



FULL FLOATER HUB KIT

INSTRUCTION MANUAL

WARNING: All components are shipped assembled for illustration purposes only.

IT IS YOUR RESPONSIBILITY FOR FINAL ASSEMBLY.

Please read instructions thoroughly before attempting installation of the Neil and Parks Full Floater Hub Kit. If installing into one of our "tubeless" housings, please read those instructions as well.

Tools Needed

- 1/8, 5/32, 3/16, and 7/32 Allen Sockets and ratchet
- 9/16 Wrench
- Snap Ring Pliers
- High Temperature Red Loctite
- Grease, or Gear Lube
- Band Saw or Chop Saw
- 1/2 - 3/4" drill bit and drill
- Tig Welder with Competent Operator
- Alignment Fixture that centers on the bearing journals, not the ID of the floater spindle
- Milling machine or angle grinder (maybe not, depends on application)
- Lathe (maybe not, depends on application)

Parts List

Qty 2 - Spindles with radius ring installed

Qty 2 - Hubs

Qty 2- Drive Plates

Qty 2 - Oil Caps

Qty 2 - Inner Bearings (installed)

Qty 2 - Outer Bearings (installed)



Qty 2 - Seals (installed)

Qty 2 - Brake Rotors, one right, one left if steel, Carbon rotors are identical

Qty 2 - Brake Rotor Retaining Rings

Qty 20 - 1/4-20 x 1/2 Flat Head Allen bolts to hold brake rotor on

Qty 6 - 1/4-20 x 3/4 Socket Head Allen bolts to hold oil cap on

Qty 8 - 3/8-24 x 7/8 Flat Head Allen bolts to hold brake caliper bracket on

Qty 4 - 3/8-24 x 1 1/8 Grade 8 bolts with washers to hold calipers on

Qty 4 - 10-24 x 3/4 Flat head Allen bolts to hold drive plates to hubs to prevent leaking upon removal of wheels

Qty 2 - Hub Retaining Clips

Qty 1 - Kit of 10, Lug studs, nuts, and possibly spacers

Qty 2 - Small o-ring for oil cap (installed)

Qty 2 - Large o-ring for drive plate (installed)

Qty 2- Calipers with pads may or may not be in the kit purchased

Instructions for Construction

These instructions are going to have to be taken with a grain of salt as their installation can vary too greatly depending on car type, housing type, and a variety of other factors to make a 100% accurate list of instructions.

1. Finish the rear end housing. I know you want to put the spindles in now, but don't. Do all the other welding first, then let's start the installation. We would recommend leaving off the filler bung, as that doesn't appear to warp the housing much when welded on and really aids in seeing to do the finish welding of the floater spindles.
2. Determine how wide the finished housing needs to be. See drawing for an illustration of the dimensions. It is 5" from the wheel face of the drive plate to the back side of the floater spindle. You will need between 1/2" and 2" maximum gap between the back of the brake flange and the end of the housing/axle tube. If your housing ends up the wrong width, you will have to correct that before proceeding.



3. Cut off the back side of spindles at the desired length. We have made these long enough that they shouldn't have to be extended. On our housings, they should go to about half of the bulkhead. Bare minimum "engagement" would be 3" into an axle tube with a weld all the way around the end of the housing/axle tube and plug welds front and back if possible. Plug welds need to be at least on one side, both is better. It will be much stronger if you can weld the end of housing and the end of the spindle (inside the housing/axle tube with plug welds between the two end welds too). Think of a bulldozer hanging off the bearing end of the spindle and try to anchor the spindle so that if the spindle bends/breaks the housing is going to bend/break as well. Use the 1/2-3/4" bit to drill the housing for the plug welds. Do not drill the spindle.
4. Insert your alignment fixture into the housing using all attachment fasteners and the gasket/sealing method you are going to race with. If you don't set the fixturing up how it is going to be run, then the axles will be in a bind.
5. Make the spindles fit into the housing, with correct alignment. There will have to be some carving on the spindles to make this happen. If using one of our "tubeless" housings, this will entail some flat milling and beveling; see instructions for that type of housing. If installing in a traditional manner, then you will more than likely have to turn the OD of the spindle to fit into the axle tube of your housing. Turn down as little as possible to maximize strength, but it does have to fit in the housing with proper alignment. If you have a 2 1/2" ID axle tube, we do not recommend proceeding. A 2 3/4" ID would be our minimum. 3" ID would be preferred. If your axle tube is offset excessively from warpage or poor construction, causing the wall thickness of the spindle to be thin, then we suggest using a 4-jaw chuck on the lathe and offset turning the spindle so that there can maintain more wall thickness on the spindle.
6. Welding. Tack the end of the housing/floater spindle in at least 6 places, more is better. Alternate sides so that when the tack pulls, the next one somewhat compensates by pulling the other way. Then tack the plug weld holes. Completely weld the spindle into the housing. We recommend re-installing the alignment fixture after welding and cooling to double check the alignment. Chances are that it will not be perfect, as it is a welded component, but you should be able to get you alignment tool on. If alignment is not correct, the car will NOT go straight, period. Remember that this is heavy wall components, a miniature weld is not going to be sufficient.



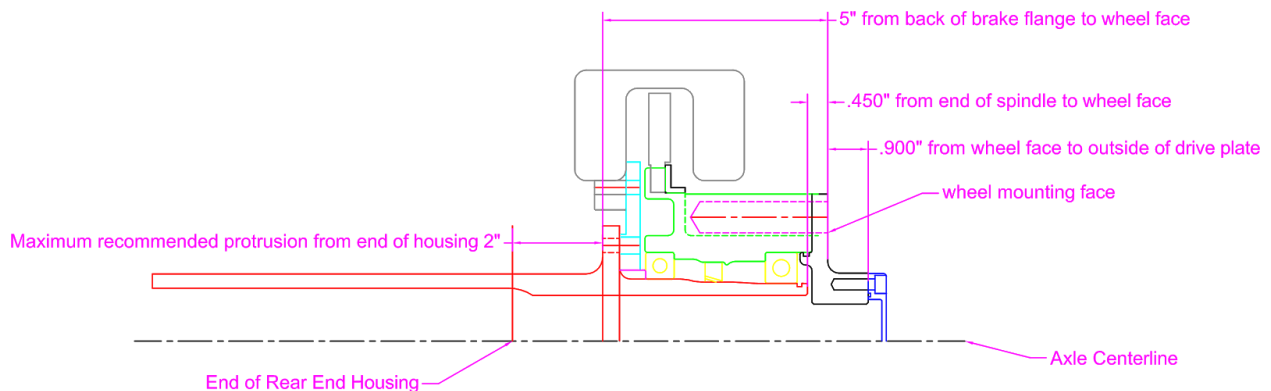
Instructions for Assembly

1. Bolt on caliper brackets to spindles using the 3/8-24 x 7/8 flat head Allen bolts. Torque to **35 Foot Pounds**. Make sure that the black radius ring is pressed onto the spindle.
2. Install brake rotors onto hubs with deeper counterbored side of rotor facing the lug stud side of hubs. Steel rotors are also directional. There is an arrow on the OD of rotor, it should point in the direction of most common rotation (forward). Rotors may be snug to loose onto hubs due to manufacturing tolerances and variables in cutting tool conditions, but they should go on fairly easy. Take care with persuading if using carbon rotor as it may fracture. Install Rotor Retaining Ring over the hub, holding the rotor on using High Temperature Red Loctite and the 1/4-20 x 1/2" Flat Head Allen Bolts. Torque to **80 Inch Pounds**.
3. Install bearings and seal. The seal should have the lip facing the lug side of the hub. Seal does not need any sealant on OD, as there is factory-applied sealant on the OD of seal. Bearings should have a very light press fit. Lube the hub where the bearings go before pressing on only the outer race of bearings. Both bearings are non-directional, and permanently lubricated, they never need greasing. However the bearing with the bigger ID goes on the inside and the bearing with the smaller ID goes on the outside.
4. Lube the seal and the spindle in the middle step (seal area) and install hub onto spindle. Do not beat this on with hammer, it should slide on if you get it straight. Install snap ring to retain hub onto spindle with the square edge of retaining ring facing out.
5. Install Lug Studs. Use High Temp Loctite and either a stud installer or the two nut method and tighten firmly. Studs should bottom out on the shoulder, .400" below the surface of the hub.
6. Put large o-ring onto drive plates, lube o-ring, and slide into hub, over the lug studs. Use the 10-24 x 3/4" Flat Head Allen Screws to fasten the drive plate to the hub, torquing to **40 Inch Pounds**. This does absolutely nothing structurally, it just ensures that oil doesn't leak out should the drive plate decide to pop out of the hub when the wheels are off.
7. Install axle. Our Floater assembly uses Snap-ring style axles available from Strange or Mark Williams in the standard 40 spline configuration. All 40 spline is compatible with one another. We can get these for you, we just need your length and spool spline



measurements. In stock gundrilled 40 spline axles from Strange are Hy-Tuff material, MW are 4340 material. They come in one inch increments, on the 1/2", such as 14 1/2", 15 1/2", 16 1/2", etc. They are measured overall. There is 1/4" from the drive plate to the end of the axle on the snap ring end. So, if you measure from the drive plate to where you want the axle to stop in the spool and get lets say 14 1/4", then you will need to order a 14 1/2" axle. Other lengths and 300M axles are available special order from either vendor. If you happen to have a 35 spline thirdmember, we can also get you a stepped axle to make that work for you special order for not a significant additional cost.

8. Install small o-rings into oil caps. Using the 1/4-20 x 3/4" socket Head Allen Bolts, fasten the oil cap onto the drive plate and torque to **80 Inch Pounds**. Fill your housing with your desired gear lubricant.
9. Install your wheels and torque the lugnuts to **90-100 Foot Pounds** with anti-seize on the threads.



Lug Stud Choices

Grip length will need to match how thick your wheel is where the lug stud goes.

Option 1 - Titanium Studs by Neil and Parks. Calculations based on our aluminum lug nut.
.500" Magnesium spacer available.

2.720" OAL Stud, provides 1/2" grip with no spacer

3.22" OAL Stud, provides .775"-1" grip with no spacer



Option 2 - Steel Studs by Strange. Calculations based on their steel lug nut. No suffix on part# will mean a standard aluminum spacer of .437". Add an "S" suffix to part# for a .250" spacer. Add an "L" suffix to part# for a .688" spacer

- A1037 2.875" OAL Stud, provides .125-.650" grip with no spacer
- A1038 3.187" OAL Stud, provides .437-.965" grip with no spacer
- A1039 3.500" OAL Stud, provides .750-1.275" grip with no spacer
- A1041 4.000" OAL Stud, provides 1.125-1.715" grip with no spacer

Brake Information

The Neil and Parks Floater kit is designed for Drag Racing **ONLY** for cars under 2500 lbs with driver.

Steel rotors require a break in procedure. The procedure consists of 8-10 brake applications increasing in harshness while allowing the brakes to cool slightly in between. Do not keep the brakes applied between stops. After you have done this, allow brakes to cool naturally. Minimum rotor thickness is .312". Pads should be replaced often as when the pistons get extended, they get a chance to get corroded, eroded, or just plain dirty and when they are pushed back in upon a brake job, there is a good chance that they could leak, or the pistons could stick, causing drag.

Carbon rotors do not need a break in procedure, however the driver needs a break in procedure. Carbon Fiber brakes will not fade under high heat conditions. In fact they increase their effectiveness. As a result, pedal pressure for the same result will vary depending on temperature. On the flip side, they do not hold as well on the starting line. If you have a car that "drags" you into the stage beams, you may need to build up some heat in the brake system in the burnout/backup process. If you don't, there is a good chance you could roll the beams. You can use the carbon pads until they are .200" thick by placing shims between the pistons and the pads to keep the pistons more in the bores, rather than extended.

If you have any questions please call 785-422-8722.