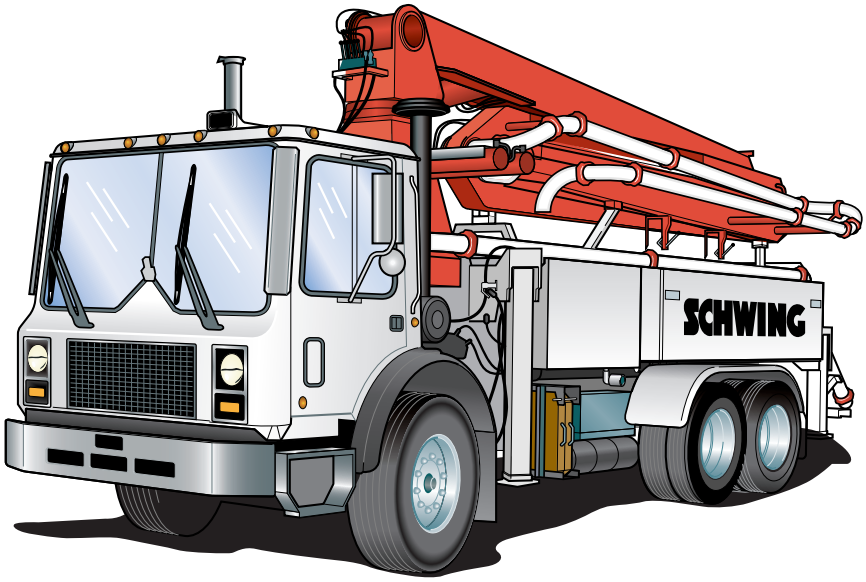
SCHWING AMERICA INC.

NOMOGRAPHS BOOK



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Using a Nomograph

General information

If you have read the original Schwing America publication, *Nomographs—A Guide to Usage*, you will notice several changes in this document. Because all of the power from the truck engine cannot be used for the concrete pump, the TK number of the engine has no meaning. Therefore, this section about using nomographs has been adapted especially for boom pumps. You can still figure out the TK of the job to do, but the suitability of the pump has to be determined in a different manner. To make the pump numbers and job numbers match, we will use a "Power Factor number," which takes into account the power of the hydraulic pumps instead of the engine and is easy to use with cubic yards per hour and PSI instead of cubic meters per hour and bar.

Concrete pumps are limited in what jobs they can do by three factors:

- The amount of power available.
- The maximum concrete output available.
- The maximum concrete pressure available.

To estimate the power a pump requires to complete a particular job and to determine which pump is appropriate, a **nomograph** is used.

With a concrete pump that is driven by its own prime mover, such as a trailer-mounted concrete pump or a truck-mounted pump with a separate drive engine, the power rating (in Kw) is shown for the engine or electric motor. With a truck-mounted pump that uses a PTO from the truck engine, the power rating reflects the power output of the hydraulic pumps only. (All the power from the truck engine is normally not available to the concrete pump and should not be used for power calculations.) If you know the required output for the job, the nomograph will help you calculate the required pressure. If you know the output and pressure, you can calculate the power requirement.

The nomograph was developed by extensive trial-and-error testing and has proven to be accurate to ±10% in nearly all pumping applications. The original nomographs used "spread measure" of fresh concrete instead of slump, and the two are not directly interchangeable. Some approximations are used in translating the charts from spread measure to slump, but the ±10% accuracy still applies. In all cases, it is assumed that you will receive fresh, high-quality concrete on your job and that the concrete will be plastic enough to flow into the material cylinders. If you know that the concrete will be hard to feed into the cylinders, you should adjust the output requirement to compensate for incomplete filling. For example, if you will need 50 cubic yards per hour into the form but the concrete is so stiff that it will fill the cylinders only 80%, you should multiply the required output by 1.25 (1÷80%).

The nomograph is divided into four quadrants (Figure 1).

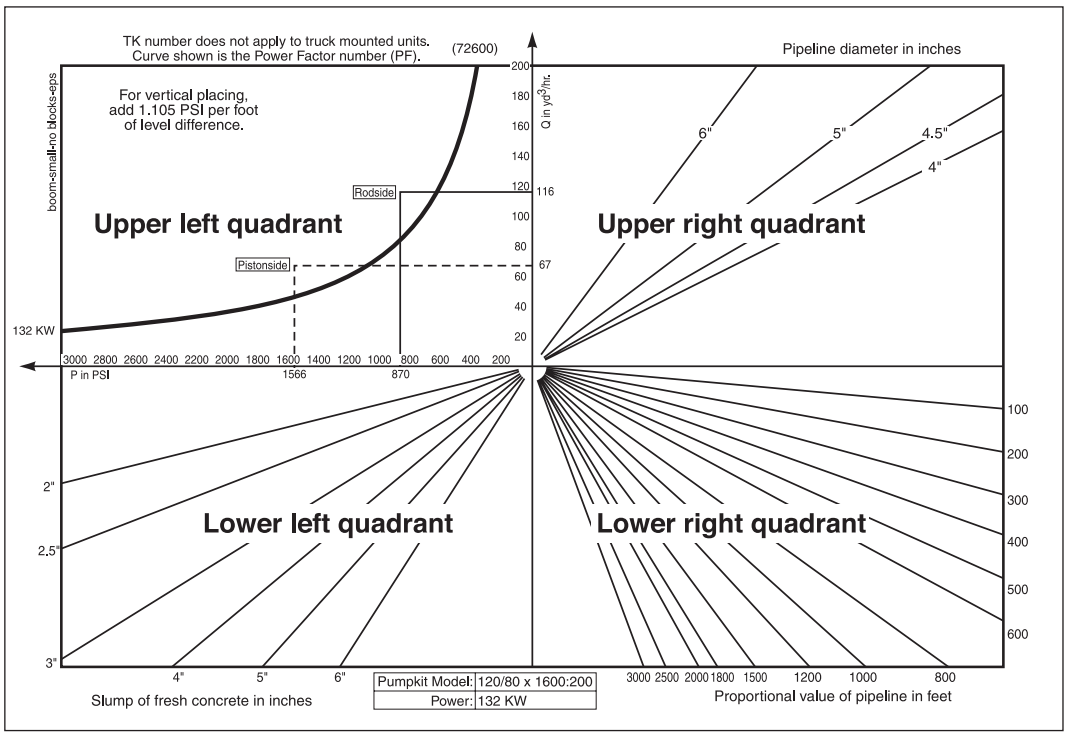


Figure 1
Quadrants

The upper left quadrant is the beginning and end point of the graph and shows maximum output, pressure, and power for a specific machine. The upper right quadrant accounts for the relationship between concrete output and pipeline diameters. The lower right quadrant accounts for the resistance to flow of the entire pipeline system. The lower left quadrant accounts for the pumpability of the concrete.

To use the nomograph, you begin at output required and move clockwise until you encounter the lines that represent your job situation. Each time you meet the line that applies, you make a 90° turn until you come to a point on the bottom of the upper left quadrant that shows pressure required (Figure 2).

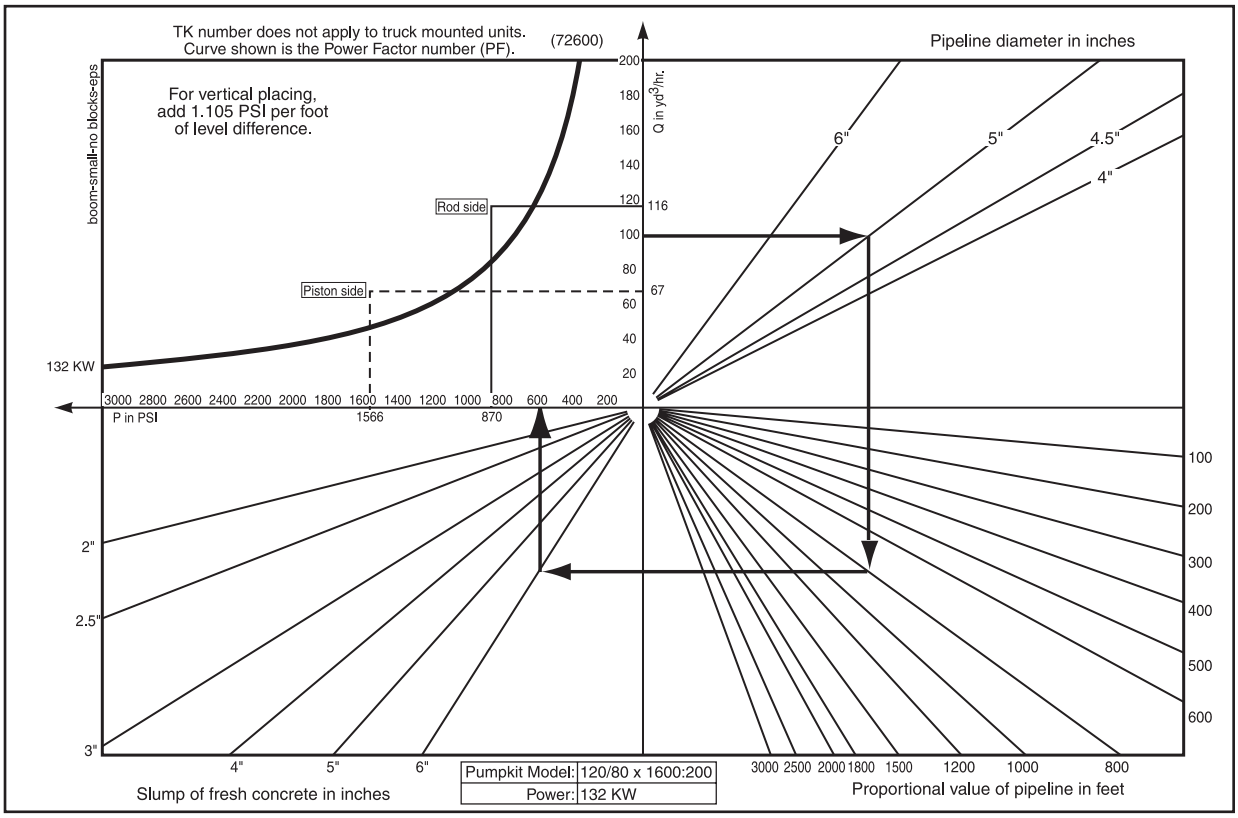


Figure 2
Moving around a nomograph

To illustrate the use of a nomograph, we will use a hypothetical job situation with the following specifications.

1. We will need an average output of 75 cubic yards per hour, but we will be pumping only 75% of the time. The rest of the time will be spent moving hose, removing pipe lengths, waiting for concrete trucks, and taking care of miscellaneous jobs. This means that when we are actually pumping, we will need an output rate of 75 ÷.75 = 100 yd^3/hr.
1. We will use 5-in.-diameter pipeline.
2. We will need the following pipeline lengths:

Separately laid pipeline.

- 40 ft of 5-in. rubber hose
- 150 ft of 5-in. horizontal steel pipe

Boom pipe, elbows, and deck system.

- 13 ft of 5-in. rubber hose
- 144 ft of 5-in. steel pipe (on the boom and pump deck)
- 5.25 ft of 6–to–5-in. reducer (on the pump)
- 4 5-in. 45° elbows, radius 250 mm
- 11 5-in. 90° elbows, radius 250 mm
- 2 6-in. 90° elbows, radius 250 mm

3. We will specify a slump of 5-6 in. and use the 5-in. line on the chart.
4. In addition, when we add the pressure for the vertical run, we will have to add 1.1 times 70 ft = 77 PSI.

All of these criteria will be explained in detail as we go through the individual quadrants.

The quadrants

1. The **upper left quadrant** describes the power curve of a given hydraulic pump Kw rating and the maximum output and maximum pressure of a particular model of concrete pump (Figure 3).

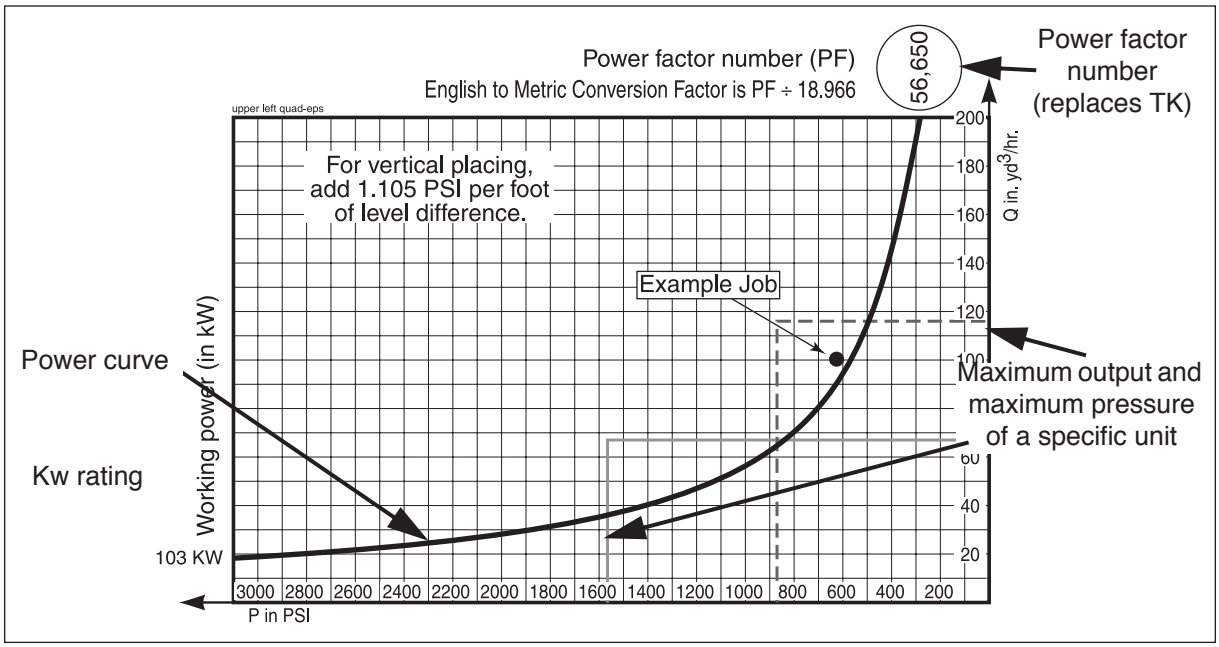


Figure 3
Upper left quadrant

Any concrete pump selected for a job must meet three technical parameters:

- The power factor number of the pump must be equal to or greater than the power factor number of the job.
- The maximum output required by the job must be available from the pump.
- The maximum pressure required by the job must be available from the pump.

It is important to notice the pump maximum pressure and maximum output, even if the power factor number of the pump is larger than the job requires. These parameters are decided during the design stage of the unit and cannot be adjusted on the job. If the unit is able to go from rod side to piston side, maximum pressure and output can be exchanged—that is, you can decrease one while increasing the other the same amount.

The **power factor number** (PF) replaces the TK number on a truck-mounted unit. It is the Kw multiplied by a constant (550) that has several efficiency factors figured in. When using an Americanized nomograph (pressure in PSI and flow in cubic yards per hour), the pressure multiplied by the output must always be less than or equal to the PF of the pump. For example, if you needed 50 cubic yards per hour and determined that this will require 750 PSI, you can multiply 50 by 750, which equals 37,500. Any pump you select must have a PF of 37,500 or greater. If you are using a nomograph that has been converted to metric units of measure (pressure in bar and output in cubic meters per hour), you can still multiply the pressure by the output, but you must multiply the answer by the conversion factor between metric and English units of measure to get the PF. The conversion factor for cubic yards to cubic meters and bar to PSI is 18.966. For all practical purposes, you can use 19. For example, if you need 50 cubic meters per hour and determine that your job setup will require 65 bar, you can multiply 50 by 65, which equals 3250. Multiply this by 19, and you find that your PF requirement is 61,750. Again, any pump you select for the job in this example should have a PF of 61,750 or greater.

The **maximum output** (abbreviated as max Q) is determined by the size of the hydraulic pumps, the number of strokes per minute, and the size of the differential and material cylinders. The unit is usually designed so maximum output can be achieved only at less than maximum pressure.

Maximum pressure (abbreviated as max P) is determined by the size of the differential and material cylinders and the setting of the main relief valve. To be sure that the unit will handle the job, be careful to notice max P and max Q. Here is an example of why that is important: You contract to pump a job that requires only 20 yards per hour, but you calculate that you will need 2100 PSI pressure. The PF of this job is 42,000 (20 x 2100). The pump shown in Figure 3 has a TK of 72,600, so there is enough power available. However, the maximum pressure available from the pump is only 1570 PSI. This pump would not do the job.

5. Follow the chart in a straight line from required output into the **upper right quadrant** until you come to the size of the pipeline that you will use. A good rule of thumb for sizing pipeline is to use the largest-diameter pipeline that you can. It takes less force to move concrete through a 6-inch pipeline than, for example, a 4-inch pipeline. When pressure is exerted on concrete in a pipeline, a paste of water and cement fines coats the inside of the pipeline and forms a slippery layer on which the bulk of the concrete slides. While it is true that a 6-inch pipeline has 49 percent more surface area to coat than a 4-inch pipeline, the volume of concrete that can move on the layer is increased by 12 percent, which results in lower velocity of the concrete (in feet per second), lower friction, and therefore lower pressure. A pump that may not be capable of completing a difficult job through 4- or 5-inch pipe may be able to do it easily through 6-inch pipe. **Note! Experience has taught us that 5-inch is the optimum pipeline size for lengthy vertical runs such as those found on high-rise buildings. It is large enough for most aggregate, but small enough that you minimize the amount of concrete that slides back into the hopper when the concrete valve cycles, which we call *backwash*. You must also consider the people at the point of placement. Very few hose handlers, if any, can move 6-inch hose on a slab all day.** There is no provision in the nomograph for mixing pipeline sizes. For example, if you will be reducing from 5-inch to 4-inch, pipe, you should calculate the chart as if you were using 4-inch pipe for the entire distance. This will not be completely accurate, but you will be safe in your pressure calculation. In our example (Figure 4) we use 5-inch pipeline.

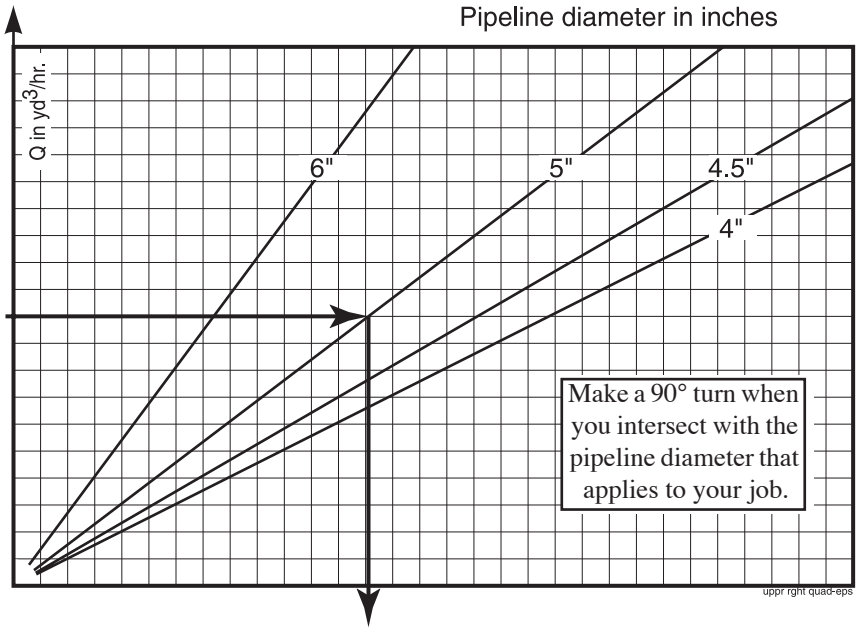
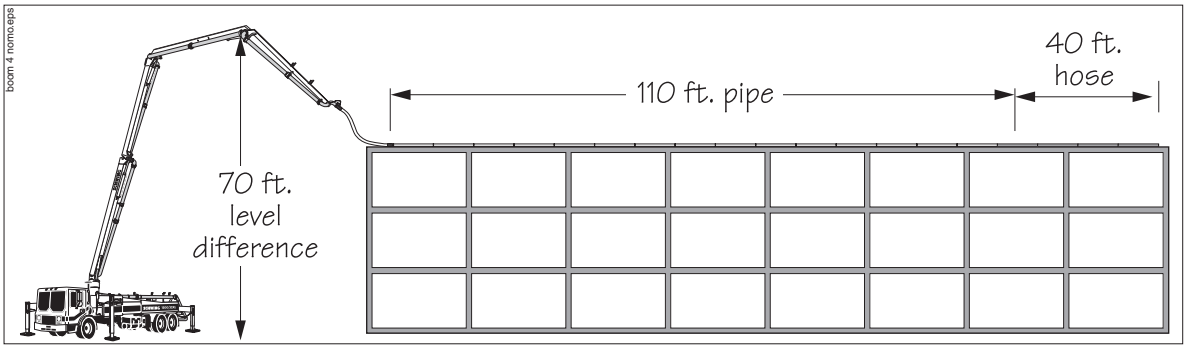


Figure 4
Upper right quadrant—Pipeline diameter

When the output line intersects the pipeline diameter that corresponds to your job, draw a line straight down into the lower right quadrant, as shown in Figure 4.

6. The **lower right quadrant** refers to the proportional value of your pipeline. It is a way of taking into account not only the length of the pipeline, but also the number of bends, the increased resistance of flow in rubber hose, and other factors. It is more a measure of the resistance to flow than a measure of length. In calculating the proportional value of your pipeline, always apply the following criteria:

- Each 90° bend with a radius of 250 mm (boom elbow) = 3.5 feet.
- Each 90° bend with a radius of 1 meter (long sweep) = 10. feet.
- Each 30° or 45° bend with a radius of 1 meter **or** 250 mm = 3 feet.
- Each section of rubber hose causes three times as much resistance as the same length of steel pipe (e.g., 12 feet of rubber hose has the same resistance as 36 feet of pipeline).
- Figure all horizontal and vertical distances equally. The increased pressure required to push concrete vertically is accounted for by adding pressure, not distance.
- An example pipeline is shown below (Figure 5).



elbow - 90°, r = 250 mm...3.5 feet
elbow - 90°, r = 1 meter...10 feet
elbow - 30° or 45°, r = 250mm or 1 meter...3 feet
rubber hose = length x 3

Note!
Proportional value of the 39X boom and deck pipe system is 261 feet. This value includes elbows, reducer, and tip hose.

Example: You must go 110 feet out through the deck and boom pipe, including the tip hose, then through 40 feet of rubber hose. Calculate the proportional value as follows:

all boom system = 261. feet (includes the tip hose)
11 10-foot pipe sections = 110. feet
40 x 3 = 120. feet (for the rubber hose)
Total = 491. feet.

Round the total to 500 feet to make it easy to use the following chart (Figure 6).

Figure 5
Calculating proportional values

Once you have calculated the proportional value of your pipeline, extend your line down from the upper right quadrant until it intersects with the line that represents your pipeline. When you reach the intersection, make a 90° turn clockwise, into the lower left quadrant. As noted above, we are using 500 feet as our proportional value (Figure 6).

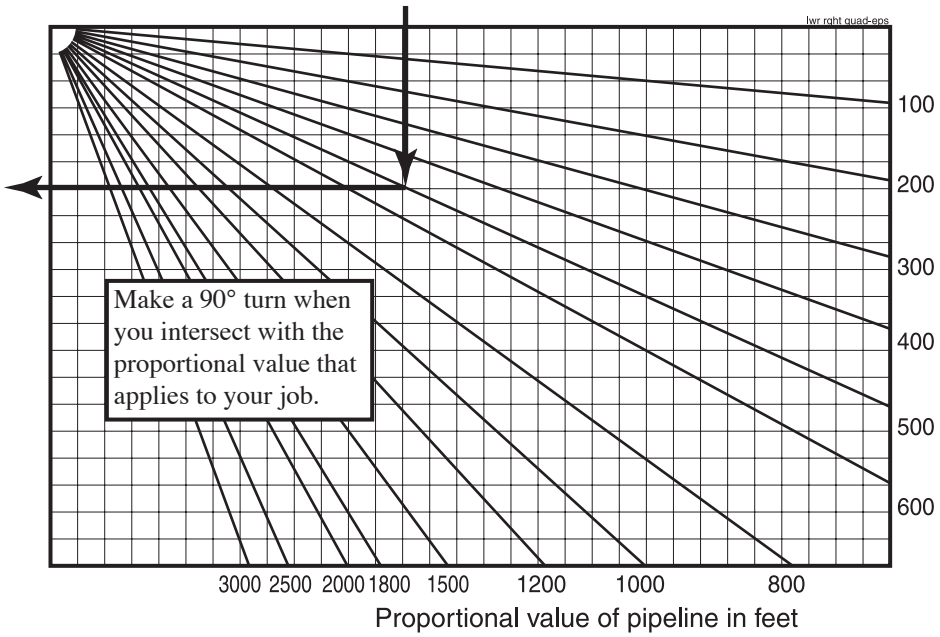


Figure 6
Lower right quadrant - proportional value of pipeline

7. The **lower left quadrant** refers to the pumpability of the concrete. If the concrete specifications allow a range in slump (for example 5–6 in.), always use the lower end to be safe. In our example, we use 5-inch slump. You extend the line from the lower right quadrant until it intersects with the 5-inch slump line, then make a 90° turn clockwise. This will lead you back into the upper left quadrant through the pressure scale (Figure 7).

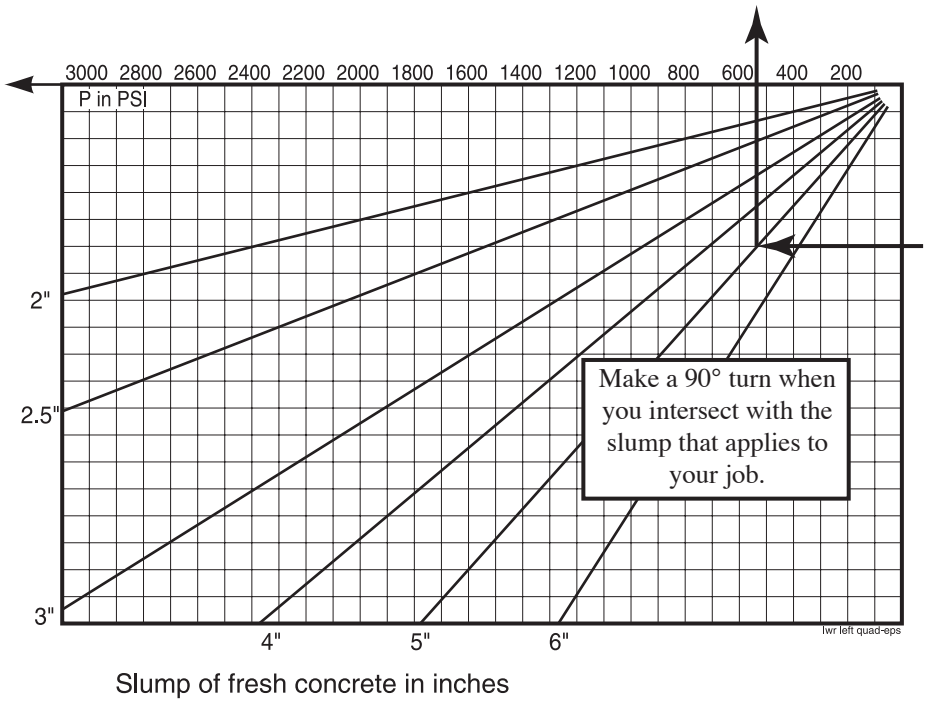


Figure 7
Lower left quadrant—pumpability of the concrete

As you can see by the chart in Figure 7, we are reentering the upper left quadrant through the pressure scale at about 550 PSI. Remember, we now have to add the head pressure for our vertical rise. At 1.1 PSI per foot of level difference, and our 70-foot vertical run, we must now add 1.1 x 70 = **77 PSI** to the 550 PSI from the chart.

550 PSI + 77 PSI = 627 PSI

NOTE!

When calculating the head pressure from vertical runs, it doesn't matter if the pipeline runs straight up and down, or if it runs uphill at an angle. Only the level difference in feet is needed for the pressure calculation. If the pipeline is running downhill, the operator will need special knowledge, but you don't need to add any head pressure to the nomograph.

The nomograph is now complete. The PF of our job can be calculated like this:

PF = PSI x yd^3/hr

We need a unit that is capable of 627 PSI, and 100 yd^3/hr. The PF of this job is:

PF = (627 x 100)

PF = 62,700

The unit must have a PF over 62,700 and it must be able to pump 100 yd^3/hr and 627 PSI **simultaneously.** Look at the pump shown in our sample nomograph (Figure 8).

- Can the unit pump at 627 PSI? **Yes**
- Can the unit pump 100 yd^3/hr? **Yes**
- Can the unit pump both simultaneously? **No! This unit will not do the job.**

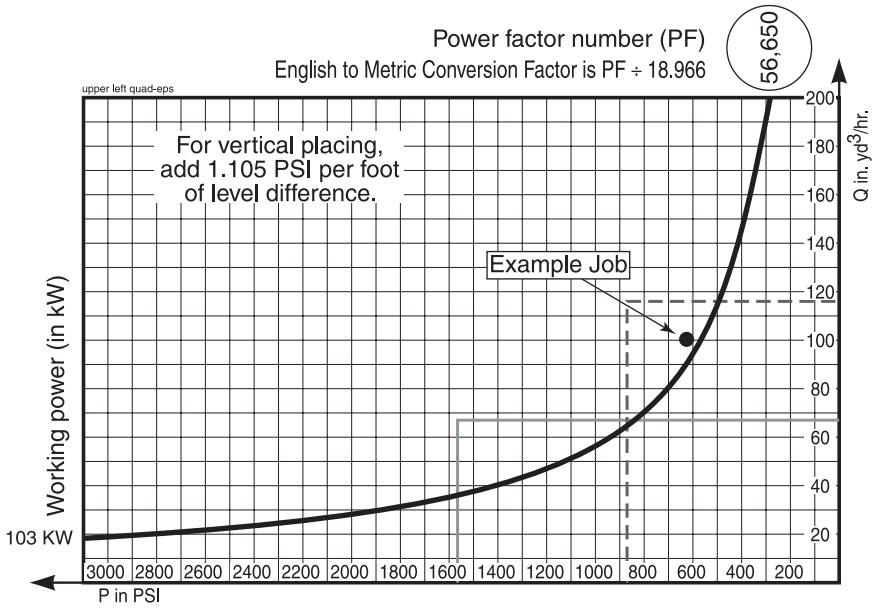


Figure 8
Is this unit sufficient for the job?

The engine is a little too small. The intersection of 100 $yards^3$/hr and 627 PSI has been plotted for visual representation, but you will see immediately that the PF of the job (62,700) is bigger than the PF of the unit (56,650). The curved black line represents the PF of the unit. If the unit is going to be able to handle the job, the intersection of pressure and yd^3/hr will be to the right and down from the curved line. Anything to the left or above the line is beyond the power of the hydraulic pumps. We could order this same unit with the pumps set to 132 Kw. The PF of the 132 Kw unit is 72,600, which would work. Plotting the intersection of our hypothetical job again, you will see that it falls within the power zone of the hydraulic pumps (Figure 9)

The nomograph should only be considered accurate to within ±10 percent. You should always calculate conservatively, and allow for the graph tolerance. In the case of the pump in Figure 9, we should still be safe even if the pressure required were 10 percent greater (690 PSI).What if you already own the pump shown in Figure 8? Is there anything that can be done to the job specifications to make the unit with the less powerful pumps work? You could use the smaller PF unit shown in Figure 8 if you can get permission to do any of the following things:

- Pump the top of the building at 85 yd^3/hr instead of 100 yd^3/hr.
- Pump the top of the building at a 6-inch slump instead of 5-inch. (This would still be within specifications.)
- Remove some of the rubber hose at the end of the horizontal run. Normally, with job circumstances that did not require a substantial vertical run, you could also use 6-inch instead of 5-inch-diameter pipeline, but in our example, the entire vertical run was made with the boom. The boom can never support 6-inch pipeline.

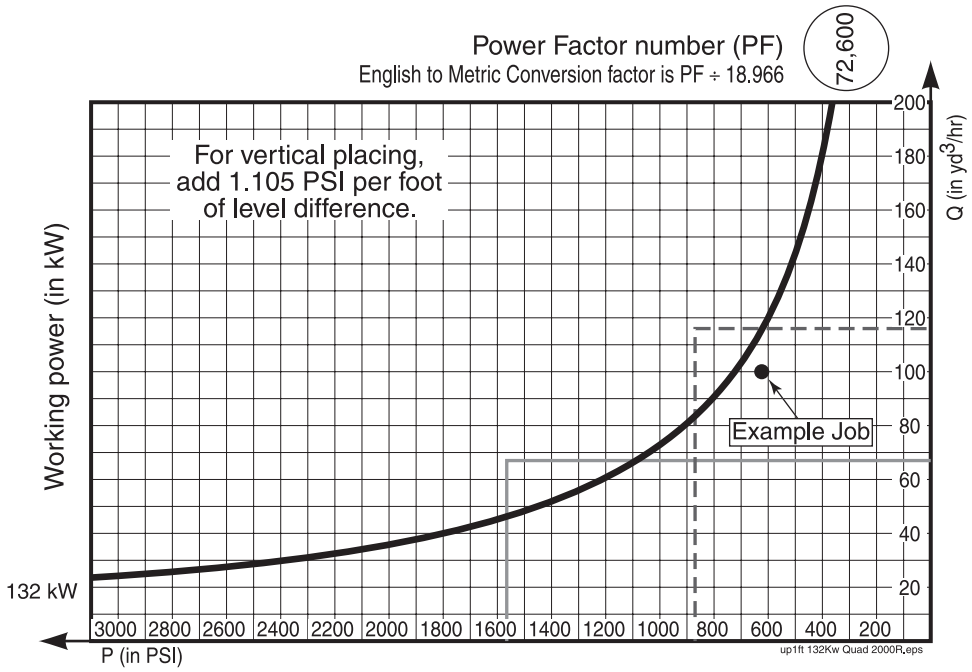
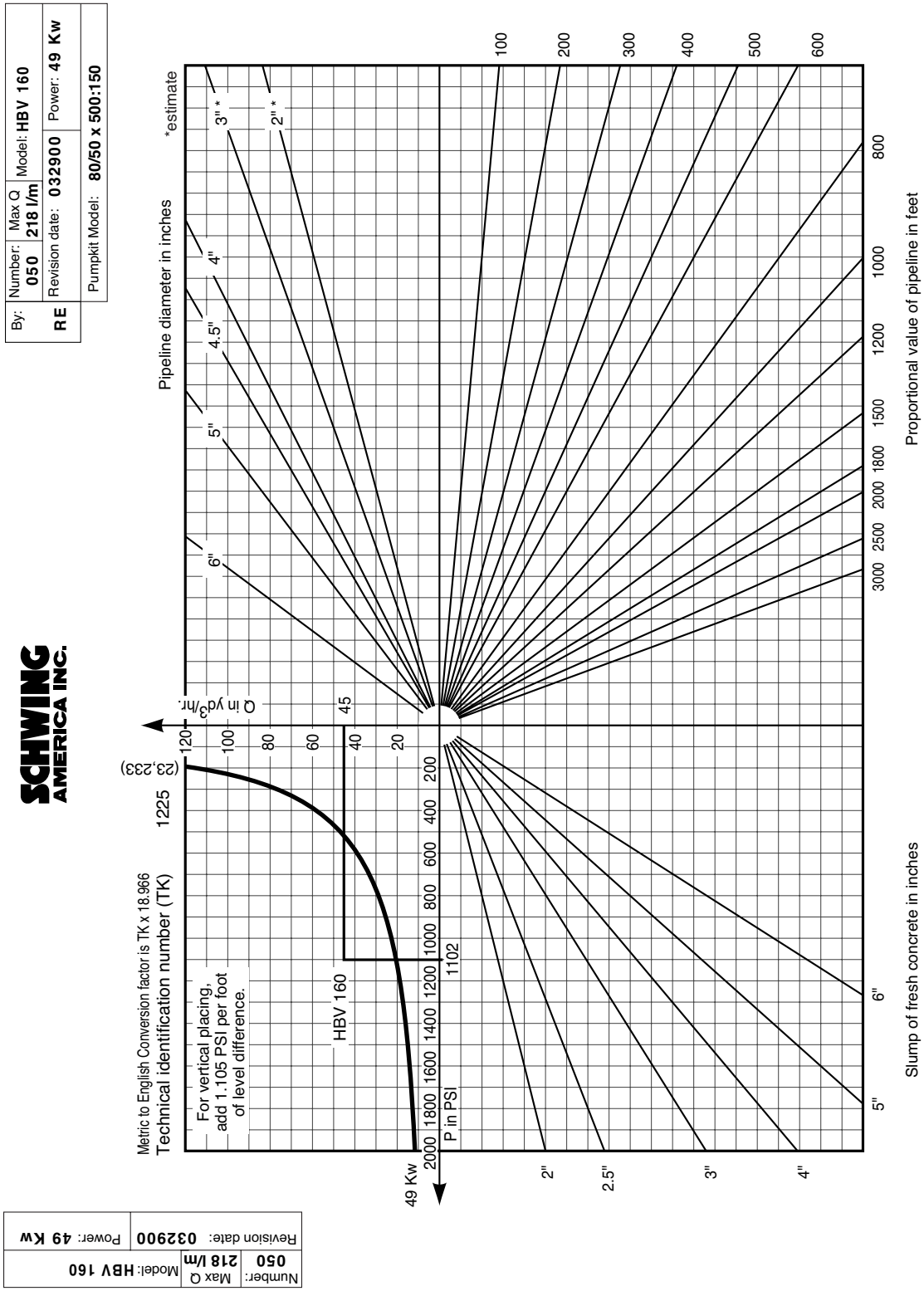
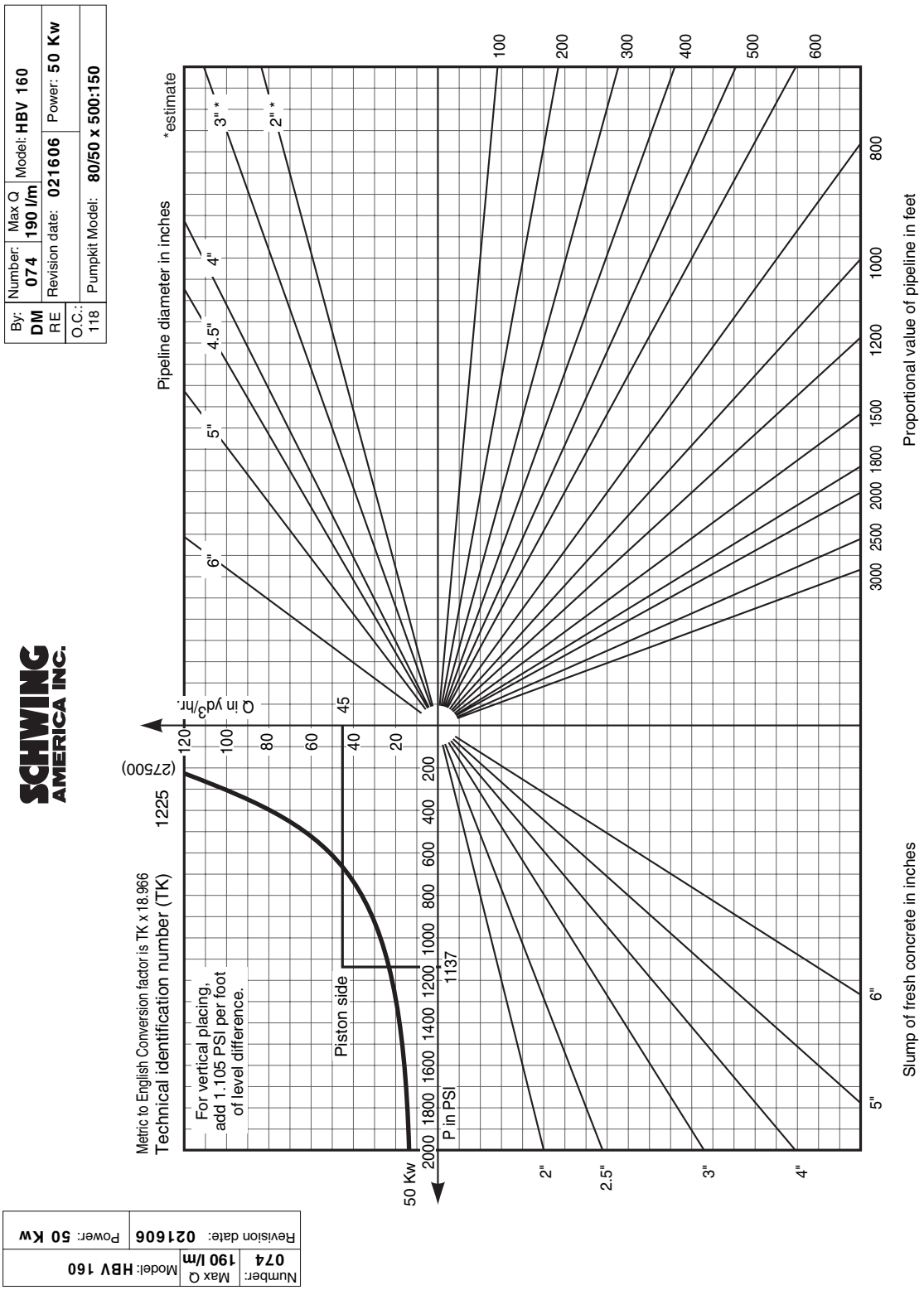


Figure 9
Same model pump with larger Kw hydraulic pumps

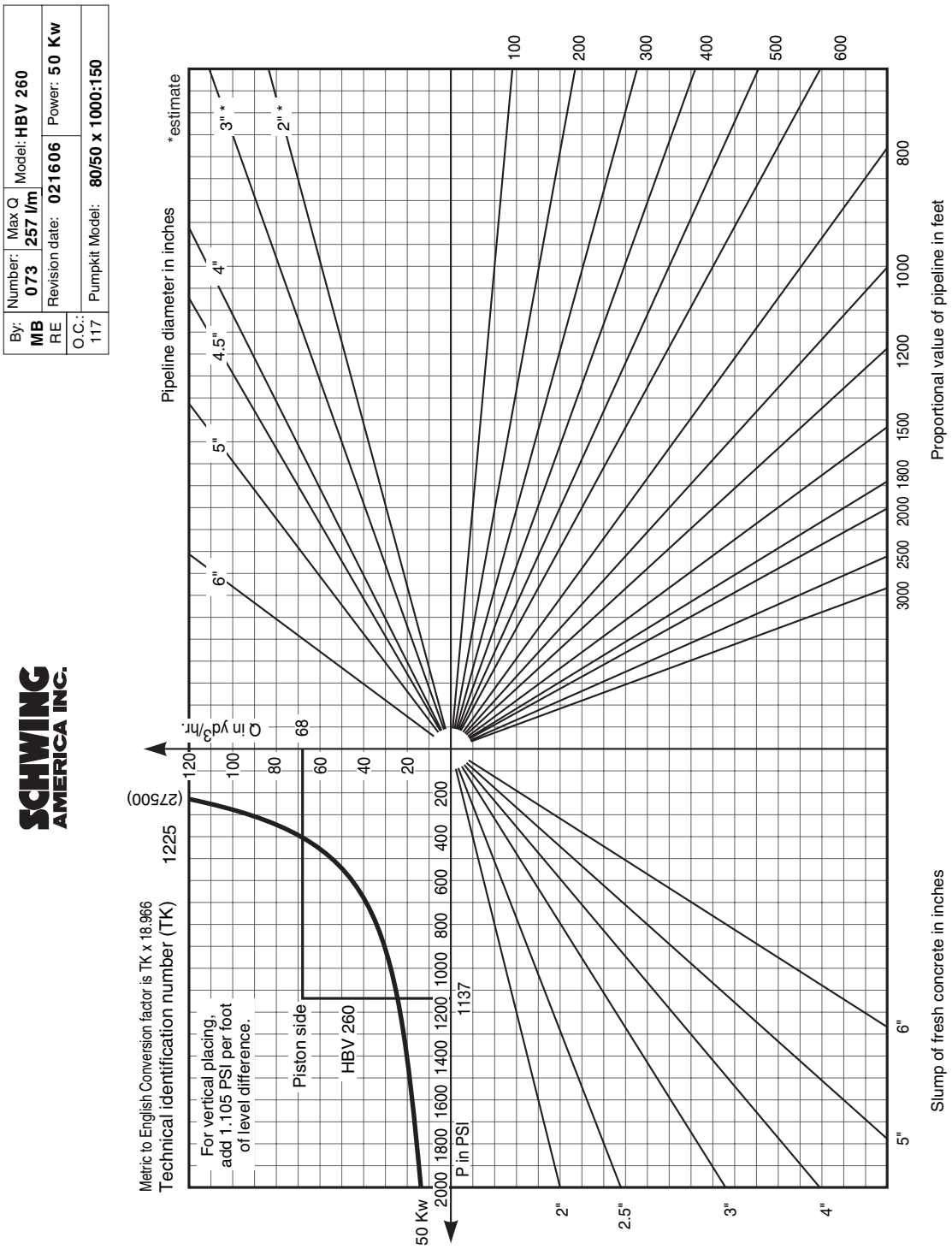

By: RE
Number: 050
Max Q 218 l/m
Model: HBV 160
Revision date: 032900
Power: 49 Kw
Pumpkit Model: 80/50 x 500:150
SCHWING AMERICA INC.
Pipeline diameter in inches
*estimate
2" *
3" *
4"
4.5"
5"
6"
Q in yd3/hr.
120
100
80
60
45
40
20
(23,233)
1225
Metric to English Conversion factor is TK x 18.966
Technical identification number (TK)
For vertical placing, add 1.105 PSI per foot of level difference.
HBV 160
200
400
600
800
1000
1102
1200
1400
1600
1800
2000
P in PSI
49 Kw
2"
2.5"
3"
4"
100
200
300
400
500
600
800
1000
1200
1500
1800
2000
2500
3000
Proportional value of pipeline in feet
5"
6"
Slump of fresh concrete in inches
Number: 050
Max Q 218 l/m
Model: HBV 160
Revision date: 032900
Power: 49 Kw

Nomographs - BPA

HBV 160 ..... 80/50 x 500:150 ..... 190 l/m 50Kw

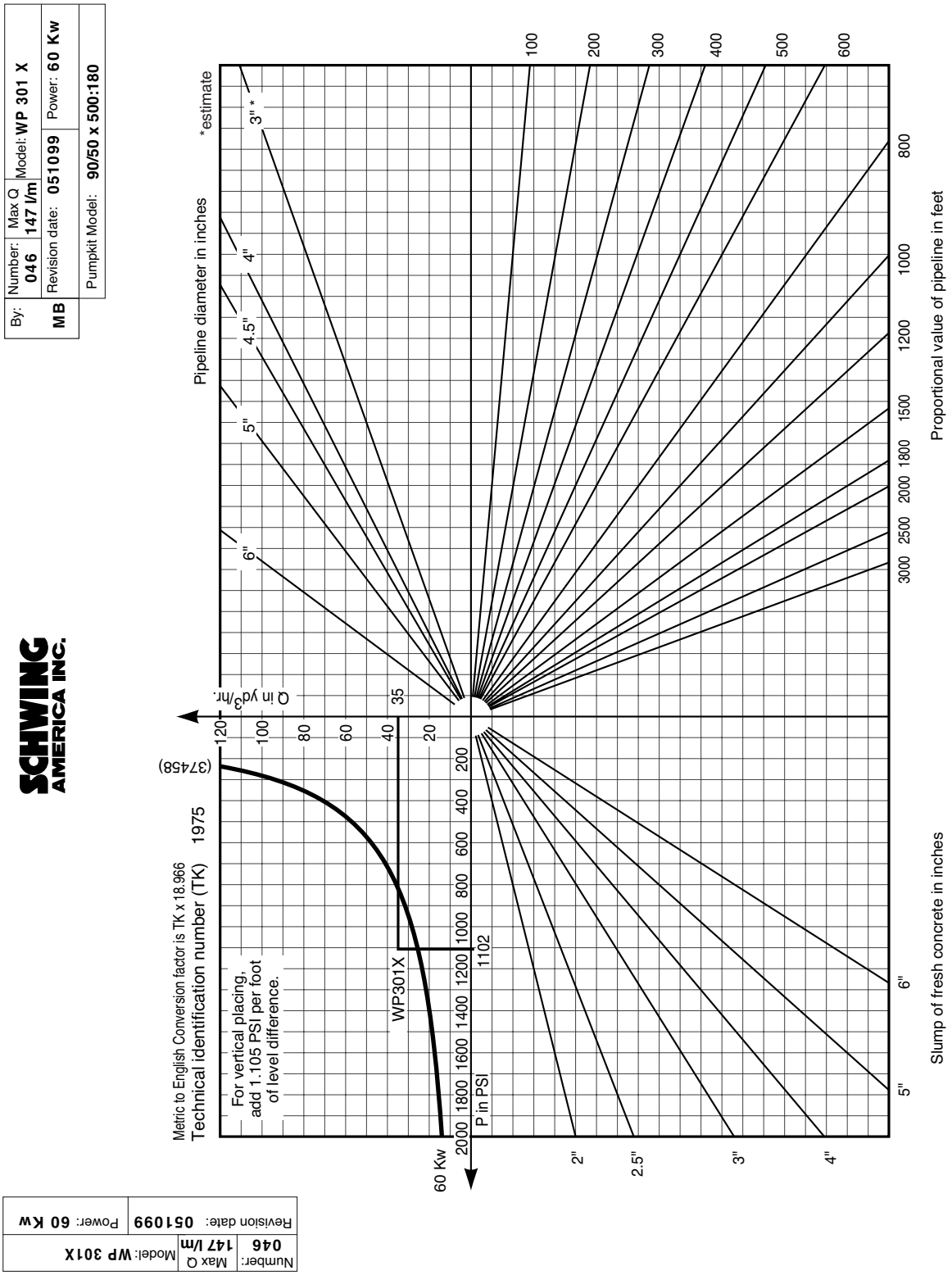


HBV 260 ..... 80/50 x 1000:150 ..... 257 l/m 50Kw

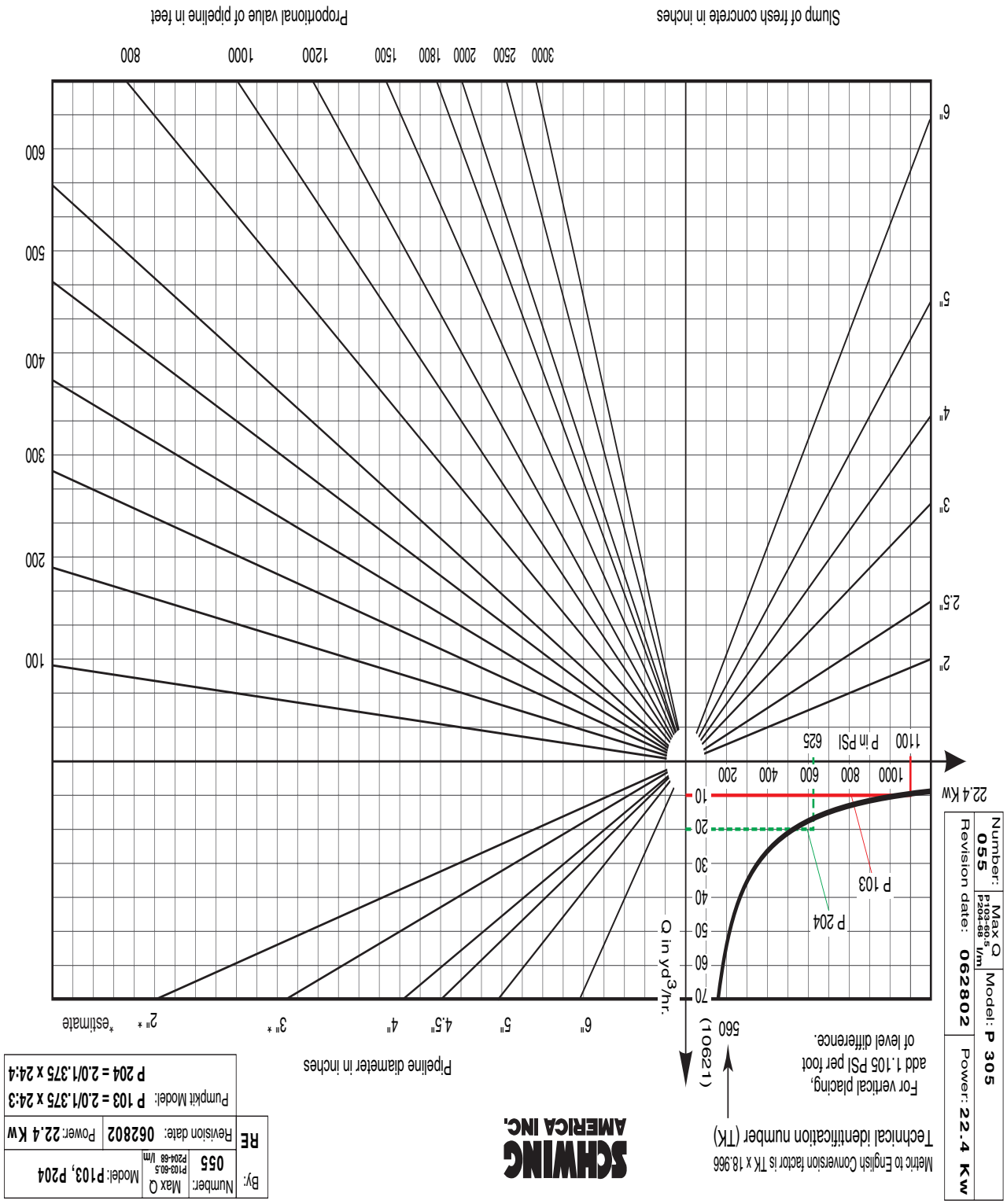


Nomographs - BPA

WP 301X..... 90/50 X 500:180 .....147 l/m .....60 Kw

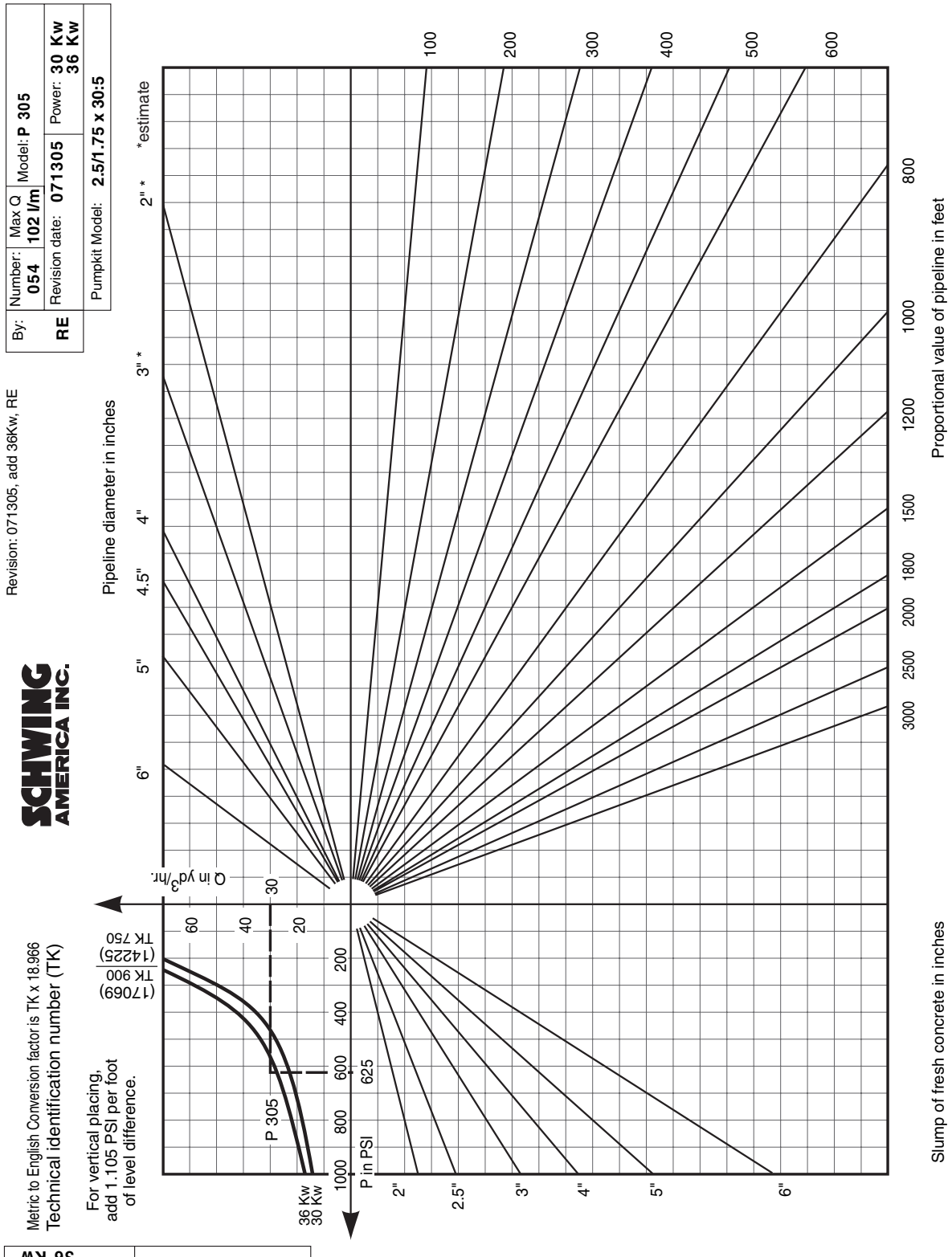


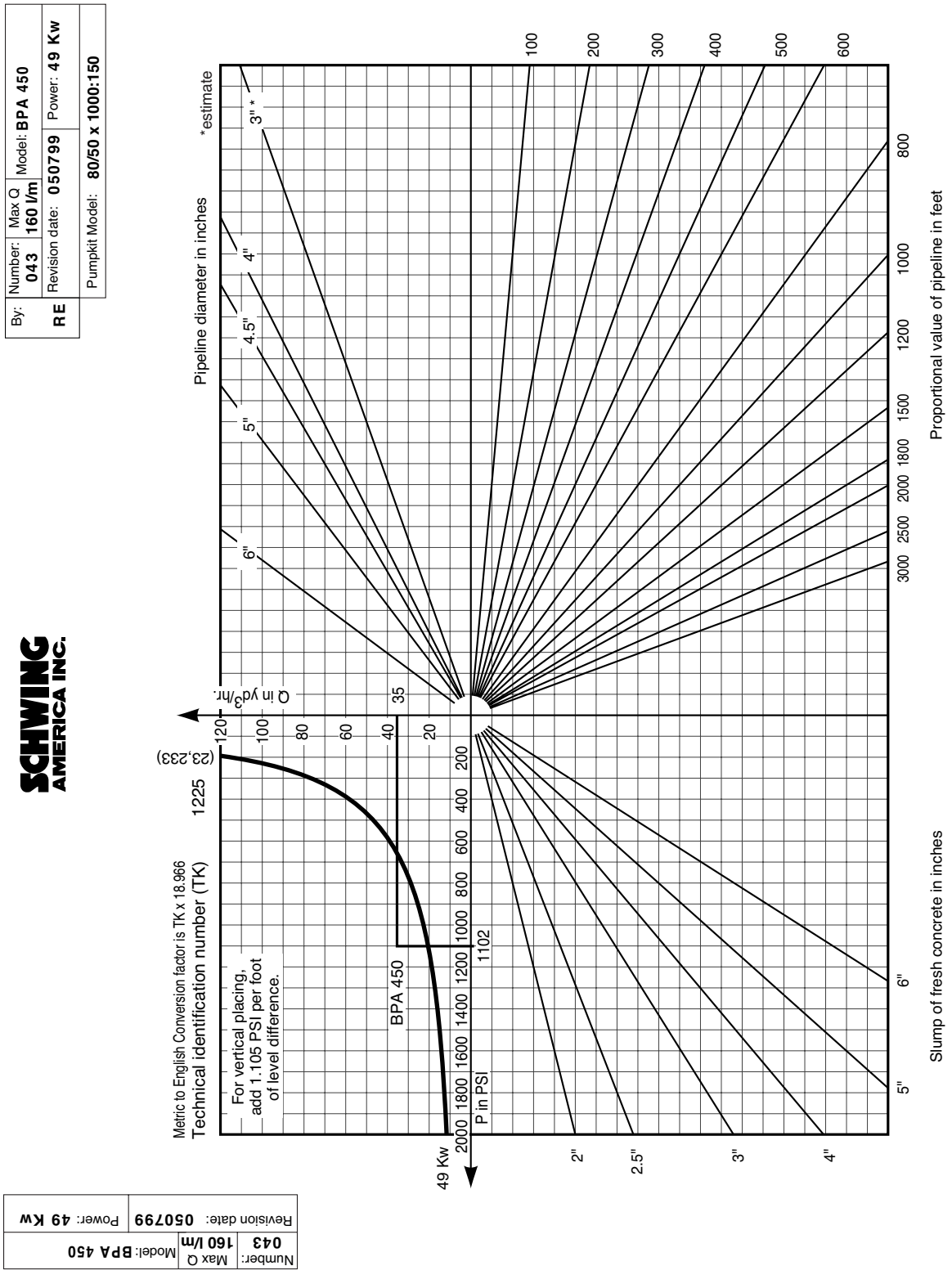
P 305 ..... P 103/204 = 2.0/1.375 x 24:3 .....60.5 l/m ..... 22.4 Kw



Nomographs - BPA

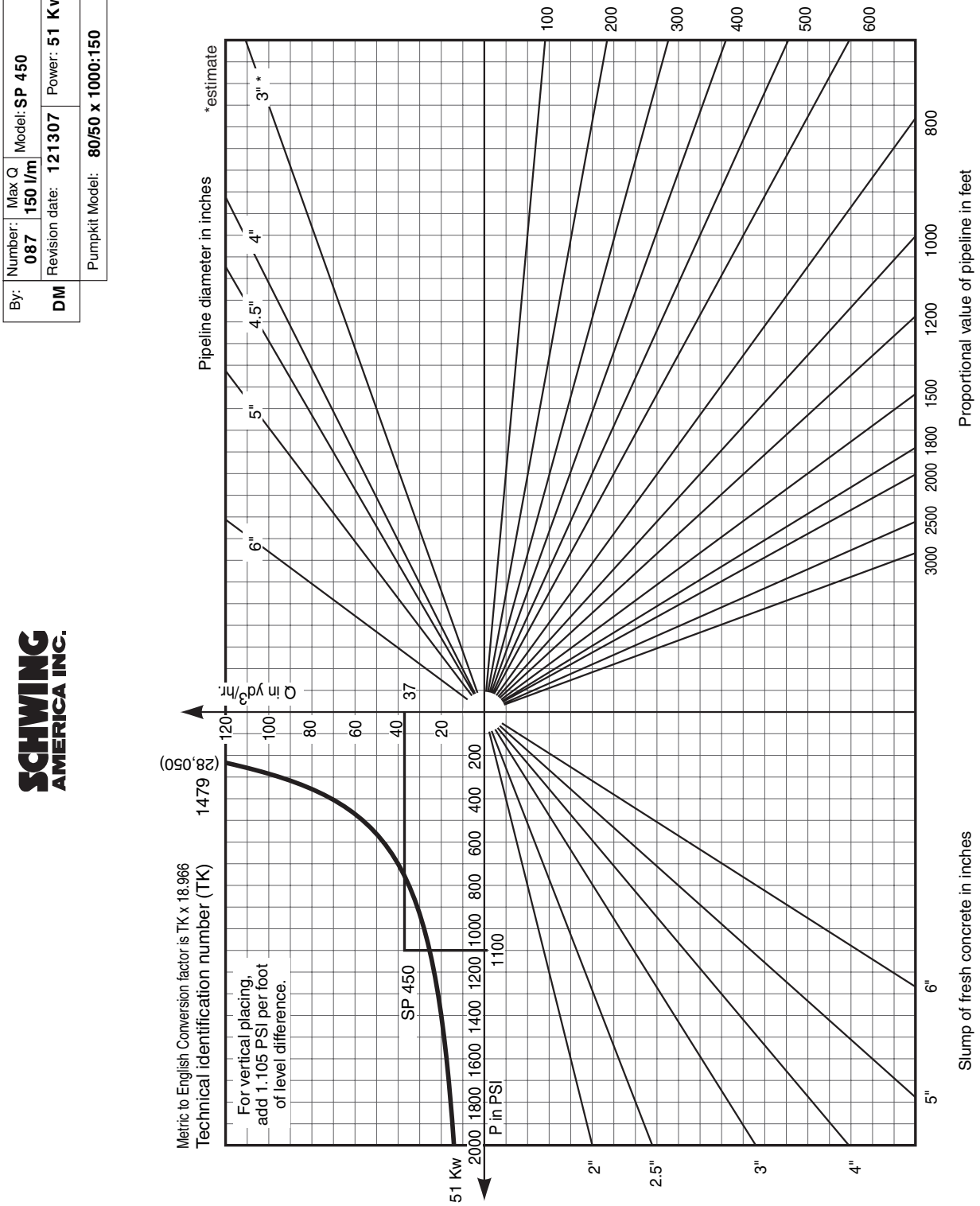
P 305 ..... 2.5/1.75 x 30:5 ..... 102 l/m .....30 Kw




By: RE
Number: 043
Max Q 160 l/m
Model: BPA 450
Revision date: 050799
Power: 49 Kw
Pumpkit Model: 80/50 x 1000:150
SCHWING AMERICA INC.
Pipeline diameter in inches
*estimate
3" *
4"
4.5"
5"
6"
Q in yd³/hr.
Metric to English Conversion factor is TK x 18.966
Technical identification number (TK)
1225
(23,233)
For vertical placing, add 1.105 PSI per foot of level difference.
BPA 450
1102
P in PSI
49 Kw
Proportional value of pipeline in feet
Slump of fresh concrete in inches
2"
2.5"
3"
4"
5"
6"
Number: 043
Max Q 160 l/m
Model: BPA 450
Revision date: 050799
Power: 49 Kw

SP 450 ..... 80/50 x 1000:150 ..... 150 l/m .....51 Kw

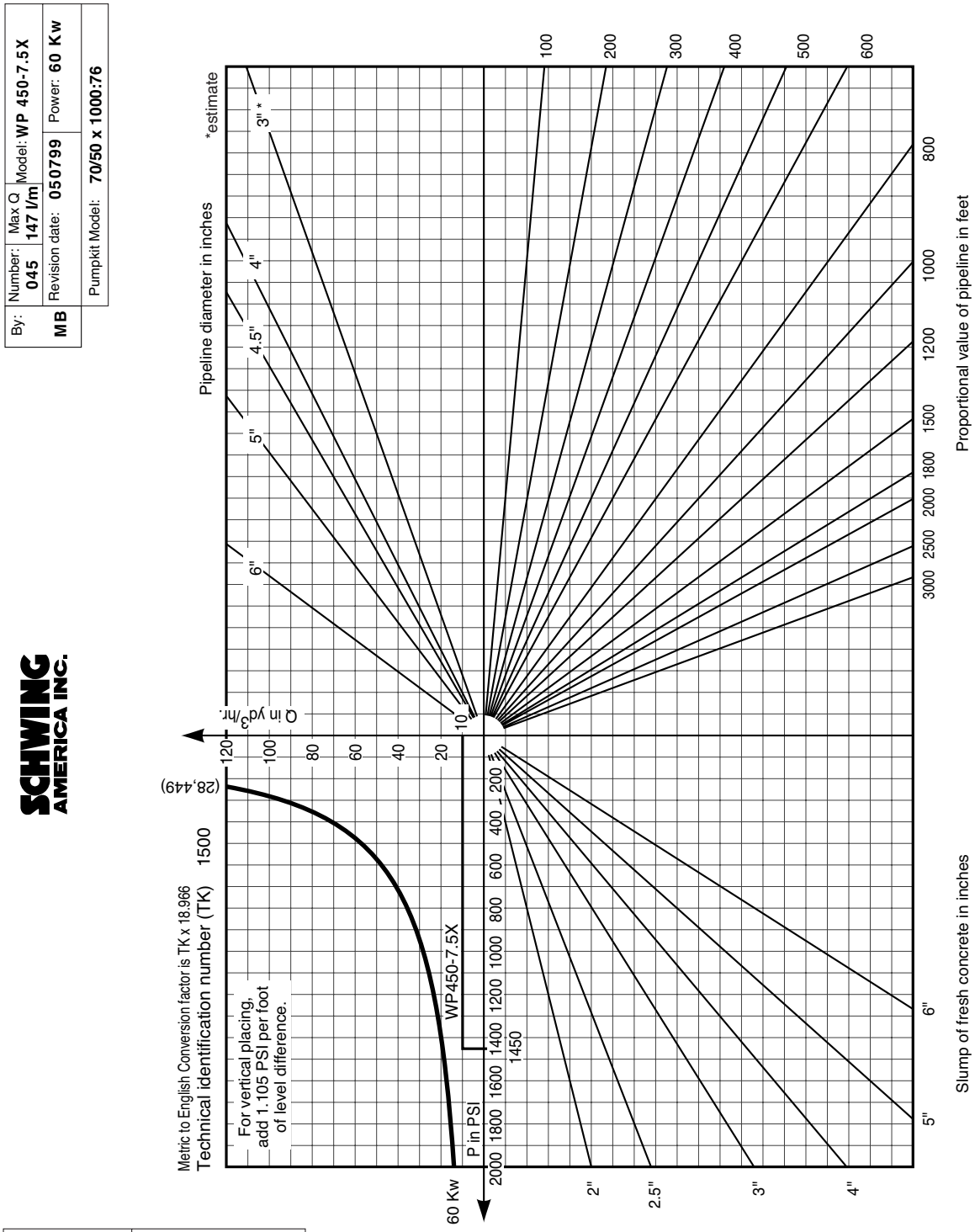
By:	Number: 087	Max Q 150 l/m	Model: SP 450
DM	Revision date: 121307		Power: 51 Kw
	Pumpkit Model: 80/50 x 1000:150		



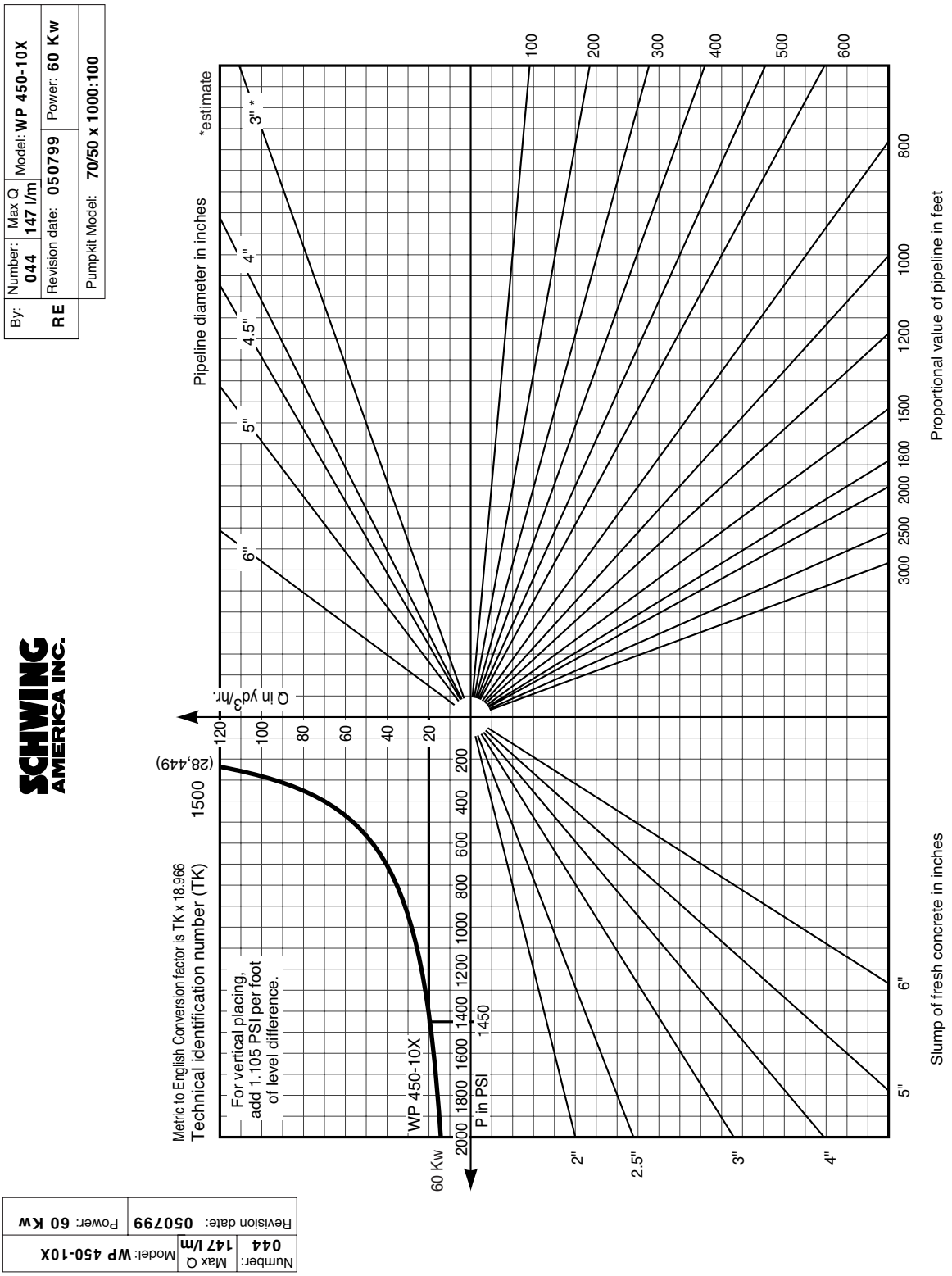
SCHWING AMERICA INC.

Number: 087	Max Q 150 l/m	Model: SP 450
Revision date: 121307		Power: 51 Kw

WP 450-7.5X..... 70/50 x 1000:76.2.....147 l/m ..... 60 Kw



WP 450-10X ..... 70/50 x 1000:101.6 ..... 147 l/m ..... 60 Kw



SP 500 ..... 80/50 X 1000:150 ..... 190 l/m ..... 54 Kw

By:	Number:	Max Q	Model:
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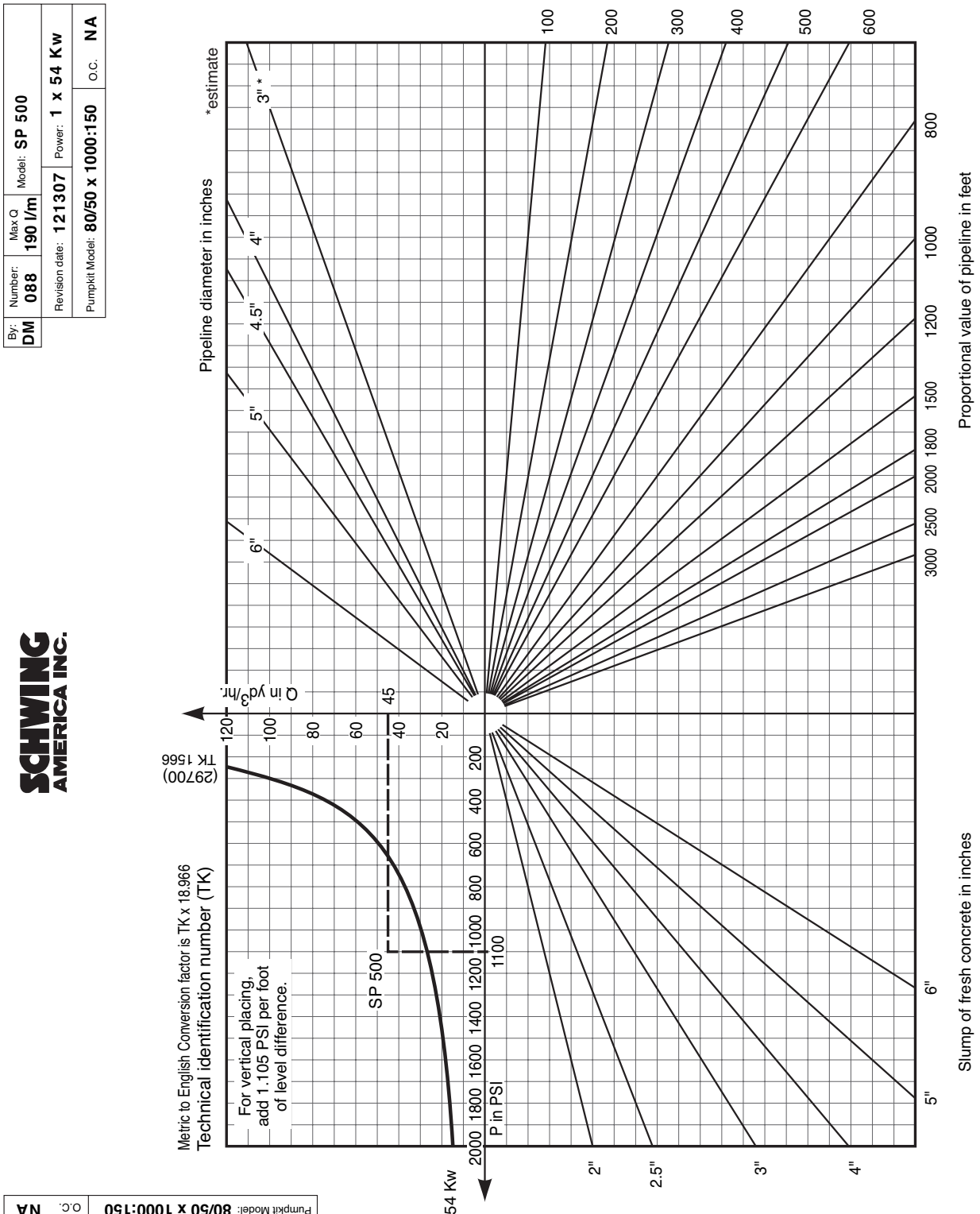
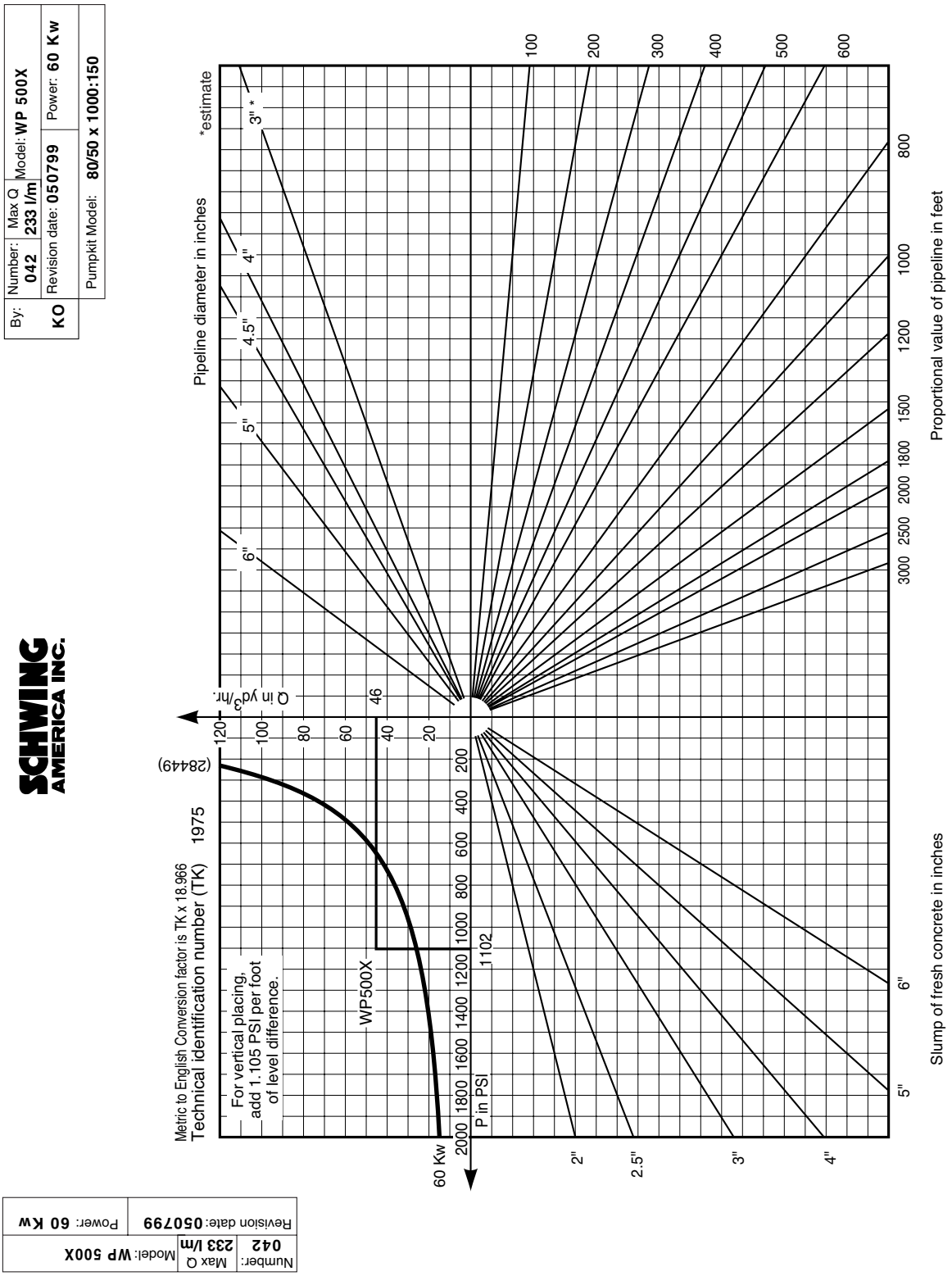
	Revision date: 121307		Power: 1 x 54 Kw
	Pumpkit Model: 80/50 x 1000:150		O.C. NA



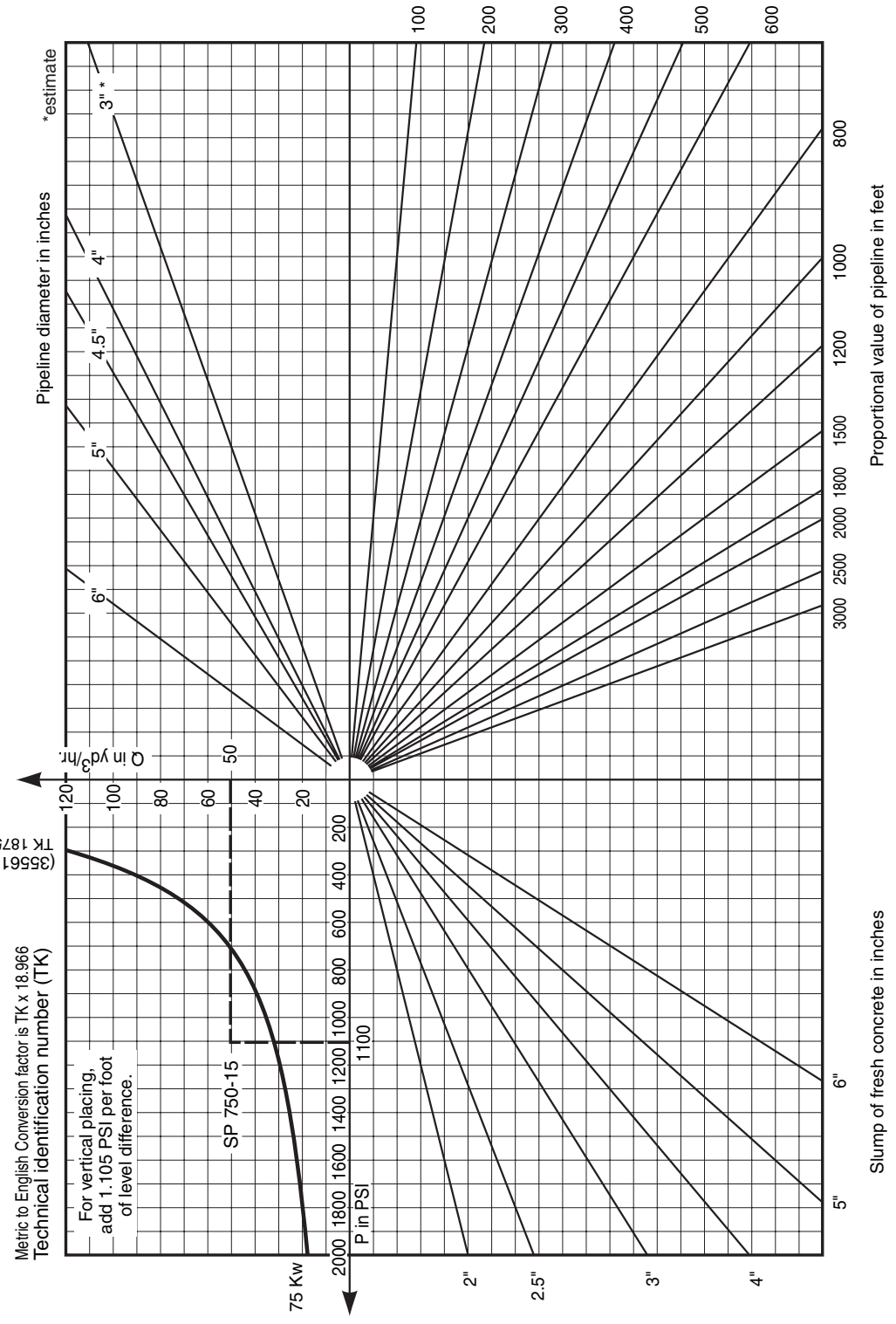
SCHWING AMERICA INC.

By:	Number:	Max Q	Model:
DM	088	190 l/m	SP 500
	Revision date: 121307		Power: 1 x 54 Kw
	Pumpkit Model: 80/50 x 1000:150		O.C. NA

WP 500X..... 80/50 x 1000:150 .....233 l/m.....60 Kw



By:	Number:	Max Q	Model: SP 750-15
DM	089	204 l/m	
	Revision date: 121307		Power: 75 Kw
	Pumpkit Model: 80/50 x 1000:150		

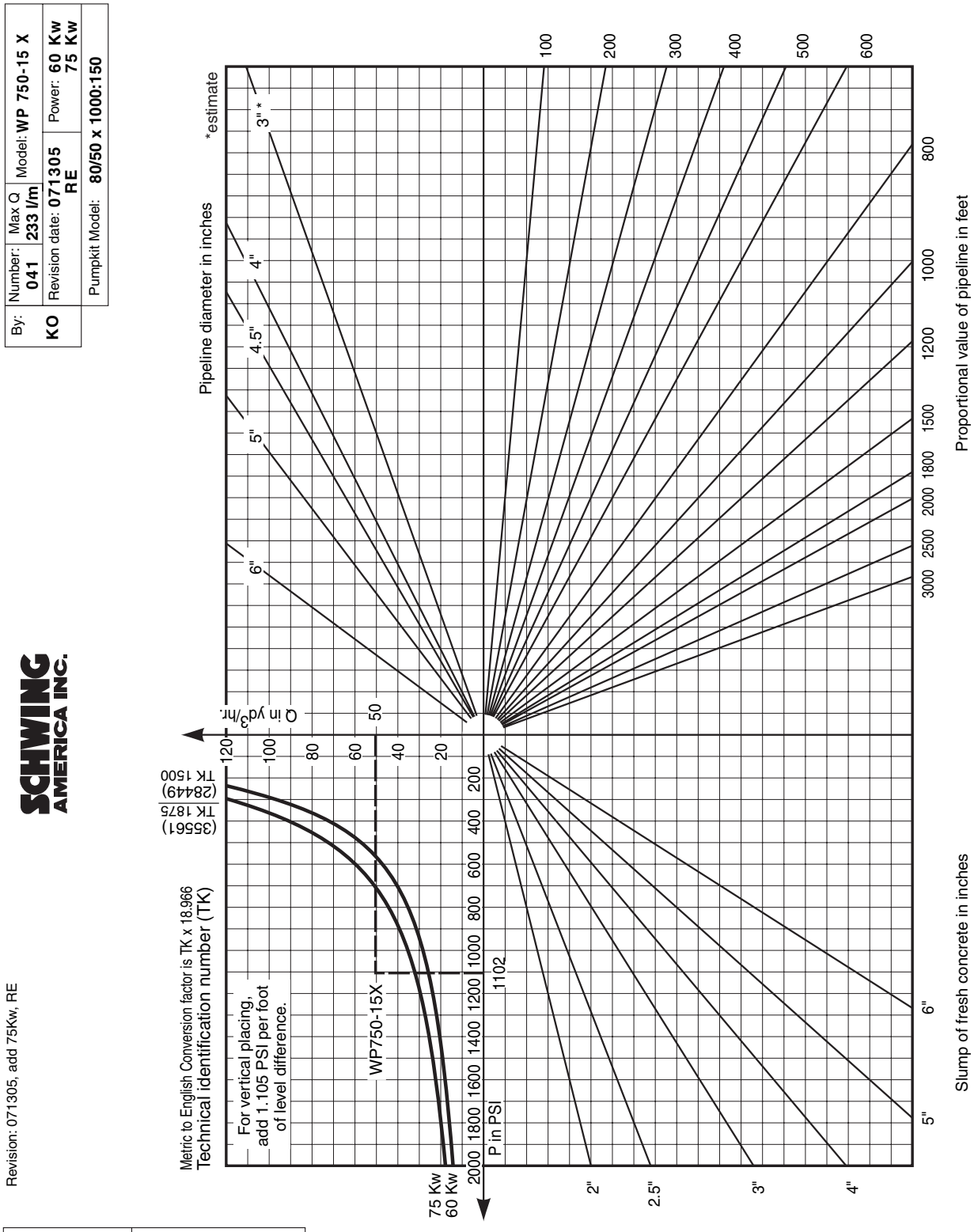


SCHWING AMERICA INC.

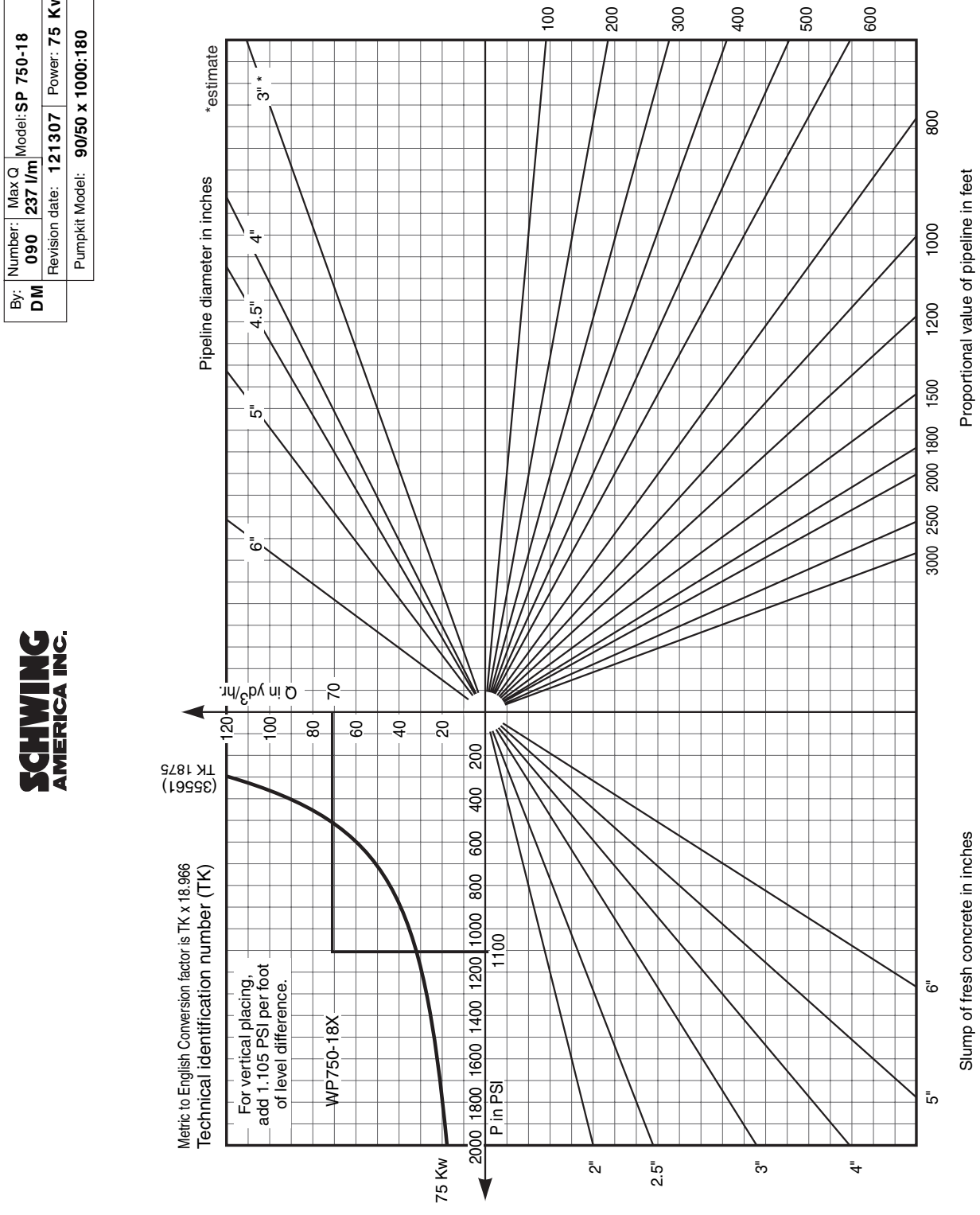
Number: 089	Max Q 204 l/m	Model: SP 750-15
Revision date: 121307		Power: 75 Kw

Nomographs - BPA

WP 750-15X ..... 80/50 x 1000:150 ..... 233 l/m 60Kw



By:	Number:	Max Q	Model: SP 750-18
DM	090	237 l/m	
	Revision date: 121307		Power: 75 Kw
	Pumpkit Model: 90/50 x 1000:180		



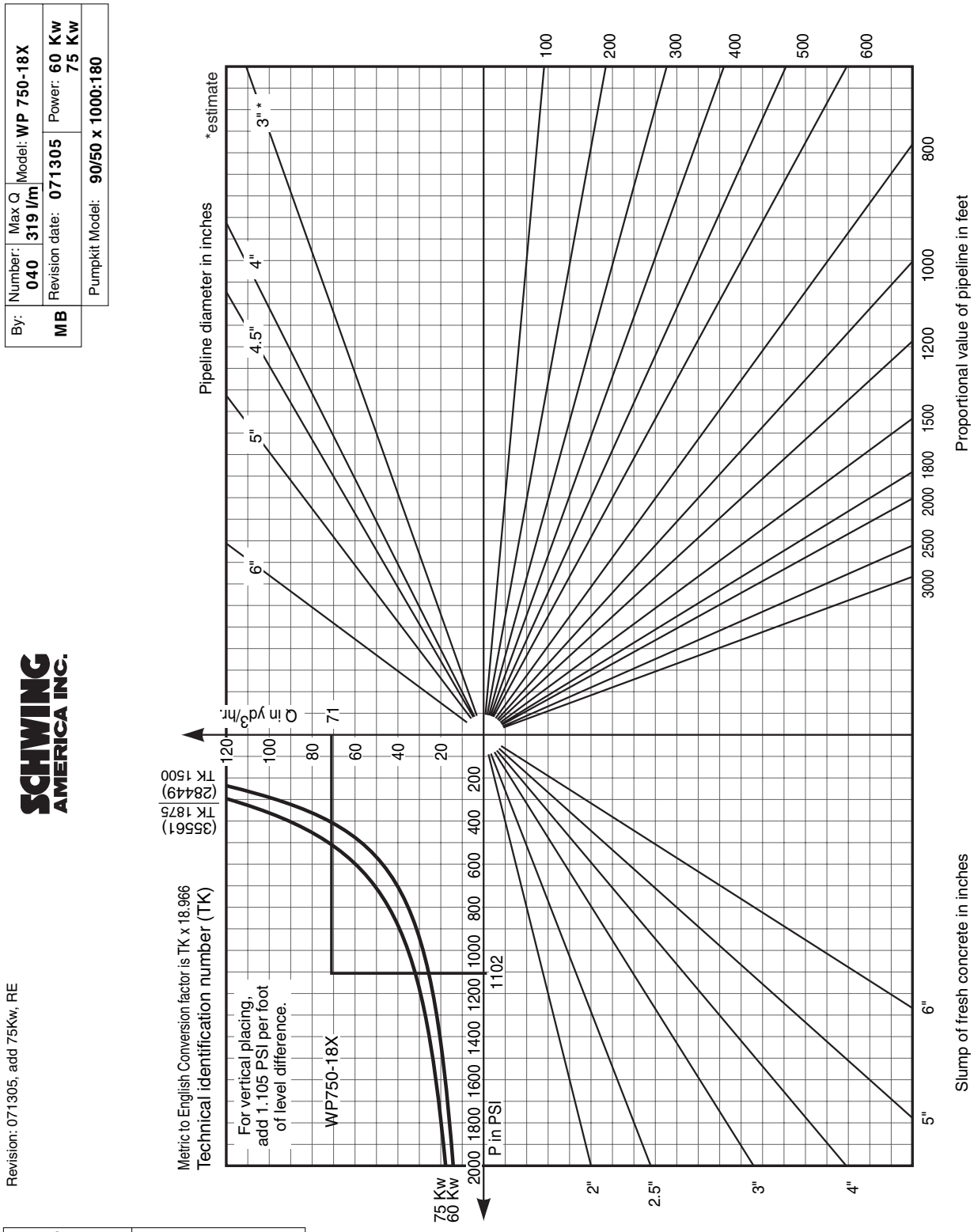
SCHWING AMERICA INC.

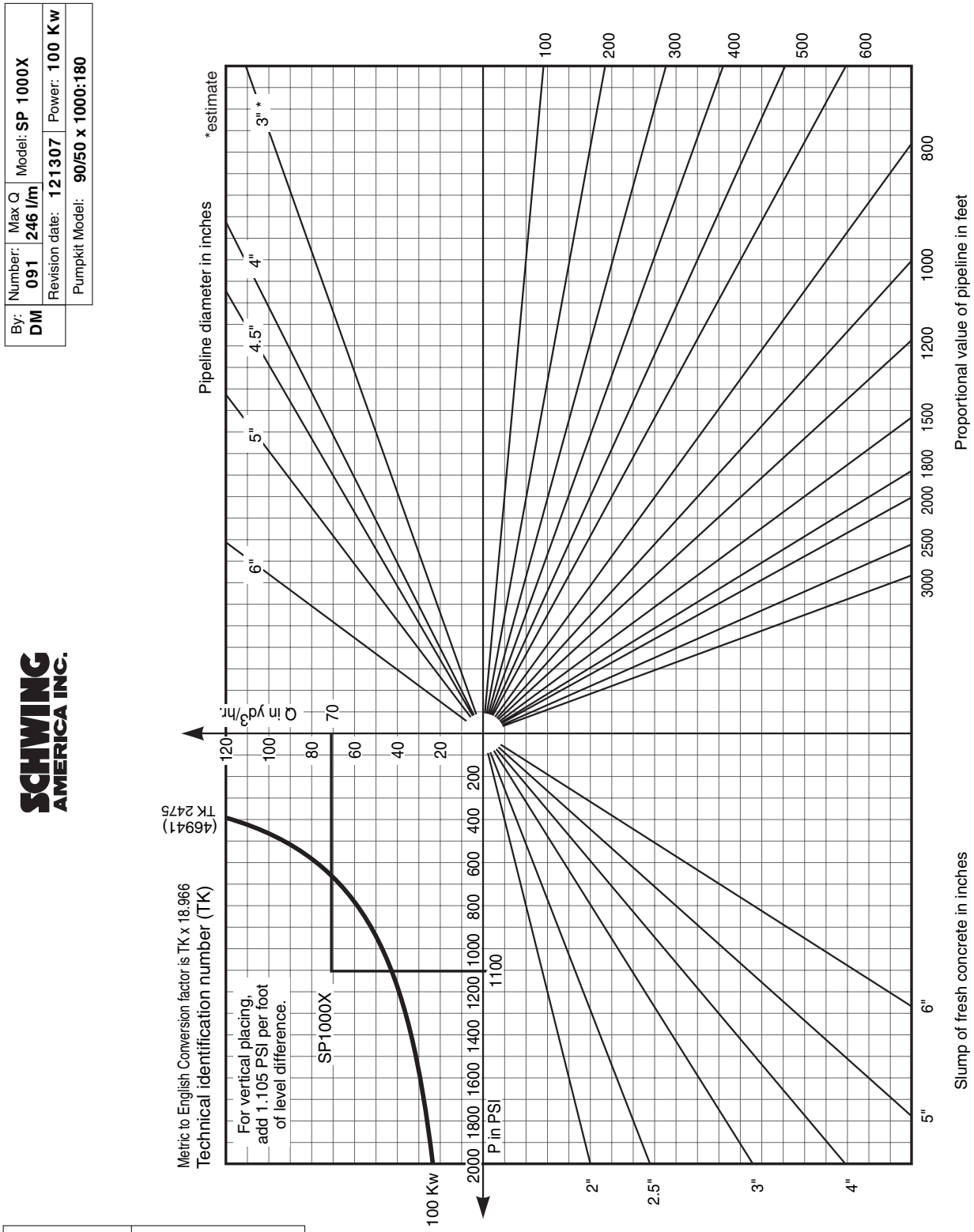
Number:	Max Q	Model: SP 750-18
090	237 l/m	
Revision date: 121307		Power: 75 Kw

SCHWING

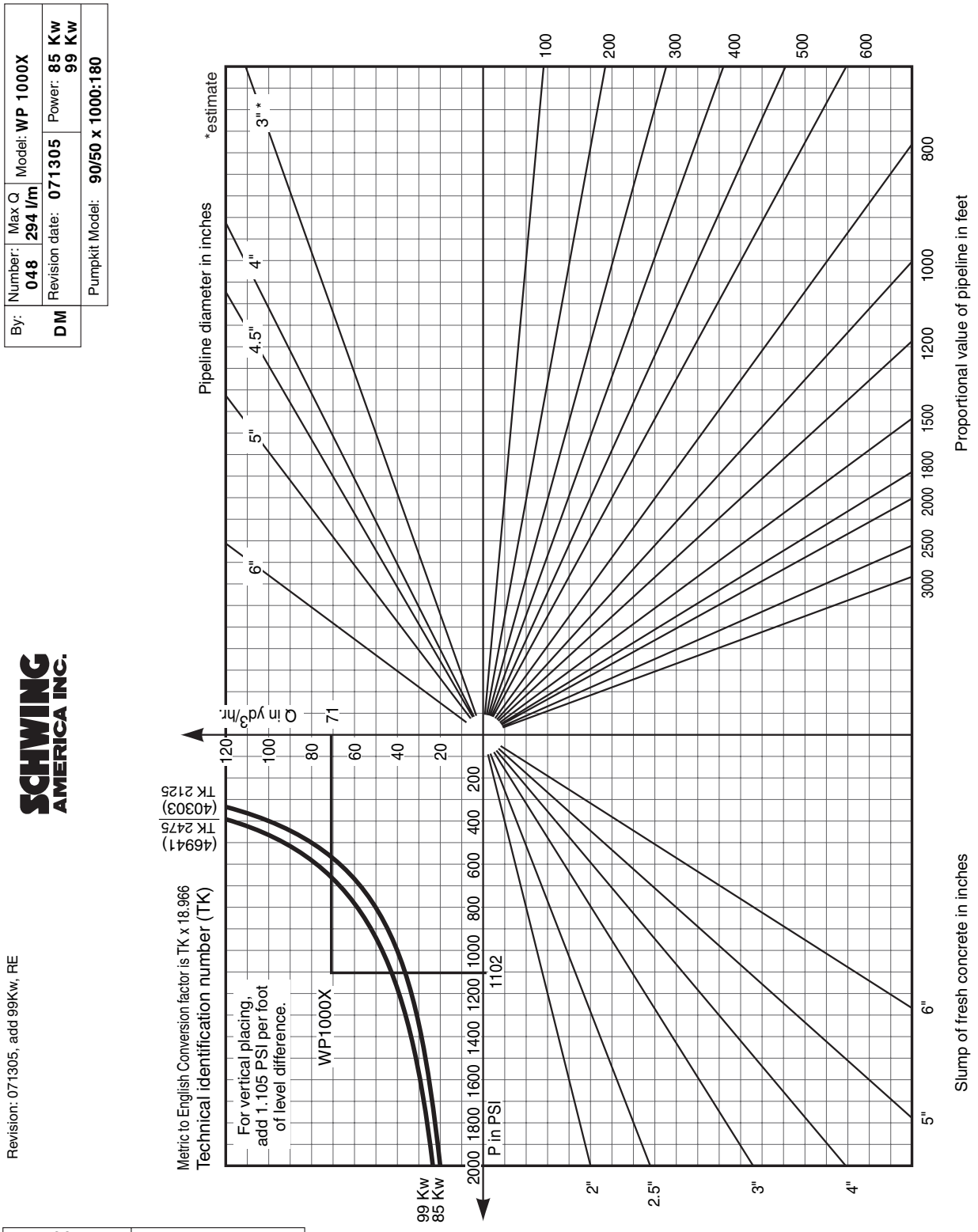
Nomographs - BPA

WP 750-18X ..... 90/50 x 1000:180 .....319 l/m.....60 Kw

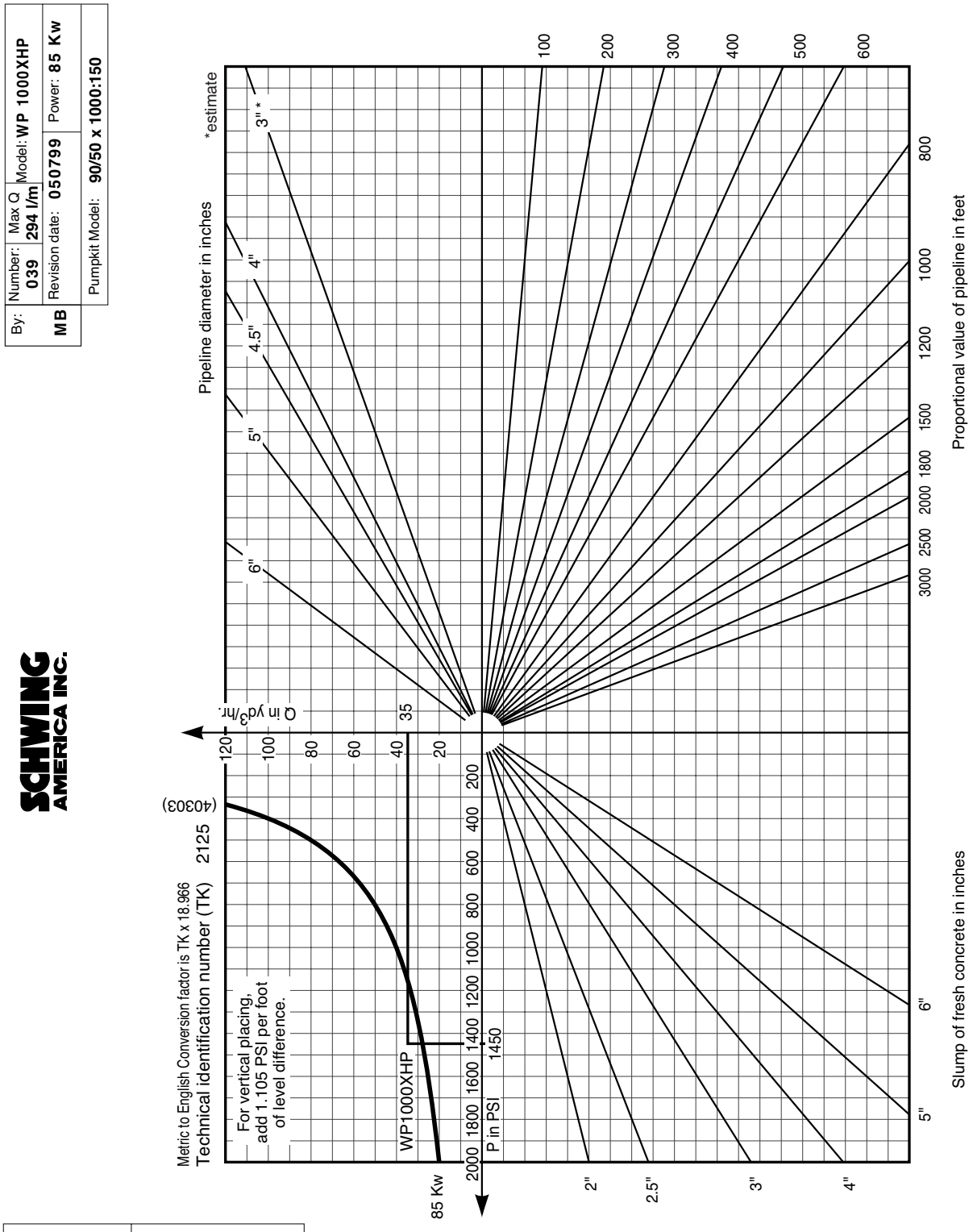



By: DM
Number: 091
Max Q 246 l/m
Model: SP 1000X
Revision date: 121307
Power: 100 Kw
Pumpkit Model: 90/50 x 1000:180
SCHWING AMERICA INC.
Pipeline diameter in inches
*estimate
3" *
4"
4.5"
5"
6"
Q in yd3/hr.
Proportional value of pipeline in feet
Slump of fresh concrete in inches
Metric to English Conversion factor is TK x 18.966
Technical identification number (TK)
(46941)
TK 2475
For vertical placing, add 1.105 PSI per foot of level difference.
SP1000X
P in PSI
100 Kw
Number: 091
Max Q 246 l/m
Model: SP 1000X
Revision date: 071305
Power: 100 Kw

WP 1000X..... 90/50 x 1000:180 .....294 l/m.....85 Kw

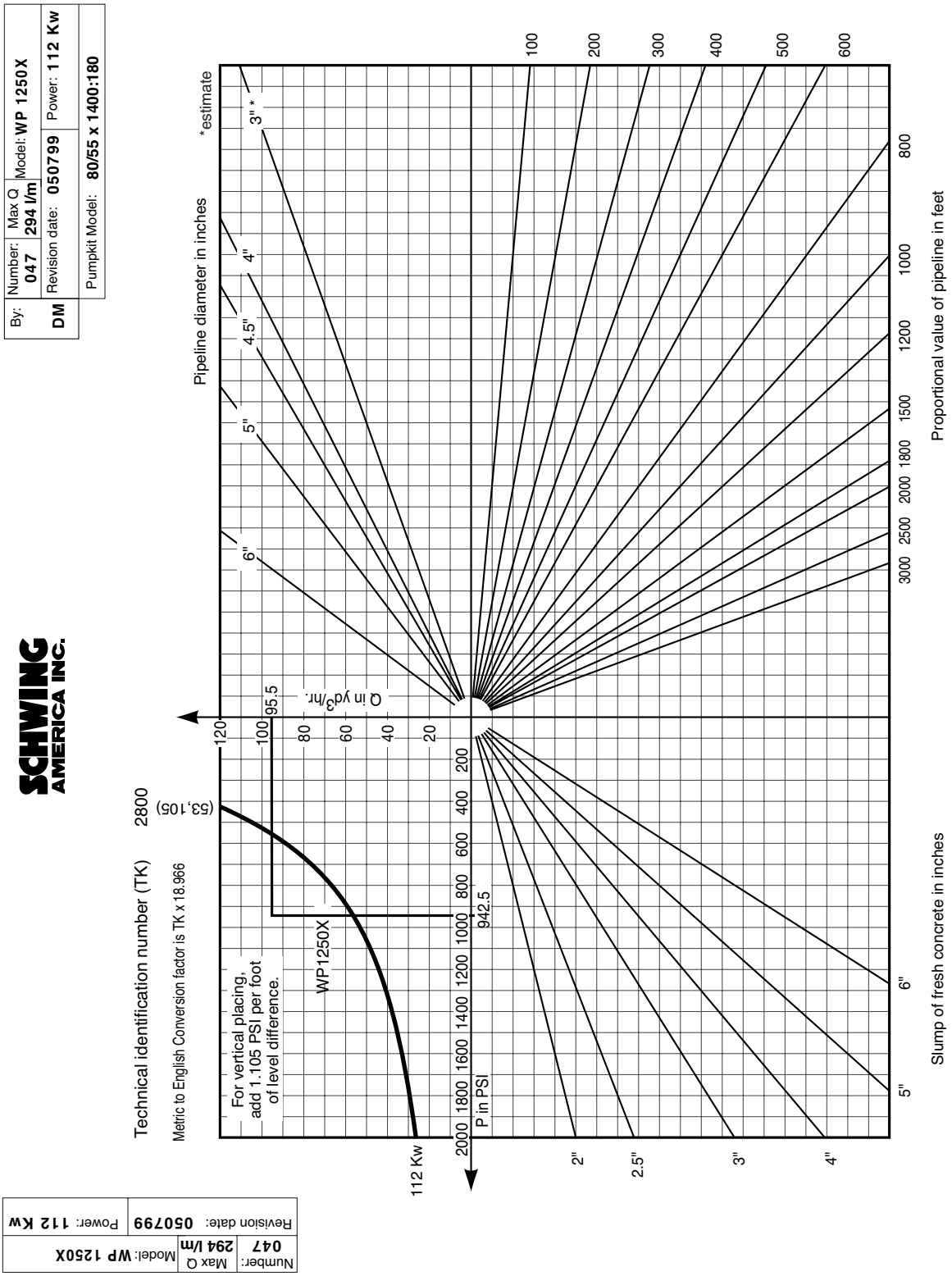


WP 1000XHP ..... 90/50 x 1000:150 ..... 294 l/m ..... 85 Kw



Number: 039	Max Q 294 l/m	Model: WP 1000XHP
Revision date: 050799		Power: 85 Kw

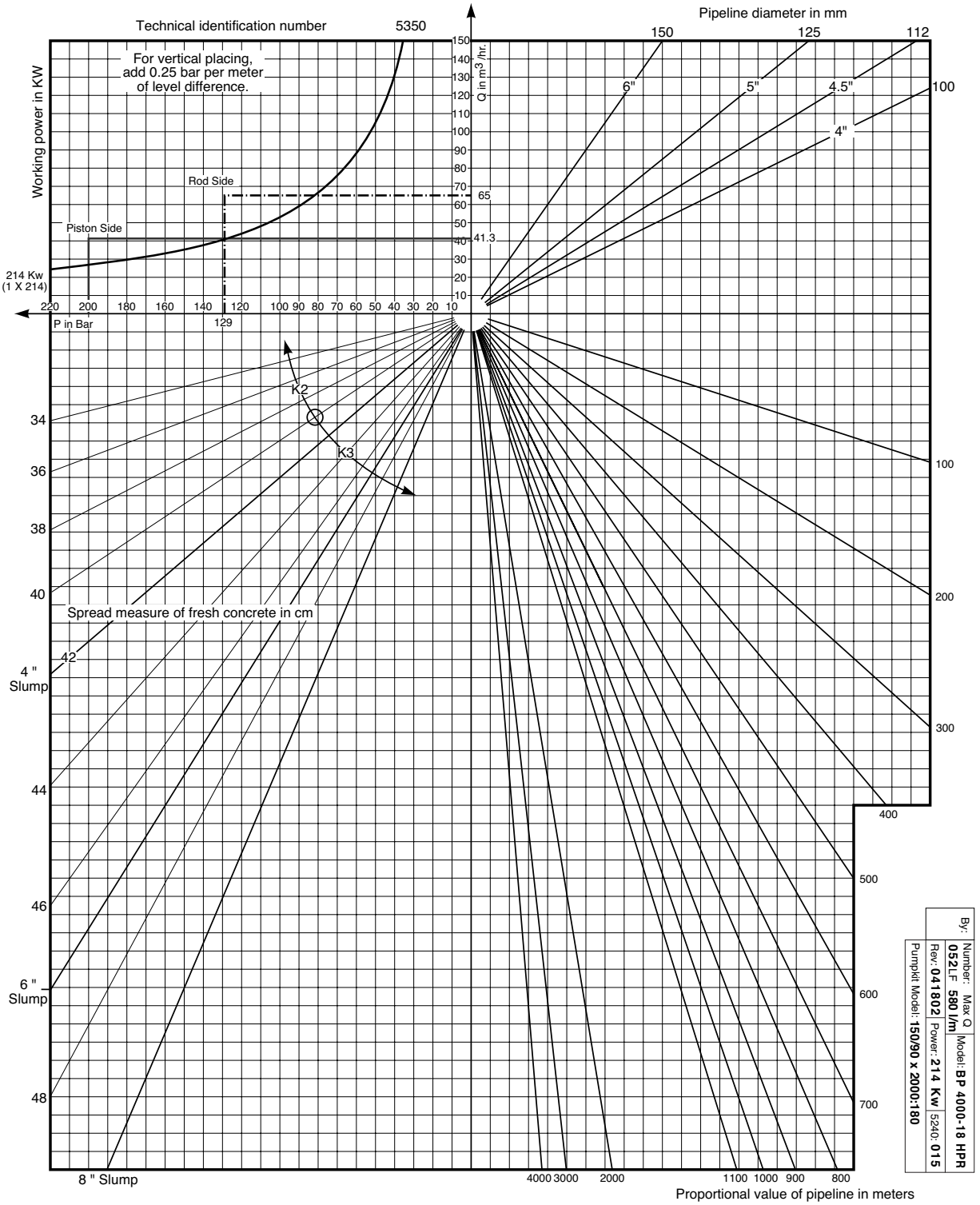
WP 1250X..... 80/55 x 1400:180 .....294 l/m.....112 Kw



BP 4000-18 HPR ..... 150/90 x 2000:180 ..... 580 l/m ..... 214 Kw

SCHWING AMERICA INC.

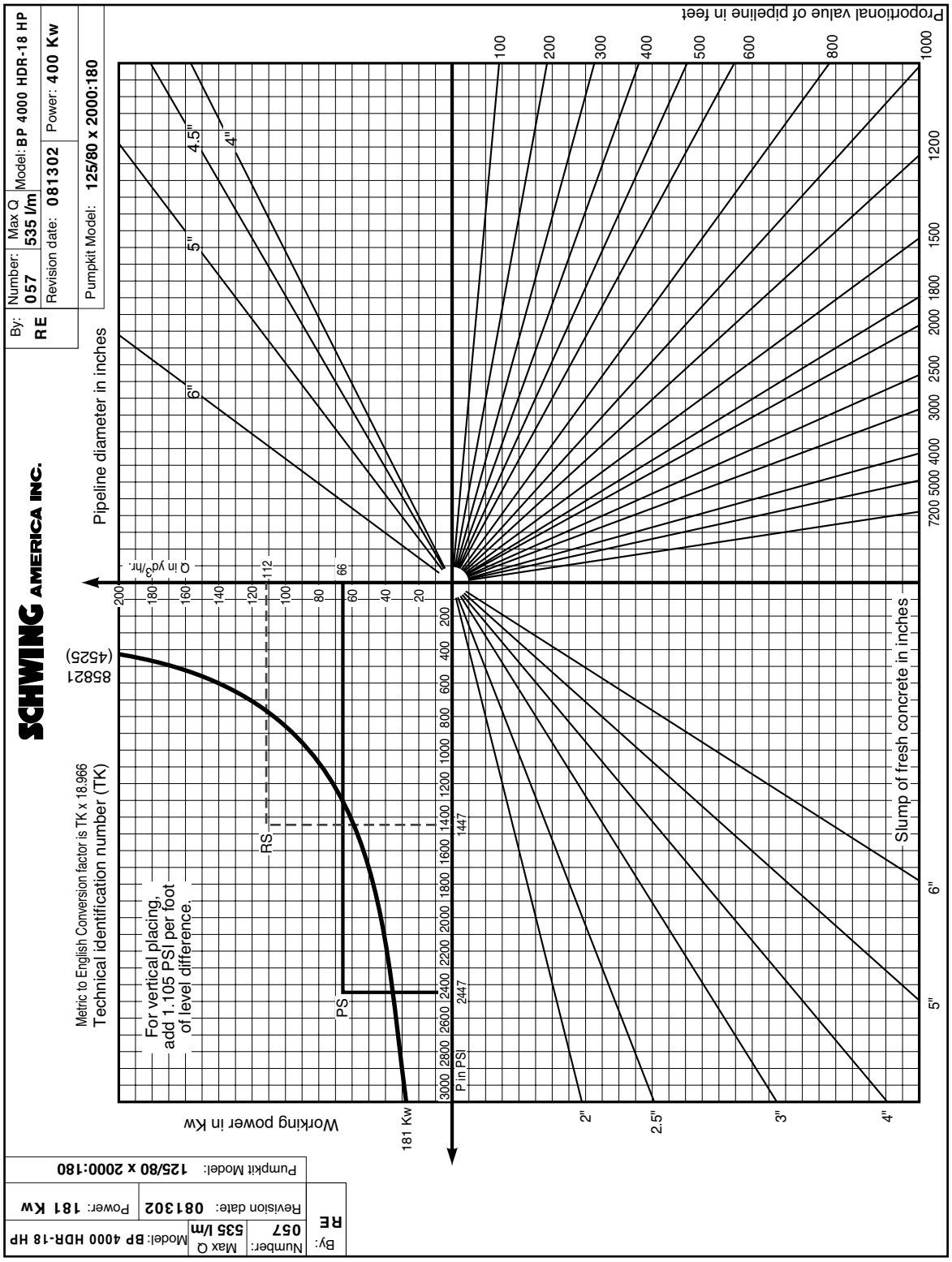
By:	Number: Max Q	Model:
RE	052LF 580 l/m	BP 4000-18 HPR
	Rev: 041802 Power: 214 Kw	5240: 015
	Pumpkit Model: 150/90 x 2000:180	



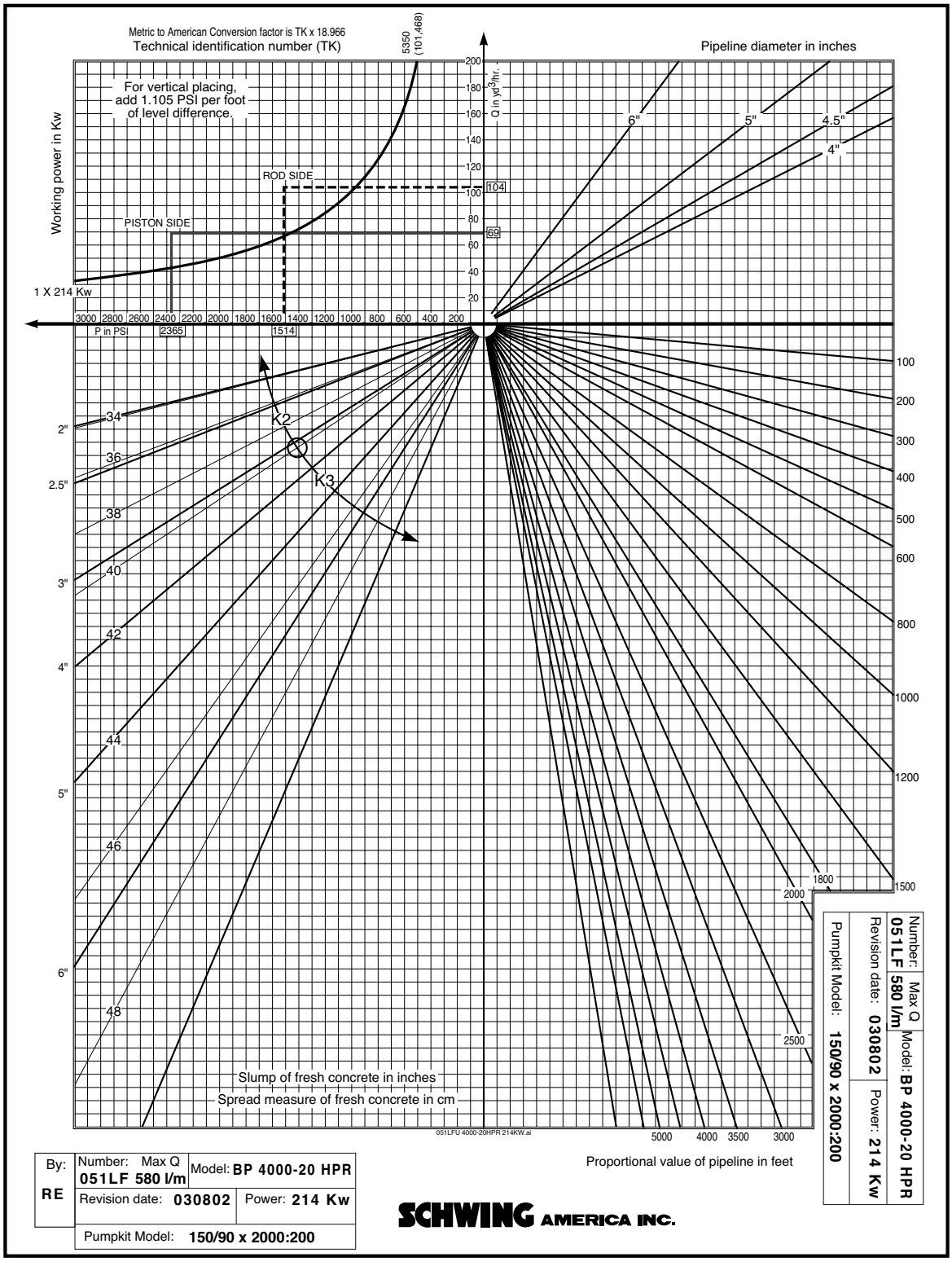
By:	Number: Max Q	Model:
	052LF 580 l/m	BP 4000-18 HPR
	Rev: 041802 Power: 214 Kw	5240: 015
	Pumpkit Model: 150/90 x 2000:180	

Nomographs - BPA

BP 4000 HDR-18 HP..... 125/80 x 2000:180 .....535 l/m.....181 Kw

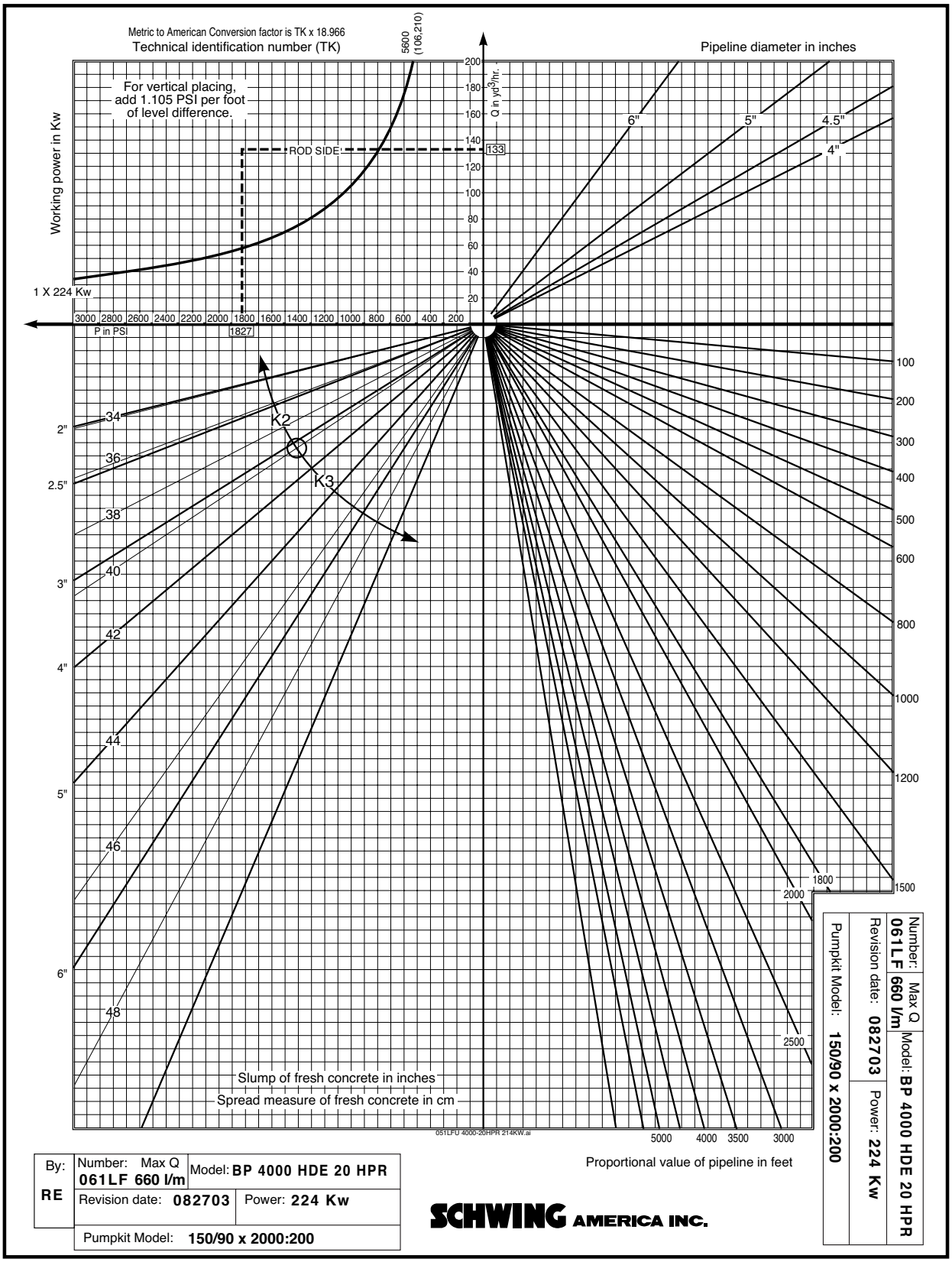


BP 4000-20 HPR ..... 150/90 x 2000:200 ..... 580 l/m ..... 214 Kw

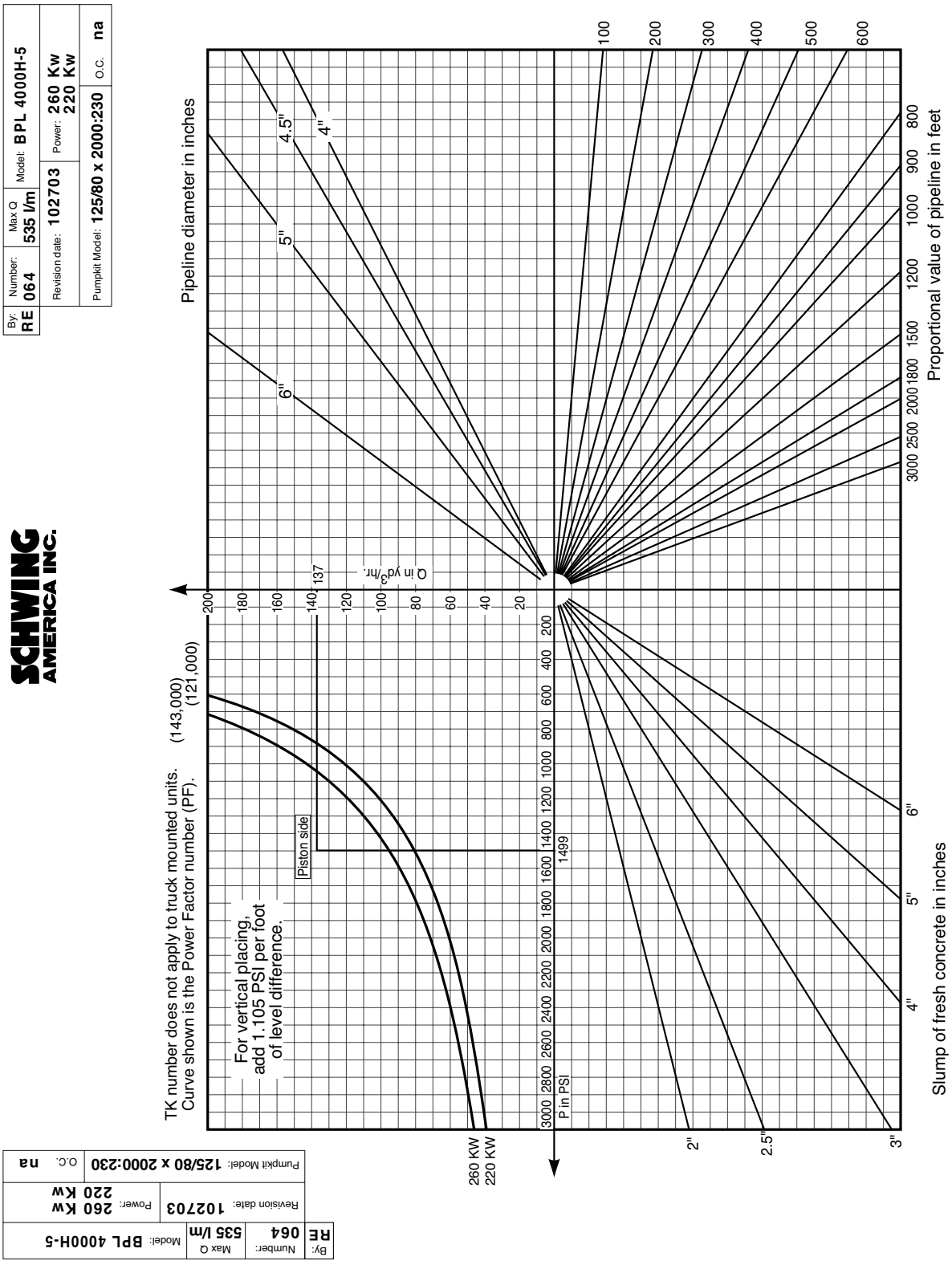


Nomographs - BPA

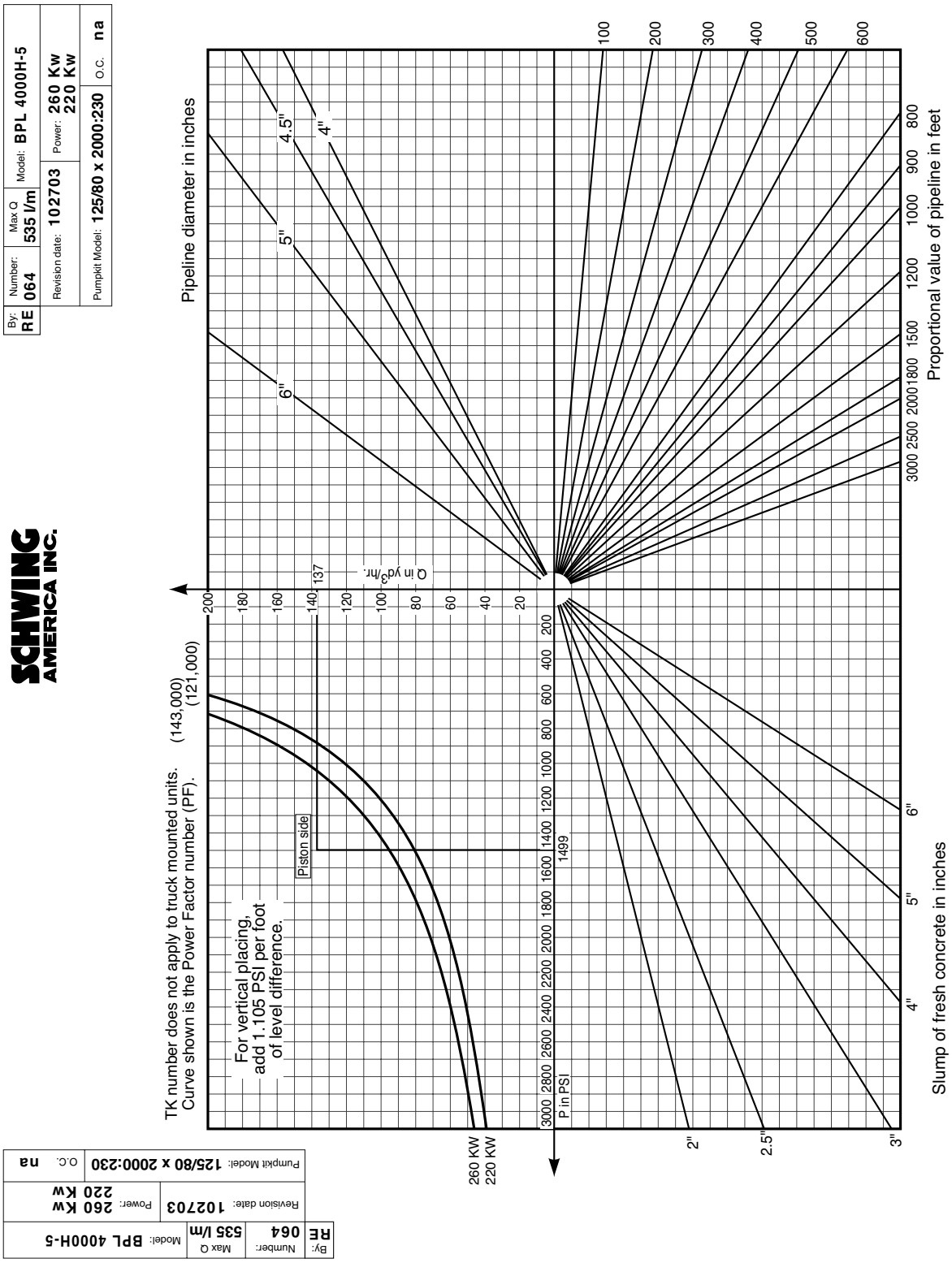
BP 4000 HDE 20 HPR..... 150/90X2000:200 .....660 l/m .....224 Kw



BPL 4000H-5 ..... 125/80X2000:230 .....535 l/m ..... 220/260 Kw

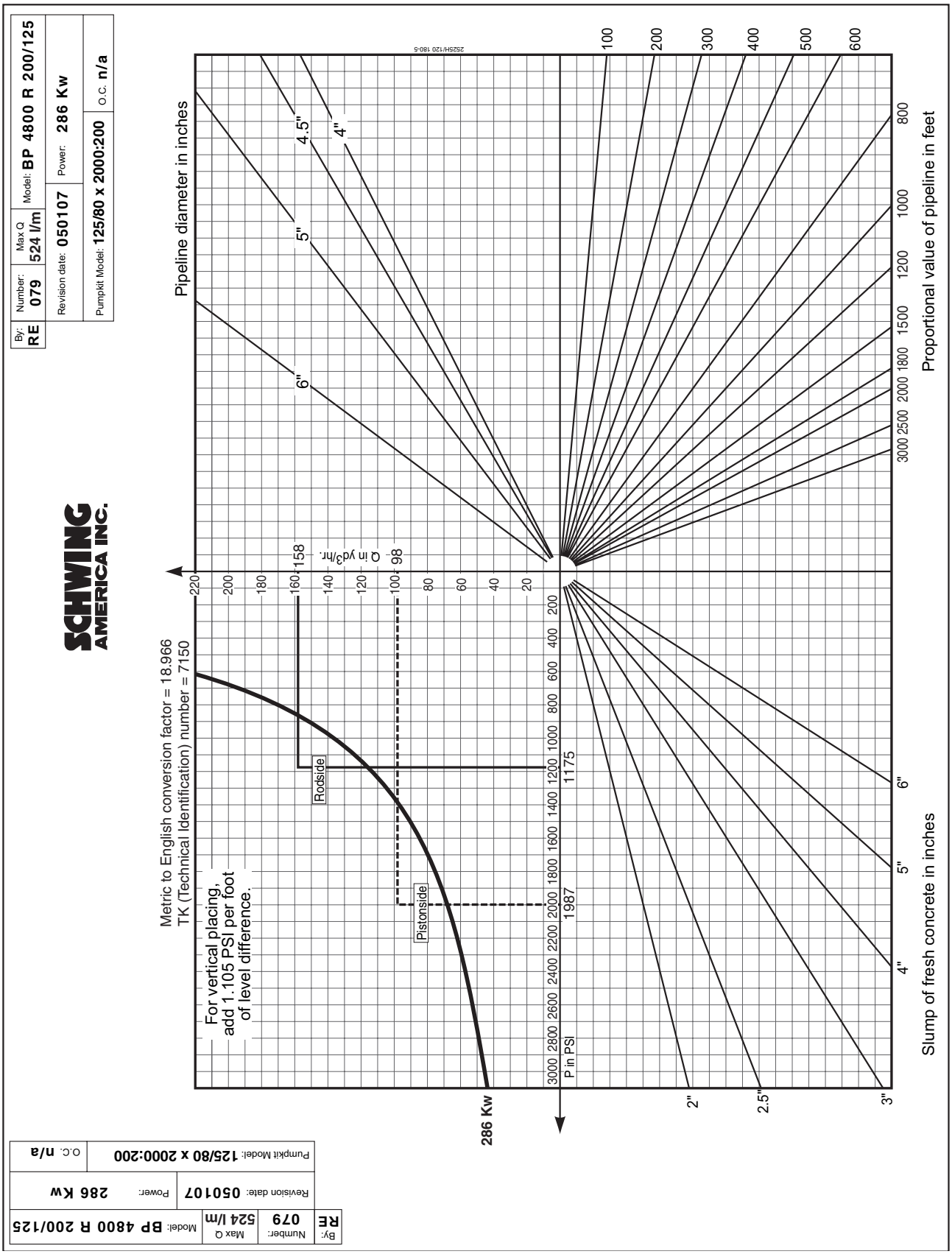


BPL 4000H-5 ..... 130/80X2000:230 ..... 535 l/m ..... 220/260 Kw



By: RE | Number: 064 | Max Q 535 l/m | Model: BPL 4000H-5
Revision date: 102703 | Power: 260 Kw 220 Kw
Pumpkit Model: 125/80 x 2000:230 | O.C. na

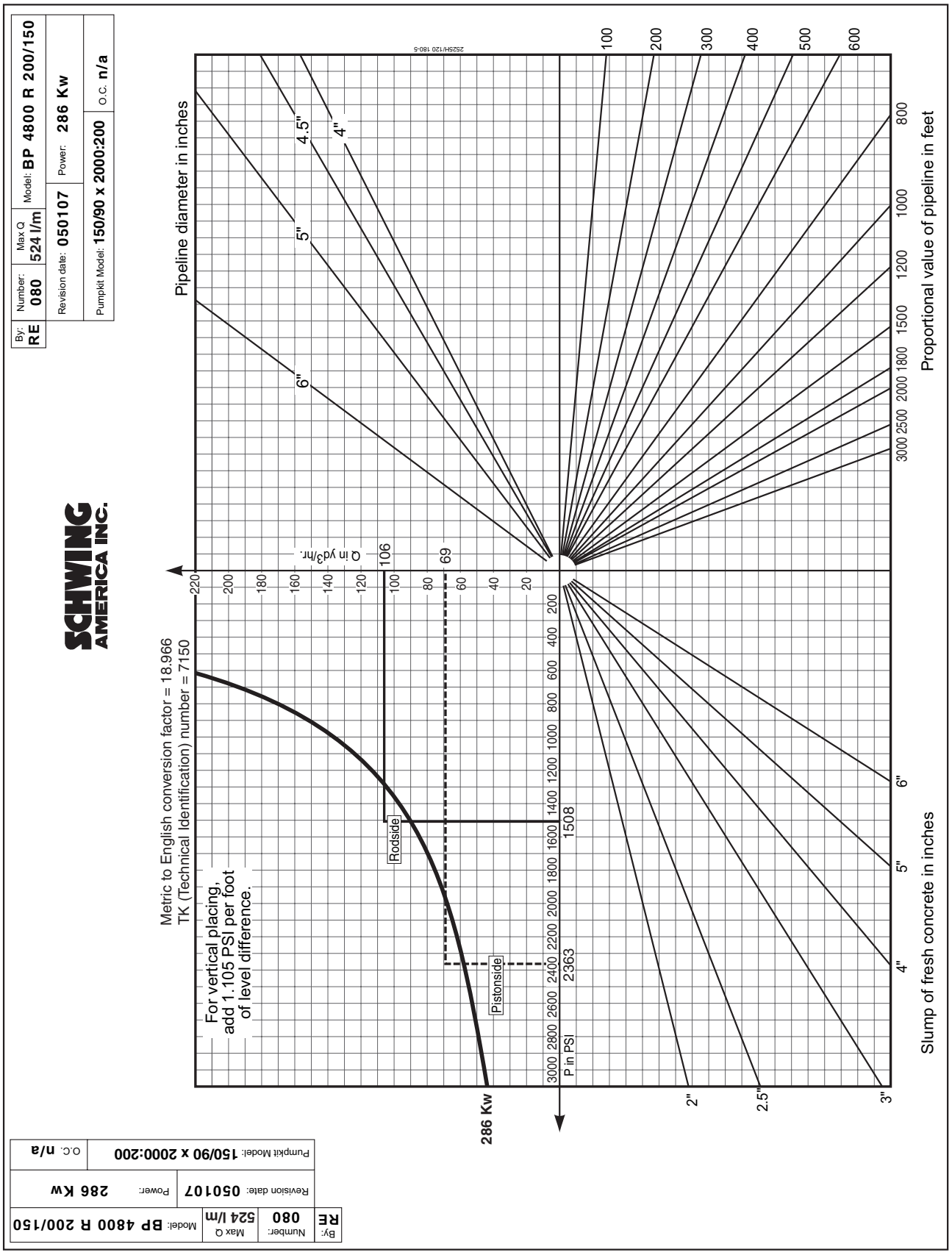
BP 4800 R 200/125 ..... 125/80 x 2000:200 ..... 524 l/m ..... 286 Kw



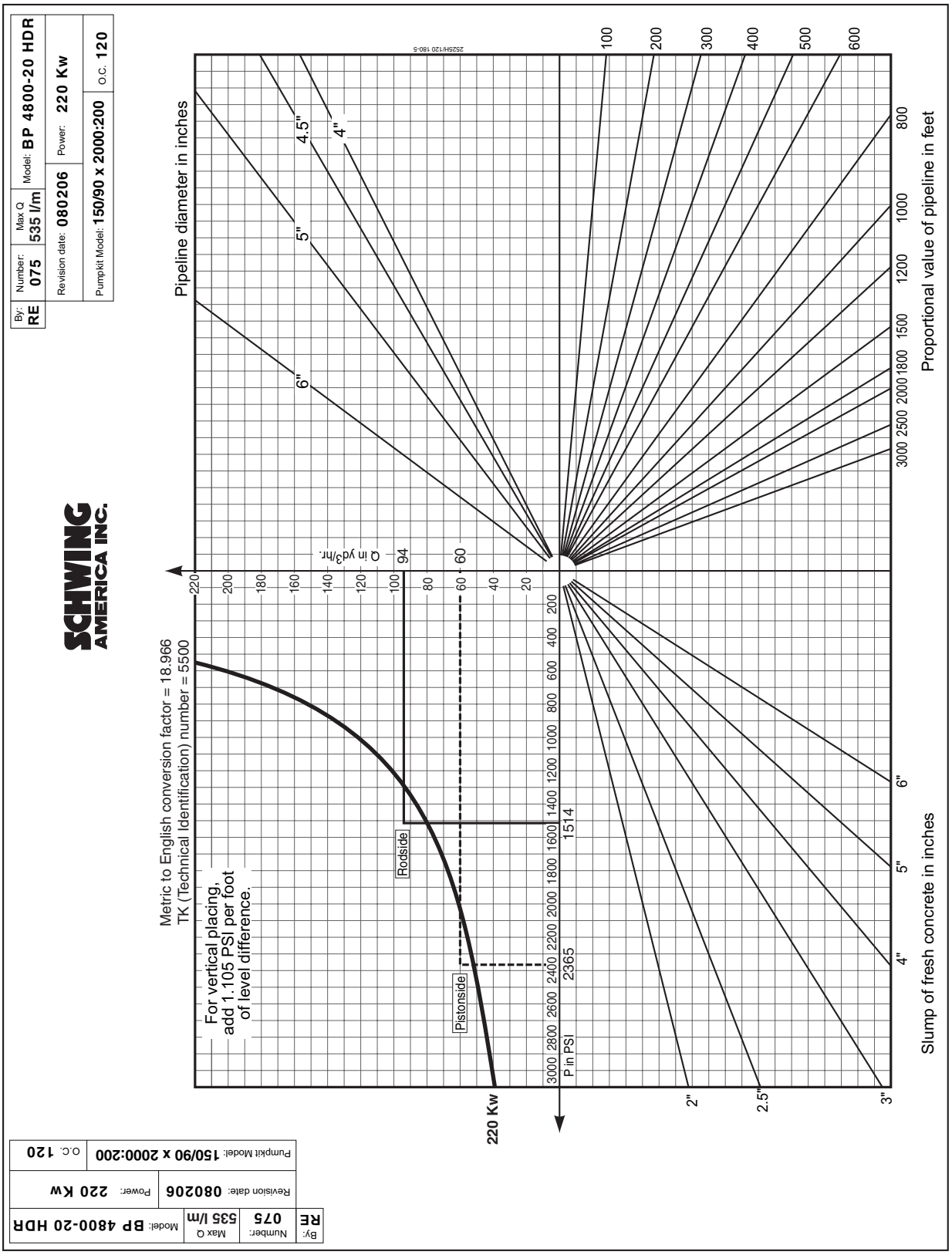
By: RE | Number: 079 | Max Q 524 l/m | Model: BP 4800 R 200/125
Revision date: 050107 | Power: 286 Kw
Pumpkit Model: 125/80 x 2000:200 | O.C. n/a

Nomographs - BPA

BP 4800 R 200/150 ..... 150/90 x 2000:200 .....524 l/m.....286 Kw

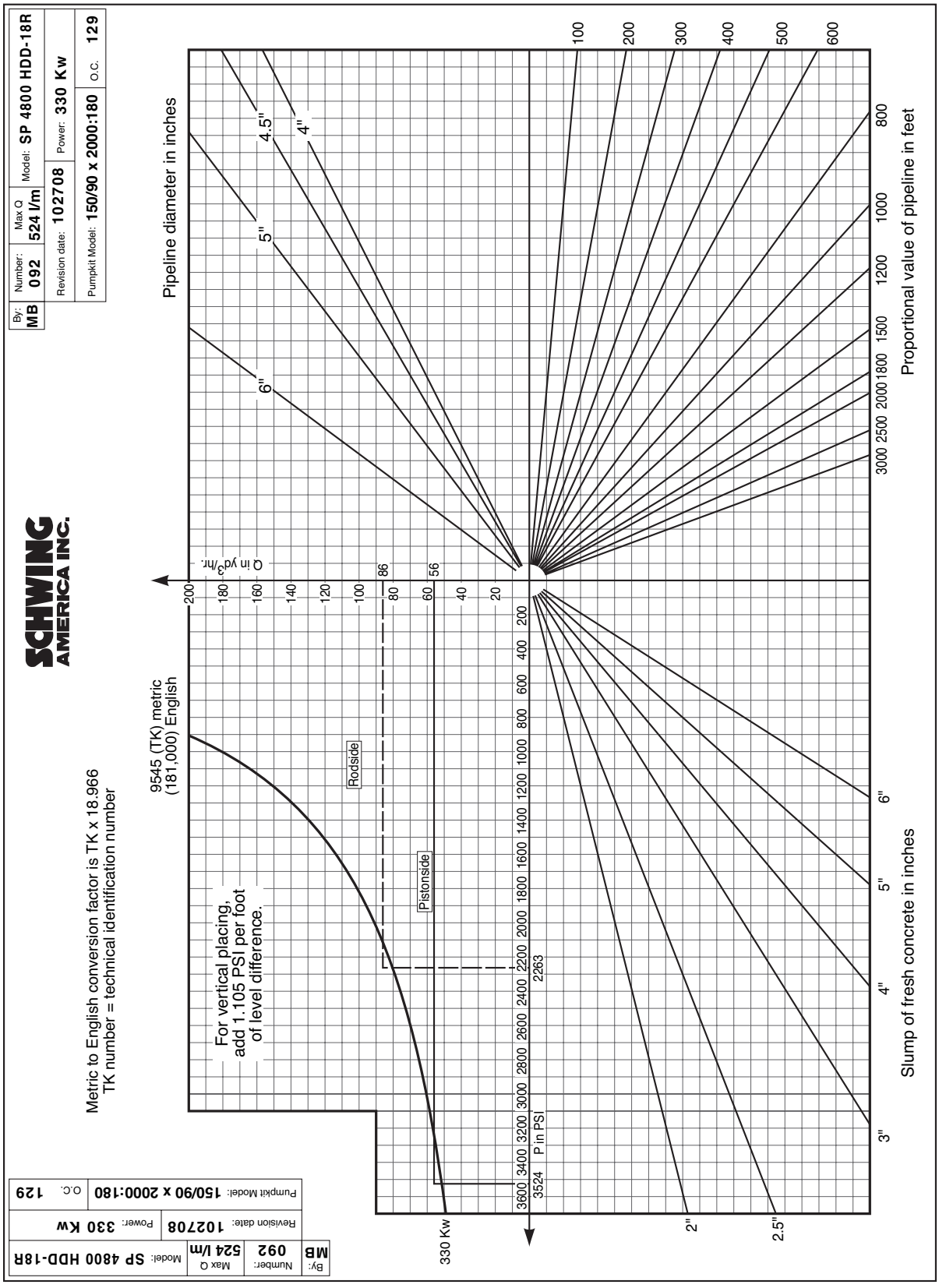


BP 4800-20 HDR ..... 150/90 X 2000:200 .....535 l/m ..... 120 Kw

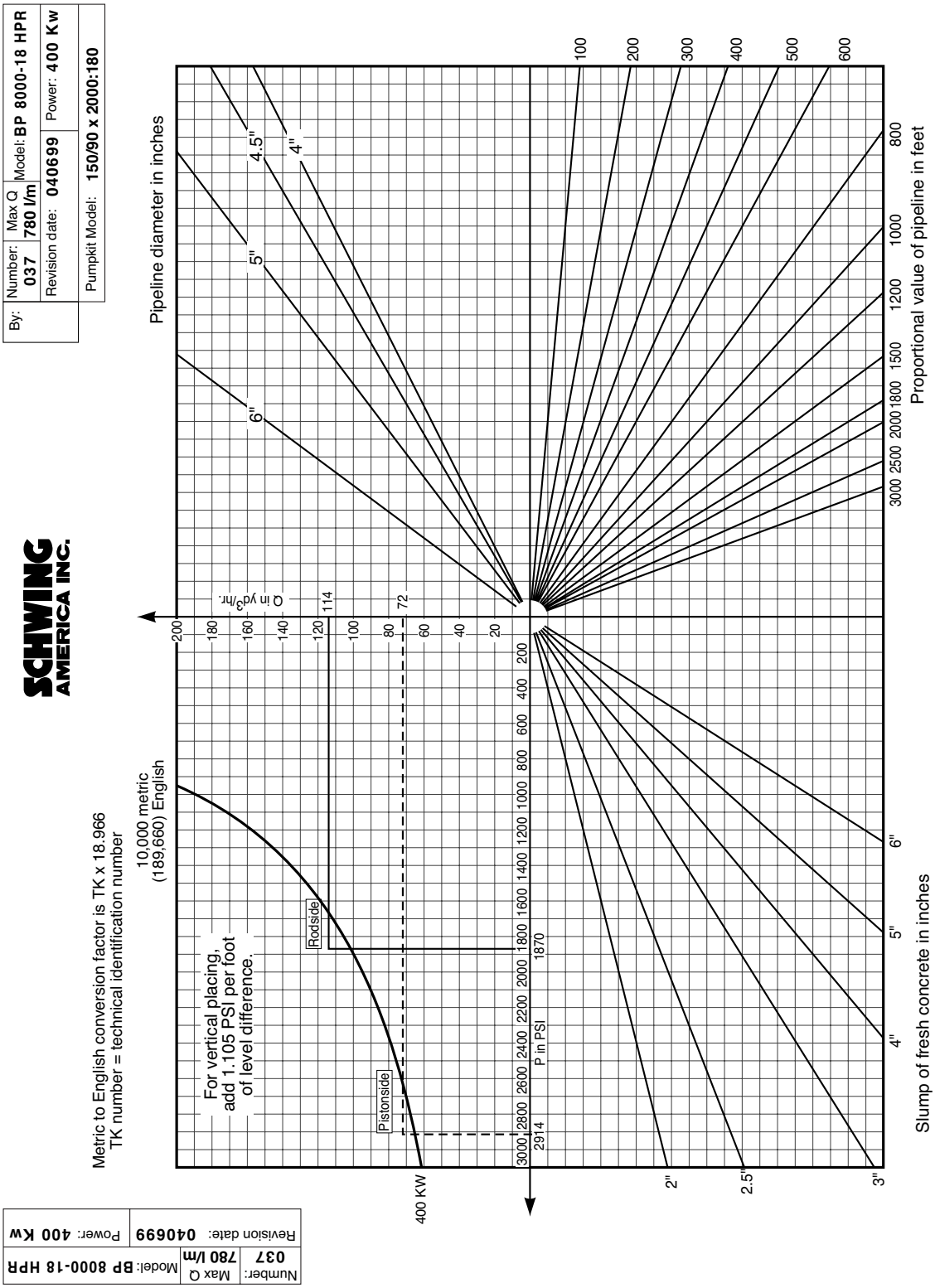


Nomographs - BPA

SP 4800 HDD-18R ..... 150/90 x 2000:180 .....524 l/m.....330 Kw

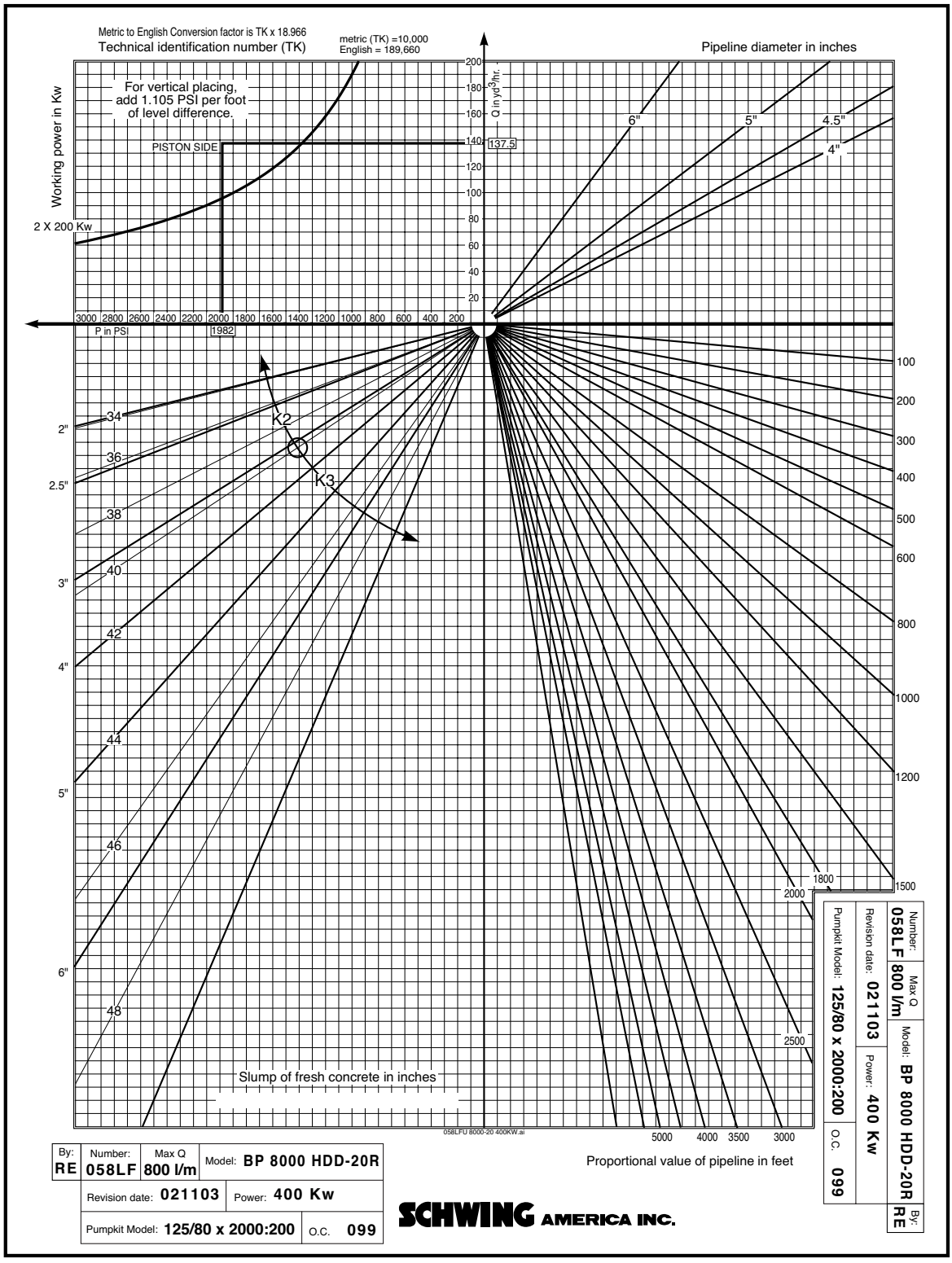


BP 8000-18 HPR ..... 150/90 x 2000:180 ..... 780 l/m ..... 400 Kw

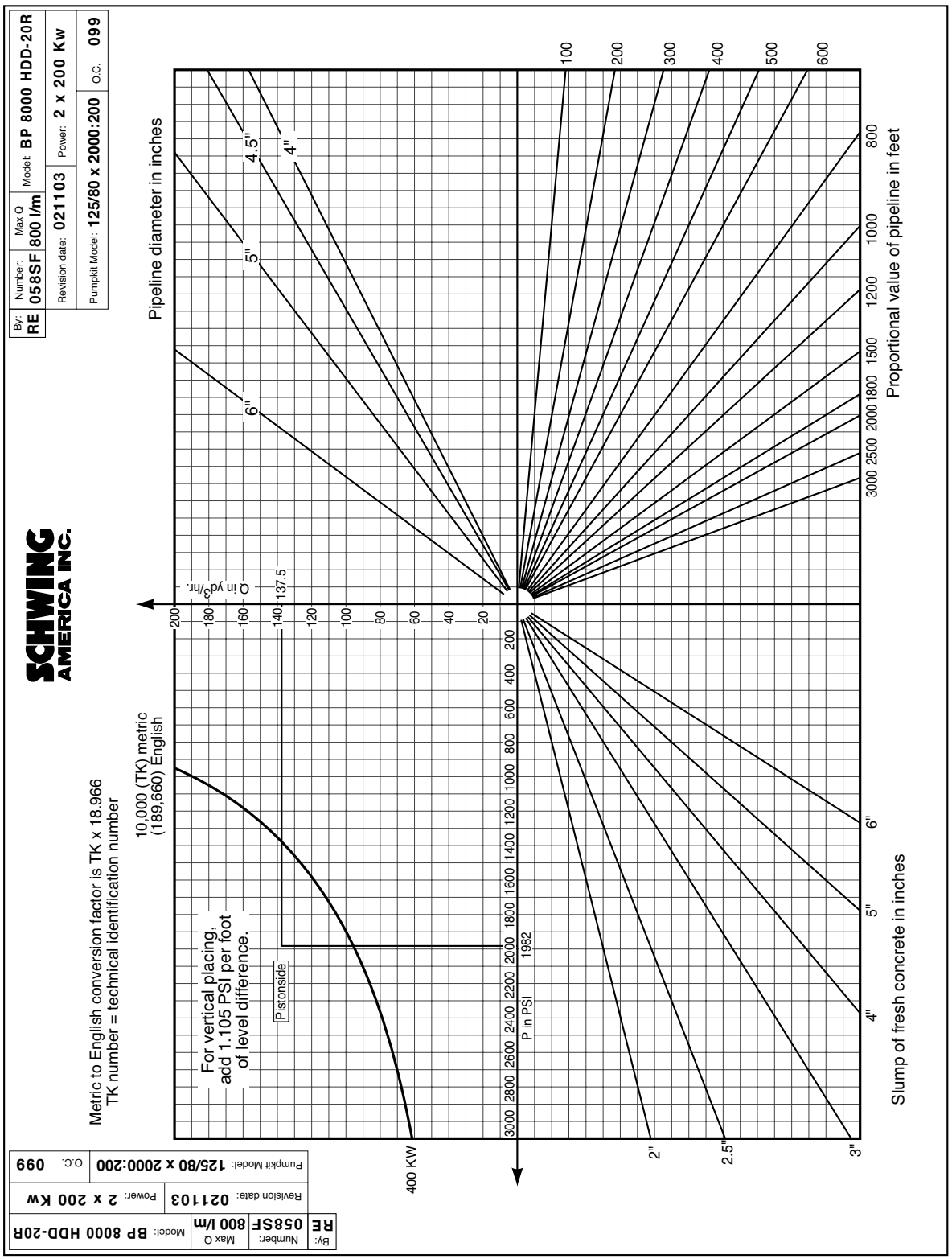


Nomographs - BPA

BP 8000 HDD-20R ..... 125/80 x 2000:200 ..... 800 l/m ..... 400 Kw

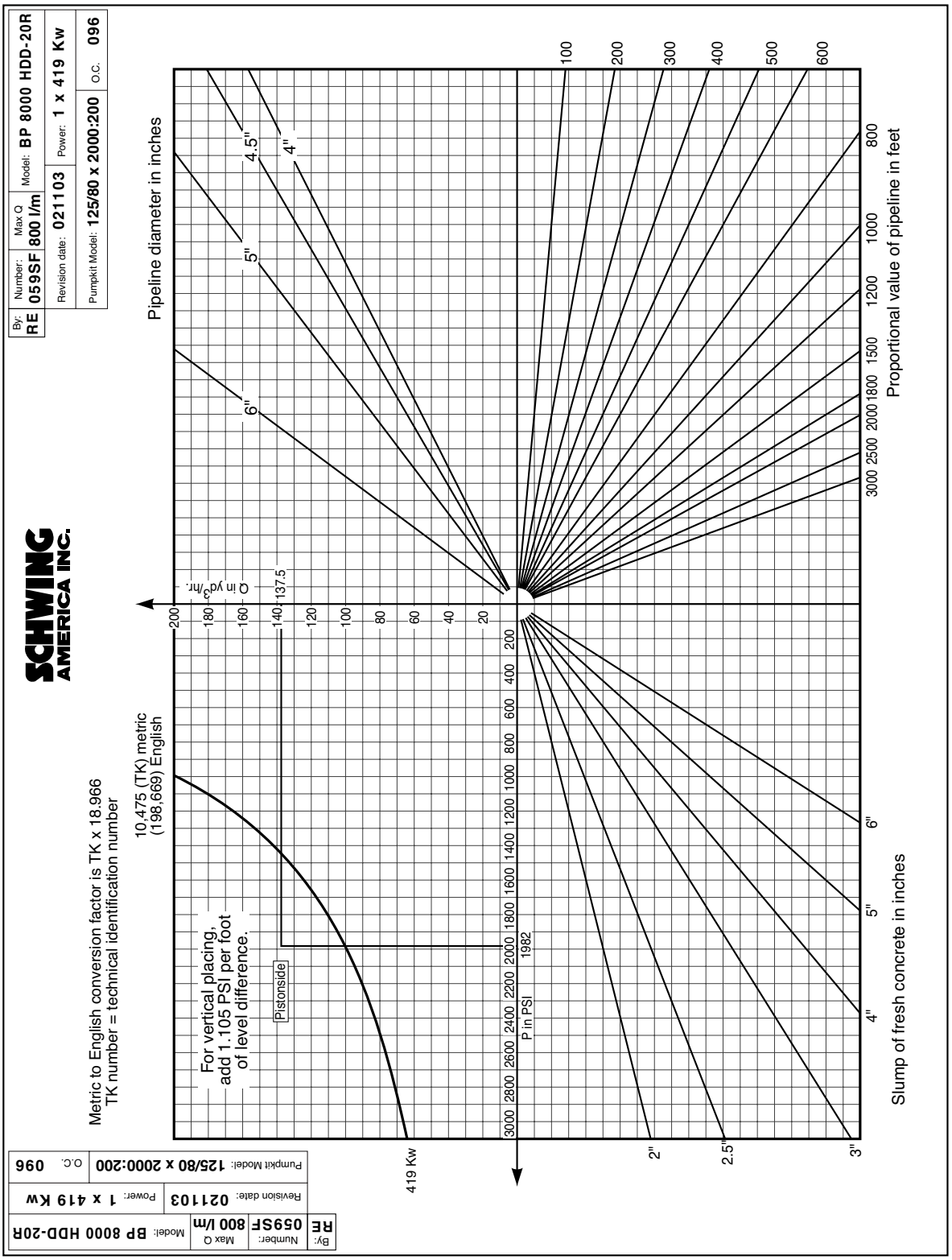


BP 8000 HDD-20R ..... 125/80 x 2000:200 ..... 800 l/m ..... 400 Kw

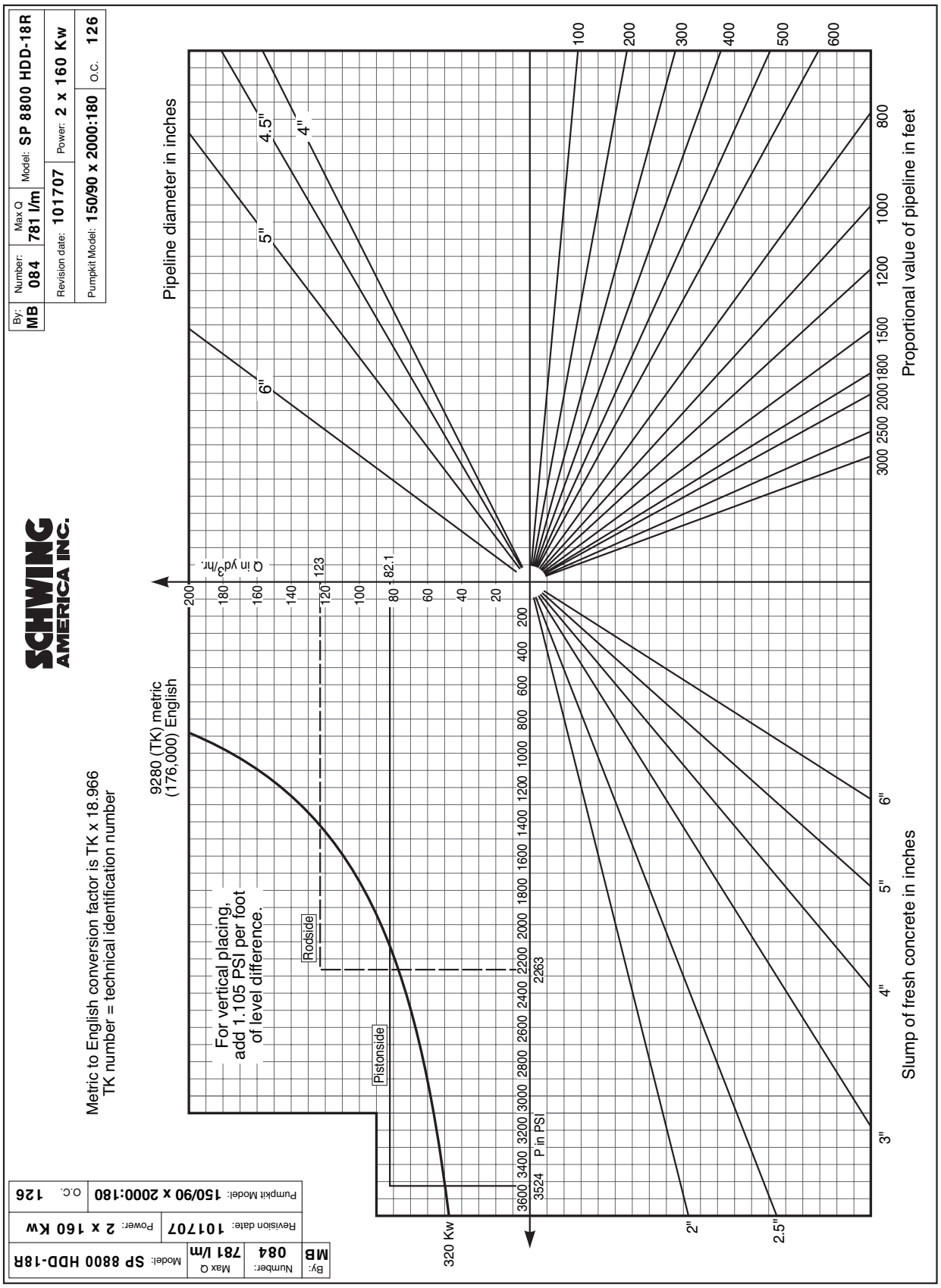


Nomographs - BPA

BP 8000 HDD-20R ..... 125/80 X 2000:200 ..... 800 l/m .....419 Kw

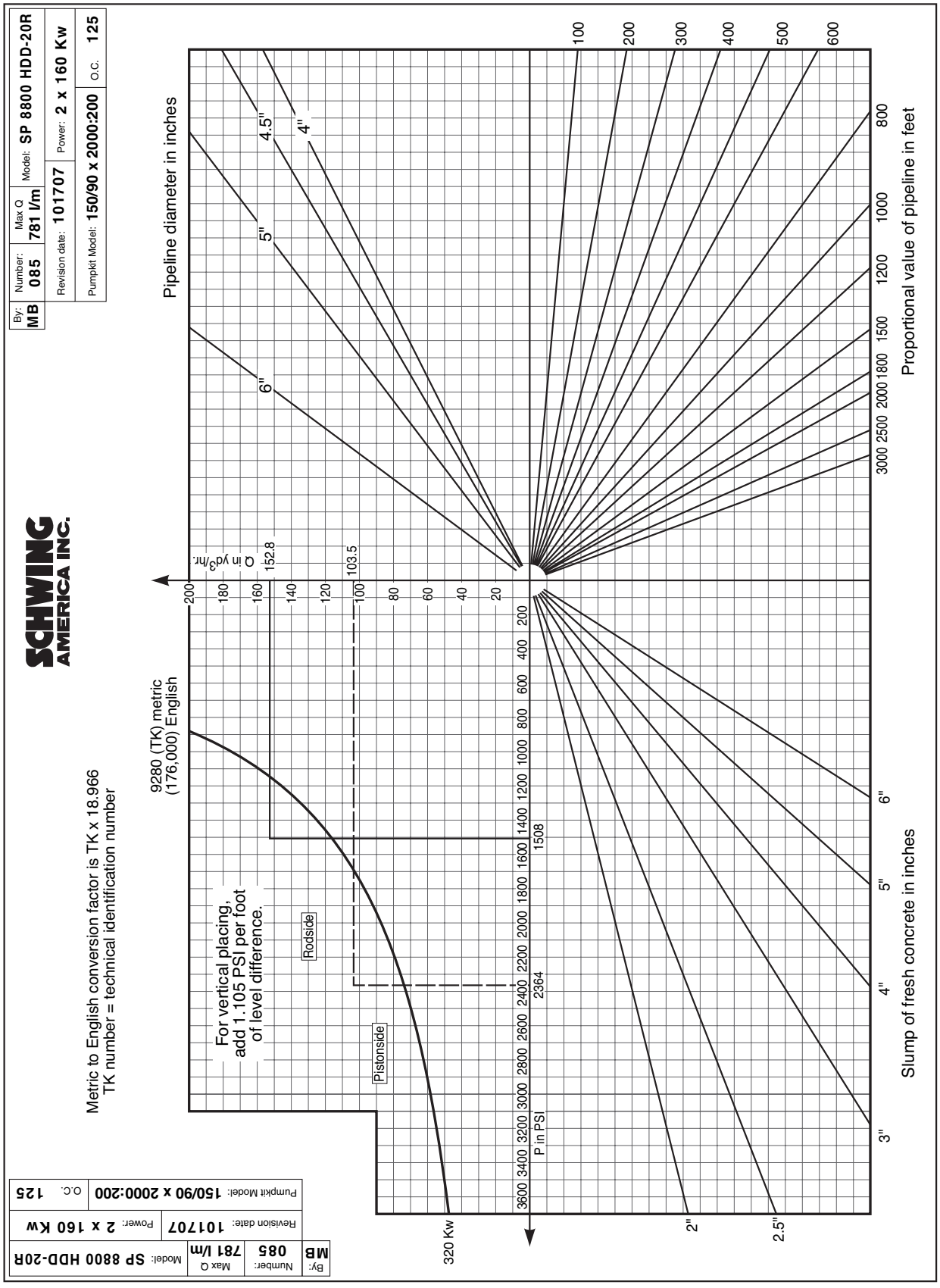


BP 8800 HDD-18R ..... 150/90 X 2000:180 .....781 l/m ..... 320 Kw

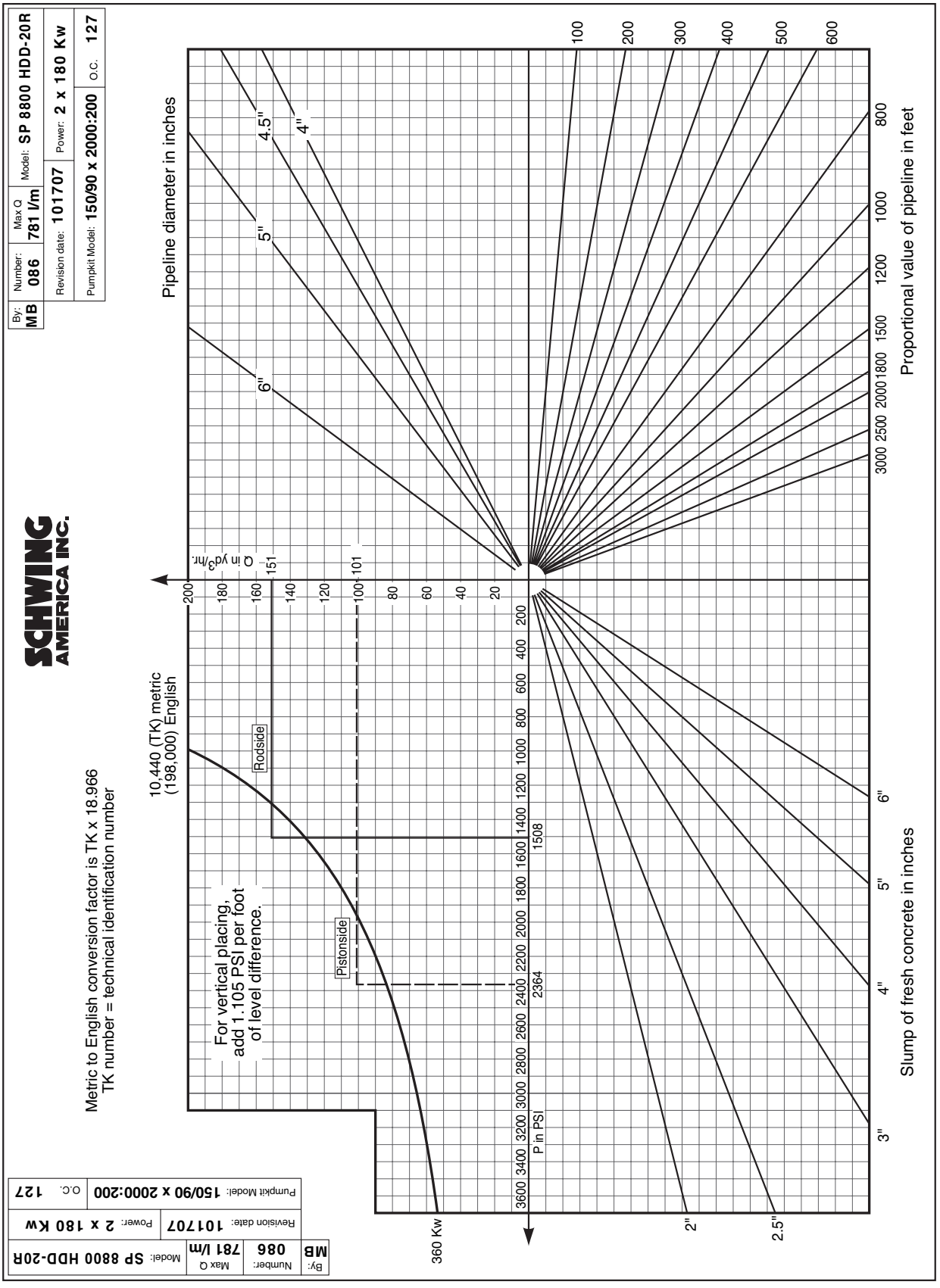


Nomographs - BPA

BP 8800 HDD-20R ..... 150/90 X 2000:200 ..... 781 l/m .....320 Kw

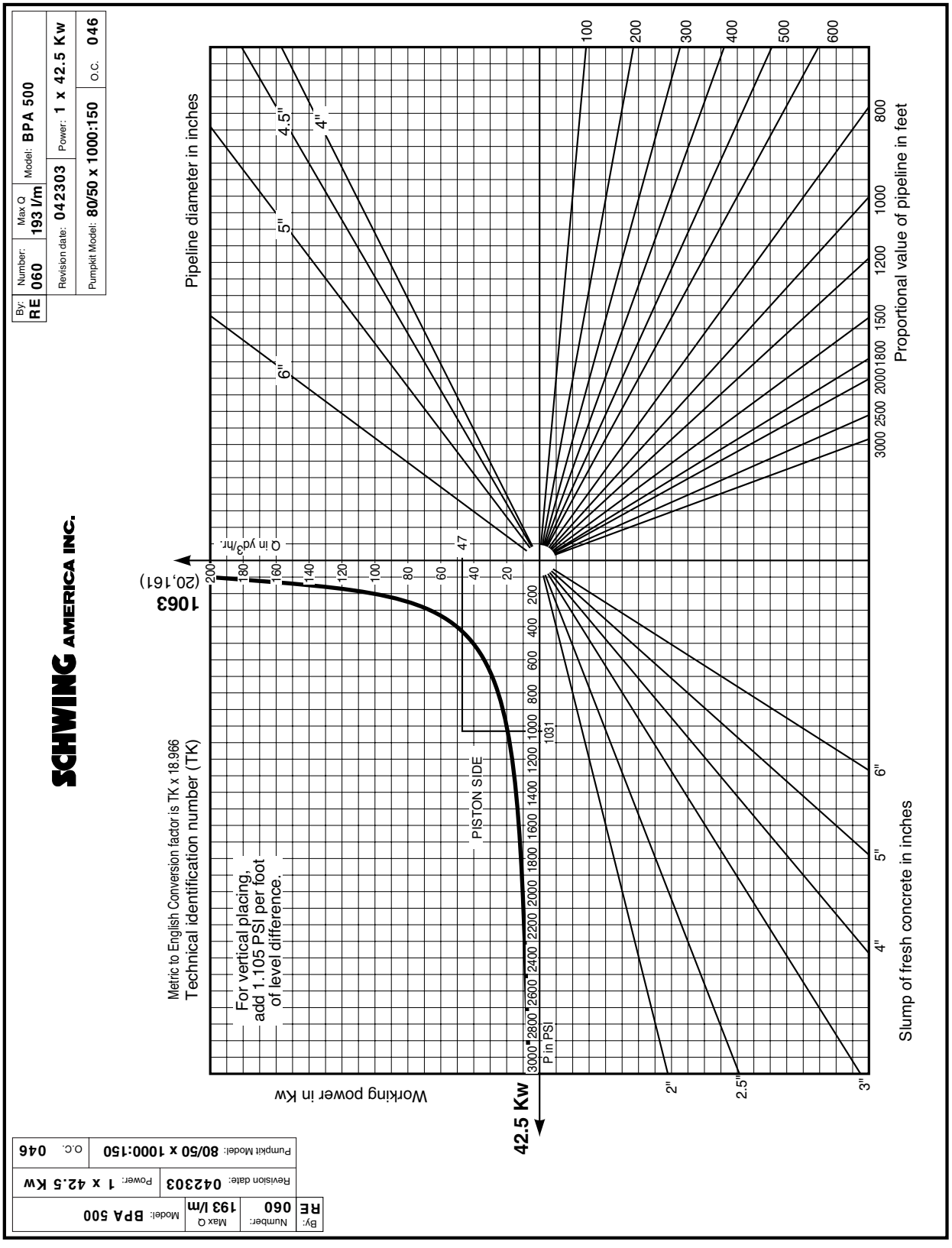


BP 8800 HDD-20R ..... 150/90 X 2000:200 .....781 l/m ..... 360 Kw



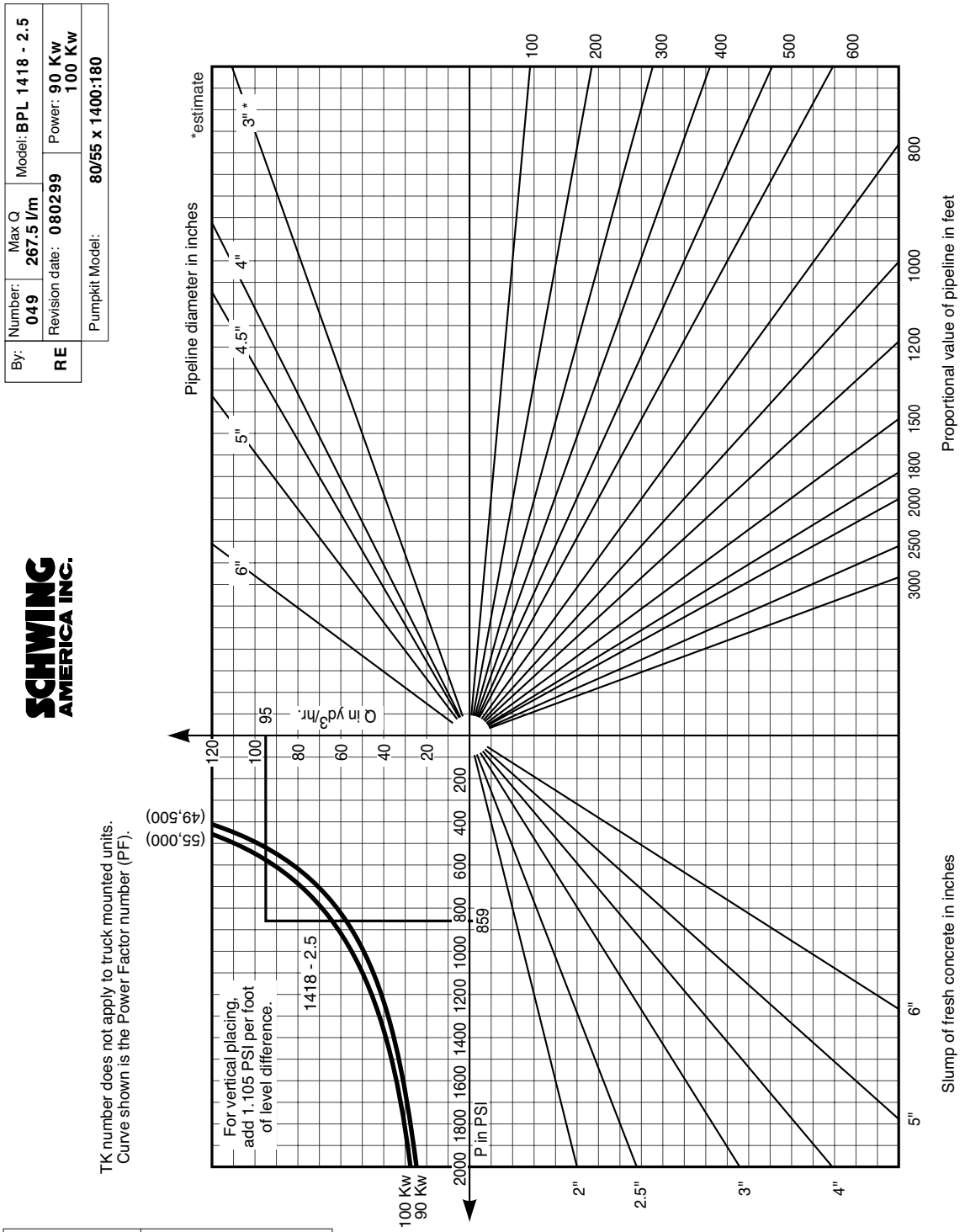
Nomographs - BPA

BPA 500..... 80/50 X 1000:150 .....193 l/m.....42.5 Kw



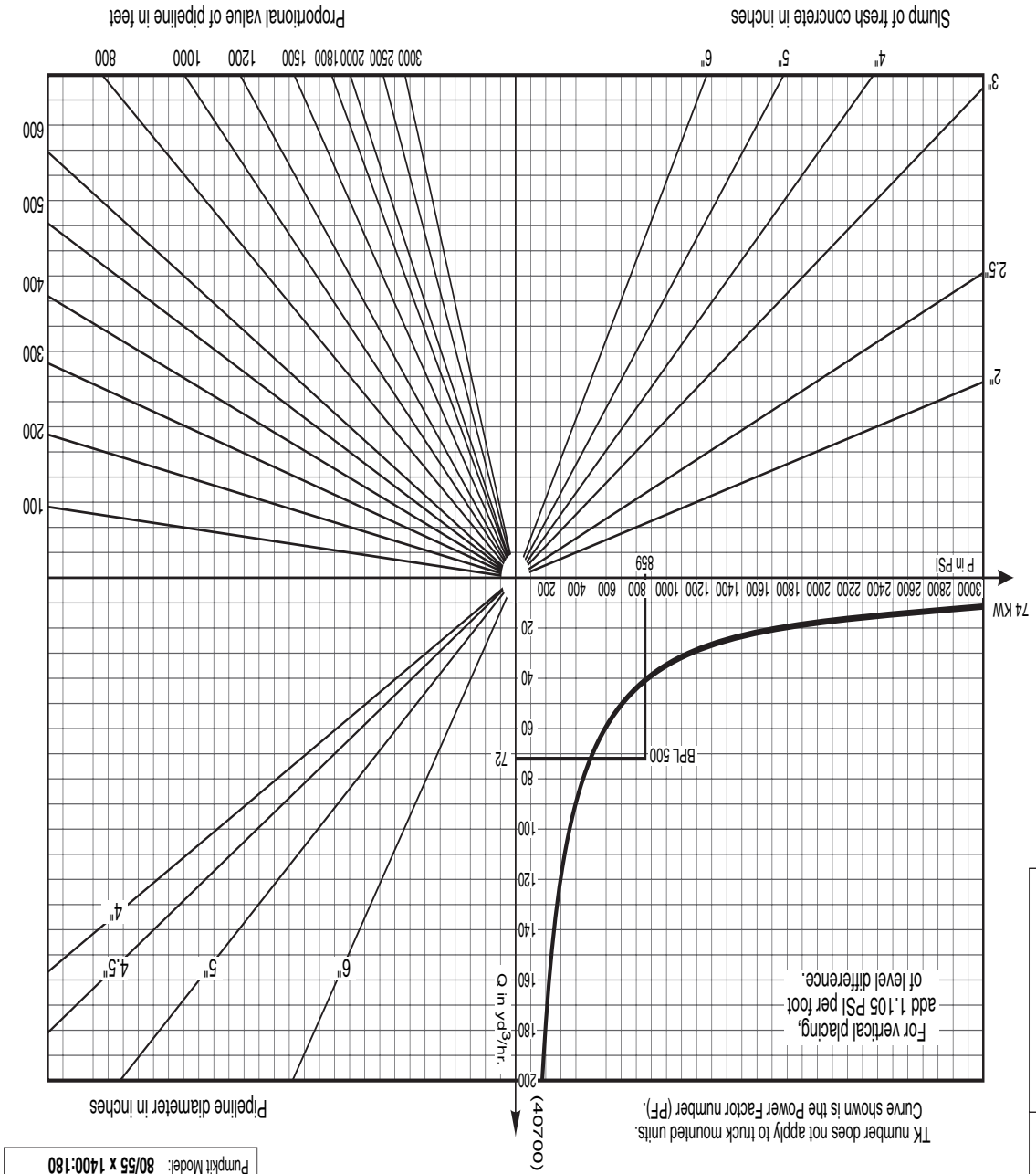
By: RE | Number: 060 | Max Q 193 l/m | Model: BPA 500
Revision date: 042303 | Power: 1 x 42.5 Kw
Pumpkit Model: 80/50 x 1000:150 | O.C. 046

BPL 1418-2.5 ..... 80/55 x 1400:180 ..... 267.5 l/m ..... 90 &100 Kw



Nomographs - BPL

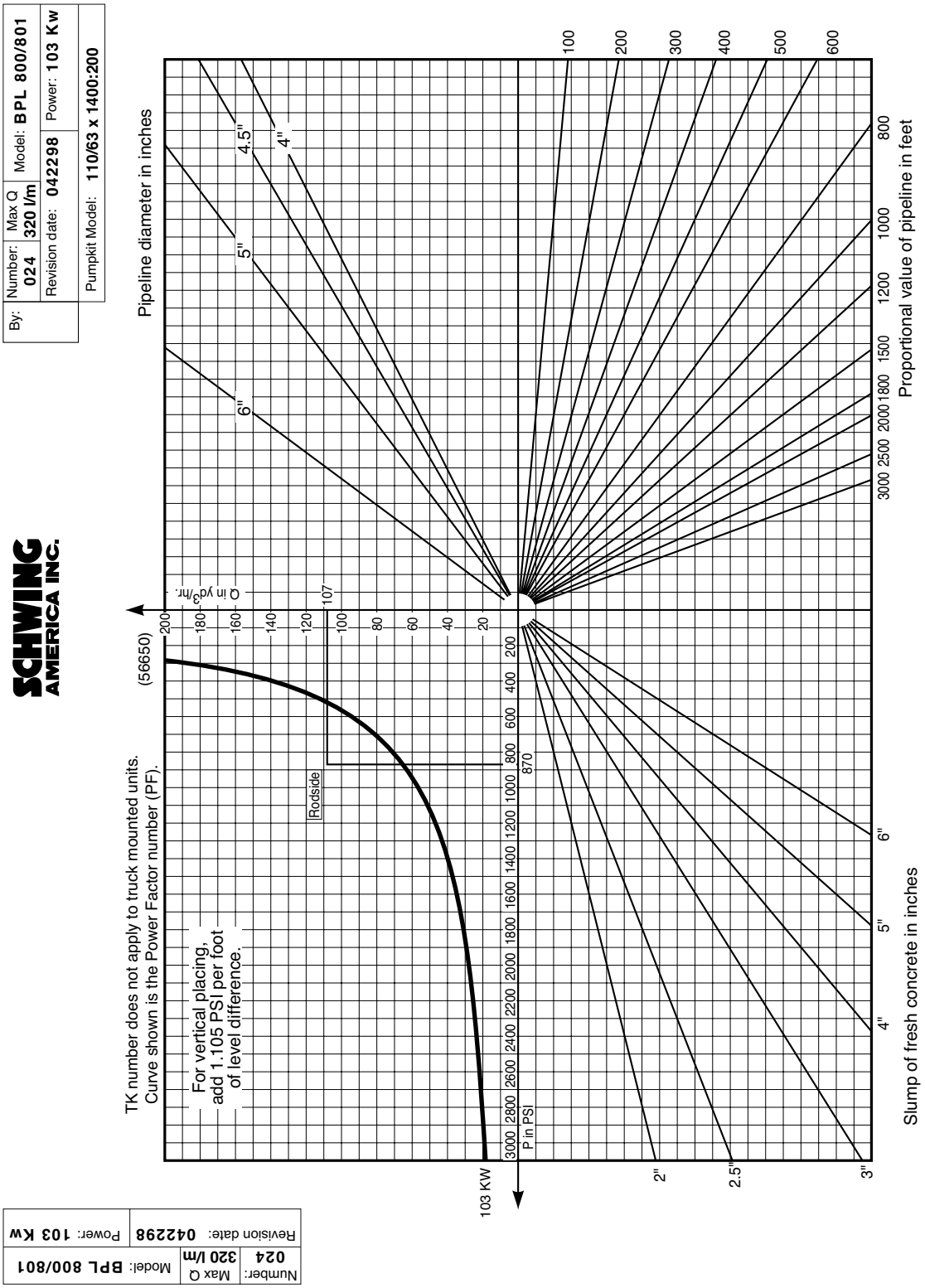
BPL 500..... 80/55 x 1400:180 .....200 l/m.....75 Kw



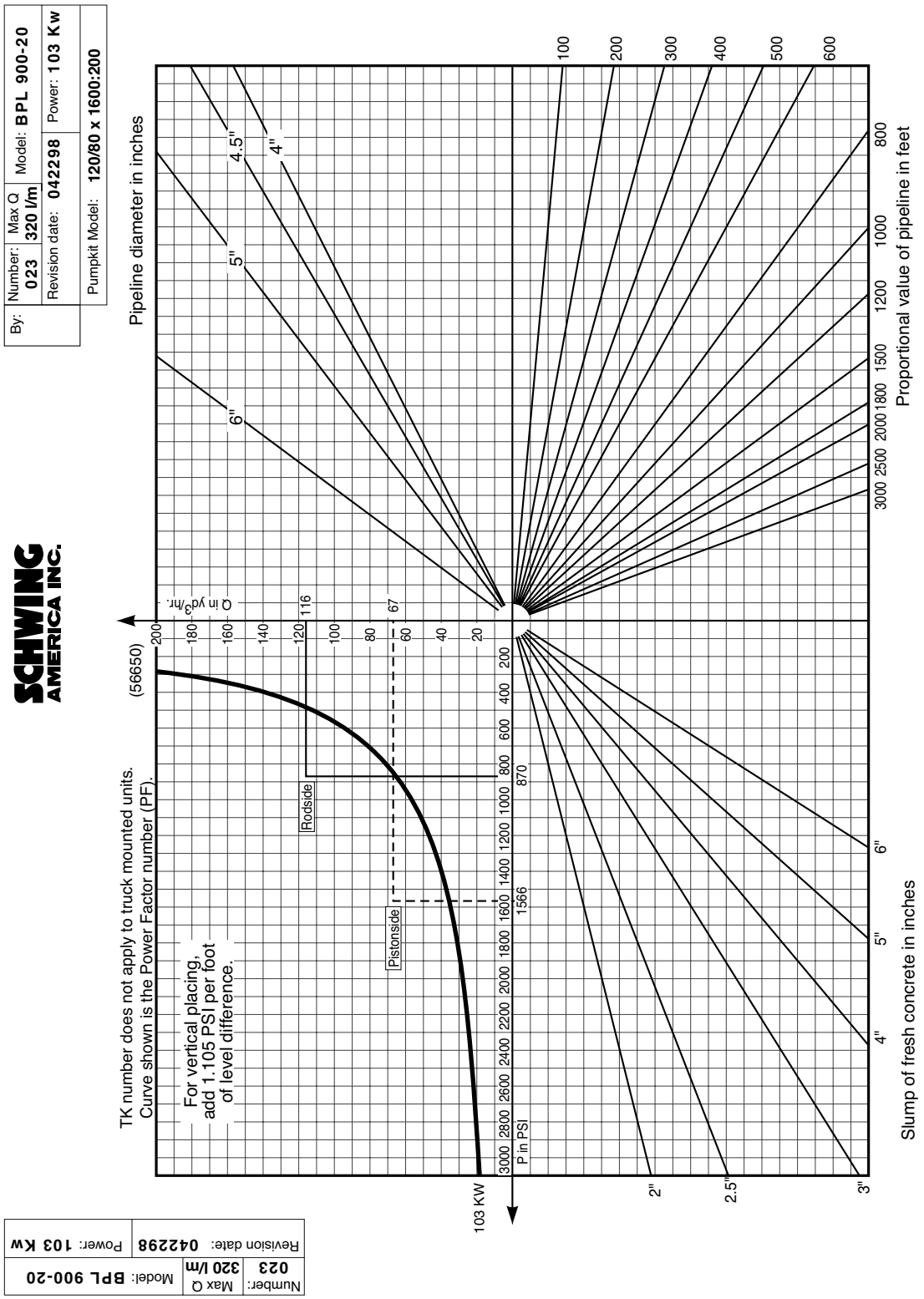
By:	Number: 033	Max Q 400 l/m	Model: BPL 500
	Revision date: 042298		Power: 75 Kw
	Pumpkit Model: 80/55 x 1400:180		

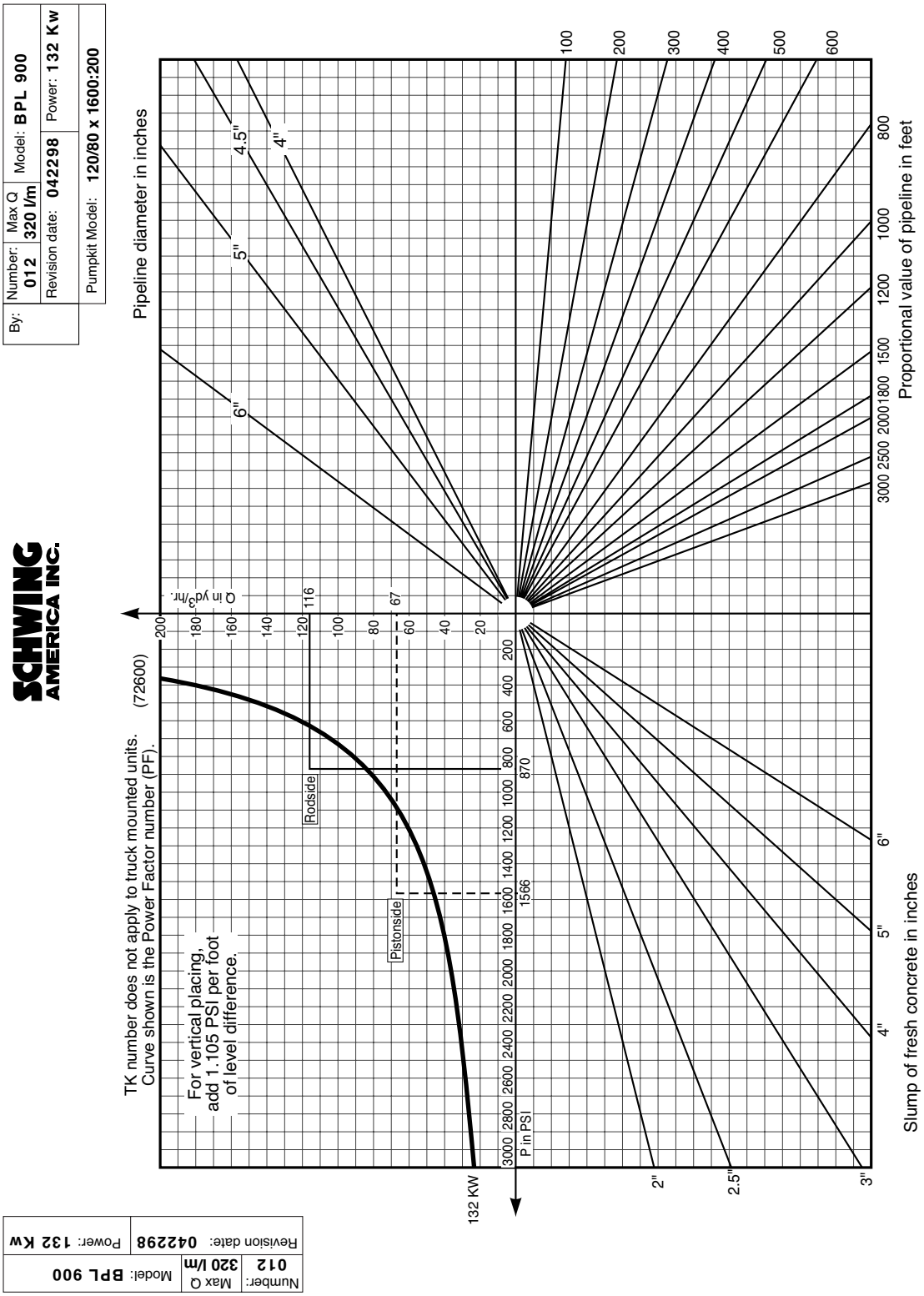
SCHWING AMERICA INC.

Number: 033	Max Q 400 l/m	Model: BPL 1200-20
Revision date: 042298		Power: 150 Kw


By:
Number: 024
Max Q 320 l/m
Model: BPL 800/801
Revision date: 042298
Power: 103 Kw
Pumpkit Model: 110/63 x 1400:200
SCHWING AMERICA INC.
Pipeline diameter in inches
4.5"
4"
5"
6"
Q in yd³/hr.
(56650)
107
Rodside
870
TK number does not apply to truck mounted units.
Curve shown is the Power Factor number (PF).
For vertical placing, add 1.105 PSI per foot of level difference.
P in PSI
103 KW
Proportional value of pipeline in feet
Slump of fresh concrete in inches
2"
2.5"
3"
4"
5"
6"
Number: 024
Max Q 320 l/m
Model: BPL 800/801
Revision date: 042298
Power: 103 Kw

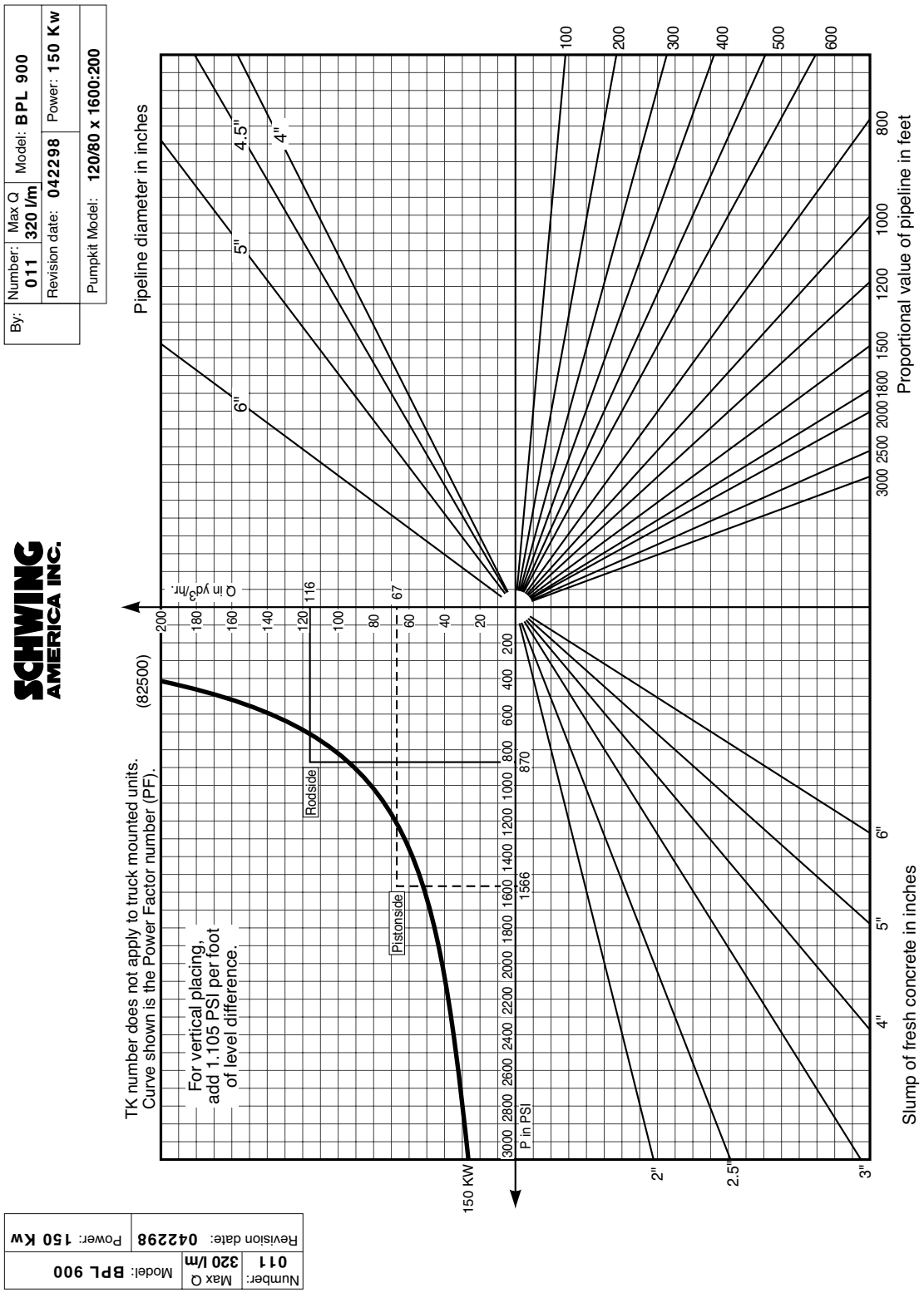
BPL 900-20 ..... 120/80 x 1600:200 .....320 l/m.....103 Kw

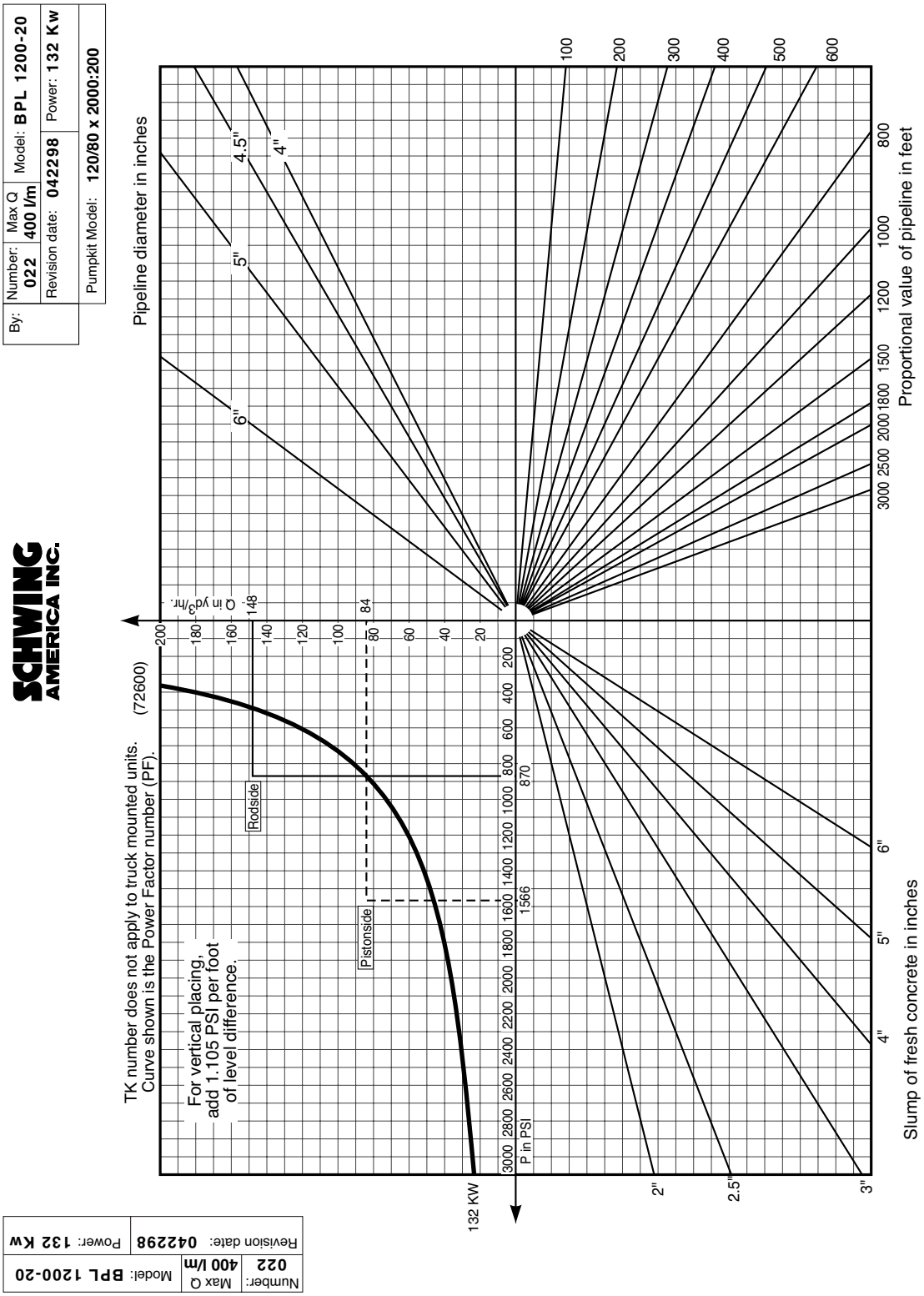



By:
Number: 012
Max Q 320 l/m
Model: BPL 900
Revision date: 042298
Power: 132 Kw
Pumpkit Model: 120/80 x 1600:200
SCHWING AMERICA INC.
Pipeline diameter in inches
4"
4.5"
5"
6"
Q in yd3/hr.
200 180 160 140 120 100 80 60 40 20
116
67
Rodside
Pistonside
870
1566
(72600)
TK number does not apply to truck mounted units.
Curve shown is the Power Factor number (PF).
For vertical placing, add 1.105 PSI per foot of level difference.
P in PSI
200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000
132 KW
100 200 300 400 500 600
800 1000 1200 1500 1800 2000 2500 3000
Proportional value of pipeline in feet
2" 2.5" 3" 4" 5" 6"
Slump of fresh concrete in inches
Number: 012
Max Q 320 l/m
Model: BPL 900
Revision date: 042298
Power: 132 Kw

Nomographs - BPL

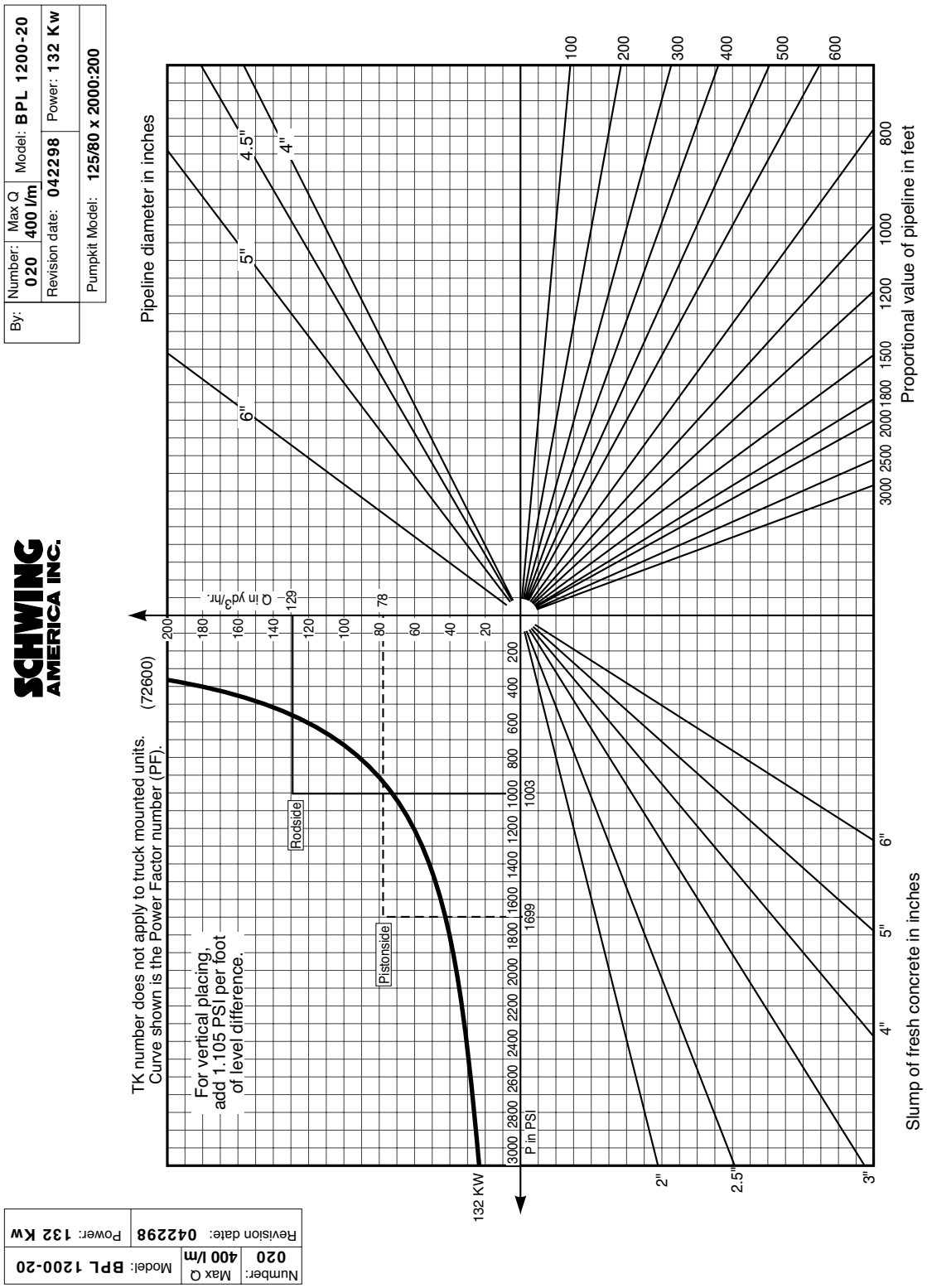
BPL 900..... 120/80 x 1600:200 .....320 l/m.....150 Kw



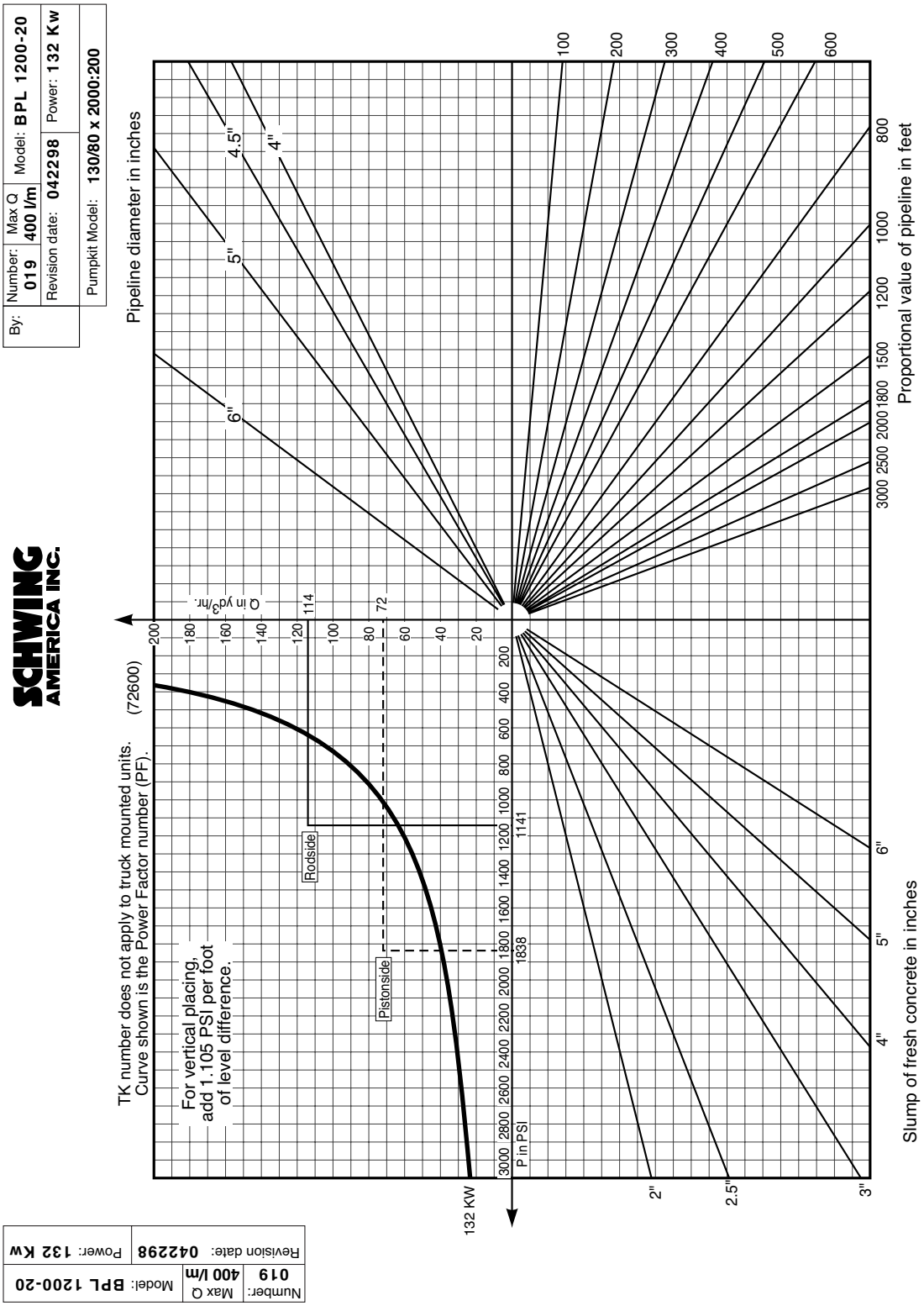

By:
Number: 022
Max Q 400 l/m
Model: BPL 1200-20
Revision date: 042298
Power: 132 Kw
Pumpkit Model: 120/80 x 2000:200
SCHWING AMERICA INC.
Pipeline diameter in inches
4"
4.5"
5"
6"
Q in yd³/hr.
148
84
Rodside
Pistonside
(72600)
TK number does not apply to truck mounted units.
Curve shown is the Power Factor number (PF).
For vertical placing, add 1.105 PSI per foot of level difference.
870
1566
P in PSI
132 KW
Proportional value of pipeline in feet
Slump of fresh concrete in inches
2"
2.5"
3"
4"
5"
6"
Number: 022
Max Q 400 l/m
Model: BPL 1200-20
Revision date: 042298
Power: 132 Kw

Nomographs - BPL

BPL 1200-20 ..... 125/80 x 2000:200 ..... 400 l/m ..... 132 Kw

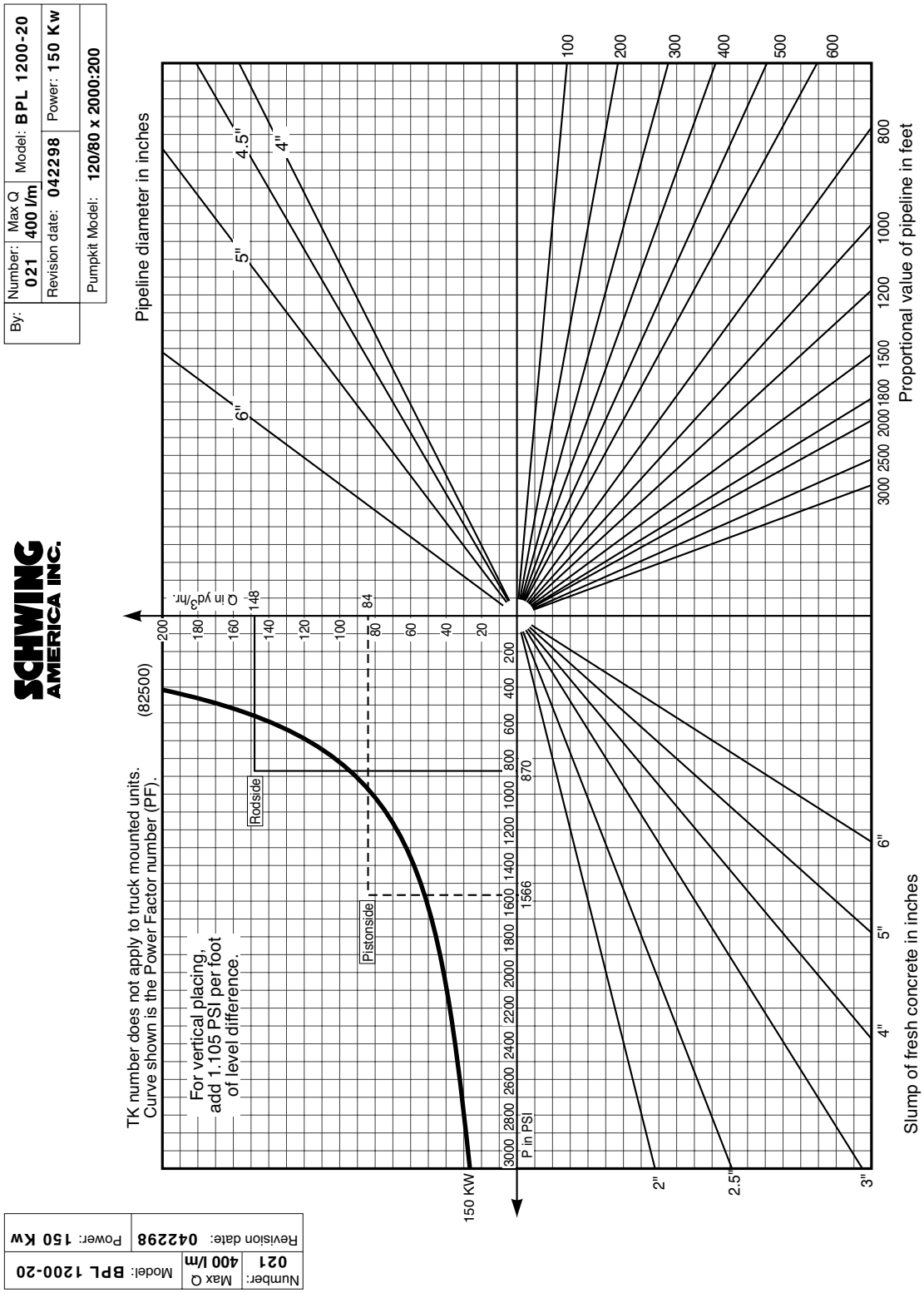


BPL 1200-20..... 130/80 x 2000:200.....400 l/m ..... 132 Kw

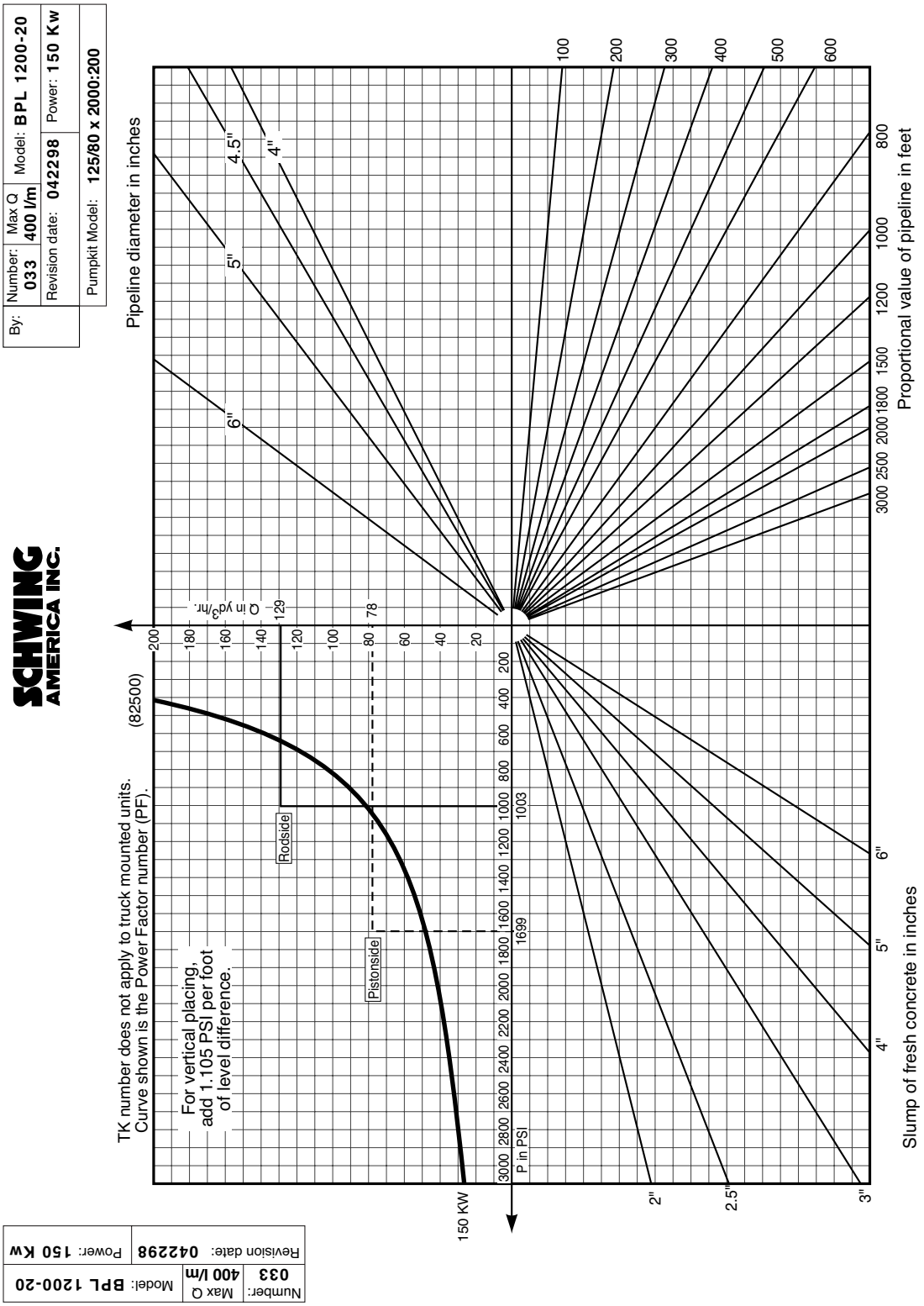


Nomographs - BPL

BPL 1200-20 ..... 120/80 x 2000:200 ..... 400 l/m ..... 150 Kw

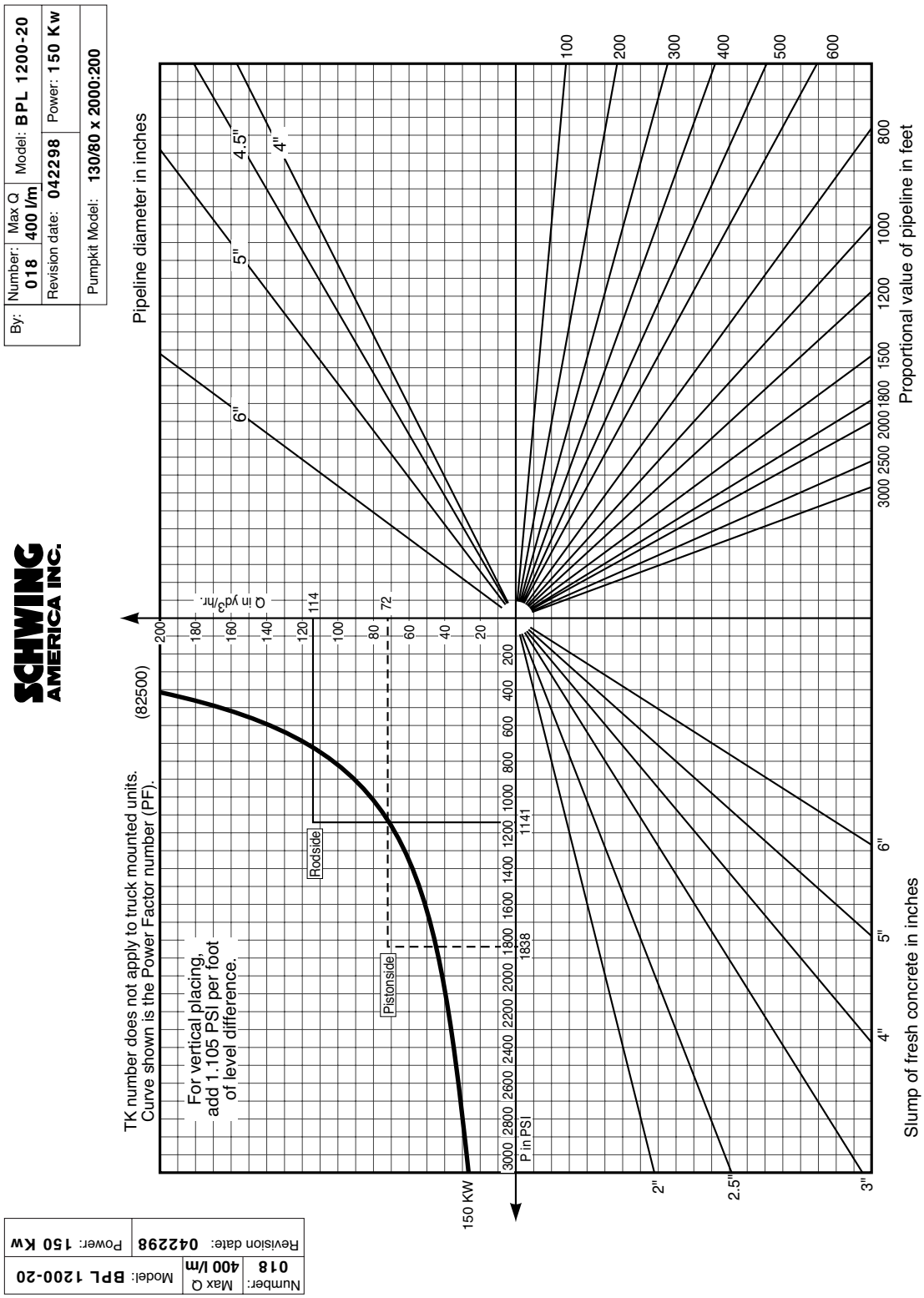


BPL 1200-20..... 125/80 x 2000:200.....400 l/m ..... 150 Kw

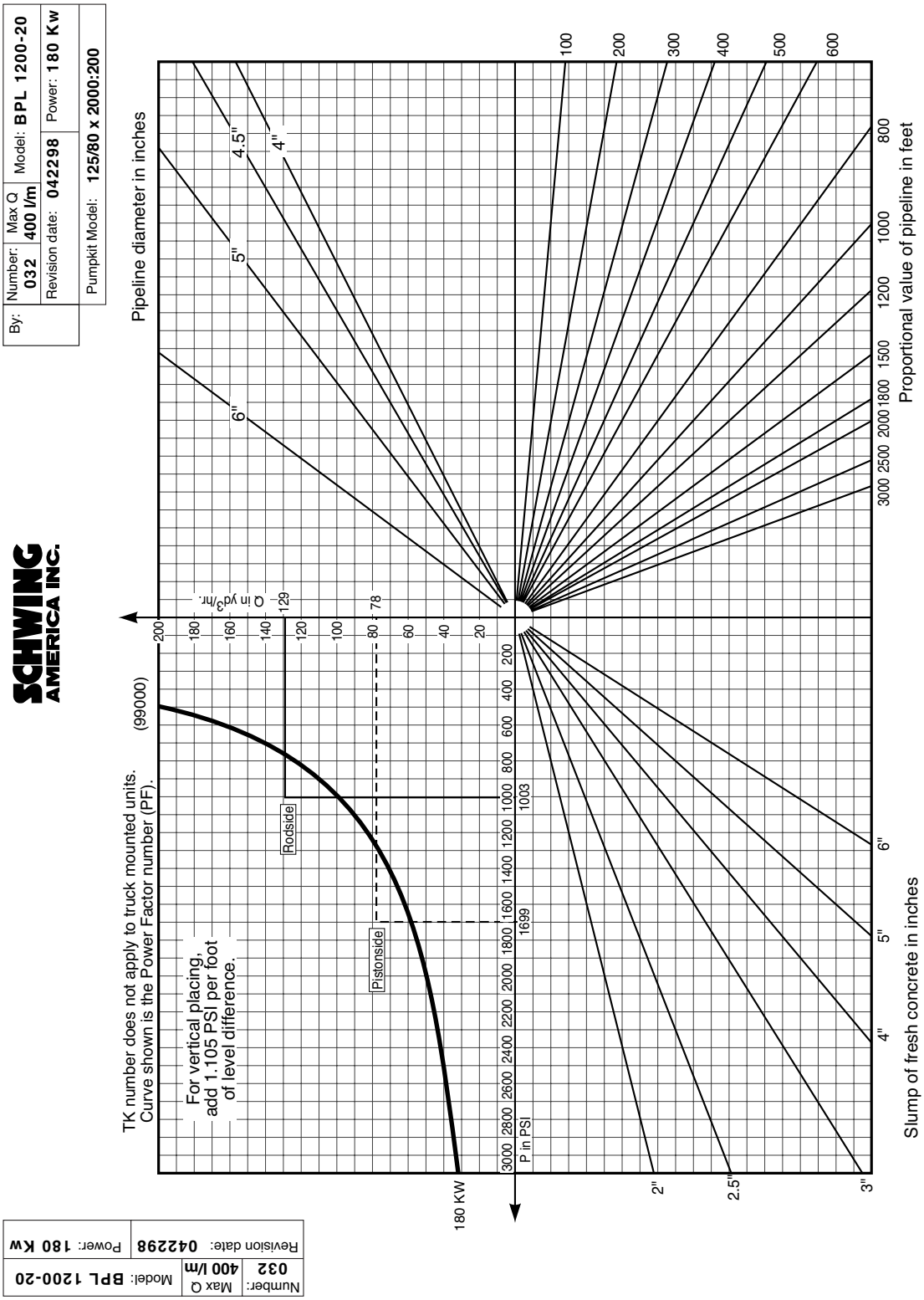


Nomographs - BPL

BPL 1200-20 ..... 130/80 x 2000:200 ..... 400 l/m ..... 150 Kw

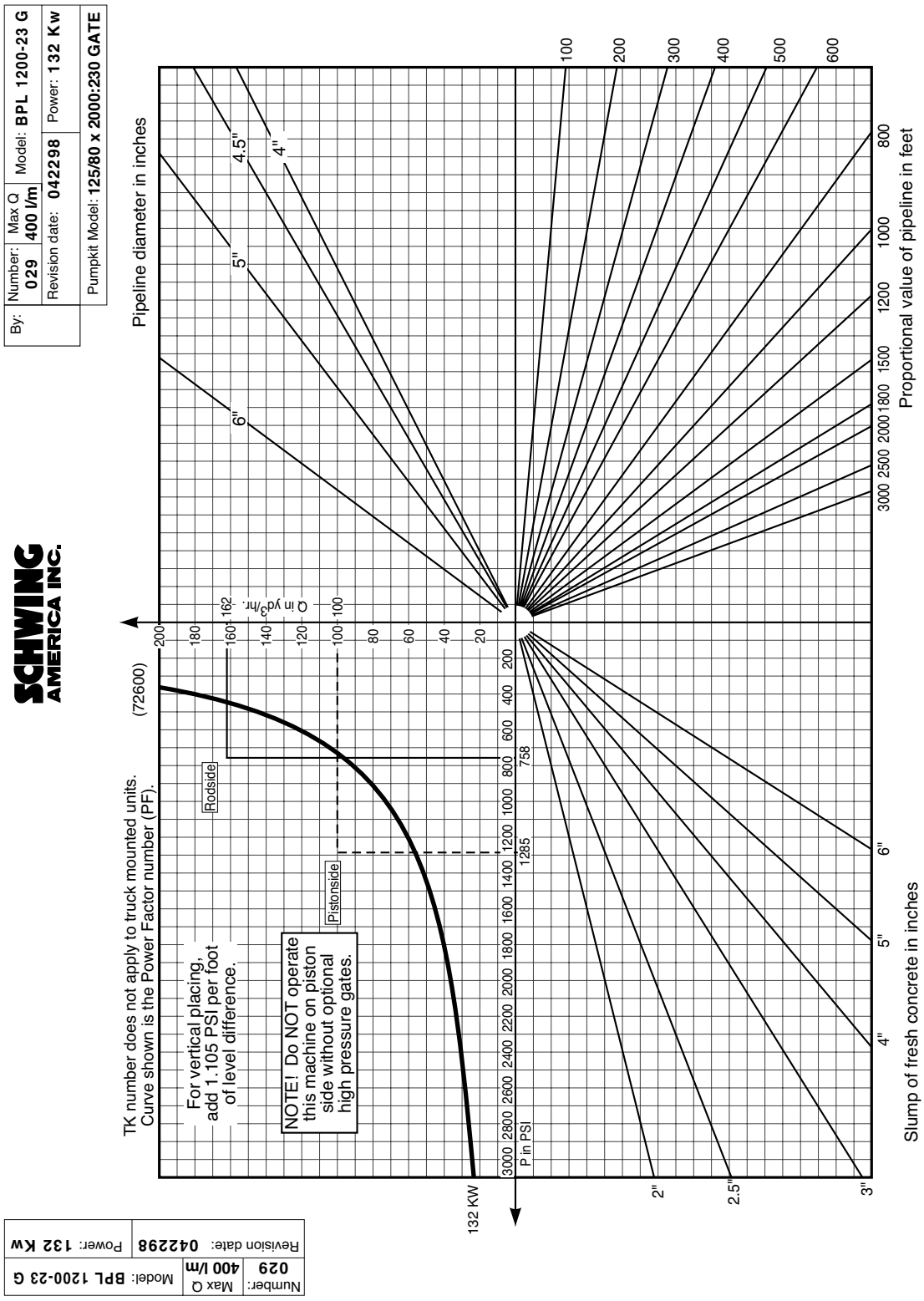


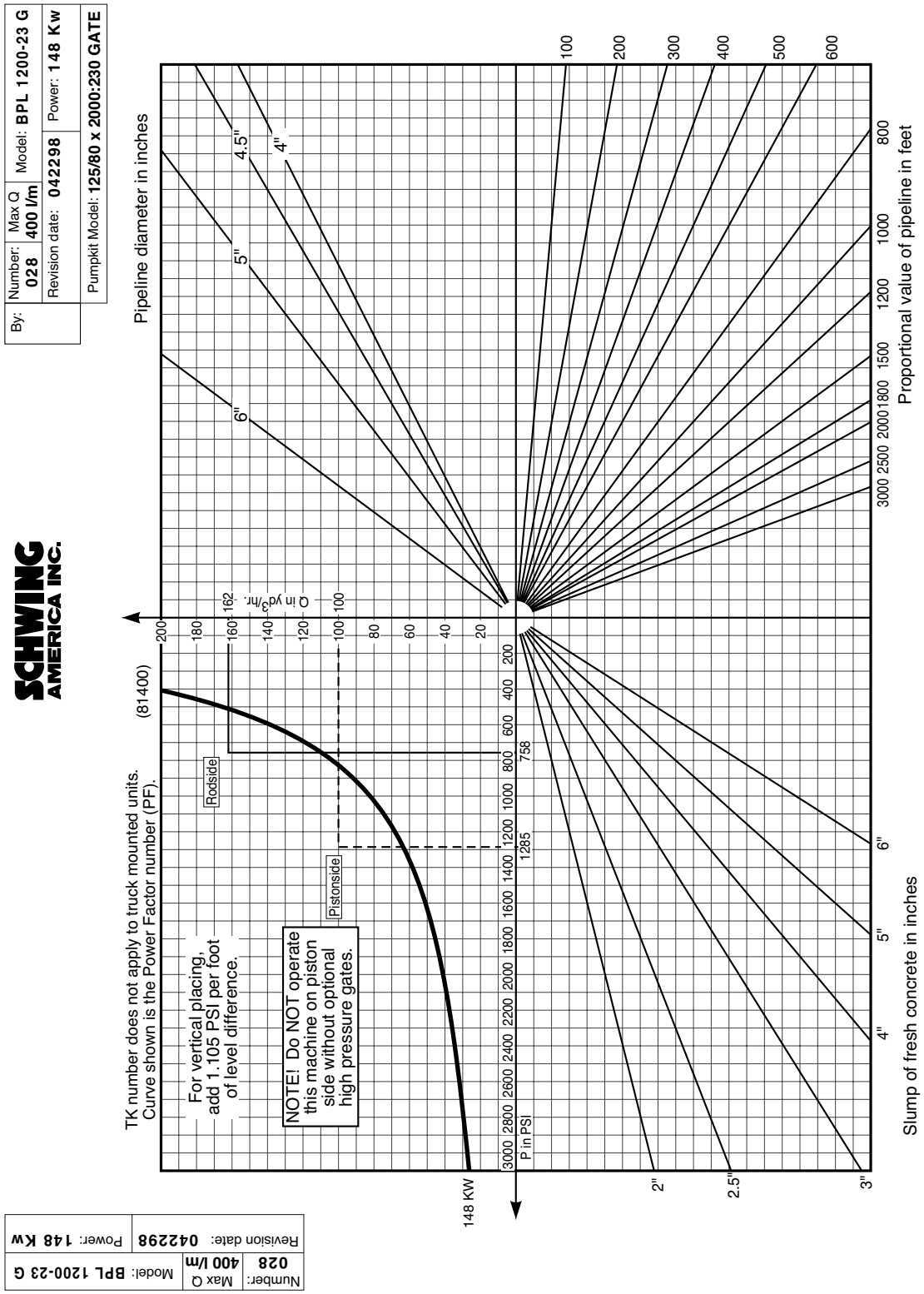
BPL 1200-20..... 125/80 x 2000:200.....400 l/m ..... 180 Kw



Nomographs - BPL

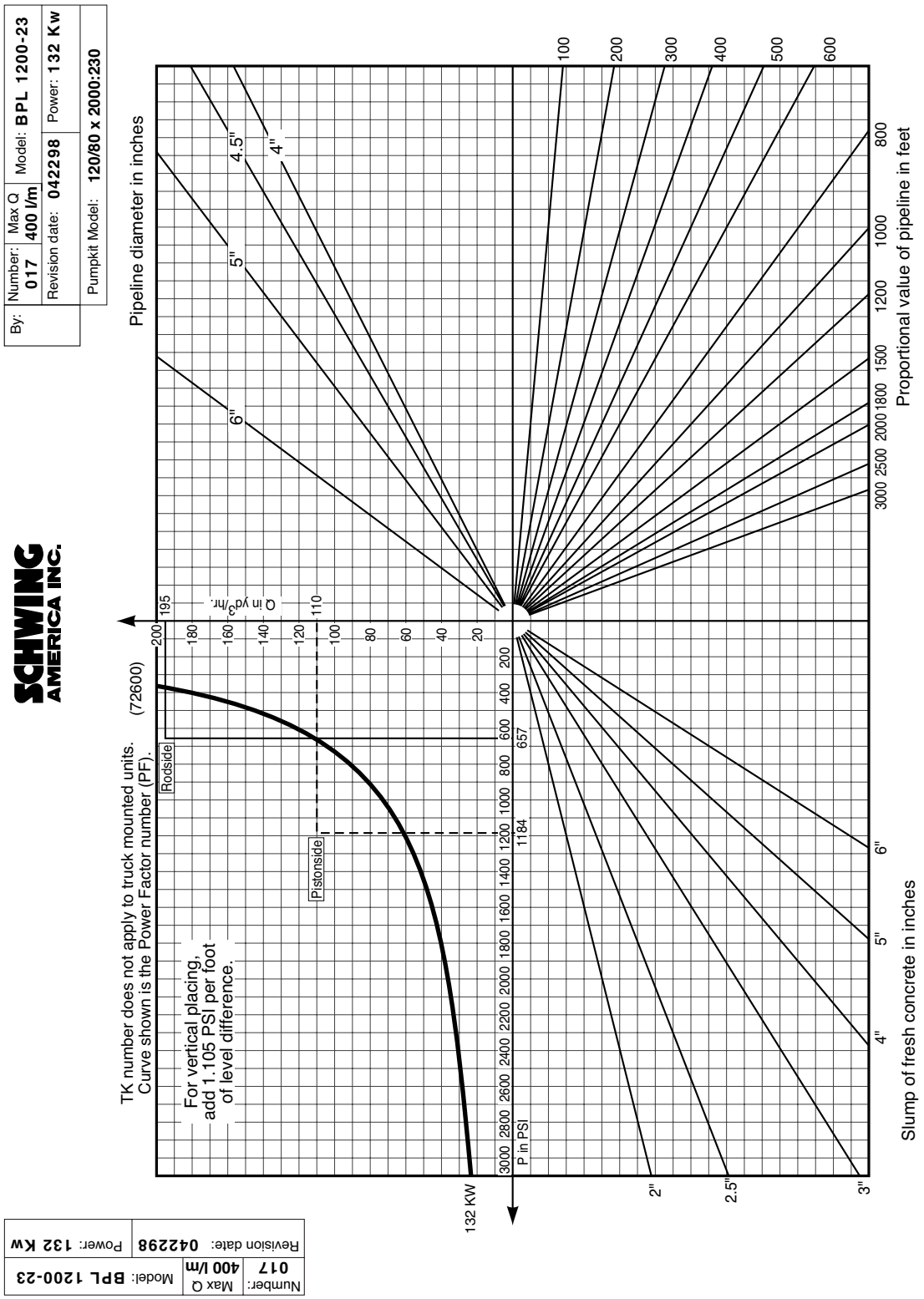
BPL 1200-23G..... 125/80 x 2000:230 GATE.....400 l/m.....132 Kw



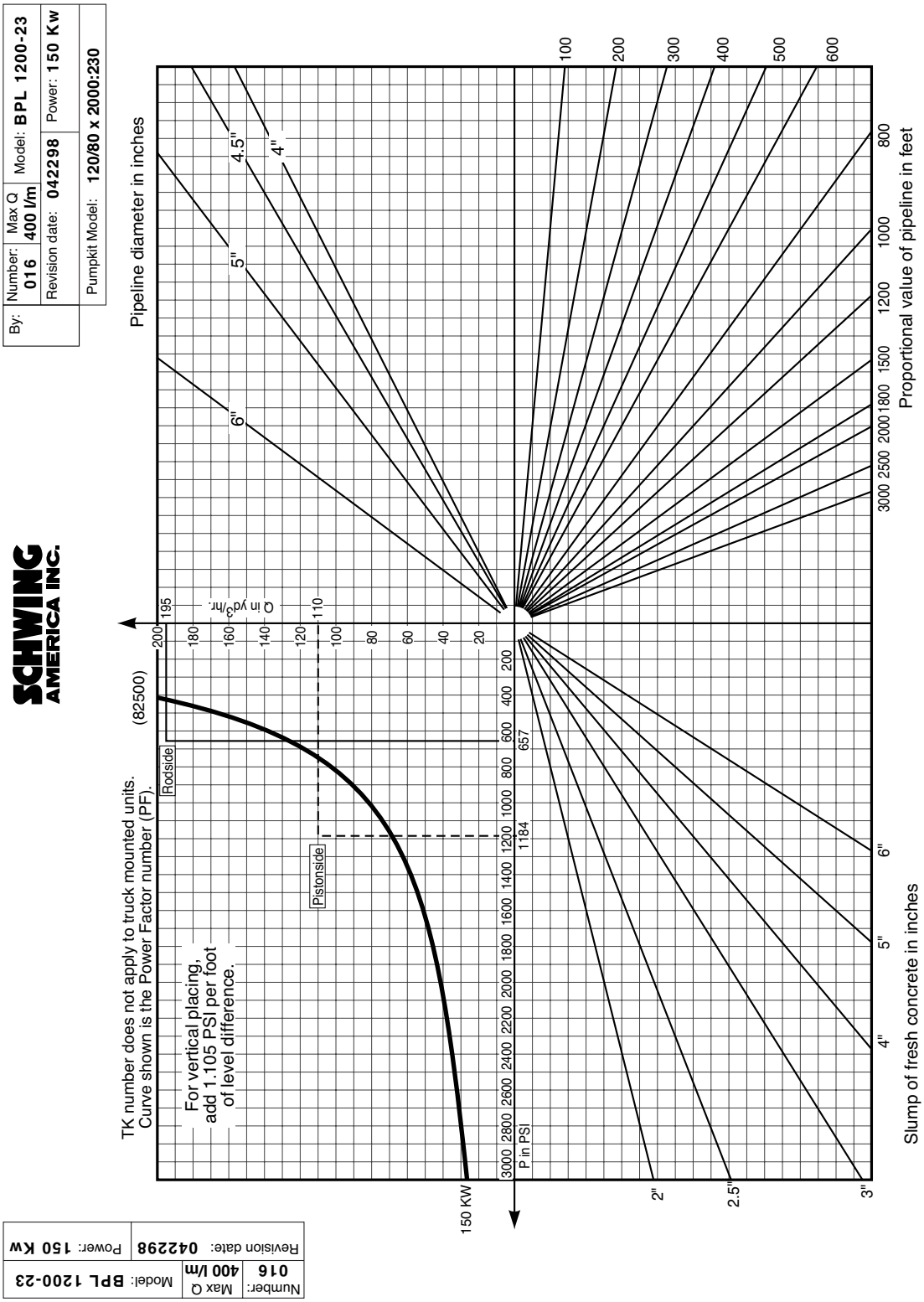

By:
Number: 028
Max Q 400 l/m
Model: BPL 1200-23 G
Revision date: 042298
Power: 148 Kw
Pumpkit Model: 125/80 x 2000:230 GATE
SCHWING AMERICA INC.
Pipeline diameter in inches
4"
4.5"
5"
6"
Q in yd³/hr.
162
Rodside
Pistonside
758
1285
P in PSI
148 KW
TK number does not apply to truck mounted units.
Curve shown is the Power Factor number (PF).
(81400)
For vertical placing, add 1.105 PSI per foot of level difference.
NOTE! Do NOT operate this machine on piston side without optional high pressure gates.
Proportional value of pipeline in feet
Slump of fresh concrete in inches
2"
2.5"
3"
4"
5"
6"
Number: 028
Max Q 400 l/m
Model: BPL 1200-23 G
Revision date: 042298
Power: 148 Kw

Nomographs - BPL

BPL 1200-23 ..... 120/80 x 2000:230 ..... 400 l/m ..... 132 Kw

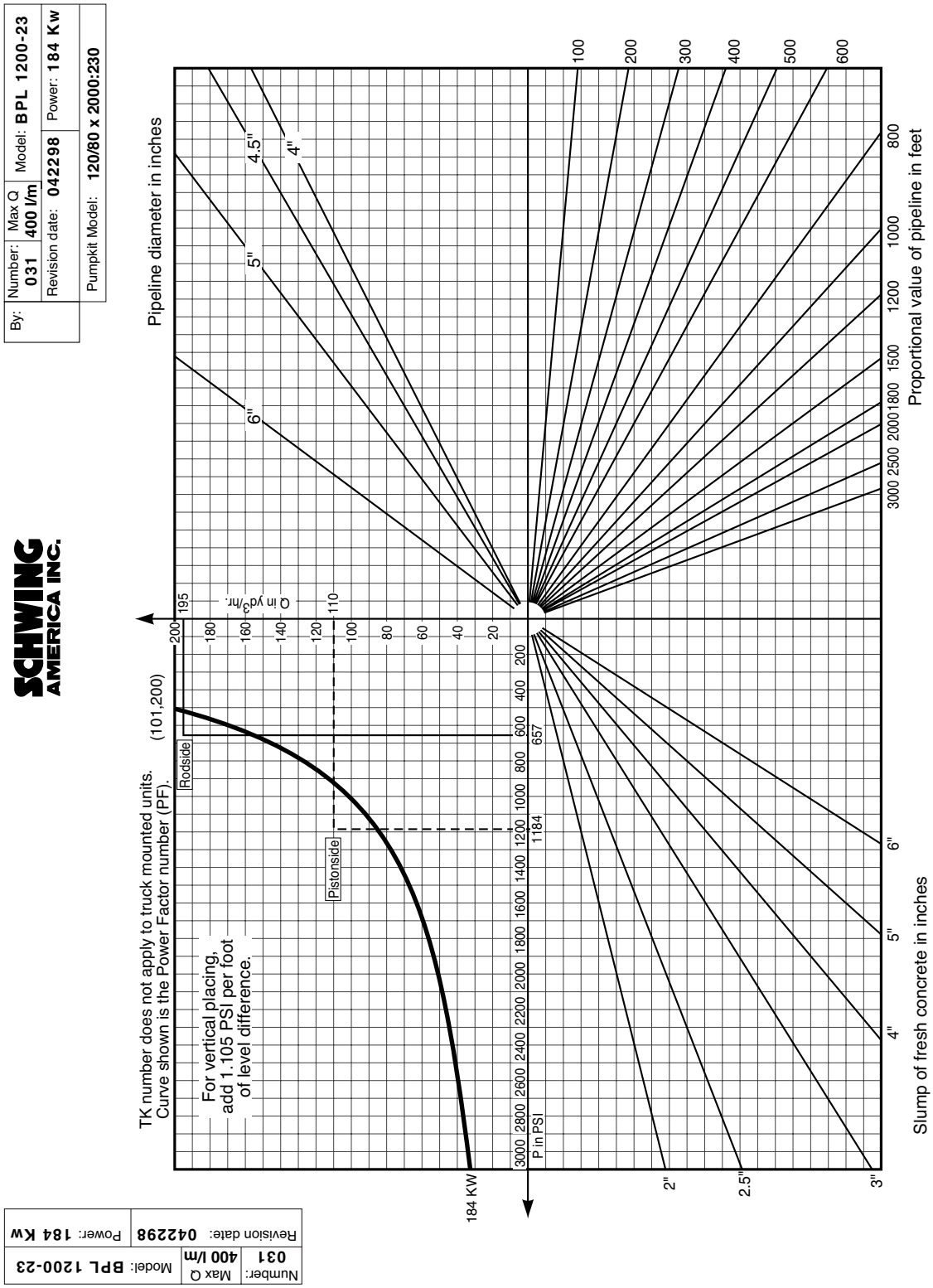


BPL 1200-23..... 120/80 x 2000:230.....400 l/m ..... 150 Kw

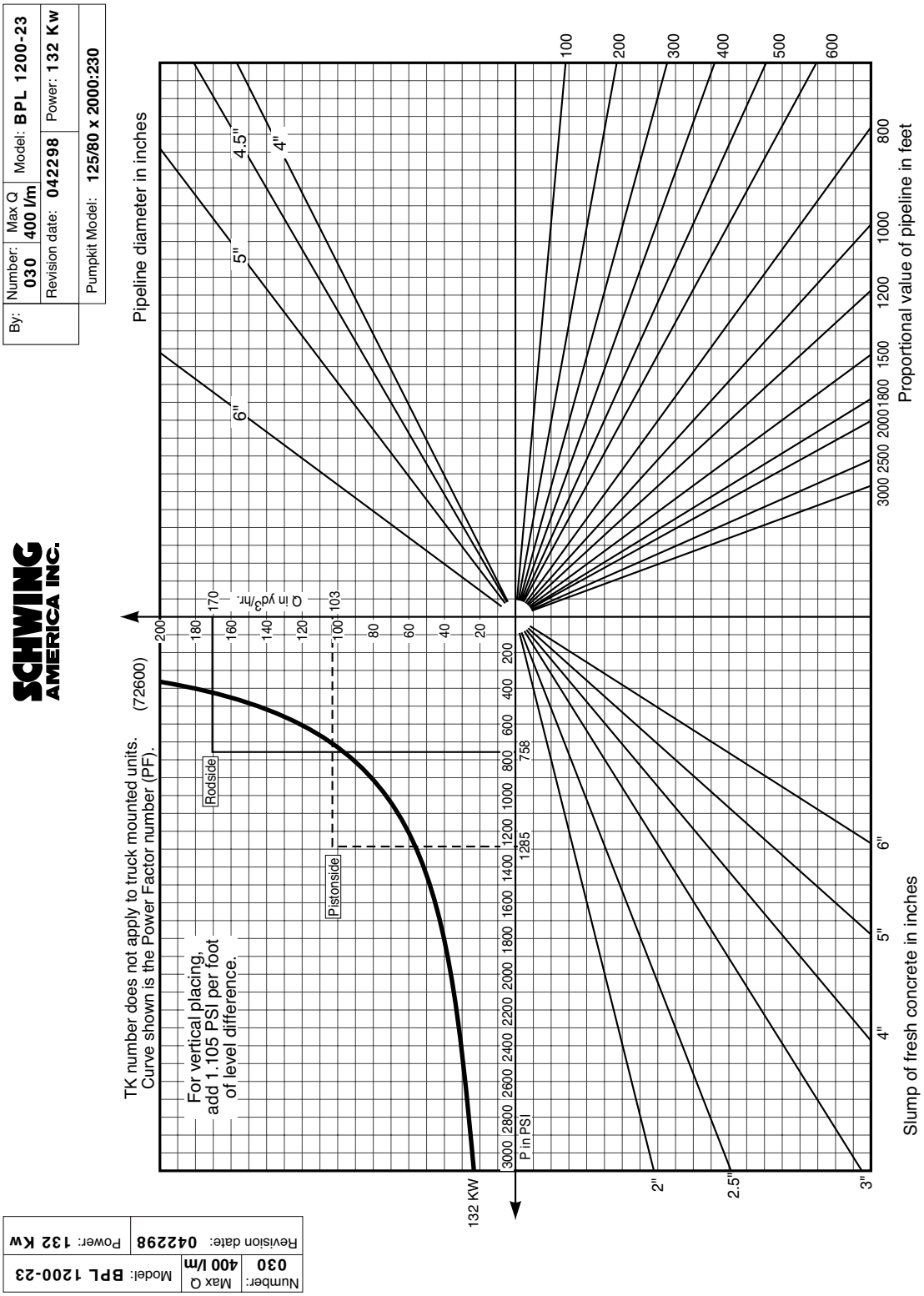


Nomographs - BPL

BPL 1200-23 ..... 120/80 x 2000:230 ..... 400 l/m ..... 184 Kw

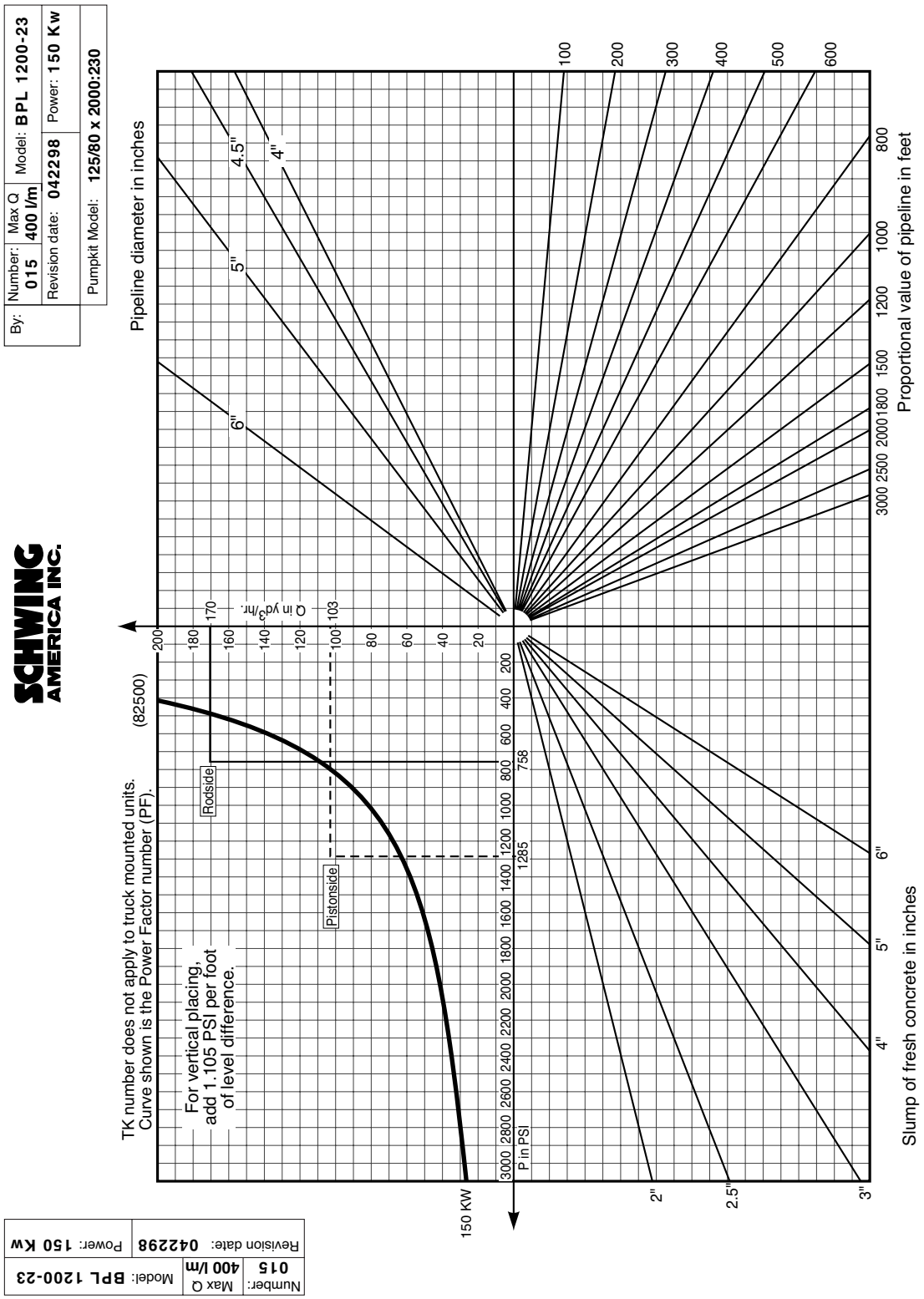


BPL 1200-23..... 125/80 x 2000:230.....400 l/m ..... 132 Kw

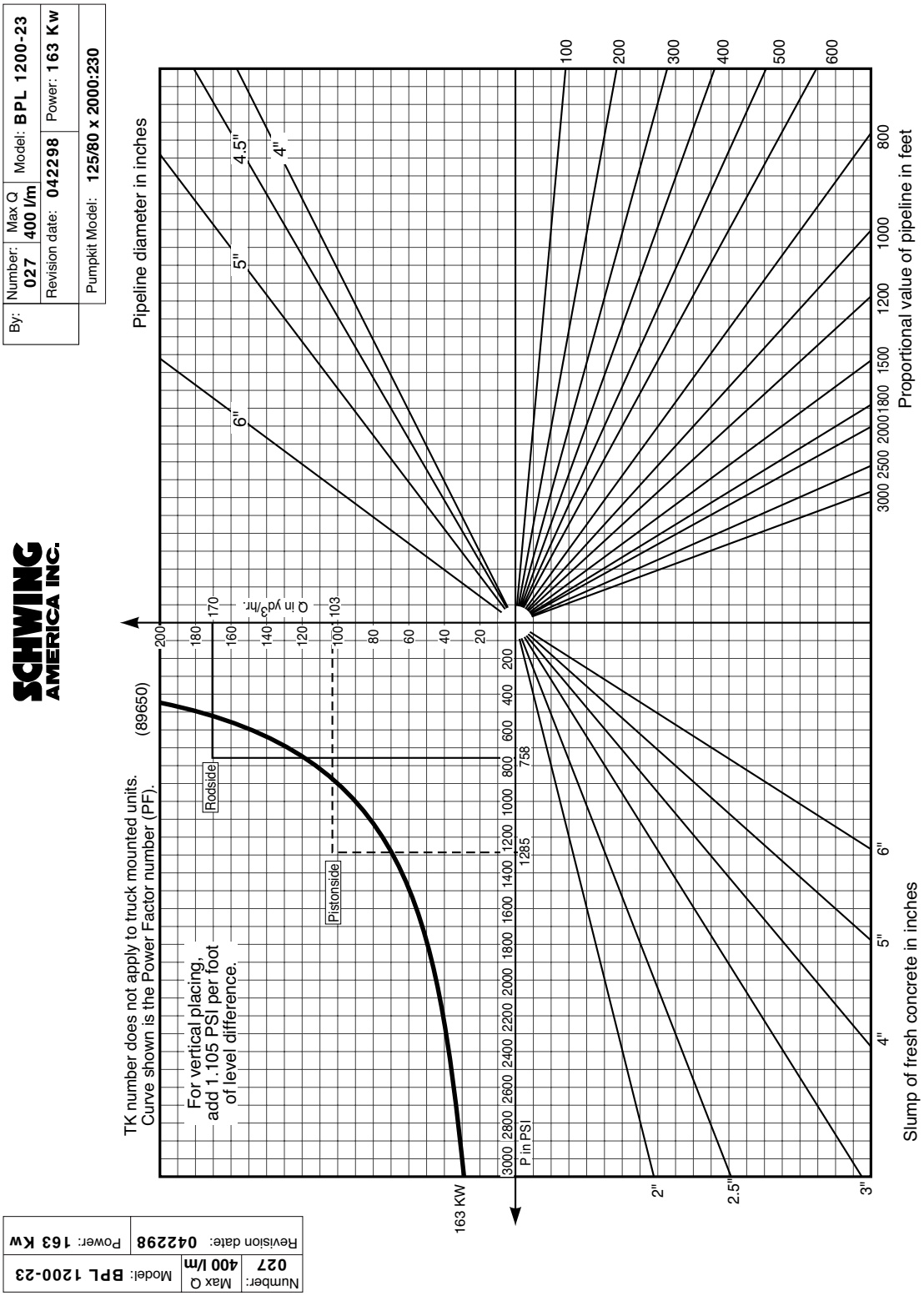


Nomographs - BPL

BPL 1200-23 ..... 125/80 x 2000:230 ..... 400 l/m ..... 150 Kw

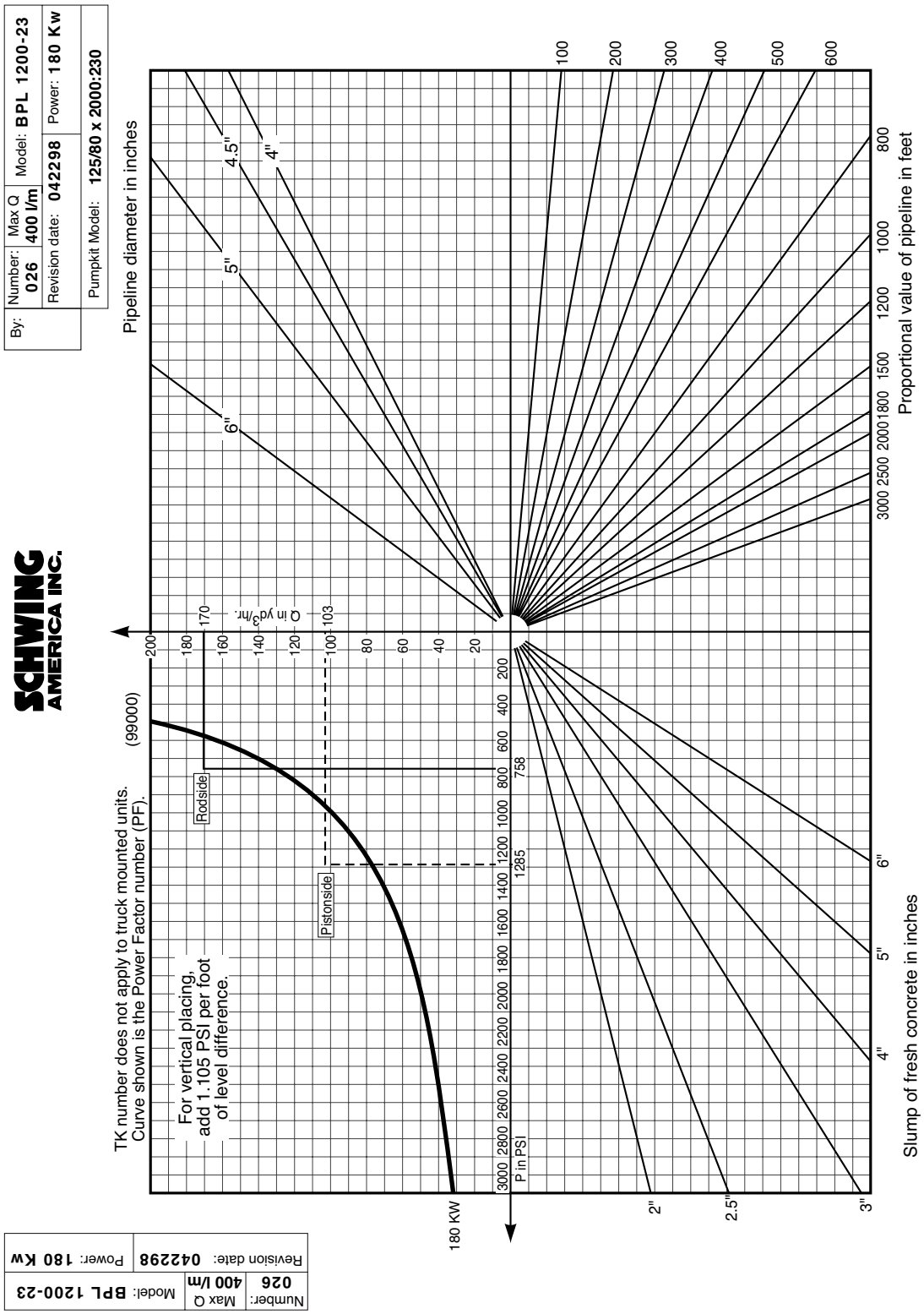


BPL 1200-23..... 125/80 x 2000:230.....400 l/m ..... 163 Kw

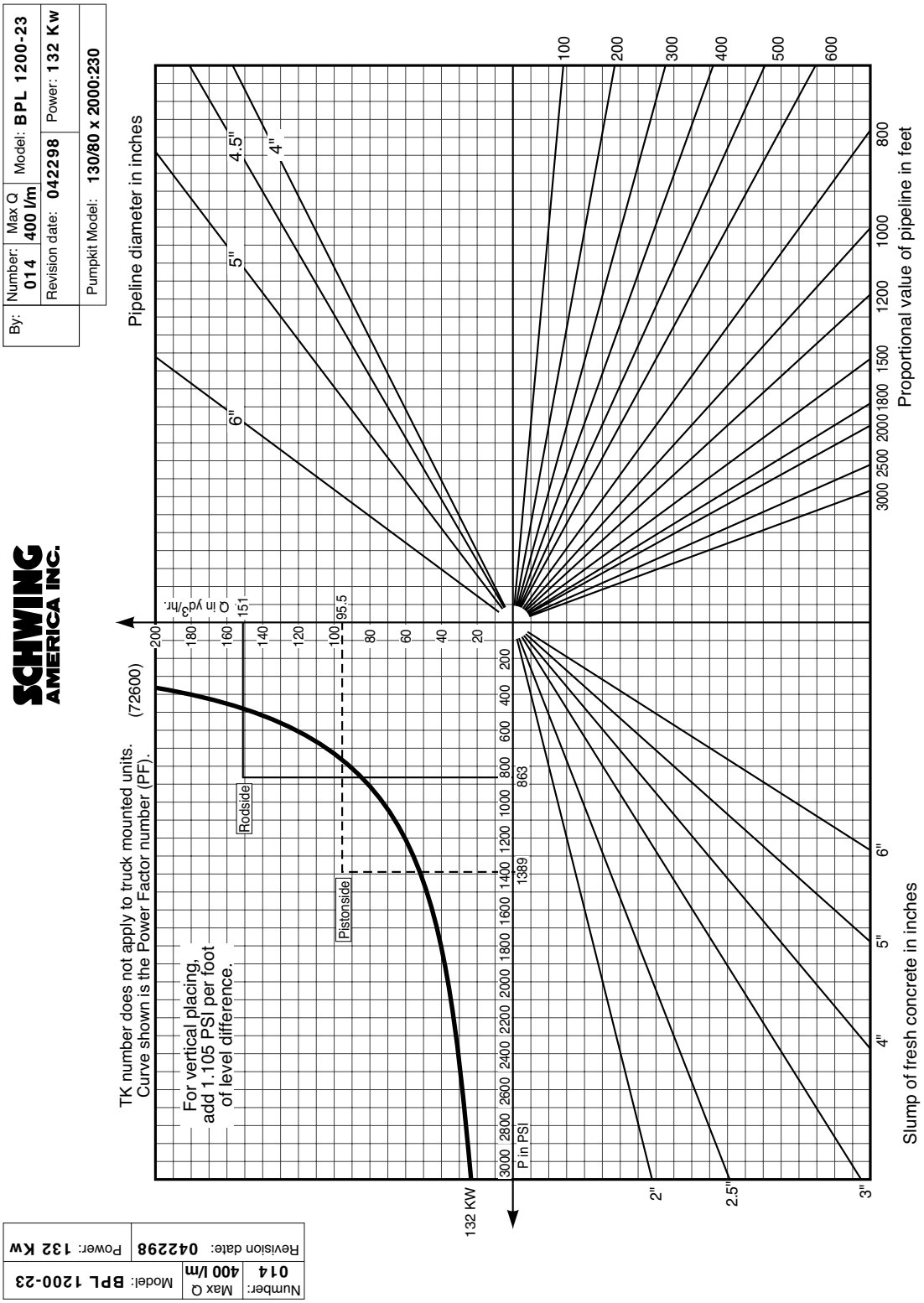


Nomographs - BPL

BPL 1200-23 ..... 125/80 x 2000:230 ..... 400 l/m ..... 180 Kw

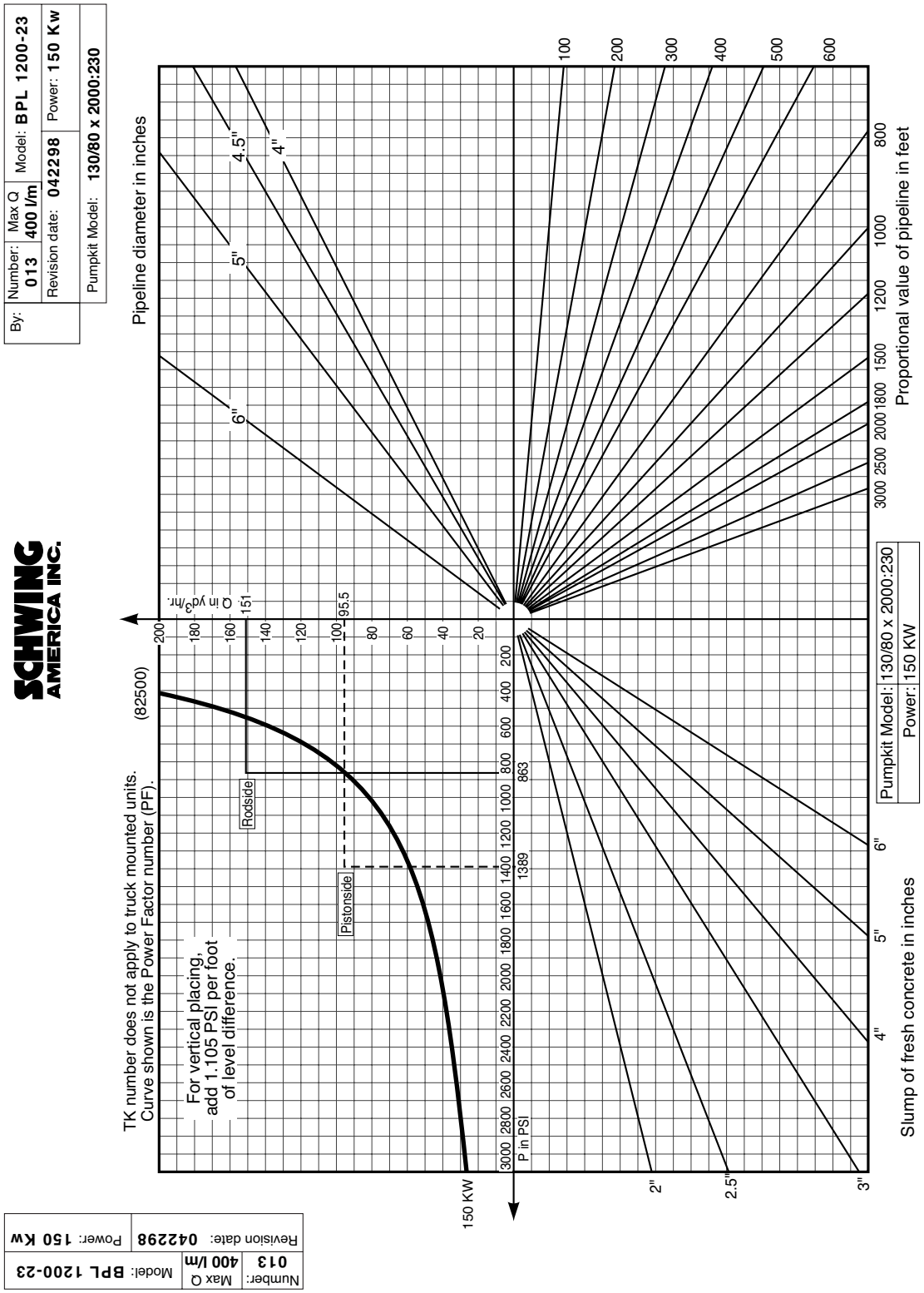


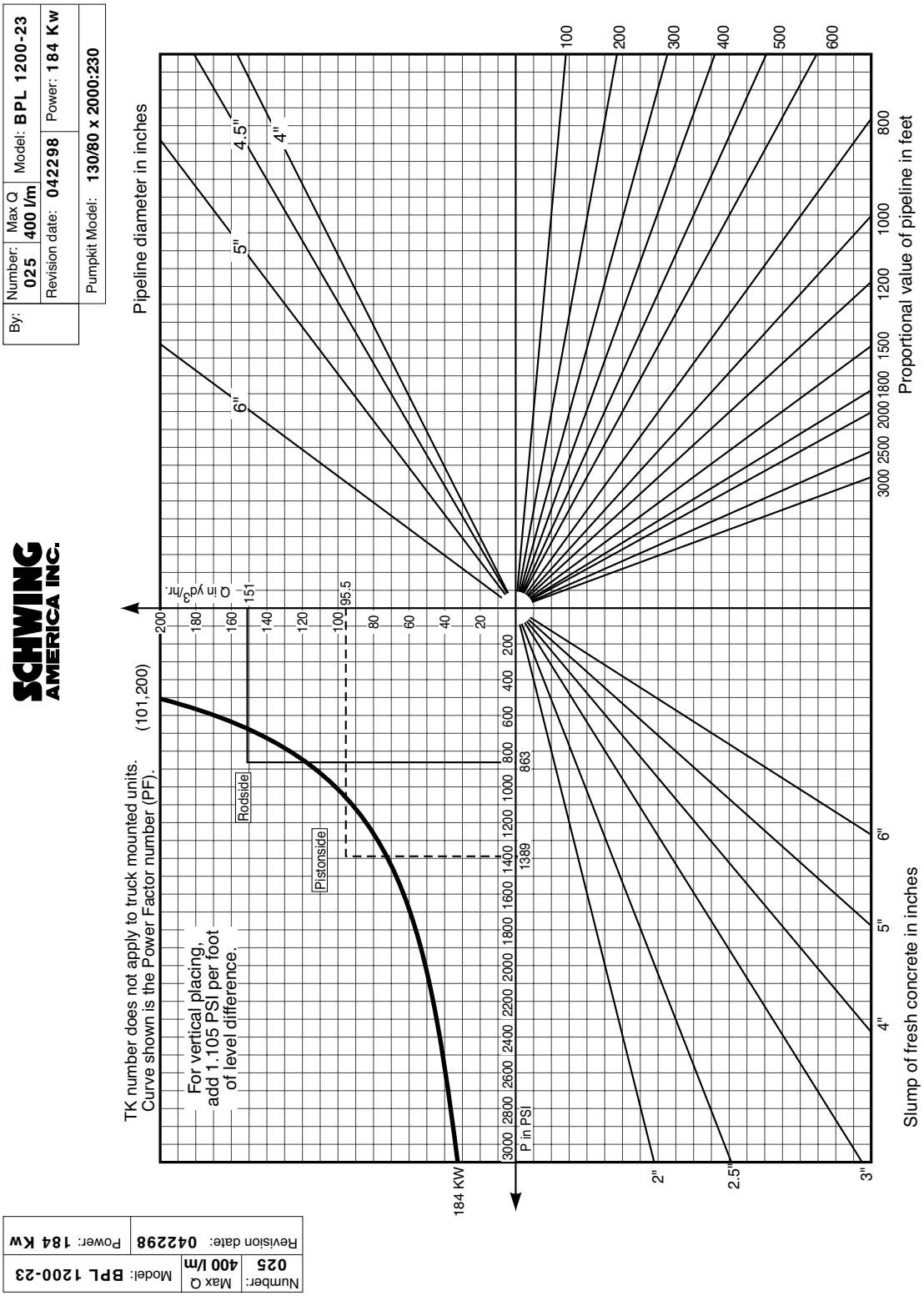
BPL 1200-23..... 130/80 x 2000:230.....400 l/m ..... 132 Kw



Nomographs - BPL

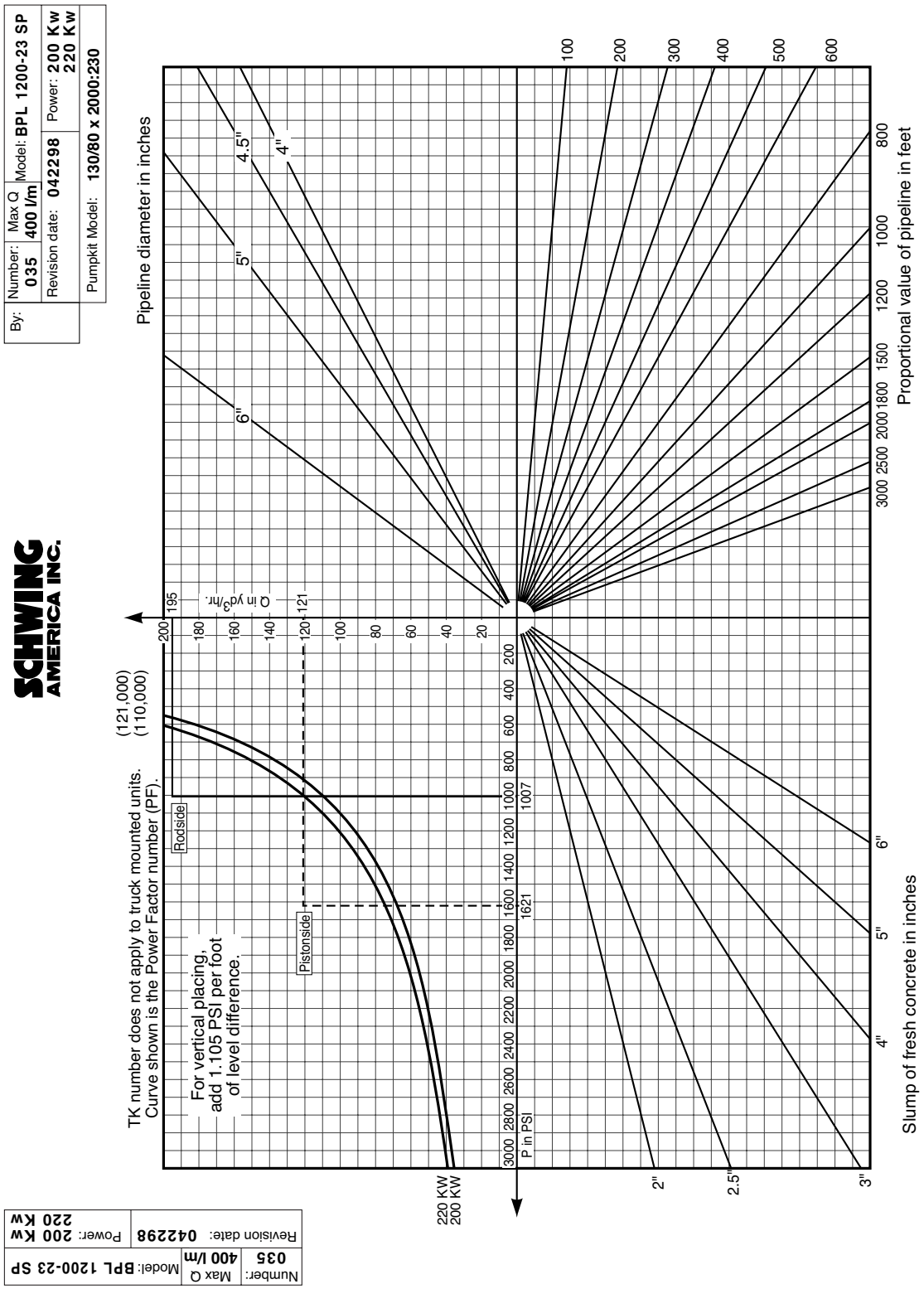
BPL 1200-23 ..... 130/80 x 2000:230 ..... 400 l/m ..... 150 Kw



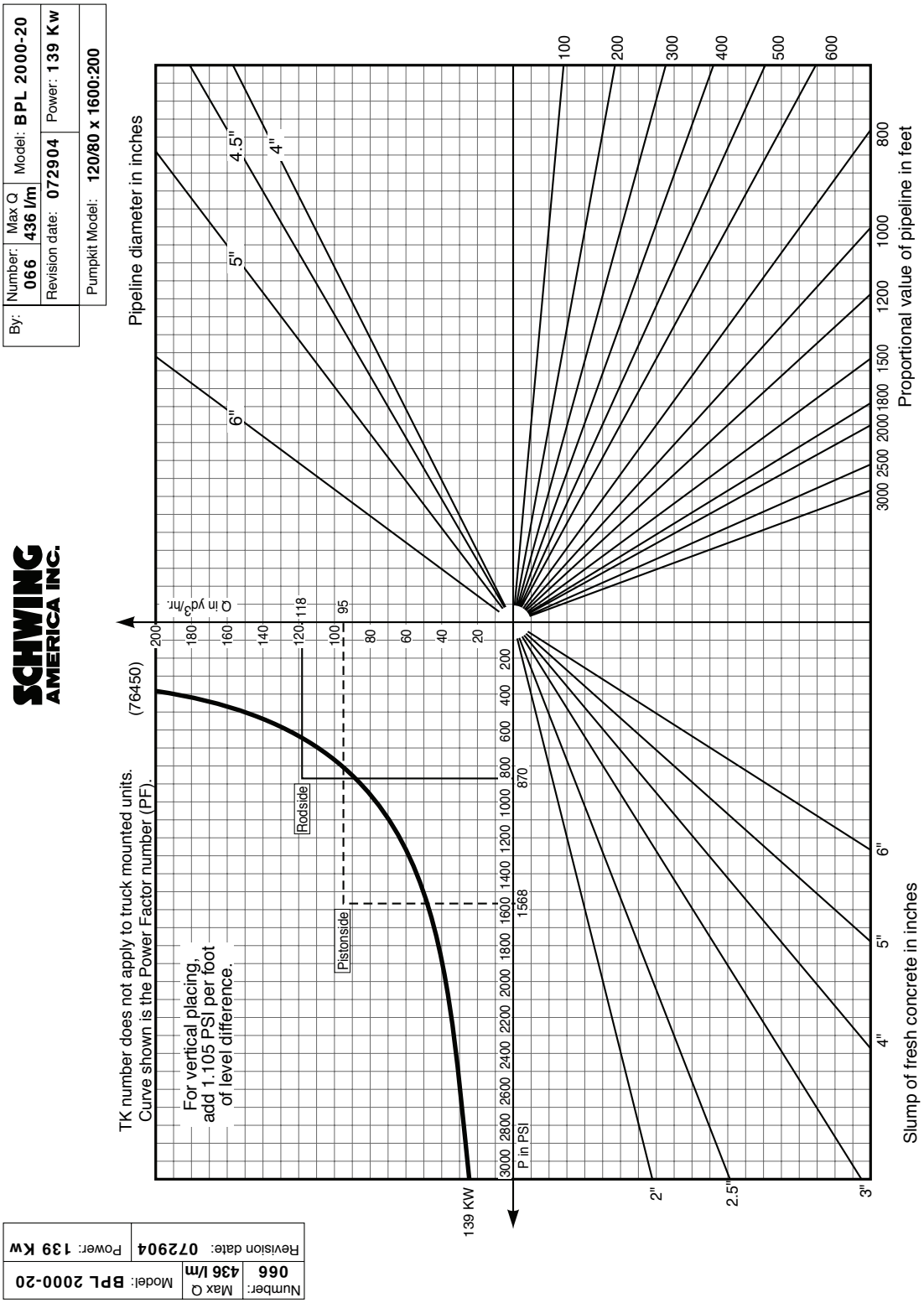

By:
Number: 025
Max Q 400 l/m
Model: BPL 1200-23
Revision date: 042298
Power: 184 Kw
Pumpkit Model: 130/80 x 2000:230
SCHWING AMERICA INC.
Pipeline diameter in inches
4.5"
4"
5"
6"
Proportional value of pipeline in feet
100 200 300 400 500 600
800 1000 1200 1500 1800 2000 2500 3000
Q in yd3/hr.
200 180 160 140 120 100 80 60 40 20
151
95.5
(101,200)
TK number does not apply to truck mounted units.
Curve shown is the Power Factor number (PF).
For vertical placing, add 1.105 PSI per foot of level difference.
Rodside
Pistonside
863
1389
P in PSI
200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000
184 KW
2"
2.5"
3"
4"
5"
6"
Slump of fresh concrete in inches
Number: 025
Max Q 400 l/m
Model: BPL 1200-23
Revision date: 042298
Power: 184 Kw

Nomographs - BPL

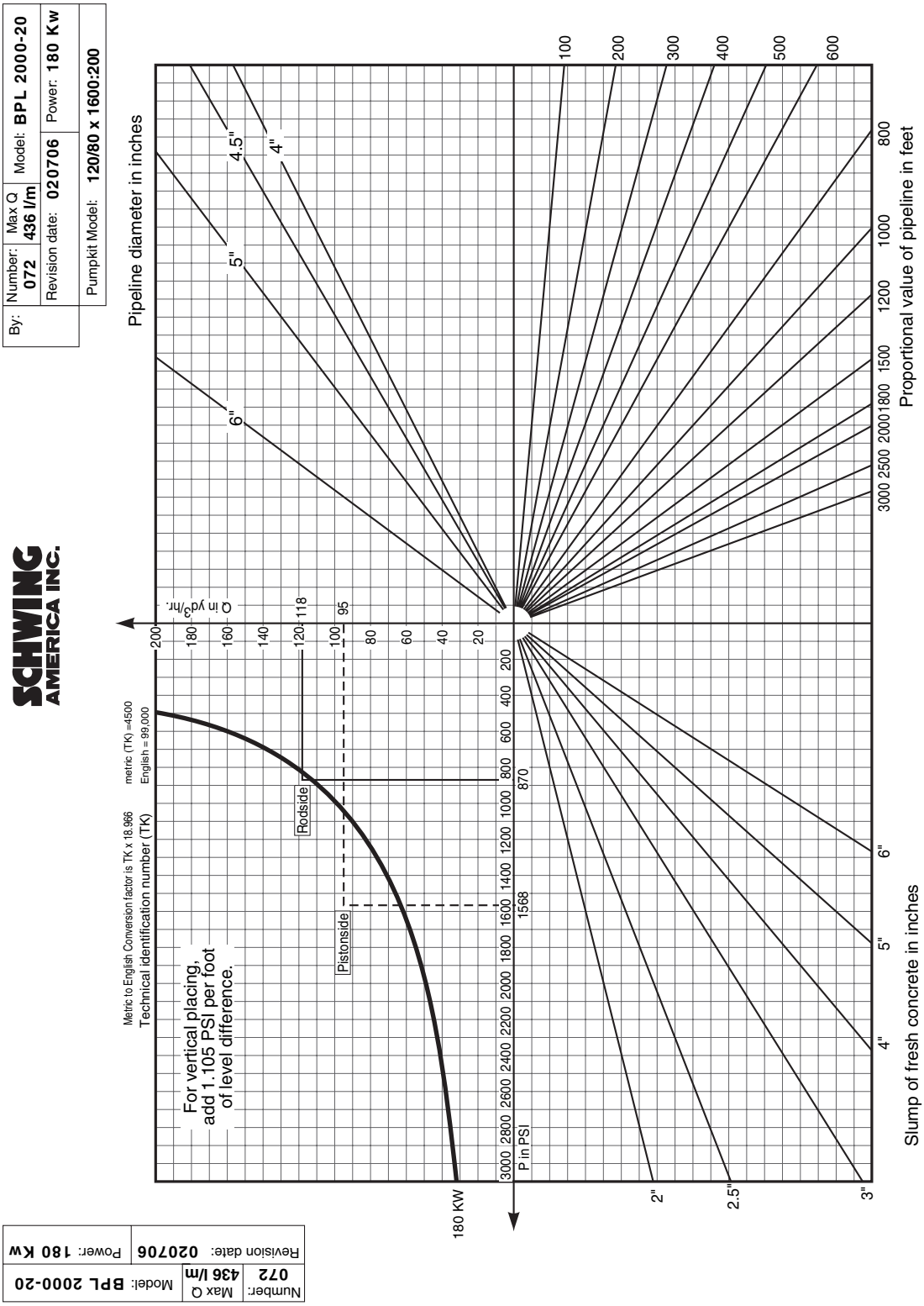
BPL 1200-23SP..... 130/80 x 2000:230 .....400 l/m.....200/220 Kw



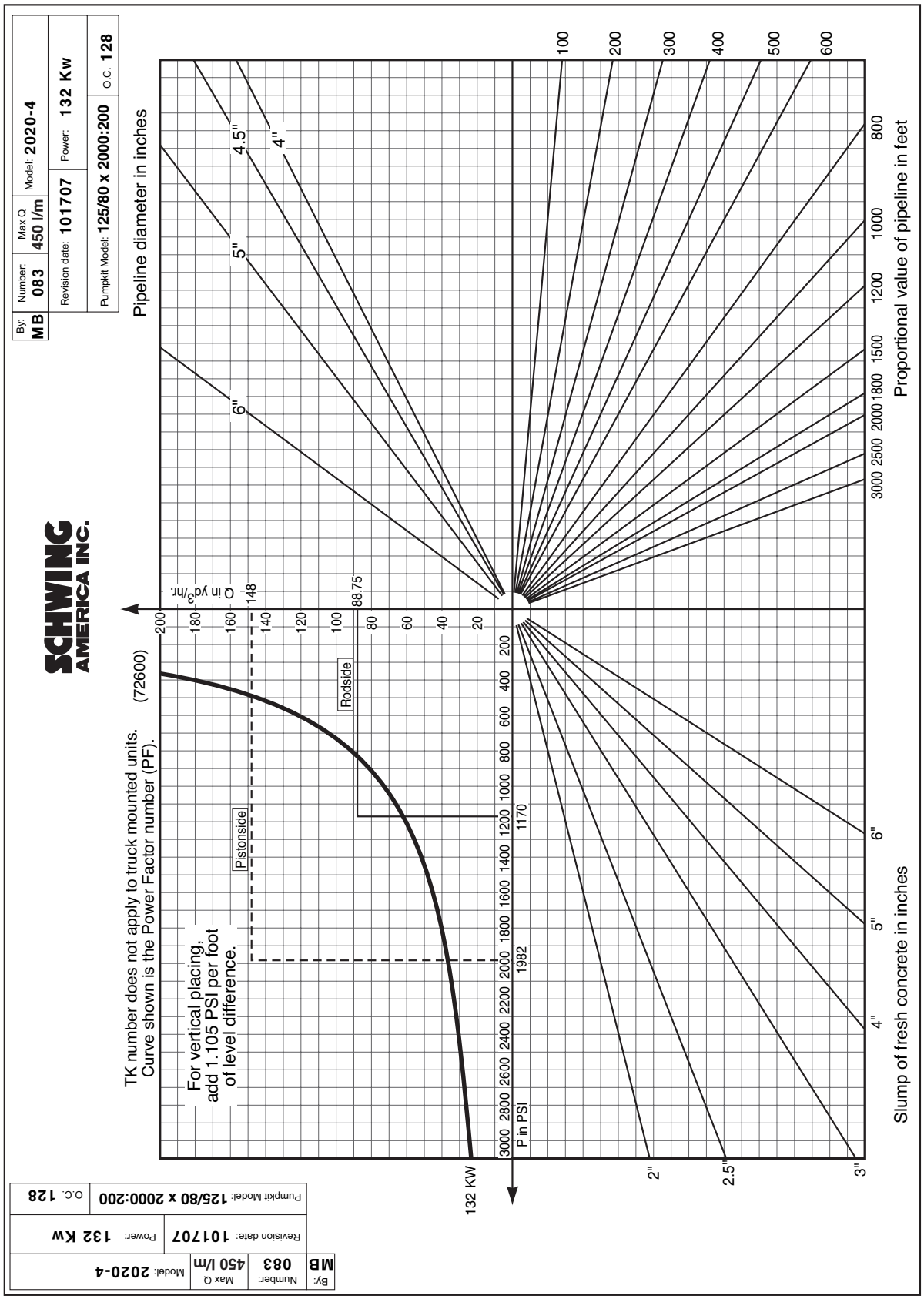
BPL 2000-20..... 120/80 X 1600:200 .....436 l/m ..... 139 Kw



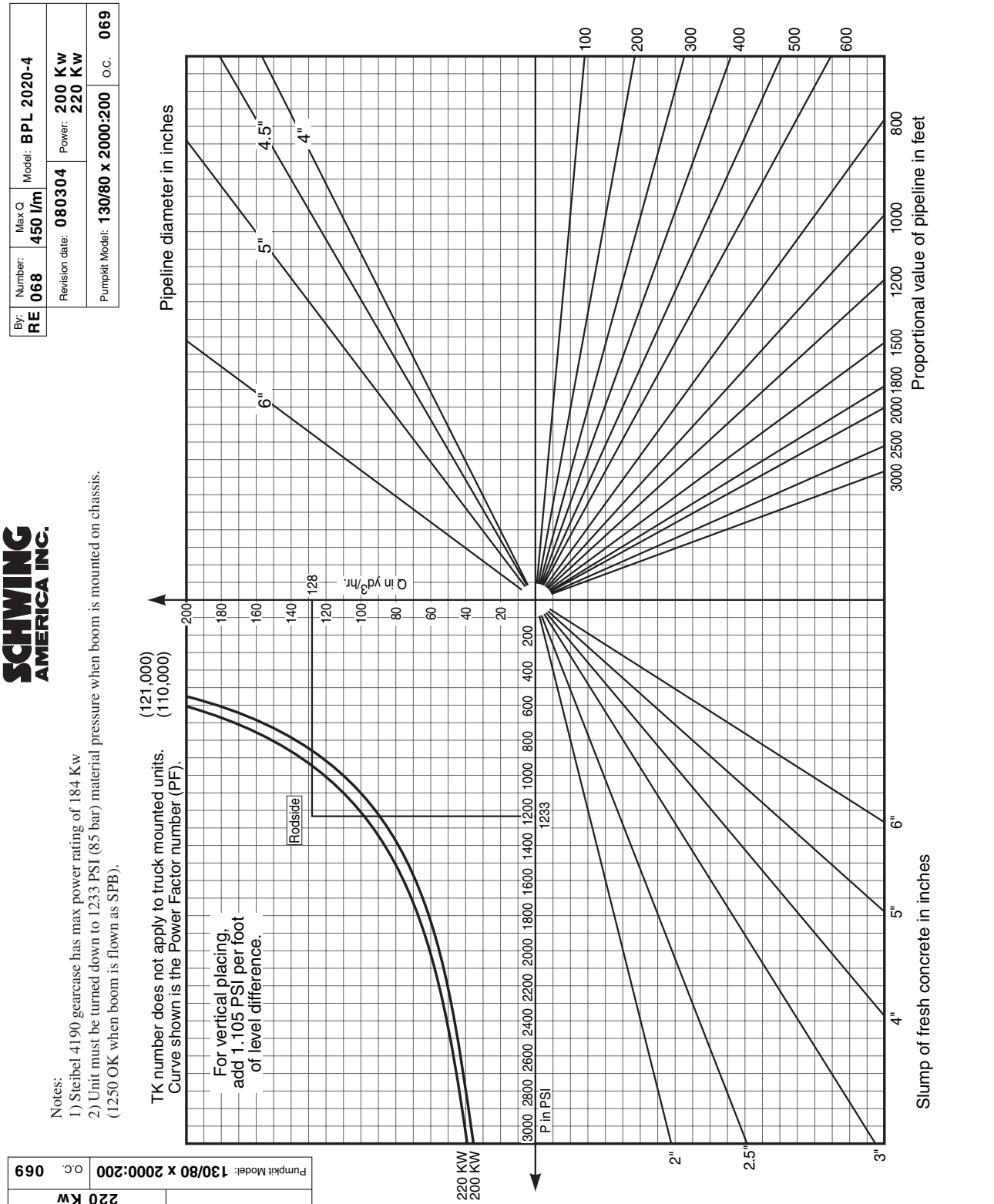
BPL 2000-20 ..... 120/80 X 1600:200 ..... 436 l/m ..... 180 Kw



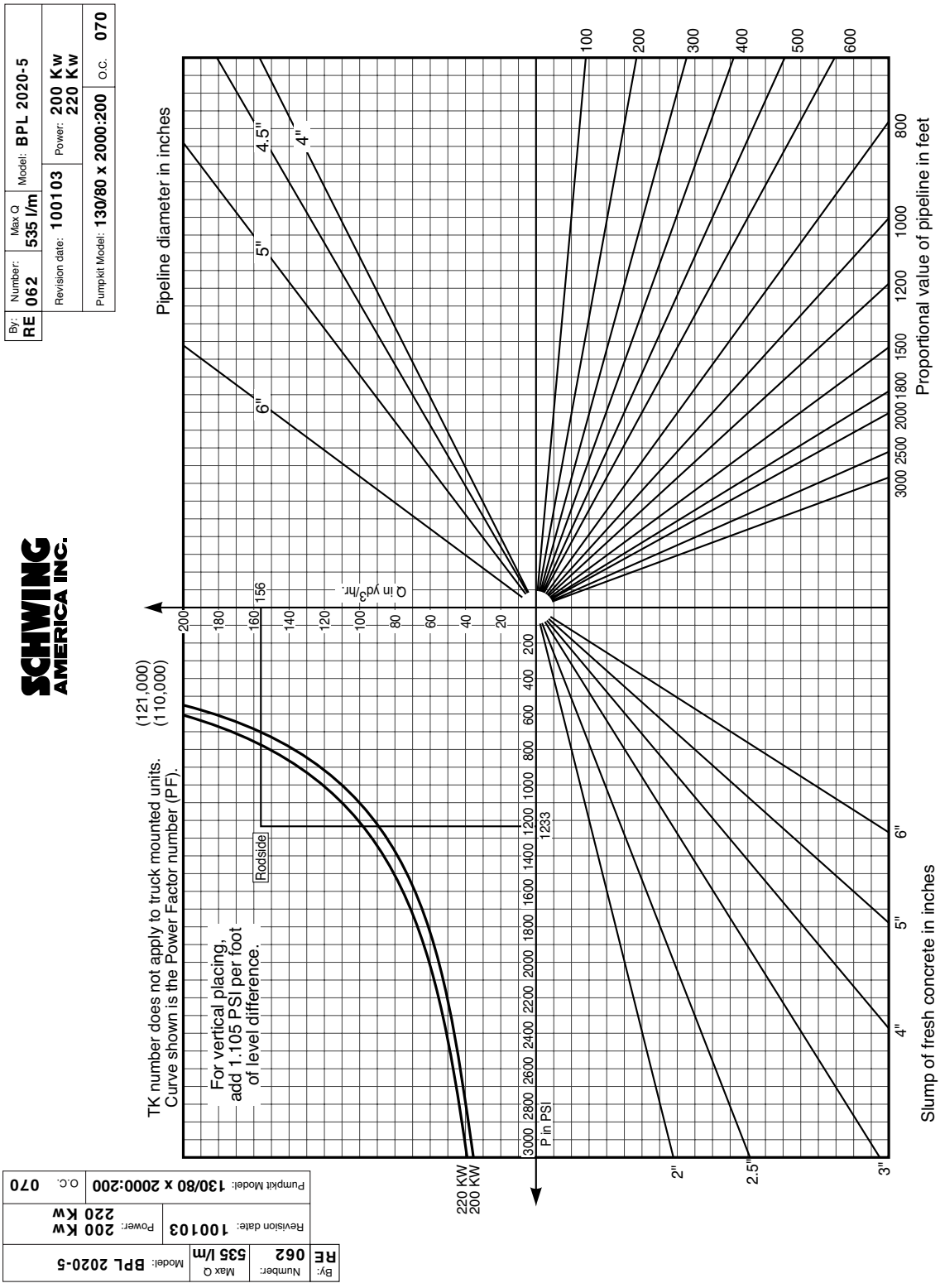
BPL 2020-4..... 125/80 x 2000:200.....450 l/m ..... 132 Kw



BPL 2020-4 ..... 130/80 X 2000:200 ..... 450 l/m ..... 200/220 Kw

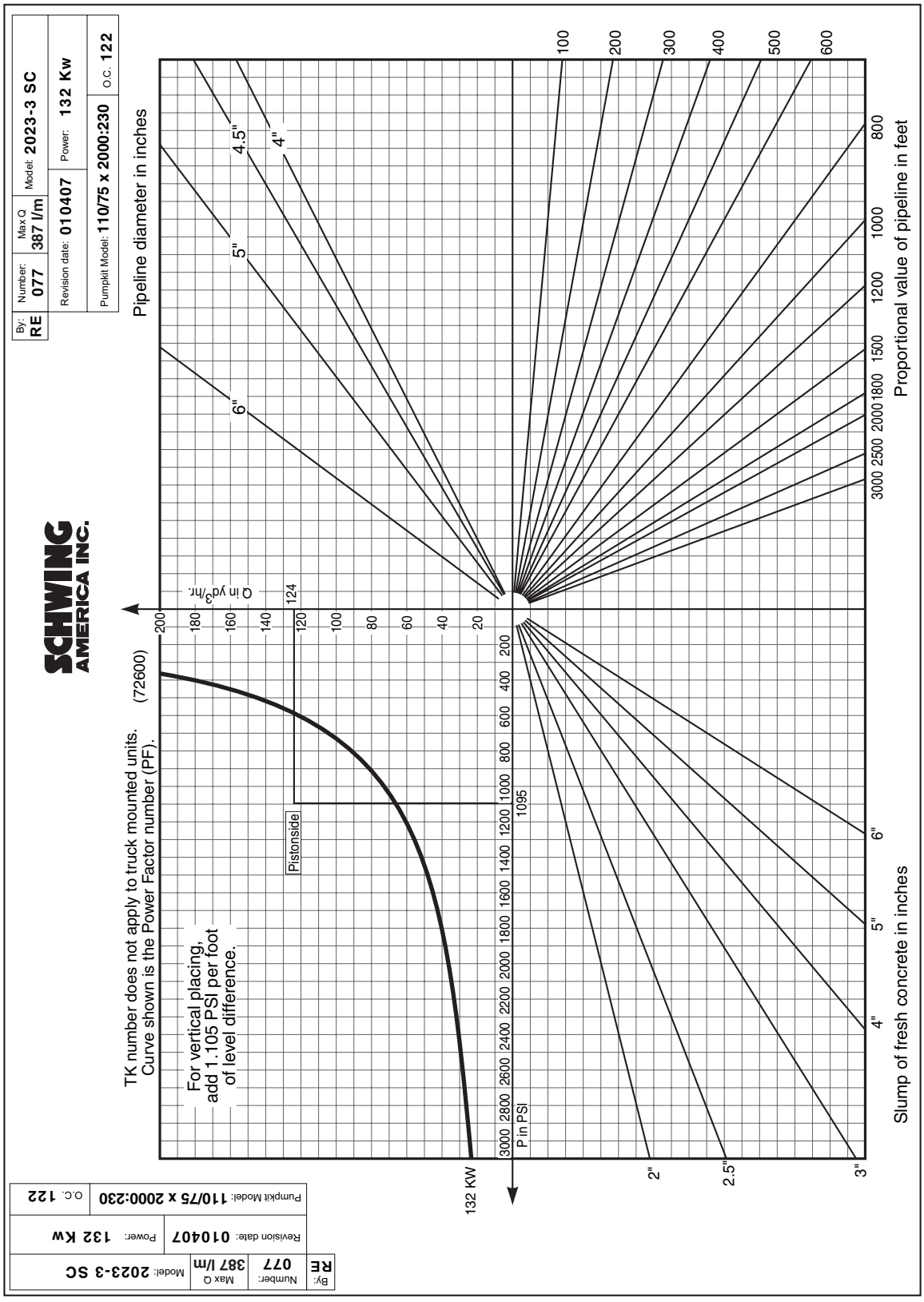


BPL 2020-5..... 130/80 X 2000:200 .....535 l/m ..... 200/220 Kw

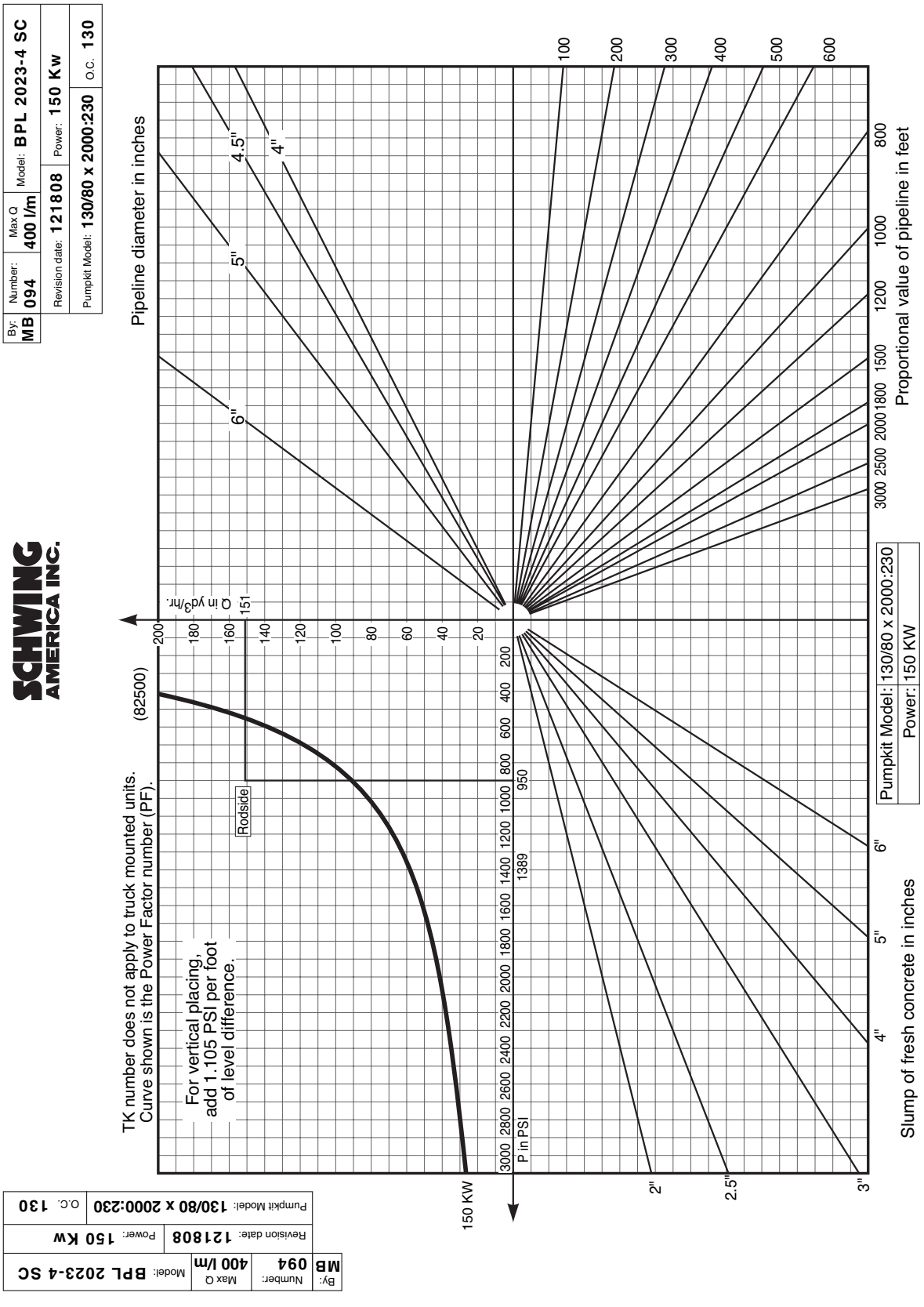


Nomographs - BPL

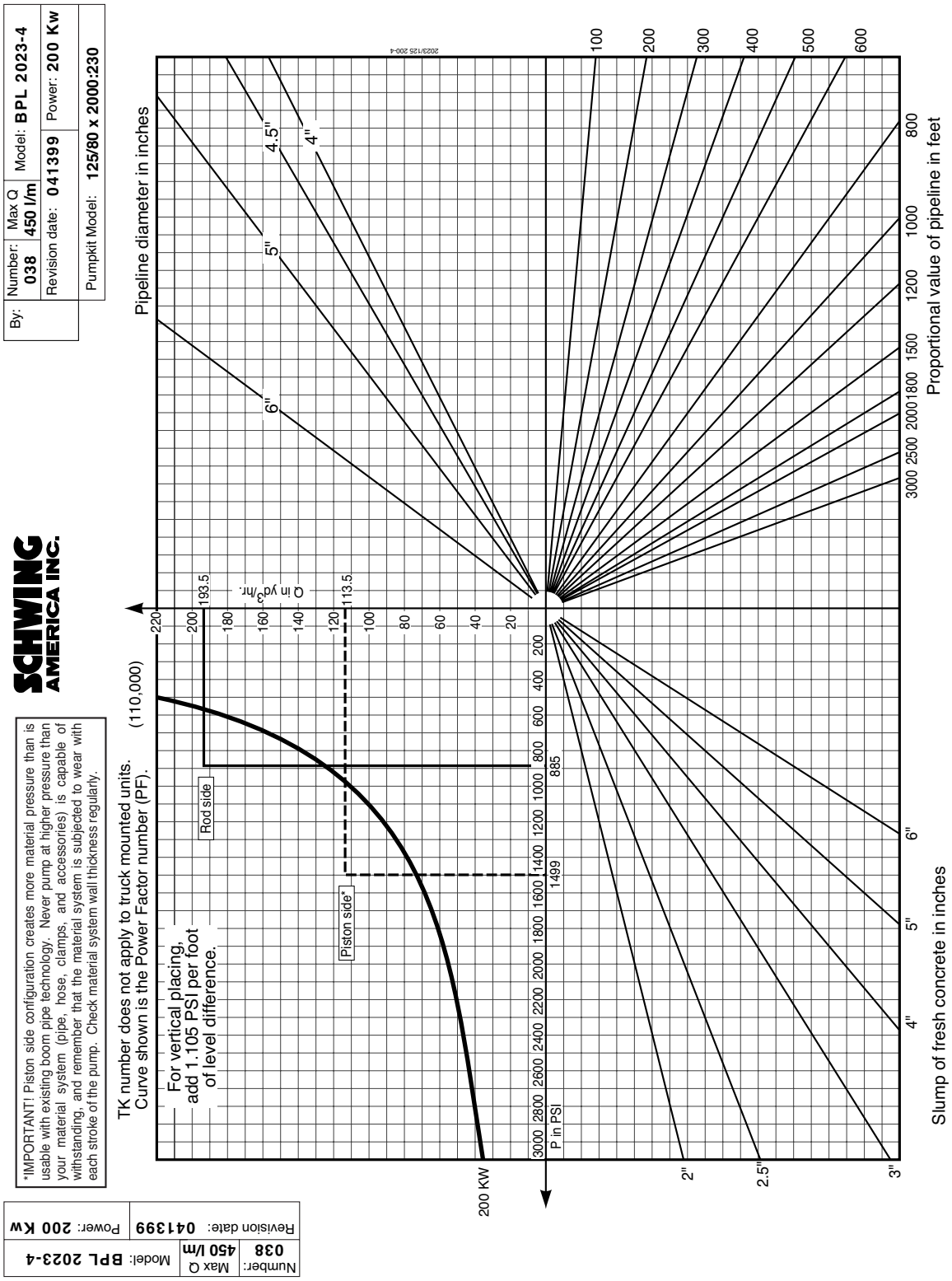
BPL 2023-3 SC ..... 110/75 x 2000:230 .....387 l/m.....132 Kw

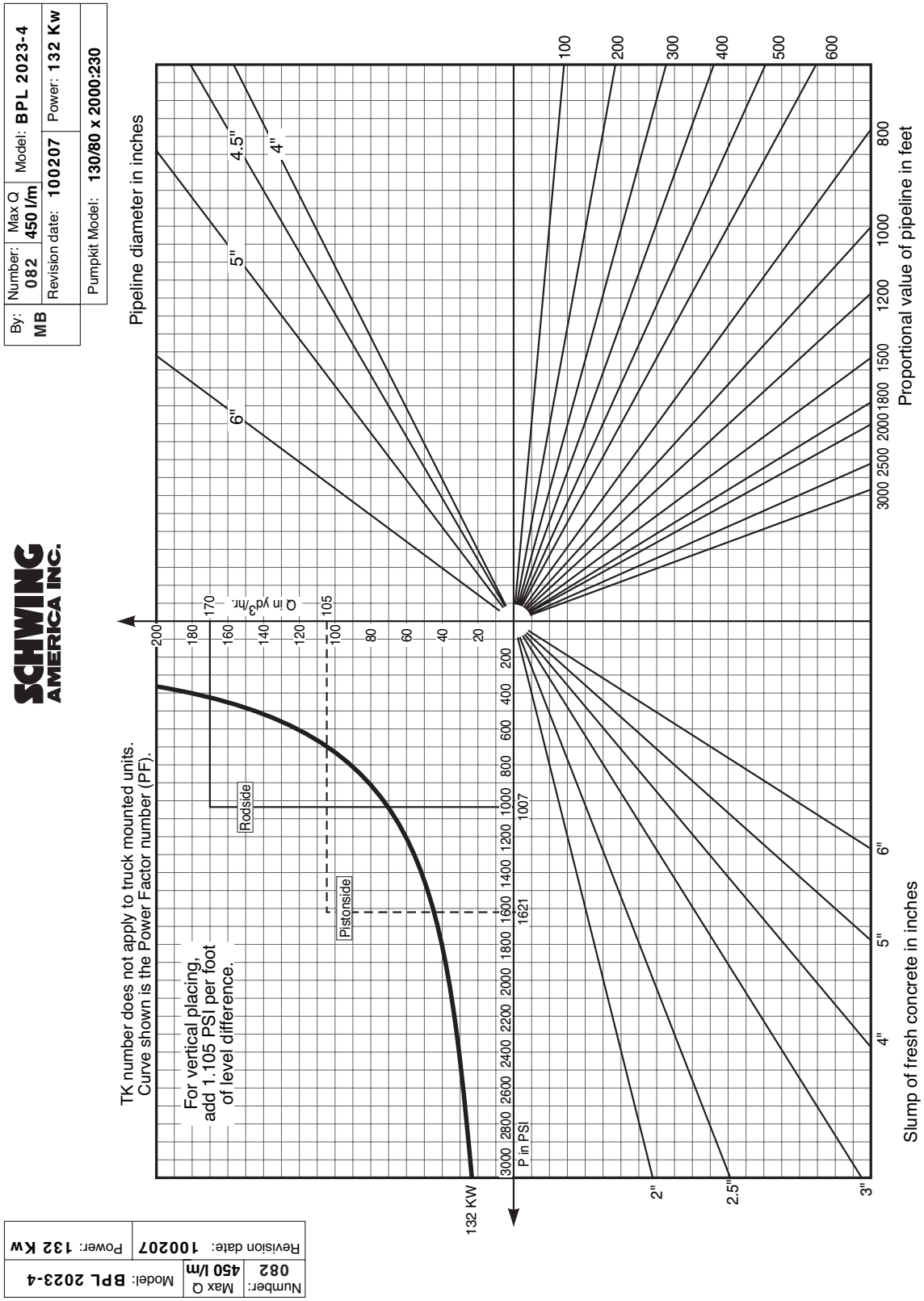


BPL 2023-4 SC..... 130/80 x 2000:230.....400 l/m ..... 150 Kw

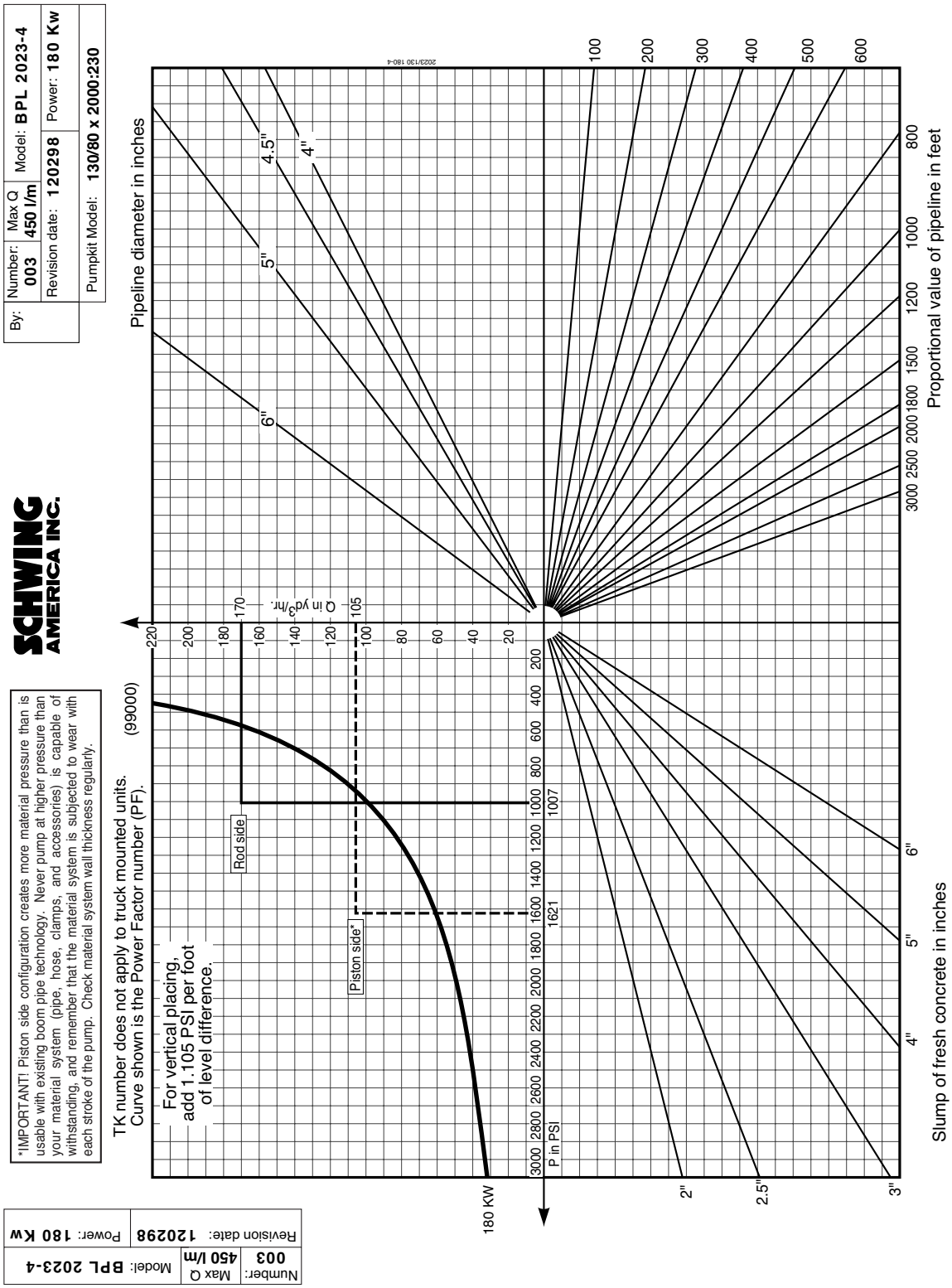


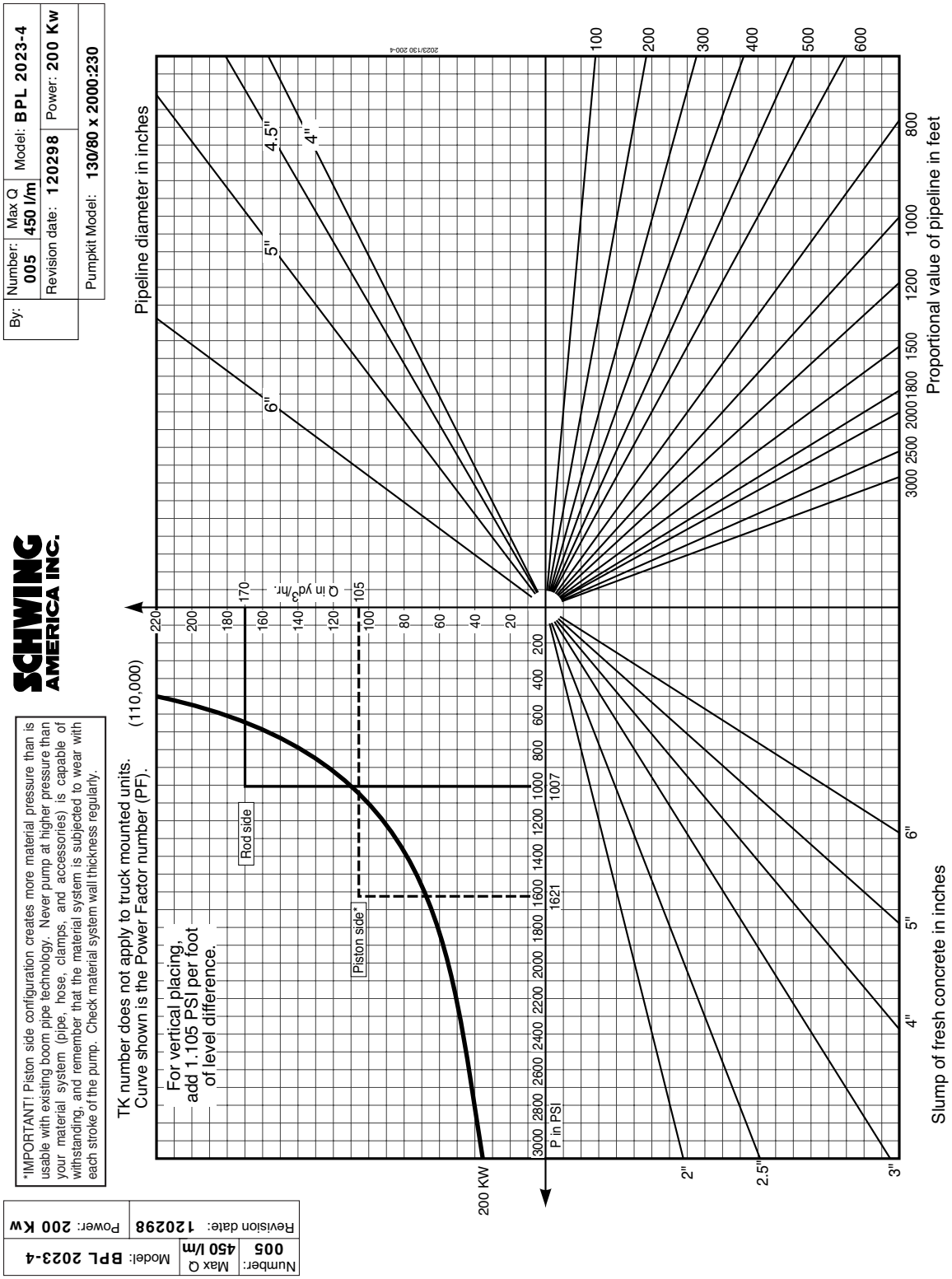
BPL 2023-4 ..... 125/80 x 2000:230 ..... 450 l/m ..... 200 Kw




By: MB
Number: 082
Max Q 450 l/m
Model: BPL 2023-4
Revision date: 100207
Power: 132 Kw
Pumpkit Model: 130/80 x 2000:230
SCHWING AMERICA INC.
Pipeline diameter in inches
4.5"
4"
5"
6"
Q in yd³/hr.
Rodside
Pistonside
1007
1621
P in PSI
132 KW
2"
2.5"
3"
4"
5"
6"
Slump of fresh concrete in inches
Proportional value of pipeline in feet
TK number does not apply to truck mounted units.
Curve shown is the Power Factor number (PF).
For vertical placing, add 1.105 PSI per foot of level difference.
Number: 082
Max Q 450 l/m
Model: BPL 2023-4
Revision date: 100207
Power: 132 Kw

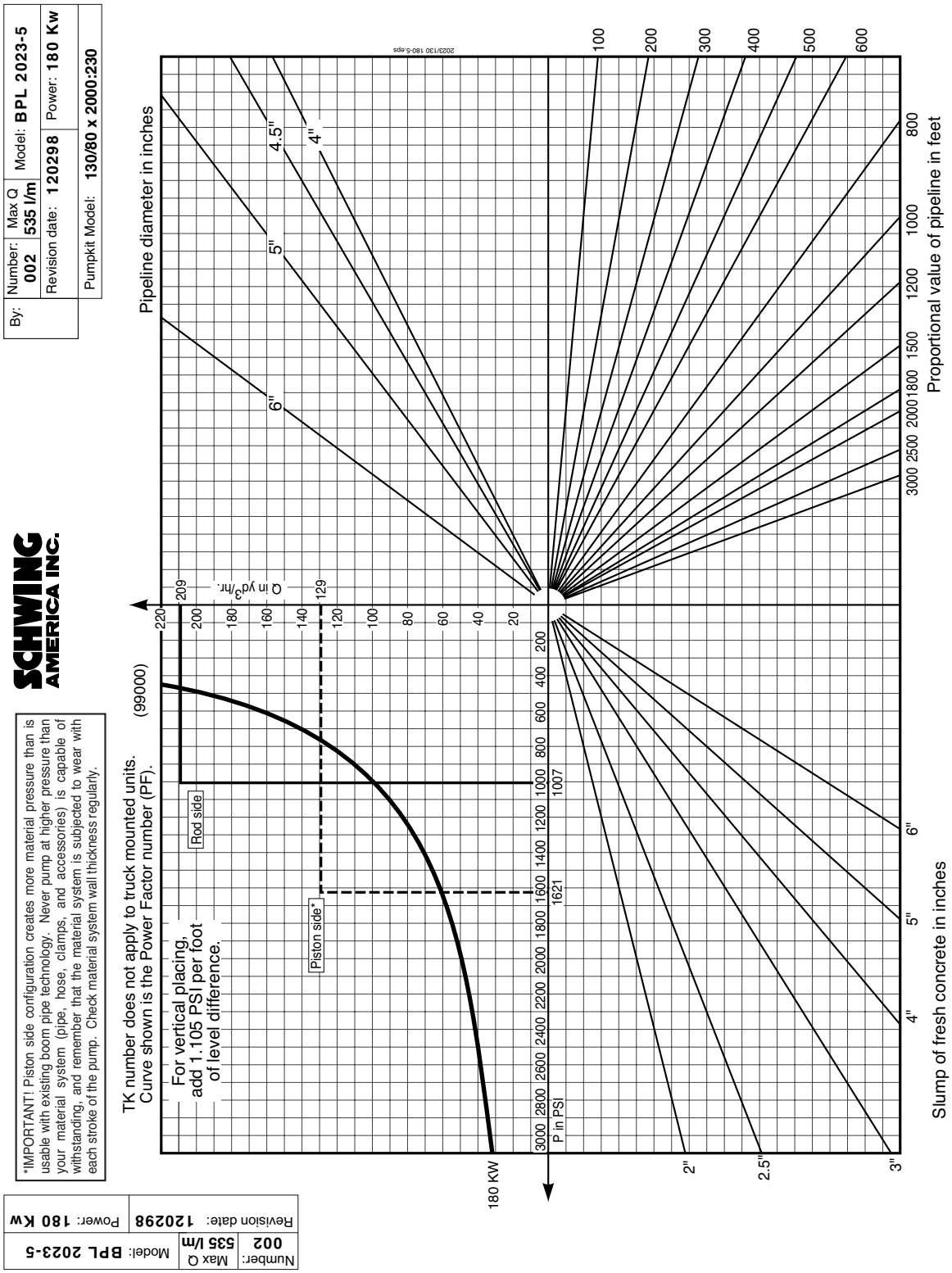
BPL 2023-4 ..... 130/80 x 2000:230 ..... 450 l/m ..... 180 Kw

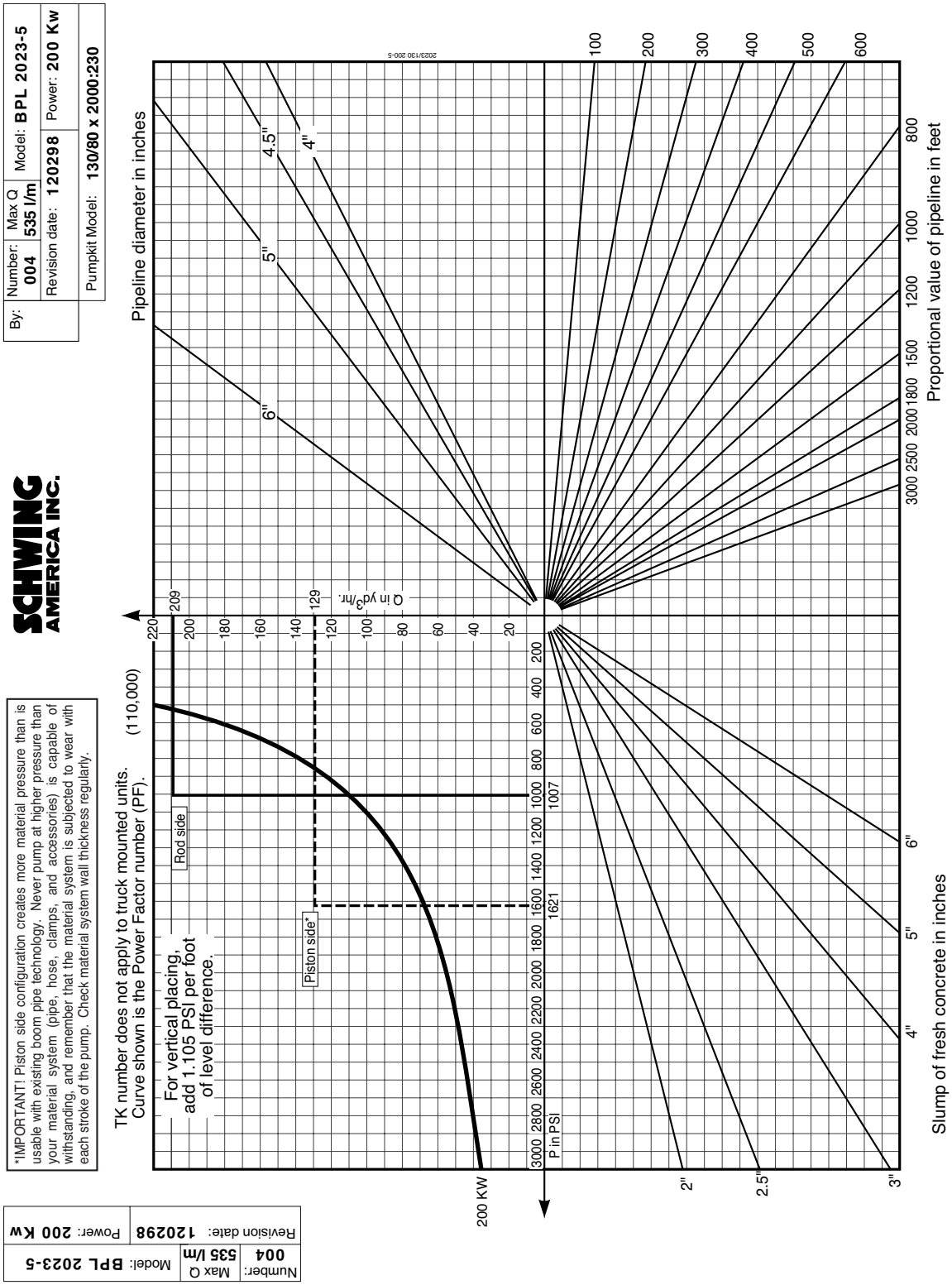



By:
Number: 005
Max Q 450 l/m
Model: BPL 2023-4
Revision date: 120298
Power: 200 Kw
Pumpkit Model: 130/80 x 2000:230
SCHWING AMERICA INC.
*IMPORTANT! Piston side configuration creates more material pressure than is usable with existing boom pipe technology. Never pump at higher pressure than your material system (pipe, hose, clamps, and accessories) is capable of withstanding, and remember that the material system is subjected to wear with each stroke of the pump. Check material system wall thickness regularly.
TK number does not apply to truck mounted units.
Curve shown is the Power Factor number (PF).
For vertical placing, add 1.105 PSI per foot of level difference.
(110,000)
Rod side
Piston side*
1007
1621
Q in yd³/hr.
P in PSI
200 KW
Pipeline diameter in inches
6"
5"
4.5"
4"
2"
2.5"
3"
Proportional value of pipeline in feet
Slump of fresh concrete in inches
Number: 005
Max Q 450 l/m
Model: BPL 2023-4
Revision date: 120298
Power: 200 KW

Nomographs - BPL

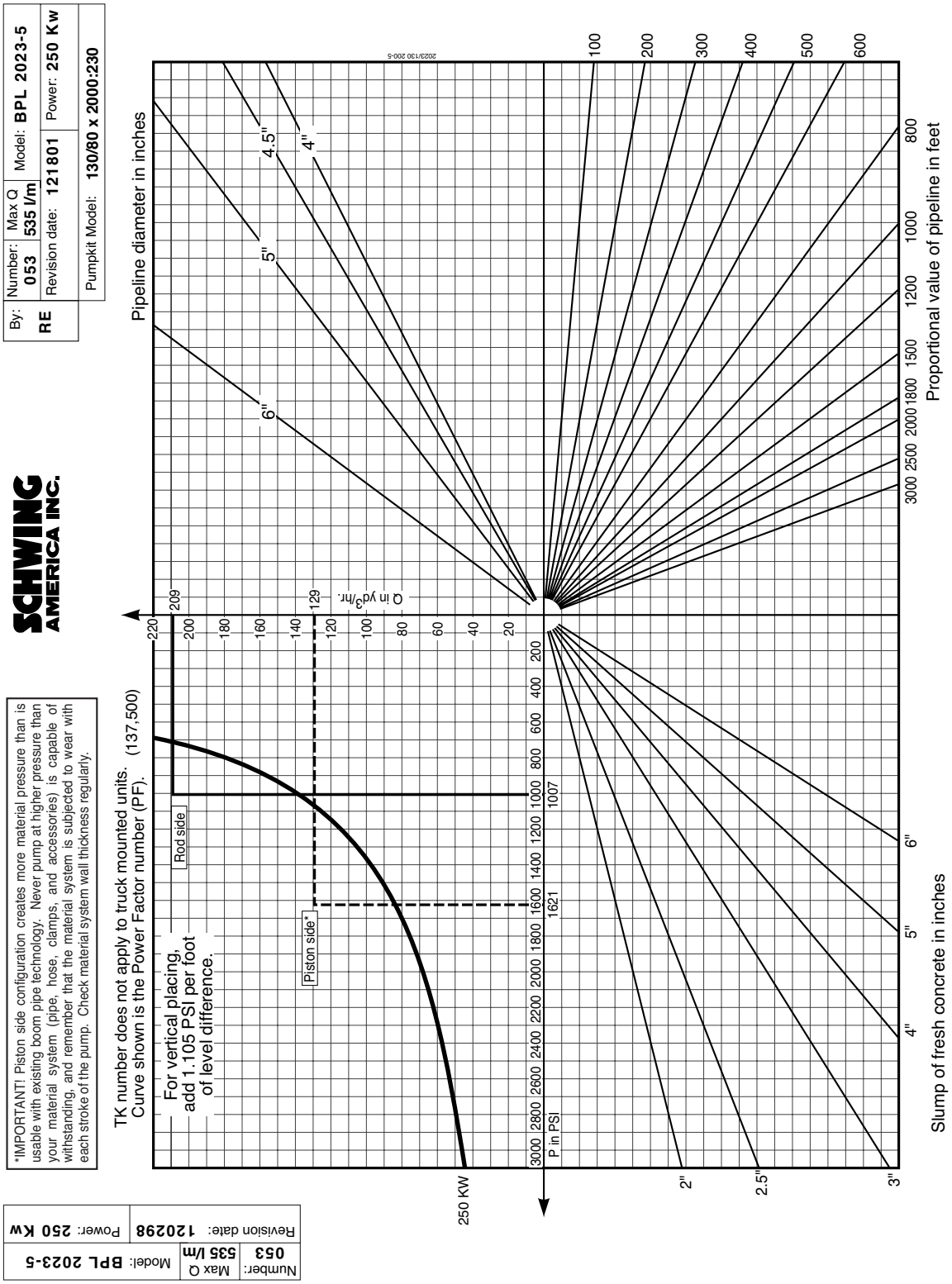
BPL 2023-5 ..... 130/80 x 2000:230 ..... 535 l/m ..... 180 Kw



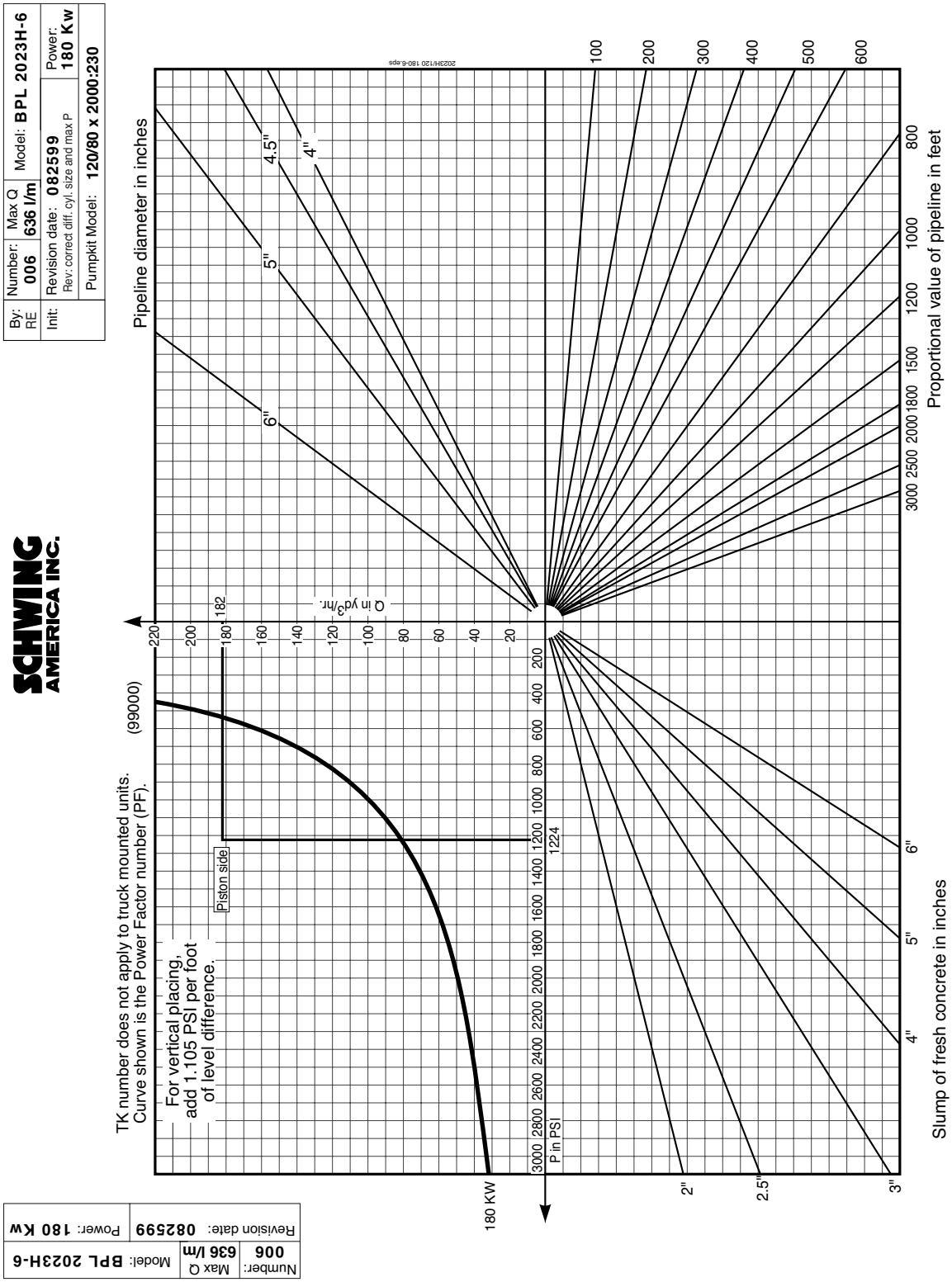

By:
Number: 004
Max Q 535 l/m
Model: BPL 2023-5
Revision date: 120298
Power: 200 Kw
Pumpkit Model: 130/80 x 2000:230
SCHWING AMERICA INC.
*IMPORTANT! Piston side configuration creates more material pressure than is usable with existing boom pipe technology. Never pump at higher pressure than your material system (pipe, hose, clamps, and accessories) is capable of withstanding, and remember that the material system is subjected to wear with each stroke of the pump. Check material system wall thickness regularly.
TK number does not apply to truck mounted units. Curve shown is the Power Factor number (PF).
For vertical placing, add 1.105 PSI per foot of level difference.
(110,000)
Rod side
Piston side*
Pipeline diameter in inches
4"
4.5"
5"
6"
Q in yd³/hr.
P in PSI
200 KW
Proportional value of pipeline in feet
Slump of fresh concrete in inches
2"
2.5"
3"
4"
5"
6"
Number: 004
Max Q 535 l/m
Model: BPL 2023-5
Revision date: 120298
Power: 200 Kw

Nomographs - BPL

BPL 2023-5 ..... 130/80 x 2000:230 ..... 535 l/m ..... 250 Kw

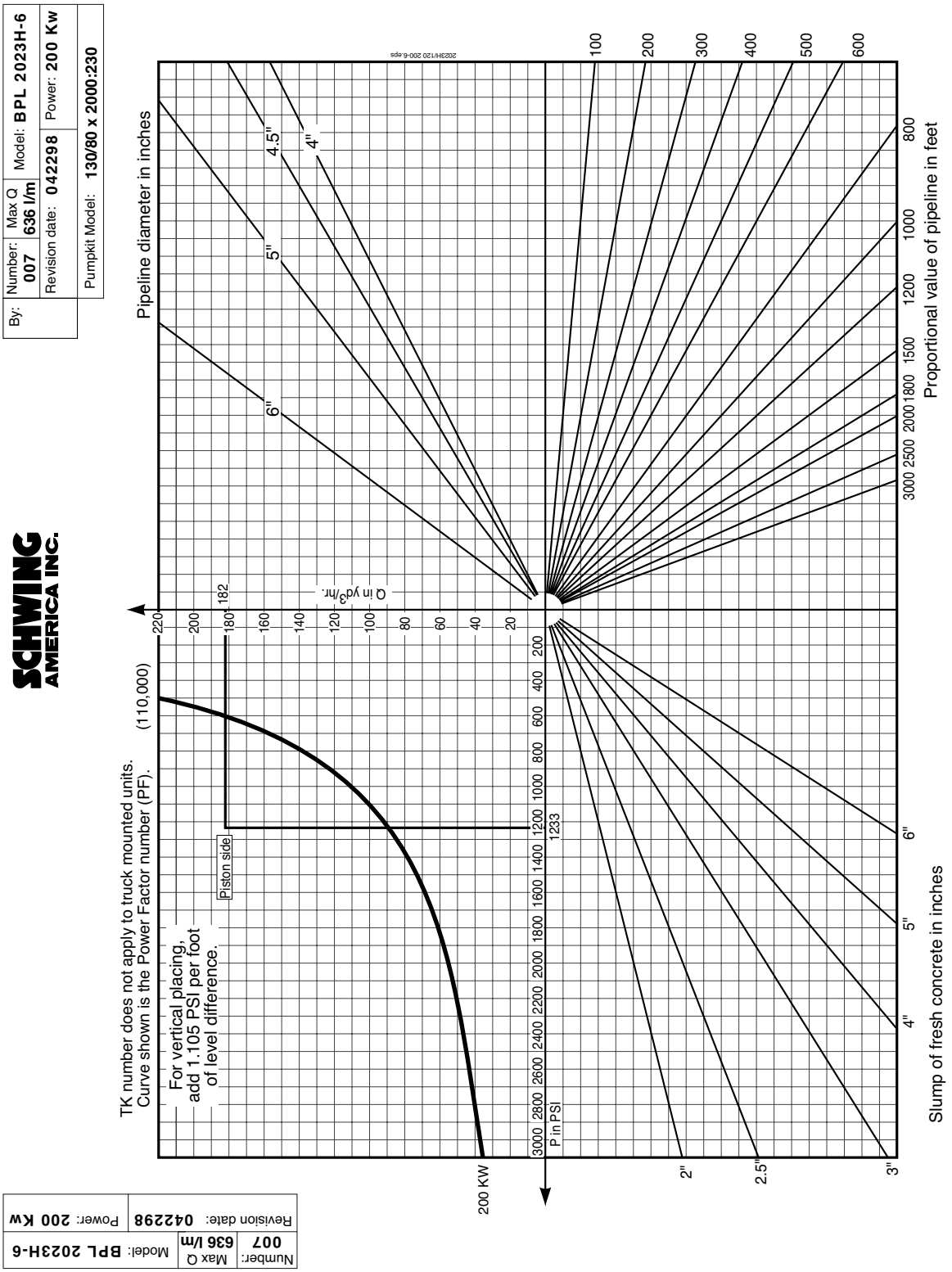


BPL 2023H-6 ..... 120/80 x 2000:230 .....636 l/m ..... 180 Kw

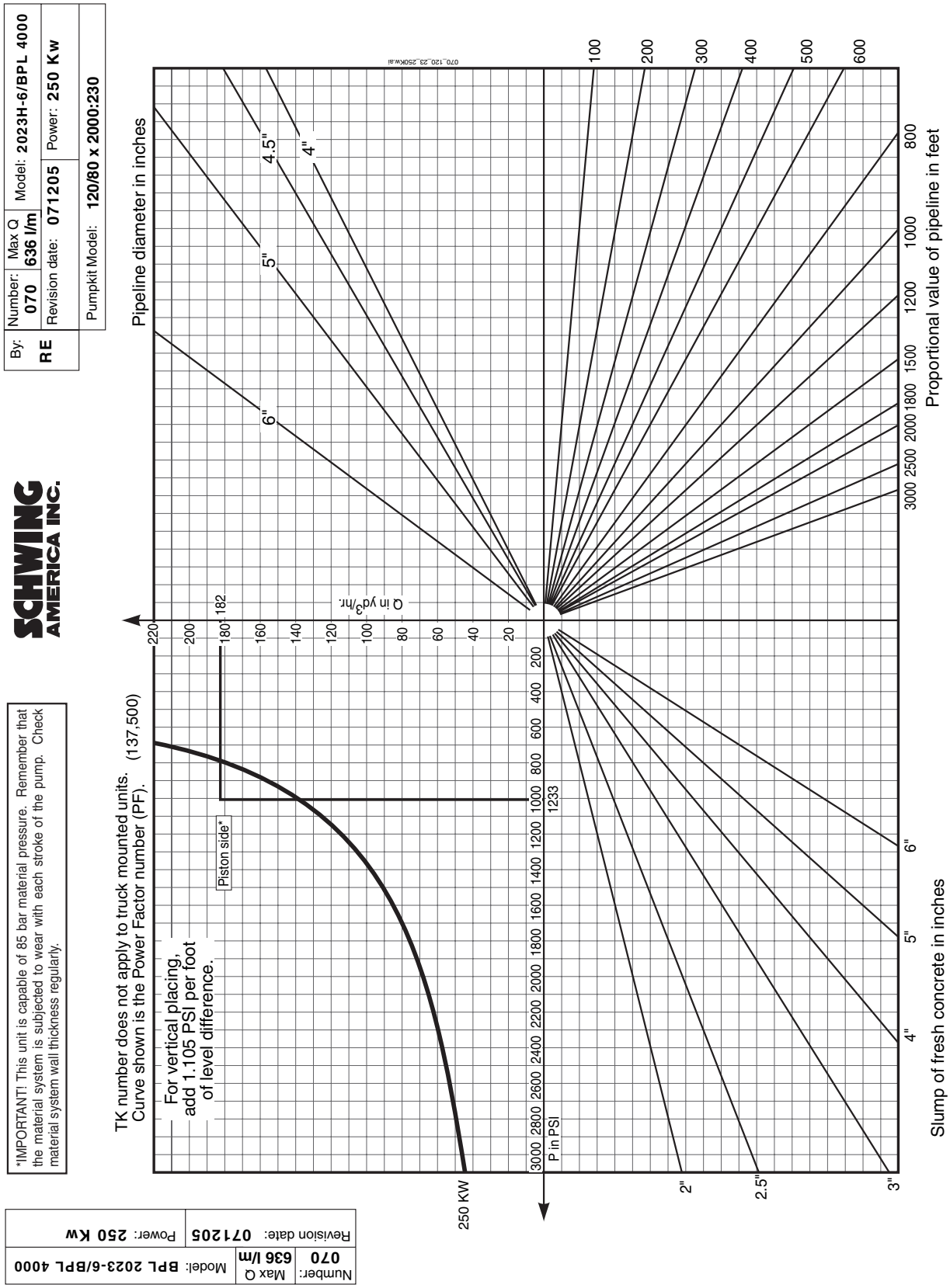


Nomographs - BPL

BPL 2023H-6..... 130/80 x 2000:230 .....636 l/m.....200 Kw

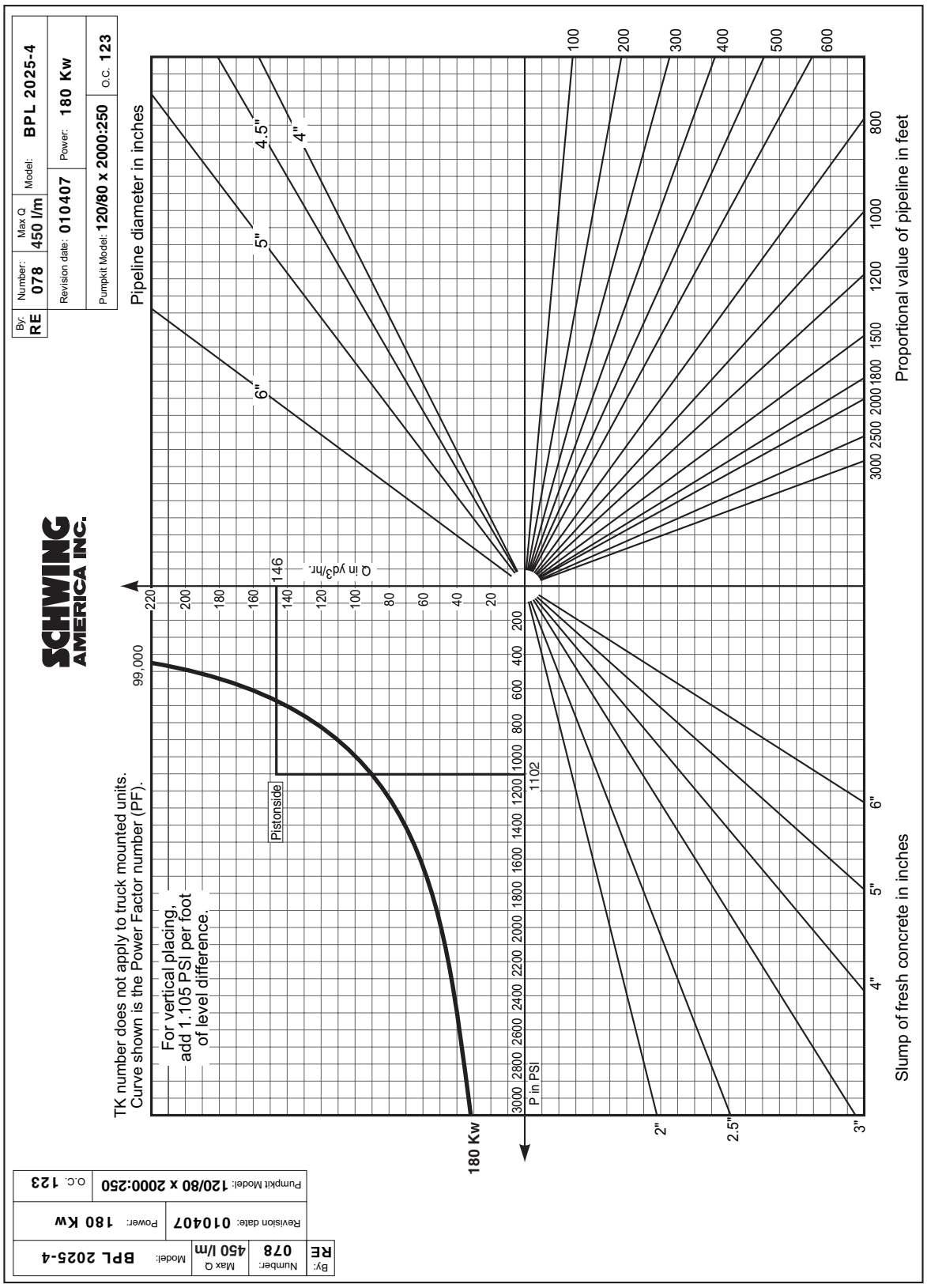


BPL 2023H-6 ..... 120/80 x 2000:230 ..... 636 l/m ..... 250 Kw

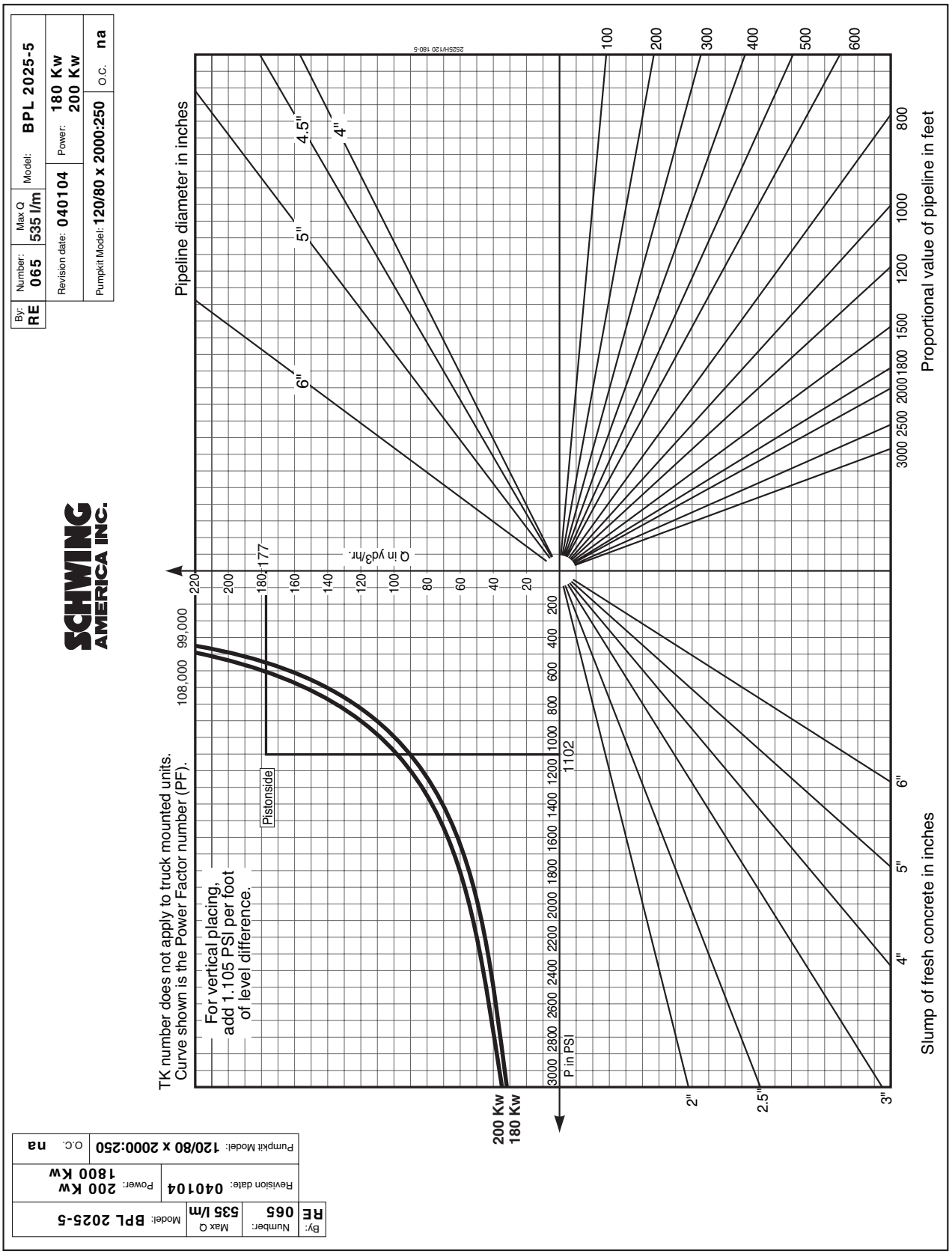


Nomographs - BPL

BPL 2025-4 ..... 120/80 X 2000:250 ..... 450 l/m ..... 180 Kw

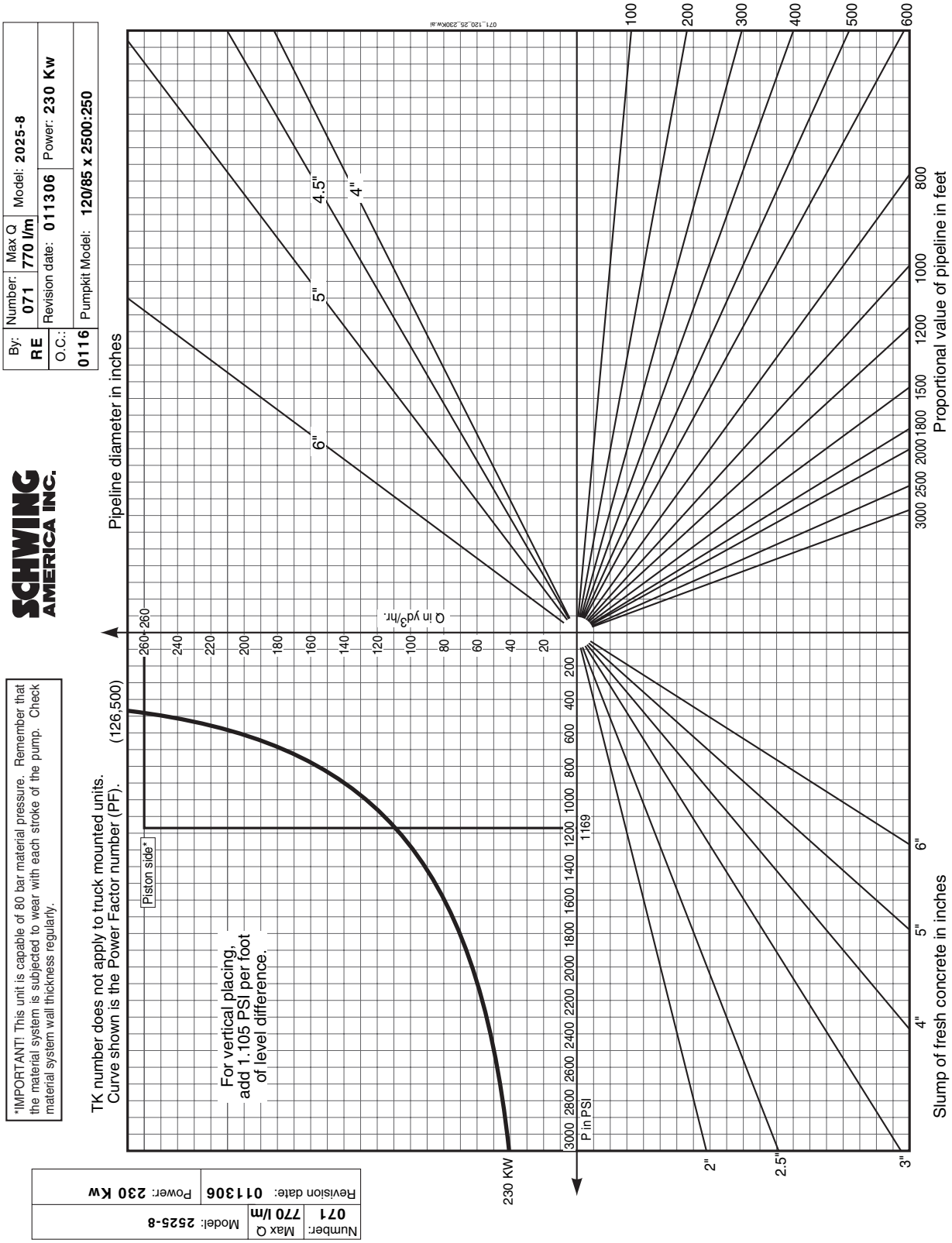


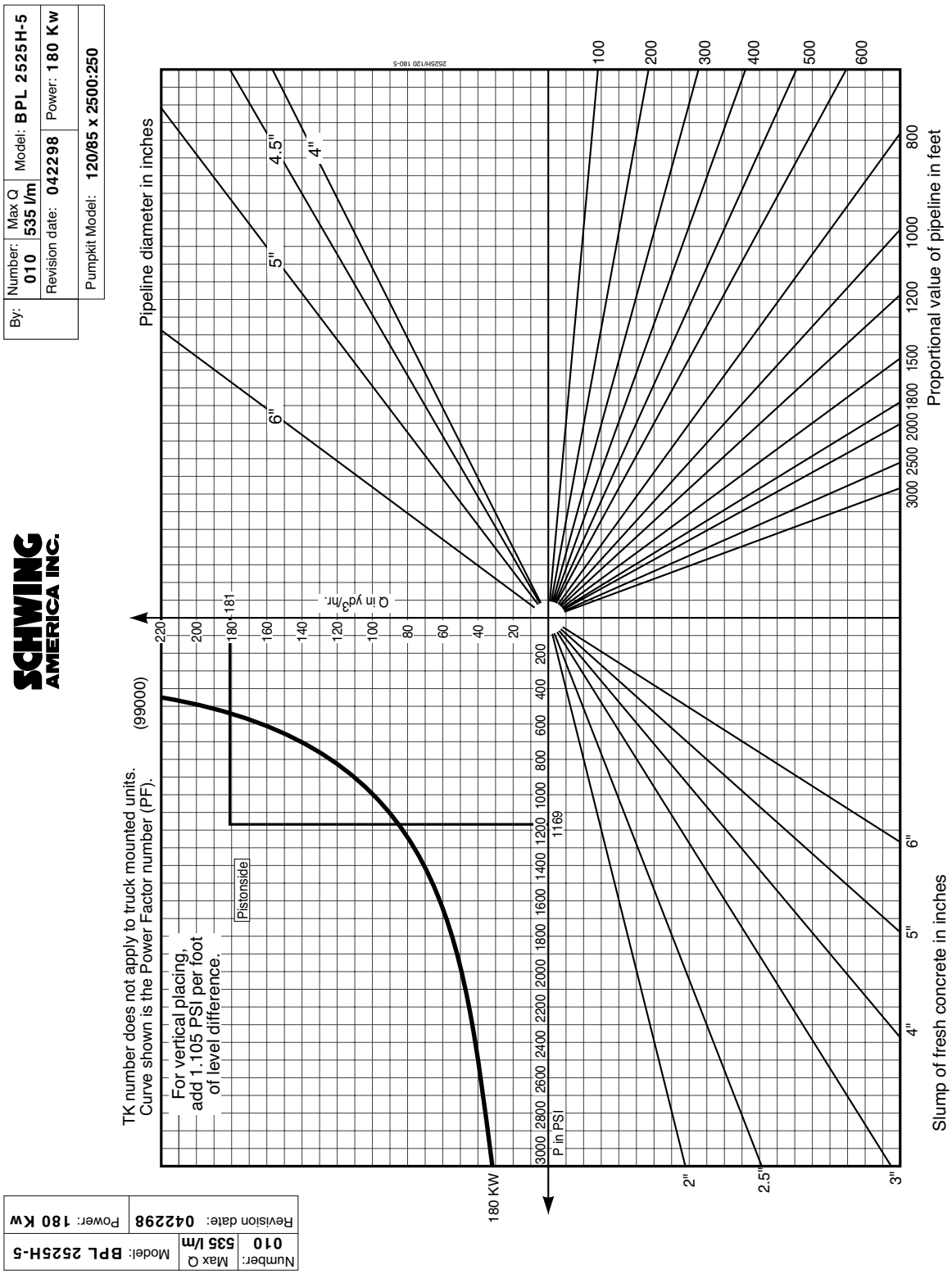
By: RE | Number: 078 | Max Q 450 l/m | Model: BPL 2025-4
Revision date: 010407 | Power: 180 Kw
Pumpkit Model: 120/80 x 2000:250 | O.C. 123


By: RE
Number: 065
Max Q 535 l/m
Model: BPL 2025-5
Revision date: 040104
Power: 180 Kw 200 Kw
Pumpkit Model: 120/80 x 2000:250
O.C. na
SCHWING AMERICA INC.
Pipeline diameter in inches
4.5"
4"
5"
6"
Q in yd3/hr.
177
180
220
200
180
160
140
120
100
80
60
40
20
108,000
99,000
Pistonside
1102
TK number does not apply to truck mounted units.
Curve shown is the Power Factor number (PF).
For vertical placing, add 1.105 PSI per foot of level difference.
200 Kw
180 Kw
P in PSI
3000 2800 2600 2400 2200 2000 1800 1600 1400 1200 1000 800 600 400 200
100 200 300 400 500 600
800 1000 1200 1500 1800 2000 2500 3000
Proportional value of pipeline in feet
2"
2.5"
3"
4"
5"
6"
Slump of fresh concrete in inches
2525H/120 180-5
By: RE
Number: 065
Max Q 535 l/m
Model: BPL 2025-5
Revision date: 040104
Power: 200 Kw 1800 Kw
Pumpkit Model: 120/80 x 2000:250
O.C. na

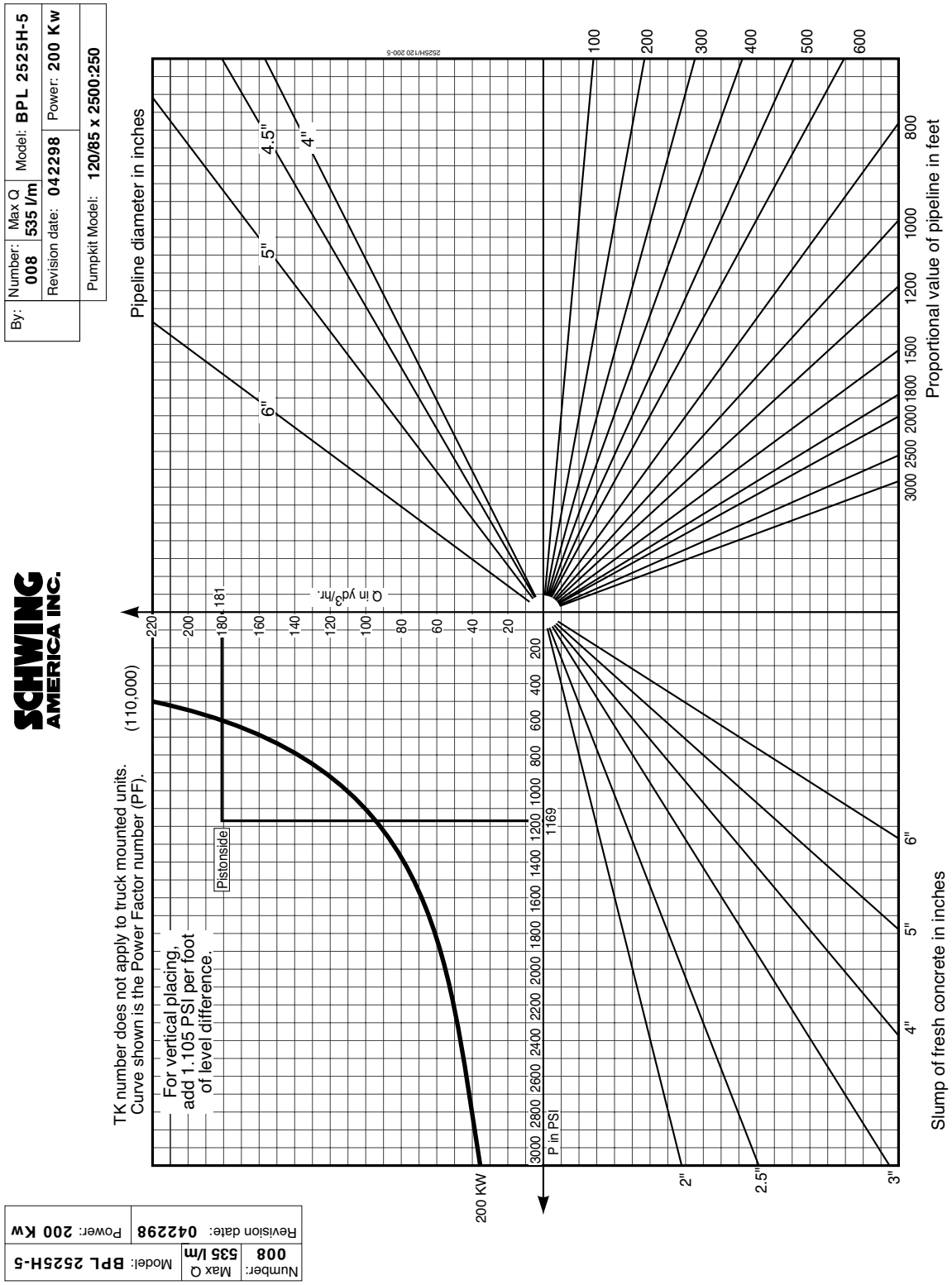
Nomographs - BPL

BPL 2025-8 ..... 125/85 X 2500:250 ..... 770 l/m ..... 230 Kw

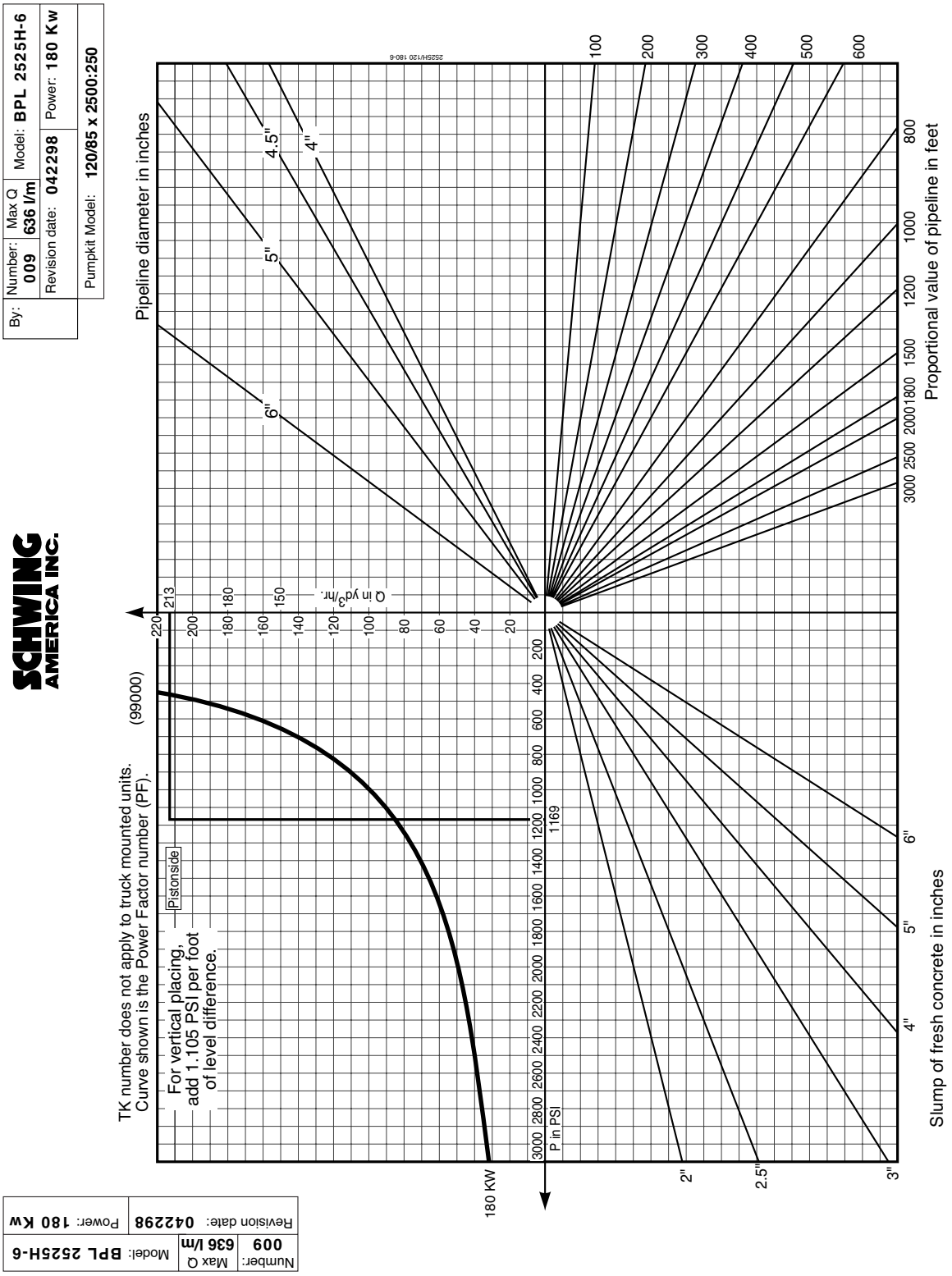



By:
Number: 010
Max Q 535 l/m
Model: BPL 2525H-5
Revision date: 042298
Power: 180 Kw
Pumpkit Model: 120/85 x 2500:250
SCHWING AMERICA INC.
Pipeline diameter in inches
4"
4.5"
5"
6"
Q in yd3/hr.
Proportional value of pipeline in feet
Slump of fresh concrete in inches
2"
2.5"
3"
4"
5"
6"
P in PSI
180 KW
(99000)
1169
181
Pistonside
For vertical placing, add 1.105 PSI per foot of level difference.
TK number does not apply to truck mounted units. Curve shown is the Power Factor number (PF).
Number: 010
Max Q 535 l/m
Model: BPL 2525H-5
Revision date: 042298
Power: 180 Kw

BPL 2525H-5 ..... 120/85 x 2500:250 ..... 535 l/m ..... 200 Kw



BPL 2525H-6 ..... 120/85 x 2500:250.....636 l/m ..... 180 Kw



BPL 2525H-6..... 120/85 x 2500:250 .....636 l/m.....200 Kw