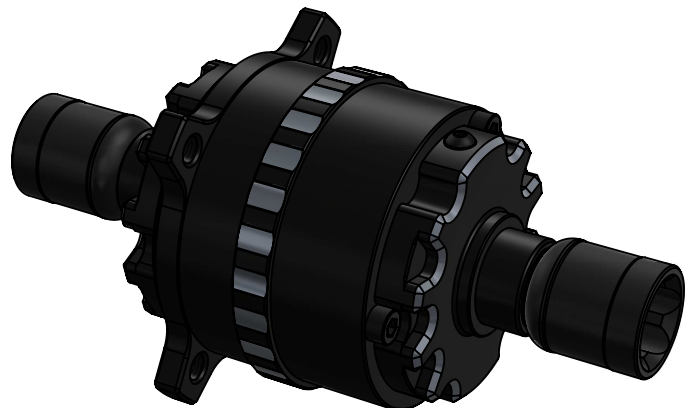
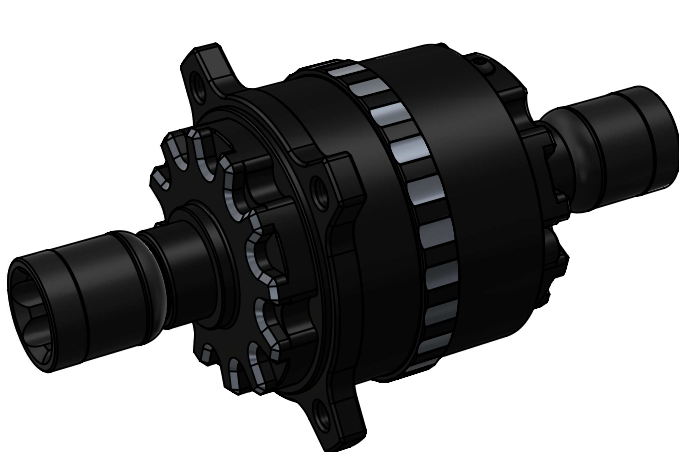
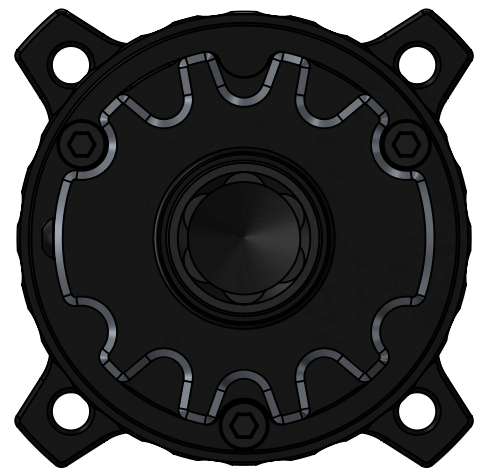
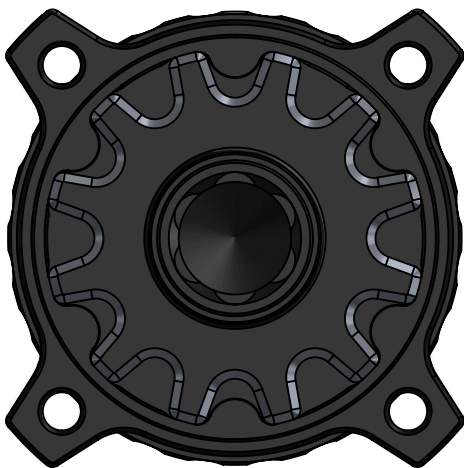
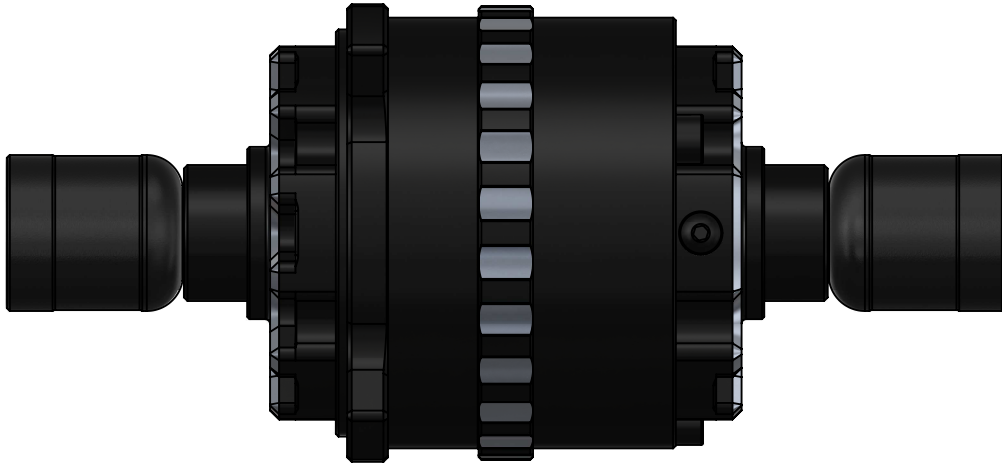


LSDIFF II USER MANUAL



THANK YOU!

Thank You for selecting the RS5 LSDiff II differential system. This differential designed with the latest technology CAD software (Solidworks) and developed at different race-tracks all round the world with our Team Drivers to maximal the performance. Uses only top quality materials such as, aircraft aluminums, special steels, high quality epoxy, and latest CNC technology (HAAS machines) to maximal the precision and durability.

The LSDiff II differential is the updated, redesigned follower of our succesfull LSDiff differential tath was introduced to the market back at 2003 and won many European Championship title. The working concept of the LSDiff was taken from the real Motorsport, and was the first differential at the 1/5 scale market with this working concept. Latter on, when some competitors see the potential of this concept, they also build similar differential systems. During the redesign we made the LSDiff II, lighter, easier to setup and maintance, and more smooth then its predecessor.

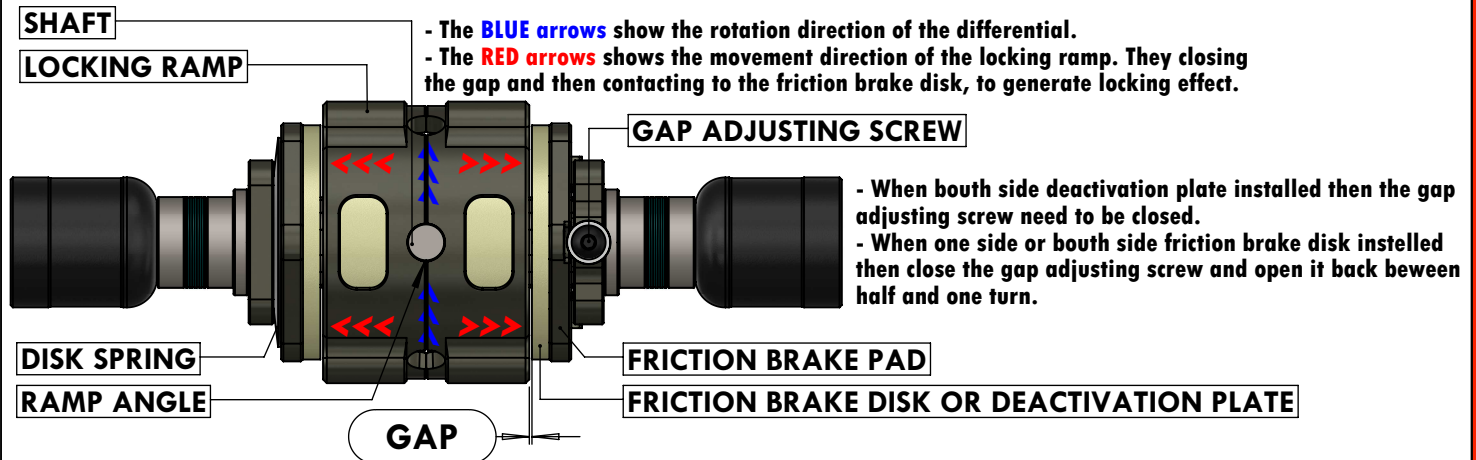
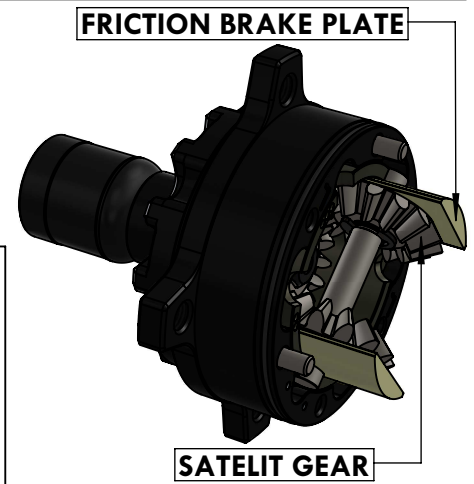
When something is unclear, or You have any problems do not hesitate to contact us per e-mail!!!

HOW DOES IT WORKS?

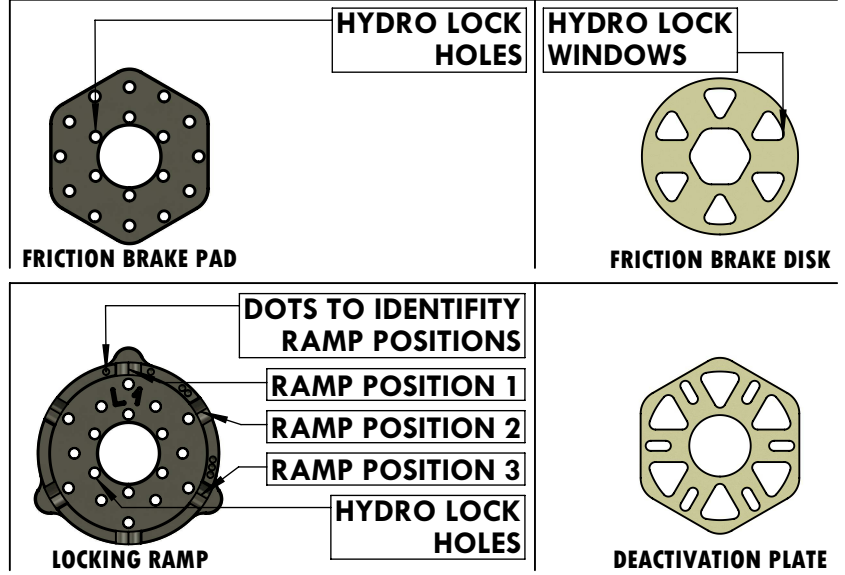
The LSDiff II differential has 3 different type of locking effect.

- 1st is the locking of the satelit gears. This is always active and works when bouth rear tyres are on the ground or when one tires lifted (for example if you drive on the kerbs) and just one tires is on the floor. The satelit gears during diff rotation want to move away from eachoter and tath reason they press themselves against the friction brake plates, slow itslefs down and generate locking effect.

- 2nd is the power locking effect. This active only when bouth rear tyres are on the ground. The shaft and the satelit gears with the friction plate, are not fixed to the differential case. When the differential start to rotate then does components want to fall behind reason of its inertia. The left and right side locking ramps are angled, so when the differential start to rotate, the shaft press them away from eachother, agains to the friction brake disk, tath is conected to the main gear, and slow them down. The locking ramps has 3 different angle position. The friction disks can be replaced by an deactivation plate at one our bouth side. If one side an a friction barke disk and on the other side an deactivation plate are installed then the power locking effect reduced by 50% compare to the bouth side friction brake disk setup. If bouth side deactivation plate are instaled then the power locking effect is 0%. On the left side of the Differential you can mount an disk spring. Without the disk spring the differential works like a switch (a bit aggressively) and with the disk spring a bit more smooth (progressively), because the pressure from the locking ramps not immediatly transfered to the friction brake disks.

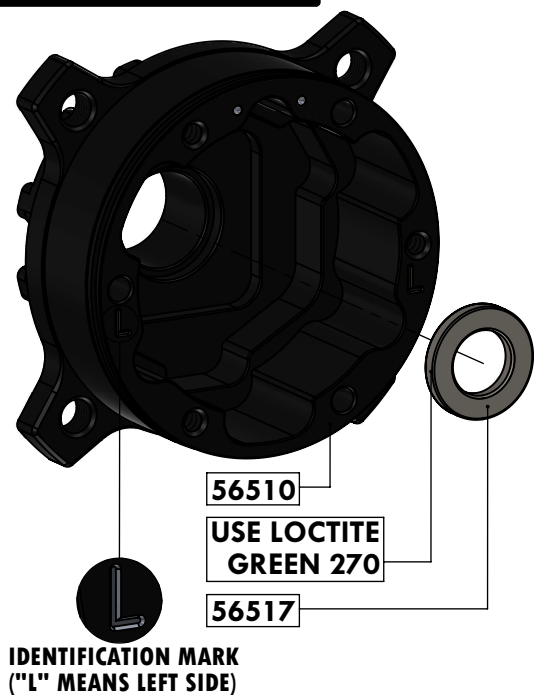


- 3rd is the hydro locking effect. This active only when one tire lifted (for example if you drive on the kerbs) and just one tire is on the floor. The locking ramps and the friction brake pads has hydro locking holes, and the friction braking disks has hydro locking windows. The oil always circulates inside the diff, through the hydro lock holes and windows during differential rotation. When one tire lifted from the floor, and its rpm want to increase then the hydro locking effect activate, and try to slow down tath tire. This type of locking effect happen because the friction brake disk want to rotate but the friction brake pads can not, so the oil tath goes through the hydro lock holes and windows need to be "cuted" firstly and just after can the friction brake disk rotate. This "oil cutting" locking effect dramatically reduce the fast rpm differents between inside and outside tyres when one of them lifted from the floor. The hydro locking effect of the LSDiff II differential only works when one side, or bouth side friction brake disk installed. If one side an a friction barke disk and on the other side an deactivation plate are installed then the hydro locking effect reduced by 50% compare to the bouth side friction brake disk setup.

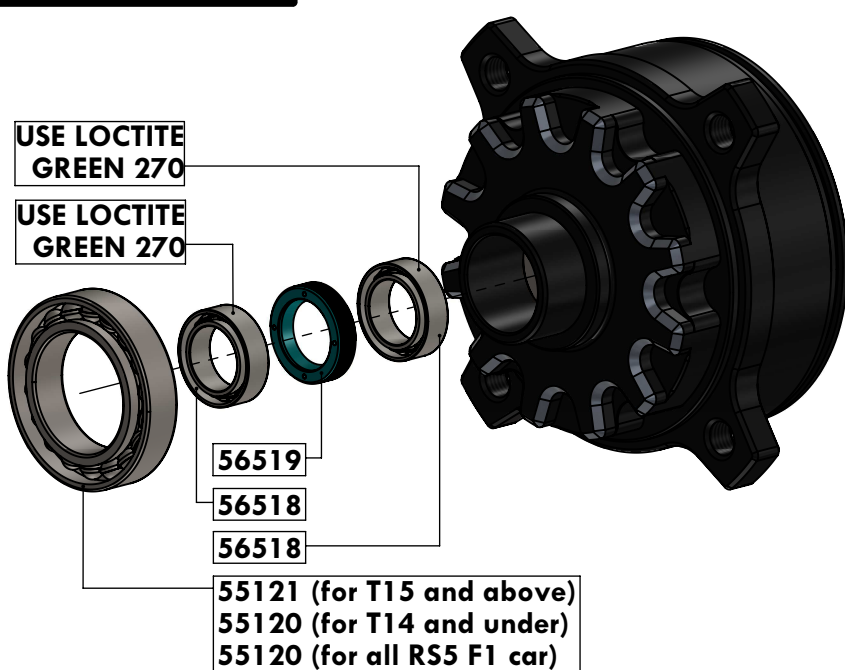


LSDIFF

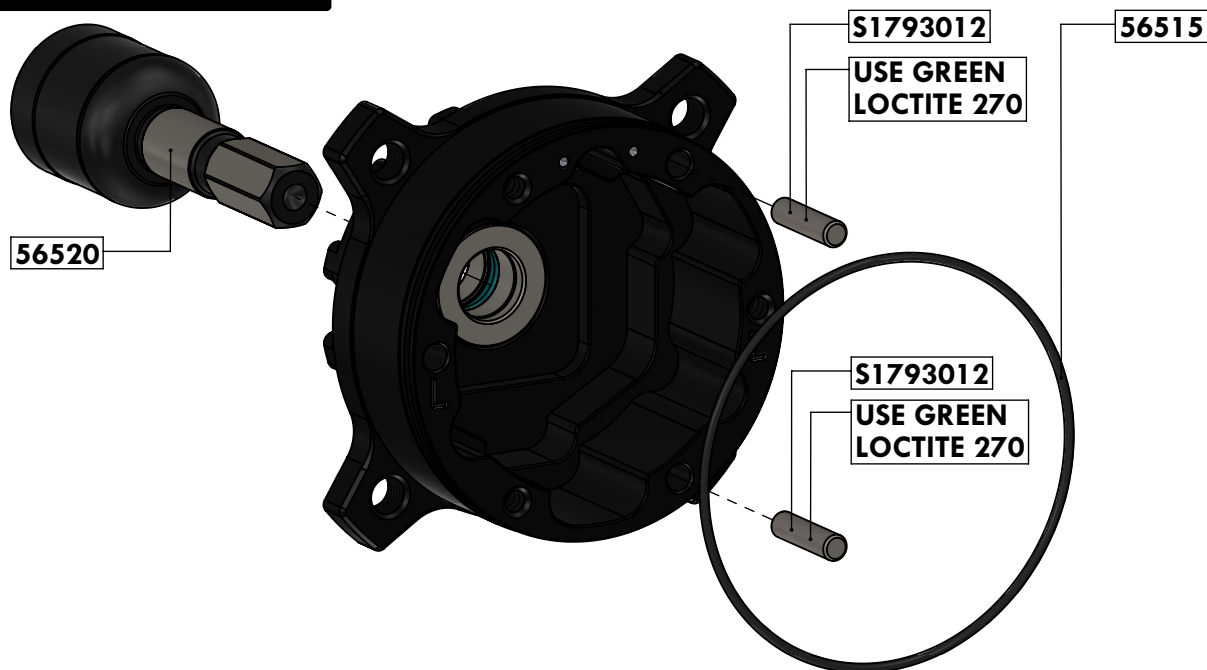
LEFT SIDE ASSEMBLY 1



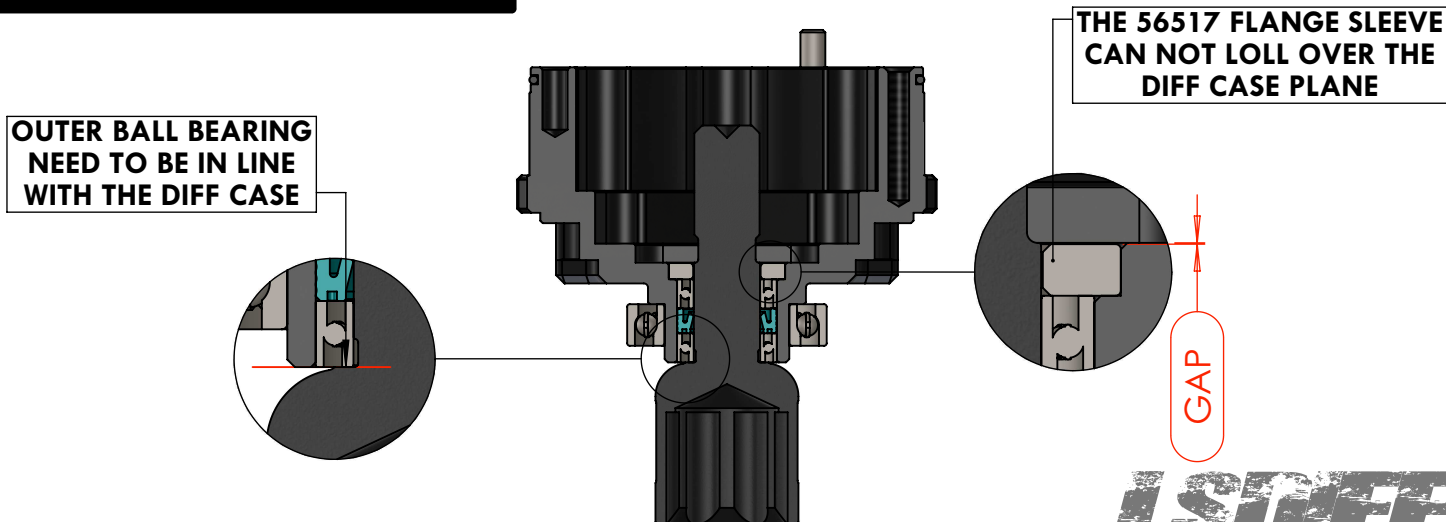
LEFT SIDE ASSEMBLY 2



LEFT SIDE ASSEMBLY 3

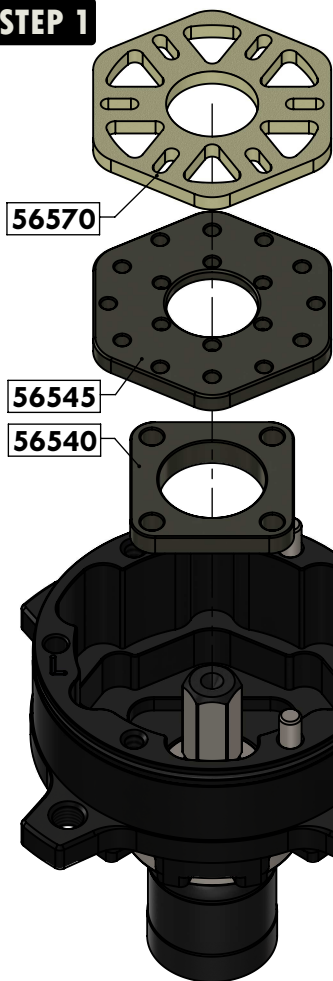


LEFT SIDE ASSEMBLY SECTION VIEW



LEFT SIDE - DEACTIVATION

STEP 1



STEP 2

IDENTIFICATION
"L" MEANS
LEFT SIDE



IDENTIFICATION
"1" MEANS
LOCKING RAMP V1



LOCKING RAMP V1
56530 - STANDARD

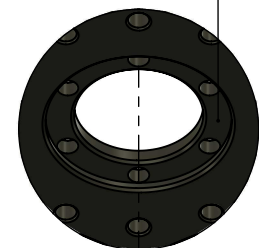
IDENTIFICATION
"2" MEANS
LOCKING RAMP V2

LOCKING RAMP V2
JUST FOR HIGH GRIP
TRACKS

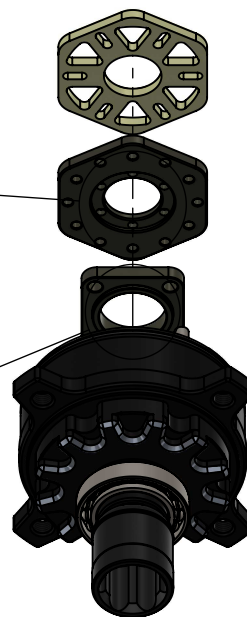
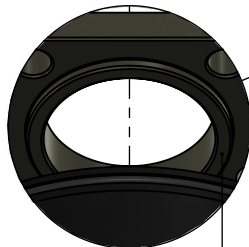


LOCKING RAMP V2
56531 - OPTIONAL

NOOK
SIDE DOWN

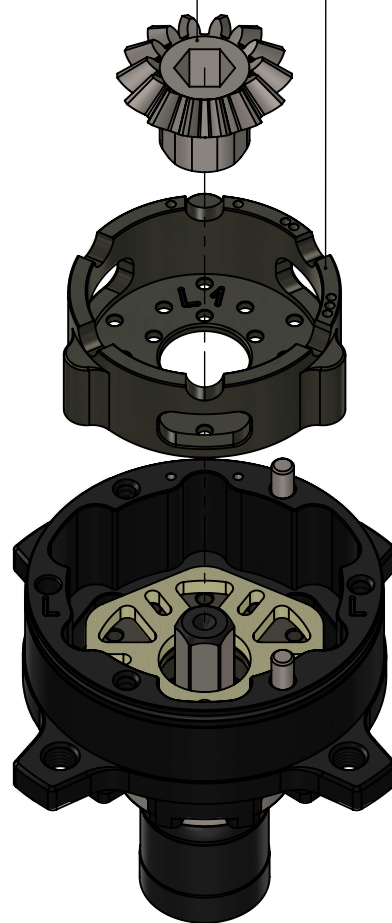


PROTRUSION
SIDE DOWN



56530 or 56531

56524



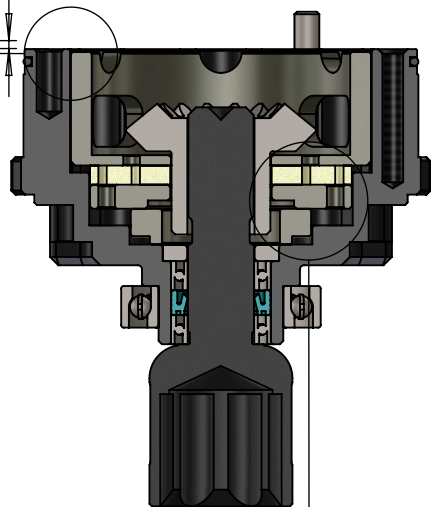
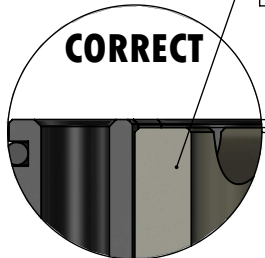
CORRECT COMPONENTS DISPOSITION

SECTION VIEW

THE LOCKING RAMP CAN NOT
LOLL OVER THE DIFF CASE PLANE

GAP

CORRECT



56540

56570

56545

NOOK
SIDE DOWN

PROTRUSION
SIDE DOWN

THE 2-2 PIECE MARKING DOTS ON THE DIFF
CASE AND AT THE LOCKING RAMP NEED TO BE
ALIGNED VERTICALLY UNDER EACH OTHER.

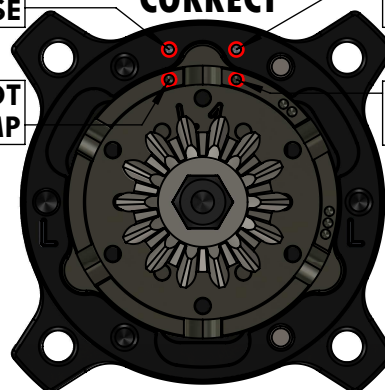
MARK DOT
DIFF CASE

CORRECT

MARK DOT
DIFF CASE

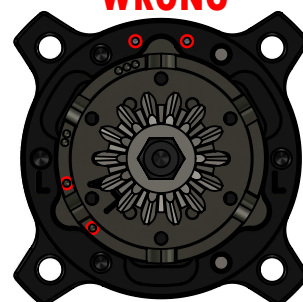
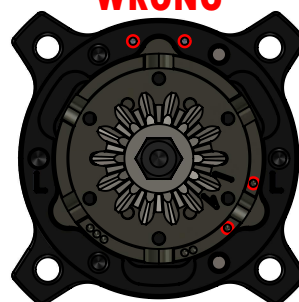
MARK DOT
RAMP

MARK DOT
RAMP



WRONG

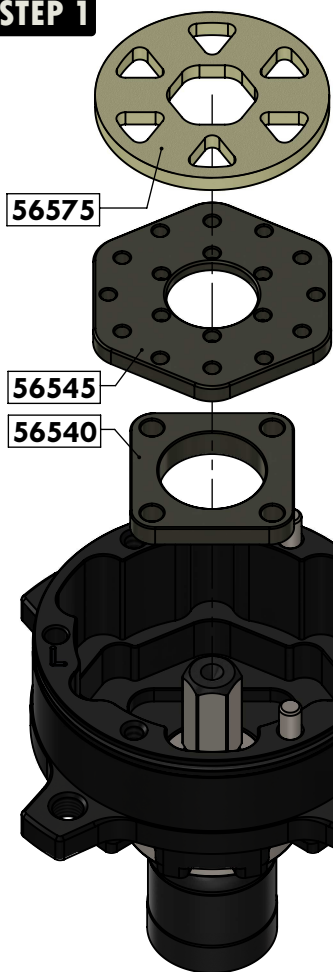
WRONG



LSDIFF

LEFT SIDE - LINEAR LOCKING

STEP 1



STEP 2

IDENTIFICATION
"L" MEANS
LEFT SIDE

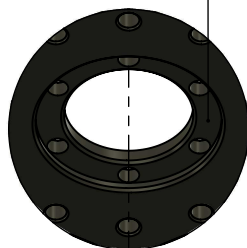


LOCKING RAMP V1
56530 - STANDARD

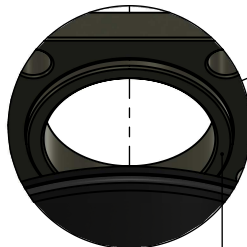
IDENTIFICATION
"1" MEANS
LOCKING RAMP V1



NOOK
SIDE DOWN



PROTRUSION
SIDE DOWN

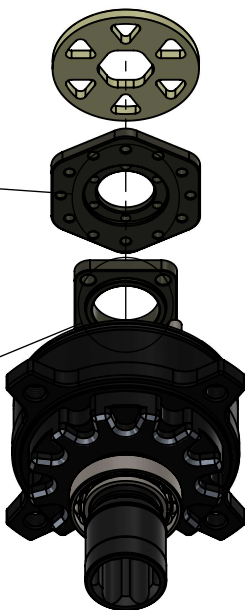


IDENTIFICATION
"2" MEANS
LOCKING RAMP V2

LOCKING RAMP V2
JUST FOR HIGH GRIP
TRACKS

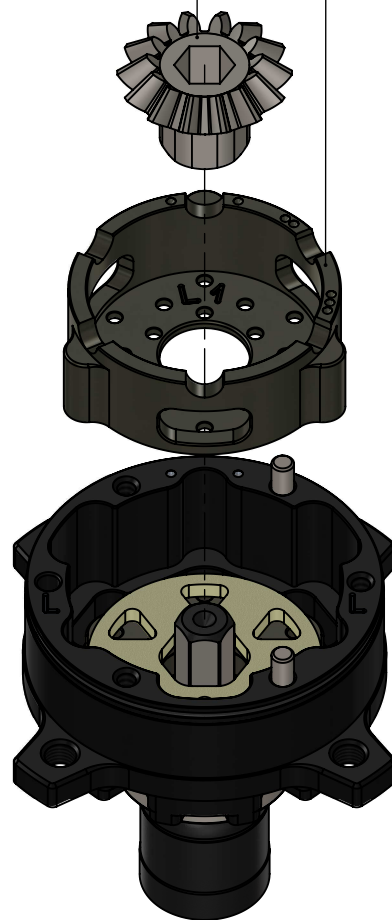


LOCKING RAMP V2
56531 - OPTIONAL



56530 or 56531

56524



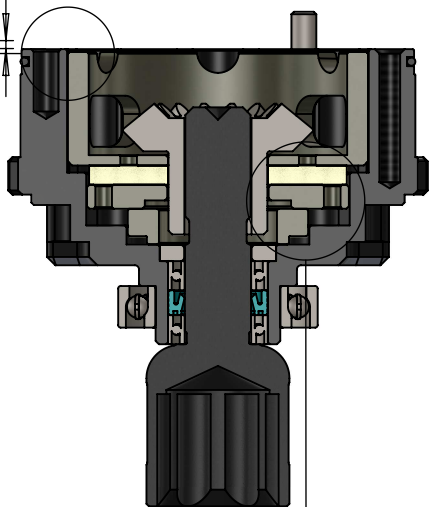
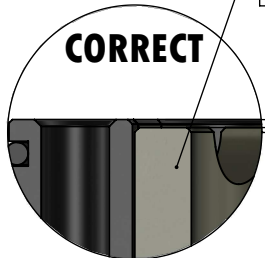
CORRECT COMPONENTS DISPOSITION

SECTION VIEW

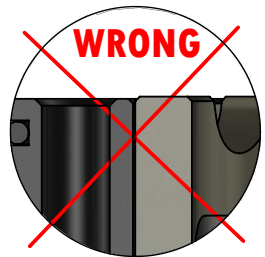
THE LOCKING RAMP CAN NOT
LOLL OVER THE DIFF CASE PLANE

GAP

CORRECT



WRONG



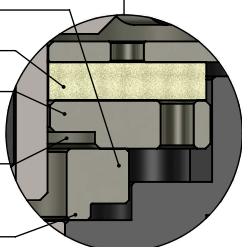
56540

56575

56545

NOOK
SIDE DOWN

PROTRUSION
SIDE DOWN



THE 2-2 PIECE MARKING DOTS ON THE DIFF
CASE AND AT THE LOCKING RAMP NEED TO BE
ALIGNED VERTICALLY UNDER EACH OTHER.

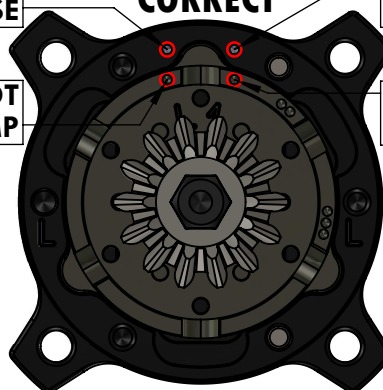
MARK DOT
DIFF CASE

CORRECT

MARK DOT
DIFF CASE

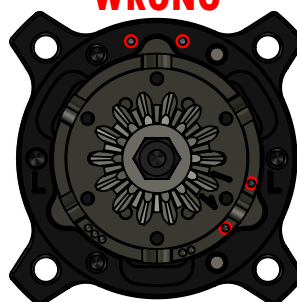
MARK DOT
RAMP

MARK DOT
RAMP



WRONG

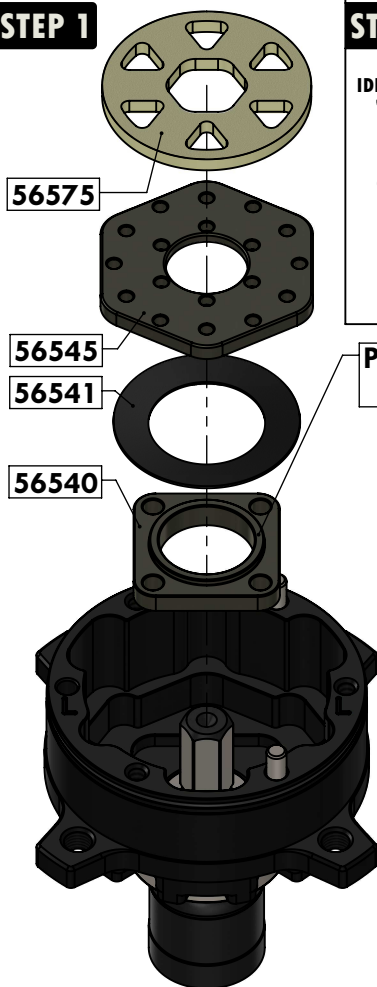
WRONG



LSDIFF

LEFT SIDE - PROGRESSIVE LOCKING

STEP 1



STEP 2

IDENTIFICATION
"L" MEANS
LEFT SIDE



IDENTIFICATION
"1" MEANS
LOCKING RAMP V1



LOCKING RAMP V1
56530 - STANDARD

IDENTIFICATION
"2" MEANS
LOCKING RAMP V2

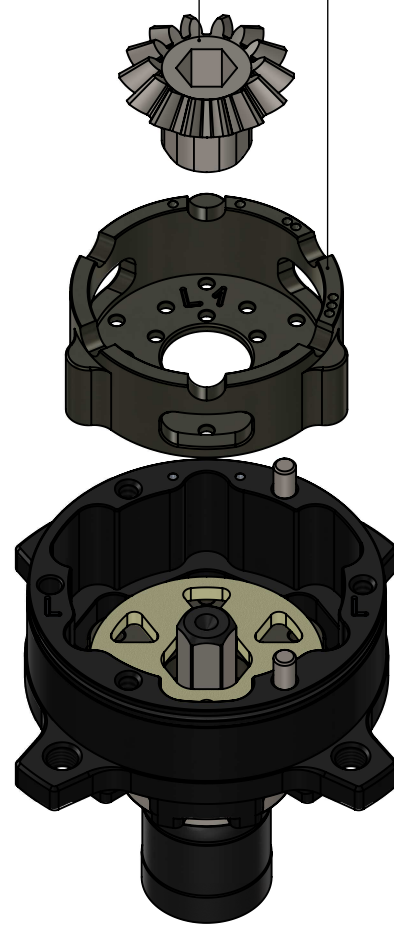


LOCKING RAMP V2
JUST FOR HIGH GRIP
TRACKS

LOCKING RAMP V2
56531 - OPTIONAL

56530 or 56531

56524



PROTRUSION
SIDE UP

NOOK
SIDE DOWN

FLAT
SIDE DOWN

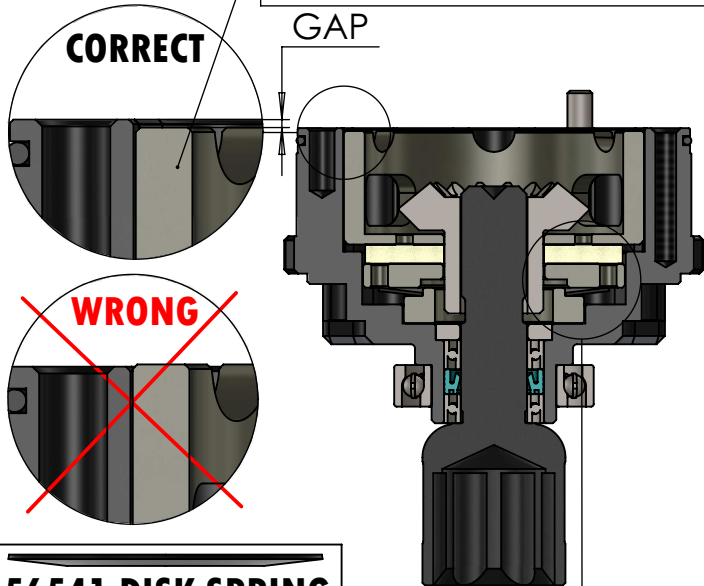
CORRECT COMPONENTS DISPOSITION

SECTION VIEW

THE LOCKING RAMP CAN NOT
LOLL OVER THE DIFF CASE PLANE

GAP

CORRECT



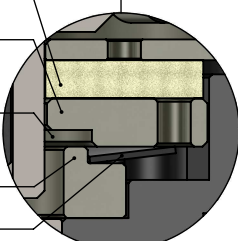
56541 DISK SPRING
DISPOSITION

56575

56545

NOOK
SIDE DOWN
PROTRUSION
SIDE UP

56541



THE 2-2 PIECE MARKING DOTS ON THE DIFF
CASE AND AT THE LOCKING RAMP NEED TO BE
ALIGNED VERTICALLY UNDER EACH OTHER.

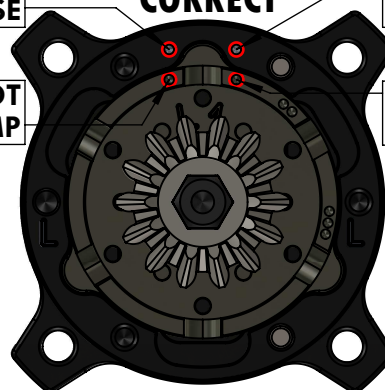
MARK DOT
DIFF CASE

CORRECT

MARK DOT
DIFF CASE

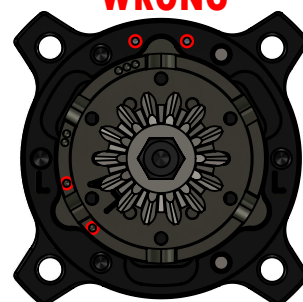
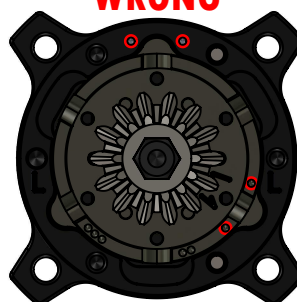
MARK DOT
RAMP

MARK DOT
RAMP



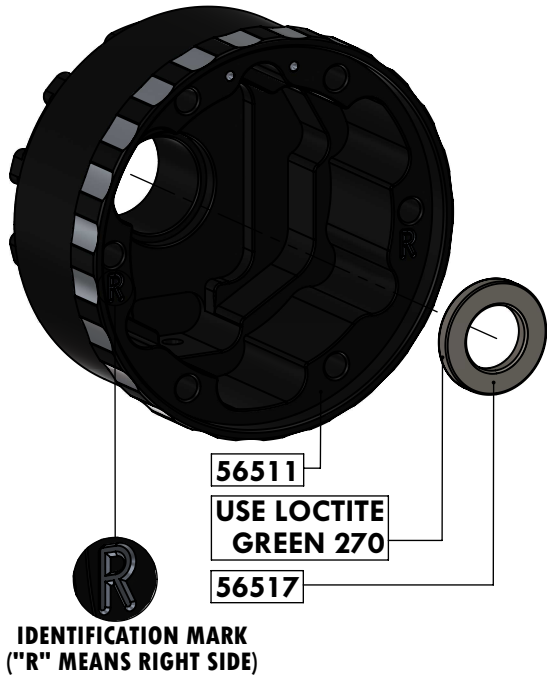
WRONG

WRONG

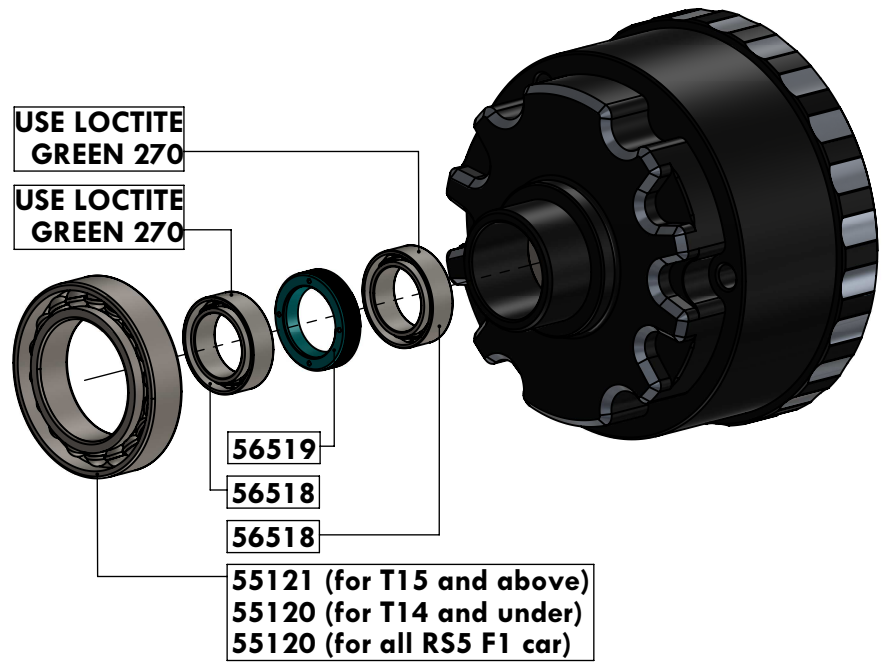


LSDIFF

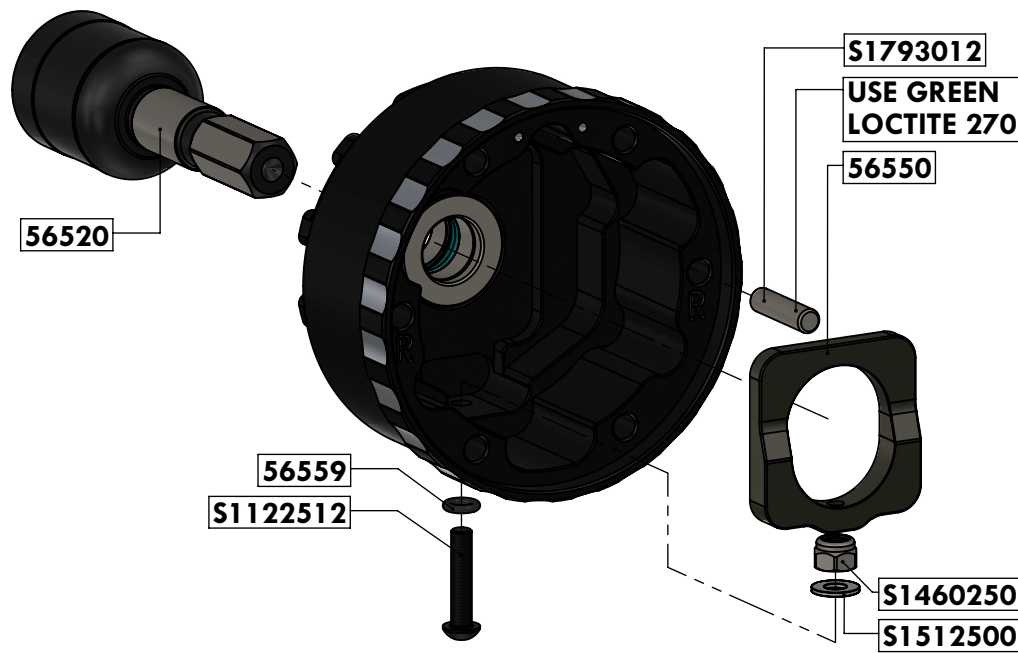
RIGHT SIDE ASSEMBLY 1



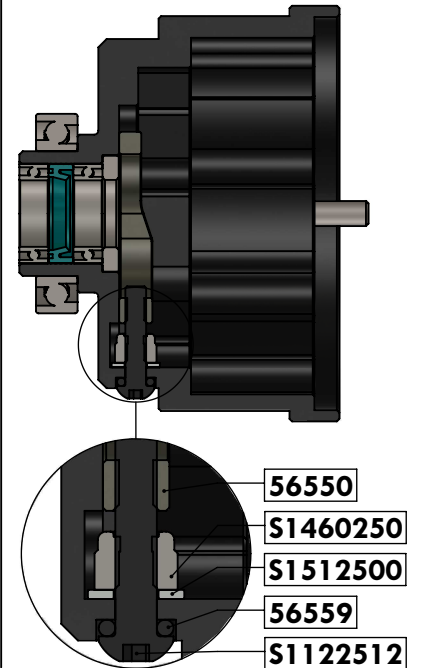
RIGHT SIDE ASSEMBLY 2



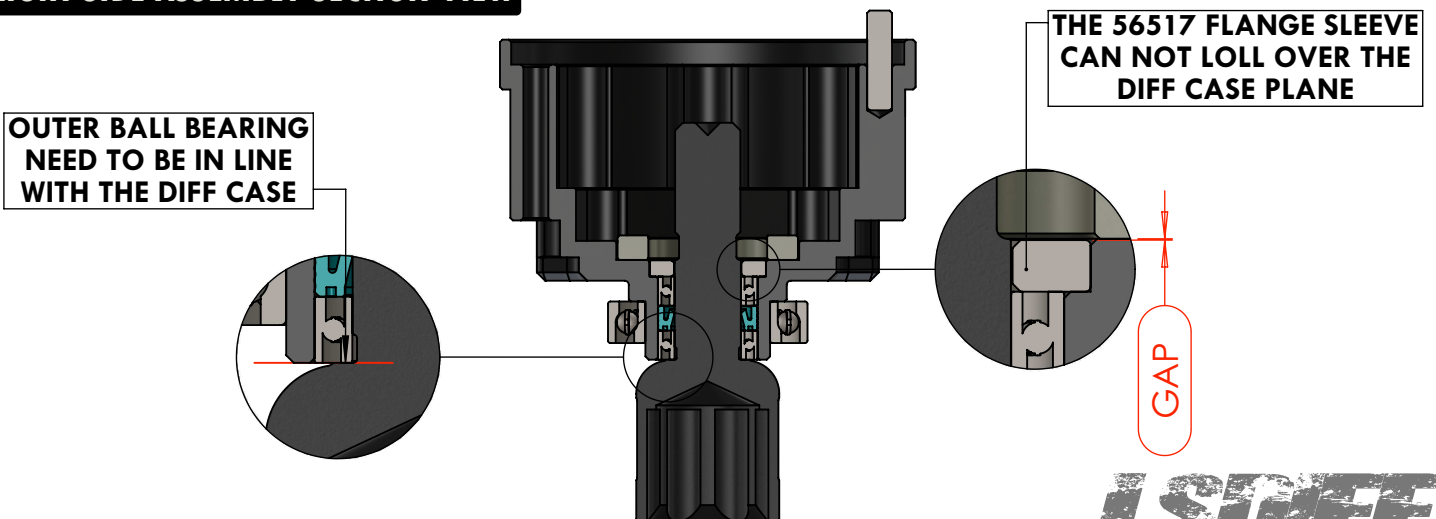
RIGHT SIDE ASSEMBLY 3



SECTION VIEW

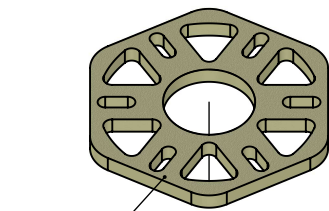


RIGHT SIDE ASSEMBLY SECTION VIEW

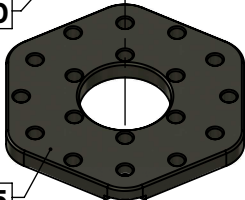


RIGHT SIDE - DEACTIVATION

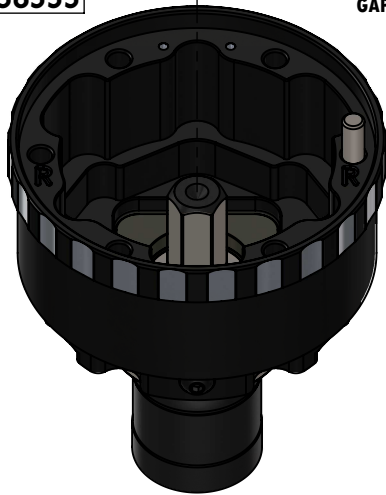
STEP 1



56570



56555

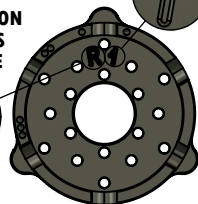


STEP 2

IDENTIFICATION
"R" MEANS
RIGHT SIDE

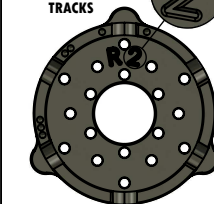


IDENTIFICATION
"1" MEANS
LOCKING RAMP V1



LOCKING RAMP V1
56530 - STANDARD

IDENTIFICATION
"2" MEANS
LOCKING RAMP V2

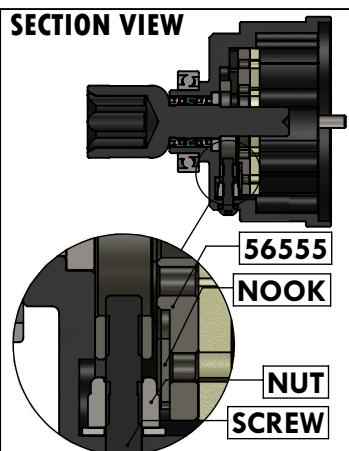


LOCKING RAMP V2
56531 - OPTIONAL

NOOK SIDE DOWN

THE NOOK PART OF THE
56555 PLATE NEED TO BE
PLACED WHERE THE SELF
LOCKING NUT AND THE
GAP ADJUSTING SCREW
ARE.

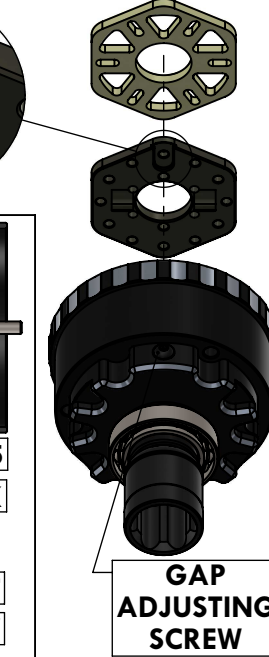
SECTION VIEW



56555

NOOK

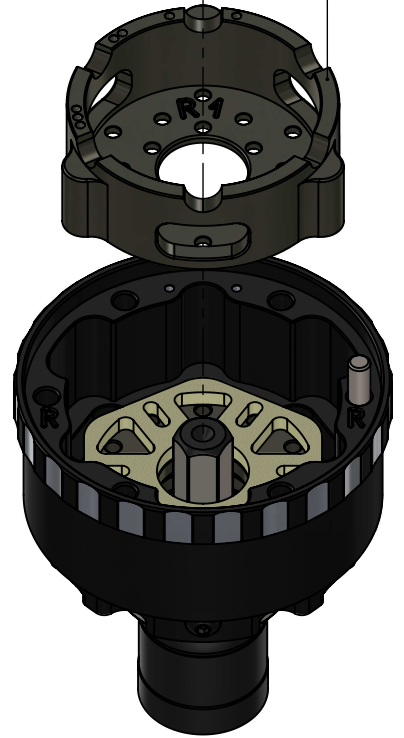
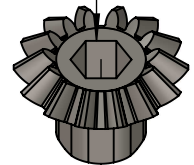
NUT
SCREW



GAP
ADJUSTING
SCREW

56530 or 56531

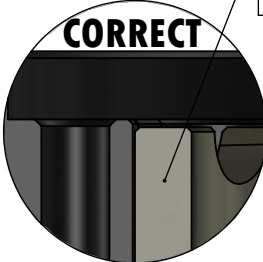
56524



CORRECT COMPONENTS DISPOSITION

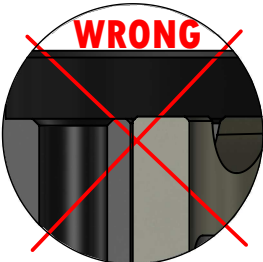
SECTION VIEW

THE LOCKING RAMP CAN NOT
LOLL OVER THE DIFF CASE PLANE



CORRECT

GAP



WRONG

56570

56555

56550

THE 2-2 PIECE MARKING DOTS ON THE DIFF
CASE AND AT THE LOCKING RAMP NEED TO BE
ALIGNED VERTICALLY UNDER EACH OTHER.

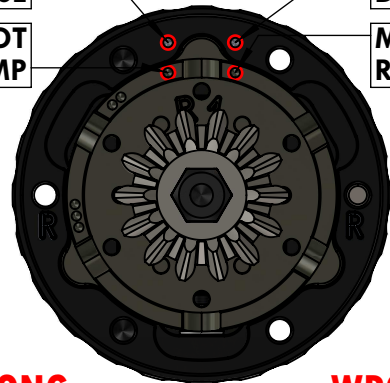
MARK DOT
DIFF CASE

CORRECT

MARK DOT
DIFF CASE

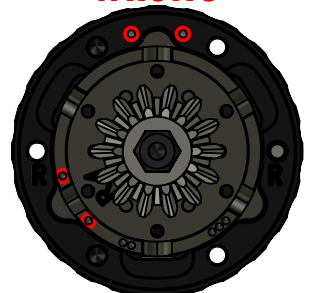
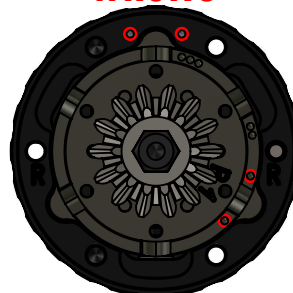
MARK DOT
RAMP

MARK DOT
RAMP



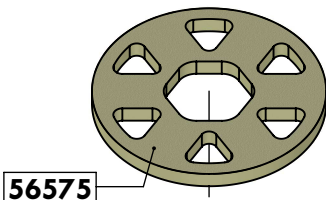
WRONG

WRONG

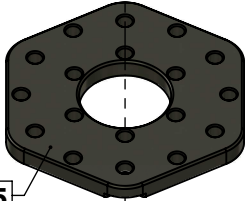


RIGHT SIDE - LINEAR LOCKING

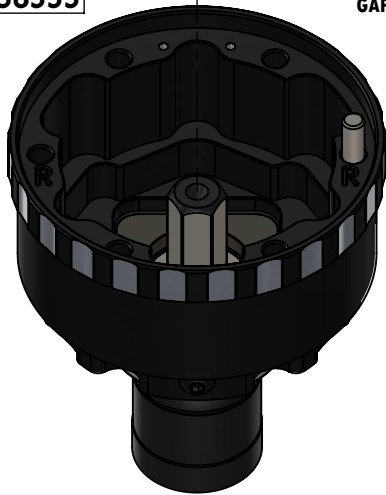
STEP 1



56575

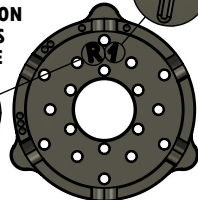


56555



STEP 2

IDENTIFICATION
"R" MEANS
RIGHT SIDE

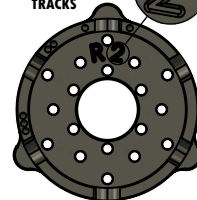


LOCKING RAMP V1
56530 - STANDARD

IDENTIFICATION
"1" MEANS
LOCKING RAMP V1



IDENTIFICATION
"2" MEANS
LOCKING RAMP V2

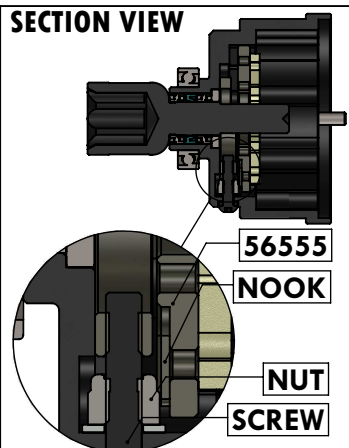


LOCKING RAMP V2
56531 - OPTIONAL

NOOK SIDE DOWN

THE NOOK PART OF THE
56555 PLATE NEED TO BE
PLACED WHERE THE SELF
LOCKING NUT AND THE
GAP ADJUSTING SCREW
ARE.

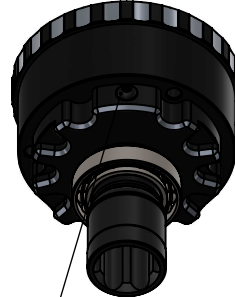
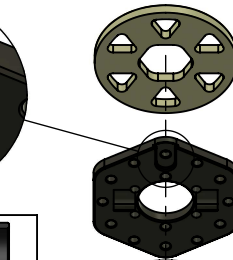
SECTION VIEW



56555

NOOK

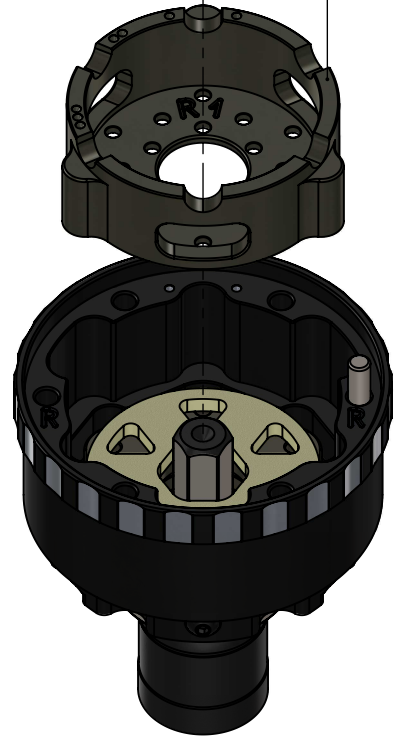
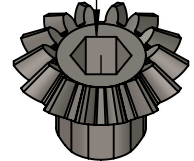
NUT
SCREW



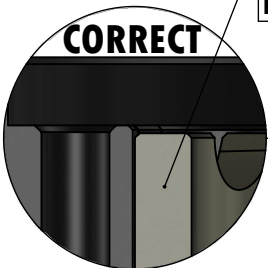
GAP
ADJUSTING
SCREW

56530 or 56531

56524



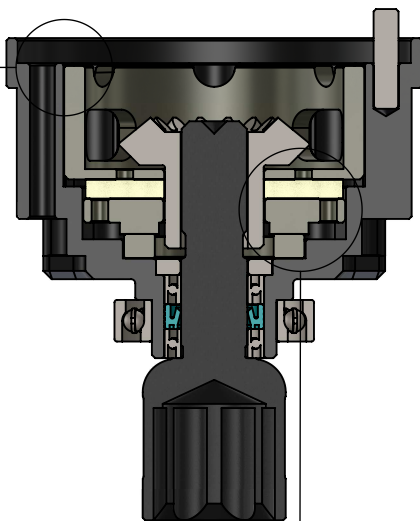
CORRECT COMPONENTS DISPOSITION SECTION VIEW



CORRECT

THE LOCKING RAMP CAN NOT
LOLL OVER THE DIFF CASE PLANE

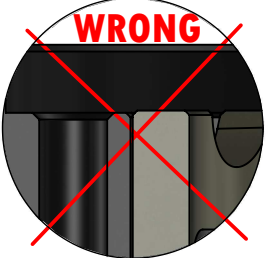
GAP



56575

56555

56550



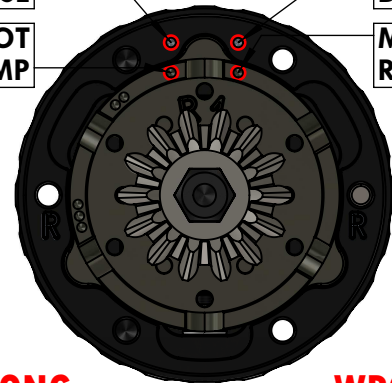
WRONG

THE 2-2 PIECE MARKING DOTS ON THE DIFF
CASE AND AT THE LOCKING RAMP NEED TO BE
ALIGNED VERTICALLY UNDER EACH OTHER.

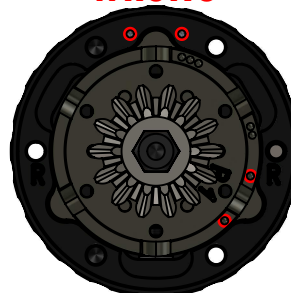
MARK DOT
DIFF CASE
MARK DOT
RAMP

CORRECT

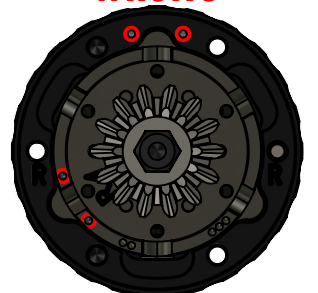
MARK DOT
DIFF CASE
MARK DOT
RAMP



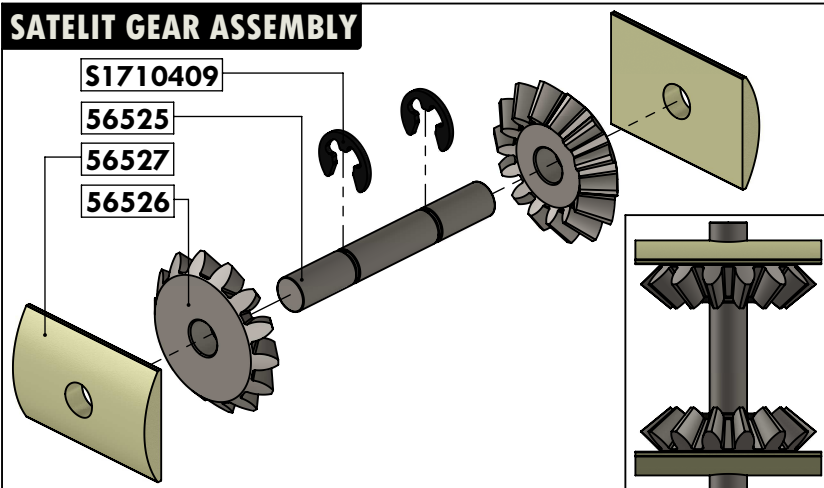
WRONG



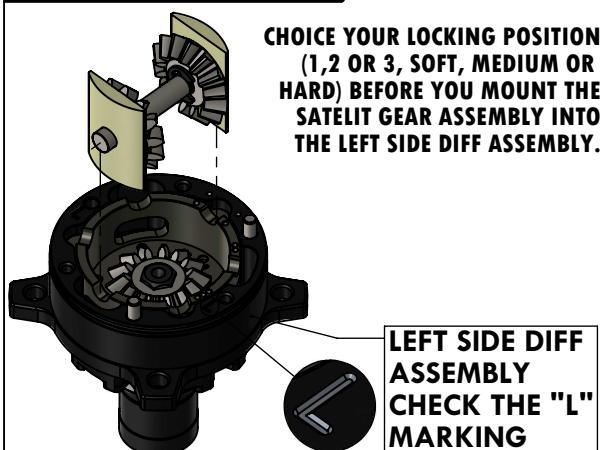
WRONG



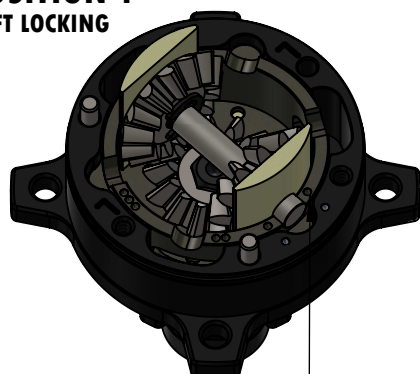
SATELIT GEAR ASSEMBLY



COMPLETE ASSEMBLY 1

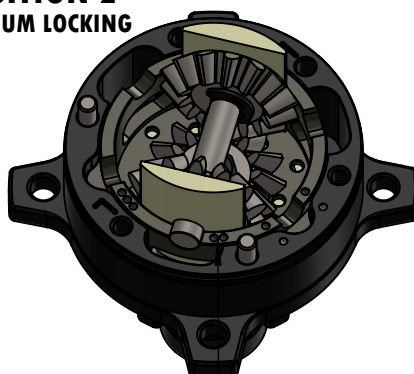


POSITION 1 SOFT LOCKING



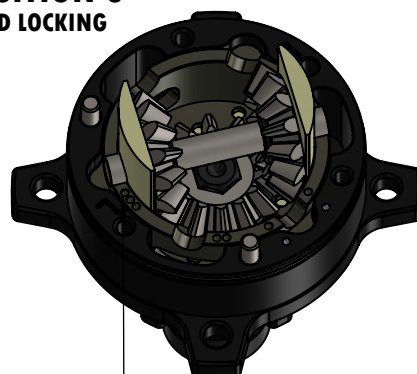
IDENTIFICATION
MARK FOR POSITION 1

POSITION 2 MEDIUM LOCKING



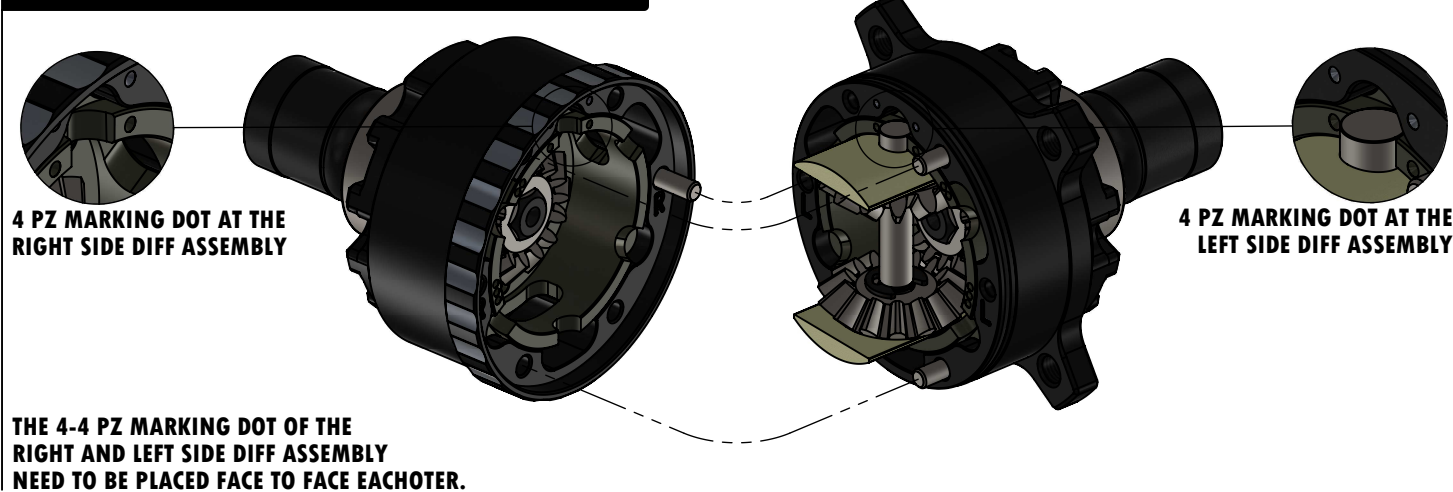
IDENTIFICATION
MARK FOR POSITION 2

POSITION 3 HARD LOCKING

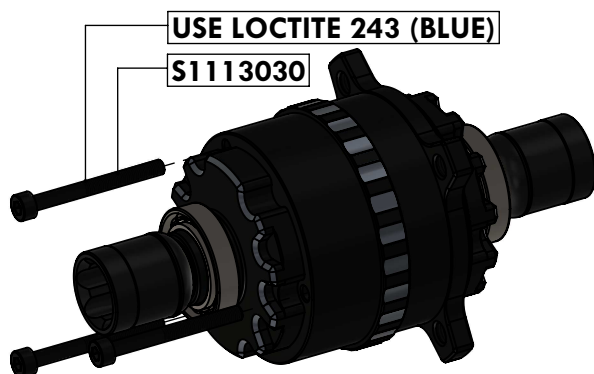


IDENTIFICATION
MARK FOR POSITION 3

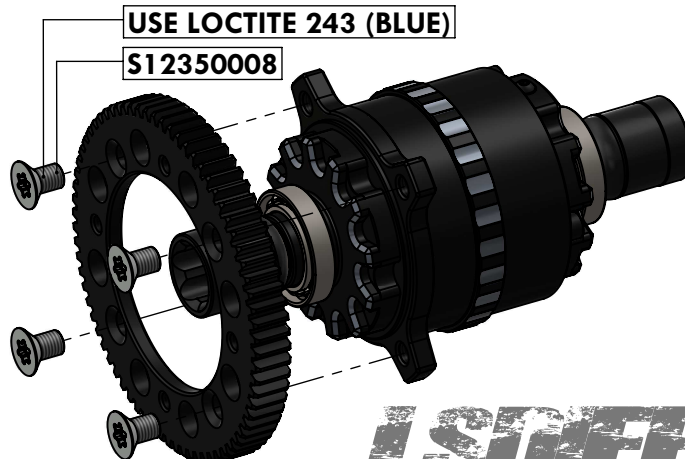
MARRIAGE LEFT AND RIGHT SIDE OF THE DIFF



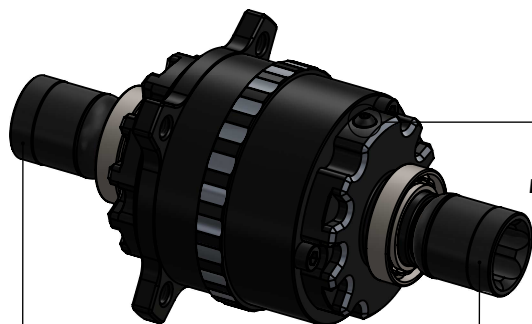
CASE SCREWS



MAIN GEAR FIXING

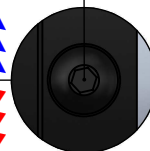


LSDIFF

LSDiff II ADJUSTMENTS**GAP ADJUSTING SCREW****DRIVESHAFT****DRIVESHAFT**

TWISTING THE GAP ADJUSTING SCREW FROM LEFT TO RIGHT (**CLOCKWISE**) MEANS **OPENING** THE DIFF (MORE GAP INSIDE) SEE **BLUE** ARROW

TWISTING THE GAP ADJUSTING SCREW FROM RIGHT TO LEFT (**COUNTERCLOCKWISE**) MEANS **CLOSING** THE DIFF (LESS GAP INSIDE) SEE **RED** ARROW



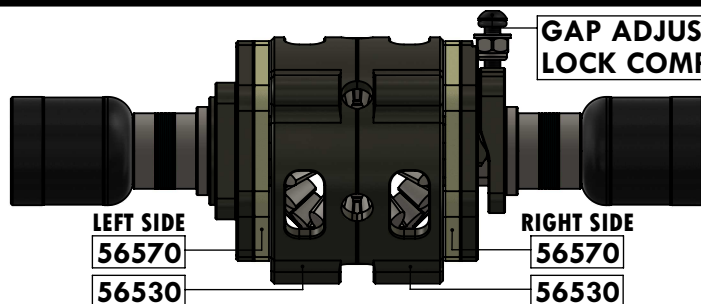
WHEN BOUT SIDE DEACTIVATION PLATE ARE INSTALLED TO THE DIFF THEN YOU NEED TO CLOSE THE GAP ADJUSTING SCREW FULLY, BECAUSE IN THIS CASE THE GAP BETWEEN THE INSIDE PARTS HAS NO AFFECT REASON OF THEY ARE NOT CONECTED TO THE MAIN GEAR.

WHEN BOUT OR ONE SIDE FRICTION BRAKE DISK INSTALLED, THEN YOU NEED TO CLOSE THE GAP ADJUSTING SCREW UNTIL THE DRIVESHAFTS START TO MOVE HARDLY, AND THEN OPEN THE GAP ADJUSTING SCREW BACK, HALF OR ONE TURN. THIS WILL MAKE

0,23 - 0,45 MM GAP BETWEEN THE INSIDE DIFFERENTIAL COMPONENTS.

WHEN THE GAP ADJUSTMENT IS DONE, THEN YOU NEED TO PUT OUT ONE DRIVESHAFT AND FILL THE DIFF WITH 15 ML OF DIFF OIL (DIFF OIL PART NR IS: 56585). YOU CAN ADJUST THE HARDNESS OF THE DIFF WITH THE AMOUNT OF THE OIL, BUT NEVER USE LESS THEN 13 ML OR MORE THEN 17 ML.

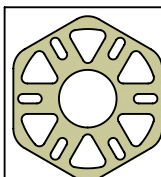
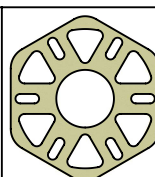
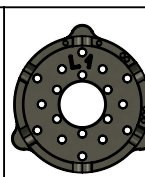
LESS OIL = LESS LOCKING
MORE OIL = MORE LOCKING

LSDiff II SETUP RECOMMENDATION - RAIN OR VERY LOW GRIP

LEFT SIDE
56570
56530

RIGHT SIDE
56570
56530

**GAP ADJUSTING SCREW:
LOCK COMPLETELY**

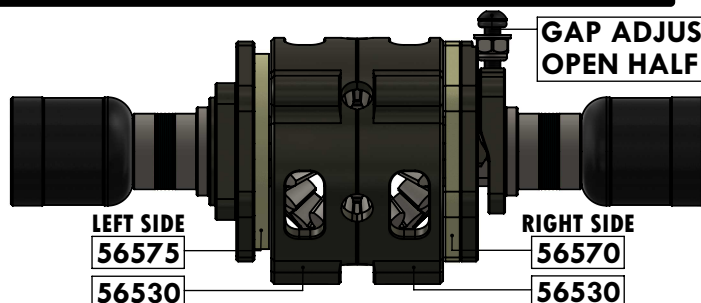
**LEFT SIDE****RIGHT SIDE****LOCKING RAMP**

AMOUNT OF OIL: 15 ML

**LOCKING RAMP V1
56530**

POSITION: 1, 2 OR 3

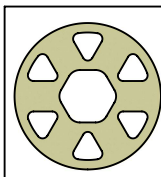
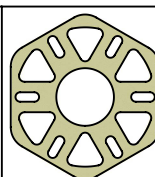
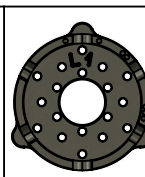
NOTE:
LOCKING RAMP POSITION HAS NO EFFECT BECAUSE BOUT SIDE DEACTIVATION PLATE ARE INSTALLED

LSDiff II SETUP RECOMMENDATION - LOW GRIP

LEFT SIDE
56575
56530

RIGHT SIDE
56570
56530

**GAP ADJUSTING SCREW:
OPEN HALF OR ONE TURN**

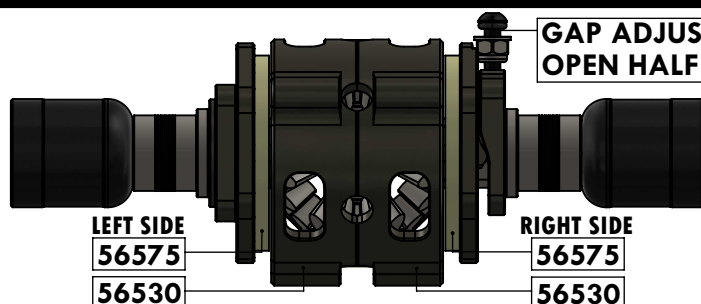
**LEFT SIDE****RIGHT SIDE****LOCKING RAMP**

AMOUNT OF OIL: 15 ML

**LOCKING RAMP V1
56530**

POSITION: 1, 2 OR 3

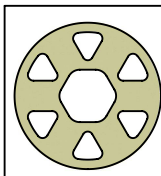
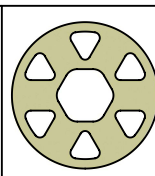
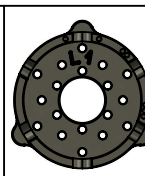
NOTE:
THE DIFFERENCE BETWEEN POSITION 1, 2 OR 3 IS VERY SMALL BECAUSE JUST IN ONE SIDE ARE FRICTION BRAKE DISK INSTALLED

LSDiff II SETUP RECOMMENDATION - MEDIUM GRIP

LEFT SIDE
56575
56530

RIGHT SIDE
56575
56530

**GAP ADJUSTING SCREW:
OPEN HALF OR ONE TURN**

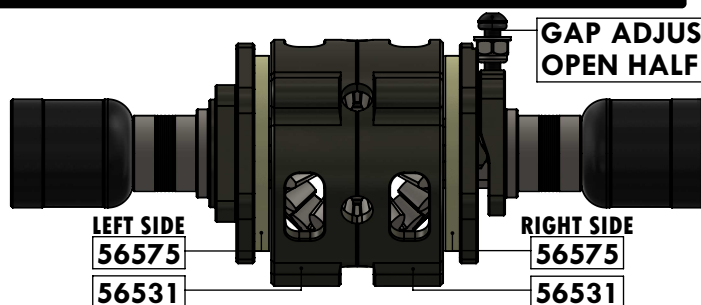
**LEFT SIDE****RIGHT SIDE****LOCKING RAMP**

AMOUNT OF OIL: 15 ML

**LOCKING RAMP V1
56530**

POSITION: 1, 2 OR 3

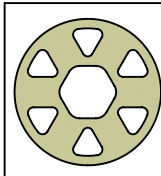
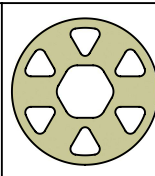
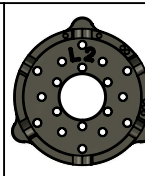
NOTE:
THE DIFFERENCE BETWEEN POSITION 1, 2 OR 3 IS NOW BIGGER BECAUSE BOUT SIDE ARE FRICTION BRAKE DISK INSTALLED

LSDiff II SETUP RECOMMENDATION - HIGH GRIP

LEFT SIDE
56575
56531

RIGHT SIDE
56575
56531

**GAP ADJUSTING SCREW:
OPEN HALF OR ONE TURN**

**LEFT SIDE****RIGHT SIDE****LOCKING RAMP**

AMOUNT OF OIL: 15 ML

**LOCKING RAMP V2
56531**

POSITION: 1, 2 OR 3

NOTE:
THE POSITION 1 OF THE V2 LOCKING RAMP IS JUST ONE STEP HARDER THEN THE V1 LOCKING RAMP 3 RD POSITION.

DISK SPRING CAN BE INSTALLED AT ALL CONFIGURATION, EXCEPT THE LOW GRIP SETUP, (BECAUSE AT THIS SETUP BOUT SIDE DEACTIVATION PLATE ARE INSTALLED) TO MAKE THE LOCKING EFFECT A BIT SMOOTHER.

WE HOPE THIS USER MANUAL HELP YOU TO UNDERSTAND OUR LSDiff II DIFFERENTIAL BETTER. WE HOPE YOU WILL LIKE OUR LSDiff II, AND YOUR LAPTIMES WILL IMPROVE.

LSDIFF