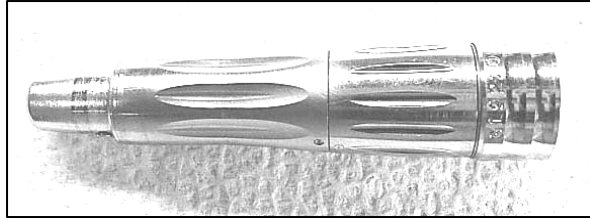


# STAR NOSECONE REPAIR PROCEDURE



The Star Nosecone has gone through very little change over the past thirty years. This repair procedure will introduce you to the newest style of Star Nosecone. This newer model has been in the field for roughly 15 years. All replacement parts are available for this nosecone. Most often, the nosecone will simply need to be cleaned to make it work properly. As always, try to determine the problem before disassembling the nosecone.

Some of the most common problems with this handpiece are:

- The chuck fails to hold a bur securely or fails to accept a bur.
- The bur spins roughly.
- The nosecone is locked up.

The repair procedures for each of these problems is addressed below



## STEP 1

Place the main housing of the nosecone into a 1/2" collet. Then insert the Star Nosecone wrench into the back end of the nosecone. You will notice there are grooves cut into the rear inner housing. The wrench fits into these grooves. Unscrew the rear inner housing in a normal counterclockwise manner. (Retaining Ring must be pushed down to insert tool).



## STEP 2

Now you will need to remove the 1/2" collet from the collet holder and replace it with a 3/8" collet. At this point, insert the nosepiece into the collet up to the nose pin. Do not put the nose pin down into the collet as this will smash the pin. After tightening the collet holder, wrap the main housing with a strip of rubber and loosen in a counterclockwise direction.



## STEP 3

Remove the nosecone pieces from the collet and place them on your work surface. Pull the spindle assembly out of the nosecone (as shown in the picture). Leave the chuck collar on the main housing at this point. Keep the chuck release ring in place at this time because the parts underneath it are spring loaded.



#### STEP 4

While still keeping the chuck collar on the main housing, unscrew the nose tip and remove the bearing, spacer and spring (at left). Be careful, these parts are also spring loaded.

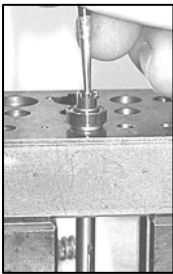


Once the spring is removed you can pull the chuck collar off and the alignment balls will not spring out of their positions (left).



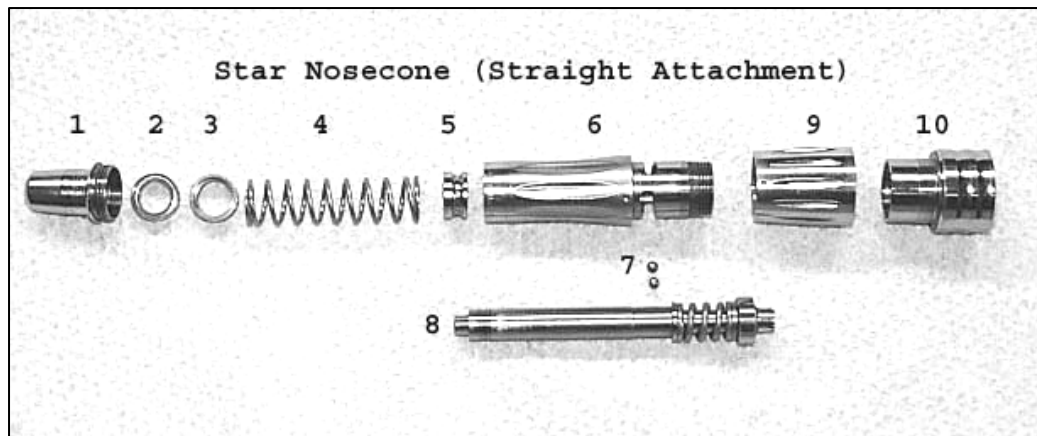
#### STEP 5

Now you can pull the chuck sleeve and spring off of the chuck (at left). Older models allow you to pull the bearing off of the chuck as well.

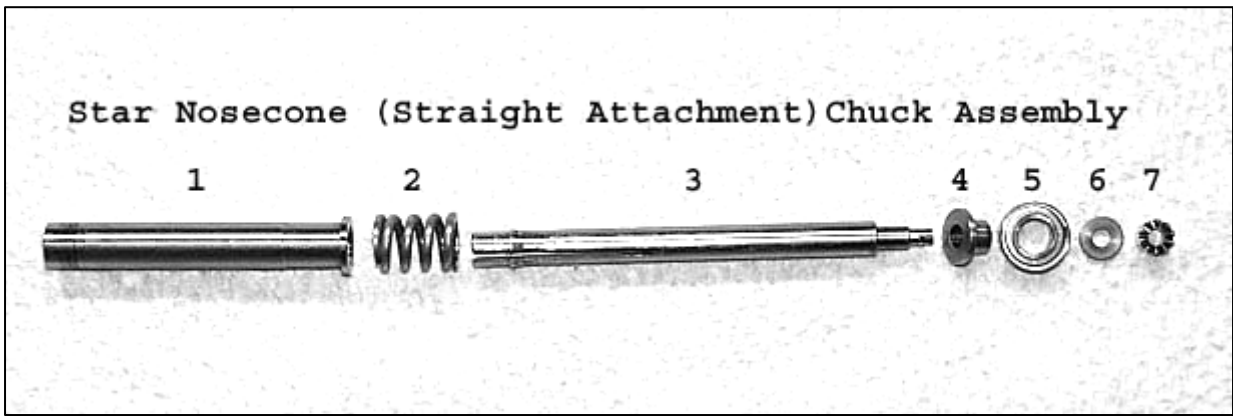


#### STEP 6

On older models, the drive gear must be removed in order to replace the rear bearing (left). In this case, you will need to place the chuck into hole #1 on your elevated work block. Next, using a small punch, tap the shaft out of the gear and remove the gear and bearing. You can now put all of the parts into your ultrasonic cleaner.



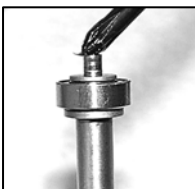
Picture Number	Part Number	Description
1	60261	Nose Tip
2	60251A	Front Nosecone Bearing
3	60252	Thrust Washer
4	60253	Spring
5	60254	Chuck Opener
6	60272	Main Housing
7	60250	Chuck Balls
8	60264	Chuck/Spindle (Original) (Exploded View on next page)
9	60271	Chuck Collar
10	60270	Rear Inner Housing



Picture Number	Part Number	Description
1	60257	Chuck Sleeve
2	60266	Chuck Spring
3	60263	Chuck Shaft
4	N/A	Bearing Spacer
5	40436	Rear Bearing
6	N/A	Gear Spacer Washer
7	60258	Drive Gear

We will address some of the troubleshooting tips now that we are about to reassemble our nosecone.

- *The chuck fails to hold a bur securely.* This is usually caused by the chuck sleeve being stuck in place on the chuck shaft. This problem is remedied by buffing the chuck shaft and cleaning the inside of the chuck sleeve itself. Sometimes a new chuck sleeve (60257) is needed.
- *The bur spins roughly.* A rough spinning bur is usually caused by one or both of the bearings being damaged. Simply replacing these bearings should solve the problem.
- *The nosecone is locked up.* A nosecone can lock up if is dirty and rusty. It may also lock up if the rear drive gear is cracked. You now need to look very closely for a hairline vertical crack in the gear at this point. A third alternative is that the rear bearing is not secure on the shaft. On the shafts where the bearing can be pulled off from the bur end, you may need to Loctite the bearing onto the shaft.
- *The nosecone will not accept a bur.* If the flange on the chuck sleeve (60257) is worn thin, or the chuck opener (60254) is worn, the chuck will not accept a bur. The solution here is to replace the chuck opener or sleeve, or place a small thin spacer washer on top of the flange. Try a 60104B.



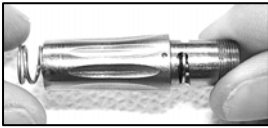
#### STEP 7

To replace the gear on the shaft of the chuck, place a bur blank in the chuck. Then place a dab of grease on the post to hold the gear in place, and align the new gear squarely.



### STEP 8

With the bur blank down on your work surface, tap the gear onto the shaft. Use a brass hammer or other soft material type of hammer so that the gear is not damaged during the repair. Next, remove the bur blank and slide the chuck spring (60266) and chuck sleeve (60257) back onto the shaft.



### STEP 9

Now we need to place the chuck opener and spring into the main housing. Make sure the small edge of the chuck opener (part # 60254) goes into the housing first. Push the Chuck opener into the main housing with the spring, until the groove in the opener is visible through the slots in the housing (shown above).



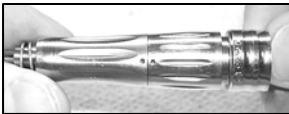
### STEP 10

Place a small dab of grease in the housing slots where the chuck balls will sit to hold the balls in place and lube the chuck collar. Then place the balls in the slots 180 degrees apart and slide the chuck collar over the balls (as shown).



### STEP 11

The next step requires us to insert the spindle/chuck into the back of the housing (at left). After doing this, thread the rear inner housing back onto the main housing (bottom left). This will secure the spindle.



### STEP 12

Now we need to set the nosecone up on end. The spring is already in the housing. Place the spacer washer and then bearing on the spring. Then screw the nosepiece onto the housing.

### STEP 13

Place the nosepiece into a 3/8" collet like in **STEP 2**. Again, be careful not to smash the nose pin. Once secure, insert the Star Nosecone wrench into the back end of the nosecone and tighten the nosecone by turning the wrench clockwise. This should complete your Star Nosecone repair.

Test the nosecone by inserting a bur into the chuck. Check for ease of insertion, that the chuck holds the bur securely, and that it spins freely.