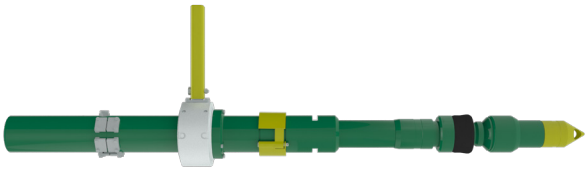
Well Construction

Drilling Technologies

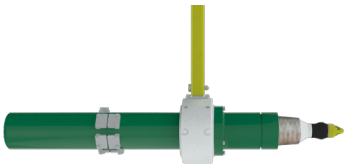
VERSAFLO™ - Casing and Drill Pipe Flowback and Circulation Tool

Features and benefits

- Drill pipe and casing flowback/circulation capability accomplished with one tool without the need to swap bails
- Casing Module is efficiently rigged down with a special breakout plate that holds the backup against the rig's bails
- Drill Pipe Module is ready to stab into the landing string after connecting a packer cup
- Casing Module (lower portion of VERSAFLO™ tool)
- Packer cup seal assembly can be outfitted to stab into a range of casing sizes from 7-inch to 18 5/8-inch
- Fill-up, circulation, and flowback can be accomplished while casing is being run; no shut down required
- Automatically-operated internal valve prevents unwanted drilling fluid spilling out on the rig floor
- Capable of sealing up to 5,000 psi
- Drill Pipe Module (upper portion of VERSAFLO™ tool
- Hydraulically-operated piston allows stabbing into drill string for circulation and flowback operations
- Wireless controls allow tool operations from outside of the red zone
- Special packer cup creates an effective seal on a range of drill pipe IDs
- Automatically-operated internal fluid valve prevents unwanted drilling fluid spilling out on the rig floor
- Hydraulic swivel allows rotation without the need to disconnect
- umbilical lines
- The drill pipe module can be screwed into a 6 5/8-inch full hole drill pipe connection without the need to disconnect or remove the piston or the packer cup from the ID of the drill string
- Compact tool design allows the use of 16-foot bails based on rig survey



Casing configuration



Drill pipe configuration

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Specifications						
Tool series	**HI-2600**		**HI-1700**	**HI-1200**	**HI-800**	**HI-600**
Connection details						
Upper connection (box up)	7-5/8” Reg. LTM	7-5/8” Reg.	7-5/8” Reg.	6-5/8” Reg.	4-1/2” IF	3-1/2” IF
Lower connection (String tool - Pin down)	7-5/8” Reg. LTM	7-5/8” Reg.	7-5/8” Reg.	6-5/8” Reg.	4-1/2” IF	3-1/2” IF
Lower connection (NB tool - Box down)	7-5/8” Reg. LTM	7-5/8” Reg.	7-5/8” Reg.	6-5/8” Reg.	4-1/2” Reg.	3-1/2” Reg.
Max. make-up torque	99,025 ft-lbs	87,140 ft-lbs	87,140 ft-lbs	45,000 ft-lbs	51,981 ft-lbs	13,745 ft-lbs
Tool dimensions						
Fish neck / tong neck O.D.	11-1/4”	9-1/2”	9-1/2”	8-1/2”	7”	5”
Fish neck length	26	26	23”	19”	19”	15”
Tong neck length (G&E)	22” upper body 18” lower body	20” upper body 18” lower body	20” upper body 15” lower body	13” upper body 9.5” lower body	14”	12”
Tool drift I.D. (C)	2.980”	2.980”	2.855”	2.780”	1.475”	1.485”
Overall tool length (A)	85-1/2”	83-1/2”	63”	42-1/2”	47”	39.7”
Approx. tool weight (lbs.)	3,300 - 3,500	3,200 – 3,400	1,250 - 1,420	400 - 550	250 - 350	190 - 250
Connection bending strength ratio	5.02	2.81	2.81	3.62	2.70	2.24
Blade dimensions						
Blade O.D. (B)	19-1/2” - 28”	19-1/2” - 28”	12-1/8” - 17-1/2”	9-3/4” - 14-3/4”	7-3/4” - 8-3/4”	5-7/8” - 6-3/4”
Blade length	32”	32”	21”	12”	11”	9” - 10”
Crown length (D)	8.5”	8.5”	6”	4”	6”	5-1/4 ”
Blade width (perpendicular to axis)	7.5” – 8.5”	7.5” – 8.5”	6”	3.5”	3.5”	2.4”
Blade wrap	270°	270°	300°	160°-190°	290°-320°	245°-270°
Number of blades	3	3	3	3	3	3
Blade type	Spiral	Spiral	Spiral	Spiral	Spiral	Spiral
Structural mechanical / operational properties						
Rated flow rate	1,750 gpm	1,750 gpm	1,500 gpm	1,250 gpm	850 gpm	500 gpm
Typical pressure drop at rated flow rate (heavily dependent on ppg)	80 psi	80 psi	60 psi	40 psi	70 psi	40 psi
Max. rubber operating temperatures	HNBR 929-05 390°F/200°C					
Torsional limit	110,030 ft-lbs	96,820 ft-lbs	96,820 ft-lbs	45,600 ft-lbs	35,629 ft-lbs	15,270 ft-lbs
Max. weight on bit	150,000 lbs	100,000 lbs	100,000 lbs	100,000 lbs	100,000 lbs	40,000 lbs
Tensile limit	1,500,000 lbs	1,400,000 lbs	1,400,000 lbs	900,000 lbs	390,000lbs	420,000lbs
Burst pressure	5,000 psi	4,800 psi	4,800 psi	4,400 psi	6,000 psi	5,000 psi