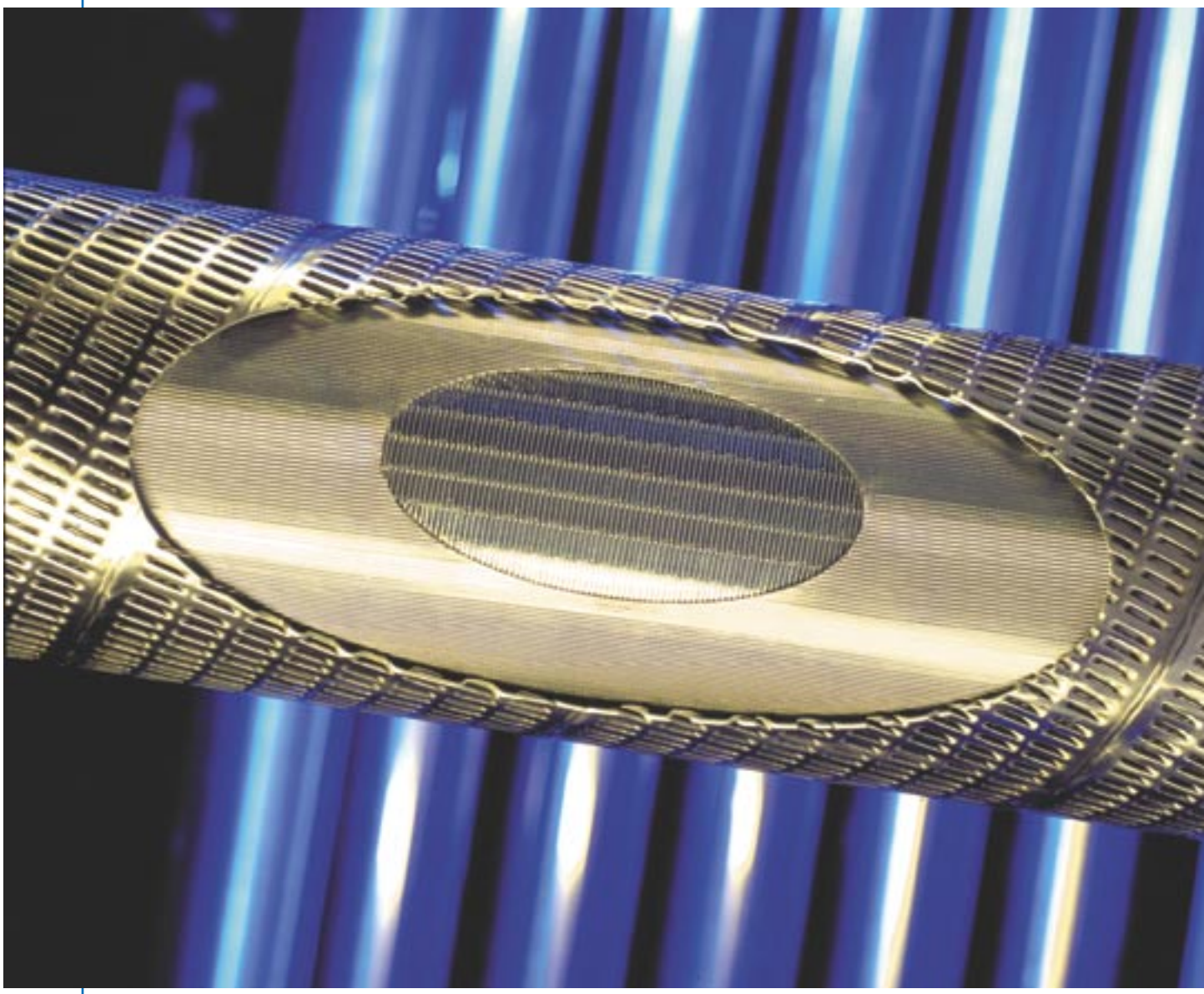
BEST
IN CLASS

EXCLUDER2000™ Screen



The leader in premium screens

BAKER HUGHES

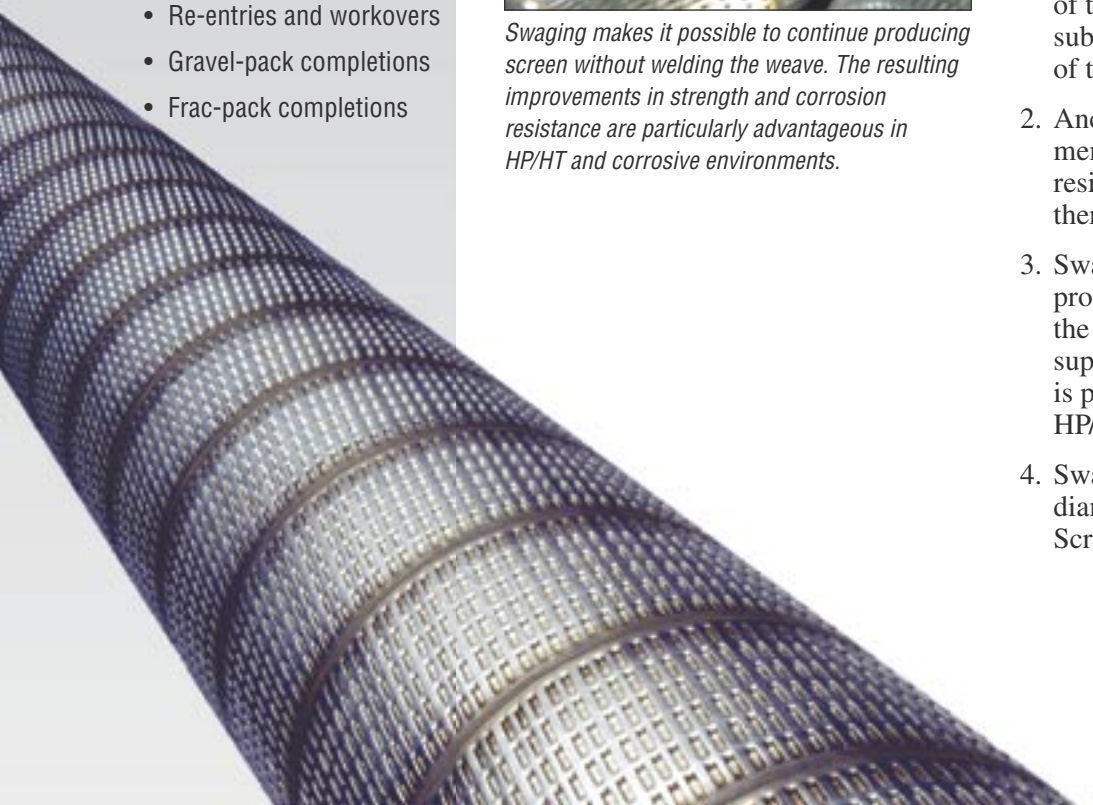
Baker Oil Tools

A New Benchmark for Sand Control

One Million Feet and Counting...

EXCLUDER2000™ builds on the unparalleled success of the original EXCLUDER™ design, whose performance has been field-tested and verified by the majority of major operators. In one million feet of screen, run in more than 300 wells in some of the most extreme conditions in the world, the EXCLUDER has proven superior in its ability to minimize production of formation materials while maximizing hydrocarbon production over the life of the well. Used as either a stand-alone product or in conjunction with any gravel-pack system, it has become the preferred well screen for a variety of open- and cased-hole completions, including:

- Horizontal completions
- Short-radius completions
- Re-entries and workovers
- Gravel-pack completions
- Frac-pack completions



Baker Oil Tools EXCLUDER™ Screen has set the industry standard for plugging and erosion resistance and sand control efficiency since 1995. Now Baker Oil Tools has raised the bar with the EXCLUDER2000™ Screen. EXCLUDER2000 offers the same superior filtration ability and sand control efficiency as the original EXCLUDER–with greater strength and a smaller outer diameter. So you can expect even better performance downhole. The difference is built in.

Swaging makes it possible to continue producing screen without welding the weave. The resulting improvements in strength and corrosion resistance are particularly advantageous in HP/HT and corrosive environments.

Burst pressure capacity of the EXCLUDER2000™ is substantially greater than that of the original EXCLUDER™ Screen, thanks to Baker Oil Tools' unique swaging process that causes the three layers of the EXCLUDER2000 Screen to behave as one.

Three Layers Act as One

Superior mechanical strength and performance are built into every EXCLUDER2000 Screen through a unique swaging process that causes the individual components to behave as a single layer. This produces four distinct advantages:

1. Swaging uniformly anchors the Vector Weave Filtration Membrane to distribute stress more evenly along the Vector Weave; as a result, the burst pressure capacity of the EXCLUDER2000 is substantially greater than that of the original EXCLUDER
2. Anchoring the filtration membrane also increases its resistance to mechanical, thermal, and pressure cycles
3. Swaging makes it possible to produce screen without welding the weave; weld-free weave means superior corrosion resistance which is particularly advantageous in HP/HT corrosive environments
4. Swaging reduces the outside diameter of the EXCLUDER2000 Screen for all base pipe sizes

Multi-Component Design

The EXCLUDER™ Screen's success is founded on Baker Oil Tools' unique multi-component design consisting of:

- Protective Vector Shroud–a tough outer layer that protects against damage from wellbore fragments during installation, then redirects production inflow to minimize erosion
- Vector Weave Filtration Membrane–a single, uniform layer of tightly woven steel wires with an inflow area comparable to that of the formation face and uniform pore construction that ensures proper sand control for a given formation sand by matching the opening size to the formation's particle size
- Strength-enhancing BAKERWELD® Inner Jacket–a patented wire-wrap jacket that provides secondary sand control and structural support, and protects the Vector Weave from high differential pressures without compromising flow area

The strength-enhancing BAKERWELD® Inner Jacket is a wire-wrap that provides the EXCLUDER2000™ secondary sand control and structural support, and protects the Vector Weave from high differential pressures without compromising flow area.

First in Technology and Quality Standards

The EXCLUDER2000™ Screen's winning components are easy to see. Equally important are the commitments by Baker Oil Tools to quality and technology. Though often unseen, these elements are nonetheless intrinsic, not only to every EXCLUDER2000 Screen, but also to every aspect of our sand control systems.

The screen design engineering team at Baker Oil Tools' Lafayette, Louisiana screen manufacturing facility not only develops products, but also subjects them to the industry's most stringent visual, analytical, and customer-specific testing procedures. Among these is rigorous testing of EXCLUDER2000 Screens to limits that deform the base pipe. Testing also includes 100% inspection of EXCLUDER filtration membranes for opening size to a tolerance of +/- .0005 in. *(14µm)*.

Inspection of the EXCLUDER2000™ Vector Weave Filtration Membrane reveals discrepancies as small as 14 microns.

Designed to Take the Heat–*and More*

EXCLUDER™ Screens have compiled outstanding performance records in extreme and sometimes record-breaking conditions, such as:

- The world's longest horizontal gravel pack–8,052 ft *(2,454 m)*–for a North Sea operator; increased production with no sand produced
- The world's deepest deepwater horizontal subsea completion from a floating rig–in 13,000 ft *(4,000 m)* of water, in South America
- Numerous high-rate frac-pack completions
- Bottomhole temperatures in excess of 300°F *(149°C)* and pressures in excess of 15,000 psi *(1,034 bars)*
- Lateral sections as long as 13,000 ft *(4,000 m)*

EXCLUDER2000™ Specifications

Material Strength

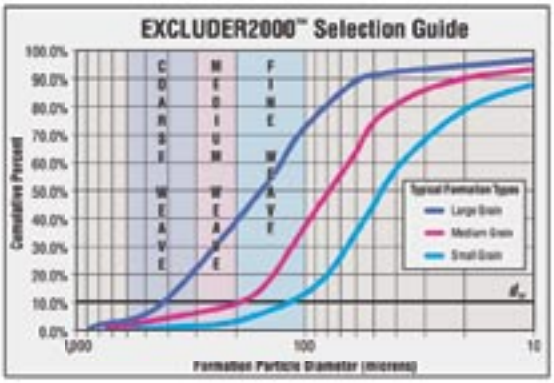
Size (in.)	2-3/8	2-7/8	3-1/2	4	4-1/2	5-1/2	6-5/8	9-5/8
Joint Yield Strength (lb)	58,430	92,774	127,399	139,337	157,530	262,020	325,890	712,600
Yield Torque (ft-lb)	3,000	5,000	6,900	7,500	9,900	10,800	13,800	48,000
Collapse Pressure (psi)	6,000	6,000	6,000	6,000	6,000	6,000	3,480	2,370
Burst Pressure (psi)	4,200	3,600	3,000	2,600	2,300	1,900	1,600	900
Shroud OD (in.)	3.17	3.67	4.30	4.80	5.31	6.32	7.46	10.50
Base Pipe ID (in.)	1.99	2.44	2.99	3.55	4.00	4.89	6.05	8.92

Fine, Medium, and Coarse Micron Options

The EXCLUDER2000™ Screen is available in three micron ratings:

- Fine *(100 to 200 d_{10} micron range)*–uniform pore openings promote high retention efficiency and large inflow areas to control sand without high differential pressures
- Medium *(200 to 300 d_{10} micron range)*–optimized membrane allows flow-back of mud solids while maintaining sand retention
- Coarse *(> 300 d_{10} micron range)*–pore size allows the very fine particles that would ordinarily plug the screen to be produced

**d_{10} equals the dimension of the grain size at the largest 10th percentile (d_{10}>d_{50})*




EXCLUDER2000™

Set a New Standard of Performance in Your Sand Control Operations

Contact your nearest Baker Oil Tools office today to learn how the EXCLUDER2000 can minimize production of formation materials while maximizing hydrocarbon production over the life of your wells.

Where to go for more information on sand control products

Visit us at www.sandcontrol.com
or Email us at sand.control@bakeroiltools.com

Quality Assurance

With the advancement of drilling and completion technology, as well as greater use of horizontal wells in increasingly difficult conditions, Baker Oil Tools has continued developing highly accurate advanced techniques in the area of quality assurance and control. Our manufacturing quality structure conforms with and is certified according to ISO 9001-2000.

Our premium screens are subjected to 100% inspection of the pore throat openings as well as the in-process control activities related to the mechanical integrity of the weave and associated components.

At Baker Oil Tools, we strive to maintain our position as the industry leader of screen technology. In addition to innovative technology developments, we ensure precision and quality in all aspects of our service. From planning through manufacturing and execution of a project, the total quality provided will bring incremental value added to your project.

THE Completion Company™

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