Skills Compétences Canada

Motorcycle Powertrain

Outdoor Power and Recreation

POST-SECONDARY

Competitor Name: _____ Province/Territory ___

Powertrains Part 1 – Motorcycle Clutches

Objective:

Your task is to completely disassemble, inspect, diagnose, and re-assemble the clutch on a motorcycle.

If there is something you don't understand, you may ask for clarification.

Procedure:

1. Remove clutch cover and pressure plate to inspect clutch pack. **DO NOT REMOVE the clutch hub nut!**
2. Inspect clutch components and determine if they are re-usable. Document all specs and measurements in the provided table. Give your diagnosis on the condition/operation of the clutch. Look at clutch questions in case you can answer some at this point.
3. Reassemble the clutch following the service manual provided. Please pay special attention to the torque specs as stripping or breaking a fastener will cause a mark deduction. DO NOT use sealant.
4. Answer all the clutch related questions.

Competitor Name: _____ Province/Territory ___

Specifications and Measurements

Component/Inspection	Spec & Service Limit	Observations
Clutch Plate Warpage (Driven)		
Thinnest Friction Disc (Drive)		
Shortest Spring Length		
Cable Free-Play		
Torque Specs		
Right Crankcase Cover *Tighten to half of the recommended torque		
Clutch Spring Bolts		

Competitor Name: _____ Province/Territory ___

Questions:

1. What type of clutch is this?
   - _____

2. If the clutch pack was to be replaced, what needs to be done to the discs and plates prior to installation?
   - _____
     _____

3. How do you determine the difference between drive plate No. 1 and No. 2?
   - _____
     _____

- Which driven plate can be substituted by a (T1.6) plate?
  - _____
    _____
- What is important to remember on reassembly for the clutch outer drive plate No. 2?
  - _____
    _____

4. What most commonly would cause a clutch to slip?

   a. _____

   b. _____

   c. _____

   d. _____

5. What could be wrong with excessive noise coming from the clutch?

   a. _____

   b. _____

   c. _____

   d. _____

   e. _____

   f. _____

   g. _____

   h. _____

6. If one clutch spring is out of specification, can you replace it individually?

   - _____

Competitor Name: _____ Province/Territory ___

Powertrains Part 2 – Transmissions

Objective:

Identify and diagnose parts of the transmission.

Identify power flow and calculate gear ratio.

Procedure:

Fill in the following information and answer the all the questions using the diagram and transmission on the lab work bench.

Identify:

From your experience list 3 items you would inspect when determining a transmissions condition:

1._____

_____

_____

2._____

_____

_____

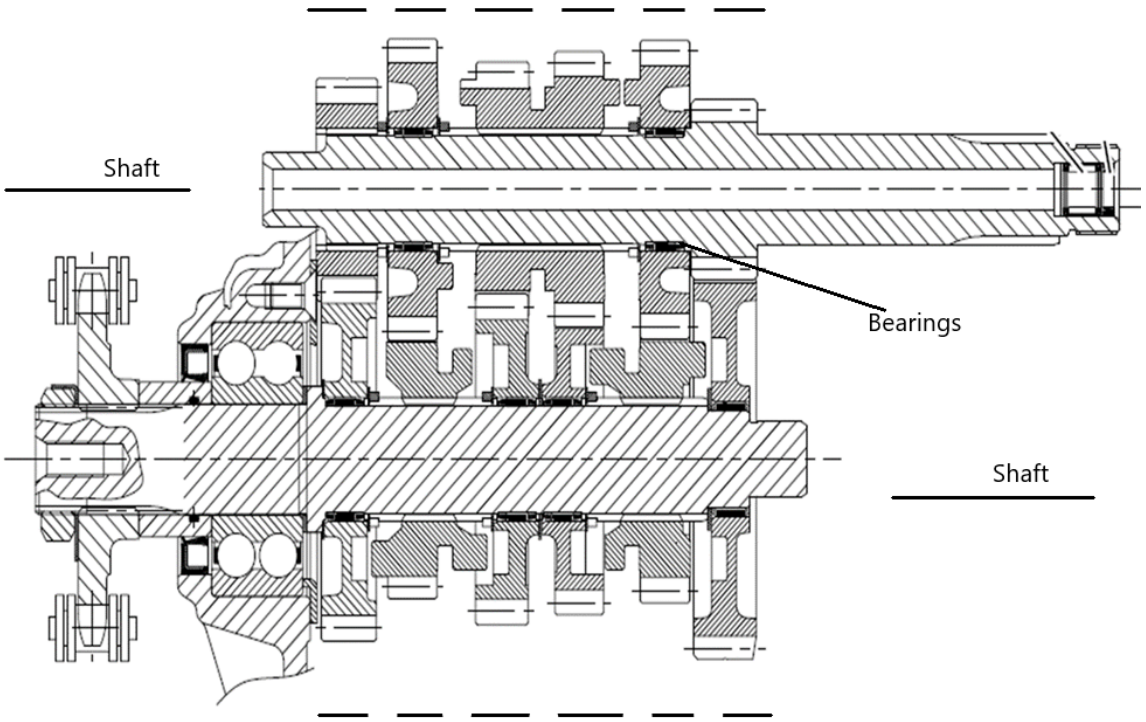
3._____

_____

_____

Competitor Name: _____ Province/Territory ___

Transmission Diagram Labelling



Label the above diagram. Indicate each shaft and gear pairing.
When labelling each gear identify which shaft location and gear pairing it is.
***Example: 1st gear on the input shaft would be labelled "I1".**

Using the labels given to the above diagram identify all the following:

Which gears are Integral: _____
Which gears are fixed: _____
Which gears are sliding: _____
Which gears are freewheeling: _____

Competitor Name: _____ Province/Territory ___

Action:

Step 1 - Shift the transmission into “third gear” and call the judge over to look at it.

Step 2 – Calculate the gear ratio for “first gear” and write it below.

- _____

Questions:

1. What is meant by the term “constant mesh” transmission?

   _____

   _____

   _____

2. What type of gear is present on the transmission other than straight cut?

   _____

   _____

   _____

3. Is there a shift shaft adjustment available?

   _____

   _____

   _____

4. What could cause a bent shift fork?

   _____

   _____

   _____