Skills Compétences Canada
Winnipeg2023

MOTORCYCLE POWERTRAINS

Outdoor Power and Recreation Equipment

POST-SECONDARY

SkillsCompétences Canada
Winnipeg2023

Motorcycle Powertrains

Objective:

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

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.

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 deductions.

4. At any point during this Lab, inspect the clutch plates that are on your bench. Inspect the plates for any damage, and note the problem here:

   Plate 1: _____

   Plate 2: _____

   Plate 3: _____

   Plate 4: _____

5. Answer all of the clutch related questions.

Specifications and Measurements

Component/Inspection	Spec	Measurement
Plate		

Disc		
Spring Length		
Cable freeplay		
Torque Specs		
Clutch Cover		
Pressure Plate		

Diagnosis:

_____
_____
_____
_____

Questions:

1. **What type of clutch is this?**
   - _____
2. **If the clutch pack was to be replaced what needs to be done to the friction plate prior to installation?**
   - _____
     _____
3. **How are the friction plates orientated during installation?**
   - _____
     _____

4. **How are the steel discs orientated during installation?**
   - _____
     _____
5. **Is the pressure plate indexed?**
   - _____
     _____
6. **What most commonly would cause a clutch to slip?**
   a. _____
   b. _____
7. **What could be wrong with the clutch that would cause hard shifting?**
   a. _____
   b. _____
8. **When replacing a worn clutch pack what other items should be replaced?**
   - _____
     _____

Transmission

Objective:

Your task is to completely inspect, diagnose, and re-assemble a transmission that a "customer" has brought to you.

Inspect transmission and Identify parts.

Show all notes and any problems found with this gearset, on this lab sheet.

Reassemble complete transmission with existing parts, starting with the "drive" axle

Use the service manual, or page(s) provided as reference.

Once transmission is complete, please answer the questions.

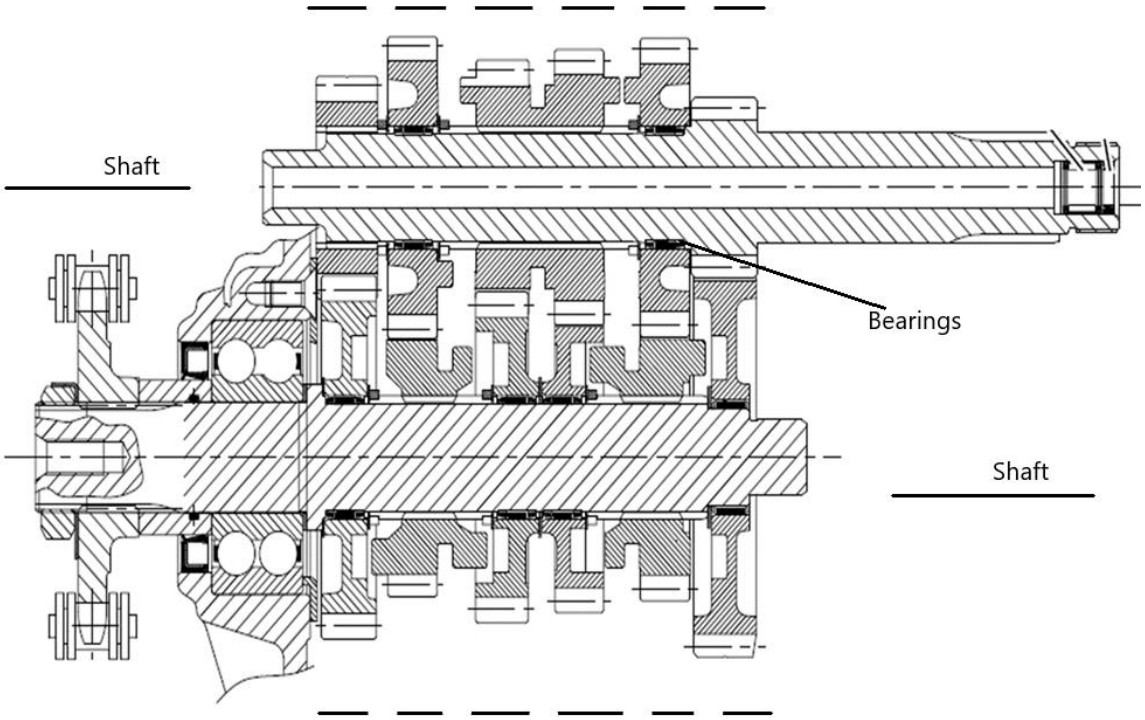
If there is something you don't understand, you may ask for clarification

Issues found: Be specific!

1. _____
   _____
   _____
2. _____
   _____
   _____
3. _____
   _____
   _____
4. _____
   _____
   _____
5. _____
   _____
   _____
6. _____
   _____
   _____

SkillsCompétences Canada
Winnipeg2023

Transmission Diagram



Label the above diagram filling all of the blanks. Label the shafts and gear pairings. Ensure every gear is identified by its shaft location and gear pairing. Example: 1st gear on the input shaft would be labelled "I1".

Now using the labels given to the above diagram identify all of the following:
Which gears are Integral: _____
Which gears are fixed: _____
Which gears are sliding: _____
Which gears are freewheeling: _____

Shift Sequence – Indicate which gears move into and out of corresponding gears to provide each of the 6 transmission gears. Example 4th: I1 out of I3, O3 into O4. Bike is in Neutral and then shifted through the gears.
1st _____
2nd _____
3rd _____
4th _____

5th _____

6th _____

Questions

1. **What is meant by the term “constant mesh”?**
   - _____
   -
2. **What is meant sequentially shifted?**
   - _____