#2491 DENT BALL SET

Thank you for purchasing this fine set of precision dent balls. Balls are made from quality, highly corrosion resistant, magnetic stainless steel, and are designed with the diameter and length increasing in size proportionally so as to maintain a constant profile shape from the smallest to the largest sizes.

DIAMETER RANGE & GRADUATION SPECIFICATIONS:

0.375" - 0.625" (9.52mm - 15.87mm)
graduation: 0.0025" (0.064mm)

0.625" - 0.750" (15.87mm - 19.05mm)
graduation: 0.005" (0.13mm)

0.750" - 0.990" (19.05mm - 25.15mm)
graduation: 0.010" (0.254mm)

GENERAL TIPS & GUIDELINES FOR DENT REMOVAL

CLEANING & LUBRICANT
Always clean the inside of the instrument to remove dirt and build up of mineral deposit. And it is recommended to always apply a light coat of vaseline or similar lubricant to the dent ball.

ROUGHING & PUSHING UP DENTS
For pipes with fairly deep dents a common procedure is to first push the dent up by forcing the ball against the dent until it raises the dent enough so that the ball can slide on past. Find the smallest ball that will just go past the dent and then move up two or three sizes larger and use that ball to raise the dent. Caution should be used to not graduate ball size too quickly or use too much force when driving or pushing the dent ball as it can cause the pipe to swell in the area opposite the dent.

Care should also be taken when driving balls because as the ball raises and slides past the dent the driver itself can ram itself into the walls of the instrument and cause damage. Our *#2040 SPRING LOADED DENT BALL DRIVER* is an excellent tool for this procedure as its unique design provides complete control over the amount of force applied against the dent, and also eliminates any chance of causing damage to the instrument when the ball slips past the dent.

Proceed in the manner described above until the dent is almost, but not completely raised. IMPORTANT: trying to completely remove the dent by this method will almost always result in swelling of the pipe.

HAMMERING OUT DENTS
Once the dent has been roughed out as described above, finishing the job is done using a dent hammer. Determine the dent ball that is just one size larger than the ball that will slide past the dent, and insert that ball with the driver into the pipe until it is right up against the dent.

When hammering out dents it is important to know the exact location of the dent ball in relation to the dent. A magnet can be handy for finding the approximate position of the ball, but listening to the sound of the hammer against the pipe will tell the technician the exact position of the ball. After determining the approximate ball location, lightly strike with the hammer around the dent area. When the hammer contacts the pipe in the exact spot where the pipe contacts the dent ball a dead, metallic sound will be heard. When the hammer strikes an area of the pipe that is not in contact with the ball a more hollow sound will be heard. A little experimenting and the difference in sound will be apparent.

Once the exact ball location is determined lightly strike the raised area around the outer edges of the dent, while at the same time applying a steady pressure against the driver and dent ball. This will work the dent from both sides - pushing up from the inside while knocking down the high area on the outside. When the dent ball slides past proceed up to the next size ball and repeat until dent is removed. Again, our *Spring Loaded Dent Ball Driver* works great for this procedure as the driver's internal spring can be adjusted to apply the desired amount of pressure to the ball and against the dent while hammering.

It is important to be always be alert to the fact that when a pipe is dented the metal around the dent itself is stretched resulting in slightly thinner wall thickness. As the dent is raised this stretched metal will have to go somewhere and will usually bulge and ripple the pipe around the edges of the dent. To compensate for this many technicians will strike the pipe with a glancing motion where the path of the hammer swing is more sideways than straight down, allowing the hammer to force and actually 'move' the metal so as to redistribute and even out the metal thickness, thus reshaping the pipe to its original conformation and integrity.