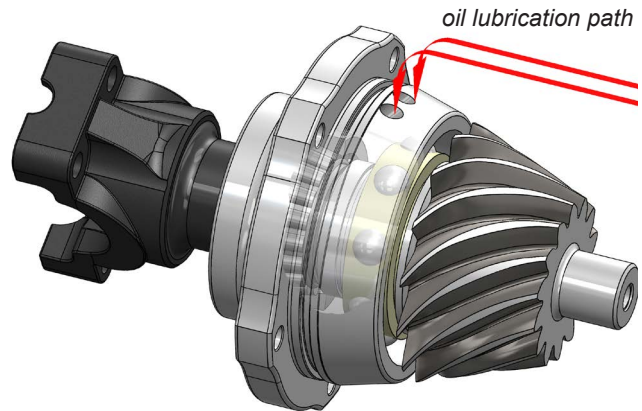


## Kit Summary:

Kit #	N1920 & N1921
Description	Pinion support kit with taper & angular contact ball bearing
Applications	Strange 9" Pro case
Page	1 of 2 total pages
Date Modified	Jun 3, 2014

## RaceStrange

- Larger than stock front tapered pinion bearing
- Oil porting to maximize bearing life
- Ideal for drag applications
- Taper/ball setup offers least amount of resistance in the drivetrain
- Optimal grain structure
- Improved rigidity for pinion shaft



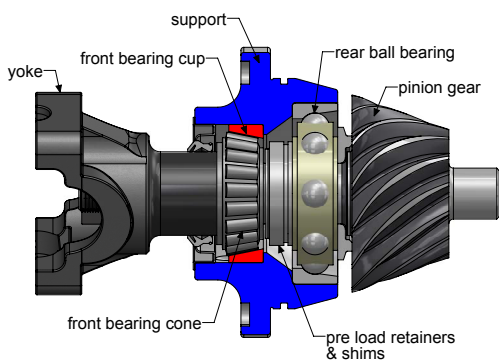
### Pinion support kits

Part #	Description	Application	Support Weight [lbs] (with races installed)
N1920	28-spline pinion shaft installation kit	track only	3.95
N1921	35-spline pinion shaft installation kit	track only	3.95

### Compatible yokes

Part #	Description	Material	U-joint Series	Application
U1603	chrome-moly yoke	4140 steel	1350	28- spline pinion
U1604	chrome-moly yoke	4140 steel	1350	35- spline pinion
U2304	chrome-moly yoke	4340 Hr. Steel	1480	35- spline pinion
U1633	billet aluminum yoke	--	1350	28- spline pinion
U1634	billet aluminum yoke	--	1350	35- spline pinion

## Pinion Bearing Preload



Bearing preload is the measure of torque [in-lbs] required to rotate the pinion after the nut has been torqued to spec.

### Preload using shim stacks:

Pinion bearing preload is adjusted by the thickness of the shim combinations inside the pre-load retainers. As shims are added the total width of the retainer assembly is increased pushing the bearings away from the cups therefore, decreasing the drag. Add shims to decrease pre-load.

Removing shims decreases the total width of the pre-load retainers. The bearings experiences a greater drag against the bearing cups at the same pinion nut torque. Remove shims to increase pre-load.

### Preload using a solid shim:

One solid steel piece that is oversized in width must be surface ground to the required thickness for proper preload. Usually, the shim pack method is first used to determine the final thickness of the solid shim. Further grinding the shim increases preload.

Application	Preload [in-lbs] (without seal)
new bearings	9-12

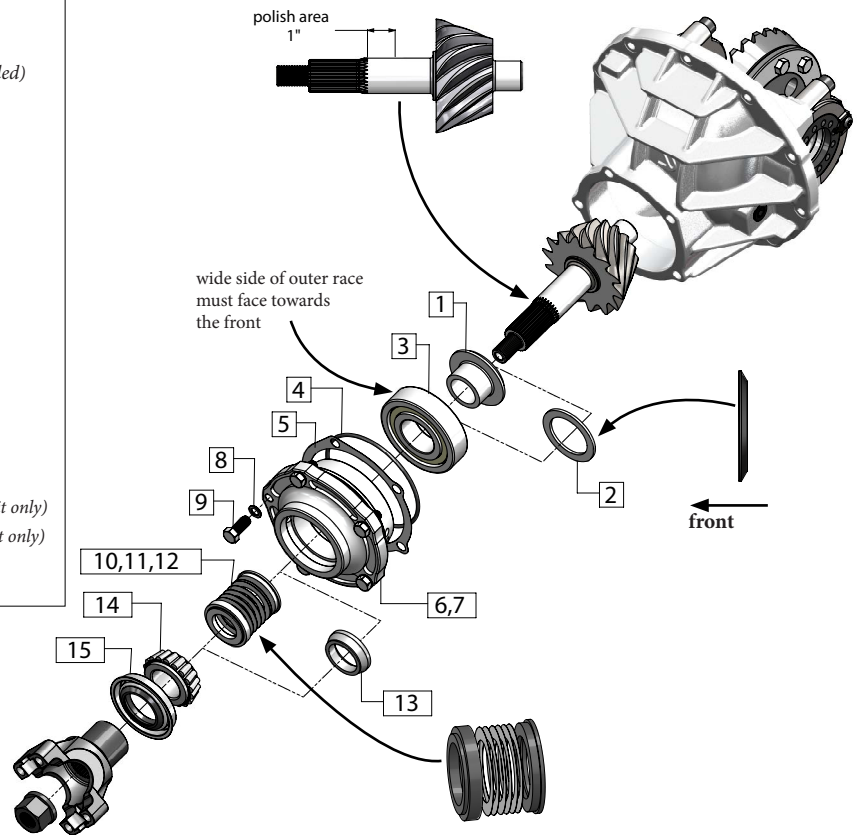
## Pinion Nut Torque

28- spline pinion: 200 ft-lbs  
35- spline pinion: 250 ft-lbs



pinion nuts are installed with red loctite  
only apply loctite after preload has been established

ITEM#	PART#	QTY	DESCRIPTION
1	N1920G	1	bearing sleeve (N1920 only)
2	N1920D	1	bearing spacer (N1921 only)
3a	N1920B	1	rear bearing cone (7309WNSU/ N1920 only)
3b	N1920BM	1	rear bearing cone (7309/N1921 only)
4	N1958A	1	o-ring #248
5	N1962	--	pinion depth shims (not included)
6	N1920A	1	pinion support
7	N1931	1	front bearing cup (#2729, pre-installed)
8	S3402N	5	3/8 washer
9	B1320R	5	3/8-16 x 1-1/2 HHCS
10a	N1920H	1	shim carrier
10b	N1919B	1	shim carrier (N1921 only)
11a	N1920I	1	shim spacer
11b	N1919A	1	shim spacer (N1921 only)
12a	N1927D	2	0.004 x 1-1/2 shim
12b	N1927E	2	0.005 x 1-1/2 shim
12c	N1927F	2	0.006 x 1-1/2 shim
12d	N1927G	2	0.007 x 1-1/2 shim
12e	N1927H	2	0.008 x 1-1/2 shim
12f	N1927I	2	0.010 x 1-1/2 shim
13a	N1920F	1	solid spacer (N1920 only/ optional)
13b	N1921A	1	solid spacer (N1921 only/ optional)
14a	N1930	1	front bearing cone (#2790/ N1920 kit only)
14b	N1936	1	front bearing cone (-2788/ N1921 kit only)
15a	N1960L	1	pinion seal (N1920 kit only)
15b	N1961L	1	pinion seal (N1921 kit only)



## Pinion Depth

Pinion depth on 9" rear ends is adjusted by shims between the pinion support and center case. Adding shims moves the pinion gear further away from the center-line of the ring gear.

## Installation:

1. Polish the pinion gear with an emery cloth or sand paper to achieve a slip fit with the front bearing cone(14).
2. Press the bearing sleeve (1) or bearing spacer (2) over the pinion shaft. Ensure the taper on the bearing spacer (2) faces towards the pinion gear head.
3. Press the rear bearing (3) into the pinion support body (6). Only press on the outer race until fully seated.
4. Press the pinion support body (6) and rear bearing (3) assembly onto the pinion gear and bearing spacer or sleeve assembly. Only press on the inner race. Do not press on the support body.
5. Slide the pinion preload retainer (10,11) and shims (12) over the pinion gear assembly. Ensure correct orientation of preload retainers. Start with 0.030" total shim thickness. Refer to notes on the first page for pinion preload.
6. Slide the front bearing cone (14) over the pinion shaft followed by the pinion yoke. Torque the pinion nut. Refer to the first page for specification. Do not install the seal (15).
7. Apply a small amount of lightweight gear oil to both bearings and check for bearing drag. This indicates an existent preload condition. Refer to the first page for pinion bearing preload specification and instructions.
8. Once the correct preload has been established, remove the pinion nut and yoke.
9. Press the pinion seal (15) into the pinion support body (6) flush with the outside face of the body.
10. Ensure the front bearing cup (7) is still inside the body before the seal is pressed on.
11. Apply a small coating of lightweight gear oil to the inside diameter of the seal (15).
12. Clean and dry the threads on the pinion gear and reinstall the yoke.
13. Clean and dry the threads of the pinion nut before applying red loctite.
14. Install the pinion nut and torque to spec listed on first page.
15. Following your gear manufacture's instructions, install the completed assembly into your Strange Engineering 9" Ford case with the o-ring (4) in the groove machined in the support. The proper amount of depth shims (5) must be determined. Lubricate the o-ring (4) and pinion support bore prior to assembly. Secure the assembly with five pinion support bolts (9) and torque to 35 ft-lbs for aluminium cases and 45 ft-lbs for iron cases.