Beyond

ENERGY SERVICES & TECHNOLOGY CORP.

NITRO MPD™ Package

www.beyondmpd.com

B.E.S.T. INTEGRATED CHOKE MANIFOLD BUILDING

NITRO MPD™ is Beyond's flagship package that is a fully loaded MPD system intended for truly challenging MPD applications. This system incorporates advanced Hydraulic models to control downhole ECD during drilling and tripping operations with pinpoint accuracy and is perfect for drilling narrow window wells. It allows for early event detection against kicks and losses and includes our patented Nitrogen backpressure system. This feature ensures you retain dynamic control of your well even in static well conditions such as connections or power loss at the rig.

The integrated manifold is a compact 20' (6.1m) container that contains the following components:	
Dual choke manifold	Automated backpressure control system
2 x Drilling chokes	Coriolis flowmeter with flow bypass
Pressure Relief Valve	Nitrogen backpressure support

Advantages and Features

Docks directly onto the BIG-B skid	Equipped with Pressure Relief Valves that avoid over-pressurizing the wellbore and, if coupled with Beyond's backpressure control system, provides an integral solution for all MPD scenarios.
Climatized unit, containing all systems required to manage pressure at surface and measures MPD/UBD parameters.	Automated backpressure control system with fast-acting, full-bore drilling chokes that can be controlled locally or via a remote panel installed anywhere at the drilling site.
Rated for 5,000 psi (34.5 MPa) – can be built as a 10,000 psi (69 MPa) package if necessary.	Two manifold sizes are available: 4" and 6"

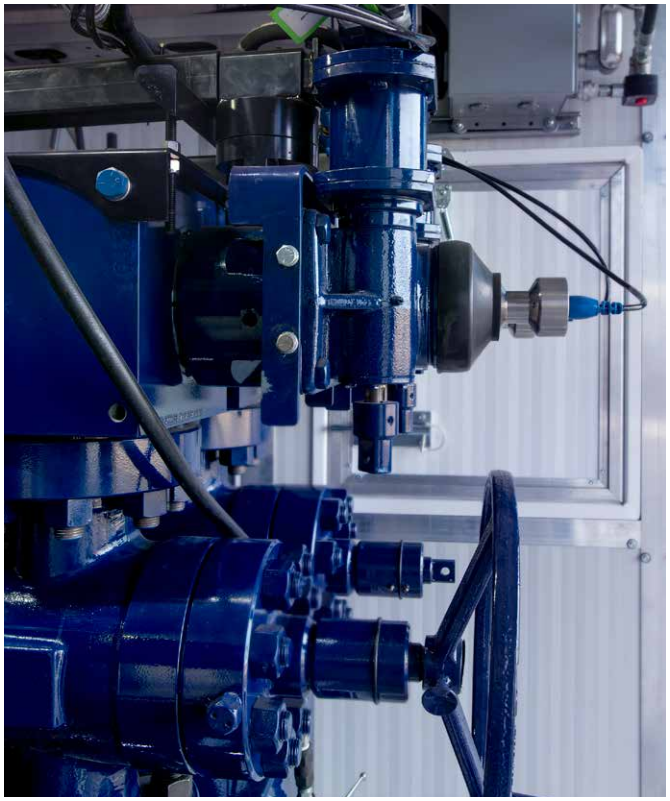
Applications

Managed Pressure Drilling
Underbalanced Drilling
Pressurized Mud Cap Drilling
Geothermal Wells

4" Interactive Tour

6" Interactive Tour

B.E.S.T. INTEGRATED CHOKE MANIFOLD BUILDING



Choke Valves

Maximum Working Pressure	5,000 psi (35.4 MPa)
Choke Diameter (Trim Size)	3” (76.2 mm)
Actuator Type	Hydraulic / Electric
Flange Specifications	API 4 $^{1/16”}$ 5M
Trim Material	Tungsten Carbide

Pressure Relief Valve (PRV)

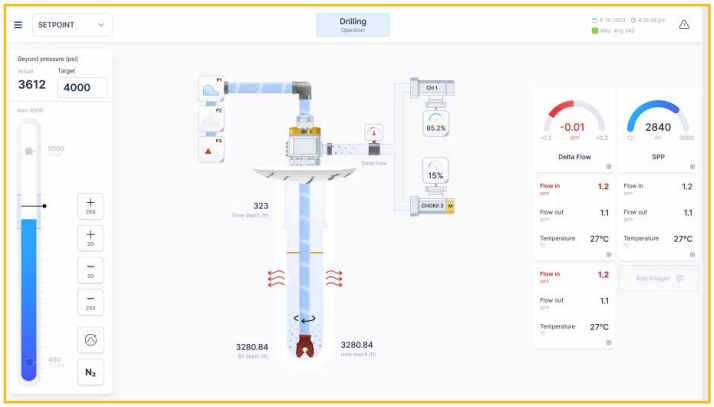
	Automatic Hydraulic Model	Nitro PRV
Maximum Working Pressure	5,000 psi (35.4 MPa)	2,500 psi (17.24 MPa)*
Actuator Type	Hydraulic	Pneumatic
Automatic Resetting	Yes, setpoint	Yes, to 75% of pop-off pressure
Field Set Point Programming Mode	Electronic	Mechanic

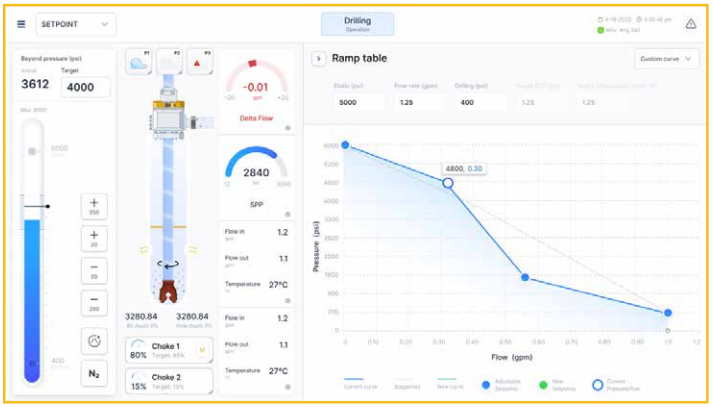
* higher pressure options available upon request

B.E.S.T. INTEGRATED CHOKE MANIFOLD BUILDING

Backpressure Control System

Maximum Working Pressure	Can be programmed to any working pressure up to the choke value maximum pressure
Number of Consoles	2 (local and remote)
Remote Control via Tablet	Yes
Control Mode in Case of Failure	Last pressure value is maintained
Backpressure Control Type	Automated (programmable as a function of flow rate)
Multiple Independent Choke Control	Yes
Power Source	Electric (main), Pneumatic (backup), and UPS (PLC backup)
Communication Protocol	WITS, Modbus (other protocols available)
Trim Remote Control Material	Via internet connection





B.E.S.T. INTEGRATED CHOKE MANIFOLD BUILDING

Coriolis Flow Meter

Measured Variables	Mass Flow Rate, Density, Temperature
Density Measuring Range	400 kg/m³ to 2,500 kg/m³ (3.3 ppg to 20.9 ppg)
Density Accuracy	±2.0 kg/m³ (±0.017 ppg)
Volume Flow Rates with 1500 kg/m³ Fluid	Up to 10 m³/min (2641 gpm)
Flow accuracy liquid	±0.10% of flow rate
Temperature Rating	-40 to 300°F (-40 to 150°C)

We do Managed Pressure Drilling.

B.E.S.T. INTEGRATED GAS BUSTER (BIG-B)

Beyond offers a Gas Buster/Separator specifically designed for MPD and flow drilling applications, where gas needs to be removed from the drilling fluid and cuttings mixture.

The BIG-B has been designed to avoid the need for cranes during rig up and rig down operations and minimize the footprint by housing the MPD manifold building and separator on the same skid. Beyond's BIG-B is designed to manage gas rates of a significantly elevated magnitude, even at atmospheric pressure.

Advantages and Features

Self-erecting. No picker truck or crane is needed.	Skid mounted vertical MPD vessel.
Level indicator provides accurate volume measurement.	Vessel designed and constructed to ASME Section VII Division 1.
Integrated manifold building design reduces rig up time and space requirements.	Adjustable u-tube design using the hydraulic lifting system that adds 8' (2.5m) to the u-tube.

Technical Specifications

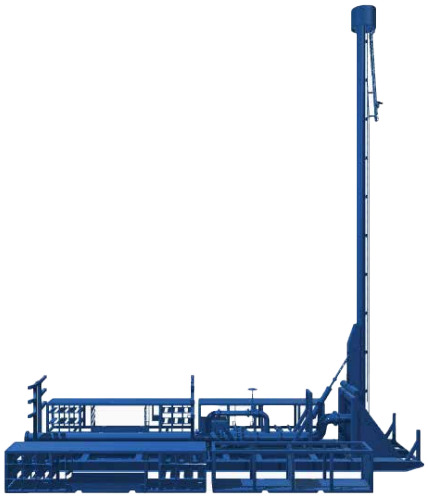
Maximum Working Pressure	125 psi (862 kPa)	
Vessel Volume	107 bbl (17 m^3)	
Height (seam to seam)	20' (6.1 m)	
Diameter	72" (1.83 m)	
Temperature Rating	-50 to 200°F (-46 to 93 °C)	
Available Connections	• 8" x 4" Primary Inlet • 8" x 4" Auxiliary Inlet • 12" Gas Out • 12" X 10" Liquid Out • 2" Spare (top)	• 8" Spare (bottom) • 2" Sparge • 16" Inspection Port • 2" Manifold pop-off inlet
Instrumentation	• Fluid Level Sensor • Separation Pressure	• Gas Flow Rate • Gas Composition (optional)

B.E.S.T. MPD SYSTEM FLARE STACK

Our flare stack complements the MPD system by offering a safe and reliable way to flare gas returns from the wellbore. The flare stack is designed to self-erect, saving time and money from the conventional design that requires a crane to rig up and rig down the MPD system.

Beyond's flare stack offers an integrated solution that contains an advanced ignition system and a flame arrestor with a bypass for emergency situations.

The flare stack skid has been designed to accommodate pipe baskets, eliminating additional trucks during transportation.



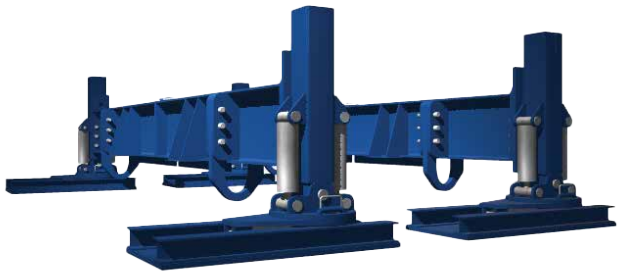
Advantages and Features

Self-erecting. Picker Truck or crane not needed.	40' Stack to handle high volumes of gas.
Small footprint with integrated pipe baskets making it an excellent choice for small leases.	Removable pipe baskets save on space and trucking.

B.E.S.T. MPD SKID WALKING SYSTEM

Run the most efficient MPD operation with Beyond MPD technology: Minimize the rig down and rig up time between wells on the same well pad using our MPD skid walking system.

For those operators looking to decrease moving times between wells on multi-well pads, Beyond offers a walking system solution that allows “walking” the skid containing the MPD choke manifold building and the MPD Separator, avoiding the need for crane or pickers as well as the need to rig up or rig down MPD lines while moving between wells.



Advantages and Features

Carrying capacity of 150,000 lbs (68 metric tonnes)	2 ft (0.61 m) of travel per cycle
Compact design for reduced footprint	Utilizes existing BIG-B Separator hydraulic system and lines, so no additional hydraulic systems are required.
Cycle time of 50 seconds	

B.E.S.T. MPD Engineering Services

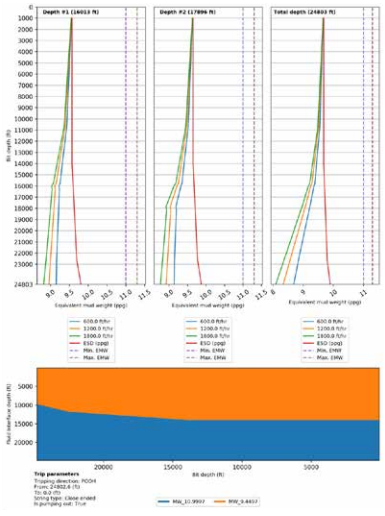
Beyond prides itself in offering the best in class MPD products and on-site MPD supervision and MPD Engineering. As part of the MPD portfolio of products, Beyond provides MPD technical support and Engineering with an experienced team of Engineers that provide the customer with all their needs in well design and operations monitoring services using state-of-the-art, in-house developed software.

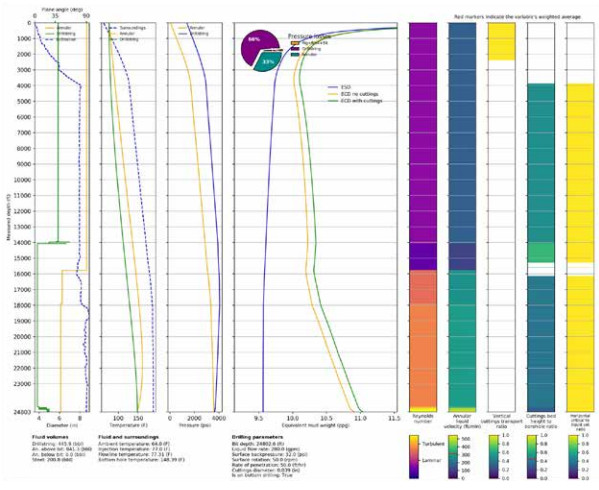
MPD Engineering Services

MPD feasibility analysis	Mud rollover and cementing schedules in MPD mode
MPD programs	Mud density and rheology overview
Equivalent circulating and static density analysis	End of well reports
Swab and surge analyses	Real-time operations monitoring and support or on-site Engineering

Engineering Experience

Very narrow window operations	Drilling optimization (ROP optimization, pressure-related events mitigation, etc.)
Horizontal drilling in different pressure profile zone	HPHT operations in deep-wells (depth > 20,000’ or 6,000m)
Flow drilling and multiphase operations	Cementing in MPD mode





Advantages of the Beyond MPD Systems

Fewer loads to transport

Our MERCURY MPD™ package only requires a SINGLE truckload to the site. Our complete NITRO MPD™ package requires only 3 loads vs. 5-6 loads for packages available in the market today.

Faster & less expensive rig up and rig down

Our integrated package requires less piping, and with our self-erecting systems, no crane is needed for rig-up and rig-down operations.

Unique MPD package walking system

Beyond's patented walking system allows for an even faster rig-up and rig-down on multi-well pads since it is not necessary to modify the existing system for well-to-well mobilization. This system is offered with our complete NITRO MPD™ package.

Smaller footprint

For our NITRO MPD™ package, no additional interconnecting pipework is needed between the choke manifold and the separator. Only 2 skids are required for the manifold, metering system, separator, flare stack, and pipe baskets.

Minimum crew on-site

For our NITRO MPD™, our standard crew that cover 24-hr operations consists of only 2 people on-site covering site supervision, equipment maintenance, RCD operations, and continuous pressure monitoring and management.

Patented backpressure maintenance technology

Our nitrogen backpressure management system automatically maintains surface backpressure during static periods in case of pump or choke failure.

Advantages of the Beyond MPD Systems

State of the art backpressure control system

The automated backpressure control system has been designed by actual users who have in-depth knowledge of MPD operations and was created to deliver rapid and accurate pressure control while providing flexibility to operate under a wide range of conditions.

24/7 Engineering support

With the top Engineering team in the business, our staff assists our valued customers with designing their wells, supporting the field operations 24/7, and monitoring all drilling activities while ensuring the technical integrity of the drilling operations.

The most experienced and motivated team of Operators and Supervisors

All of our senior supervisory staff have 20+ years of global knowledge in MPD and UBD applications worldwide, ensuring your well is in the best hands possible.

Experience

Our experienced team has drilled over 2,000 wells in the last 7 years, ranging from multiphase operations to HPHT wells with no practical drilling window, while under various conditions around the globe.

We do Managed Pressure Drilling.

Beyond

We do Managed Pressure Drilling.

www.beyondmpd.com | sales@beyondmpd.com | +1 866 648 9067