



# ZOOM™ TORSIONAL OSCILLATION

The Zoom Torsional Oscillation Control Tool is the most versatile sustainable tool in the industry. Driving performance in all operations from drilling to fishing to coiled tubing and well intervention—saving energy and increasing efficiency in new wells and breathing life back into old wells.

## THE ZOOM DIFFERENCE

ZOOM DX/FX	Agitator	Resonator	Impulse	ZOOM
Low pressure drop	x	x	x	✓
Operator variable G range	x	x	x	✓
Amplitude wave above 40 G/sec on all axis XYZ	x	x	x	✓
Field serviceable	x	x	x	✓
No shock sub	x	x	x	✓
No complex valve	x	x	x	✓
Designed for rotary drilling	x	x	x	✓
Overpull while pumping above 90Klbs	x	x	x	✓
Ball activated	✓	✓	✓	x
Designed for strong torsional oscillation control	x	x	x	✓
Requires shop configuration for target flow rates	✓	✓	✓	x
Throughbore option	x	x	x	✓

## Zoom Applications

### ▲ Fishing

- ▲ Milling
- ▲ Packer/Completion recovery
- ▲ BHA recovery

### ▲ Drilling

- ▲ Long horizontal & complex wells
- ▲ Wells with WBS issues
- ▲ BHAs with high shock/vibration & slick/slip issues

### ▲ Intervention

- ▲ Wellbore clean-up
- ▲ Frac-plug drill out
- ▲ Downhole sleeve manipulation

## SAVINGS

### ZoomDX - Drilling

- ▲ 1.6 days saved with ROP optimized
- ▲ +70 day run life
- ▲ 70% pressure drop savings
- ▲ 12% savings on torque
- ▲ Save drilling 1 out of 5 wells for the same reservoir recovery
- ▲ Save on high DBR costs
- ▲ Tool mobilization costs (service in 45-60m on site)
- ▲ 5-6 runs before servicing

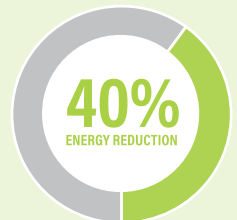
### ZoomFX - Fishing

- ▲ No expensive BHA LIH costs
- ▲ Save on trips (1 vs multiple)
- ▲ 60% avg. days saved by recovering longer sections
- ▲ 30% less energy required on surface to free fish
- ▲ Tool mobilization costs (service in 45-60m on-site)

## OUR SUSTAINABILITY

26.40 METRIC TONS CO<sub>2</sub> SAVED

PWS is committed to providing solutions that enable our clients to reduce time in wells, resulting in overall energy reduction in all operations.



### Sustainable Solutions

To meet the intensifying urgency for industry to address environmental concerns, PWS delivers 100% Measurable Sustainable technology that optimizes efficiency and saves energy with waste-eliminating patent-pending technology. Providing sustainable technology is our commitment to ensure carbon neutral initiatives are achieved.

### Impact Investment

As an "Impact Investment Company," PWS is committed to donating a minimum 1% of profits to charitable organizations. As a partner of PWS, your organization will have a direct and positive impact on the world.

### Corporate Responsibility

PWS has committed to a yearly audit review of our sustainability efforts set forth by our Sustainability Plan in alignment with the UN 2030 Agenda for Sustainable Development.

FISHING AND INTERVENTION

# ZOOMFX™

The World's Most Versatile Sustainable Oilfield Tool

## Overview

The ZOOM FX™ tool is our most robust, user-friendly tool that is added to the fishing assembly to enable fish excitation in the lateral component of movement—driving performance from scale and wellbore clean up to frac plug drill out, from sleeve manipulation for well shut off to breathing new life into old wells. Wherein today's conventional tools only operate on the internal excitation to external, the ZOOM FX incorporates our external lateral boost system. By doing so, the ZOOM FX can induce much higher lateral resonance g-forces to the fish. This ensures that no matter the fishing challenge, the ZOOM FX can address the job.

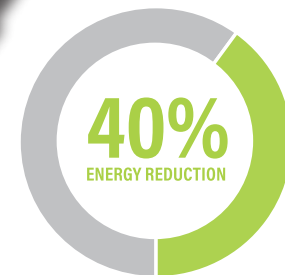
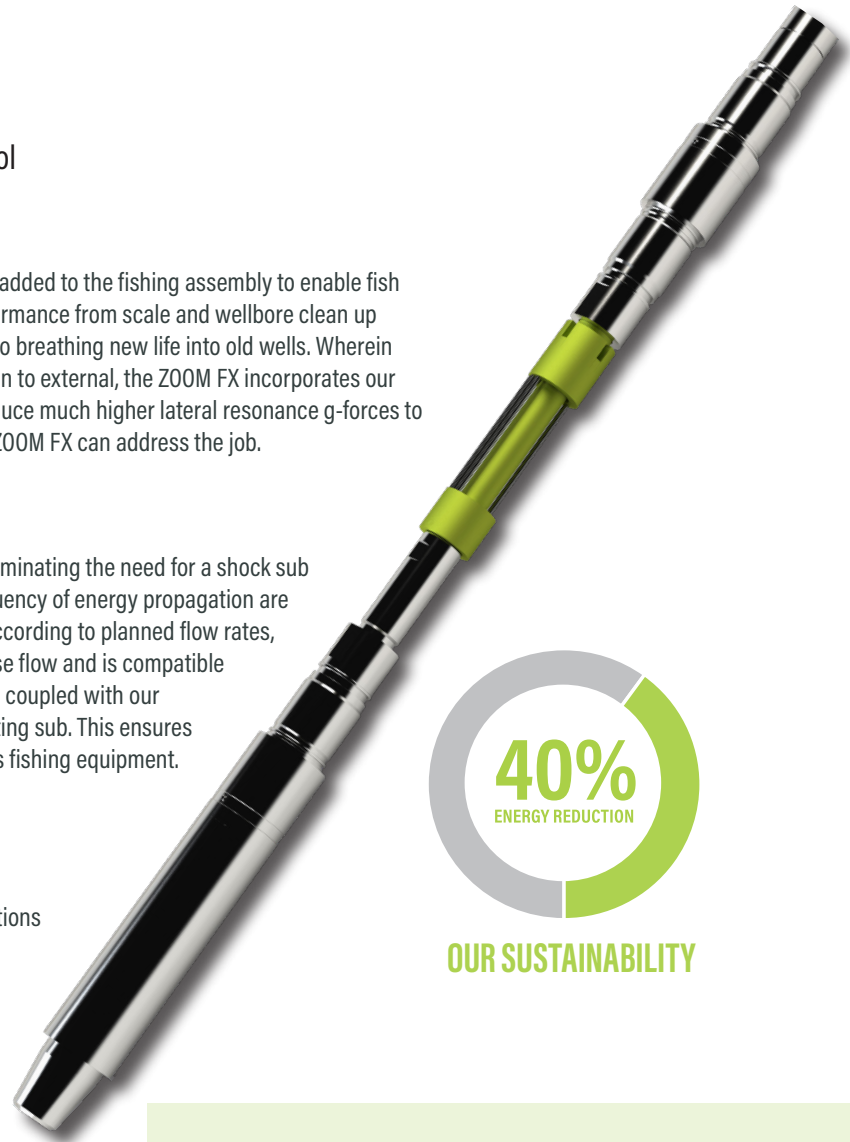
## Operating Principles

The ZOOM FS/FX generates vibration on the X-Y axis, thereby eliminating the need for a shock sub since no Z-axis impact vibration is created. Amplitude and frequency of energy propagation are controlled by changing the flow configuration within the tool according to planned flow rates, and the ZOOM operates with all conventional fluids or two-phase flow and is compatible with all standard drill pipe. Both fishing ZOOM FS and FX can be coupled with our bespoke multi-activation circulating sub and high-tension rotating sub. This ensures the ZOOM FS/FX is fully compatible with today's and tomorrow's fishing equipment.

## Benefits

- ▲ Minimal pressure drop (<150 psi)
- ▲ Weight transfer solution giving way to longer horizontal sections
- ▲ Variable impact lateral loads can be stacked
- ▲ No limitation from internal valves
- ▲ LCM friendly
- ▲ Cross-fluid compatibility
- ▲ Inhouse-designed placement program

Parameters	5" ZOOM FX
Flowrate	100-450 gpm
Pressure drop	< 250 psi
Temperature range	HT 450F
Maximum overpull	1M lbs
ZOOM FX attenuation frequency	On request
ZOOM FX amplitude range	On request
ZOOM FX G range	8G/second
ZOOM FX G range max	80G/second
Design	
Connection	As per client
Length	24 ft
Weight	1,195 lbs
ID	1.8"



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SUSTAINABLE DRILLING

# ZOOMDX™

The World's Most Versatile Sustainable Oilfield Tool

## Overview

The ZOOM DX™ generates vibration on the X-Y axis, thereby eliminating the need for a shock sub since no Z-axis impact vibration is created. Amplitude and frequency of energy propagation is controlled by changing the flow configuration within the tool according to planned flow rates, and the ZOOM DX operates with all conventional fluids or two-phase flow and is compatible with all standard drill pipe. The ZOOM DX is MWD and LWD friendly, which means that the ZOOM DX can be run in close proximity to them on the bottom hole assembly or multiple ZOOM DX can be adopted across the string.

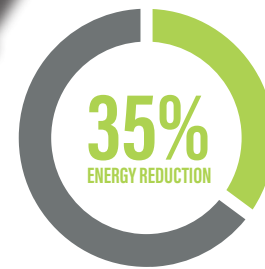
## Drilling

The Zoom DX is a robust, user-friendly tool that is added to the drillpipe to enhance rotary drilling performance under the most challenging of wellbore conditions when drilling horizontal wells. The Zoom DX uses a specially designed positive displacement motor (PDM) power section to rotate our bespoke mass oscillation system that enables the drill string, to break friction and maintain the string in forward momentum. In turn, this ensures smooth torque and RPM transfer through the string, mitigating the effects of string elasticity and the resultant stick slip and vibrations on the BHA. **Through the adoption of the ZOOM DX, clients require less energy to reach further, reducing the need for other complex solutions while maintaining pinnacle performance.**

## Benefits

- ▲ Minimal pressure drop (<180 psi) with no impact to MWD signals
- ▲ Weight transfer solution giving way to longer horizontal sections
- ▲ Removes string-generated stick/slip
- ▲ Increasing rates of penetration
- ▲ Reduced BHA wear and downhole tool failure rates
- ▲ Reduced possibility of differential sticking
- ▲ Reduced wellbore fatigue
- ▲ Cross-fluid compatibility
- ▲ Inhouse-designed placement program

Parameters	5" ZOOM	6-3/4" ZOOM
Flowrate	100-450 gpm	300-800 gpm
Pressure Drop	<180 psi	<180 psi
Temp Range	HT 450° F	HT 450° F
Max Overpull	135,000 lbs	340,000 lbs
ZOOM Attenuation frequency	On request	On request
ZOOM Amplitude Range	On request	On request
Design		
Connection	As per client	As per client
Length	29 ft	29 ft
Weight	1,195 lbs	2,170 lbs
ID	1.8"	2"



OUR SUSTAINABILITY

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FISHING AND INTERVENTION

# ZOOMCS/CX™

The World's Most Versatile Sustainable Oilfield Tool

## Overview

The ZOOM CS/CX™ tool is a custom downhole vibration device for use in applications requiring slimhole concentric pipe or coiled tubing downhole tool deployment in extended reach/high angle wells. The PWS ZOOM CS/CX tool allows the frictional drag between non-rotating downhole tool components and the wellbore wall to be negated, resulting in superior weight control and optimized energy transfer allowing clients to reach pinnacle performance.

## Features

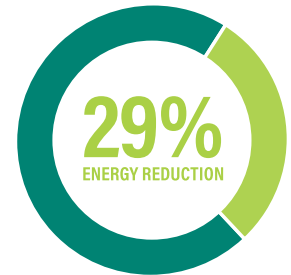
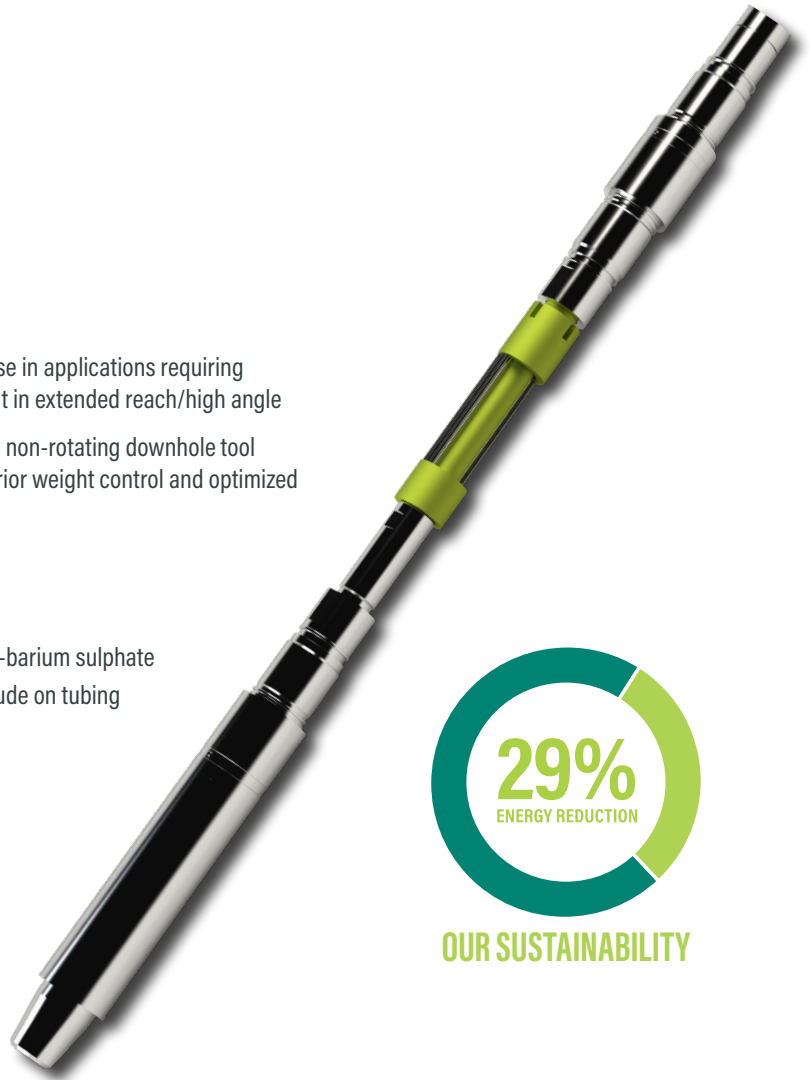
- ▲ Wellbore cleanup
- ▲ Specialized ZOOM CS utilized with our patented rotary scrubber—barium sulphate
- ▲ ZOOM CX, advanced scale removal. Pairing vibratory high amplitude on tubing with advanced scrapers
- ▲ Drilling out to new virgin well areas in high angle wells
- ▲ Milling operations

## Benefits

The ZOOM CS/CX tool completes the through tubing market requirement for a reliable, effective energy saving system.

- ▲ Increased rates of penetration
- ▲ Reduced downhole tool damage
- ▲ Allows for greater downhole weight control
- ▲ Improves cleanup times as the ZOOM works to remove material
- ▲ Can be adopted to manipulate ICD sleeve shutoff control, which is a real challenge today

Parameters	2-7/8"	2-1/8"
Connection	2-3/8" PAC	1 1/2" AMMT
Length	12 ft	12 ft
Weight	205 lbs	199 lbs
Operational flow range	100-180 gpm	100-180 gpm
Frequency	16-28 Hz	16-28 Hz
Pressure pulse max	590 psi	590 psi



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