercise the same way you completed the other examinations for your program. Follow the instructions provided to send your answers to the school for grading.



## ONLINE EXAMINATION

For the online exam, you must use this

**EXAMINATION NUMBER:**

**03382700**

**When you're confident that you've mastered the material in your studies, you can complete your examination online. Follow these instructions:**

1. Write down the eight-digit examination number shown in the box above.
2. Click the **Back** button on your browser.
3. Click the **Take an Exam** button near the top of the screen.
4. Type in the eight-digit examination number.