HydroGRS

The HydroGRS (guide/reamer shoe) is a guide shoe designed to assist in getting the casing to bottom in difficult environments saving time and overall costs. The shoe has a proven track record of getting casing to bottom in a significantly shorter time when swelling shales, ledges and/or washed out areas are hampering the ability to get casing to TD successfully.

Type I guide nose:
- Aluminum alloy.
- Drillable design.

Type II reamer nose:
- Steel alloy with carbide hard-facing.
- Non-drillable design.

FEATURES

- Eccentric rotary guide/reamer nose assists to negotiate the casing string through troublesome hole conditions quickly.
- Nose is free to rotate as needed to "follow" the hole while running casing but can be rotated with pump pressure to actually ream the hole if necessary.
- Low torque output to minimize the possibility of sidetracking the wellbore while reaming.
- Aluminum nose for applications where drilling out is required.
- Steel alloy nose for applications where drilling out is not required (carbide hard-facing can be added at customers request).
- Internal components are all aluminum alloy and fully drillable when run with the aluminum nose to allow drilling to continue below the casing shoe after cementing.
- Optional roller guide section to reduce friction of the shoe track during casing running.
- Standard body metallurgy is L-80 but can be per customer's request.

SPECIFICATIONS

Unit	Size (in)	Body OD (in)	Max. OD @Roller (in)	Length (in)	Circulating Ports (Number × Size, in)	Connection
HGRS-0500	5.000	5.590	5.748	25.590	3 × 1.97	Per customer request
HGRS-0512	5.500	6.300	6.535	25.200	3 × 2.17	Per customer request
HGRS-0700	7.000	7.677	7.874	27.560	3 × 2.76	Per customer request
HGRS-0958	9.625	10.630	10.866	31.500	3 × 3.15	Per customer request

PROPERTIES

Unit	Pump Rate (bbl/min)	Pressure Drop (psi)	Speed (rpm)	Torque (ft-lb)	* Shear Force (lbs.)
HGRS-0500	6.0 – 9.1	218 – 363	600 – 1000	92.2 – 162.3	132,277.0
HGRS-0512	7.2 – 10.2	218 – 363	700 – 1200	169.7 – 280.3	143,301.0
HGRS-0700	8.3 – 11.3	218 – 363	700 – 1200	258.2 – 383.6	176,370.0
HGRS-0958	9.8 – 12.8	218 – 363	700 – 1200	331.9 – 464.7	220,462.0

* The minimum force to disconnect rotary nose and body.