

# Packet Pump

Reliable ESP production in harsh, abrasive well conditions

## Applications

- Unconventional and conventional wells
- Wells with unstable or rapid declining flow rates
- Wells producing with abrasives, solids, or high gas volumes

## Benefits

- Improved reliability and longer run life through better down thrust management and improved tolerance to solids
- Simplified field installation (no shimming) reduces rig time
- Extended operating flow range reduces intervention frequency and cost

## Features

- Packet technology with dynamic thrust management for increased tolerance to solids and down thrust
- Enhanced abrasion-resistant (tungsten carbide) T bearing in packet base absorbs down thrust produced by the stages
- Radial bearings provide superior radial shaft support
- No shimming required
- Ni-Resist pump stages
- Wide operating range
- Handles up to 1 g/l solids content

The Borets Packet Pump incorporates design innovations in the pump stages and construction to deliver longer run life and reliable ESP production when flow rates vary or are unstable.

The packet-style construction employs a dynamic thrust management capability, enabling the pump to withstand harsher operation conditions such as sand production and increased down thrust typically experienced with unconventional well production.

The Packet Pump is constructed such that as mechanical wear progresses, stage impellers will lock together in groups (configurable packets) so as to limit the axial movement of the packet along the shaft. As the packet forms, total axial down thrust is then dynamically managed through a special tungsten carbide (T) bearing at the base of each packet in the diffuser.

The size of each packet is determined or configured by the spacing of the tungsten carbide bearing. The small spacing between these combined radial/thrust bearings also delivers enhanced radial stability when pumping fluid with high solids content.

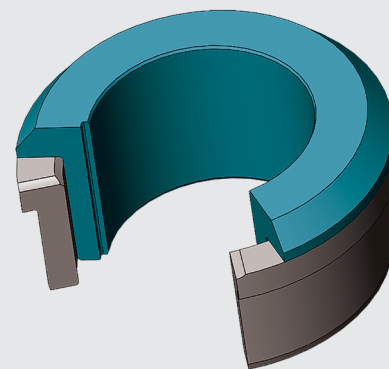
Packet assembly has advantages similar to that of a compression pump assembly but avoids one main drawback. Packet pumps require no special shimming during installation, which significantly reduces the installation time and the risk of installation errors.



The technologically enhanced pump design better accommodates varying production rates and handles solids more efficiently.

The enhanced tungsten carbide bearings installed at the base of each packet provide superior axial support and enable reliable production from deeper wells by limiting thrust load transferred to a motor seal protector.

Available in 400 and 538 series sizes, the Packet Pump must be positioned above an intake / gas separator / gas handler.



*Tungsten carbide T-bearing*

## Packet Pump Specifications (60 Hz)

Pump model		Recommended operating range		Best efficiency	Head per stage *		Shaft diameter	
		bpd	m <sup>3</sup> /day		ft	m	in.	mm
400 series	400-1050	309 – 1,697	49 – 270	65	30.83	9.40	0.669	17
	400-1750	514 – 2,469	82 – 393	71	24.59	7.50	0.787	20
	400-3000	1,029 – 3,882	164 – 617	69	32.43	9.88	0.866	22
	400-3700	1,543 – 5,143	245 – 818	70	33.04	10.07	0.866	22
	400-5800	1,543 – 7,714	245 – 1,227	70	26.11	7.96	0.984	25
538 series	538-1000	350 – 1,359	56 – 216	54	53.34	16.26	0.787	20
	538-1500	350 – 2,400	56 – 382	60	64.36	19.62	0.866	22
	538-1900	755 – 2,300	120 – 366	64	51.12	15.58	0.866	22
	538-2600M	777 – 3,806	124 – 605	69	53.80	16.40	0.866	22
	538-3600	1,552 – 4,731	247 – 752	70	52.80	16.09	0.866	22
	538-5000	1,552 – 6,531	247 – 1,038	70	55.13	16.80	0.984	25
	538-7000	2,018 – 10,286	321 – 1,635	72	48.02	14.64	0.984	25
	538-8000	3,086 – 11,314	491 – 1,799	78	54.06	16.48	0.866	22
	538-9000	3,105 – 11,314	494 – 1,799	72	40.20	12.25	0.984	25
	538-12500	8,229 – 16,457	1,380 – 2,617	73	38.43	11.71	1.181 splines 1.102	30 splines 28.00
538-18000	13,371 – 20,314	2,126 – 3,230	63	38.54	11.75	1.181 splines 1.102	30 splines 28.00	

\* Using permanent magnet motor