DTU

DISCOUNT TIRE UNIVERSITY

WHEEL BASICS

FACILITATOR GUIDE

WHEEL BASICS FACILITATOR GUIDE

CLASS PREPARATION

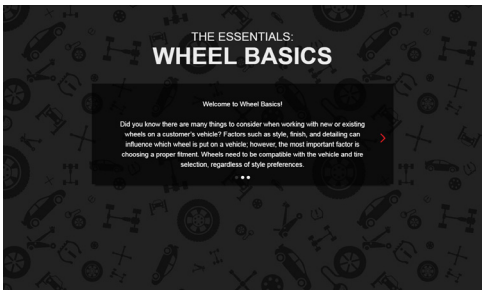
Welcome to the Wheel Basics course! You will be sharing the many things to consider when working with new or existing wheels on a customer's vehicle. Factors to consider such as style, finish, and detailing can influence which wheel is put on a vehicle; however, the most important factor is choosing a safe fitment. Wheels need to be compatible with the vehicle and tire selection, regardless of style preferences.

In this course, we are going to introduce the sections of a wheel and their purpose, wheel measurements, and wheel accessories. After that, you will work with wheels to identify and distinguish between different brands, finishes, and sizes. Let the participants know they will potentially use all of this information within the first thirty days of working in the backroom. The course will be wrapped up with a brief assessment.

MATERIALS

- Collect different styles of finishes on wheels of the same type.
- Work orders and wheel labels
- TPMS Rebuild Kits
- A variety of lug nuts and bolts
- Hub Rings
- Participant Reference Guide
- Prizes for team challenges

BEFORE CLASS



1. Log onto the KC and access the Regional Training Academy page via the DTU menu.
2. Open the Wheel Basics Online Presentation.
3. Download and print the Participant Reference Guide for the number of learners enrolled in the course.
4. Download and print the Facilitator Guide.
5. Based on the number of participants, set up the appropriate number of different styles of wheels in the room.

CLASS PREPARATION

TIME

There are six sections and an assessment within this course. They are:

#	Section Name	Duration
200	Wheel Basics Introduction	2 minutes
201	Sections of a Wheel	3 minutes
202	Wheel Measurements	5 minutes
203	Wheel Accessories: Valve Stems and TPMS Sensors	5 minutes
204	Wheel Accessories: Lug Nuts & Hub Rings	5 minutes
205	Wheel Accessories: Center Caps, Covers, Spacers, Hub Extensions, and Lug Adapters	5 minutes
206	Matching Work Orders and Wheel Box Labels	5 minutes
207	Course Assessment	10 minutes

END OF COURSE

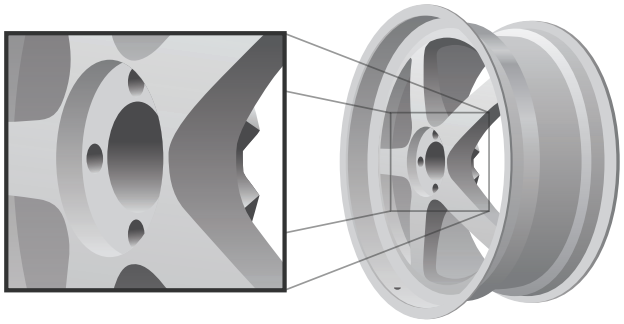
At the end of section 206 – Matching Work Orders & Labels, send participants the assessment link so they can individually take the Wheel Basics Assessment. It should take approximately 10 minutes to complete. Then go into DTU and mark the participant complete for the Wheel Basics course.

SECTION 201 - SECTIONS OF A WHEEL

LEARNING OBJECTIVE

State the learning objective so participants know what they need to learn.

- Identify the sections of a wheel which include the face, rim flange, drop center, bead seat, lug holes, valve hole, center bore, and mounting surface.

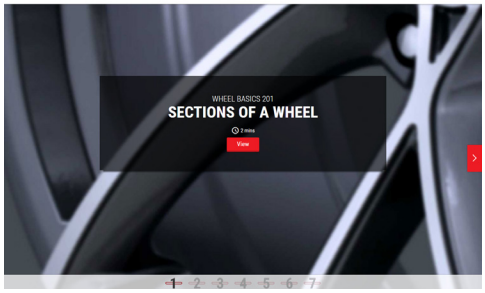


Online Module

3 Minutes

Demonstration:

1. Start the online presentation titled Wheel Basics 201- Sections of a Wheel.
2. After the online presentation, call on participants to point out a section on the wheel as you name it.
3. Let participants know they have review questions at the end of each section in their Participant Reference Guide, which they can use in preparation for their Wheel Basics Assessment.



4. Give learners a minute or two after the section to complete their participant guide questions.

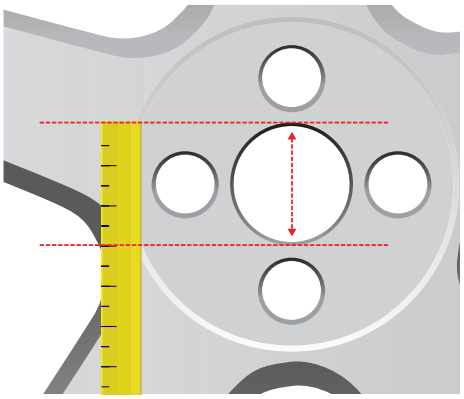
SECTION 201 - SECTIONS OF A WHEEL

Questions	Answers
What is the most exposed part of the wheel that comes in different designs and finishes?	The face.
What is the purpose of the drop center?	To allow the tire bead to go over the bead retention hump during mounting.
What is the purpose of the bead seat area on the wheel?	To prevent the tire from slipping off the wheel - it is the section between the rim flange and retention hump.
Where is the rim flange and why is it important?	It is the outside structure that secures the tire to the wheel and locks the bead into place.
What section of the wheel comes into contact with the hub and rotor surfaces?	The mounting surface. The surface must stay clean at all times.
What section of the wheel is matched to the hub pilot of the vehicle?	The center bore.

SECTION 202 - WHEEL MEASUREMENTS

LEARNING OBJECTIVE

State the learning objectives so participants know what they need to learn.

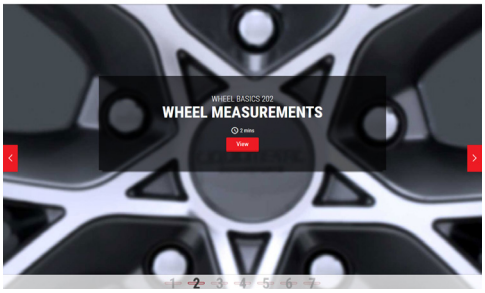


1. Identify the components of wheel measurements to include:
    - Rim diameter, rim width, bolt pattern, offset, bore diameter, and center-line.

Online Module

2 Minutes

Demonstration:



1. Continue the online presentation and access Wheel Basics 202 - Wheel Measurements.
2. Pause the online presentation and point out each component of the wheel, its measurements, and purpose until the section finishes.
3. During the online presentation, ask a few of the questions provided on the next page.

Whole Class Activity

3 Minutes

1. Ask learners to come up and illustrate how a variety of measurements are taken.
2. Reinforce their answers, whether correct or incorrect, with the accurate information.
3. Ask a few of the questions provided on the next page if you find the learners need more reinforcement.
4. Give learners a few minutes after each section to complete their participant guide questions.

SECTION 202 - WHEEL MEASUREMENTS

Questions	Answers
What represents the size of the center bore in millimeters?	Bore diameter.
What is the distance in millimeters of the hub mounting surface to the centerline of the wheel?	Offset.
What is bolt pattern?	Bolt Pattern is a measurement of lug holes on a wheel that are meant to be matched with the bolt pattern of the studs on the vehicle hub.
What is the bolt circle?	It refers to the diameter of the imaginary circle drawn through the exact middle of each bolt.
What is the distance from bead seat to bead seat on the same side of the wheel?	Rim diameter.
Must the rim diameter on a wheel match the size of mounted tire exactly?	Yes - it is very important for the safety of your customer and their vehicle.

SECTION 203 - WHEEL ACCESSORIES: VALVE STEMS & TPMS SENSORS

LEARNING OBJECTIVE

State the learning objectives so participants know what they need to learn.

1. Identify the purpose and anatomy of valve stems as well as TPMS sensors.

Online Module

2 Minutes

Demonstration:

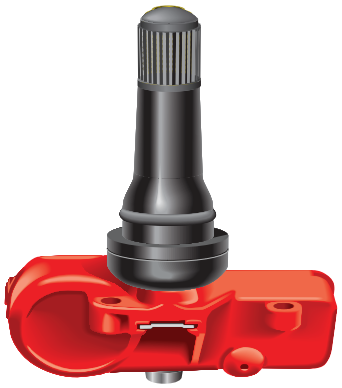
1. Prior to starting this section, provide each participant a valve stem and TPMS Rebuild Kit so as each part of the anatomy is shown they can identify it on the component.

2. Continue the online presentation and access Wheel Basics 203 – Accessories: Valve Stems & TPMS Sensors.
3. Pause the online presentation as needed to point out the parts of the anatomy of both the valve stems and TPMS sensors until the section is finished.
4. Ask some of the questions provided on the next page during the online presentation.

Whole Class Activity

3 Minutes

1. Provide each participant valve stems and a TPMS Rebuild Kit.
2. Ask each participant to point and identify what you call out – the name or purpose of a valve or TPMS sensor.
3. Ask participants to answer the review questions for this section in their Participant Reference Guide.
4. Reinforce their answers as needed.
5. Ask some of the questions provided on the next page if you find the learners need more reinforcement.



SECTION 203 - WHEEL ACCESSORIES: VALVE STEMS & TPMS SENSORS

Questions	Answers
What are the benefits of a TPMS system?	It warns of a flat or low tire, promotes increased tread life, and increased fuel economy.
Why does TPMS need to be rebuilt every time a wheel is mounted or remounted?	Because of its exposure to heat and excessive forces.
What transmits information to the in-dash computer?	The sensor.
What part seals around the valve hole of the wheel?	The base.
This valve type is used if the psi is less than 65.	Standard valves.
What two types of valve stem sensors were covered?	Rubber and aluminum.
What type of sensor is found along the barrel and does not allow air to go through it?	Banded sensors.
Why is it important that valves are replaced?	To prevent corrosion.

SECTION 204 - WHEEL ACCESSORIES: LUG NUTS & HUB RINGS

LEARNING OBJECTIVE

State the learning objectives so participants know what they need to learn.

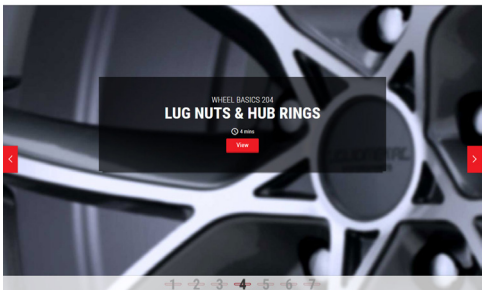
1. Identify the purpose of lug nuts, their different types and sizes, as well as the purpose of hub rings.

Online Module

2 Minutes

Demonstration:

1. Prior to starting this section, provide each participant 5 lug nuts and 3 hub rings of different sizes, so as each part is shown, they can identify it.
2. Continue the online presentation and access Wheel Basics 204 – Wheel Accessories: Lug Nuts & Hub Rings.
3. Pause the online presentation as needed to point out the type of lug nuts and various sized hub rings until the section is finished.

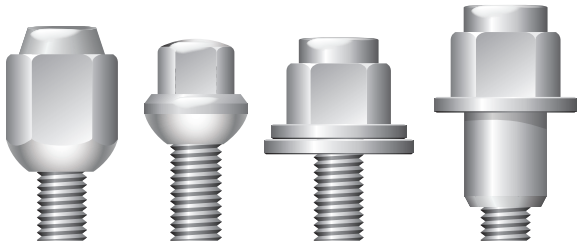


4. Ask some of the questions provided on the next page during the online presentation.

Whole Class Activity

3 Minutes

1. Ask each participant to point and identify what you call out – a lug type or purpose of a hub ring.
2. Ask participants to answer the review questions for this section in their Participant Reference Guide.
3. Reinforce their answers as needed.



4. Ask some of the questions provided if you find the learners need more reinforcement.

SECTION 204 - WHEEL ACCESSORIES: LUG NUTS & HUB RINGS

Questions	Answers
What type of wheel is centered onto a vehicle's hub?	A lug-centric wheel.
Why is it important to make sure the lug sizes are correct for a particular wheel?	To prevent wheel damage based on it being too loose or too tight.
Why do we use hub rings?	When a lug-centric wheel is centered onto a vehicle's hub, a gap may exist between the center bore of the wheel and the hub pilot. To fill the gap, and assist in aligning the assembly, we have hub rings. They also center the wheel, which reduces vibration.
Which lug nut features a bowl shaped seat?	Radius/ball seat.
Which lug nut features a flat mounting surface underneath a lug nut?	Mag/shank.

SECTION 205 – WHEEL ACCESSORIES: CENTER CAPS, COVERS, SPACERS, HUB EXTENSIONS, AND LUG ADAPTERS

LEARNING OBJECTIVE

State the learning objectives so participants know what they need to learn.

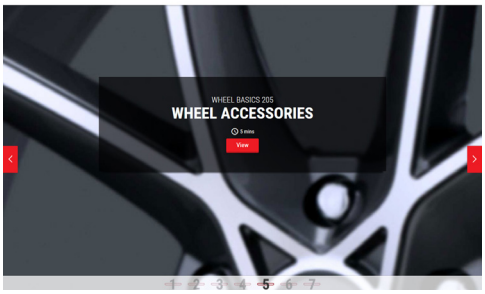
1. Identify the purpose of caps and covers, their different types, as well as the purpose of spacers and what to do if a vehicle has them.

Online Module

2 Minutes

Demonstration:

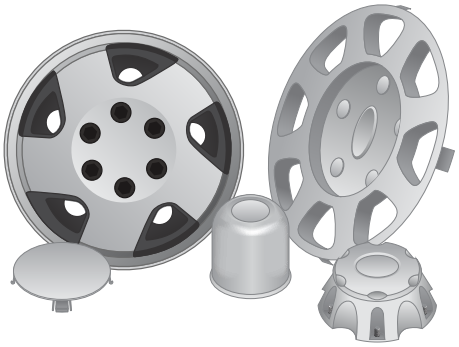
1. Continue the online presentation and access Wheel Basics 205 – Wheel Accessories.
2. Pause the online presentation as needed to point out the types of caps, covers, and various types of spacers until the section is finished.
3. Ask some of the questions provided on the next page during the online presentation.



Whole Class Activity

3 Minutes

1. Ask each participant to point and identify what you call out – a type of cap/cover or its description. Ask them what they need to do if they see a spacer – get their Service Coordinator.
2. Ask participants to answer the review questions for this section in their Participant Reference Guide.
3. Reinforce their answers as needed.
4. Ask some of the questions provided if you find the learners need more reinforcement.



SECTION 205 – WHEEL ACCESSORIES: CENTER CAPS, COVERS, SPACERS, HUB EXTENSIONS, AND LUG ADAPTERS

Questions	Answers
When should you stop and get your Service Coordinator immediately?	When you see wheel spacers.
This has brackets that snap into the center bore from the front of the wheel.	Snap-in cap.
What is the purpose of caps and covers?	To protect the center of the axle and the wheel hub from dirt and grime that may cause excessive wear. Wheel center caps also cover unsightly lug nuts and bearings.
These are made of aluminum and steel and go into the center bore from the back of the wheel.	Push-in caps.
These cover the entire face of the wheel and are secured by brackets.	Hub caps.
These attach through screws or bolts at the front or rear.	Screw on caps.

SECTION 206 - MATCHING WHEELS WITH WORK ORDERS

LEARNING OBJECTIVE

State the learning objectives so participants know what they need to learn.

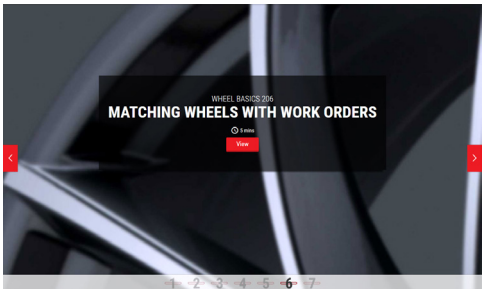
1. Identify the information that must match required to install and service the correct product.

Online Module

2 Minutes

Demonstration:

1. Continue the online presentation and access Wheel Basics 206 - Matching Wheels With Work Orders.
2. Pause the online presentation and point out the wheel markings, a wheel box label (if available), and where on the work order the information is located.



Whole Class Activity

3 Minutes

1. Complete the matching activity in the Online Presentation as a group.
2. Have learners complete the activity in their Participant Reference Guide of matching two or three wheel box labels to the correct work order.

ADDITIONAL CLASSROOM IDEA

Course Review - cover the course content, especially if you witness anyone is weak in a particular topic. Focus on areas within the course to set participants up for success on the final assessment. Review using the questions throughout their Participant Reference Guide.

SECTION 207 - COURSE ASSESSMENT

END OF COURSE

Assessment

10 Minutes

Send participants the assessment link so they can individually take the Wheel Basics Assessment. It should take approximately 10 minutes to complete. Then go into DTU and mark the participant complete for the Wheel Basics course.