



ALPHA OIL TOOLS GUIDELINES FOR RUNNING H-M BRIDGE PLUGS:

DISCLAIMER These are **guidelines only** recommended by Alpha Oil Tools. It is the responsibility of the service company to evaluate all the variables for each specific job to formulate the exact procedure for each individual job.

RECOMMENDED PROCEDURE BEFORE RUNNING H-M BRIDGE PLUG:

1. Run a casing scraper (if necessary) to clean inner wall of casing and free any debris or obstructions.
2. Circulate well to clean well of debris and junk.
3. Check casing I.D. 2 ft.-3 ft. below setting depth to ensure no restrictions exist.

MAKE-UP PROCEDURE:

1. Make up tubing on tubing adapter by placing back-up on tubing adapter and rotate tubing to the right until tight.
2. DO NOT REMOVE TUBING ADAPTER FROM PLUG TO MAKE-UP.
3. Do not rest string weight on plug during or after make-up.

RUNNING IN:

1. Run into well at uniform rate - no faster than 30 seconds per 90 foot stand. Be certain tubing is free of debris and excessive scale.
2. Avoid right-hand rotation of tubing string.
3. Use slow starts and stops when moving tubing string - no jerking.

SETTING H-M PLUG:

1. Run tubing to desired setting point. Never set in collars or where milling has occurred. Set in static conditions (no fluid or gas movement).
2. Drop ball down tubing string. The ball should be 1-1/4" diameter for HM-P/HM-E. The ball should be 1-3/4" diameter for Magna-Bore. Allow approximately 5 minutes per 1,000 feet for ball to travel in water. More time is needed in mud or viscous fluids.
3. Slowly apply pump pressure to tubing string until 2,000 psi is reached. This pressure will stroke the cylinder down onto slip. The slip will break into segments and make contact with casing.

NOTE: If you lose pressure before reaching 2,000 psi, go on to the next step. In heavier weights of casing, slip and hydro sleeve travel is limited which prevents pressure loss. Simply stop at 2,000 psi and proceed to the next step.

CAUTION: DO NOT EXCEED 2,500 psi. If it is believed that the slips have not broken with a maximum of 2,500 psi, then POOH and evaluate the condition of the tools and well.

4. **Bleed off all pressure** and pull recommended tension above the pipe weight at the tool, to complete setting the plug. See Table 1. Hold tension for at least 5 minutes to complete the set. It is recommended to calculate tubing stretch versus using weight indicator for true pull.



Table 1: Recommended Tension to Set Plug

Plug Size OD	SETTING FORCES	
	Minimum Tension	Maximum Tension
2.750"	9,000 lbs	12,500 lbs
3.120"	20,000 lbs	23,500 lbs
3.500" - 4.750"	22,000 lbs	24,000 lbs
5.340" - 6.090"	30,000 lbs	44,000 lbs
6.960" - 7.710"	35,000 lbs	44,000 lbs
8.690" - 9.500"	35,000 lbs	44,000 lbs
11.560" - 12.000"	35,000 lbs	44,000 lbs
14.250" - 17.250"	40,000 lbs	44,000 lbs

- Once the tool is packed off, apply slack off weight (equivalent to tension applied) to ensure the bottom slips are properly engaged.

RELEASING FROM H-M PLUG:

- The primary tubing release method from the H-M Plug may be achieved by pulling 500 lbs tension at the tool and rotating the work string 9 turns to the right at the tool.
- The secondary tubing release method from the H-M Plug may be achieved by overcoming the tensile value of the shear stud by pulling tension in the work string to values shown in Table 2.

Table 2: Tensile Force to Shear Stud for HM-P/ HM-E

Plug Size OD	TENSILE SHEAR FORCES	
	Minimum Tension	Maximum Tension
2.750"	15,500 lbs	22,500 lbs
3.120"	29,500 lbs	34,500 lbs
3.500" - 4.750"	30,000 lbs	40,000 lbs
5.340" - 6.090"	55,000 lbs	60,000 lbs
6.960" - 7.710"	55,000 lbs	60,000 lbs
8.690" - 9.500"	55,000 lbs	60,000 lbs
11.560" - 12.000"	55,000 lbs	60,000 lbs
14.250" - 17.250"	55,000 lbs	60,000 lbs

Table 3: Tensile Force to Shear Stud for Magna-Bore

Plug Size OD	TENSILE SHEAR FORCES*	
	Minimum Tension	Maximum Tension
5.610" - 17.250"	70,000 lbs	80,000 lbs

**A higher non-rated shear stud is available for the Magna-Bore HM Plugs*