

CP-7 SPOOL VALVE REPAIR (3 piece spool valves)

A broken reversing spool (p/n KIT-HP-10VSA or KIT-HP-20VSA) can be temporarily repaired if no spare is available. The spool is pushed back and forth inside the valve block by the white pistons inside the valve block end caps. Because valve timing is very important, a repaired valve must be the same length as it was before it broke so that it will move to the right spot when pushed by the piston.

Set aside the white sealing ring and black rubber quad seal ring from the broken end of the spool. Using a 1/2" (13 mm) drill, countersink the threaded hole in the end of the broken off end of the spool. Drill in about 3/8" (10 mm). If the threaded hole does not go all the way through the broken off end piece, drill it out with a 1/4 inch (6 mm) drill. Find a sheet metal screw or machine screw about 1 1/2 inch (4 cm) long which will pass freely through the threaded hole and with a head diameter that will fit inside the countersink but not go all the way through. Center punch as closely as possible the exact center of the broken off end of the larger piece of the spool. Take a tap drill if using a machine screw or a suitable size drill if using a sheet metal screw, and drill as straight as possible down the center line of the spool center section about one inch (2.5 cm). Drill far enough in that the screw will not bottom out, but avoid going all the way to the white seal on the unbroken end. If using a machine screw, tap the hole. Place the black quad ring and the white seal ring on the larger piece of the spool. Holding the two pieces together in their original positions as closely as possible, insert the screw into the end of the spool and secure them together.

The spool will still work if it is not perfectly straight, and vise or wrench marks on the narrow diameter sections of the spool will not affect performance. Avoid damaging the large diameter sections or the white seals.

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