

dodson[®]

**INSTALLATION
INSTRUCTIONS**

DL800 PROMAX

DMS-00-0007 REVISION 012

01 FEBRUARY 2023

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DATE: 01FEB2023**

**RELEASED BY: 
DATE: 01FEB2023**

REVISION UPDATE NOTES:

The following table indicates the changes we have made in either the disassembly or assembly of the product you have received. All changes are indicated by a revision bar in the margin.

If you have any questions email us at technical@dodsonmotorsport.com

Revision	Date	Description
REV.012	1FEB2023	<ul style="list-style-type: none">- Consolidated instructions due to all clutch variations using separator springs.- Clarified clearance measurement on the last page.
REV.011	2SEP2022	<ul style="list-style-type: none">- Added instructions for piston return spring plate modifications to suit 10/10 and 10/11.
REV.010	31MAY2022	<ul style="list-style-type: none">- Revised formatting and contents list.- Added clearance measurement for 10/10 and 10/11.- Rewrote some steps for improved clarity.- Added note to last page.
REV.009	03MAR2022	<ul style="list-style-type: none">- Added machined bottom plate detail to assembly instructions Section A.
REV.008	05JAN2022	<ul style="list-style-type: none">- Updated format
REV.007	01NOV2021	<ul style="list-style-type: none">- Added specific assembly instructions for 10-Plate and 10/11-Plate clutches with separator springs.
REV.006	01JUL2021	<ul style="list-style-type: none">- Modification to the OEM core must take place for any 11-plate clutch.- Stacks come pre-assembled in the correct build order.- A 1.6mm steel without scallops will be used against the clutch core.

DL800 PROMAX KIT CONTENTS



Item Number	Part Name	DMS Code	Qty
1	Clutch Lid Assembly	DMS-*	1
2	Outer Basket Assembly	DMS-*	1
3	Large Inner Basket	DMS-3219	1
4	Small Inner Basket	DMS-3220	1
5	Large Stack	DMS-**	1
6	Small Stack	DMS-**	1

* Items #1 and #2 are a part of a kit - **DMS-8065**.

** Clutch stack DMS codes depend on the version of the clutch.

Please contact sales@dodsonmotorsport if you require a replacement or upgraded clutch stack.

DL800 PROMAX INSTALLATION INSTRUCTIONS DISASSEMBLY

STEP 1

Remove the bolts from the aluminum clutch cover and pull the clutch unit out of the transmission.



STEP 2

Remove the plastic cover shown below by removing the bolts.

This will need to be modified before reassembly. (*see Page 25*)



STEP 3

Remove the circlip holding the large outer basket and lid.



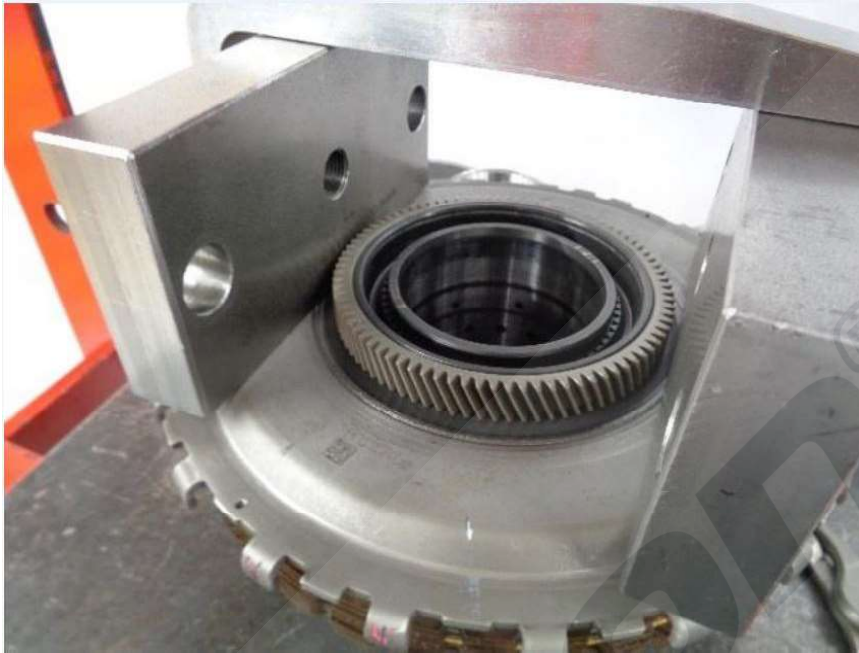
STEP 4

Remove the circlip retainer carefully making sure not damaging it. We will be using this when re-assembling the clutch.



STEP 5

Press the lid to remove circlip



STEP 6

Remove the retainer circlip.



STEP 7

Take the clutch core with lid out, remove the lid, keep the pistons and and return spring together.

**STEP 8**

Keep the bearings from the OE clutch baskets.



STEP 9

Press the piston from the basket side.



STEP 10

Remove the circlip and take the basket-side piston out. Keep the piston and springs for further assembly.



STEP 11

Remove the OE clutch stacks from the clutch core. Clean, inspect and keep OE clutch core ready for further assembly.

**CORE MODIFICATION INSTRUCTIONS**

**IF YOU ARE RUNNING A 10/11 OR 11/ 11 PLATE CLUTCH,
YOU MUST MODIFY THE OEM CORE AS PER DODSON
INSTRUCTIONS (DMS-00-0009).**

Please email us at technical@dodsonmotorsport.com for instructions and drawings on how to complete this step.

ASSEMBLY INSTRUCTIONS

NOTE: HANDLE THE STACK WITH CARE. SOAK THE FRICTIONS IN OIL BEFORE ASSEMBLY

Upon receiving your clutch stacks, the top of the stack will be indicated on the packaging. This indicates the pre-assembled orientation that the large stack and small stack should be installed. The thinnest plates will be located in the middle of the stack with the thickest plates on the outside (with a machined bottom plate on the bottom of the stack). The steel mating plate thickness may vary between stacks to produce the correct total stack thickness and result in the desired clutch clearance. **Take care to maintain the order of the parts in the stack.**



IMPORTANT NOTE

FOR THE 10/10-PLATE AND THE 10/11-PLATE CLUTCHES

Due to the introduction of the spring separators, the pre-load on the clutch pistons increases. This in turn can cause the TCM to be unable to successfully complete a clutch basic setting procedure, due to expected pressures falling just out of the TCM's tolerance. This has only been observed on a very small amount of isolated cases, however as a precaution and design improvement we recommend the OE piston return spring plates to be modified.

PLEASE REMOVE 4 SPRINGS EVENLY SPACED AS SHOWN BELOW USING LONG NOSE PLIERS.

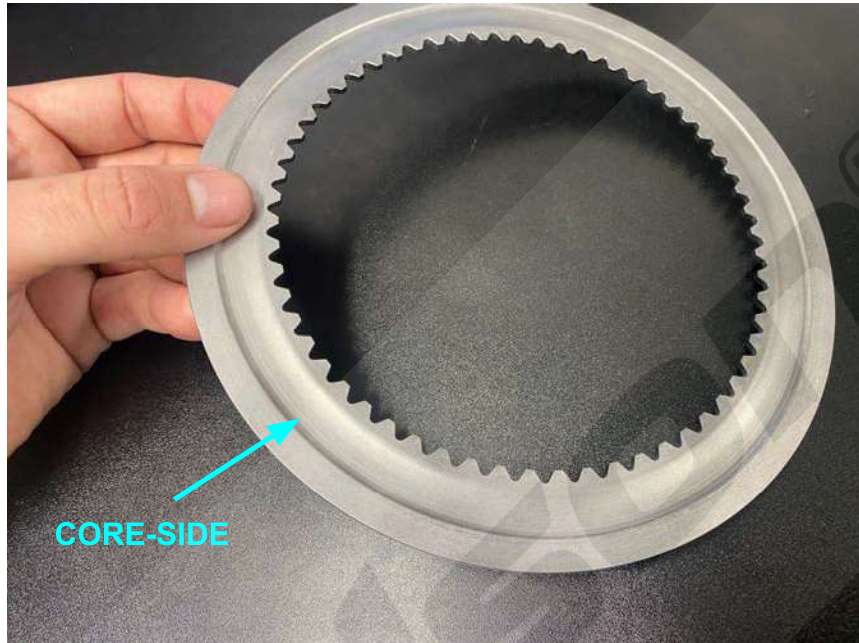


BOTH SMALL AND LARGE CLUTCH SIDE RETURN SPRING PLATES NEED TO BE MODIFIED

ASSEMBLY INSTRUCTIONS - SMALL STACK

STEP 1

Start by assembling the small stack first, bottom to top. The machined bottom plate runs against the core (this is the bottom of the stack). Ensure the flat face is facing upwards, with the contoured face being placed directly against the core. (this is the bottom of the stack). A friction will then follow the mating plate.



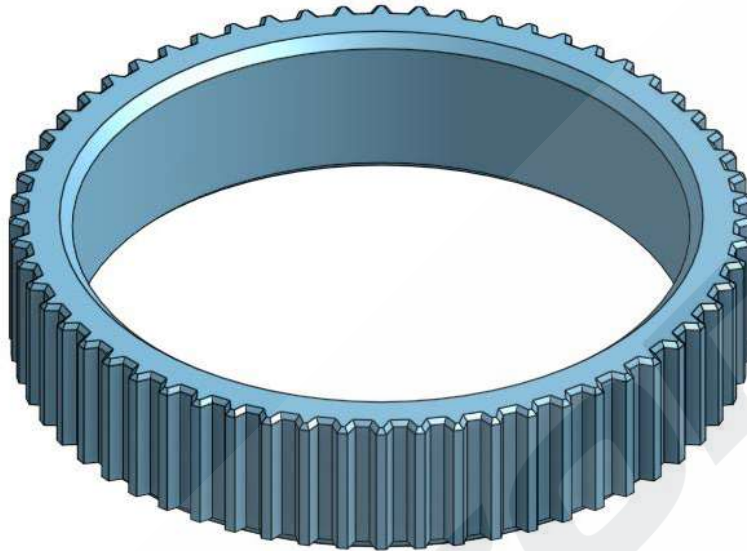
NOTE:

For 10/11-Plate clutches, the machined bottom plate is replaced with a standard 1.6mm steel on the SMALL (11) SIDE ONLY.

STEP 2

The spline extender tool which forms part of the spring clutch assembly tool kit can be placed onto the core now, ensuring the teeth on the tool align with the teeth on the core.

This is important, as the free height of the stack due to the springs is taller than the core.



Continue assembling the stack onto the core - **placing a spring, followed by a friction, followed by a steel.** Take care to ensure that with each set of plates assembled onto the core, the spring sits within the inner diameter of the friction and they are not sitting atop one another. Continue assembling the clutch plates onto the core until the entire stack is assembled. Install the piston return spring into the core as shown.

For 10/10 and 10/11 clutches make sure it has been modified as per instructions (Page 10).



NOTE: Please disregard the colour change of the spline extender tool in the images above.

STEP 3

Lube the small piston and fit it in the large clamp ring - lubing the components allows for easy assembly and prevents damage to the seals.



IMPORTANT

THE FOLLOWING STEPS CAN BE COMPLETED WITH A SINGLE PERSON BUT WE HIGHLY RECOMMEND HAVING A SECOND PAIR OF HANDS TO MAKE THE PROCESS EASIER.

READ THROUGH THE INSTRUCTIONS CAREFULLY AND BECOME FAMILIAR WITH THE PROCESS BEFORE PROCEEDING.

STEP 4

Using the clutch stack spring compression tool (included as part of the spring clutch assembly tool kit), apply even pressure to the stack until the top plate in the stack is below the top of the splines on the core. **There is a small ridge on the underside of the tool to ensure it is centred on the clutch plate - it is important that the tool is centred to allow for installation of the piston and clamp plate in the following step.** You may see a small amount of flex on the top plate at this stage - this is normal. Do not force the stack down - **if it feels like the steels or springs are not compressing smoothly onto the core and are catching on the edge of the leading edge of the core spline, STOP, and check the alignment of the spline extender tool.**



**TOP PLATE BELOW TOP
EDGE OF CORE SPLINE**

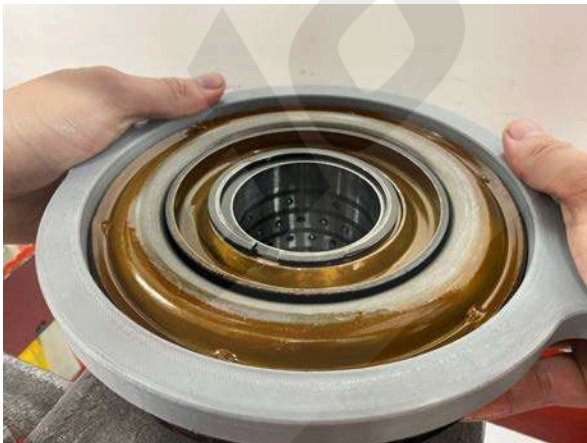
STEP 5

Whilst maintaining compression on the stack, remove the spline extender tool, and fit the piston and clamp ring to the core as shown below. Press firmly down on the piston so it goes on as far as possible. The piston and clamp ring should fit perfectly within the centre of the spring compression tool.



STEP 6

Whilst maintaining compression on the stack, move the clutch assembly to the hydraulic press to prepare for installation of the piston retention circlip. Gently release the compression tool, allowing the stack to spring back to full height. This will push the piston and clamp ring up, and the steels will travel off the end of the core spline. **It is very important that no part of the stack is disturbed at this point, as any movement will cause the clutch plates to not move smoothly back into position during the next step.**

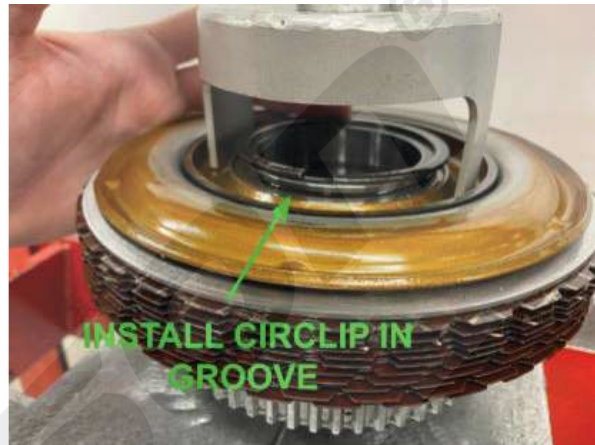


STEP 7

Compress the piston and spring assembly using a hydraulic press to allow for the installation of the circlip as shown in the images below. This will compress both the separator springs AND the piston return spring. Use the OEM circlip that came with the clutch core.

It is important to STOP IMMEDIATELY if any resistance is felt during this process, as this is a likely indicator that one of the top clutch plates in the stack has moved out of alignment and is catching on the core.

If this is the case, remove the piston and part of the clutch stack, replace the spline extender tool, reassemble the top part of the stack and repeat the previous steps.



STEP 8

Once the assembly is complete and the circlip is installed, release the hydraulic press and check for free movement of all the plates in the stack. If any of the piston-side plates do not move freely, or there is noticeable flex on the top plate on the stack this is an indicator that a component has caught on the edge of the core, and the clutch must be disassembled, checked, and reassembled.

If all the plates spin freely, the small clutch assembly is complete and you can proceed to the large clutch assembly.

ASSEMBLY INSTRUCTIONS - LARGE STACK

NOTE: Steps 1 through 6 follow the same process as for the small stack.

STEP 1

Assemble the large stack onto the core, bottom to top. The spline extender tool which forms part of the spring clutch assembly tool kit can be placed onto the core now, ensuring the teeth on the tool align with the teeth on the core. **This is important, as the free height of the stack due to the springs is taller than the core.** The machined bottom plate runs against the core (this is the bottom of the stack) Ensure the flat face is facing upwards, with the contoured face being placed directly against the core.



NOTE - The final production billet bottom plate has NO SCALLOPS.

STEP 2

Continue assembling the stack onto the core - **placing a spring, followed by a friction, followed by a steel.** Take care to ensure that with each set of plates assembled onto the core, the spring sits within the inner diameter of the friction and they are not sitting atop one another. Continue assembling the clutch plates onto the core until the entire stack is assembled. Install the piston return spring into the core as shown,

For 10/10 and 10/11 clutches make sure it has been modified as per instructions (Page 10).



STEP 3

Lube the small piston and fit it in the large clamp ring - lubing the components allows for easy assembly and prevents damage to the seals.

IMPORTANT

The following steps can be completed with a single person but we highly recommend having a second pair of hands to make the process easier. **Read through the instructions carefully and become familiar with the process before proceeding.**

STEP 4

Using the clutch stack spring compression tool (included as part of the spring clutch assembly tool kit), apply even pressure to the stack until the top plate in the stack is below the top of the splines on the core. **There is a small ridge on the underside of the tool to ensure it is centred on the clutch plate - it is important that the tool is centred to allow for installation of the piston and clamp plate in the following step.** You may see a small amount of flex on the top plate at this stage - this is normal. Do not force the stack down - **if it feels like the steels or springs are not compressing smoothly onto the core and are catching on the edge of the leading edge of the core spline, STOP, and check the alignment of the spline extender tool.**

STEP 5

Whilst maintaining compression on the stack, remove the spline extender tool, and fit the piston and clamp ring to the core as shown below. Press firmly down on the piston so it goes on as far as possible. The piston and clamp ring should fit perfectly within the centre of the spring compression tool.

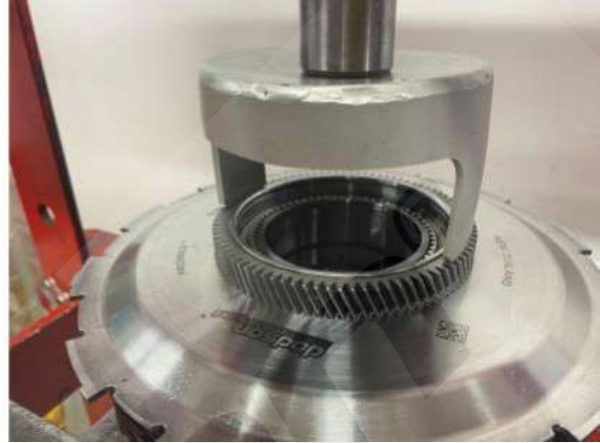


STEP 6

Whilst maintaining compression on the stack, move the clutch assembly to the hydraulic press to prepare for installation of the piston retention circlip. Gently release the compression tool, allowing the stack to spring back to full height. This will push the piston and clamp ring up, and the steels will travel off the end of the core spline. **It is very important that no part of the stack is disturbed at this point, as any movement will cause the clutch plates to not move smoothly back into position during the next step.**

STEP 7

Place the lid onto the core, on top of the clutch piston and clamp plate. Ensure the splines on the lid are lined up with the splines on the core (there should be enough engagement to be able to do this by feel). **Again, ensure that the plates in the large stack are not moved during this process, or else the alignment will be disturbed and you will have to disassemble and repeat the previous steps.**

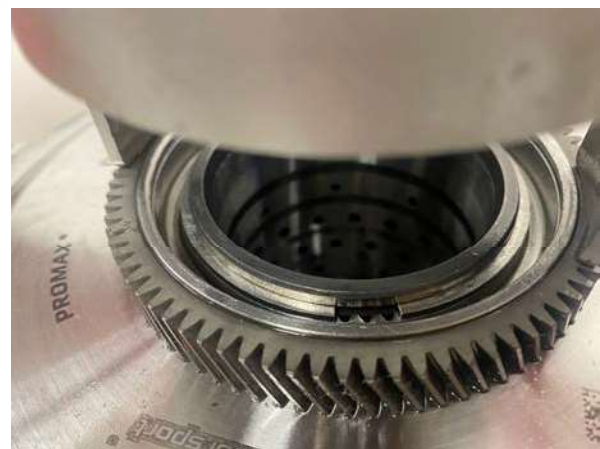


STEP 8

Compress the lid, piston, and spring assembly using a hydraulic press to allow for the installation of the circlip as shown in the images below. This will compress both the separator springs AND the piston return spring, and push the lid onto the core splines. Use the OEM circlip that came with the clutch core.

It is important to STOP IMMEDIATELY if any resistance is felt during this process, as this is a likely indicator that one of the top clutch plates in the stack has moved out of alignment and is catching on the core OR the lid is not correctly aligned with the core splines.

If this is the case, remove the lid, piston, and part of the clutch stack, replace the spline extender tool, reassemble the top part of the stack and repeat the previous steps.



STEP 9

Once the assembly is complete and the circlip is installed, release the hydraulic press and check for free movement of all the plates in the stack. If any of the lid-side plates do not move freely, or there is noticeable flex on the top plate on the stack this is an indicator that a component has caught on the edge of the core, and the clutch must be disassembled, checked, and reassembled.

If all the plates spin freely, the large clutch assembly is complete and you can proceed to the next section.



NOTE:

Clutch clearance does not need to be measured for clutches which utilise separator springs.

If it is absolutely necessary to measure the clearance it can only be done by assembling the clutch stacks onto the core without the separator springs following the same steps as above.

See further information on the clutch clearance specifications and measurements on the last page, section entitled "CLEARANCE MEASUREMENT".

ASSEMBLY COMPLETION

STEP 1

Assemble the OE large bearing on the clutch core. Make sure you assemble the bearing as shown in the image below. If assembled upside down, it will result in damage to the clutch.



STEP 2

Assemble the billet small basket on the clutch. Aligning the friction teeth using a small screwdriver or pick helps with the assembly.



STEP 3

Assemble the OE small bearing on the small basket. If it is placed upside down it will result in damage to the clutch.



NOTE: DO NOT PLACE THE OEM SHIM/WASHER UNDER THE BEARING.

STEP 4

Assemble the billet large basket on the clutch.



STEP 5

Make sure the OE small bearing is assembled on the clutch as shown. If it is placed upside down it will result in damage to the clutch.



NOTE: DO NOT PLACE THE OEM SHIM/WASHER UNDER THE BEARING.

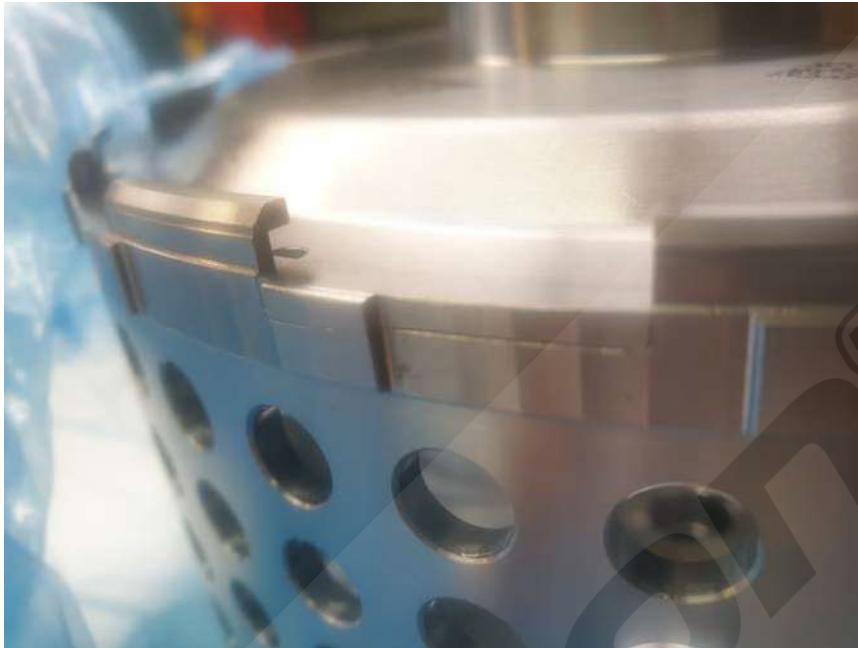
STEP 6

Assemble the billet Large outer basket assembly.



STEP 7

Align the speed sensor on the clutch lid and on the large basket assembly.



STEP 8

Assemble the circlip holding the Outer large basket assembly and clutch lid.



STEP 10

Assemble the circlip retainer carefully without damaging it.



STEP 11

Cut the plastic plate from Step 2 of disassembly as shown in the image below and bolt it back in the transmission.



STEP 12

Fit the clutch in the transmission housing while carefully turning it to line up the clutch basket splines with the input shafts. Bolt the clutch cover to the transmission.

Please make sure to check the O-ring on the aluminium clutch cover is correctly seated and not damaged during the final assembly of the clutch.



IMPORTANT NOTE

PLEASE MAKE SURE THAT THE BASIC SETTING AND ADAPTION DRIVE PROCEDURES ARE SUCCESSFULLY COMPLETED BEFORE USING THE FULL POWER OF THE VEHICLE.

DODSON INSTRUCTIONS FOR THE PROCEDURE USING VCDS SOFTWARE ARE AVAILABLE IF NEEDED (DMS-00-0033).

If you have any questions email us at technical@dodsonmotorsport.com

CLEARANCE MEASUREMENT

If clutch clearance needs to be measured for any reason (such as troubleshooting), the clutch stacks would have to be assembled onto the core without the separator springs.

Using feeler gauges as shown in figure, measure the clearance **between the piston and the top plate** of the stack for both the lid-side and non lid-side clutch stacks.

(Clearance cannot be measured on the core center side due to the bottom plate design)



CLEARANCE FOR BOTH CLUTCHES SHOULD BE:

- **3.4mm +/- 0.2mm** for 8/8 and 9/9
- **3.0mm +/- 0.2mm** for 10/10 and 10/11

If reaching this clearance is not possible, please contact us at technical@dodsonmotorsport.com