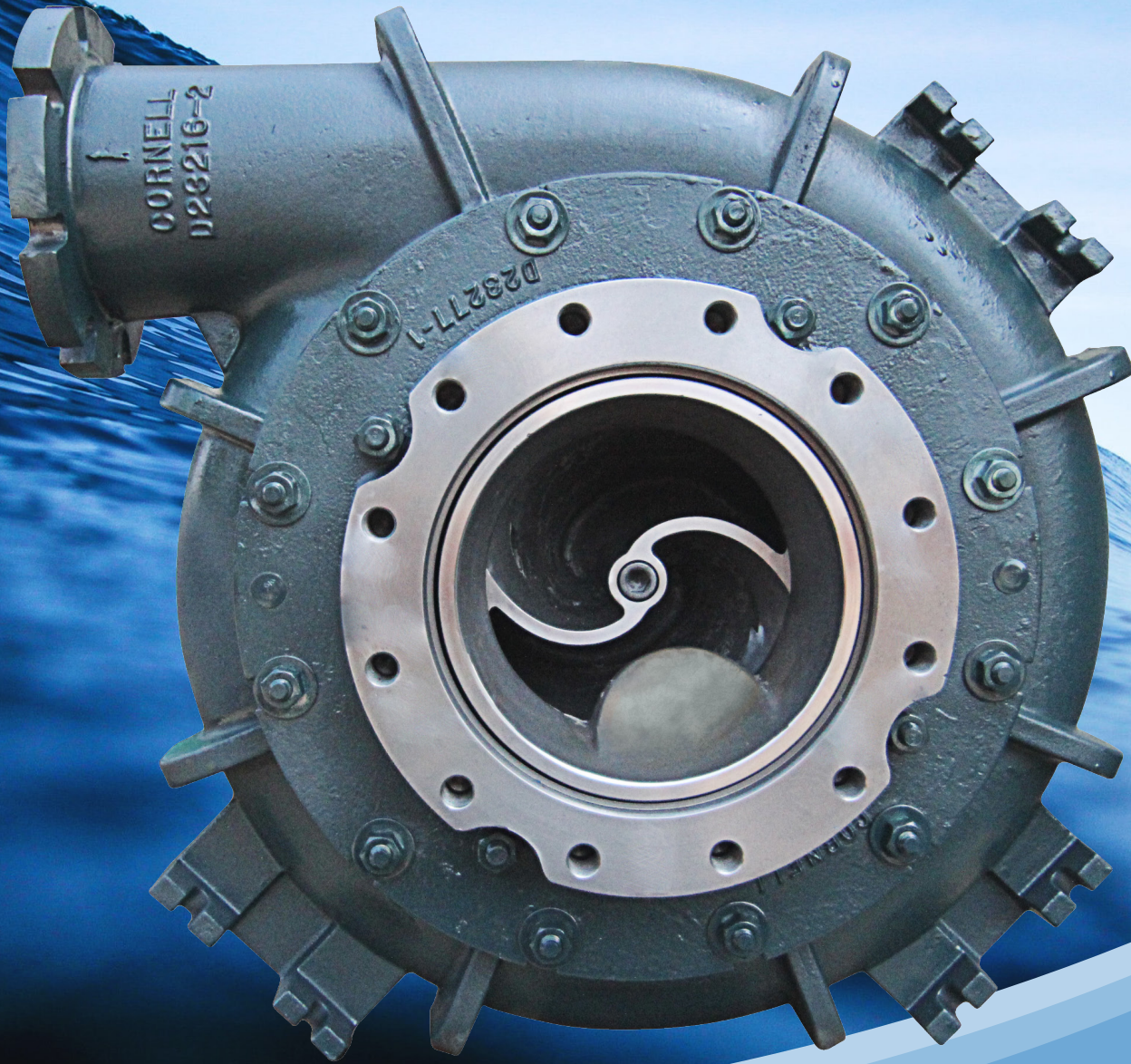


CORNELL PUMP COMPANY

CUTTER PUMPS

PERFORMANCE CURVES FOR WASTE WARRIOR PUMPS



CORNELL PUMP COMPANY



WASTEWATER RAGGING AND FOULING

More than six billion flushable toilet wipes, plus over one billion floor and counter cleaning wipes, mingle with countless paper towels, baby wipes, feminine hygiene products, grease, and other coagulants in sewers worldwide EVERY YEAR!

A problem that didn't exist a decade ago has 'wiped out' many water utilities' maintenance and repair budgets. Instead of building infrastructure, wastewater engineers have been cleaning out pump stations up to three times a day, auguring out force mains, and picking away at so-called 'fatbergs' the size of buses just to keep systems running.

It's a problem—a big problem, and one that must be addressed to keep sanitation functioning around the world.

WHAT SETS CORNELL PUMPS APART

Since 1946, Cornell Pump has been a trusted manufacturer of durable and high-efficiency pumps for industrial and municipal markets, delivering unparalleled value to our customers. Our clear liquid, solids handling, and grit/slurry pumps are engineered to meet the demanding requirements of industrial and municipal applications, providing unparalleled reliability and interchangeability. With a broad range of pump models and configurations, we can easily integrate our pumps into your existing systems. Moreover, we offer custom system design to meet your specific needs. Our team of technical and engineering experts is among the best in the industry and can provide innovative pump solutions of the highest quality.

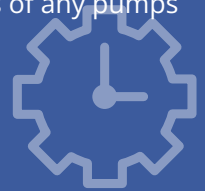
PUMPS DESIGNED FOR SPECIFIC JOBS

Our team of expert engineers design pumps to meet the varying demands of industry applications, such as solids handling, slurry, and head requirements.



OUTSTANDING EFFICIENCIES

We put our experience and knowledge to work to produce tested designs with some of the highest efficiencies of any pumps on the market.



A WIDE VARIETY OF SIZES AND CONFIGURATIONS

Models range in size from 1" to 24" and a range of configuration options are available for each model – including frame and engine mount options and Cornell features like Run-Dry™ and Redi-Prime®.



ROBUST CONSTRUCTION

Cornell pumps are built using superior materials selected for their suitability to each pump's intended application. Heavier casting walls, thicker shafts, and fully-machined impellers are part of what make Cornell pumps more rugged and durable than other pumps.

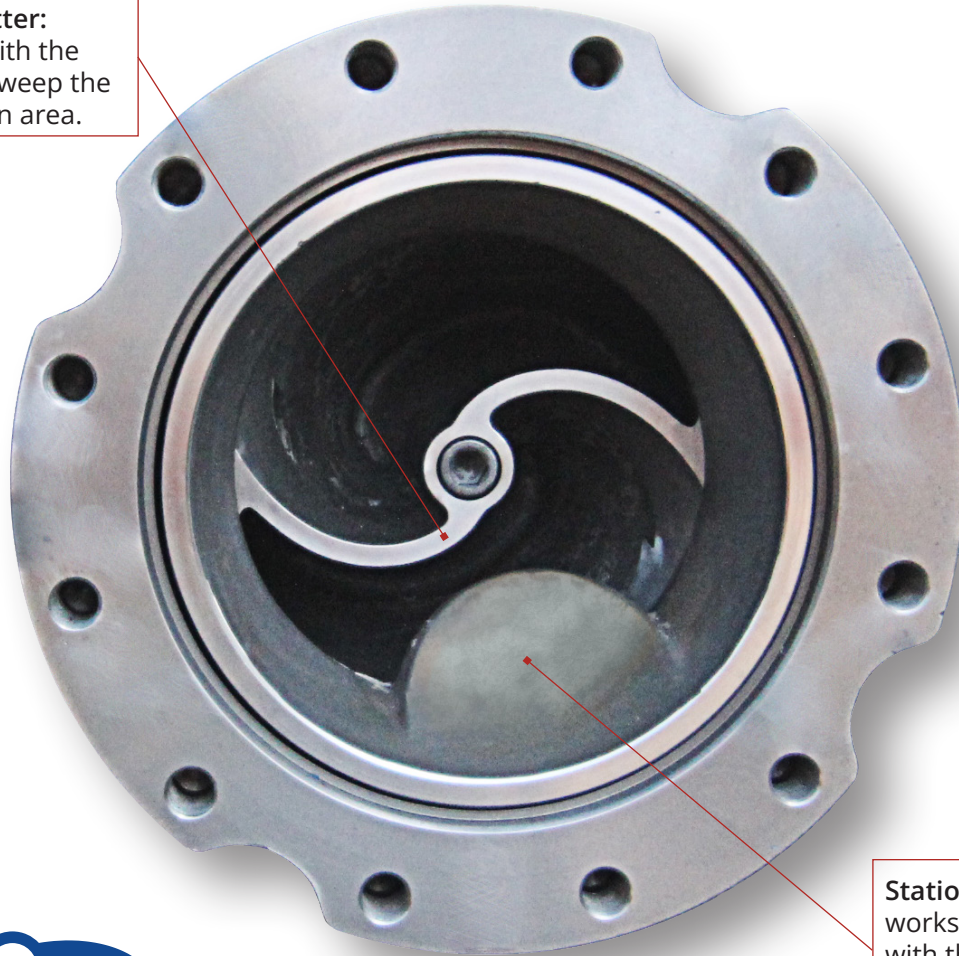


WATCH A VIDEO

Use your smart phones QR reader to see a short video about the auger cutter solution for the SW Washington water district, or visit our website at <http://www.cornellpump.com/support/success-stories/>

WASTE WARRIOR PUMPS

Rotating Cutter:
Integrated with the
impeller to sweep the
entire suction area.



Stationary Cutter:
works in conjunction
with the rotating
blades to increase
cutting efficiency.



WASTE WARRIOR INNOVATIVE DESIGN

The Waste Warrior pump's aggressive cutting action is due to the scythe-like cutting edges that sweep the entire area where the suction pipe meets the volute.

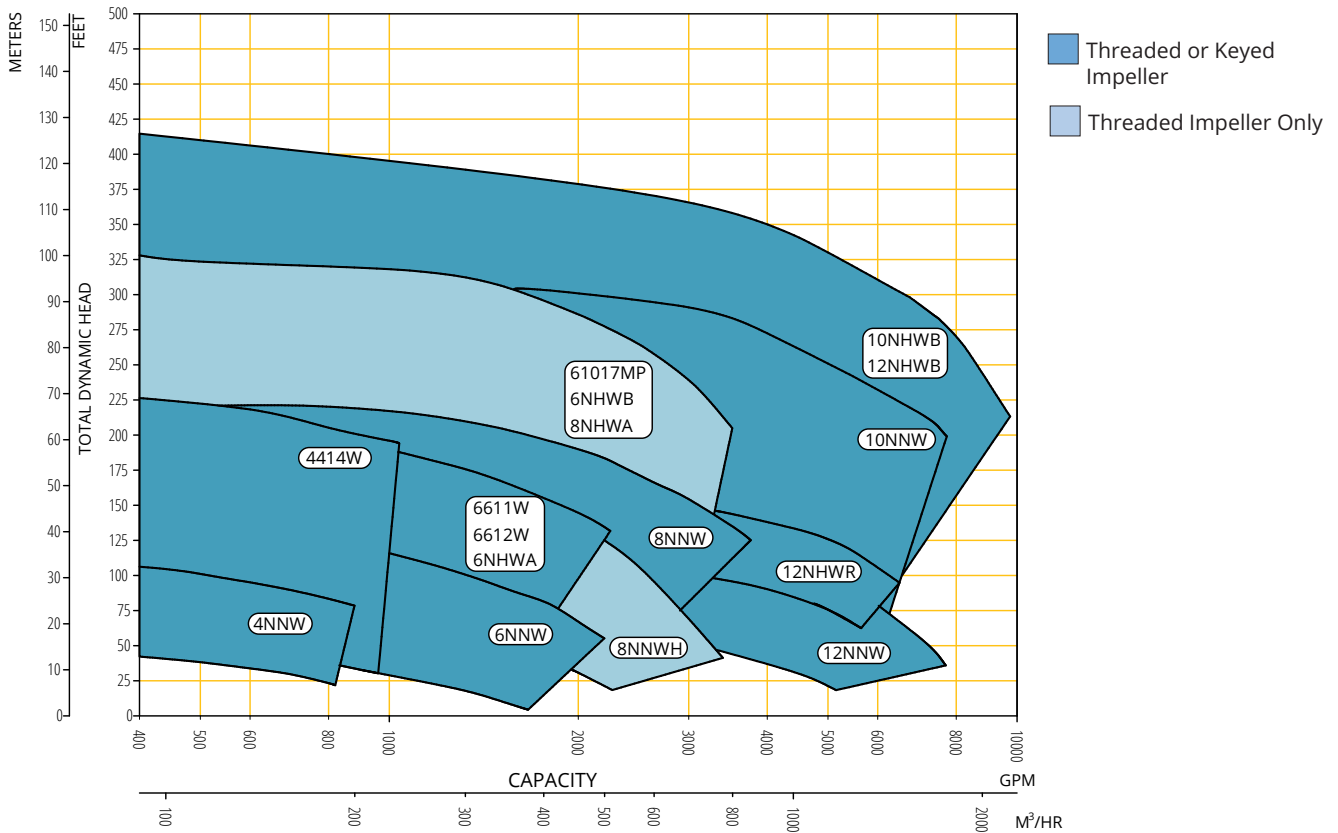
- Handles most aggressive and troublesome clogs and ragging.
- Limited energy consumption (around 8%) over non-cutter models.
- Cutter made of hardened material.
- Does not change external pump dimensions
- Retrofittable into pumps with blade cutters and pumps without cutters installed.*

**Some models retrofittable; contact Cornell for determination.*

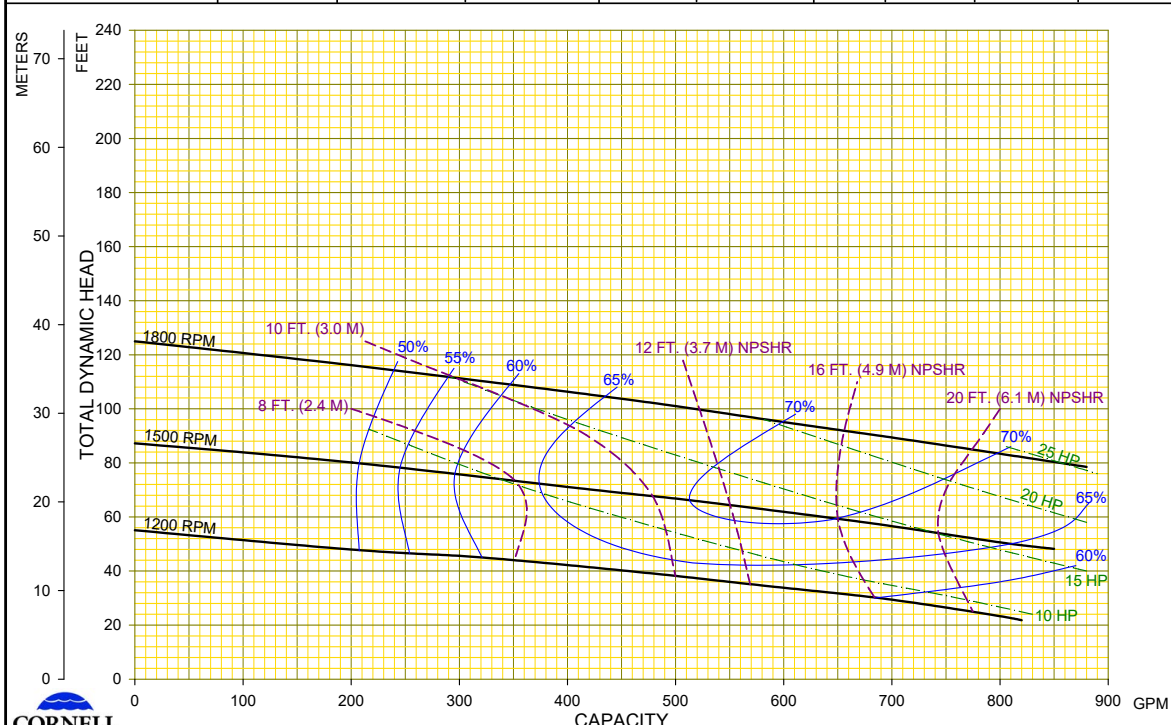
PUMPAGE REQUIREMENTS FOR OPTIMAL PERFORMANCE

- Pump operating speed is important to cutting ability. Speeds of at least 1200 RPM required for operation; 1800 RPM preferred.
- Recommended fluid velocity is 5 to 7 feet per second. Fluid velocity on the inlet piping system needs to be high enough to carry solids into the suction end; pump size and operating speed are critical to proper velocity.
- Solid to liquid ratio can affect fluid velocity and operation of pump. When selecting a pump model, it is important to take into account the volume of solids in the pumpage.

WASTE WARRIOR CURVES



Speed	Impeller Dia.	Style	Volute	Solids Dia.	N _s	Suction	Discharge	No. Vanes
VARIOUS	10.09"	ENCLOSED	SINGLE	3"	1630	4"	4"	2

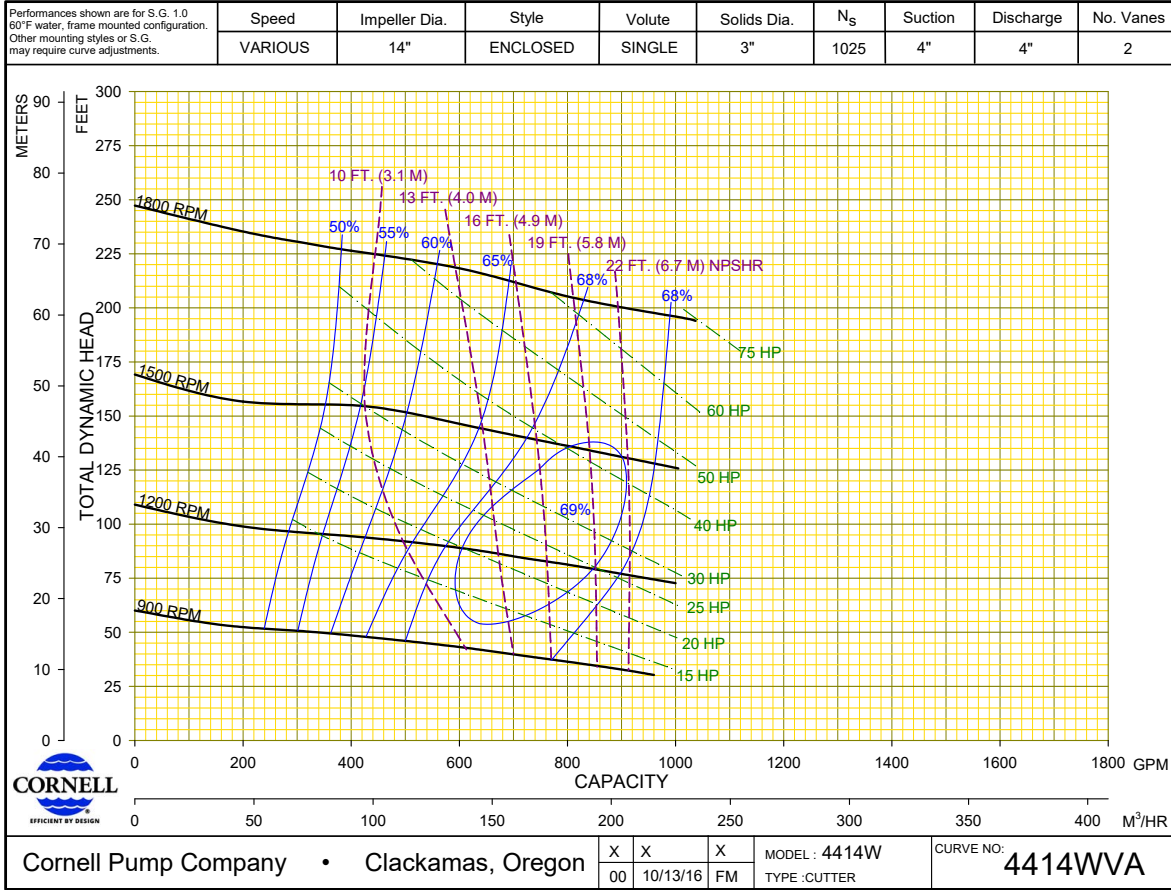


Cornell Pump Company • Clackamas, Oregon

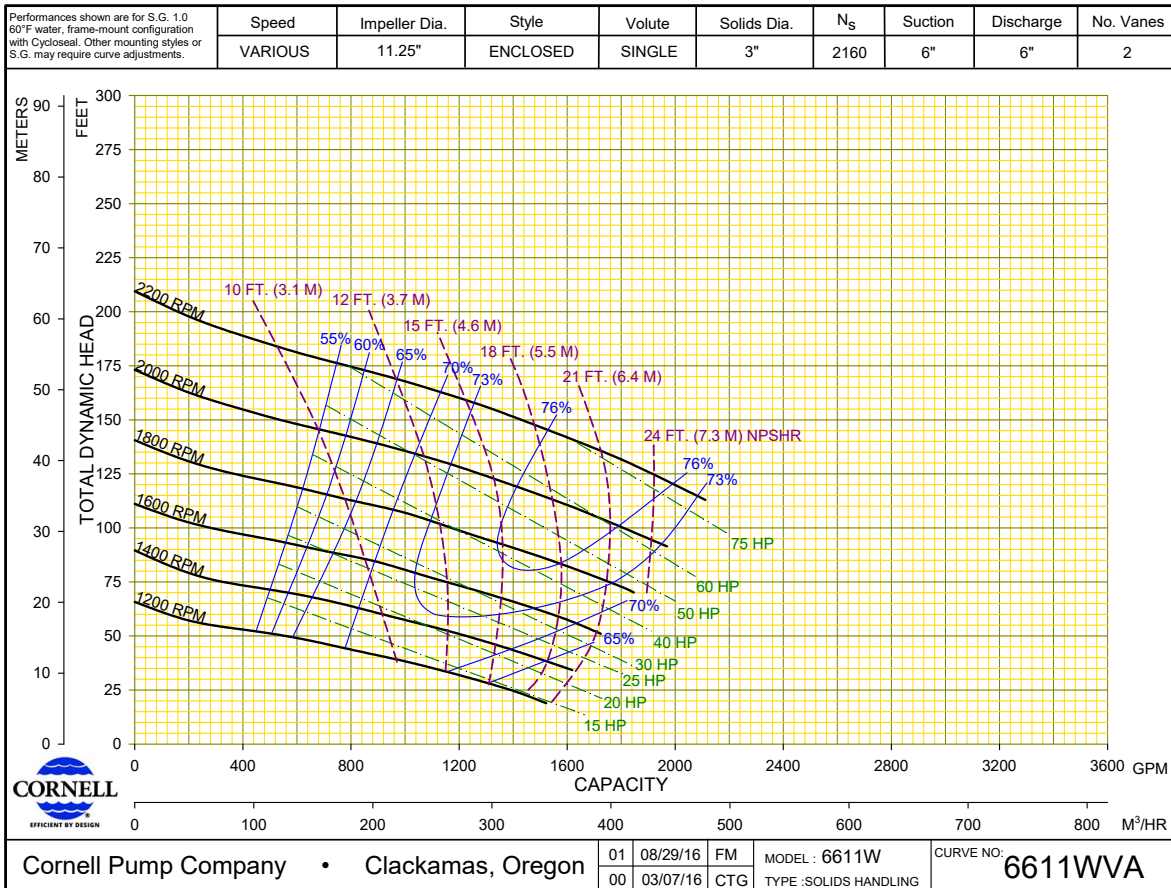
-	-	-	MODEL: 4NNW	CURVE NO:
00	08/09/16	AE	TYPE: CUTTER	4NNWVA

CONSULT ENGINEERING PRIOR TO MAKING PERFORMANCE SELECTIONS / *CAN BE FITTED WITH WASTE WARRIOR OR BLADE CUTTERS

WASTE WARRIOR CURVES



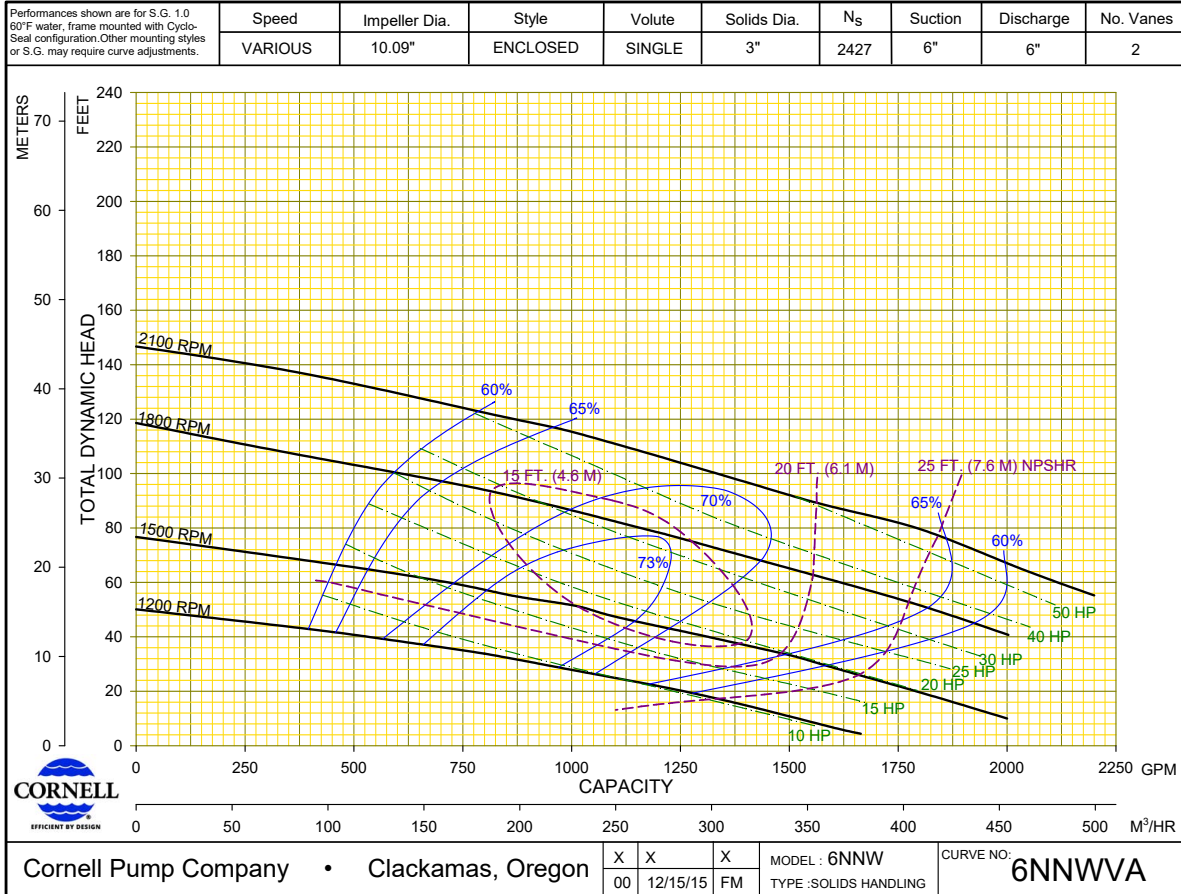
4414W*



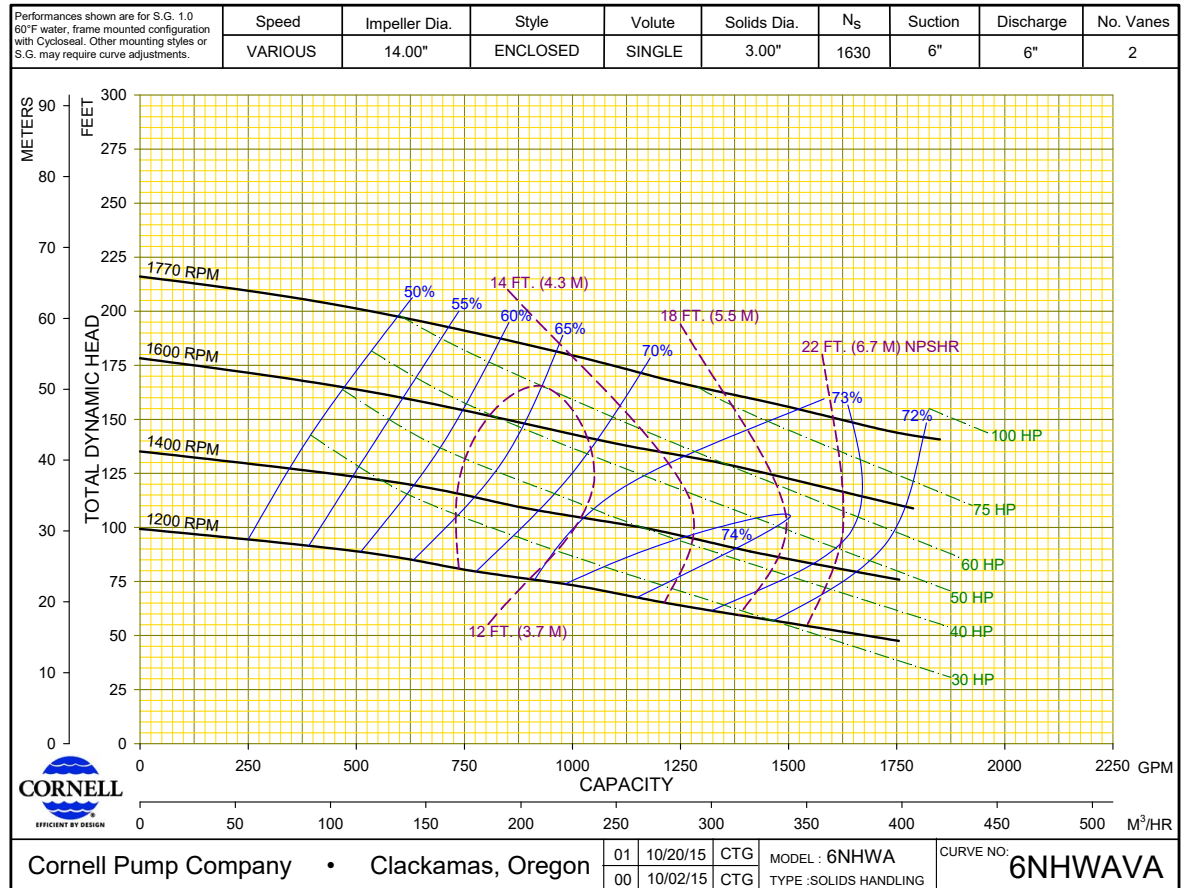
6611W

WASTE WARRIOR CURVES

6NNW*

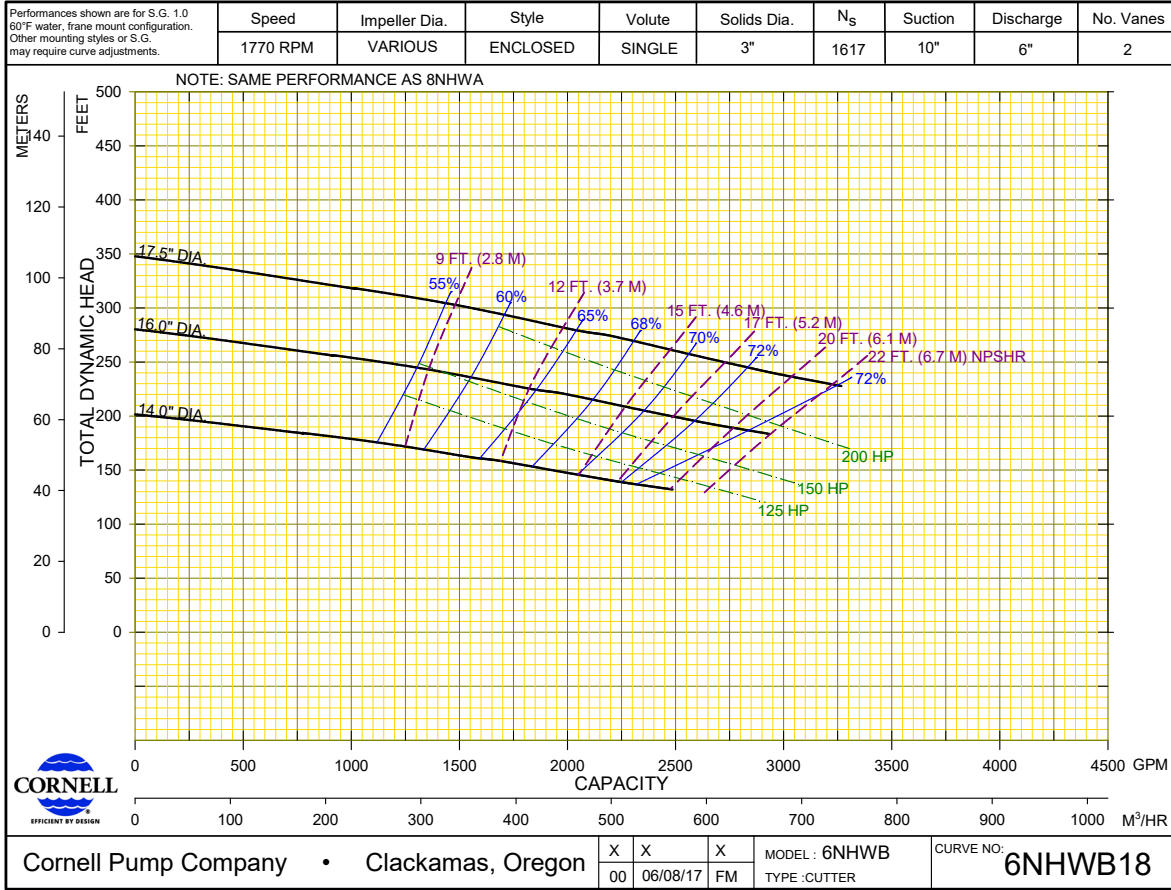


6NHWA*

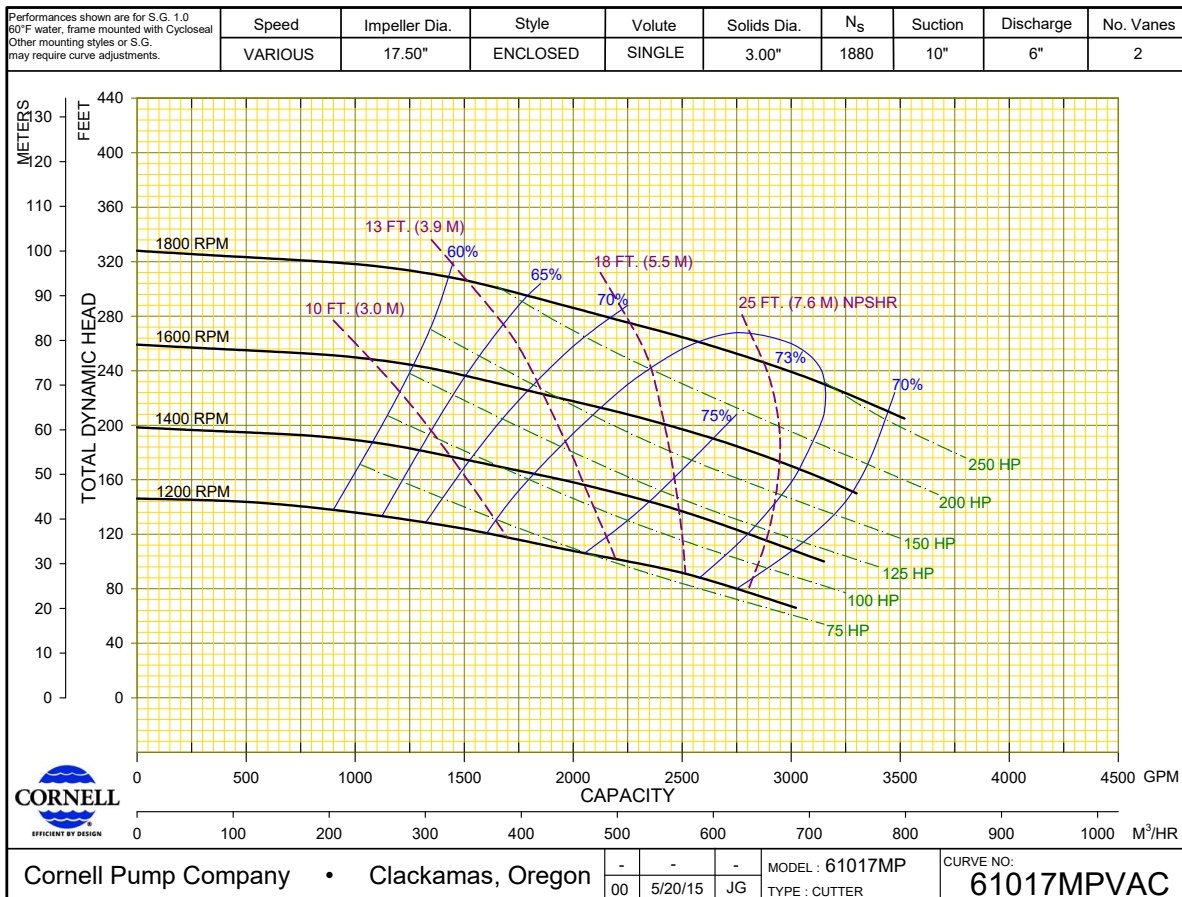


CONSULT ENGINEERING PRIOR TO MAKING PERFORMANCE SELECTIONS / *CAN BE FITTED WITH WASTE WARRIOR OR BLADE CUTTERS

WASTE WARRIOR CURVES



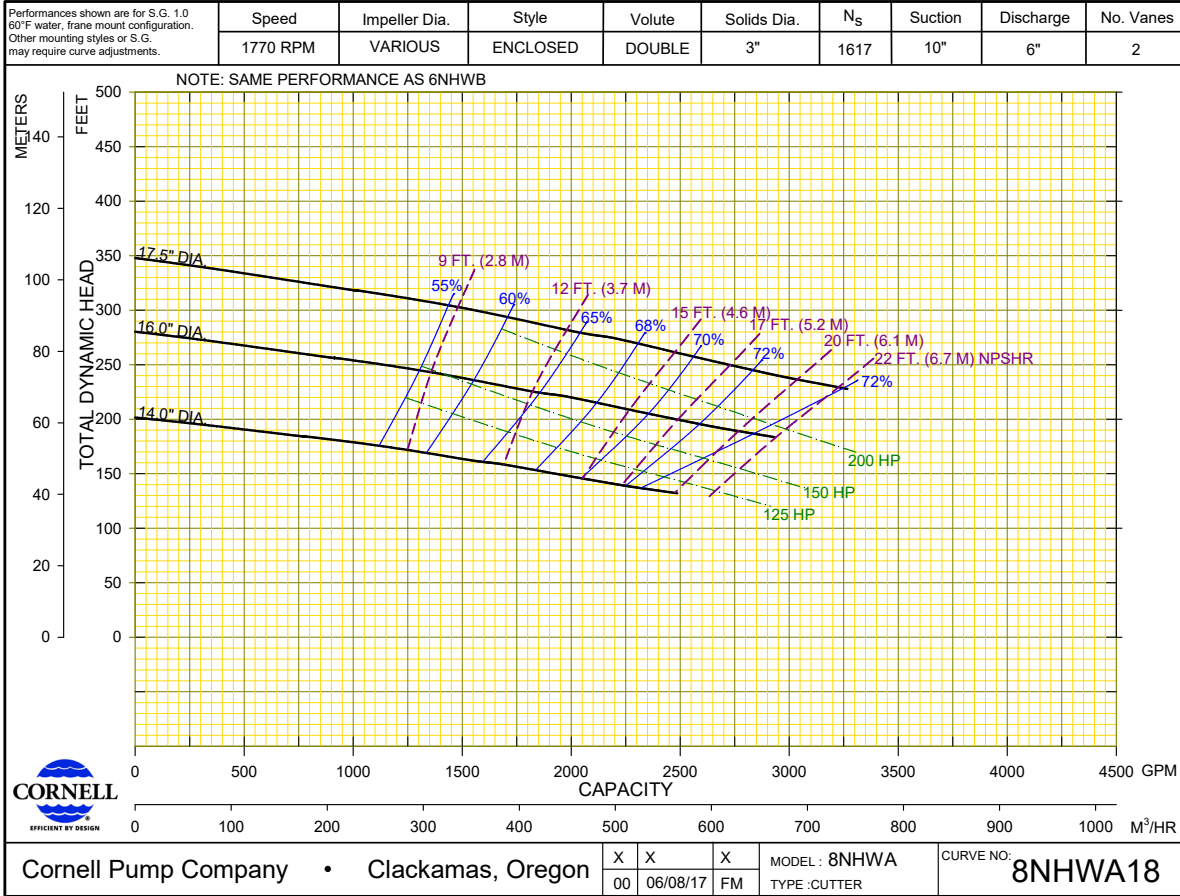
6NHWB*



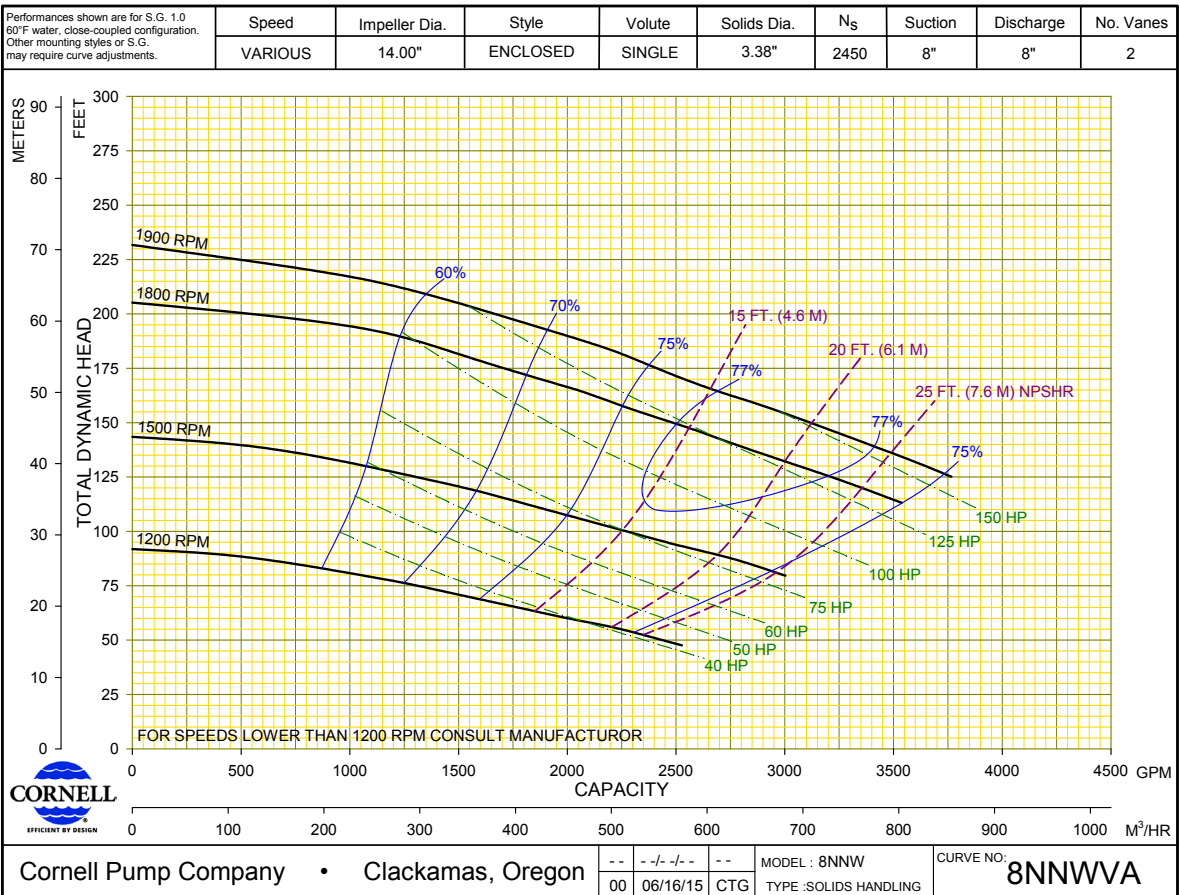
61017MPW

WASTE WARRIOR CURVES

8NHWA*

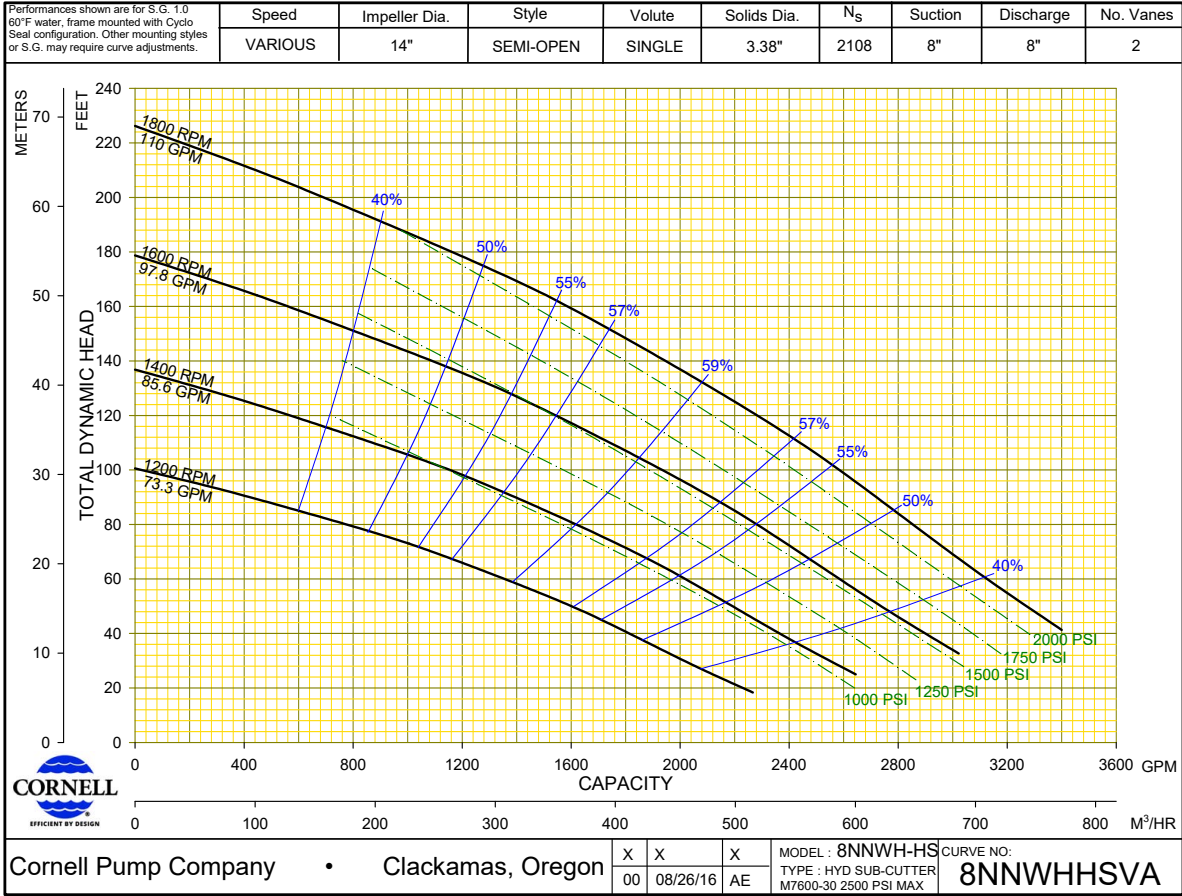


8NNW*

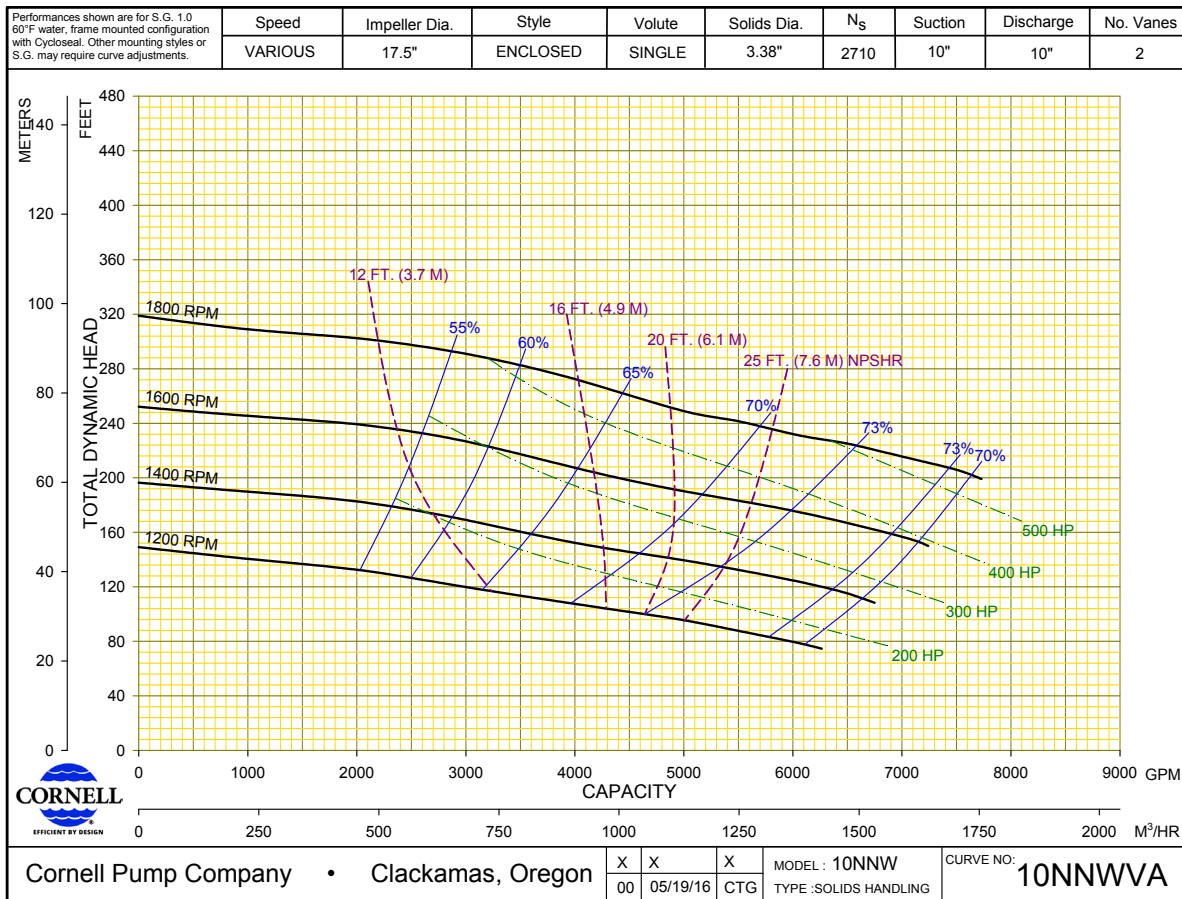


CONSULT ENGINEERING PRIOR TO MAKING PERFORMANCE SELECTIONS / *CAN BE FITTED WITH WASTE WARRIOR OR BLADE CUTTERS

WASTE WARRIOR CURVES



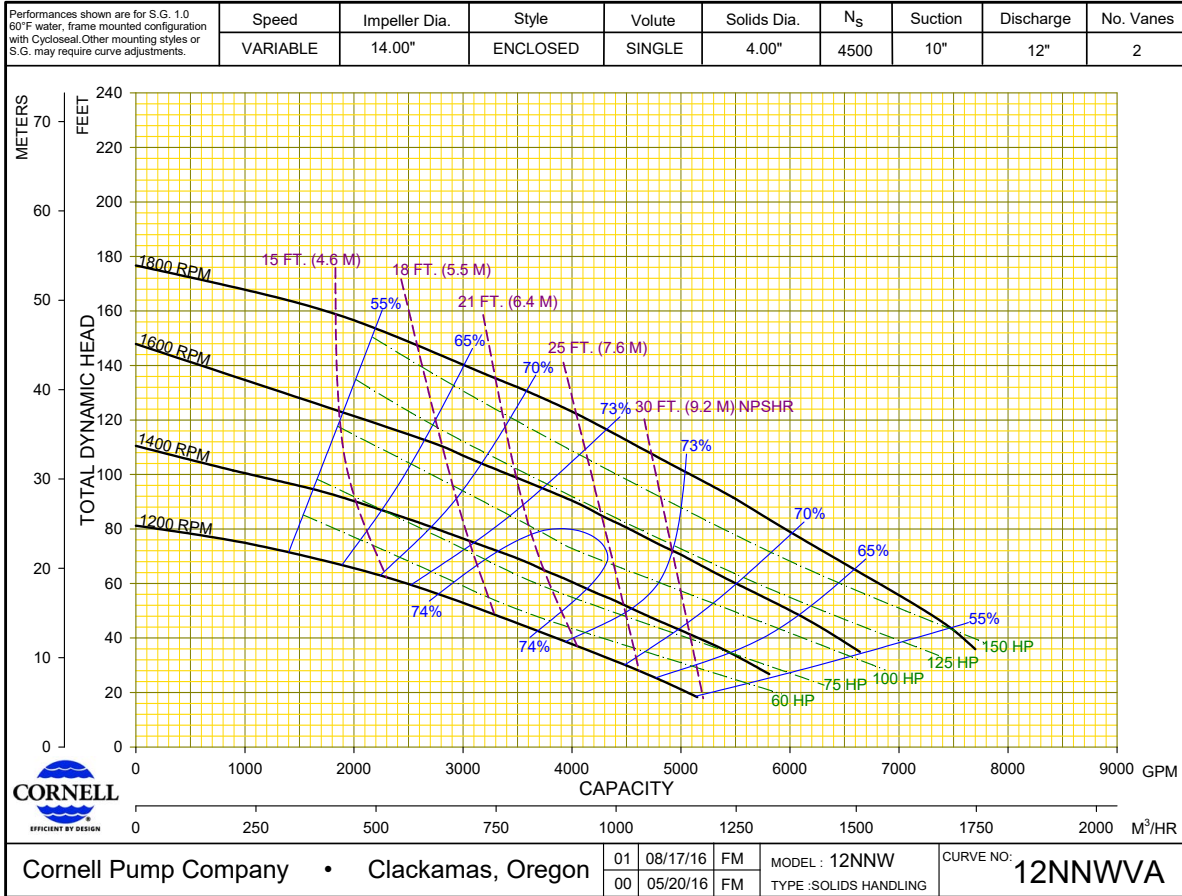
8NNWHHS



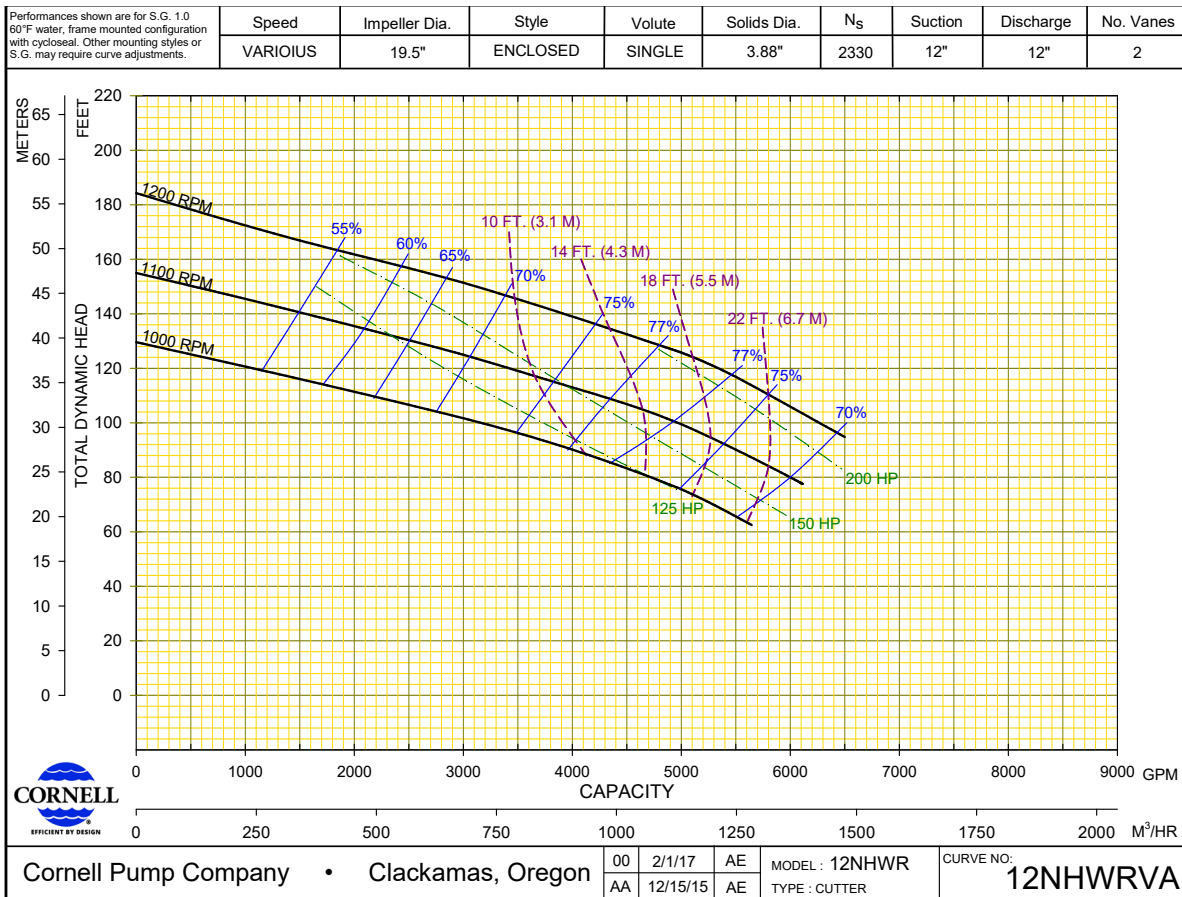
10NNW*

WASTE WARRIOR CURVES

12NNW*



12NHWR*



WASTE WARRIOR PUMPS

INTERCHANGEABLE MODELS

Many cutter pump models are configured with either the blade cutters or the newer Waste Warrior cutters. Waste Warrior models are designated with a "W" in the model name. In contrast, the same pump fitted with blade cutters has a "T." If the concentration of ragging solids changes, different cutters can be fit without replacing the entire pump.

COMPARISON OF INTERCHANGEABLE MODELS							
	MODELS	SPEED	MAX HEAD	MAX FLOW	BEP	BEP HEAD	BEP FLOW
4"	4NNT	1800 RPM	117'	1150 GPM	73%	85'	620 GPM
	4NNW		125'	875 GPM	70%	89'	700 GPM
4"	4414T	1800 RPM	250'	1140 GPM	72%	194'	1100 GPM
	4414W		247'	1040 GPM	68%	200'	900 GPM
6"	6NHTA	1770 RPM	230'	2100 GPM	79%	125'	2100 GPM
	6NHWA		215'	1850 GPM	73%	152'	1587 GPM
6"	6NHTB	1800 RPM	350'	4400 GPM	75%	222'	3350 GPM
	6NHWB		350'	3250 GPM	72%	237'	3050 GPM
6"	6NNT	1800 RPM	110'	2100 GPM	76%	63'	1520 GPM
	6NNW		147'	2125 GPM	72%	77'	1225 GPM
8"	8NHTA	1770 RPM	350'	4200 GPM	78%	210'	3550 GPM
	8NHWA		350'	3250 GPM	72%	237'	3050 GPM
8"	8NNT	1800 RPM	235'	3750 GPM	77%	132'	2950 GPM
	8NNW		205'	3550 GPM	77%	132'	2850 GPM
10"	10NNT	1800 RPM	352'	7900 GPM	77%	212'	6100 GPM
	10NNW		320'	7700 GPM	73%	216'	7000 GPM
12"	12NHTR	1200 RPM	184'	8000 GPM	77%	125'	5150 GPM
	12NHWR		184'	6500 GPM	77%	124'	5150 GPM
12"	12NNT	1800 RPM	203'	5100 GPM	74%	109'	4500 GPM
	12NNW		176'	7700 GPM	73%	109'	4650 GPM

WHAT COULD YOU SAVE WITH CUTTERS?

A Southern California district estimated they saved about \$31,000 per year with the cutters, while a Southern Washington district figured they were saving more than \$41,000 per year between personnel and electricity costs. Most installations save thousands of dollars a year in staff time.

Cost Savings Example:

AVERAGE TIME PER EVENT (two workers for three hours)	6 hours
COST PER MAN HOUR	\$50
TOTAL DIRECT COST PER EVENT	\$300
EVENTS PER WEEK:	2
TOTAL ANNUAL DIRECT EXPENSE	\$31,200
TOTAL MAN HOURS SAVED THAT CAN BE USED MAINTAINING OTHER ITEMS	624 hours annually

CONSULT ENGINEERING PRIOR TO MAKING PERFORMANCE SELECTIONS / *CAN BE FITTED WITH WASTE WARRIOR OR BLADE CUTTERS

CORNELL PUMP COMPANY MARKET & PRODUCT LINE



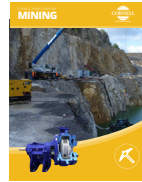
AGRICULTURE



FOOD PROCESS



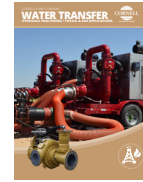
INDUSTRIAL



MINING



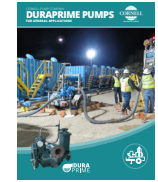
MUNICIPAL



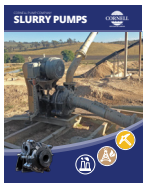
WATER TRANSFER



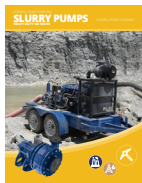
REFRIGERATION



CONSTRUCTION



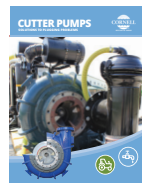
SLURRY



SLURRY SM



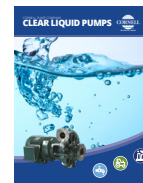
MANURE



CUTTERS



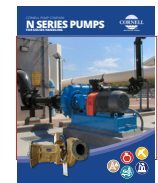
SELF PRIMING



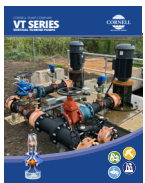
CLEAR LIQUIDS



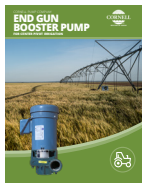
MX SERIES



N SERIES



CYCLONE™



EDGE™



HYDRAULIC SUBS



IMMERSIBLE



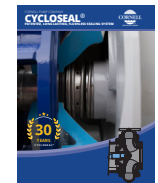
CD4MCU



RUN-DRY™



PRIMING SYSTEMS



CYCLOSEAL®

Cycloseal® and Redi-Prime® are Registered Trademarks of Cornell Pump Company.

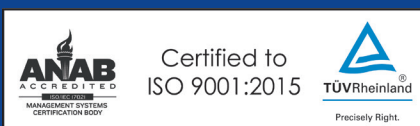
Cornell pumps and products are the subject of one or more of the following U.S. and foreign patents:

6,074,554; 6,036,434; 6,079,958; 6,309,169; 6,104,949.

24 - CT - BR - 201

CORNELLPUMP.COM
©2024 CORNELL PUMP COMPANY

AUTHORIZED CORNELL PUMP DISTRIBUTOR



Cornell Pump Company
Clackamas, Oregon, USA
P: +1 (503) 653-0330
F: +1 (503) 653-0338