FAULT DIAGNOSTIC GUIDE

1. Shudder/Vibration - on engagement of clutch

1.1

Contamination from faulty transmission seal or excessive lubrication of clutch release bearing.

CORRECTIVE ACTION

1. Replace seal.
2. Lubricate to manufacturer's spec.
3. Replace release bearing.

2. Non-release/Drags - unable to select gear

2.1

Clutch plate installed 'back to front'. Spring windows fouling the flywheel attaching bolts.

CORRECTIVE ACTION

Take care to install the clutch correctly.

2.2

Incorrect clutch plate for application.

CORRECTIVE ACTION

Contact the reseller for more information.

2.3

Clutch operation has deteriorated over a period of time. Misalignment has caused premature wear on pivot points within the cover assembly.

CORRECTIVE ACTION

1. Correct alignment before installing a new clutch. (ie, clean mating surfaces).
2. Check that dowels and dowel holes are in good condition. Refer "Driveline Misalignment".

FAULT DIAGNOSTIC GUIDE

2. Non-release/Drags - unable to select gear *continued*

2.4

Unable to achieve clutch release. Incorrect cable adjustment caused by cracked release fork.

CORRECTIVE ACTION
Replace fork.

2.5

Unable to achieve clutch release. Failed release fork caused by incorrect release bearing carrier.

CORRECTIVE ACTION
Install new fork and bearing carrier

2.6

Misalignment between engine and transmission.

CORRECTIVE ACTION
Refer “Driveline Misalignment”.

2.7

Incorrectly assembled release bearing (mounted ‘back to front’) on the carrier.

CORRECTIVE ACTION
Install bearing correctly with surface contact face to diaphgram/levers.

3. Slips/No Drive - unable to accelerate vehicle

3.1.

Heavy duty (wide facing) clutch plate installed under standard cover assembly (narrow pressure plate)

CORRECTIVE ACTION
Install correct parts.

3.2

Flywheel has not been refaced to give positive friction surfaces.

CORRECTIVE ACTION
Machine flywheel prior to clutch installation.

3.3

Incorrect cover assembly or incorrect clutch release mechanism adjustment or driver abuse.

CORRECTIVE ACTION
Install correct parts and/or educate driver.

3.4

Result of incorrect clutch driven plate for the application.

CORRECTIVE ACTION
Install correct clutch driven plate. Before installing the transmission, the clutch plate should be introduced onto the first motion shaft to confirm compatibility.

FAULT DIAGNOSTIC GUIDE

3. Slips/No Drive - unable to accelerate vehicle *continued*

3.5

Burst facing usually caused by driver abuse, such as severe down changing through gears, ie 5th to 2nd at excessive road speed.

CORRECTIVE ACTION
Driver Education.

4. Pedal Graunch - stiff or 'jerky' pedal with engine running

4.1

Misalignment between engine and transmission.

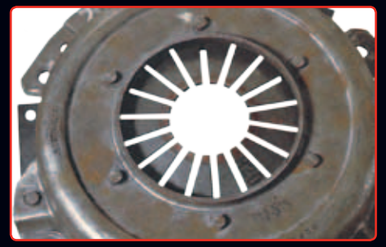
CORRECTIVE ACTION
Refer "Driveline Misalignment".

3.6

Clutch has failed at the segment necks due to misalignment between engine and transmission. Most common cause being non standard engine installation ie, engine transplant or engine not aligned with transmission first motion shaft.

CORRECTIVE ACTION
Refer "Driveline Misalignment".

4.2



Misalignment between engine and transmission, causing excess wear indicated by presence of red dust.

CORRECTIVE ACTION
Refer "Driveline Misalignment".

5. Driven plate will not fit

5.1

First motion shaft spline was not engaged correctly.

CORRECTIVE ACTION
Align spline as transmission is installed.

6. Failed 11inch (275mm) clutch

6.1

Centrifugal failure of 11 inch clutch due to non-standard installation. Possibly in lieu of twin plate.

CORRECTIVE ACTION
A twin plate system should be installed.

7. Noisy release bearing

7.1

Release bearing has been incorrectly installed.

CORRECTIVE ACTION
Install release bearing correctly.

8. Hard clutch pedal operation

8.1

Worn release bearing carrier.

CORRECTIVE ACTION
Replace carrier.

9. Noisy release

9.1

Misalignment between engine and transmission has resulted in the release bearing welding itself to the diaphragm.

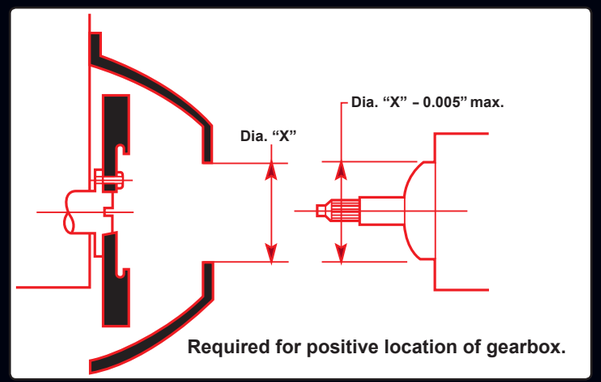
CORRECTIVE ACTION
Refer "Driveline Misalignment".

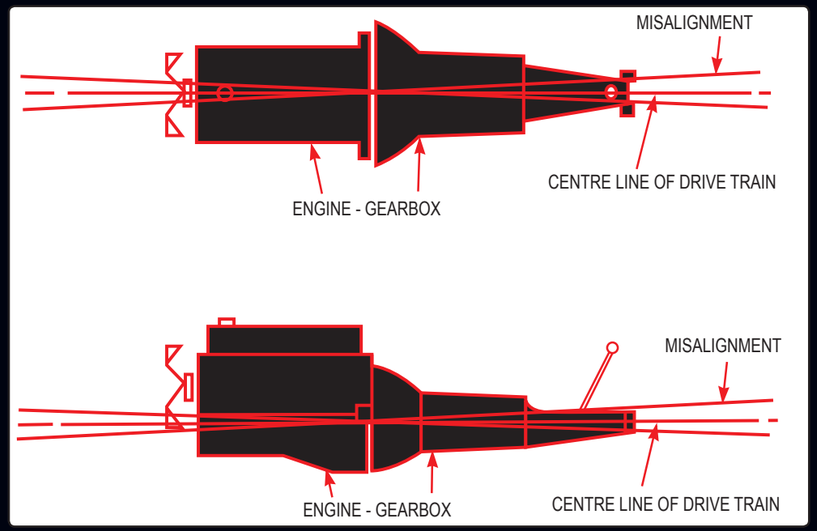
DRIVELINE MISALIGNMENT

Does the clutch you have just removed show any of these signs of wear?

- Broken clutch plate.
- Worn diaphragm fingers.
- Red dust covering the clutch assembly.
- Loose pivot rings inside the cover assembly.
- Release bearing guide worn on one side.

If it does, the clutch has probably failed due to driveline misalignment. Fitting a new clutch without rectifying any misalignment will lead to possible premature failure of the new clutch.





DRIVELINE MISALIGNMENT

What causes Misalignment?

The most common causes of driveline misalignment are:

- Missing or damaged dowel pins allowing the transmission to be bolted off centre.
- Mislocated front bearing retainer.
- Foreign matter between the engine block and the transmission mounting faces.
- Missing or worn pilot bearing.
- Broken block flange.

What are the symptoms of misalignment?

- Pedal graunch with the engine running.
- Deterioration of the clutch until non-release occurs.
- Failed drive plate.
- Red dust covering clutch and/or groove worn in the diaphragm by the release bearing.

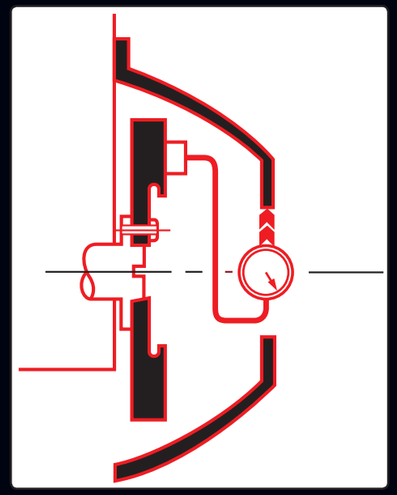
How do I prevent misalignment?

Whenever you are replacing a clutch, inspect the old components. If misalignment is present you will need to find the cause.

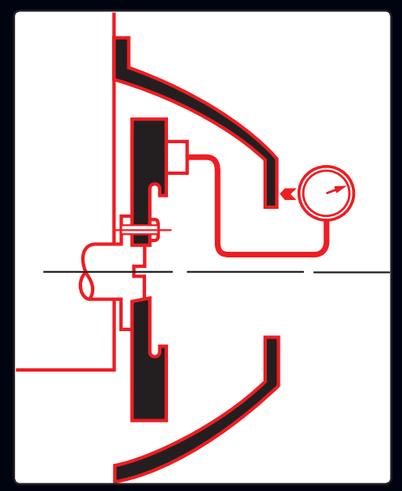
- Inspect all dowels and dowel holes for condition.
- Inspect release bearing guide and replace if necessary.
- Clean all mating surfaces.
- Inspect block flange for damage.

REMEMBER - IF MISALIGNMENT IS PRESENT, FITTING A NEW CLUTCH KIT WILL NOT FIX THE CAUSE OF THE PROBLEM AND THE MISALIGNMENT WILL QUICKLY DESTROY THE NEW CLUTCH.

How to check for engine/transmission misalignment



STEP 1 Mount indicator to flywheel and determine concentricity of bell housing bore to centre line of crank rotation. SPECIFICATION: 0.15mm max. T.I.R.



STEP 2 With indicator still mounted to flywheel ensure rear surface of housing is square. SPECIFICATION: 0.15mm max. T.I.R.

TROUBLESHOOTING

PROBLEM	ACTION
NON RELEASE	
Distorted clutch plate (bent)	Improve installation technique and replace plate
Incorrect clutch for the application	Use Clutch Industries catalogue for recommended components
Oil contamination of facings	Replace failed gear box seal or rear main seal and install new clutch plate
Pressure plate does not release the driven plate because the: 1. Cover assembly has been distorted/damaged 2. Clutch plate has been distorted/damaged	1. Replace cover assembly during installation 2. Replace clutch plate during installation
Unable to achieve correct release bearing travel because: 1. Faulty linkage 2. Faulty cable 3. Faulty hydraulics 4. Incorrect adjustment	1. Overhaul or replace 2. Replace cable 3. Overhaul or replace 4. Adjust mechanism to vehicle manufacturers specifications
SLIPS	
Clutch friction facings are worn beyond service life	Replace clutch driven plate
Oil contamination of facings reducing their coefficient of friction	Replace clutch plate and repair either front gear box seal or rear main seal from leakage
Incorrect cover assembly for the application	Use Clutch Industries catalogue for recommended components
Incorrect release mechanism adjustment	Refer to vehicle manufacturer's repair manual
Faulty release mechanism causes too much friction from: 1. Worn linkages 2. Frayed cable 3. Seized hydraulics	1. Overhaul or replace 2. Replace cable 3. Overhaul or replace
NOISY	
Clutch is noisy with pedal depressed: 1. Faulty release bearing 2. Faulty pilot (spigot) bearing/bush 3. Noisy release bearing	1. Replace release bearing 2. Replace pilot bearing 3. Manually centre self-centring bearing
Noise occurs when clutch engaged: Worn gear box front bearing	Overhaul gear box
PEDAL GRAUNCH	
Pedal graunch or jerky with engine running, but smooth with engine NOT running	Correct the misalignment between transmission and engine Refer "Driveline Misalignment"
SHUDDER	
Bent clutch plate	Install a new clutch plate using correct installation technique
Damaged cover assembly	Install new cover assembly
Failure to resurface the flywheel	Remachine the flywheel prior to installing new clutch
Worn engine/transmission mounts	Repair or replace mounts
Jerky pedal causing shudder	Correct the misalignment between transmission and engine. Refer "Driveline Misalignment".