Fire Suppression

Fire Pump, Driver and Controller Assemblies Certified as to Rating Compatibility

The route to UL 448D compliance
With UL Mark and published on UL's Online Certification Directory

Benefit of fire pump assemblies Certified as to Rating Compatibility

Code Authorities and building owners look for assurance to confirm the fire pump, driver and controller assembly have compatible rated speeds and power ratings. In addition to UL Mark Certification service for fire pumps, drivers and controllers individually, UL now has a Certification service for the assembly of a fire pump, driver and controller to confirm the rated speed and power ratings of the assembly are compatible.

Specifications for fire pump assemblies Certified as to Rating Compatibility

UL's Outline of Investigation for Fire Pump, Driver and Controller Assembly Rating Compatibility, UL 448D, specifies the requirements for this service, including:
Scope: The assembled equipment is intended for installation in accordance with ANSI/NFPA 20 and ANSI/NFPA 70.
Construction: Fire Pump – Certified to ANSI/UL 448, Diesel engine driver - Certified to ANSI/UL 1247 or, where applicable, to UL 1247A, Electric motor driver – Certified ANSI/UL1004-5, and Fire pump controller – Certified to ANSI/UL 218.
Rating Compatibility: The UL Certification Markings on each of the three UL Certified products assembled together, including the rated speed and power ratings, are reviewed and confirmed for compatibility. UL 448D specifies the requirements to determine compliance for compatibility.
Documentation: The assembler of the fire pump, driver and controller provides the manufacturing and production test data (curve) for the fire pump as required in ANSI/UL 448.
Marking: Each fire pump, driver and controller assembly shall be marked on the pump or assembly base with the assembler's name and an assembly serial number

How to get started?

To initiate a quote request, please contact your local UL Sales Team or FireSafetyQuote@ul.com and provide the ratings marked on the UL Certified (1) fire pump, (2) driver and (3) controller for each assembly, along with the pump performance curve developed during pump production testing.

What do you get when the fire pump assembly rating compatibility is confirmed?

Once the assembly is found to comply with UL 448D, the UL Certified Mark (see sample below) can be applied at the assembly location under UL Follow-Up Service. A UL report will be issued and the assembly serial number with detailed rated speed, horsepower and output information for that assembly will be published on UL's Online Certification Directory, under UL Category Code QXYV.



Fire Pump, Driver and Controller Assembly
Certified as to Rating Compatibility Only
Assembly Serial Number #####

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FIRE SAFETY

UL Testing for Fire Pumps, Engines and Couplings

Single-source evaluation services

Ensuring the safety of modern buildings, particularly high-rises, is highly dependent on the proper function of the fire safety equipment and systems installed in them. Among these, no equipment is more vital than the fire pumps, engines and couplings that ensure that building sprinkler systems have adequate water pressure to operate effectively.

For more than 60 years, UL has been your one-stop provider for research, testing, certification and standards development for fire pump equipment. Fire pumps and engines are separately evaluated and tested to determine their suitability and durability for use in fire sprinkler systems. Their construction is examined for compliance with the requirements. Pumps, engines and couplings for fire safety service are also subjected to performance tests to confirm their operation and compliance with the requirements and the ratings desired.

Certification to a variety of standards

The UL fire safety division's suppression team supports manufacturers, regulatory authorities, building owners and insurance companies with certification and customized testing services for a variety of suppression equipment, including fire pumps, engines and related equipment. UL tests and certifies these products in accordance with the requirements in the current editions of the following Standards:

ANSI/UL 448 — Centrifugal Stationary Pumps for Fire-Protection Service

Subject 448A — Flexible Couplings And Connecting Shafts for Fire Pumps

Subject 448B — Residential Fire Pumps Intended for One- and Two-Family Dwellings and Manufactured Homes

Subject 448C — S tationary, Rotary Type, Positive Displacement Pumps for Fire-Protection Service

ANSI/UL 1247 — Diesel Engines for Driving Stationary Fire Pumps

Subject 1247A — Variable Speed Pressure Limiting Controls Installed with Diesel Engines for Driving Stationary Fire Pumps

ANSI/UL 218 — Fire Pump Controllers

ANSI/UL 508 — Industrial Control Equipment

Fire pumps, engines, couplings and controllers are to be installed in accordance with NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection.

The value of UL

UL has been a trusted leader in the testing of products for more than 100 years. Our testing and certification services offer several advantages to both manufacturers and users of fire suppression equipment. One advantage is product listing in an applicable UL Product Directory. UL directories contain a list of companies that have demonstrated compliance with UL requirements and applicable standards and are authorized to use a UL Mark. The directories are considered an invaluable resource by thousands of regulatory authorities, building owners and insurance companies.

UL offers comprehensive, state-of-the-art testing facilities and a highly experienced technical staff with extensive code knowledge.

For more information T: 877.854.3577 / W: ul.com/fire

Once a product is UL Listed, it will appear in a UL Product Directory. More than 2,500 Authorities Having Jurisdiction (AHJs) and code officials reference these directories annually.

UL can also help you reduce time to market by offering efficient and flexible services from an industry leader in fire safety certification. We offer comprehensive, state-of-the-art testing facilities and a highly experienced technical staff with extensive code knowledge. This is why the UL Mark is immediately recognized and respected by professionals in fire safety around the world.

Additional Services

In addition to fire pumps, engines and couplings services, the UL fire safety division's suppression team supports manufacturers, AHJs, building owners and insurance companies by offering certification and customized testing services in the following areas:

- Fire Extinguishers
- Valves for Fire Suppression Systems
- Sprinklers
- Sprinkler Piping Systems
- Fixed Fire Extinguishing Systems
- Fire Alarm Equipment

For more information T: 877.854.3577 / W: ul.com/fire

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Vertical Multistage Pump
Type MSV Inox Series



Vertical Multistage Pump
Type DL Series



Vertical In-Line Pump
Type SLS Series



Multistage Centrifugal
Pump Type MWB



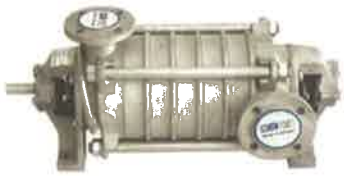
Portable Diesel Engine
Water Pump Type LDP



Diesel Engine Self Priming Pump
SPDW Series



Multiple Pressure Booster Systems
With Variable Speed Controller
Type BL



Multistage High Pressure
Centrifugal Pump
Type MS-E



Horizontal Split Casing Pump
Type ACT Series



Self Priming Pump
Type SPW Series



End Suction Centrifugal Pump
Type LDP3 DIN 24255



Petrochemical Process Pump
Type SLZA Series



Centrifugal Oil Pump
Type AY Series



Pulp Pump (Open Impeller)
Type SJ Series



Stainless Steel Multistage
Deep-well Submersible Pump
Type SJ Series



Submersible Pump
Type CP,DV, GQ Series



Non-Clogging Submersible
Sewage Pump WQ Series



Submersible Propeller
Pump
Model: QZ /QH Series



Stainless Steel
Submersible Pump
Type WL Series



Vertical Submersible Pump
Model: YW Series



Vertical Turbine Pump
Type LJC /LP(T) Series



Drakos Horizontal Split Casing
Fire Pump Model SLOW
UL/SETSCO Listed



Drakos Fire Pump Motor
Model SWE Series
UL/SETSCO Listed



Master Fire Pump Controller
FM/UL

SAFEWAY MARKETING PTE LTD

35 Kallang Pudding Road, #02-12
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Tel: 65-67442277 /Fax: 65-67445706
Email: safeway_mkg@yahoo.com.sg, safewaymkg@gmail.com
Website: www.safewaymarketing.sg

SWE SERIES (IE3)

THREE PHASE PREMIUM EFFICIENCY ASYNCHRONOUS MOTORS



Wonder SWE Series Three Phase Asynchronous Motor is premium efficiency electric motors with cast iron housing. Its efficiency indicators are in line with IE3.

Characteristics for all WONDER standard Three Phase Asynchronous Motors

- Widely applied in general machinery and industries such as pumps & water treatment, fire fighting system, road machinery, petroleum, chemical, metallurgy, cement and paper milling.
- IP55 protection, Class F insulation, B Temperature rise, S1 duty, Service factor 1.10.
- Rated voltage: 400V.
- Rated frequency: 50Hz.
- Ambient temperature: 20° C to 40° C
- Altitude: <1000m
- Cooling method: IC411

SWE Series (IE3)
2 Pole / 3000 rpm 50 Hz

Technical Specifications

Frame Size	Rated Output		Full Load Current (A)	Rated Speed	Efficiency η %			Power Factor cos φ			Locked Rotor Current	Locked Rotor Torque	Breakdown Torque	Sound LP	Moment of Inertia	Weight
					% Of Full Load						Rated Current	Rated Torque	Rated Torque	dB(A)	JKgm2	kg
	kW	HP	400V	Rpm	100	75	50	100	75	50						
200L2	37	50	63.0	2955	94.2	94.0	92.3	0.90	0.84	0.80	8.5	3.0	3.8	75	0.203	275
225M	45	60	75.5	2970	94.5	94.3	93.1	0.91	0.88	0.81	8.5	2.8	3.9	75	0.411	345
250M	55	75	93.9	2980	95.0	94.6	93.4	0.89	0.86	0.76	8.0	2.6	3.9	81	0.435	450
280S	75	100	126	2980	95.2	95.2	93.6	0.90	0.84	0.80	8.5	2.8	3.9	80	0.743	540
280M	90	125	150	2980	95.4	95.2	93.8	0.91	0.89	0.85	6.5	2.1	2.9	80	0.823	575
315S	110	150	182	2980	95.7	95.1	94.1	0.91	0.88	0.86	7.5	2.2	3.6	80	1.64	1010
315M	132	180	218	2980	95.9	95.8	94.8	0.91	0.87	0.84	7.5	2.2	3.3	80	1.78	1070

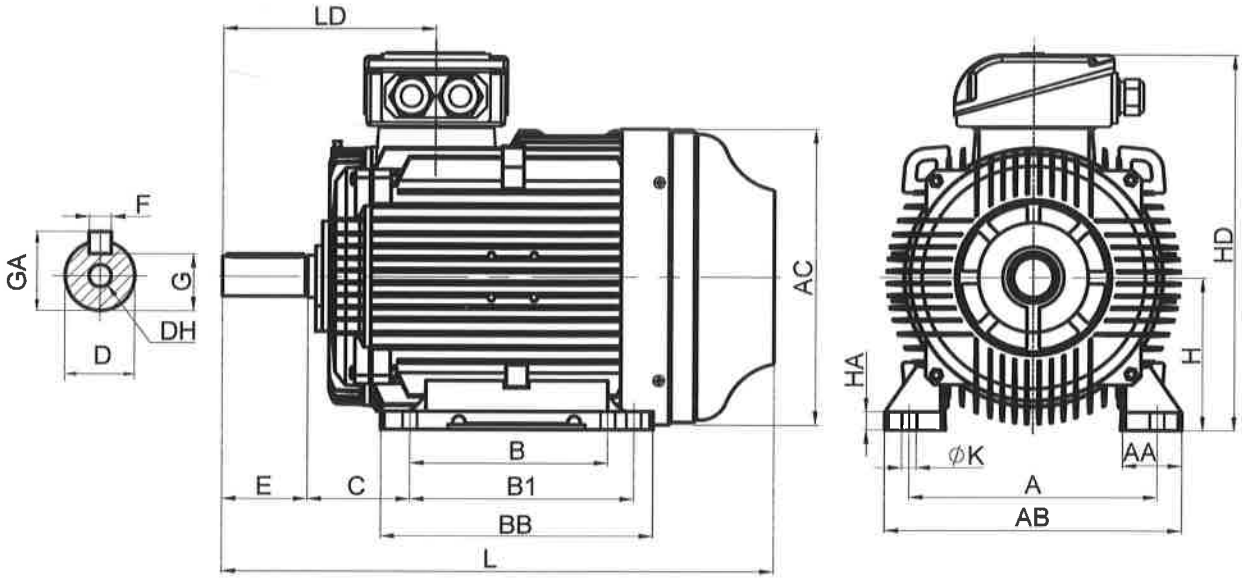
Authorized Dealer
SAFEWAY MARKETING PTE LTD
35 Kallang Pudding Road
#02-12, Tong Lee Building, Blk A
Singapore 349314
Tel: 65-67442277 /Fax: 65-67445706
Email: safewaylkl@lycos.com

WONDER PUMPS SETSCO

UL Listed E X16407

ISO 9001:2008

Mounting and Overall Dimensions



Frame Size	Poles	Mounting Dimensions (mm)												Overall Dimensions (mm)							
		A	B	B1	C	D	E	F	G	H	K	DH	GA	AA	AB	AC	HA	HD	BB	LD	L
200L2	2	318	305	/	133	55	110	16	49	200	19	M20 x 42	59	70	388	400	25	492	370	186	780
225M	2	356	311	/	149	55	110	16	49	225	19	M20 x 42	59	75	435	450	28	540	386	189	820
250M	2	406	349	/	168	60	140	18	53	250	24	M20 x 42	64	80	503	485	30	616	445	207	915
280S	2	457	368	/	190	65	140	18	58	280	24	M20 x 42	69	85	545	550	35	672	490	215	968
280M	2	457	419	/	190	65	140	18	58	280	24	M20 x 42	69	85	545	550	35	672	540	215	1020
315S	2	508	406	/	216	65	140	18	58	315	28	M20 x 46	69	120	630	625	45	815	570	257	1204
315M	2	508	457	508	216	65	140	18	58	315	28	M20 x 46	69	120	630	625	45	815	680	257	130

Bearing

Frame Size	Driven End 2 Pole	Non Driven End 2 Pole
200L2	6212/C3	6212/C3
225M	6312/C3	6312/C3
250M	6313/C3	6313/C3
280S	6314/C3	6314/C3
280M	6314/C3	6314/C3
315S	6317/C3	6317/C3
315M	6317/C3	6319/C3

LIANCHENG-DRAKOS

Horizontal Split Casing Fire Pump
Type SLOW Series



Features

This pump is a horizontal and split type, with both pump casing and cover split at the central line of the shaft, both water inlet and outlet and the pump casing cast integrally. A wearable ring set in between the impeller and the pump casing, the impeller axially fixed upon an elastic baffle ring and the mechanical seal directly mounted on the shaft and without a muff. These will greatly reduce the works of repair for the pump user. The shaft is made of stainless steel the packing seal structure is set with a muff to prevent the shaft from worn out. The bearings are open ball bearing type and a round post roller bearing and axially fixed upon a baffle ring. There is no thread and nut on the shaft so the moving direction of the pump can be changed any time without the need to replace the shaft. The impeller is made of Bronze material.

Operating Data

Pump Size	DN	:	80 ~ 250 mm
Capacity	Q	:	≤ 345 L/sec
Pressure	P	:	≤ 3 Mpa
Working Temperature	T	:	up to 80° C
Medium		:	Pure water and similar to that of pure water

Authorized Dealer
SAFEWAY MARKETING PTE LTD
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Tel: 65-67442277 /Fax: 65-67445706
Email: safewaylkl@lycos.com

连成集团 LIANCHENG GROUP

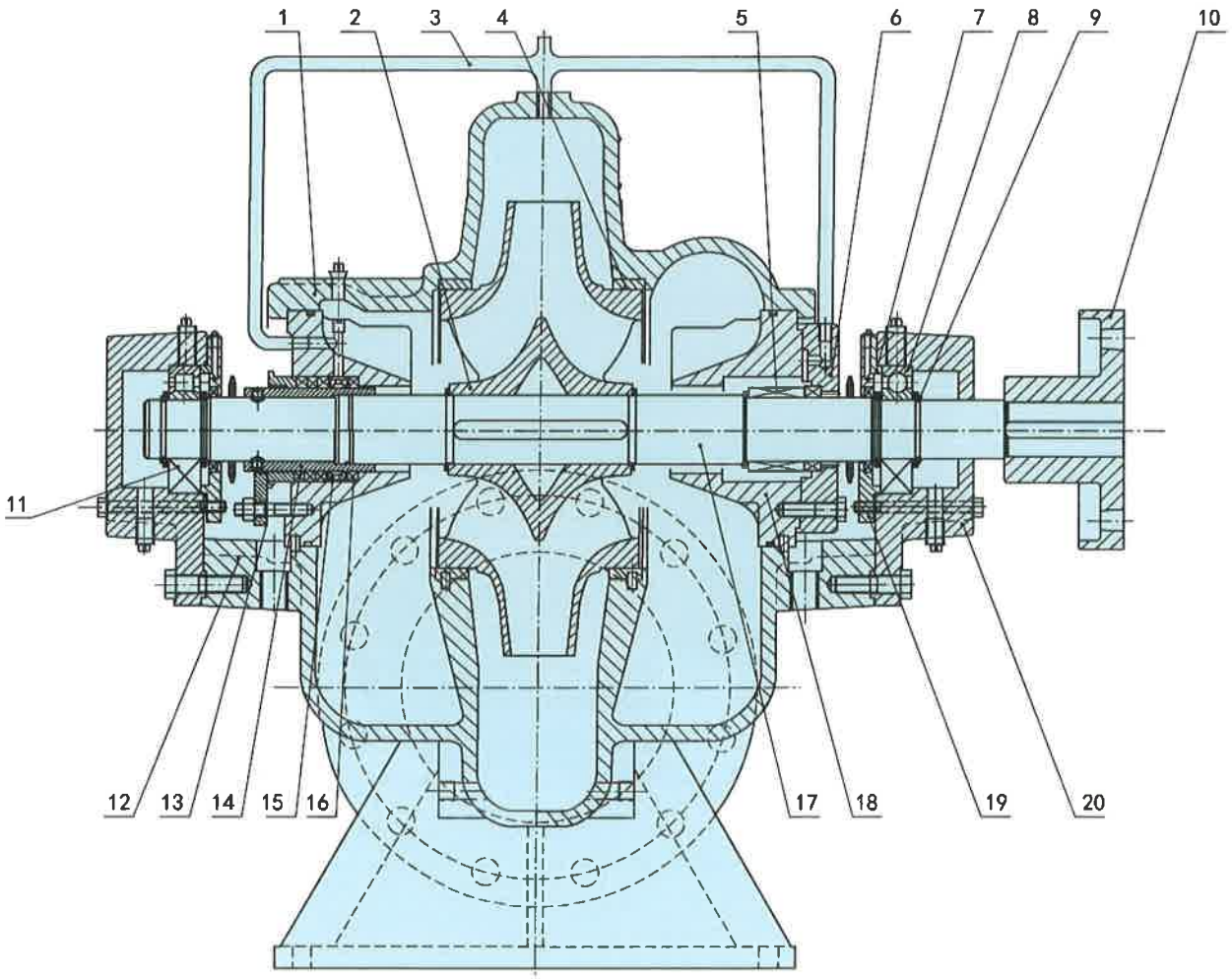
DMP PUMPS

SETSCO

UL Listed
EX16460

ISO 9001:2008

Structure Drawing

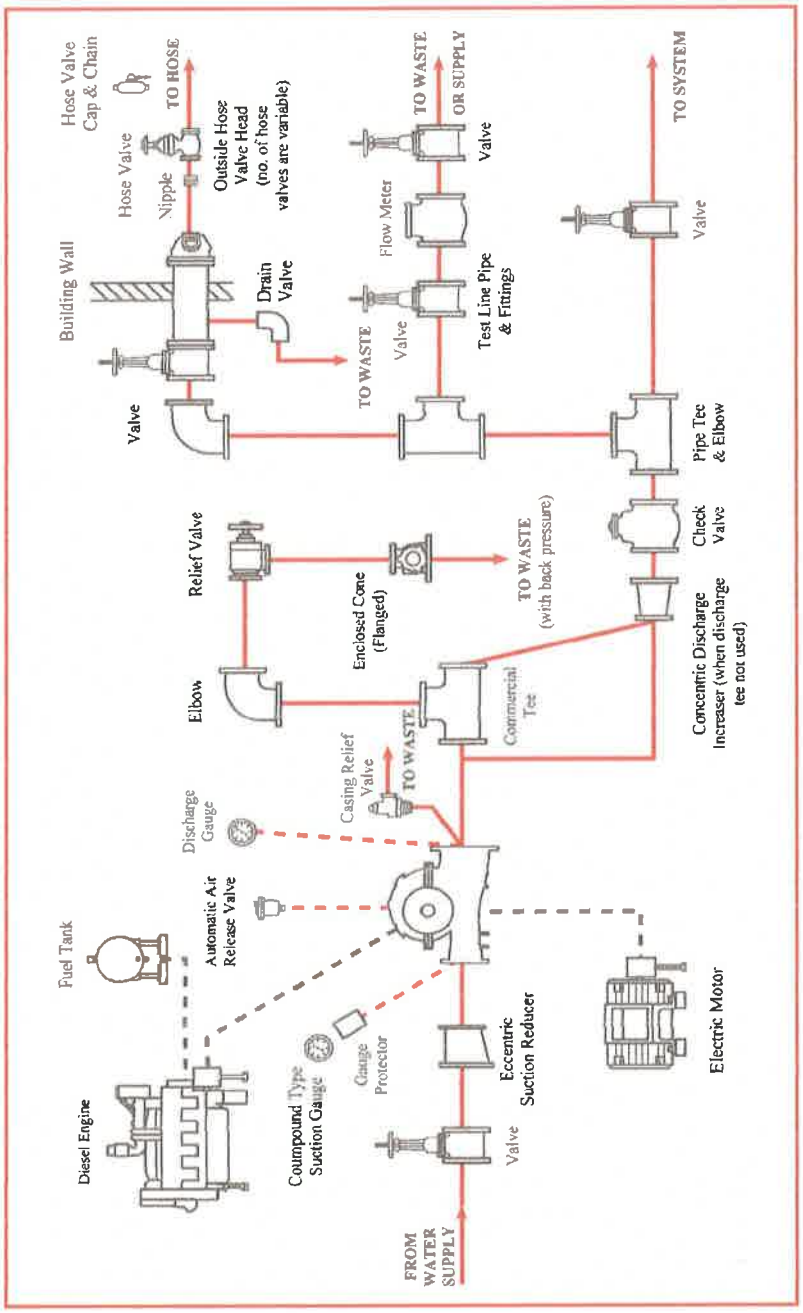


1	Pump Cover	6	Mechanical Seal Gland	11	Bearing	16	Packing
2	Impeller	7	Oil Seal of Frame	12	Pump Casing	17	Shaft
3	Water Sealed Pipe	8	Bearing	13	Packing Gland	18	Sealing Body
4	Seal Ring	9	Elastic Baffle Ring Shaft	14	Muff	19	Bearing Gland
5	Mechanical Seal	10	Clutch	15	Packing Ring	20	Bearing Body

Pump Accessories

To meet the recommendations of the standards of the UL requirement, certain accessories are required for all the fire pump installations. They will vary, however, to fit the needs of each individual installation and the requirement of the insurance authorities. Drakos Pump provides a wide range of fire pump fittings which include: concentric discharge increaser, casing relief valve, eccentric suction reducer, increasing discharge tee, overflow cone, hose valve head, hose valves, hose valve caps and chains, suction and discharge gauges, relief valve automatic air release valve, flow mete, and ball drip valve. No matter what the requirement, Drakos Pump has a completed line of accessories available and can satisfy the requirement of each installation.

The chart reproduced below graphically illustrates the many accessories as well as the optional drives that are available with all Drakos Fire Pumps and package system.



DRAKOS PUMP

SETSCO

UL Listed EA15857

ISO 9001:2008

Drakos Fire Pumps can be found in most types of installation around the world including:

- Office Buildings
- Hospitals
- Airports
- Manufacturing Facilities
- Power Station
- Pharmaceutical Facilities
- School / Colleges
- Warehouses

Type of Applications

Applications vary from small, basic electric motor driven to diesel engine driven, package systems. Standard units are designed to handle fresh water, but special materials are available for seawater and special liquid applications. Drakos Fire Pumps can be used for Sprinkler System, Hydrant System, Deluge System, Monitor System and Water Curtain.

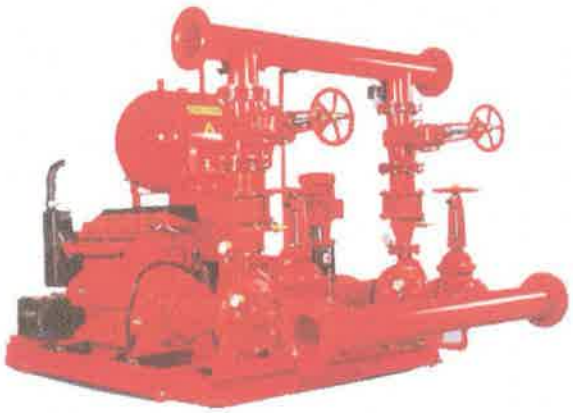












DRAKOS PUMP

SETSCO

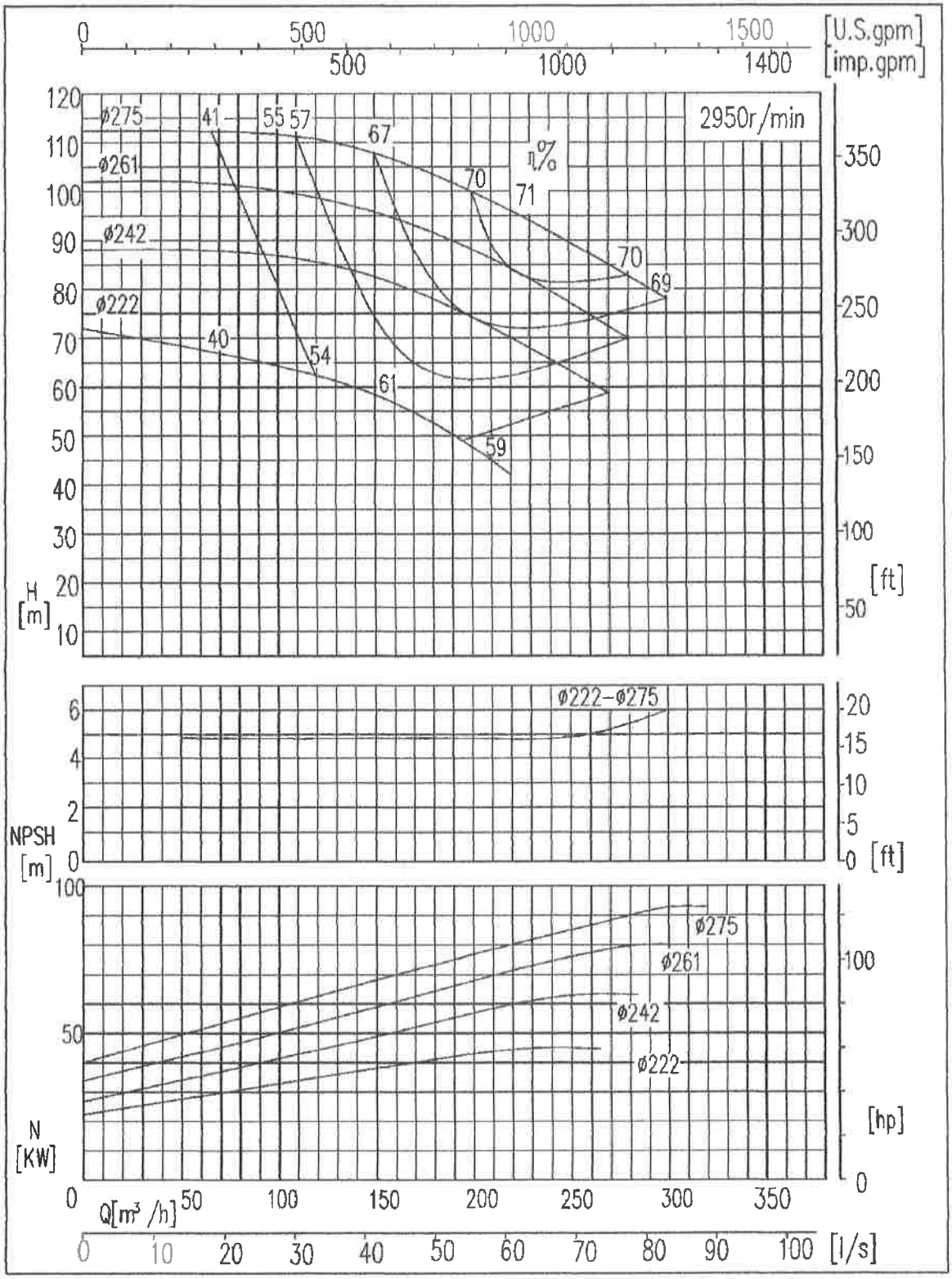
UL Listed EX15857

ISO 9001:2008

DRAKOS PUMP

Model: SLOW 80-280(I)
Suction: 125mm
Discharge: 80mm

UL File Ref: EX15851



DRAKOS PUMP

SETSCO

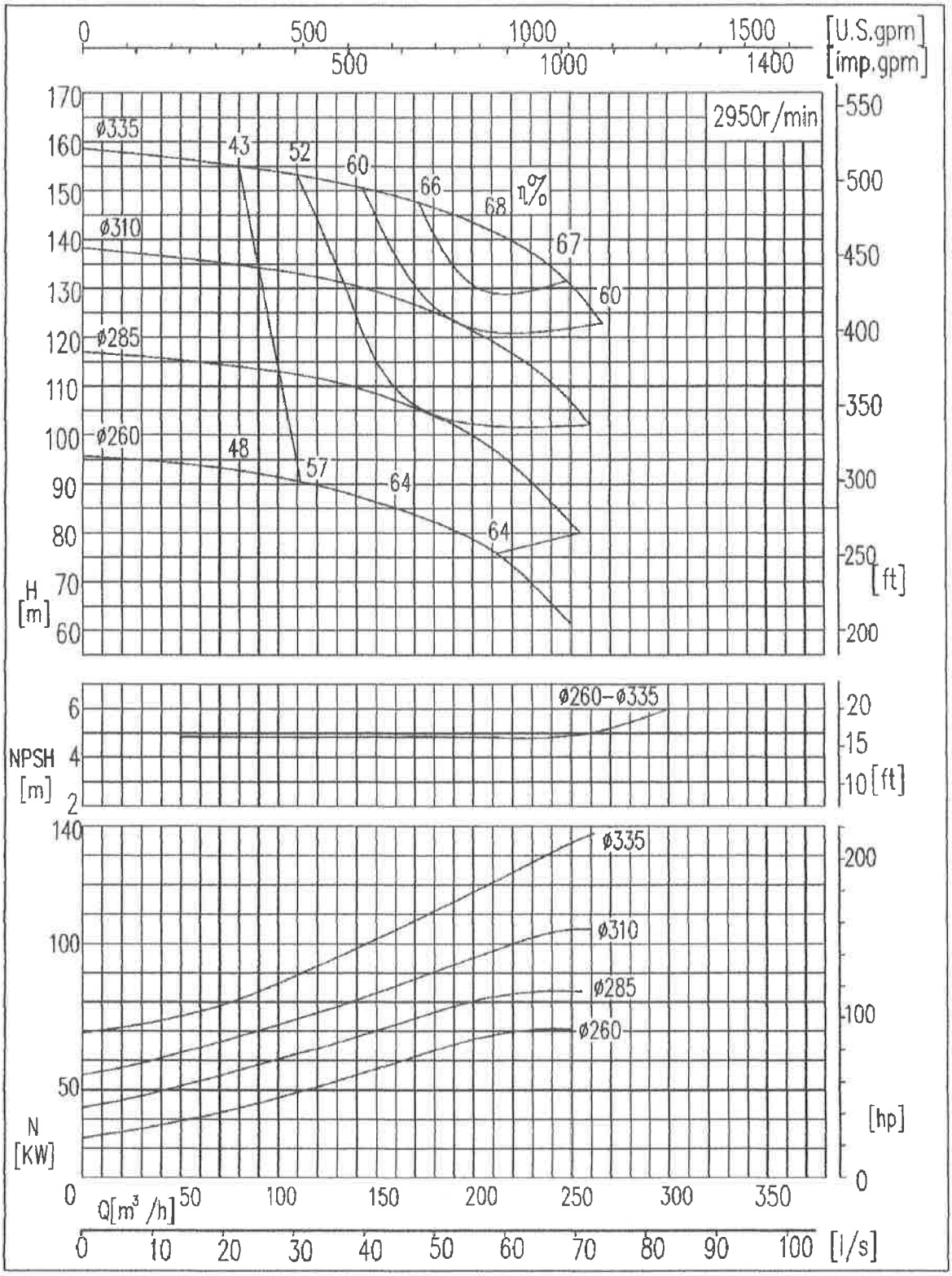
UL Listed EX15851

ISO 9001:2000

DRAKOS PUMP

Model: SLOW 80-350
Suction: 125mm
Discharge: 80mm

UL File Ref: EX15851



DRAKOS PUMP

SETSCO

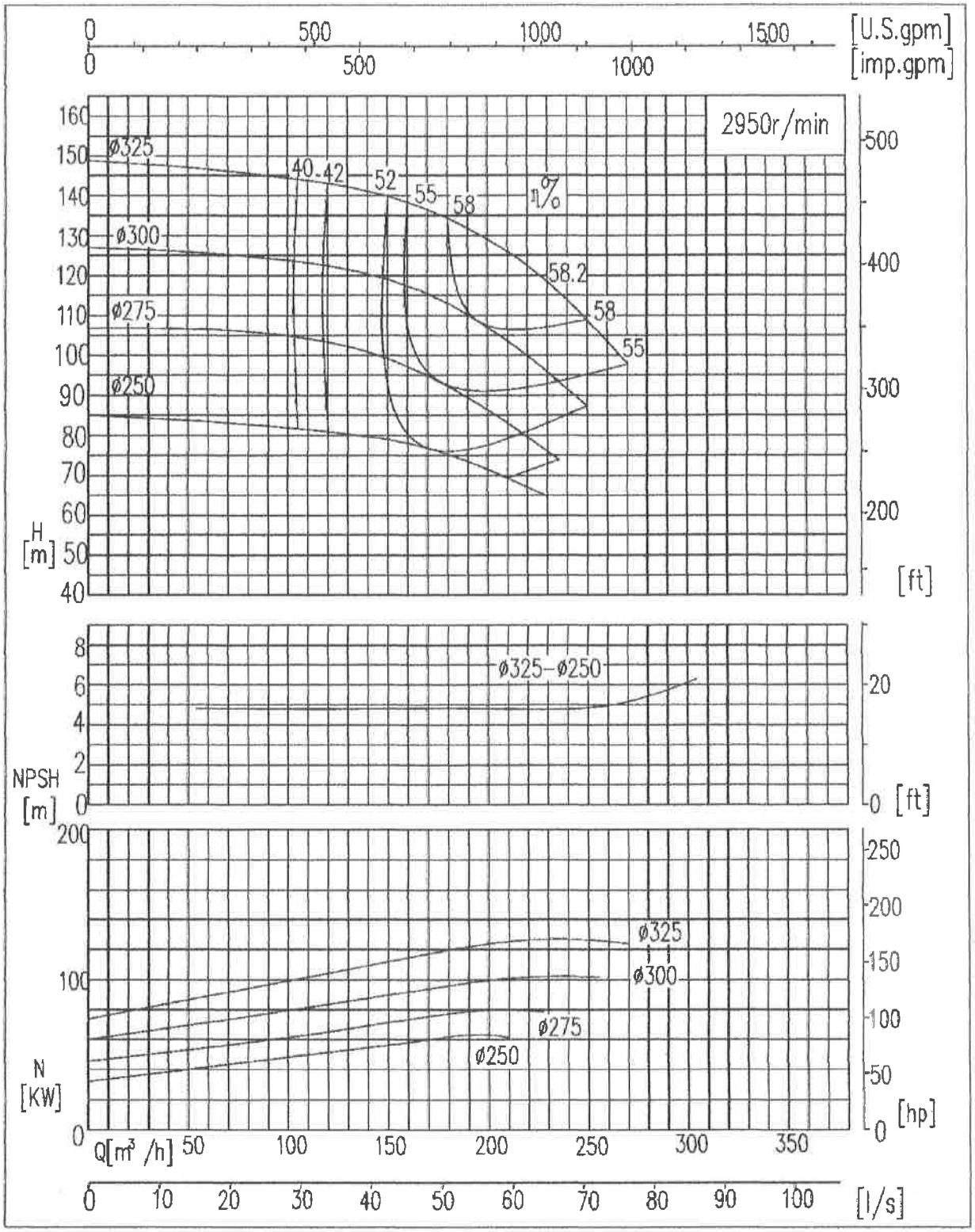
UL Listed EX15851

ISO 9001:2008

DRAKOS PUMP

Model: SLOW 100-320
Suction: 150mm
Discharge: 100mm

UL File Ref: EX15851



DRAKOS PUMP

SETSCO

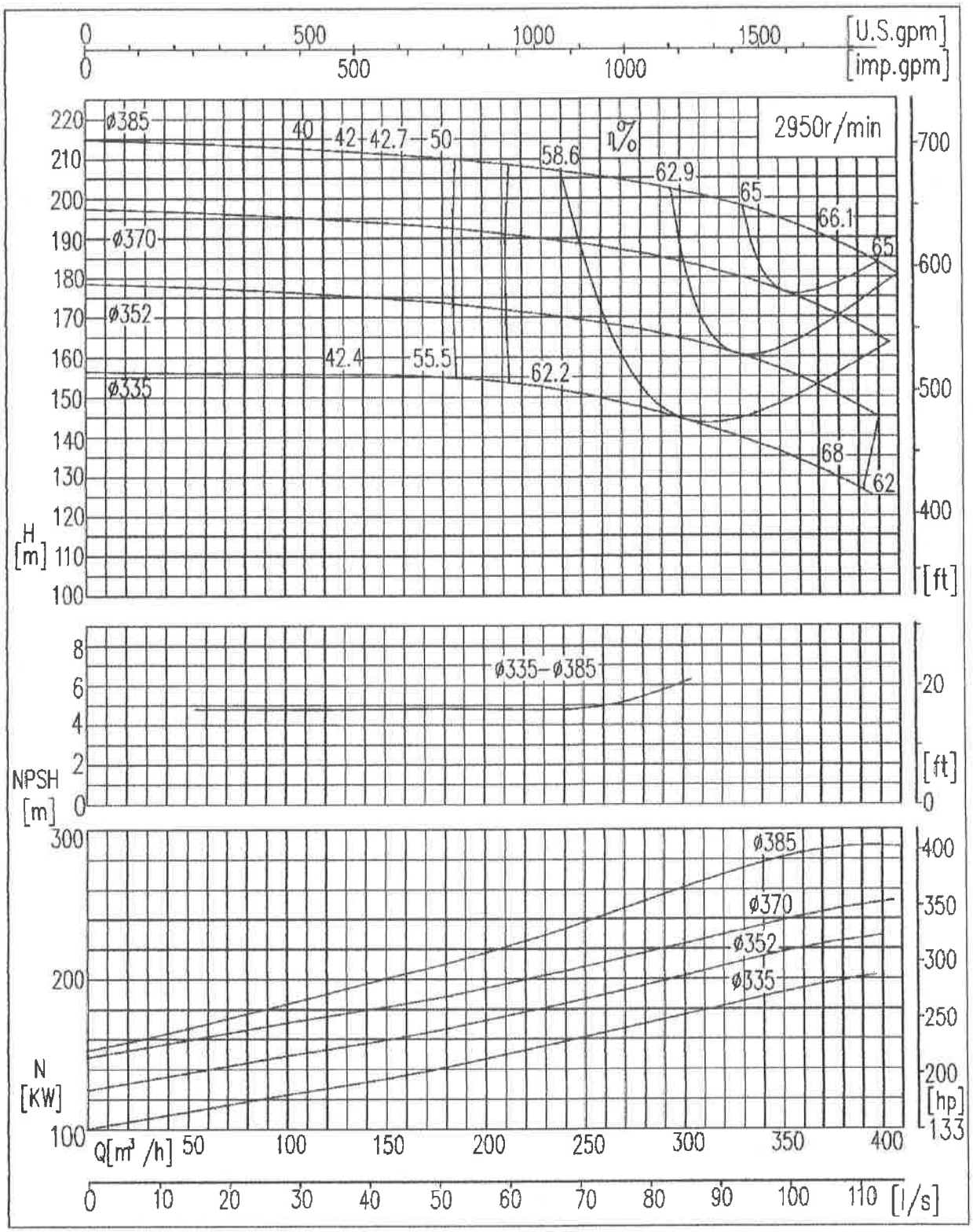
UL Listed EX15851

ISO 9001:2008

DRAKOS PUMP

Model: SLOW 100-400
Suction: 150mm
Discharge: 100mm

UL File Ref: EX15851



DRAKOS PUMP

SETSCO

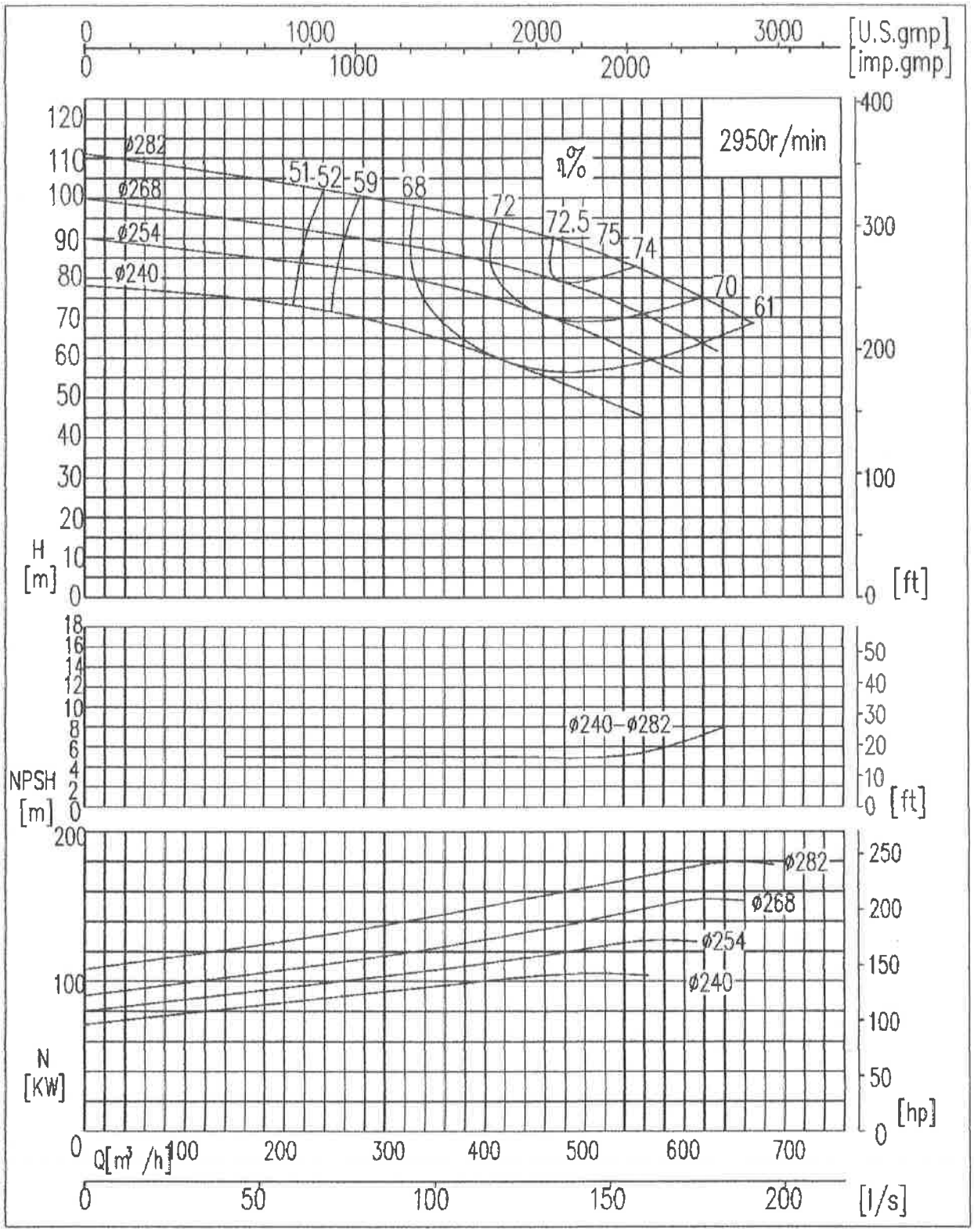
UL Listed EX15851

ISO 9001:2008

DRAKOS PUMP

Model: SLOW 125-300
Suction: 200mm
Discharge: 125mm

UL File Ref: EX15851



DRAKOS PUMP

SETSCO

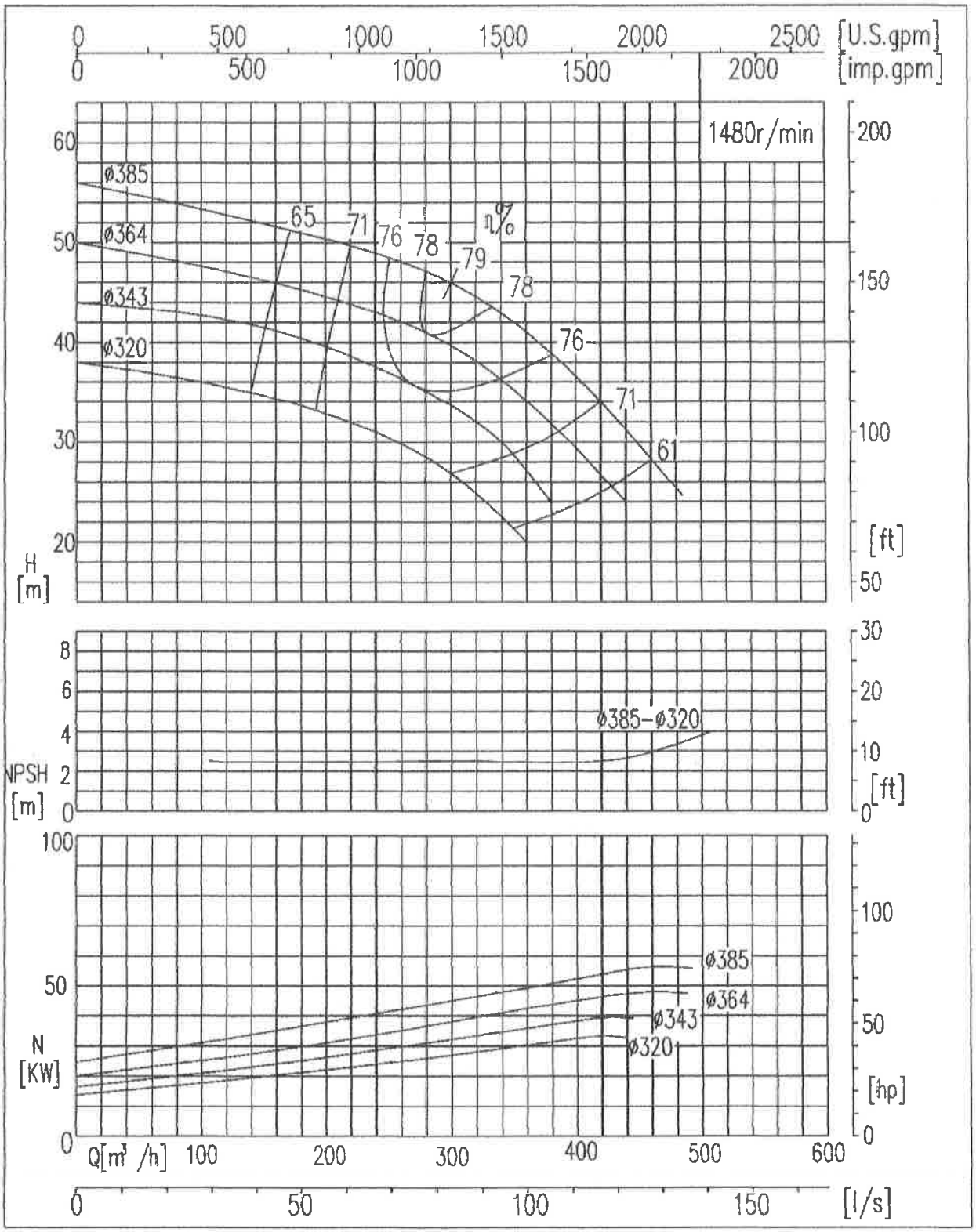
UL Listed EX15851

ISO 9001:2008

DRAKOS PUMP

Model: SLOW 125-380
Suction: 200mm
Discharge: 125mm

UL File Ref: EX15851



DRAKOS PUMP

SETSCO

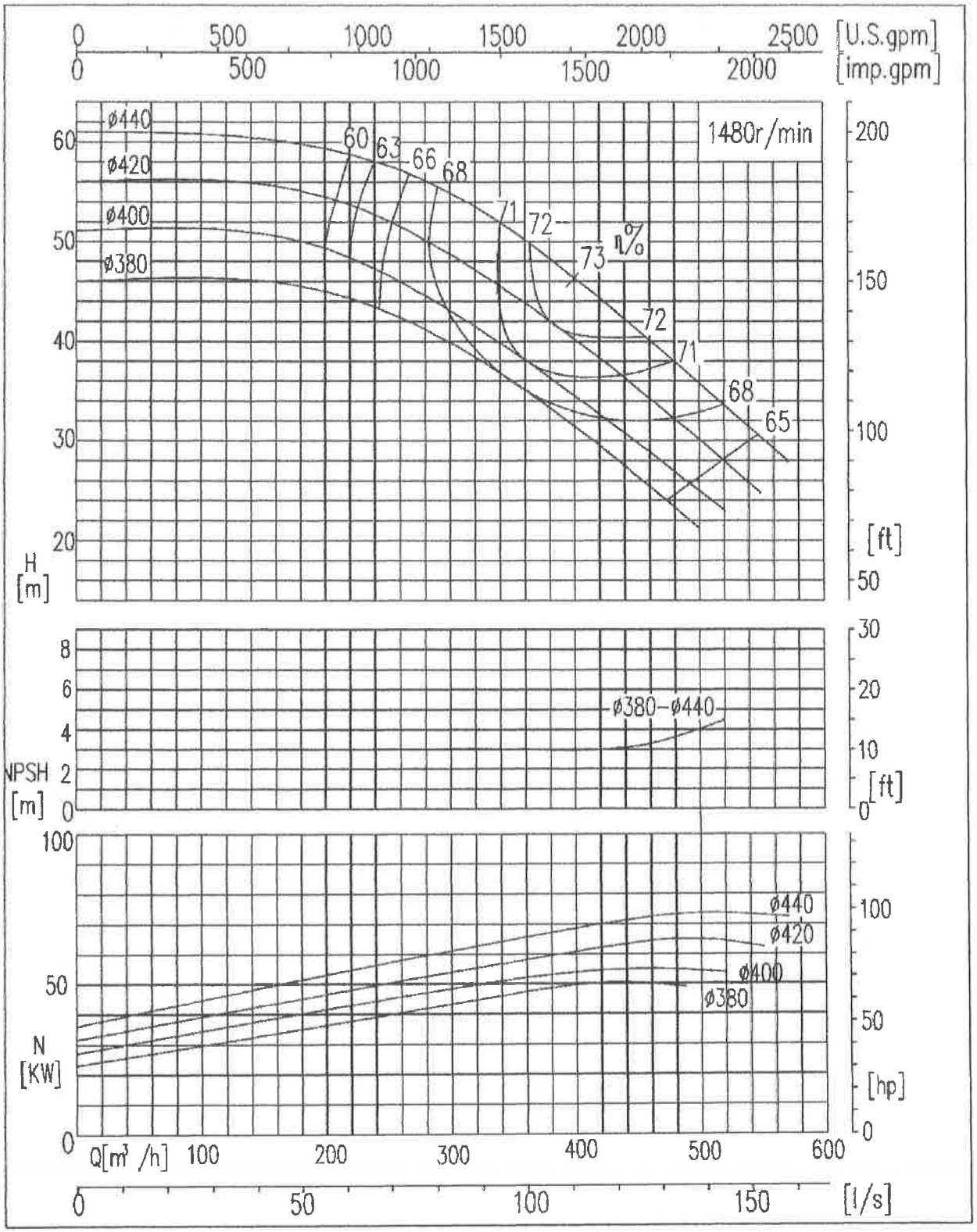
UL Listed EX15851

ISO 9001:2000

DRAKOS PUMP

Model: SLOW 125-480
Suction: 200mm
Discharge: 125mm

UL File Ref: EX15851



DRAKOS PUMP

SETSCO

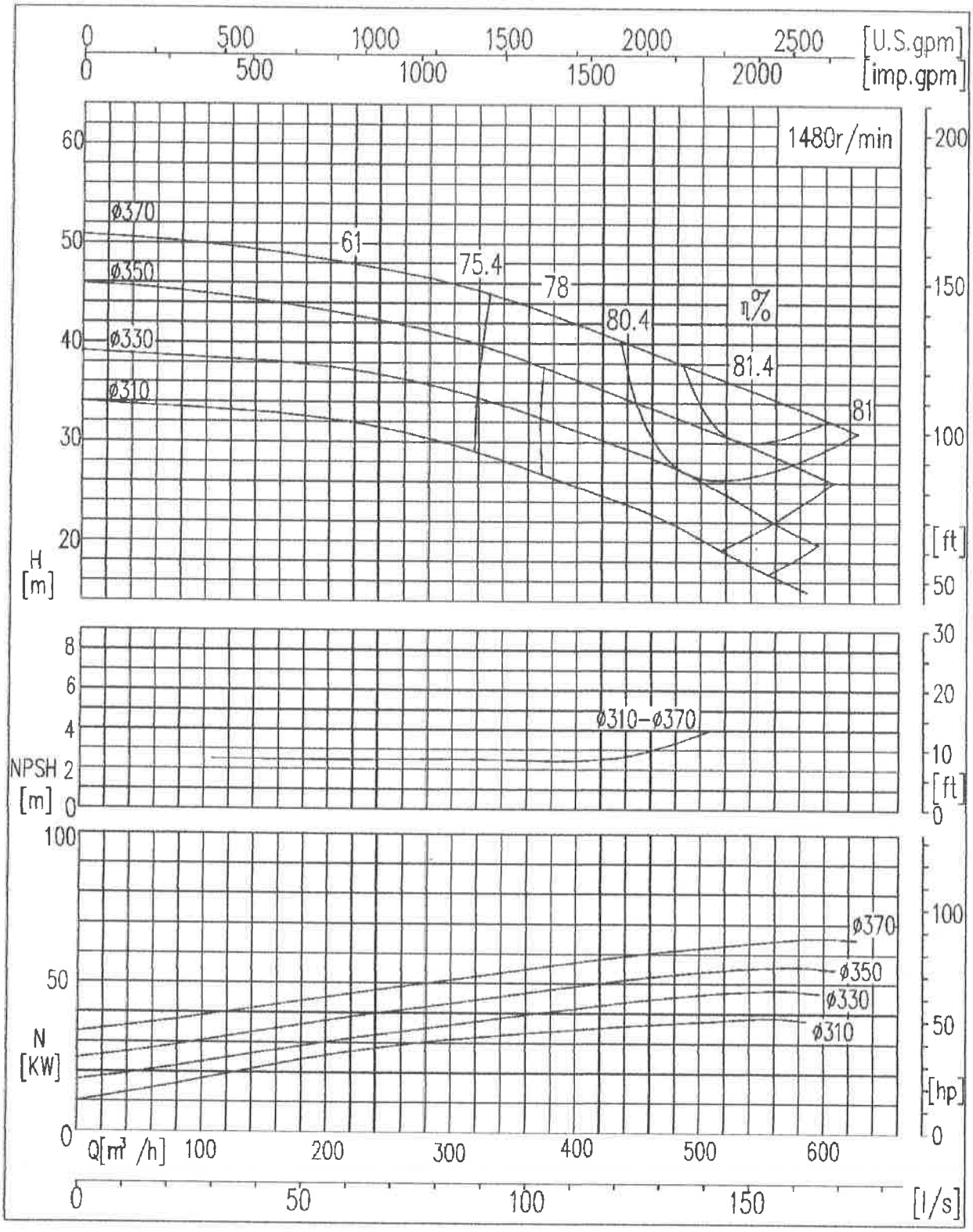
UL Listed EX15851

ISO 9001:2008

DRAKOS PUMP

Model: SLOW 150-350
Suction: 200mm
Discharge: 150mm

UL File Ref: EX15851



DRAKOS PUMP

SETSCO

UL Listed EX15851

ISO 9001:2008

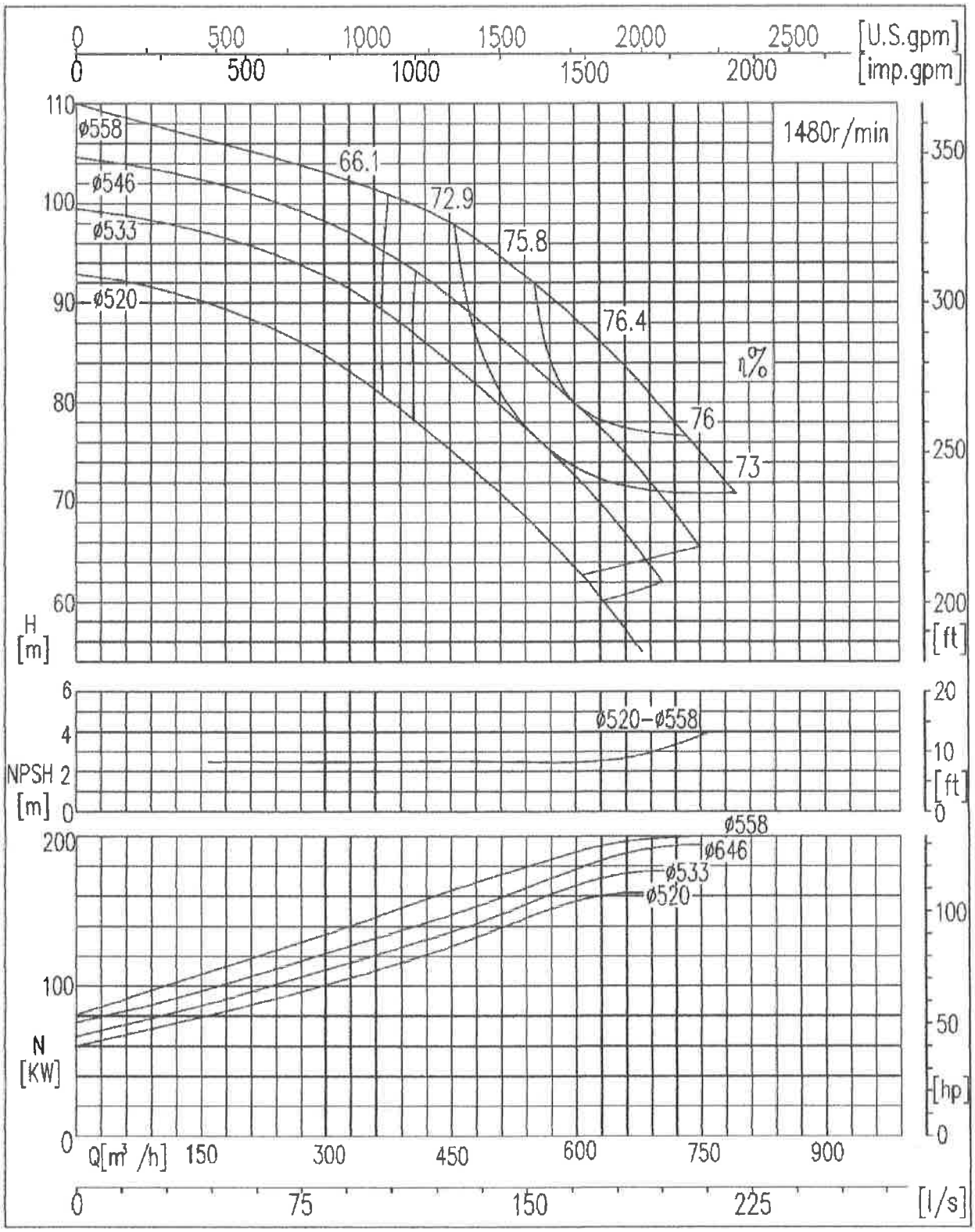
DRAKOS PUMP

Model: SLOW 150-570

Suction: 200mm

Discharge: 150mm

UL File Ref: EX15851



DRAKOS PUMP

SETSCO

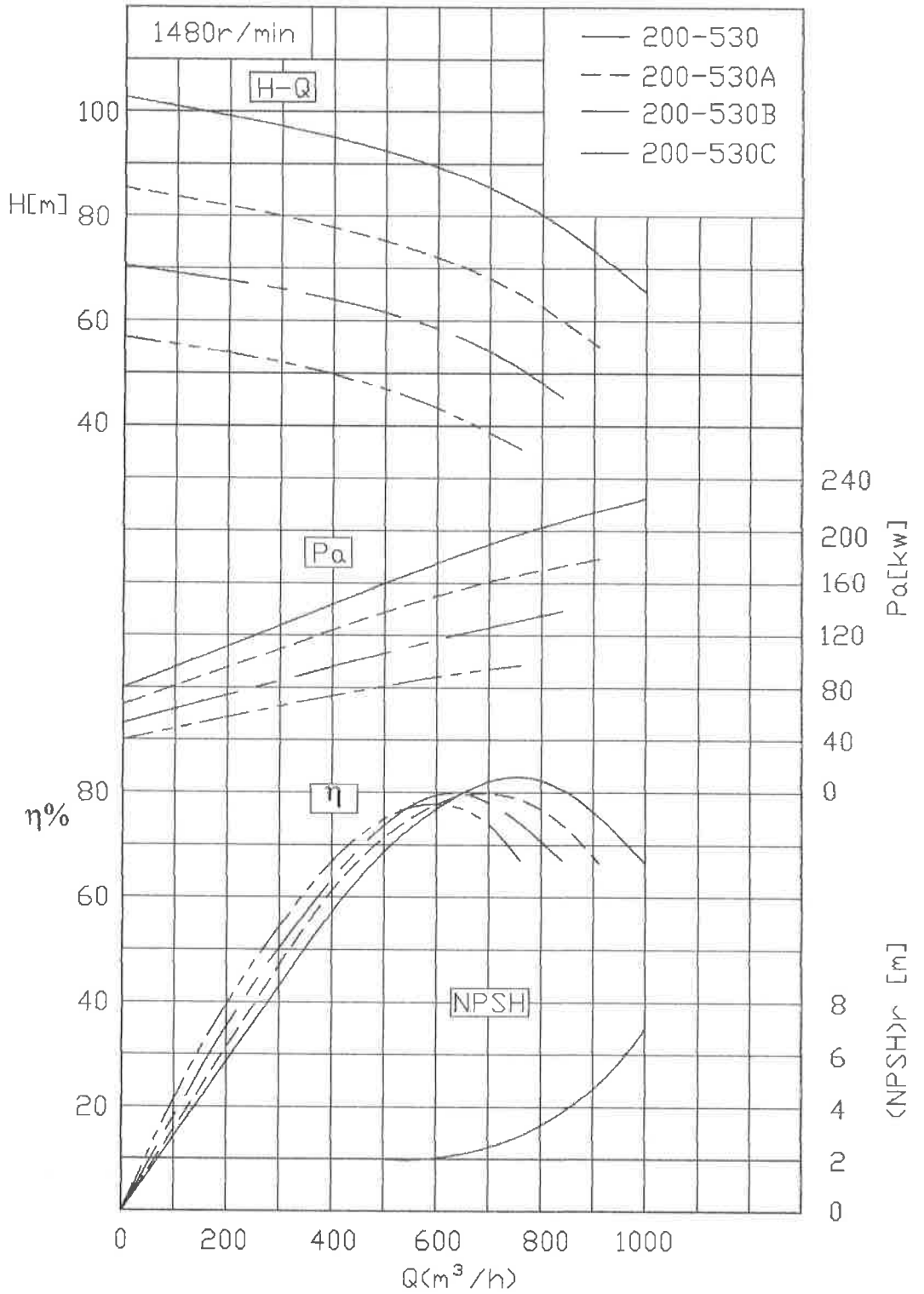
UL Listed EX15851

ISO 9001:2008

DRAKOS PUMP

Model: SLOW 200-530
Suction: 250mm
Discharge: 200mm

UL File Ref: EX15851



DRAKOS PUMP

SETSCO

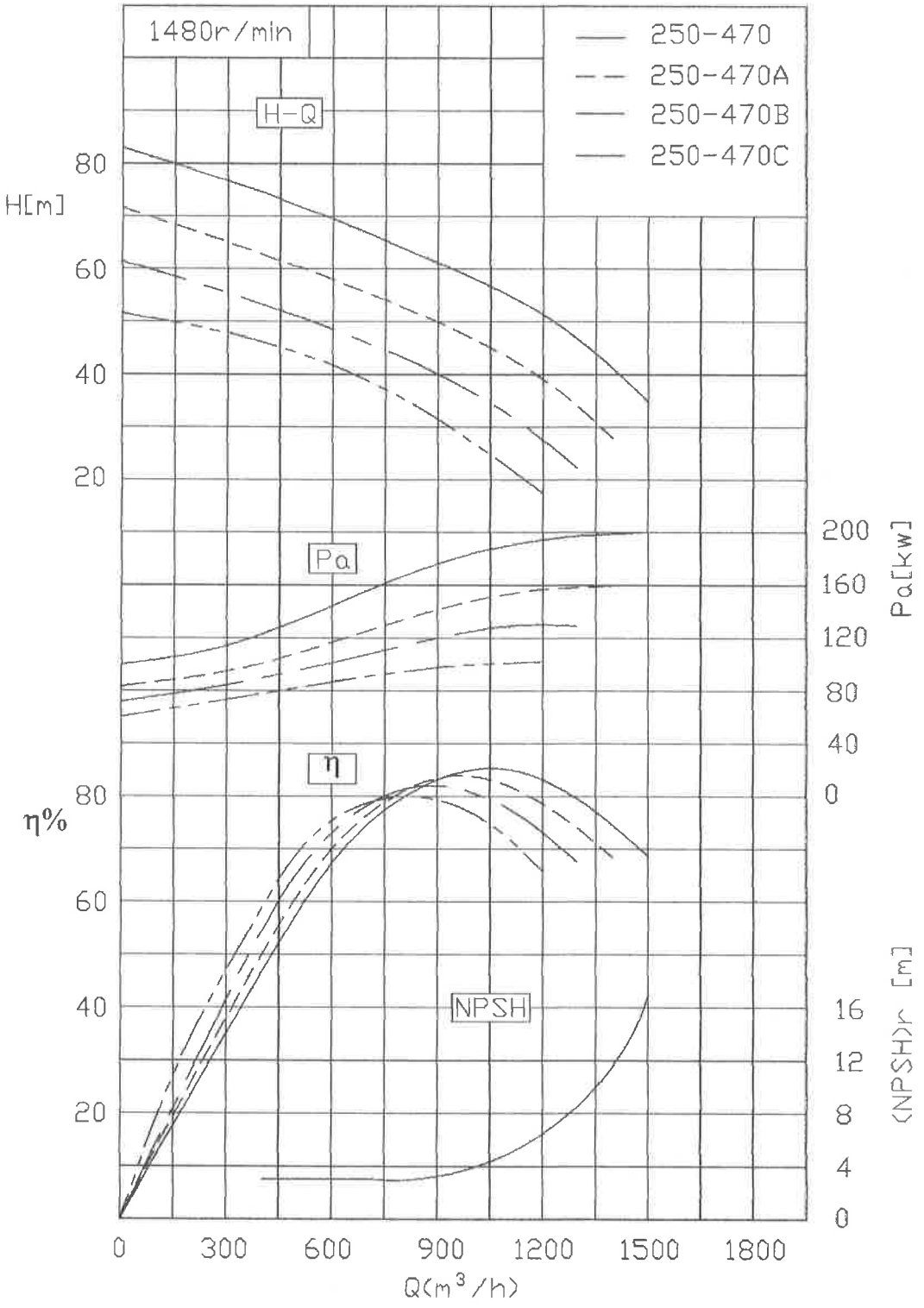
UL Listed EX15851

ISO 9001:2008

DRAKOS PUMP

Model: SLOW 250-470
Suction: 300mm
Discharge: 250mm

UL File Ref: EX15851



DRAKOS PUMP

SETSCO

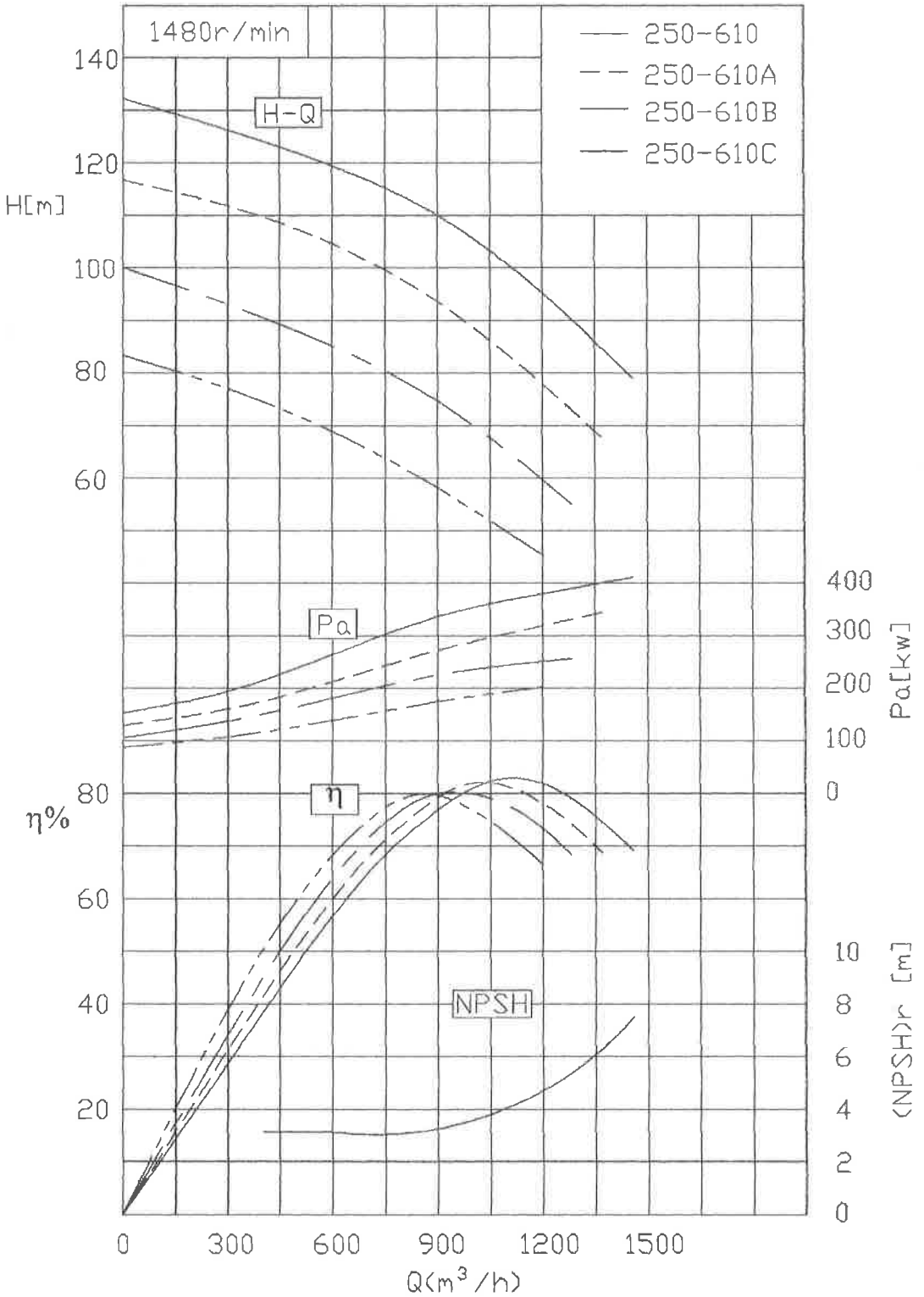
UL Listed EX15851

ISO 9001:2008

DRAKOS PUMP

Model: SLOW 250-610
Suction: 300mm
Discharge: 250mm

UL File Ref: EX15851



DRAKOS PUMP

SETSCO

UL Listed EX15851

ISO 9001:2008

CERTIFICATE OF COMPLIANCE

Certificate Number	20160330-EX15851
Report Reference	EX15851-20131230
Issue Date	2016-MARCH-30

Issued to: DRAKOS PUMP FAR EAST PTE LTD
Blk A 02-12 Tong Lee Bldg
35 Kallang Pudding Rd
Singapore 349314 SINGAPORE

This is to certify that representative samples of CENTRIFUGAL FIRE PUMPS, SPLIT CASE
Slow80-350,Slow80-280(I),Slow100-320,Slow100-400,Slow125-300,Slow125-380,Slow125-480,Slow150-350,Slow150-570,Slow200-530,Slow250-470,Slow250-610

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: Centrifugal Stationary Pumps for Fire-Protection Service, UL 448.

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at http://ul.com/aboutul/locations/

CERTIFICATE OF COMPLIANCE

Certificate Number	20170222-EX16407
Report Reference	EX16407-20140925
Issue Date	2017-FEBRUARY-22

Issued to: DRAKOS PUMP FAR EAST PTE LTD
Blk A 02-12 Tong Lee Bldg
35 Kallang Pudding Rd
Singapore 349314 SINGAPORE

This is to certify that representative samples of FIRE PUMP MOTORS

Fire Pump Motors - SWE200L2-2,SWE225M-2,SWE250M-2,SWE280S-2,SWE280M-2,SWE315S-2,SWE315M-2,SWE160M2-2,SWE160L-2,SWE180M-2,SWE200L1-2,SWE315L1-2,SWE315L2-2,SWE355M-2

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 1004-1 - Rotating Electrical Machines – General Requirements,
UL 1004-5 - Fire Pump Motors

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

UL LLC

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CERTIFICATE OF COMPLIANCE

Certificate Number	20160531-EX26661
Report Reference	EX26661-20151228
Issue Date	2016-MAY-31
Issued to:	SYNTECH SWITCHGEAR & ENGINEERING PTE LTD 2, WOODLANDS SECTOR 1, 01-19, WOODLANDS SPECTRUM 1, 738068 SINGAPORE
This is to certify that representative samples of	PUMP CONTROLLERS, FIRE Electric Fire Pump Controllers. Model SYN-WRB-037KW. Model SYN-WRB-045KW. Model SYN-WRT, followed by -075KW, -090KW, -110KW or -160KW. Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	UL218, Fire Pump Controllers UL508, Industrial Control Equipment CSA C22.2 NO. 263-09 FIRE PUMP CONTROLLERS NFPA 20 INSTALLATION OF CENTRIFUGAL FIRE PUMPS
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at http://ul.com/aboutul/locations/

CERTIFICATE OF COMPLIANCE

Certificate Number	20161012-EX1912
Report Reference	EX1912-19811009
Issue Date	2016-OCTOBER-12

Issued to: MASTER CONTROL SYSTEMS INC
910 NORTH SHORE DR
PO BOX 276
LAKE BLUFF IL 60044-0276

This is to certify that representative samples of PUMP CONTROLLERS, FIRE
USL, CNL Single source (single power supply) fire pump controllers for control of electric motor driven fire pumps, Types MCA, ECA, MCR, ECR, MCP, ECP, MCT, ECT, MCY, ECY, MCO, ECO, MCS, ECS, MCV and ECV followed by additional suffix letters and/or numbers

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: ANSI/UL 508, "Industrial Control Equipment," and ANSI/UL 218, "Fire Pump Controllers."
CSA-C22.2 No. 263, "Fire Pump Controllers," and ANSI/NFPA 20, "Installation of Stationary Pumps for Fire Protection."

Additional Information: See the ULC Online Certification Directory at www.ulc.ca for additional information

Only those products bearing the ULC Listing Mark should be considered as being covered by ULC's Listing and Follow-Up Service.

The ULC Listing Mark generally includes the following elements: the symbol ULC in a circle: (ULC) with the word "LISTED"; a control number (may be alphanumeric) assigned by ULC; and the product category name (product identifier) as indicated in the appropriate ULC Directory.

To confirm the status, validate the above information via the online directory.

Look for the ULC Listing Mark on the product.

Joseph Hosey, General Manager, Director of Sales - Canada

UNDERWRITERS LABORATORIES OF CANADA INC.

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