LENNTECH
info@lenntech.com Tel. +31-152-610-900
www.lenntech.com Fax. +31-152-616-289

In-line Pump

Etaline / Etaline-R

50 Hz

Type Series Booklet

Legal information/Copyright

Type Series Booklet Etaline / Etaline-R

All rights reserved. The contents provided herein must neither be distributed, copied, reproduced, edited or processed for any other purpose, nor otherwise transmitted, published or made available to a third party without the manufacturer's express written consent.

Subject to technical modification without prior notice.

© KSB Aktiengesellschaft, Frankenthal 24.07.2014

Contents

Heating / Air-conditioning / Ventilation

In-line Pumps

Etaline / Etaline-R

Main applications

- Heating systems
- Air-conditioning systems
- Cooling circuits
- Water supply systems
- Service water supply systems
- Industrial recirculation systems

Fluids handled

- Fluids not chemically or mechanically aggressive to the materials

Table of fluids handled (⇨ Page 6)

Operating data

Operating properties

Characteristic		Value
Flow rate	Q	Up to 1900 m³/h (528 l/s)
Head	H	Up to 95 m
Fluid temperature	t	-30 °C to +140 °C
Operating pressure	p	Up to 25 bar

Pressure and temperature limits

Also see

Pressure and temperature limits [➞ 8]

Designation

Etaline

Example: ETL 050-050-160 GG X AA 06 D 2

Key to the designation

Code	Description	
ETL	Type series	
	ETL	= Etaline
050	Nominal suction nozzle diameter [mm]	
050	Nominal discharge nozzle diameter [mm]	
160	Nominal impeller diameter [mm]	
G	Casing material	
	G	= grey cast iron
G	Impeller material if different from casing material	
	G	= grey cast iron
	C	= stainless steel
	B	= bronze
X	Additional code	
	X	= special design
A	Casing cover	
	A	= conical seal chamber
A	Sealing system	
	A	= conical seal chamber
	V	= conical seal chamber with vent
06	Seal code	
	06	= mechanical seal material U3BEGG (WE 25, 35)
	07	= mechanical seal material Q1Q1EGG
	09	= mechanical seal material U3U3VGG
	10	= mechanical seal material Q1Q1X4GG
	11	= mechanical seal material BQ1EGG
	22	= mechanical seal material AQ1EGG (WE 55)
D	D	= pump with motor
	A	= pump without motor
2	Shaft unit	
	2	= WE 25
	3	= WE 35
	5	= WE 55

Etaline-R

Example: Etaline-R GN 65-160/ 402 GN11

Key to the designation

Code	Description	
Etaline	Type series	
R	Extended selection chart	
G	Casing / casing cover / impeller material combination	
	G	= nodular cast iron / grey cast iron / grey cast iron
	M	= nodular cast iron / grey cast iron / tin bronze
	S	= nodular cast iron / nodular cast iron / grey cast iron
N	Stub shaft design and standardised motor	
65	Nominal discharge nozzle diameter [mm]	
160	Nominal impeller diameter [mm]	
40	Motor rating: kW x 10 (example 4 kW)	
2	Number of motor poles	
11	Seal code	
	Mechanical seal made of Q1BE(V)GG	

Code	Description
	Mechanical seal made of Q1Q1E(V)GG
	Mechanical seal made of Q1AEGG

Further information on the designation

(⇨ Page 87)

Design details

Design

Etaline

- Close-coupled design/in-line design
- Single-stage
- Horizontal/vertical installation
- Rigid connection between pump and motor

Etaline-R

- Close-coupled design/in-line design
- Single-stage
- Vertical installation
- Rigid connection between pump and motor

Pump casing

- Radially split volute casing

Impeller type

- Closed radial impeller

Shaft seal

Etaline

- Standardised mechanical seal to EN 12756
- Shaft equipped with a replaceable shaft sleeve in the shaft seal area

Etaline-R

- KSB mechanical seal

Bearings

Etaline

- Radial ball bearings in the motor housing
- Grease lubrication

Etaline-R

- Radial ball bearing in the bearing bracket
- Grease lubrication

Drive

Standard design:

- KSB/Siemens surface-cooled IEC frame three-phase current squirrel-cage motor

Winding	Up to 2.2 kW: 220-240 V/ 380-420 V From 3 kW: 380-420 V/ 660-725 V
Type of construction	Up to 4 kW: IM V1 From 5.5 kW: IM V15
Enclosure	IP55
Thermal class	F
Motor protection:	3 PTC thermistors
Mode of operation:	S1
Efficiency class:	IE2 or IE3
Mode of operation	Continuous operation S1

Supreme Motor (up to 45 kW only):

- KSB SuPremE motor: surface-cooled, IEC-compatible, magnetless synchronous reluctance motor (PumpDrive required)

Frequency	50 Hz/ 60 Hz (at PumpDrive input)
Voltage	380 - 480 V (at PumpDrive input)
Type of construction	IM V15
Enclosure	IP55
Thermal class	F
Motor protection	3 PTC thermistors
Mode of operation	Continuous operation S1
Efficiency class	IE4, as per IEC/CD 60034-30 Ed.2

Automation

Automation options:

- PumpDrive
- PumpMeter

Coating and preservation

- Coating and preservation to KSB standard

Product benefits

- Improved efficiency and $NPSH_{req}$ by experimentally verified hydraulic design of impellers (vanes)
- Low energy costs through compliance with future requirements of Commission Regulation 547/2012 (minimum efficiency index MEI ≥ 0.4)
- Operating costs reduced by trimming the impeller diameter to match the specified duty point
- Little wear, low vibration levels and excellent smooth running characteristics thanks to good suction performance and virtually cavitation-free operation across a wide operating range
- Casing sealed reliably – even in varying operating conditions – by confined casing gasket
- Large variety of materials for perfectly matching the pump to the fluid handled. Large range of materials for many applications available as standard

Product information as per Regulation No. 547/2012 (for water pumps with a maximum shaft power of 150 kW) implementing "Ecodesign" Directive 2009/125/EC

- Minimum efficiency index: see data sheet
- The benchmark for the most efficient water pumps is MEI ≥ 0.70.
- Year of construction: see data sheet
- Manufacturer's name or trade mark, commercial registration number and place of manufacture: see data sheet or order documentation
- Product's type and size identificator: see data sheet

- Hydraulic pump efficiency (%) with trimmed impeller: see data sheet
- Pump performance curves, including efficiency characteristics: see documented characteristic curve
- The efficiency of a pump with a trimmed impeller is usually lower than that of a pump with full impeller diameter. Trimming of the impeller will adapt the pump to a fixed duty point, leading to reduced energy consumption. The minimum efficiency index (MEI) is based on the full impeller diameter.
- Operation of this water pump with variable duty points may be more efficient and economic when controlled, for example, by the use of a variable speed drive that matches the pump duty to the system.
- Information relevant for disassembly, recycling or disposal at end of life: see installation/operating manual
- Information on benchmark efficiency or benchmark efficiency graph for MEI = 0.7 (0.4) for the pump based on the model shown in the Figure are available at: http://www.europump.org/efficiencycharts

Acceptance tests / warranty

The following acceptance tests may be performed at a surcharge:

- **Materials testing**
  - Test report 2.2
- **Final inspection**
  - Inspection certificate 3.1 to EN 10204
- **Hydraulic test**
  - The duty point of each pump is guaranteed according to ISO 9906/2B or ISO 9906/3B.
  - NPSH test
- Other inspections/tests on request

Warranties

- Warranties are given within the scope of the valid delivery conditions.

Overview of all fluids handled

Etaline

Table of fluids handled and associated material combinations
✘ = standard

Fluid handled	Application limit Temperature	Materials casing/impeller			Shaft seal mechanical seal						Comments
		Grey cast iron/ grey cast iron	Grey cast iron/ stainless steel	Grey cast iron/ bronze	U3BEGG (WE 25, 35)	AQ1EGG (WE 55)	Q1Q1EGG	U3U3VGG	Q1Q1X4GG	BQ1EGG	
	[°C]	G	GC	GB	6	22	7	9	10	11	
Water											
Service water	≤ 110	✘							✘		CrNiMo cast steel can be used
Fire-fighting water[1)]	≤ 60			✘					✘		Contact KSB for supply to VdS guideline.

1) General evaluation criteria for results of water analysis: pH value ≥ 7; chlorides content (Cl) ≤ 250 mg/kg. Chlorine (Cl2) ≤ 0.6 mg/kg.

Fluid handled	Application limit Temperature	Materials casing/impeller			Shaft seal mechanical seal						Comments
		Grey cast iron/ grey cast iron	Grey cast iron/ stainless steel	Grey cast iron/ bronze	U3BEGG (WE 25, 35)	AQ1EGG (WE 55)	Q1Q1EGG	U3U3VGG	Q1Q1X4GG	BQ1EGG	
	[°C]	G	GC	GB	6	22	7	9	10	11	
Heating water[2]	≤ 110	✘								✘	If used as a circulating pump to DIN 4752: p maximum ≤ 10 bar
Heating water	≤ 140	✘			✘	✘					
Heating water	≥ 110	✘							✘		
Condensate	≤ 110	✘								✘	
Cooling water (without antifreeze)	≤ 60	✘							✘		Open circuit: GB 10 required
Cooling water pH ≥ 7.5 (with antifreeze [3])	≥ -30 ≤ 60	✘								✘	Open loop: use GB
Cooling water pH ≥ 7.5 (with antifreeze [3])	≥ 60 ≤ 110	✘					✘				Open loop: use GB
Slightly contaminated water	≤ 60	✘							✘		
Pure water[4]	≤ 60	✘								✘	
Raw water	≤ 60	✘							✘		
Swimming pool water (fresh water)	≤ 60	✘							✘		Also applies to requirements as per DIN 19643
Swimming pool water[5]: filtration	≤ 40			✘					✘		Variant GB Shaft C45+N, shaft sleeve CrNiMo steel, nut A4/AISI 316, key A2, casing wear ring (suction and discharge side) grey cast iron JL 1040/ CI
Swimming pool water[5]: water features; without turbulences and/or air content	≤ 40			✘					✘		Variant GB Shaft C45+N, shaft sleeve CrNiMo steel, nut A4/ AISI 316, key A2, casing wear ring (suction and discharge side) CC495K-GS
Dam water	≤ 60			✘					✘		If solids are contained, contact KSB.
Drinking water[6]	≤ 60			✘						✘	
Partly desalinated water	≤ 120	✘								✘	
Fully desalinated water as boiler feed water	≤ 110	✘								✘	
Refrigerants, cooling brines											
Cooling brine; inorganic, pH value > 7.5, inhibited	≥ -30 ≤ 25	✘								✘	
Water with antifreeze, pH value ≥ 7.5	≥ -30 ≤ 60	✘								✘	
Water with antifreeze, pH value ≥ 7.5	≥ 60 ≤ 110	✘					✘				
Oils/emulsions											
Drilling/grinding emulsion	≤ 60	✘						✘			
Oil-water emulsion	≤ 60	✘						✘			

Etaline-R

Table of fluids handled and associated material combinations
✘ = standard

Fluid handled	Application limits	Casing/impeller materials			Mechanical seal material	Design variant code, mechanical seal
		G	M	S	4	
Water						
Service water	t ≤ 60 °C; p ≤ 16 bar	✘			✘	G4
Fire-fighting water[7]	t ≤ 60 °C; p ≤ 16 bar		✘		✘	M4

2) Treatment to VdTÜV 1466; additional requirement: O2 < 0.02 mg/l
3) Antifreeze on ethylene glycol basis with inhibitors Content: >20 % to 50 % (e.g. Antifrogen N)
4) No ultra-pure water! Conductivity at 25 °C: ≤ 800 µS/cm, neutral with regard to chemical corrosion
5) For France, observe the applicable rules as per ministerial order dated 18 January 2002.
6) For France, ACS approval is required.

Fluid handled	Application limits	Casing/impeller materials			Mechanical seal material	Design variant code, mechanical seal
		G	M	S	4	
Heating water[8)]	t ≤ 120 °C; p ≤16 bar	✘			✘	G4
Heating water[8)]	t ≤ 140 °C; p ≤ 25 bar			✘	✘	S4
Heating water[8)]	t ≤ 110 °C; p ≤ 16 bar	✘			✘	G4
Condensate[8)]	t ≤ 120 °C; p ≤ 16 bar	✘			✘	Contact KSB.
Cooling water[7)] (without antifreeze)	t ≤ 60 °C; p ≤ 16 bar	✘			✘	G4
Cooling water pH ≥ 7.5 (with antifreeze)[9)]	t ≥ -30 °C; p ≤ 16 bar t ≤ 110 °C; p ≤ 25 bar	✘		✘	✘	G4
Slightly contaminated water[7)]	t ≤ 60 °C; p ≤ 16 bar	✘			✘	G4
Pure water[10)]	t ≤ 25 °C; p ≤ 16 bar	✘			✘	G4
Raw water (irrigation)[7)]	t ≤ 60 °C; p ≤ 16 bar	✘			✘	G4
Raw water (industrial application)[7)]	t ≤ 60 °C; p ≤ 16 bar	✘			✘	G4
Swimming pool water (fresh water)[7)]	t ≤ 60 °C; p ≤ 16 bar	✘			✘	G4
Dam water[7)]	t ≤ 60 °C; p ≤ 16 bar		✘		✘	M4
Drinking water[7)]	t ≤ 60 °C; p ≤ 16 bar		✘		✘	M4
Partly desalinated water[8)]	t ≤ 120 °C; p ≤ 16 bar	✘			✘	Contact KSB.
Fully desalinated water as boiler feed water[8)]	t ≤ 120 °C; p ≤ 16 bar	✘			✘	G4
Refrigerants, cooling brines						
Cooling brine, inorganic, pH ≥ 7.5, inhibited	t ≥ -30 °C; p ≤ 16 bar t ≤ 25 °C	✘			✘	G4
Water with antifreeze pH ≥ 7.5[7)9)]	t ≥ -30 °C; p ≤ 16 bar t ≤ 110 °C	✘			✘	G4
Oils/emulsions						
Diesel oil, extra light fuel oil	t ≤ 60 °C; p ≤ 16 bar			✘	✘	S4
Lubricating oil, turbine oil, does not apply to SF-D oils (hardly flammable)	t ≤ 80 °C; p ≤ 16 bar			✘	✘	S4
Drilling/grinding emulsion	t ≤ 60 °C; p ≤ 16 bar	✘			✘	G4
Oil-water emulsion	t ≤ 60 °C; p ≤ 16 bar	✘			✘	G4
Cleaning agents						
Lyes for bottle rinsers	t ≤ 90 °C; p ≤ 16 bar	✘				
Brewery applications						
Beer mash	t ≤ 100 °C; p ≤ 16 bar	✘			✘	G4
Beer wort	t ≤ 100 °C; p ≤ 16 bar	✘			✘	G4

Pressure and temperature limits

Pressure and temperature limits of the pump

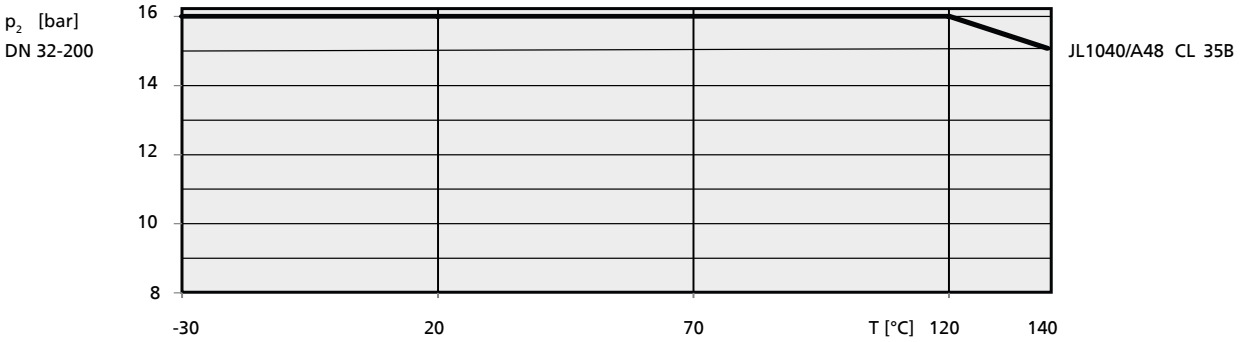
Pressure and temperature limits of the pump

Material variant	Fluid temperature [°C][11)12)]	Test pressure [bar][13)]
Etaline		
G, GC,GB	-30 to +140	Up to 21
Etaline-R		

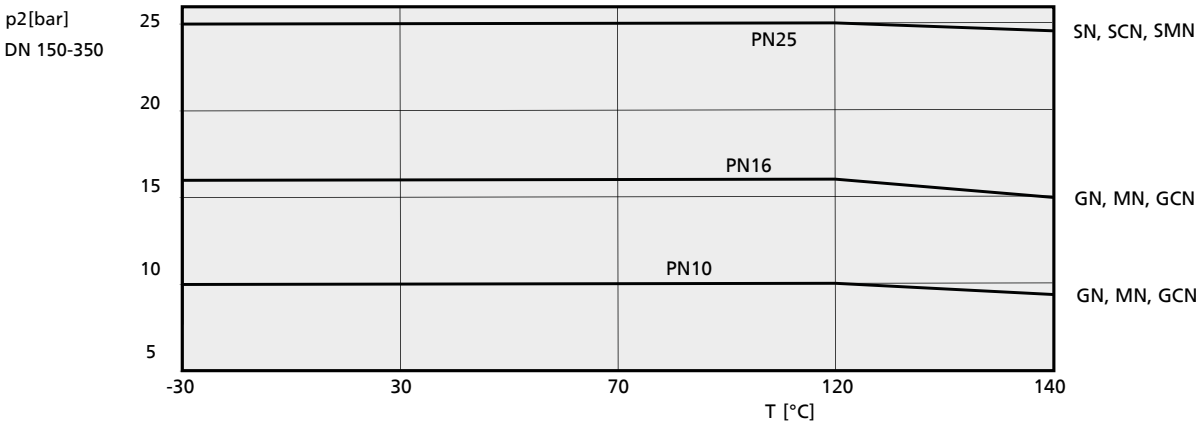
7) General evaluation criteria for results of water analysis; pH value ≥ 7; chlorides content (Cl) ≤ 250 mg/kg. Chlorine (Cl2) ≤ 0.6 mg/kg
8) Treatment to VdTÜV 1466; additional requirement: O2 < 0.02 mg/l
9) Antifreeze on ethylene glycol basis with inhibitors Content: > 20 % to 50 % (e.g. Antifrogen N)
10) No ultra-pure water! Conductivity at 25 °C: < 800 µS/cm, neutral with regard to chemical corrosion
11) For hot water heating systems to DIN 4752, Section 4.5, application limits must be observed.
12) For fluid temperatures >140 °C use Etanorm SYT.
13) The casing components are checked for leakage by means of internal pressure tests to AN 1897/75-03D00 with water.

Material variant	Fluid temperature [°C][11)12)]	Test pressure [bar] 13)
GN, MN, GCN	-30 to +140	Up to 24
SN, SCN, SMN	-30 to +140	Up to 37.5

Pressure and temperature limits of pump with flanges to EN 1092-2, drilled to ASME B 16.1



Pressure and temperature limits of an Etaline pump



Pressure and temperature limits of an Etaline-R pump

Materials

Overview of materials available for Etaline

Part No.	Description		Material variant		
			G	GB	GC
102	Volute casing	Grey cast iron JL1040/A 48 CL 35B	✗	✗	✗
161	Casing cover, conical	Grey cast iron JL1040 / A 48 CL 35B	✗	✗	✗
210	Shaft	Tempered steel C45+N	✗	✗	✗
		Stainless steel 1.4571 (optional)	✗	✗	✗
230	Impeller	Grey cast iron JL1040/A 48 CL 35B	✗	-	-
		Bronze CC480K-GS / B30 C90700	-	✗	-
		Stainless steel 1.4408 / A743 Gr CF8 M	-	-	✗
341	Drive lantern	Grey cast iron JL1040/A 48 CL 35B	✗	✗	✗
400	Sealing elements	DPAF, asbestos-free	✗	✗	✗
502.01	Casing wear ring, suction side	Grey cast iron JL1040 / CI	✗	✗	✗
		Bronze CC480K-GS	-	✗	-
502.02	Casing wear ring, discharge side	Grey cast iron JL1040 / CI	✗	✗	✗
		Bronze CC480K-GS	-	✗	-
523	Shaft sleeve	Stainless steel (CrNiMo steel)	✗	✗	✗

11) For hot water heating systems to DIN 4752, Section 4.5, application limits must be observed.
12) For fluid temperatures >140 °C use Etanorm SYT.
13) The casing components are checked for leakage by means of internal pressure tests to AN 1897/75-03D00 with water.

Part No.	Description		Material variant		
			G	GB	GC
902	Studs	Steel 8.8	✗	✗	✗
903	Plug	Steel	✗	✗	✗
920	Nut	8+A2A/ 8+B633 SC1 TP3	✗	✗	✗
920.95	Impeller nut	Stainless steel (CrNiMo steel)	✗	✗	✗
		Steel 8	✗	✗	-

Overview of materials available for Etaline-R

Part No.	Description	Material	Material variant					
			GN	GCN	MN	SN	SCN	SMN
102	Volute casing	Nodular cast iron JS 1025	✗	✗	✗	✗	✗	✗
161	Casing cover	Grey cast iron JL 1040	✗	✗	✗	-	-	-
		Nodular cast iron JS 1025	-	-	-	✗	✗	✗
210	Shaft	Tempered steel C45	✗	✗	✗	✗	✗	✗
		Stainless steel 1.4057 (optional)	✗	✗	✗	✗	✗	✗
230	Impeller	Grey cast iron JL 1040	✗	-	-	✗	-	-
		Stainless steel 1.4408	-	✗	-	-	✗	-
		Tin bronze CC480K-GS	-	-	✗	-	-	✗
330	Bearing bracket	Grey cast iron JL 1040	✗	✗	✗	✗	✗	✗
400	Sealing elements	DPAF, asbestos-free	✗	✗	✗	✗	✗	✗
502	Casing wear ring	Grey cast iron JL 1040	✗	✗	-	✗	✗	-
	Casing / discharge cover	Lead bronze CC495K-GS	-	-	✗	-	-	✗
902.01	Studs	1.7709	✗	✗	✗	-	-	-
		1.6772	-	-	-	✗	✗	✗
920.01	Nut	1.7218	✗	✗	✗	-	-	-
		1.6772	-	-	-	✗	✗	✗
920.95	Impeller nut	Stainless steel (CrNiMo steel) (1.4571)	✗	✗	✗	✗	✗	✗

Technical data of the motor

Etaline

n = 2900 rpm

Size	Motor			[kg]
	Size	[kW]	400 V [A]	
032-032-160	80M	1,10	2,41	35.14
032-032-160	90S	1,50	3,15	38.17
032-032-160	90L	2,20	4,46	40.97
032-032-160	100L	3,00	6,09	47.61
032-032-160	112M	4,00	7,82	51.61
032-032-160	132S	5,50	10,49	72.02
032-032-160	132S	7,50	14,12	79.02
032-032-200	100L	3,00	6,09	56.74
032-032-200	112M	4,00	7,82	60.74
032-032-200	132S	5,50	10,49	81.15
032-032-200	132S	7,50	14,12	88.15
032-032-200	160M	11,00	20,41	114.36
032-032-200	160M	15,00	27,25	125.36
040-040-160	90L	2,20	4,46	41.49
040-040-160	100L	3,00	6,09	48.13
040-040-160	112M	4,00	7,82	52.13
040-040-160	132S	5,50	10,49	72.54
040-040-160	132S	7,50	14,12	79.54
040-040-160	160M	11,00	20,41	105.75
040-040-250	132S	5,50	10,49	87.9
040-040-250	132S	7,50	14,12	94.9
040-040-250	160M	11,00	20,41	121.11
040-040-250	160M	15,00	27,25	132.11

Size	Motor			[kg]
	Size	[kW]	400 V [A]	
040-040-250	160L	18,50	33,38	149.11
040-040-250	180M	22,00	39,52	214.74
040-040-250	200L	30,00	54,73	284.23
040-040-250	200L	37,00	66,36	304.23
050-050-160	90L	2,20	4,46	45.78
050-050-160	100L	3,00	6,09	52.42
050-050-160	112M	4,00	7,82	56.42
050-050-160	132S	5,50	10,49	76.83
050-050-160	132S	7,50	14,12	83.83
050-050-160	160M	11,00	20,41	110.04
050-050-160	160M	15,00	27,25	121.04
050-050-250	132S	7,50	14,12	97.93
050-050-250	160M	11,00	20,41	124.14
050-050-250	160M	15,00	27,25	135.14
050-050-250	160L	18,50	33,38	152.14
050-050-250	180M	22,00	39,52	217.77
050-050-250	200L	30,00	54,73	287.26
050-050-250	200L	37,00	66,36	307.26
065-065-160	100L	3,00	6,09	54.67
065-065-160	112M	4,00	7,82	58.67
065-065-160	132S	5,50	10,49	79.08
065-065-160	132S	7,50	14,12	86.08
065-065-160	160M	11,00	20,41	112.29
065-065-160	160M	15,00	27,25	123.29
065-065-160	160L	18,50	33,38	140.29
065-065-160	180M	22,00	39,52	205.92
065-065-250	160M	11,00	20,41	128.21
065-065-250	160M	15,00	27,25	139.21
065-065-250	160L	18,50	33,38	156.21
065-065-250	180M	22,00	39,52	221.84
065-065-250	200L	30,00	54,73	291.33

Size	Motor			[kg]
	Size	[kW]	400 V [A]	
065-065-250	200L	37,00	66,36	311.33
080-080-160	132S	5,50	10,49	85.12
080-080-160	132S	7,50	14,12	92.12
080-080-160	160M	11,00	20,41	118.33
080-080-160	160M	15,00	27,25	129.33
080-080-160	160L	18,50	33,38	146.33
080-080-160	180M	22,00	39,52	211.96
080-080-160	200L	30,00	54,73	281.45
080-080-200	160M	11,00	20,41	127.11
080-080-200	160M	15,00	27,25	138.11
080-080-200	160L	18,50	33,38	155.11
080-080-200	180M	22,00	39,52	220.74
080-080-200	200L	30,00	54,73	290.23
080-080-200	200L	37,00	66,36	310.23
100-100-125	132S	5,50	10,49	90.06
100-100-125	132S	7,50	14,12	97.06
100-100-125	160M	11,00	20,41	123.27
100-100-125	160M	15,00	27,25	134.27
100-100-160	160M	11,00	20,41	129.85
100-100-160	160M	15,00	27,25	140.85
100-100-160	160L	18,50	33,38	157.85
100-100-160	180M	22,00	39,52	223.48
100-100-160	200L	30,00	54,73	292.97
100-100-160	200L	37,00	66,36	312.97
125-125-160	160L	18,50	33,38	212.48
125-125-160	180M	22,00	39,52	278.1
125-125-160	200L	30,00	54,73	347.39
125-125-160	200L	37,00	66,36	367.39
125-125-160	225M	45,00	79,45	433.64
125-125-200	180M	22,00	39,52	275.19
125-125-200	200L	30,00	54,73	344.48
125-125-200	200L	37,00	66,36	364.48
125-125-200	225M	45,00	79,45	430.73

n = 1450 rpm

Size	Motor			[kg]
	Size	[kW]	400 V [A]	
032-032-160	71M	0,25	0,77	28.68
032-032-160	71M	0,37	1,06	29.88
032-032-160	80M	0,55	1,46	33.24
032-032-160	80M	0,75	1,67	34.64
032-032-160	90S	1,10	2,51	37.57
032-032-200	71M	0,37	1,06	39.01
032-032-200	80M	0,55	1,46	42.37
032-032-200	80M	0,75	1,67	43.77
032-032-200	90S	1,10	2,51	46.7
032-032-200	90L	1,50	3,32	50
032-032-200	100L	2,20	4,67	57.74
040-040-160	71M	0,37	1,06	30.4
040-040-160	80M	0,55	1,46	33.76
040-040-160	80M	0,75	1,67	35.16
040-040-160	90S	1,10	2,51	38.09
040-040-160	90L	1,50	3,32	41.39
040-040-250	80M	0,75	1,67	50.52
040-040-250	90S	1,10	2,51	53.45
040-040-250	90L	1,50	3,32	56.75
040-040-250	100L	2,20	4,67	64.49
040-040-250	100L	3,00	6,18	66.49
040-040-250	112M	4,00	8,23	71.49
040-040-250	132S	5,50	11,32	83.9

Size	Motor			[kg]
	Size	[kW]	400 V [A]	
050-050-160	71M	0,37	1,06	34.69
050-050-160	80M	0,55	1,46	38.05
050-050-160	80M	0,75	1,67	39.45
050-050-160	90S	1,10	2,51	42.38
050-050-160	90L	1,50	3,32	45.68
050-050-160	100L	2,20	4,67	53.42
050-050-250	90S	1,10	2,51	56.48
050-050-250	90L	1,50	3,32	59.78
050-050-250	100L	2,20	4,67	67.52
050-050-250	100L	3,00	6,18	69.52
050-050-250	112M	4,00	8,23	74.52
050-050-250	132S	5,50	11,32	86.93
050-050-250	132M	7,50	14,70	100.93
065-065-160	71M	0,37	1,06	36.94
065-065-160	80M	0,55	1,46	40.3
065-065-160	80M	0,75	1,67	41.7
065-065-160	90S	1,10	2,51	44.63
065-065-160	90L	1,50	3,32	47.93
065-065-160	100L	2,20	4,67	55.67
065-065-160	100L	3,00	6,18	57.67
065-065-250	90L	1,50	3,32	63.85
065-065-250	100L	2,20	4,67	71.59
065-065-250	100L	3,00	6,18	73.59
065-065-250	112M	4,00	8,23	78.59
065-065-250	132S	5,50	11,32	91
065-065-250	132M	7,50	14,70	105
065-065-250	160M	11,00	20,80	131.21
080-080-160	80M	0,55	1,46	46.34
080-080-160	80M	0,75	1,67	47.74
080-080-160	90S	1,10	2,51	50.67
080-080-160	90L	1,50	3,32	53.97
080-080-160	100L	2,20	4,67	61.71
080-080-160	100L	3,00	6,18	63.71
080-080-160	112M	4,00	8,23	68.71
080-080-200	90S	1,10	2,51	59.45
080-080-200	90L	1,50	3,32	62.75
080-080-200	100L	2,20	4,67	70.49
080-080-200	100L	3,00	6,18	72.49
080-080-200	112M	4,00	8,23	77.49
080-080-200	132S	5,50	11,32	89.9
080-080-200	132M	7,50	14,70	103.9
080-080-250	100L	2,20	4,67	90.79
080-080-250	100L	3,00	6,18	92.79
080-080-250	112M	4,00	8,23	97.79
080-080-250	132S	5,50	11,32	109.69
080-080-250	132M	7,50	14,70	123.69
080-080-250	160M	11,00	20,80	149.9
080-080-250	160L	15,00	28,11	165.9
100-100-125	80M	0,75	1,67	52.68
100-100-125	90S	1,10	2,51	55.61
100-100-125	90L	1,50	3,32	58.91
100-100-125	100L	2,20	4,67	66.65
100-100-160	90L	1,50	3,32	65.49
100-100-160	100L	2,20	4,67	73.23
100-100-160	100L	3,00	6,18	75.23
100-100-160	112M	4,00	8,23	80.23
100-100-160	132S	5,50	11,32	92.64
100-100-200	100L	2,20	4,67	105.64
100-100-200	100L	3,00	6,18	107.64
100-100-200	112M	4,00	8,23	112.64
100-100-200	132S	5,50	11,32	124.54
100-100-200	132M	7,50	14,70	138.54
100-100-200	160M	11,00	20,80	164.75

Size	Motor			[kg]
	Size	[kW]	400 V [A]	
100-100-250	100L	3,00	6,18	119.56
100-100-250	112M	4,00	8,23	124.56
100-100-250	132S	5,50	11,32	136.46
100-100-250	132M	7,50	14,70	150.46
100-100-250	160M	11,00	20,80	176.67
100-100-250	160L	15,00	28,11	192.67
100-100-250	180M	18,50	35,28	267.29
125-125-160	100L	2,20	4,67	128.37
125-125-160	100L	3,00	6,18	130.37
125-125-160	112M	4,00	8,23	135.37
125-125-160	132S	5,50	11,32	147.27
125-125-160	132M	7,50	14,70	161.27
125-125-200	100L	3,00	6,18	127.46
125-125-200	112M	4,00	8,23	132.46
125-125-200	132S	5,50	11,32	144.36
125-125-200	132M	7,50	14,70	158.36
125-125-200	160M	11,00	20,80	184.57
125-125-200	160L	15,00	28,11	200.57
125-125-250	132S	5,50	11,32	156.47
125-125-250	132M	7,50	14,70	170.47
125-125-250	160M	11,00	20,80	196.68
125-125-250	160L	15,00	28,11	212.68
125-125-250	180M	18,50	35,28	287.3
125-125-250	180L	22,00	41,27	302.3
150-150-200	132S	5,50	11,32	175.85
150-150-200	132M	7,50	14,70	189.85
150-150-200	160M	11,00	20,80	216.06
150-150-200	160L	15,00	28,11	232.06
150-150-200	180M	18,50	35,28	306.68
150-150-250	132M	7,50	14,70	204.14
150-150-250	160M	11,00	20,80	230.35
150-150-250	160L	15,00	28,11	246.35
150-150-250	180M	18,50	35,28	320.97
150-150-250	180L	22,00	41,27	335.97
150-150-250	200L	30,00	55,19	400.26
150-150-250	225S	37,00	65,47	466.65
200-200-250	160M	11,00	20,80	285.87
200-200-250	160L	15,00	28,11	301.87
200-200-250	180M	18,50	35,28	376.49
200-200-250	180L	22,00	41,27	391.49
200-200-250	200L	30,00	55,19	455.78
200-200-250	225S	37,00	65,47	522.17
200-200-250	225M	45,00	80,19	552.17
200-200-315	180L	22,00	41,27	430.01
200-200-315	200L	30,00	55,19	490.01
200-200-315	225S	37,00	65,47	556.25
200-200-315	225M	45,00	80,19	586.25
200-200-315	250M	55,00	99,89	699.62

Etaline-R

n = 1450 rpm

Pump size	Motor			Weight [kg]
	Size	[kW]	400 V [A]	
150-500/3004	200L	30,00	53,9	874
150-500/3704	225S	37,00	68,0	960
150-500/4504	225M	45,00	81,0	1000
150-500/5504	250M	55,00	96,0	1170
150-500/7504	280S	75,00	130,0	1285

Pump size	Motor			Weight [kg]
	Size	[kW]	400 V [A]	
150-500/9004	228M	90,00	160,0	1385
150-500/11004	315S	110,00	193,0	1551
150-500/13204	315M	132,00	230,0	1706
150-500/16004	315L	160,00	270,0	1846
200-330/1504	160L	15,00	27,8	707
200-330/1854	180M	18,50	34,9	733
200-330/2204	180L	22,00	41,3	750
200-330/3004	200L	30,00	53,9	804
200-330/3704	225S	37,00	68,0	890
200-330/4504	225M	45,00	81,0	930
200-330/5504	250M	55,00	96,0	1110
200-330/7504	280S	75,00	130,0	1225
200-330/9004	228M	90,00	160,0	1325
200-330/11004	315S	110,00	193,0	1491
200-400/3004	200L	30,00	53,9	979
200-400/3704	225S	37,00	68,0	1065
200-400/4504	225M	45,00	81,0	1105
200-400/5504	250M	55,00	96,0	1280
200-400/7504	280S	75,00	130,0	1395
200-400/9004	228M	90,00	160,0	1495
200-400/11004	315S	110,00	193,0	1661
200-400/13204	315M	132,00	230,0	1816
200-400/16004	315L	160,00	270,0	1956
200-400/20004	315L	200,00	340,0	1956
200-500/4504	225M	45,00	81,0	1175
200-500/5504	250M	55,00	96,0	1345
200-500/7504	280S	75,00	130,0	1460
200-500/9004	228M	90,00	160,0	1560
200-500/11004	315S	110,00	193,0	1726
200-500/13204	315M	132,00	230,0	1881
200-500/16004	315L	160,00	270,0	2021
200-500/20004	315L	200,00	340,0	2021
200-500/25004	315L	250,00	434,0	2185
250-250/754	280S	75,00	130,0	620
250-250/1104	315S	110,00	193,0	641
250-250/1504	160L	15,00	27,8	667
250-250/1854	180M	18,50	34,9	693
250-250/2204	180L	22,00	41,3	710
250-250/3004	200L	30,00	53,9	764
250-250/3704	225S	37,00	68,0	850
250-250/4504	225M	45,00	81,0	890
250-260/1104	315S	110,00	193,0	701
250-260/1504	160L	15,00	27,8	727
250-260/1854	180M	18,50	34,9	753
250-260/2204	180L	22,00	41,3	770
250-260/3004	200L	30,00	53,9	824
250-260/3704	225S	37,00	68,0	910
250-260/4504	225M	45,00	81,0	950
250-260/5504	250M	55,00	96,0	1130
250-300/1504	160L	15,00	27,8	882
250-300/1854	180M	18,50	34,9	908
250-300/2204	180L	22,00	41,3	925
250-300/3004	200L	30,00	53,9	979
250-300/3704	225S	37,00	68,0	1065
250-300/4504	225M	45,00	81,0	1105

Pump size	Motor			Weight [kg]
	Size	[kW]	400 V [A]	
250-300/5504	250M	55,00	96,0	1265
250-300/7504	280S	75,00	130,0	1380
250-300/9004	228M	90,00	160,0	1480
250-330/2204	180L	22,00	41,3	890
250-330/3004	200L	30,00	53,9	944
250-330/3704	225S	37,00	68,0	1030
250-330/4504	225M	45,00	81,0	1070
250-330/5504	250M	55,00	96,0	1250
250-330/7504	280S	75,00	130,0	1365
250-330/9004	228M	90,00	160,0	1465
250-330/11004	315S	110,00	193,0	1631
250-330/13204	315M	132,00	230,0	1786
250-330/16004	315L	160,00	270,0	1926
250-400/3004	200L	30,00	53,9	1109
250-400/3704	225S	37,00	68,0	1195
250-400/4504	225M	45,00	81,0	1235
250-400/5504	250M	55,00	96,0	1410
250-400/7504	280S	75,00	130,0	1525
250-400/9004	228M	90,00	160,0	1625
250-400/11004	315S	110,00	193,0	1791
250-400/13204	315M	132,00	230,0	1946
250-400/16004	315L	160,00	270,0	2086
250-400/20004	315L	200,00	340,0	2086
250-400/25004	315L	250,00	434,0	2250
250-500/7504	280S	75,00	130,0	1740
250-500/9004	228M	90,00	160,0	1840
250-500/11004	315S	110,00	193,0	2006
250-500/13204	315M	132,00	230,0	2161
250-500/16004	315L	160,00	270,0	2301
250-500/20004	315L	200,00	340,0	2301
250-500/25004	315L	250,00	434,0	2465
250-500/31504	315L	315,00	546,0	2665
300-360/3704	225S	37,00	68,0	1465
300-360/4504	225M	45,00	81,0	1505
300-360/5504	250M	55,00	96,0	1680
300-360/7504	280S	75,00	130,0	1795
300-360/9004	228M	90,00	160,0	1895
300-360/11004	315S	110,00	193,0	2061
300-360/13204	315M	132,00	230,0	2216
300-360/16004	315L	160,00	270,0	2356
300-360/20004	315L	200,00	340,0	2356
300-400/5504	250M	55,00	96,0	1645
300-400/7504	280S	75,00	130,0	1760
300-400/9004	228M	90,00	160,0	1860
300-400/11004	315S	110,00	193,0	2026
300-400/13204	315M	132,00	230,0	2181
300-400/16004	315L	160,00	270,0	2321
300-400/20004	315L	200,00	340,0	2321
300-400/25004	315L	250,00	434,0	2485
300-400/31504	315L	315,00	270,0	2685
300-500/11004	315S	110,00	193,0	2151
300-500/13204	315M	132,00	230,0	2306
300-500/16004	315L	160,00	270,0	2446
300-500/20004	315L	200,00	340,0	2446
300-500/25004	315L	250,00	434,0	2610

Pump size	Motor			Weight [kg]
	Size	[kW]	400 V [A]	
300-500/31504	315L	315,00	546,0	2810
350-340/2204	180L	22,00	41,3	1175
350-340/3004	200L	30,00	53,9	1229
350-340/3704	225S	37,00	68,0	1315
350-340/4504	225M	45,00	81,0	1355
350-340/5504	250M	55,00	96,0	1530
350-340/7504	280S	75,00	130,0	1645
350-340/9004	228M	90,00	160,0	1745

Technical data of the pump

Technical data of an Etaline pump

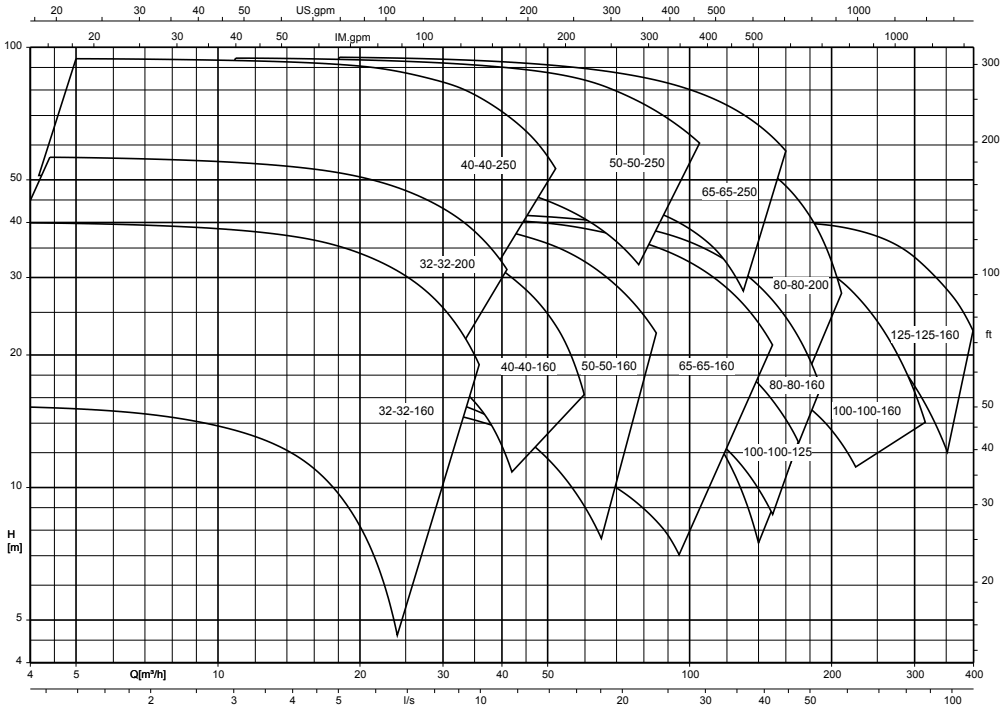
Size	Shaft unit	Impeller				Speed limit	
		Impeller outlet width	Impeller inlet diameter	Impeller diameter		Maximum	Minimum
				Maximum	Minimum		
		[mm]	[mm]	[mm]	[mm]	[rpm]	[rpm]
032-032-160	WS_25	5,7	52,7	170	112	4400	500
032-032-200	WS_25	5,6	54,0	204	165	3800	500
040-040-160	WS_25	8,5	60,6	174	136	3500	500
040-040-250	WS_25	7,5	62,6	261	197	3000	500
050-050-160	WS_25	13,0	70,0	174	120	4400	500
050-050-250	WS_25	8,4	74,1	260	198	3000	500
065-065-160	WS_25	16,9	86,9	174	108	4400	500
065-065-250	WS_25	10,5	84,0	260	196	3000	500
080-080-160	WS_25	21,0	92,0	174	132	3900	500
080-080-200	WS_25	17,0	99,7	219	170	3000	500
080-080-250	WS_35	15,1	101,0	260	190	3000	500
100-100-125	WS_25	25,8	99,0	141	124	4000	500
100-100-160	WS_25	31,6	124,0	174	138	3500	500
100-100-200	WS_35	24,5	115,0	219	178	3500	500
100-100-250	WS_35	19,0	115,0	269	215	2900	500
125-125-160	WS_35	37,6	135,0	185	155	3600	500
125-125-200	WS_35	32,5	142,0	219	179	3300	500
125-125-250	WS_35	27,0	145,0	269	210	2500	500
150-150-200	WS_35	40,7	159,0	224	178	2600	500
150-150-250	WS_35	37,0	162,4	269	218	2000	500
200-200-250	WS_35	48,8	191,0	269	220	1800	500
200-200-315	WS_55	39,7	191,5	334	264	2100	500

Technische Daten Etaline-R

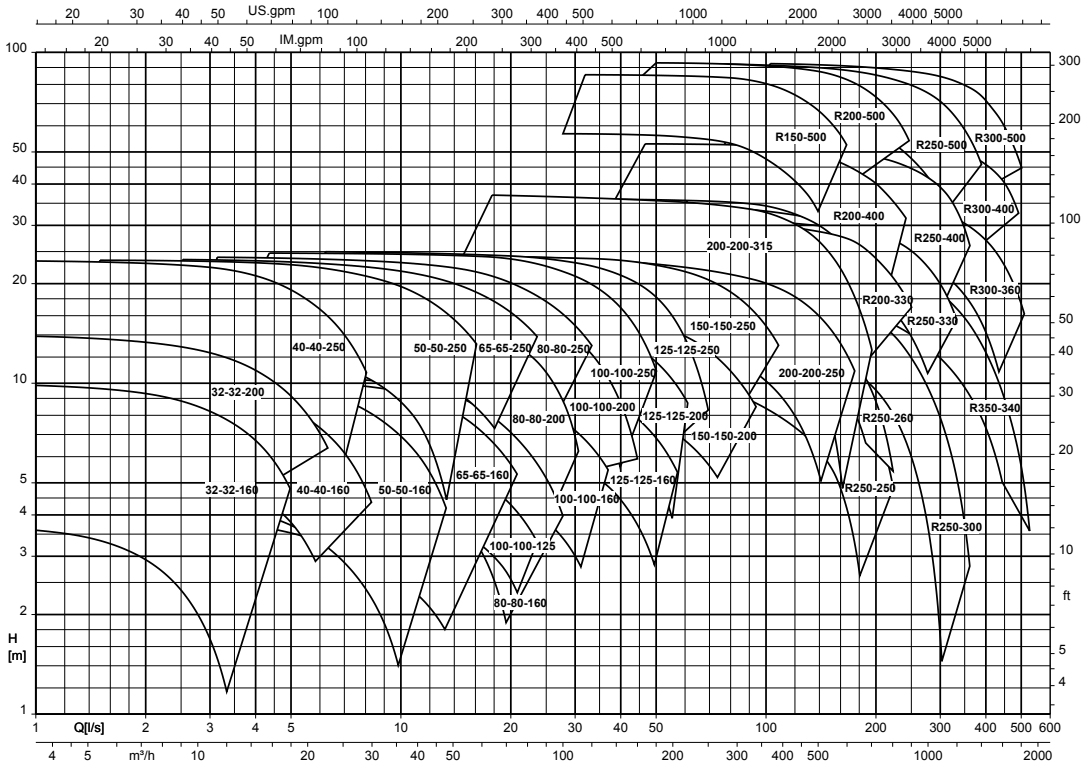
Size	Shaft unit	Impeller				Speed limit	
		Impeller outlet width	Impeller inlet diameter	Impeller diameter		Maximum	Minimum
				Maximum	Minimum		
		[mm]	[mm]	[mm]	[mm]	[rpm]	[rpm]
150-500	WE65	21,0	200	410	500	1500	300
200-330	WE65	54,0	220	270	330	1800	300
200-400	WE65	38,0	240	340	405	1800	300
200-500	WE65	36,0	220	420	510	1500	300
250-250	WE65	57,0	213	200	240	1800	300
250-260	WE65	62,0	190	240	260	1800	300
250-300	WE65	66,5	248	245	285	1800	300
250-330	WE65	72,0	240	290	330	1800	300
250-400	WE65	58,0	280	340	405	1800	300
250-500	WE65	44,0	260	440	520	1500	300
300-360	WE65	78,0	260	320	360	1800	300
300-400	WE65	65,0	290	360	430	1800	300
300-500	WE65	56,0	290	450	520	1500	300

Selection charts

Etaline, n = 2900 rpm



Etaline, Etaline-R = 1450 rpm



Characteristic curves

General

Test class: Characteristic curves to ISO 9906 Class 3B

NPSH values
The NPSH values indicated in the characteristic curves correspond to a head drop of 3 %.

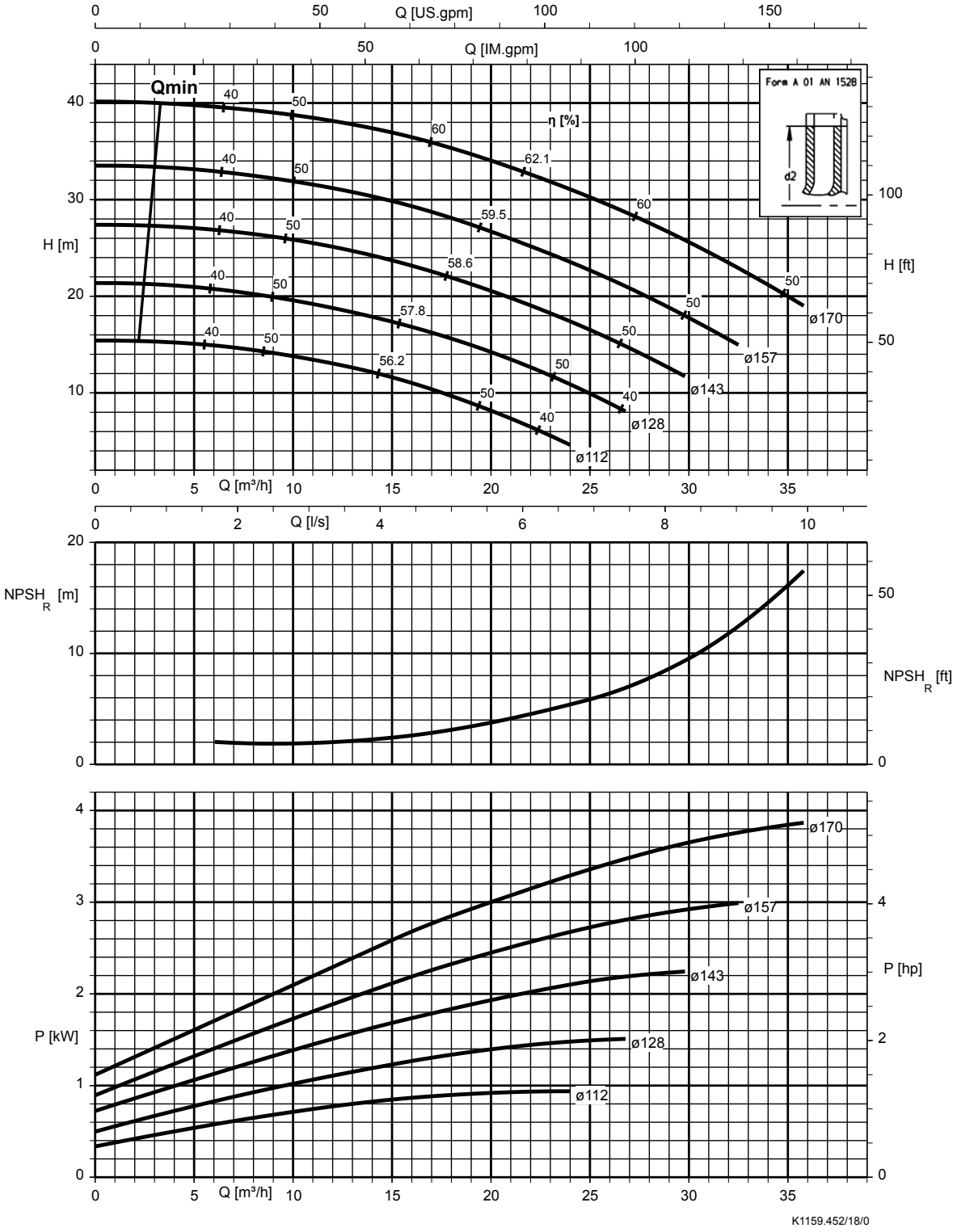
NPSH values in low-flow conditions
NPSH values for flow rates below Q = 0.3 x Q_{opt} can only be measured with intense technical efforts. Evidence of NPSH values in the low-flow range cannot be provided.

Density of the fluid handled
The indicated heads and performance data apply to pumped fluids with a density ρ = 1.0 kg/dm³ and a kinematic viscosity v of up to 20 mm²/s max. If the density ≠ 1.0, the performance data must be multiplied by ρ. For viscosities >20 mm²/s the corresponding data for cold water has to be calculated and the impact on the pump's performance has to be determined.

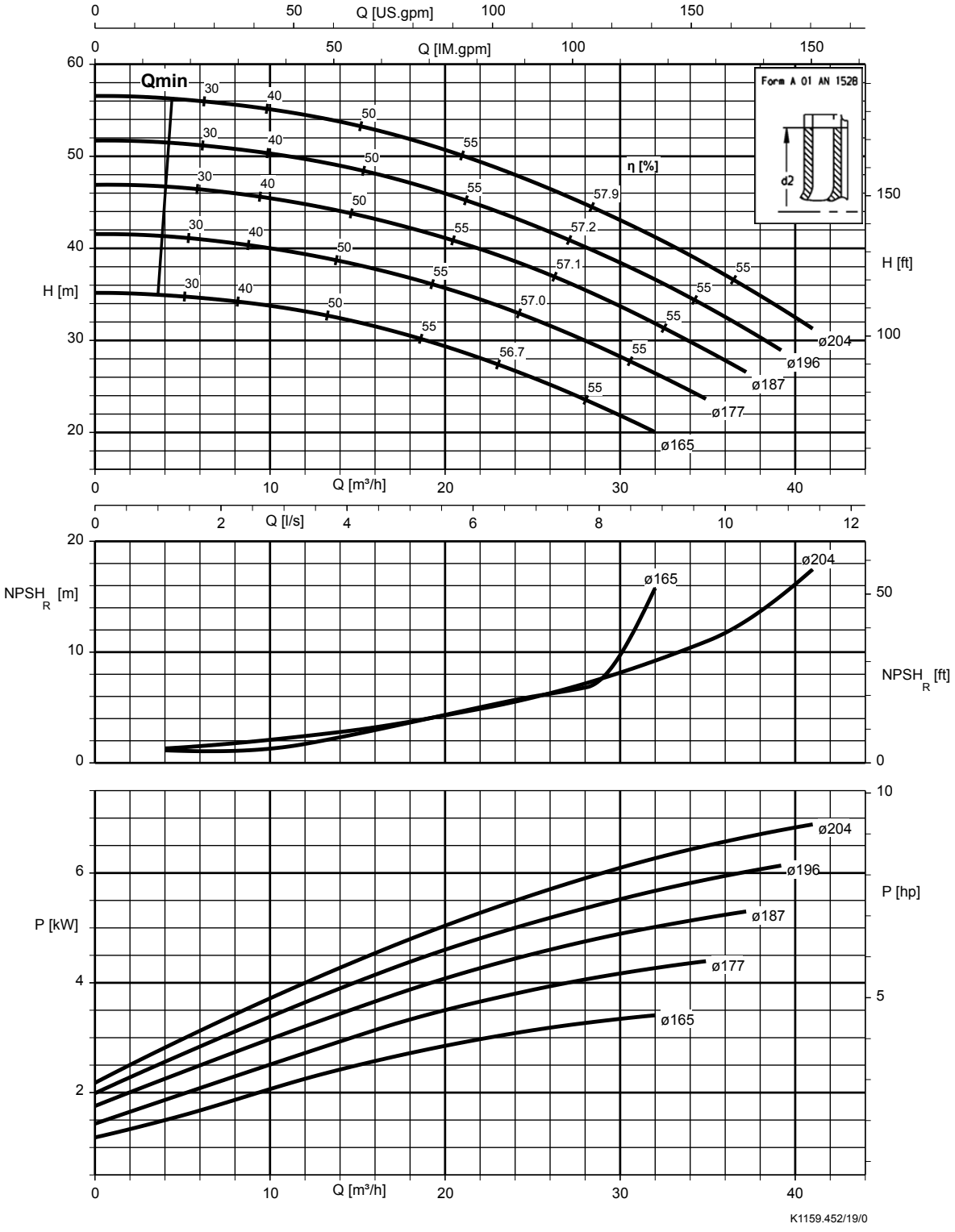
Correction factors
The characteristic curves apply to pumps with cast iron or bronze impellers. When using an impeller made of cast steel materials the efficiency and pump power of the corresponding pump sizes have to be multiplied by the correction factors indicated in the characteristic curves.

Etaline, n = 2900 rpm

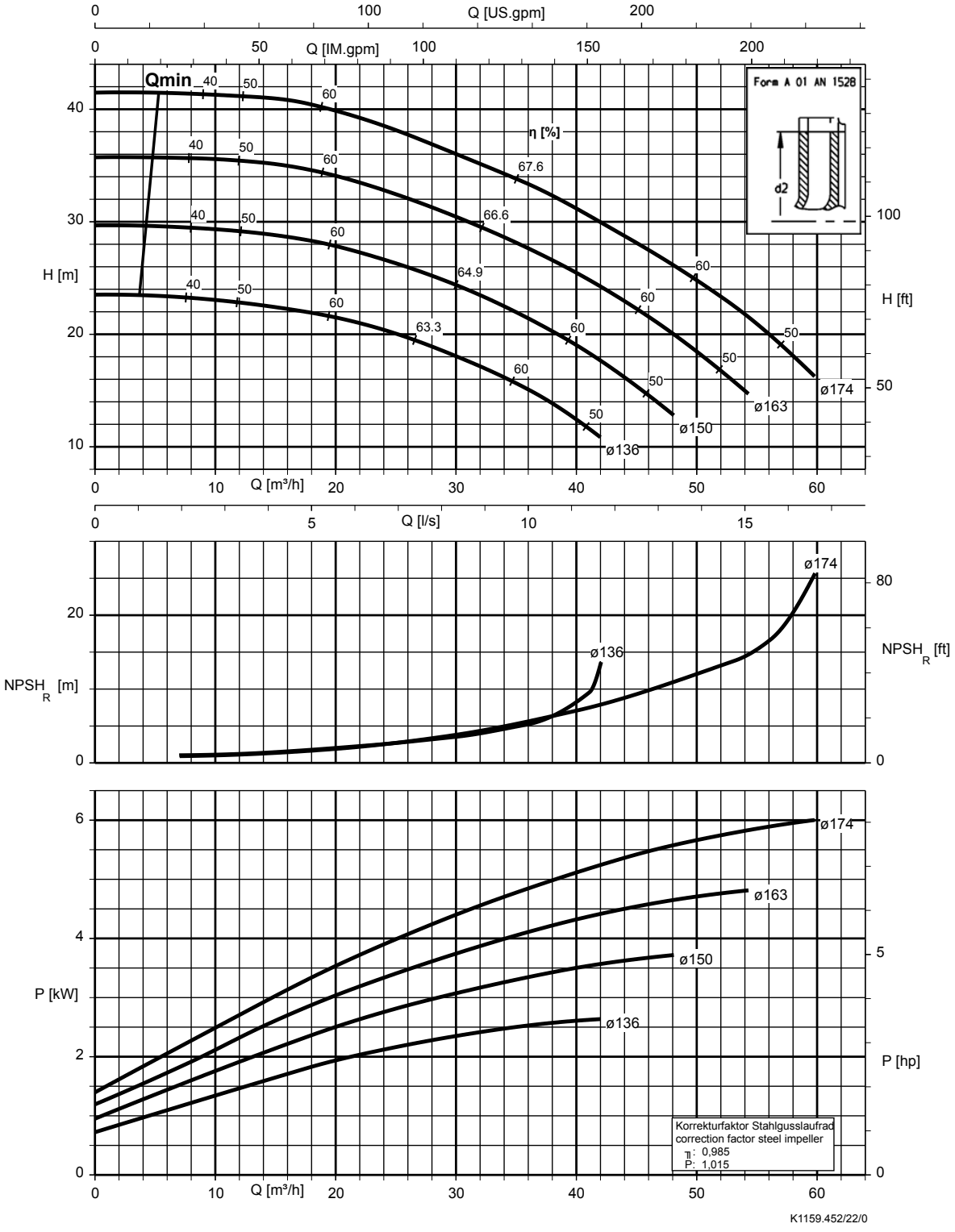
Etaline 32-32-160, n = 2900 rpm



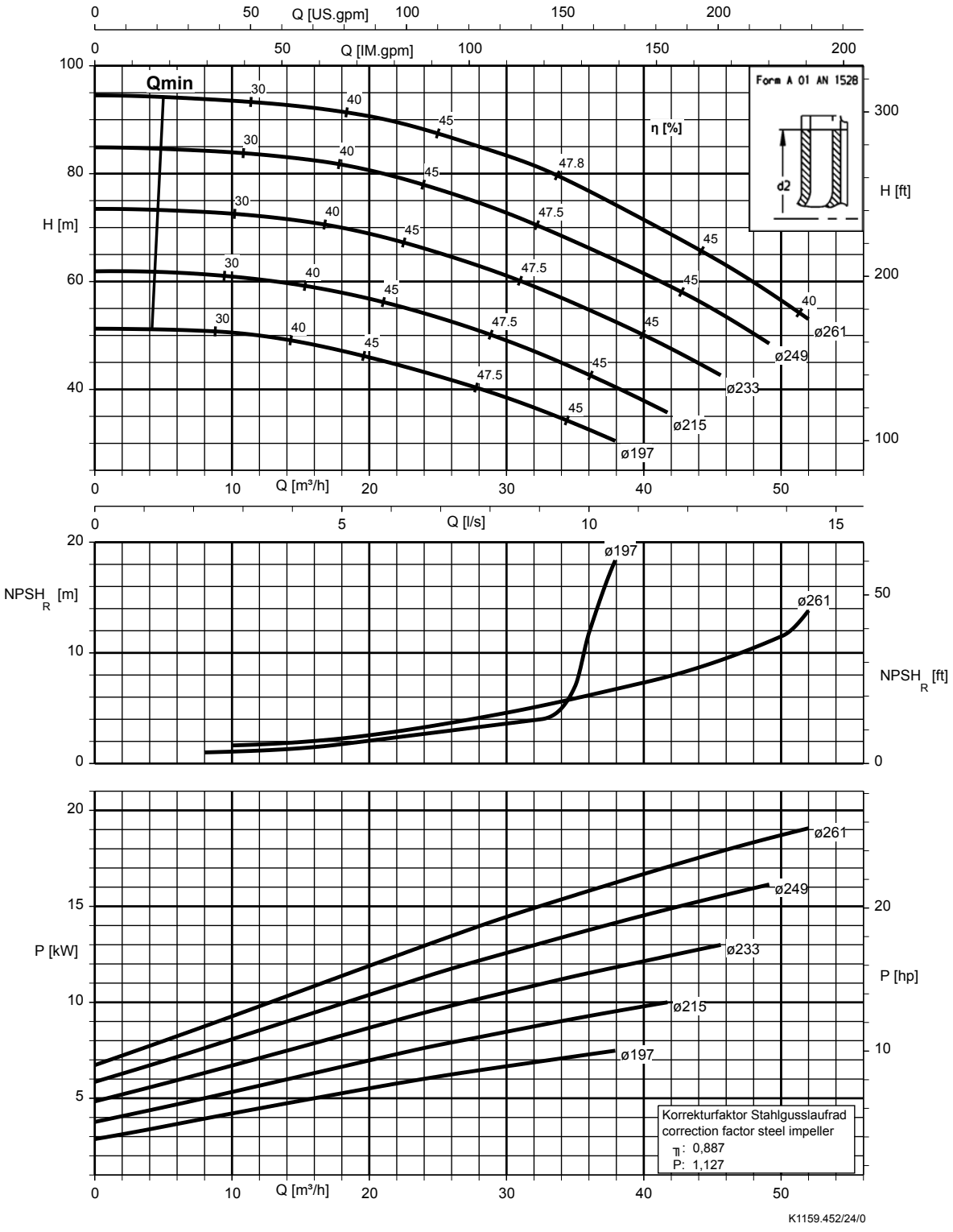
Etaline 32-32-200, n = 2900 rpm



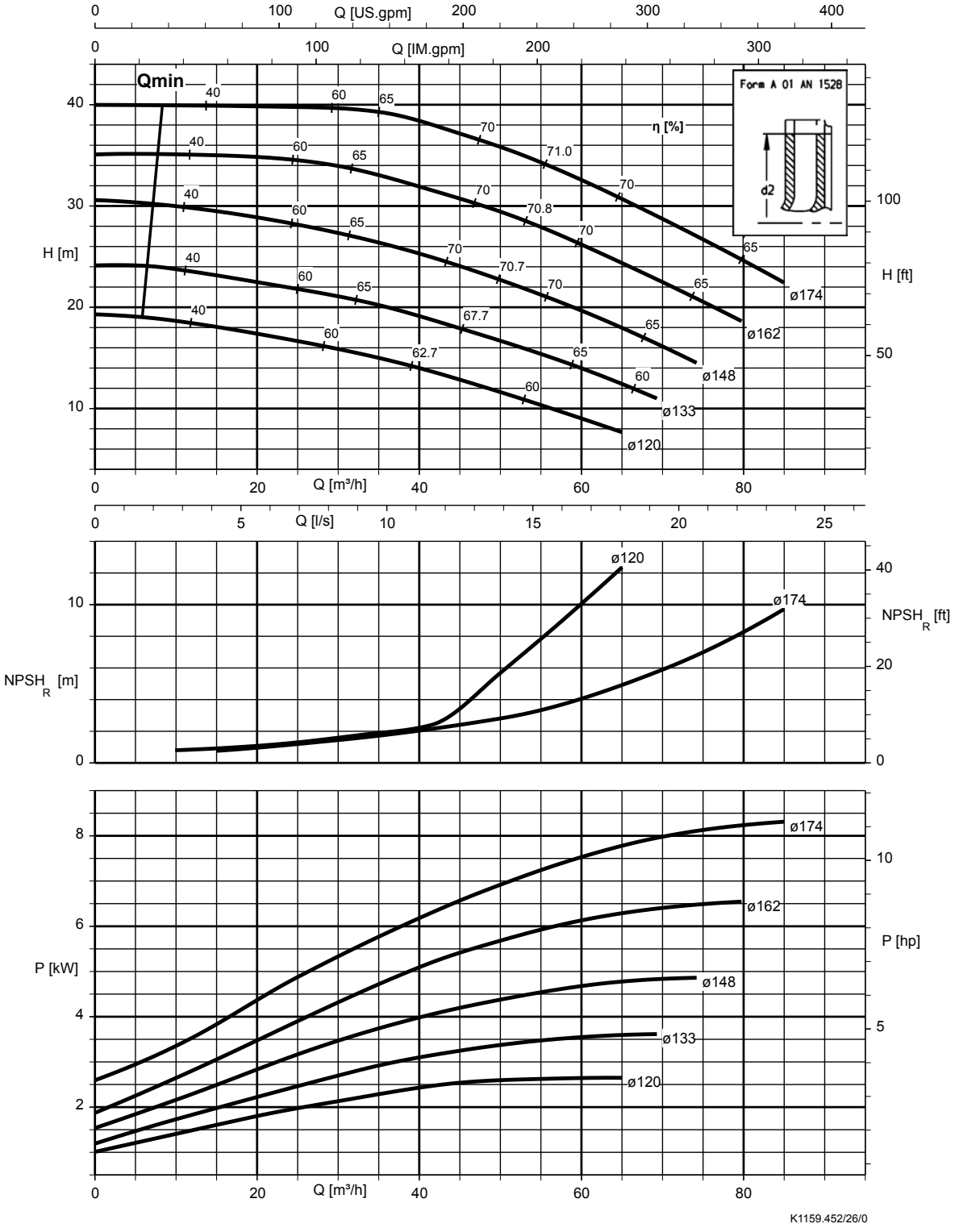
Etaline 40-40-160, n = 2900 rpm



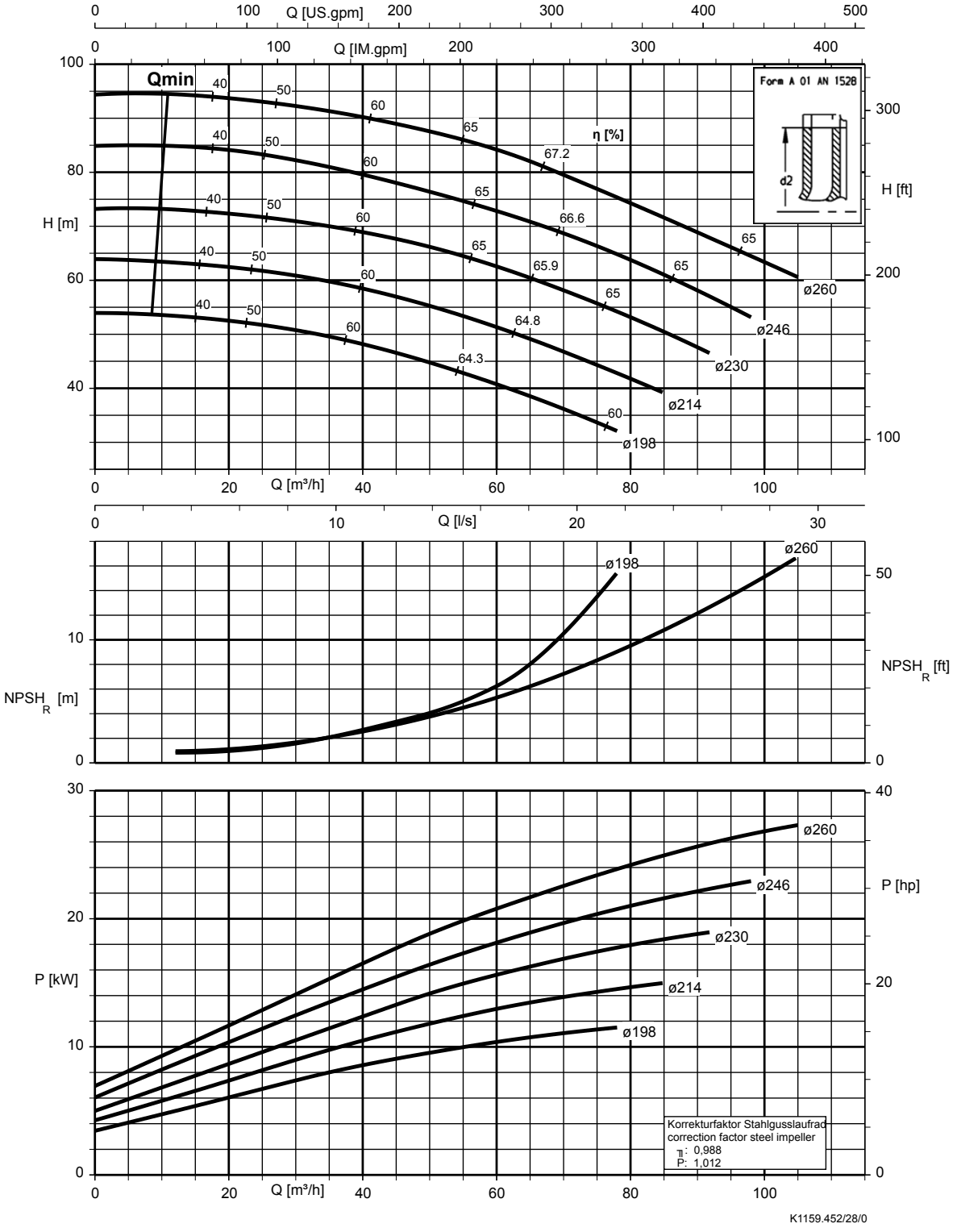
Etaline 40-40-250, n = 2900 rpm



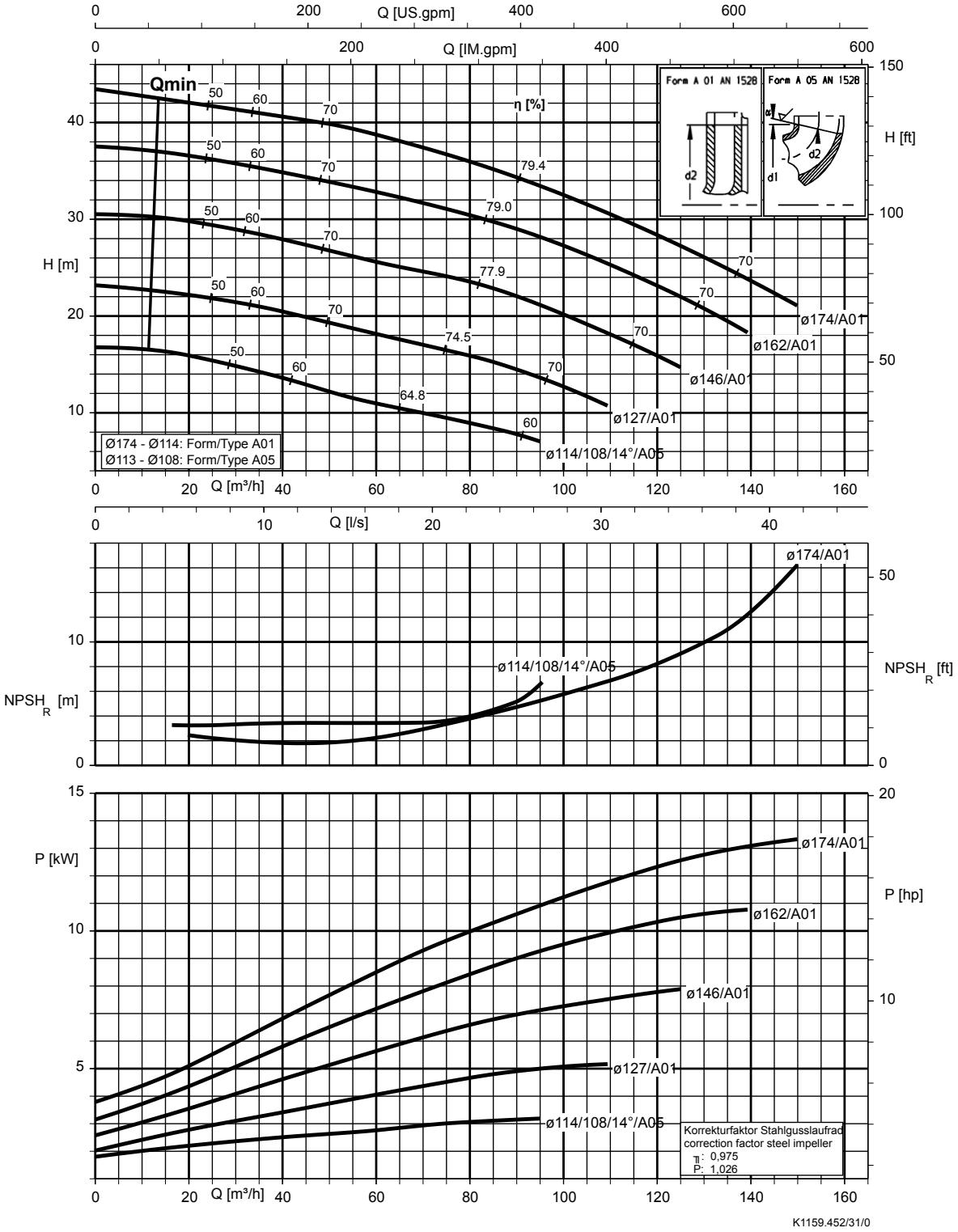
Etaline 50-50-160, n = 2900 rpm



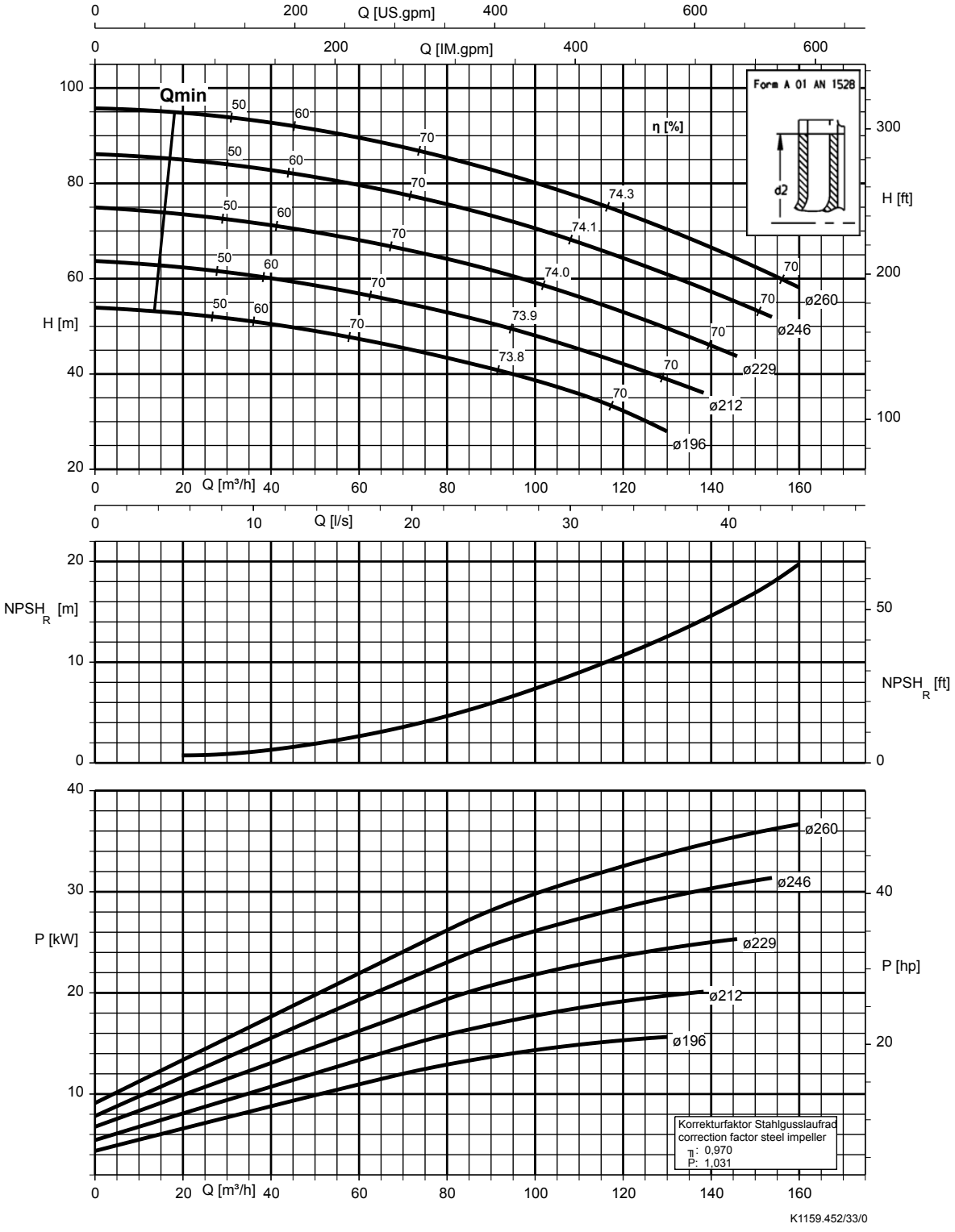
Etaline 50-50-250, n = 2900 rpm



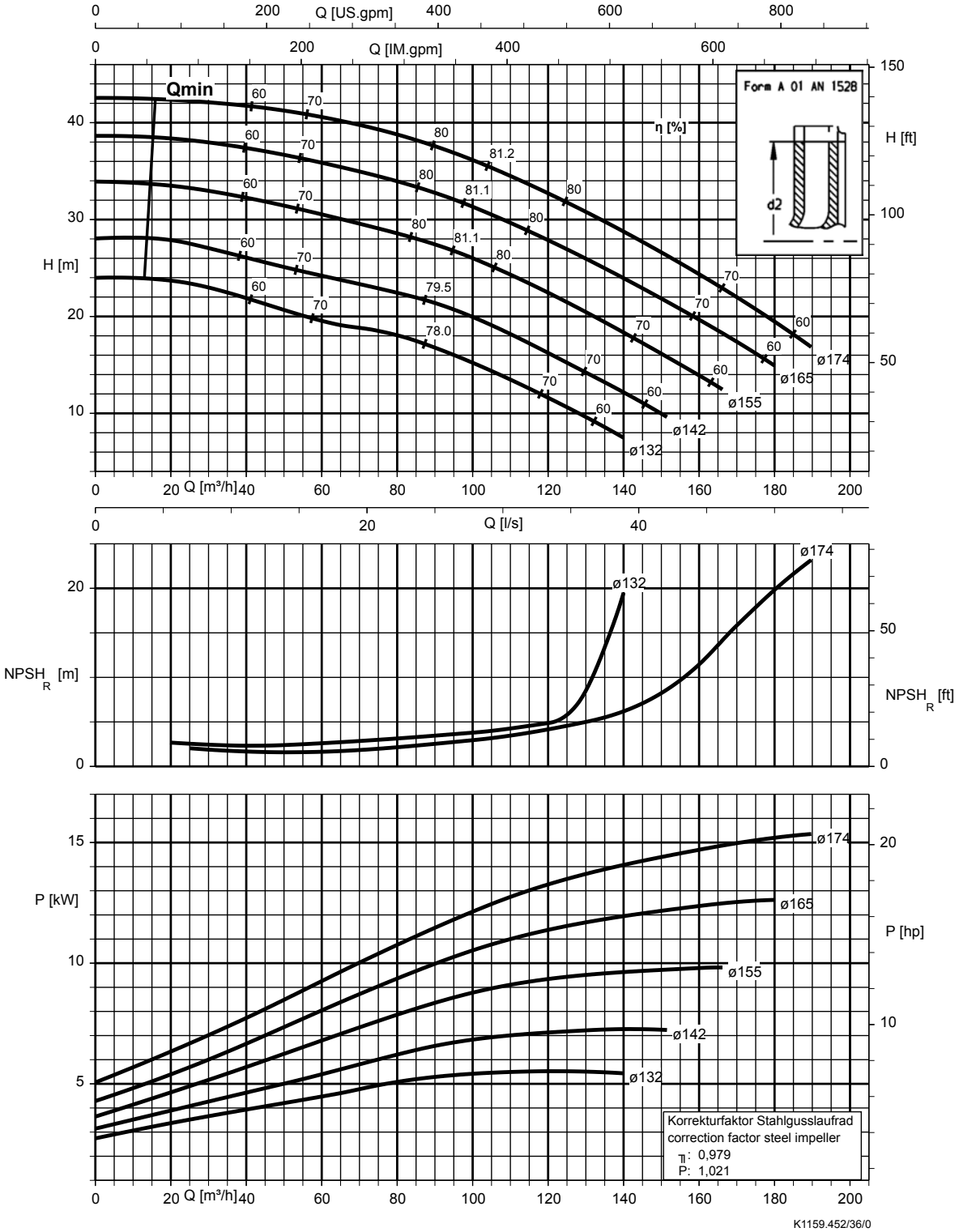
Etaline 65-65-160, n = 2900 rpm



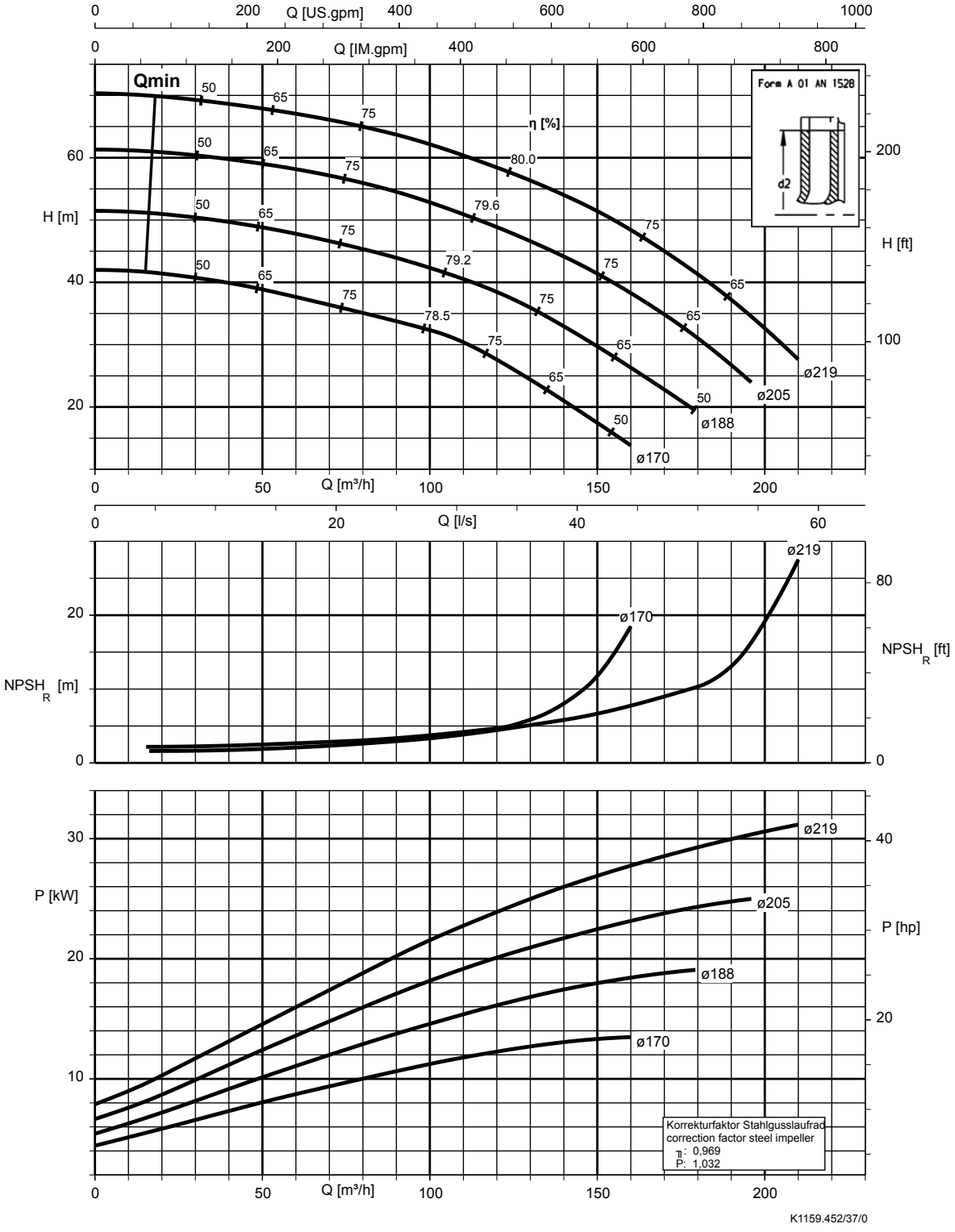
Etaline 65-65-250, n = 2900 rpm



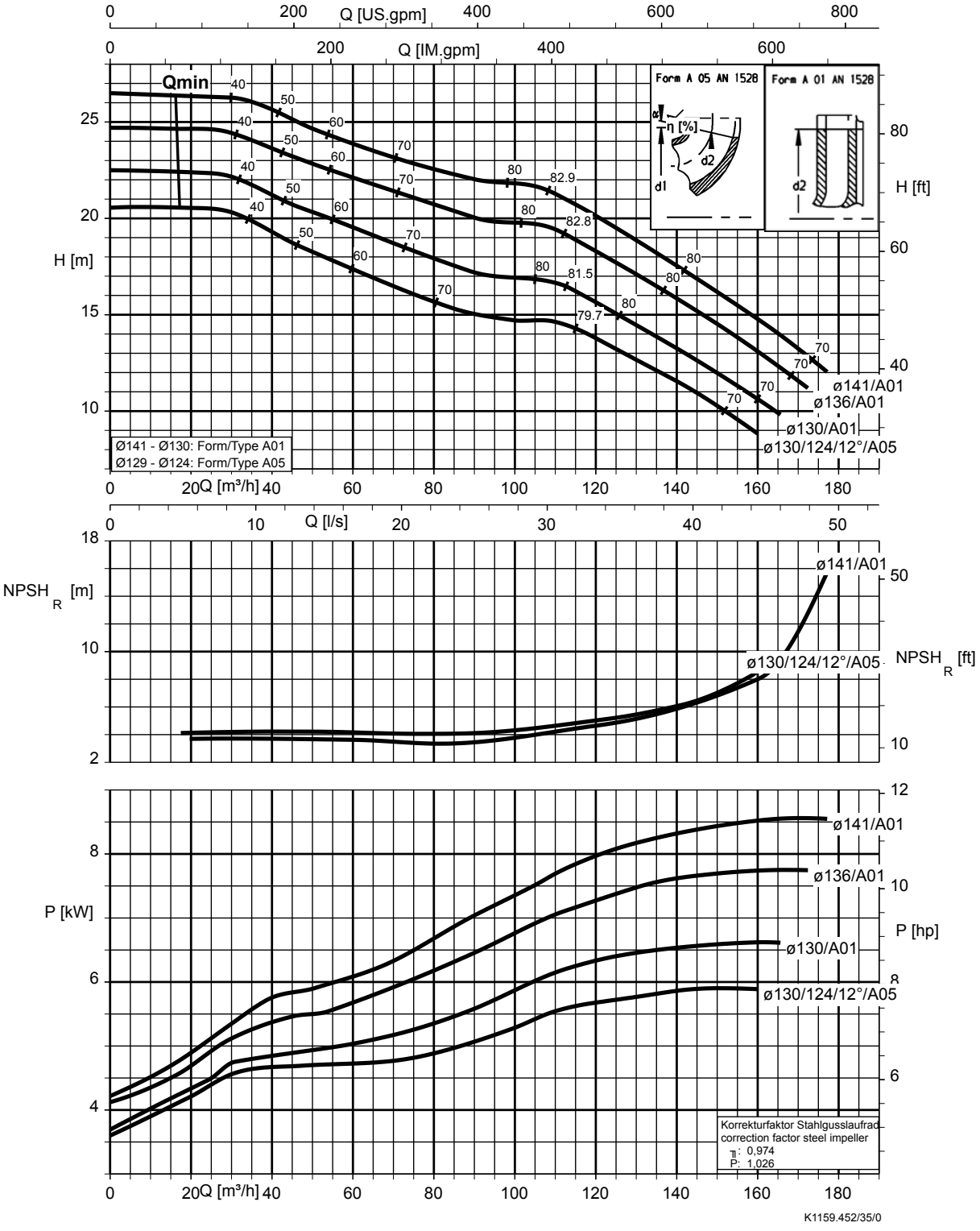
Etaline 80-80-160, n = 2900 rpm



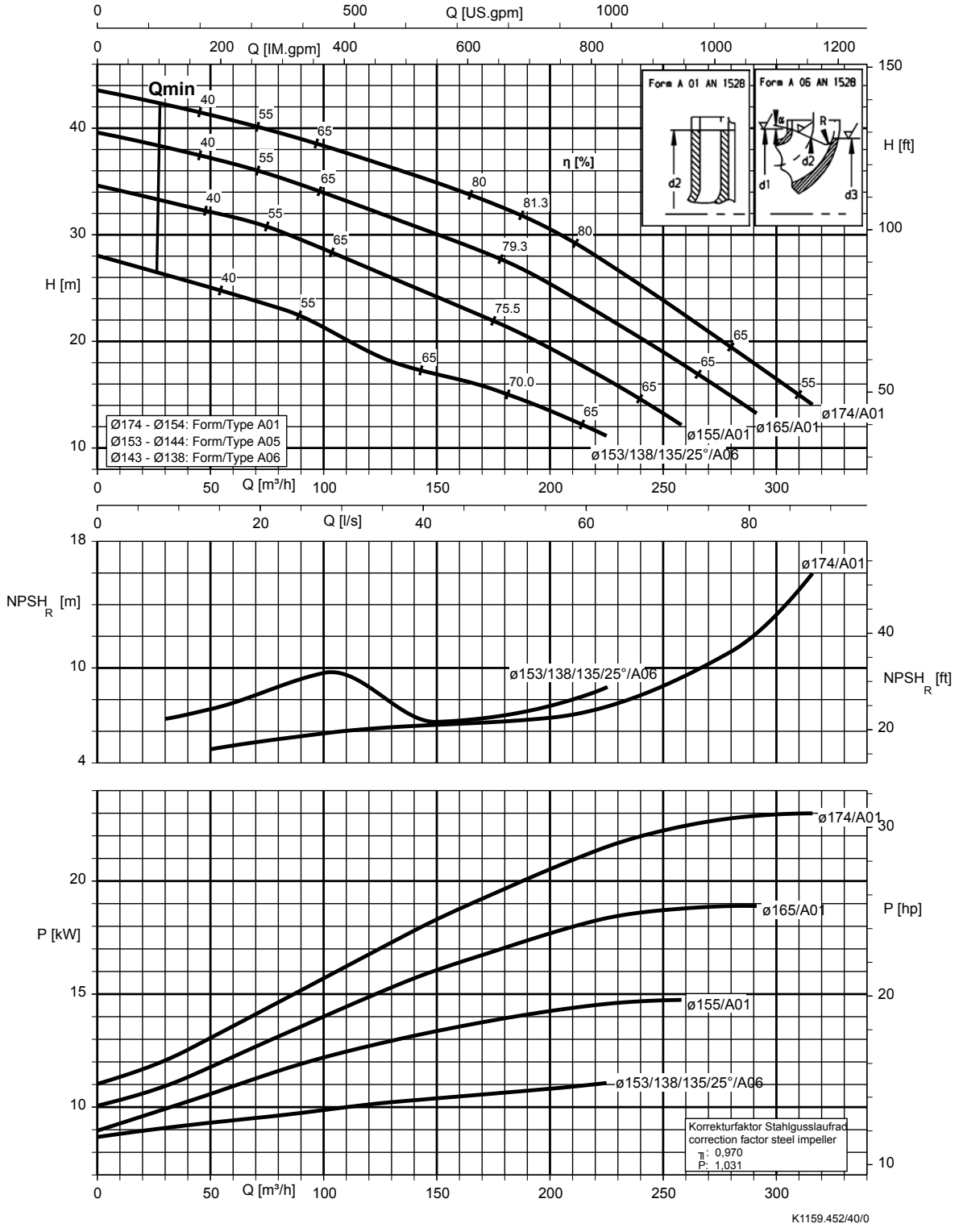
Etaline 80-80-200, n = 2900 rpm



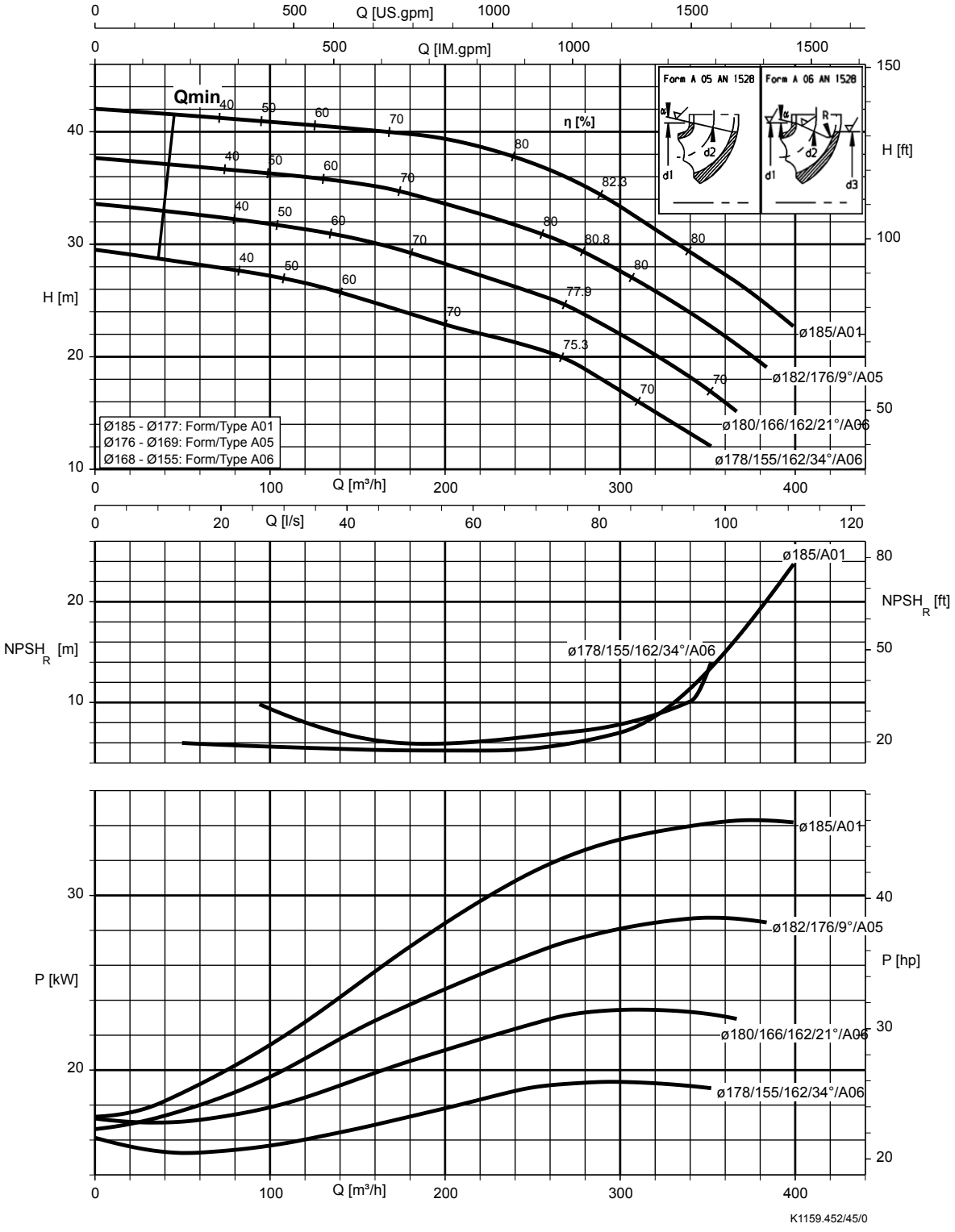
Etaline 100-100-125, n = 2900 rpm



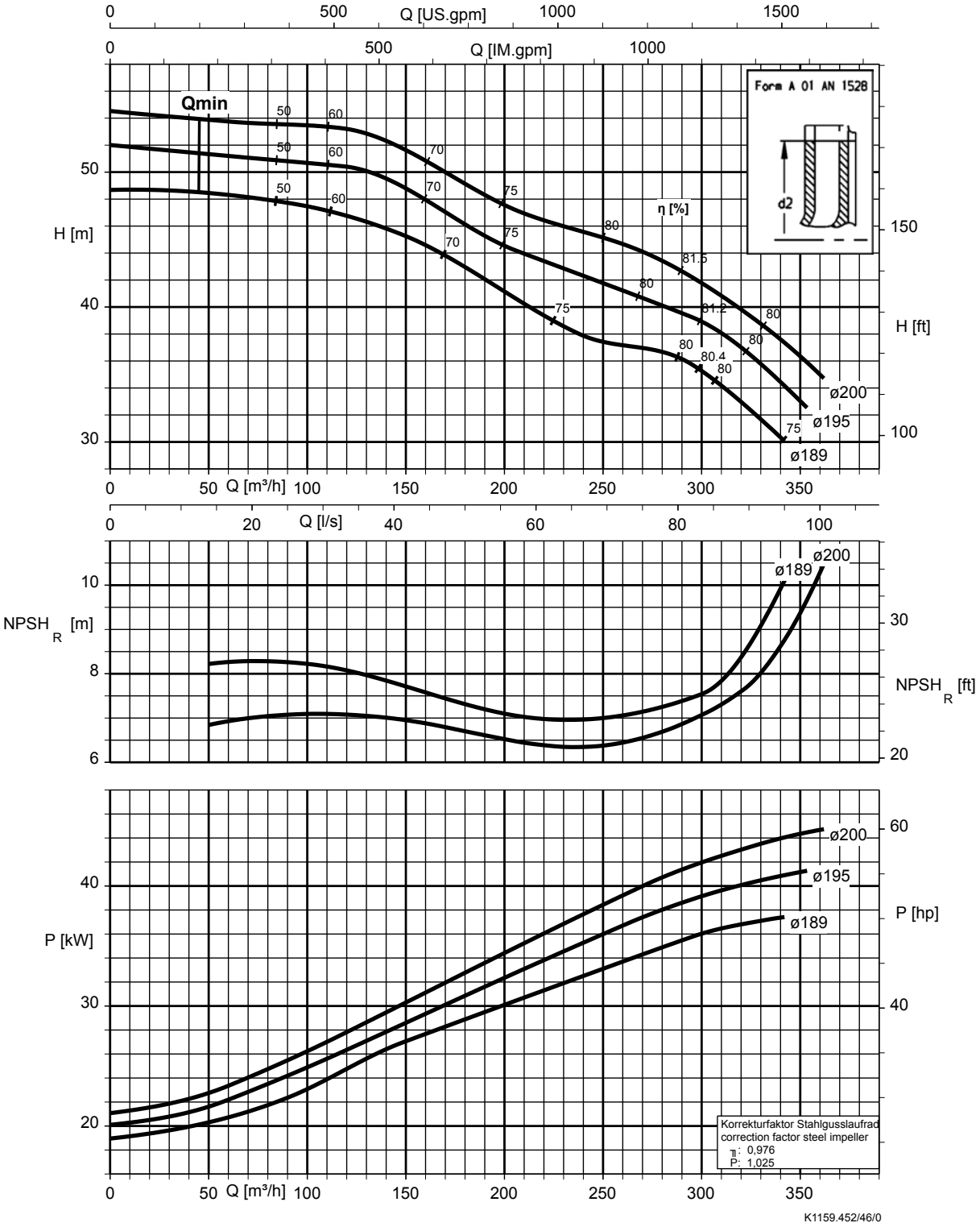
Etaline 100-100-160, n = 2900 rpm



Etaline 125-125-160, n = 2900 rpm

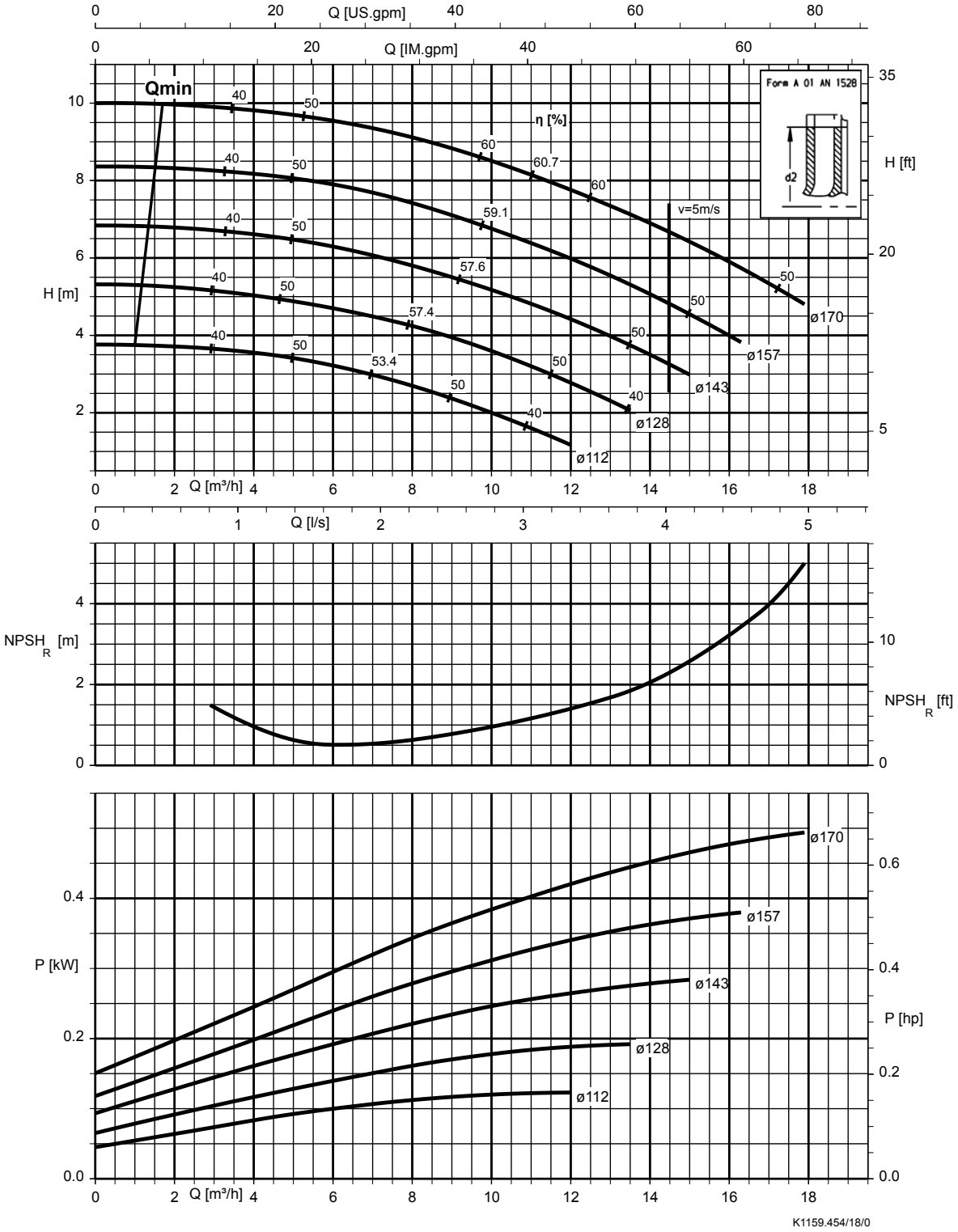


Etaline 125-125-200, n = 2900 rpm

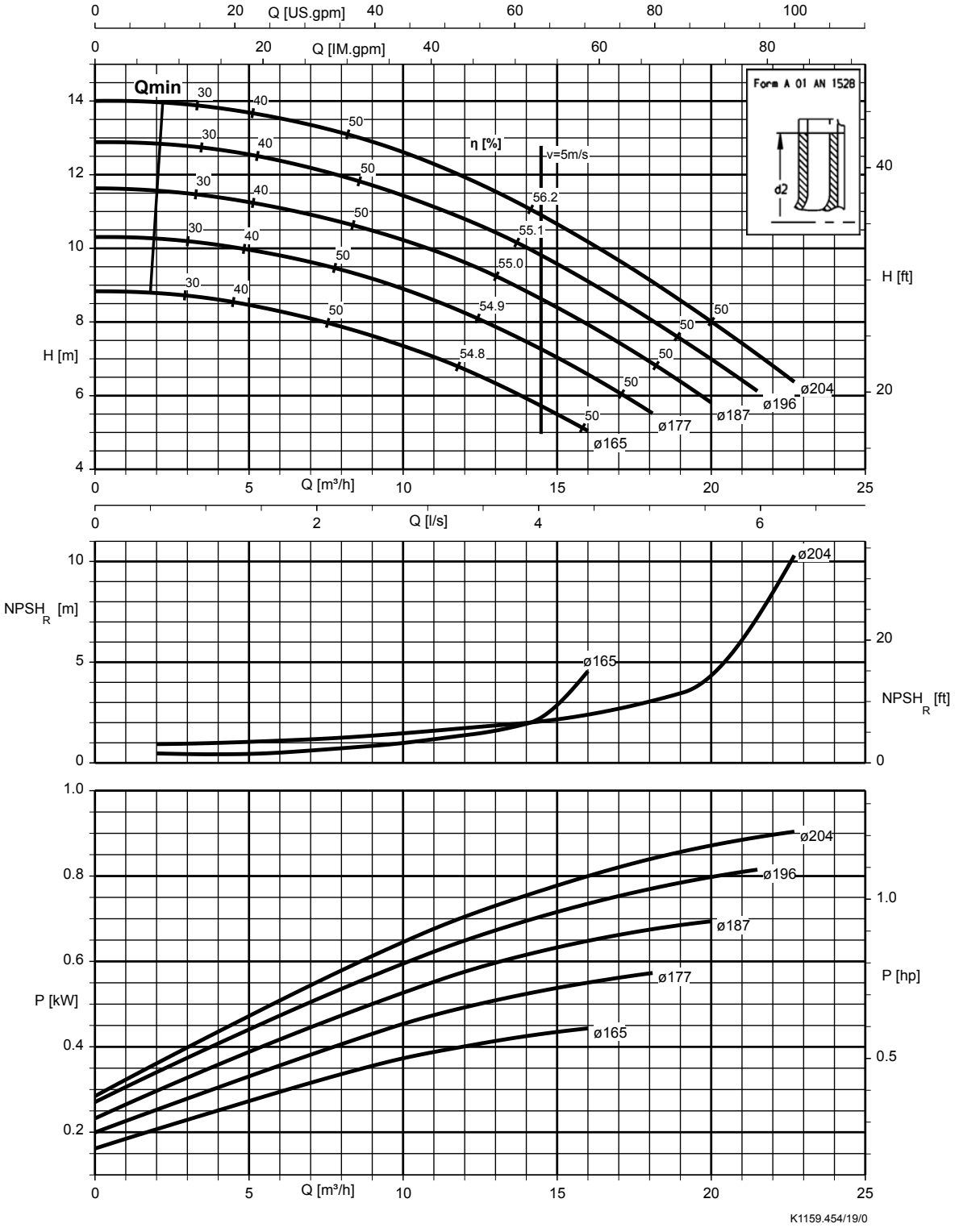


Etaline, n = 1450 rpm

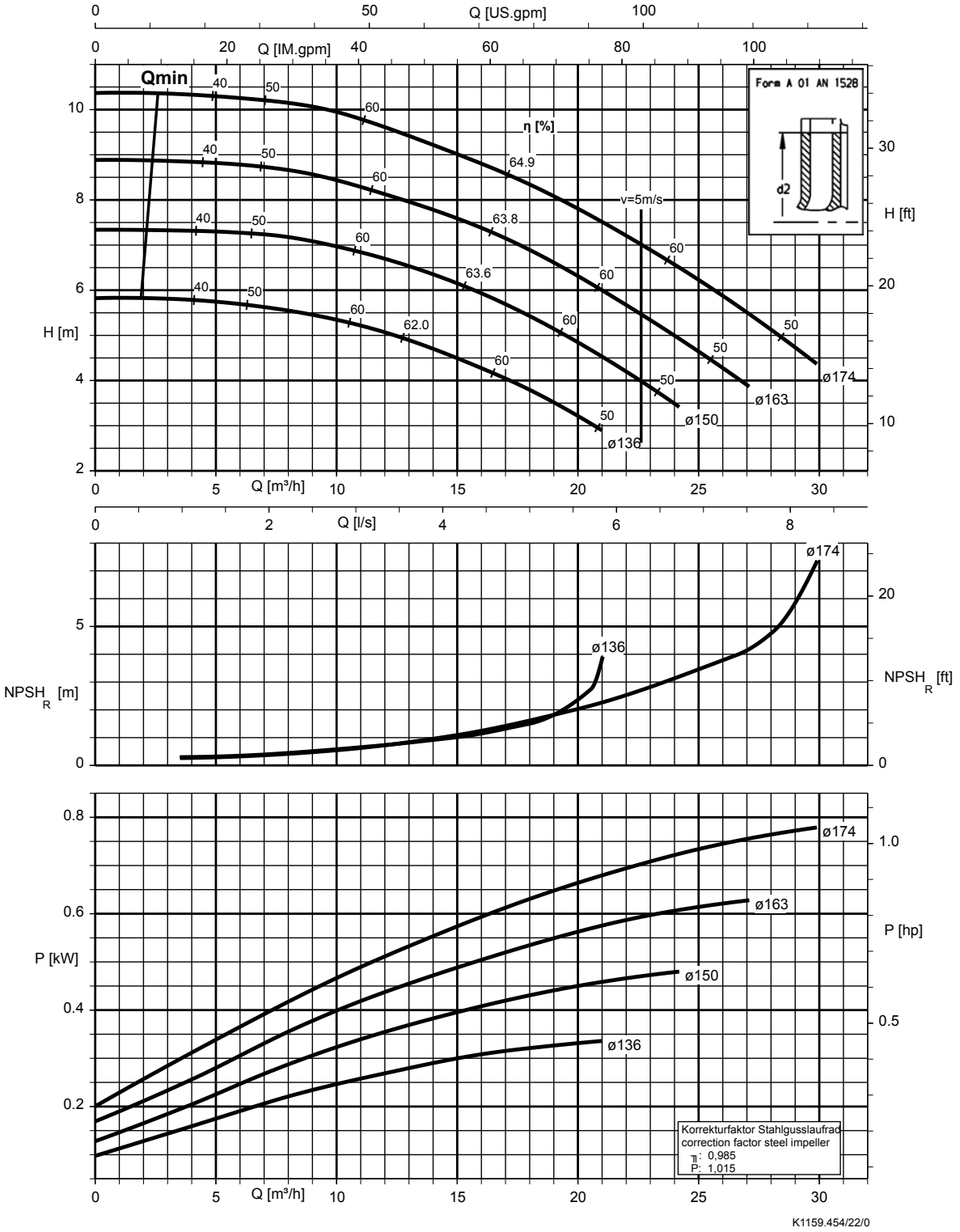
Etaline 32-32-160, n = 1450 rpm



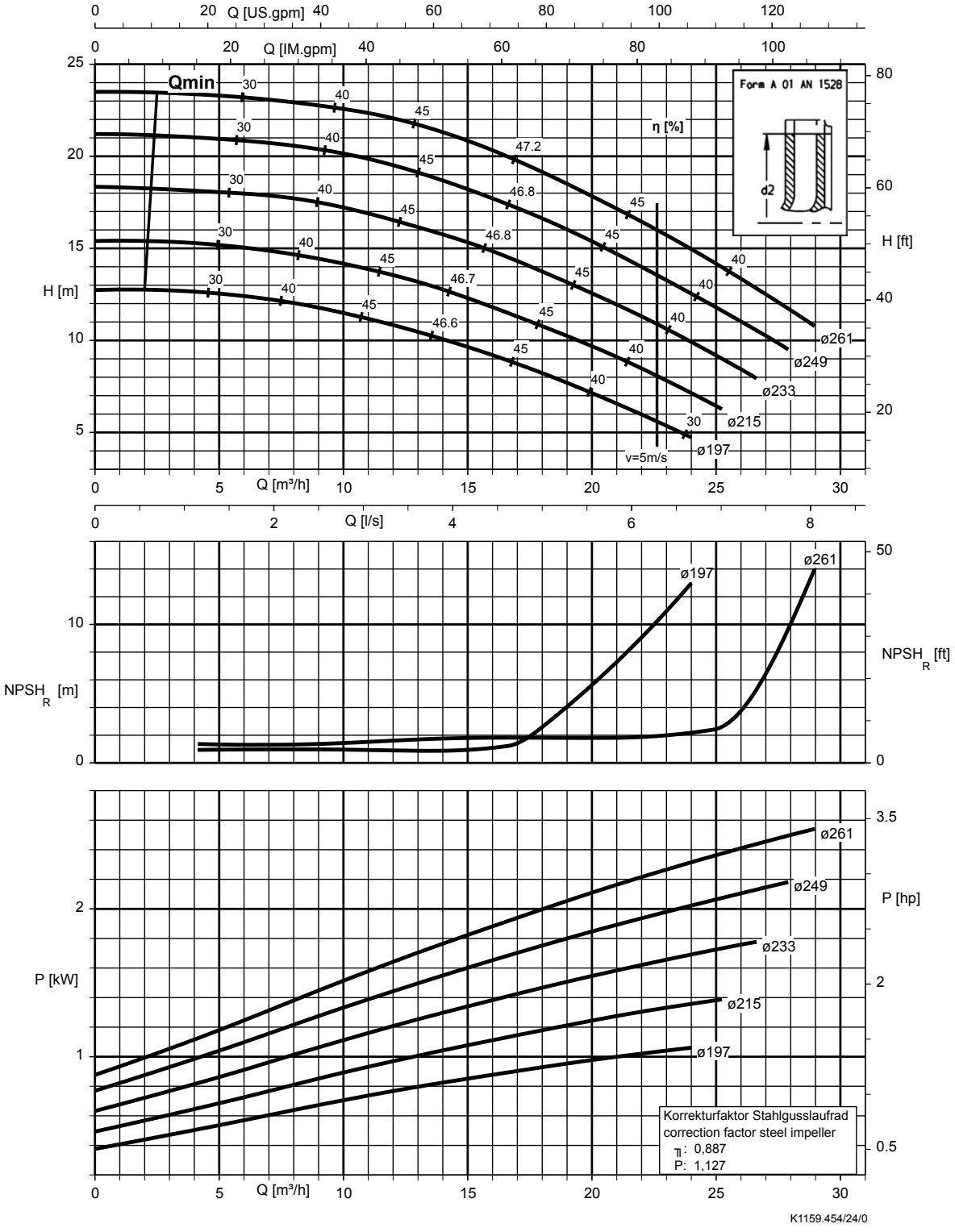
Etaline 32-32-200, n = 1450 rpm



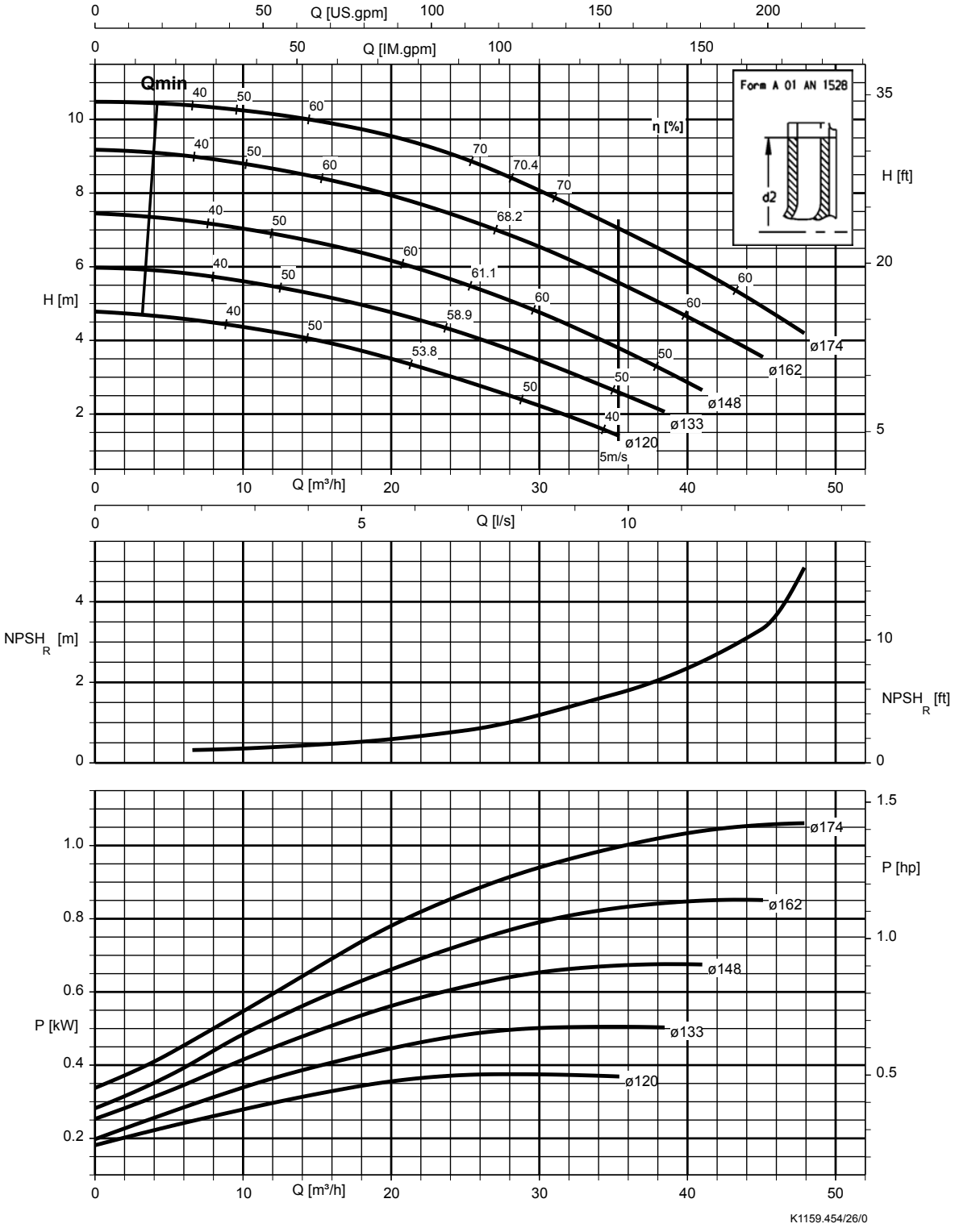
Etaline 40-40-160, n = 1450 rpm



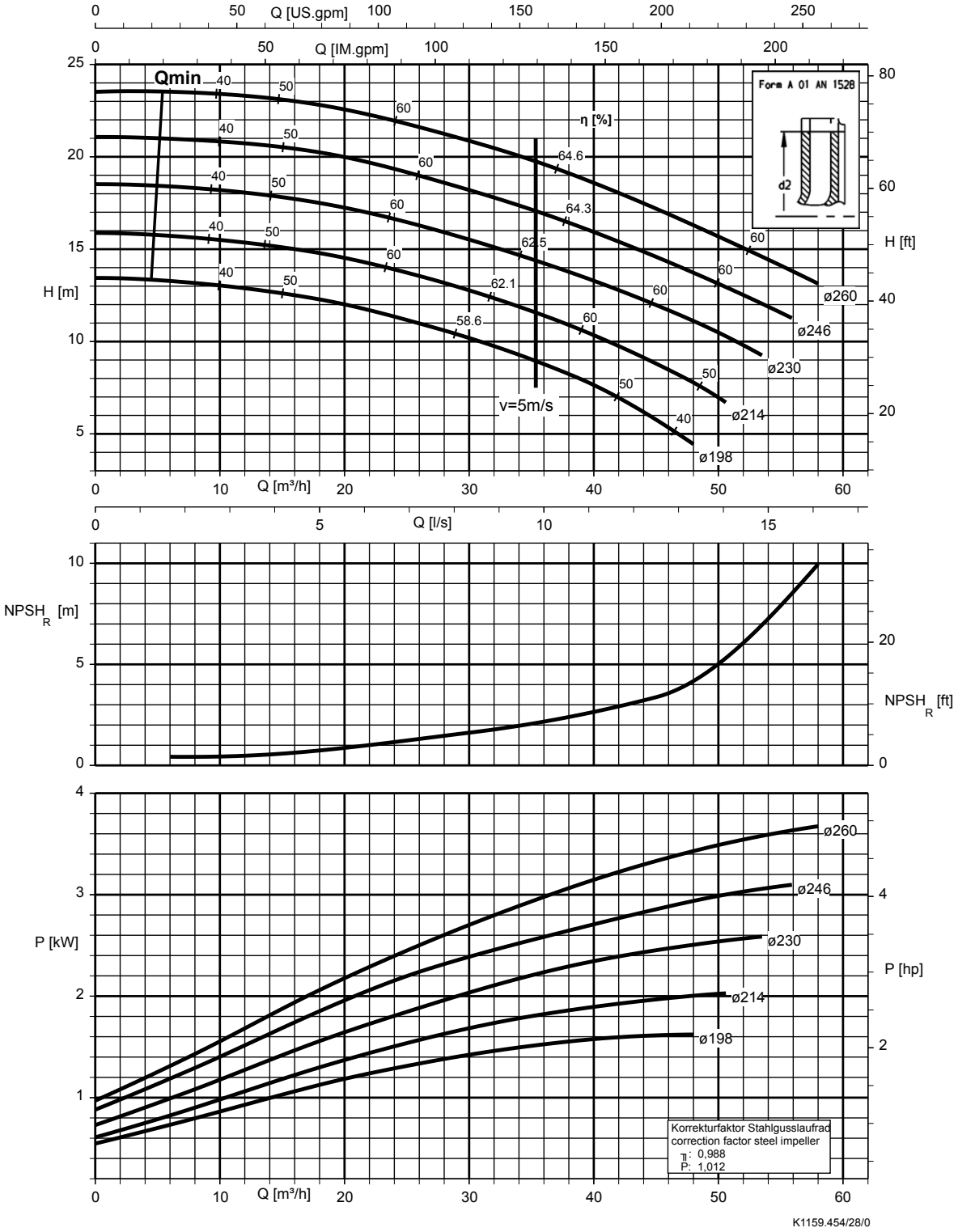
Etaline 40-40-250, n = 1450 rpm



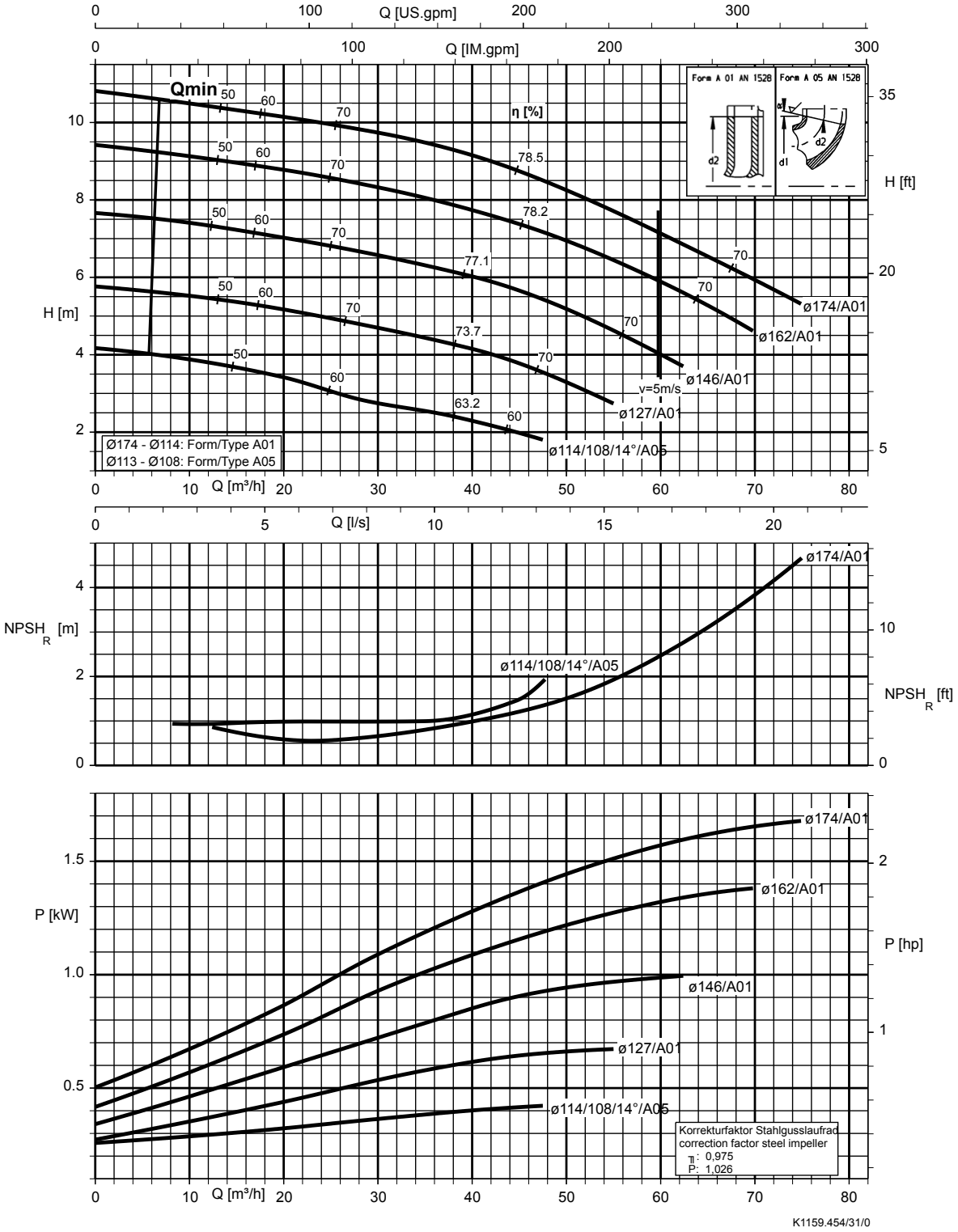
Etaline 50-50-160, n = 1450 rpm



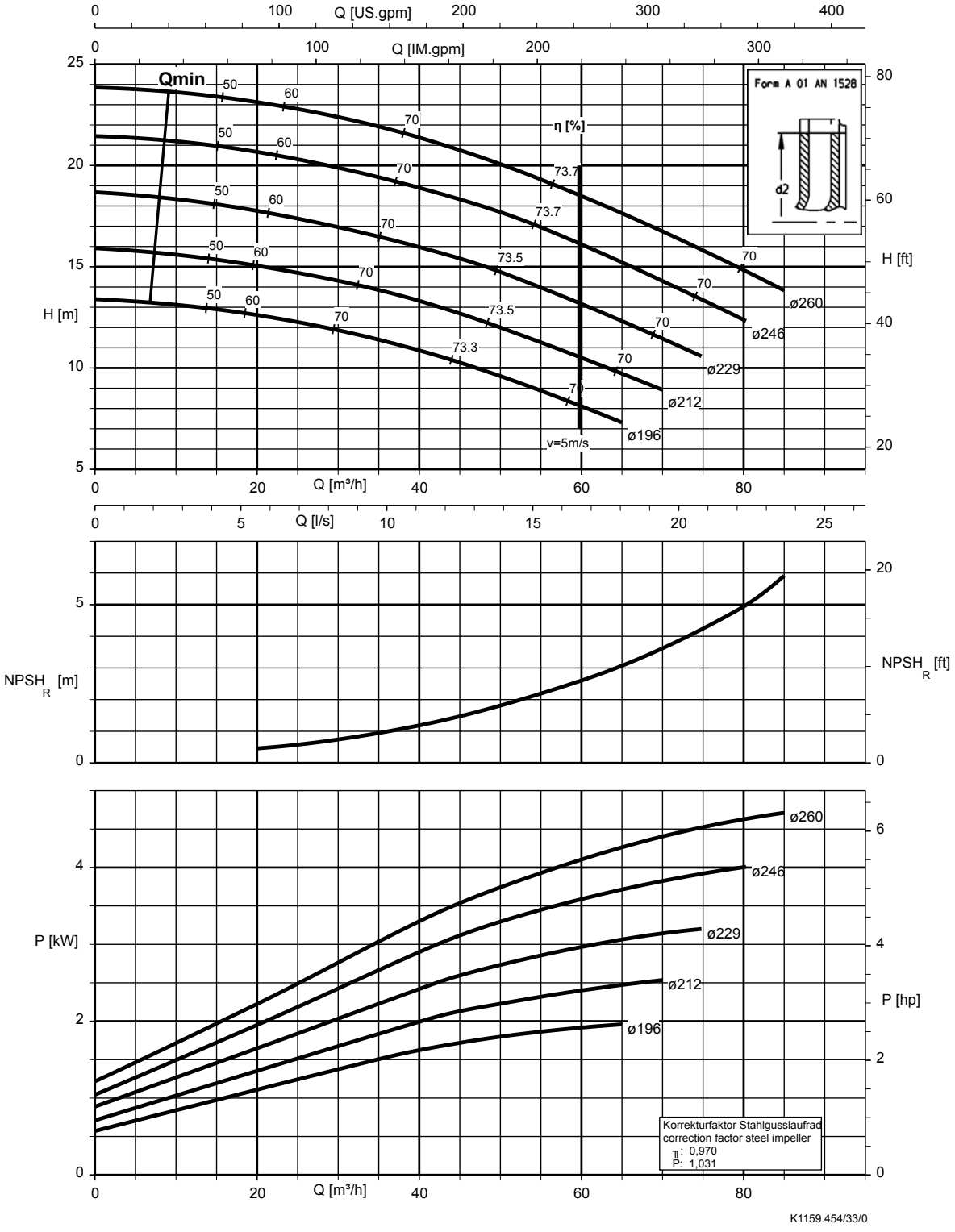
Etaline 50-50-250, n = 1450 rpm



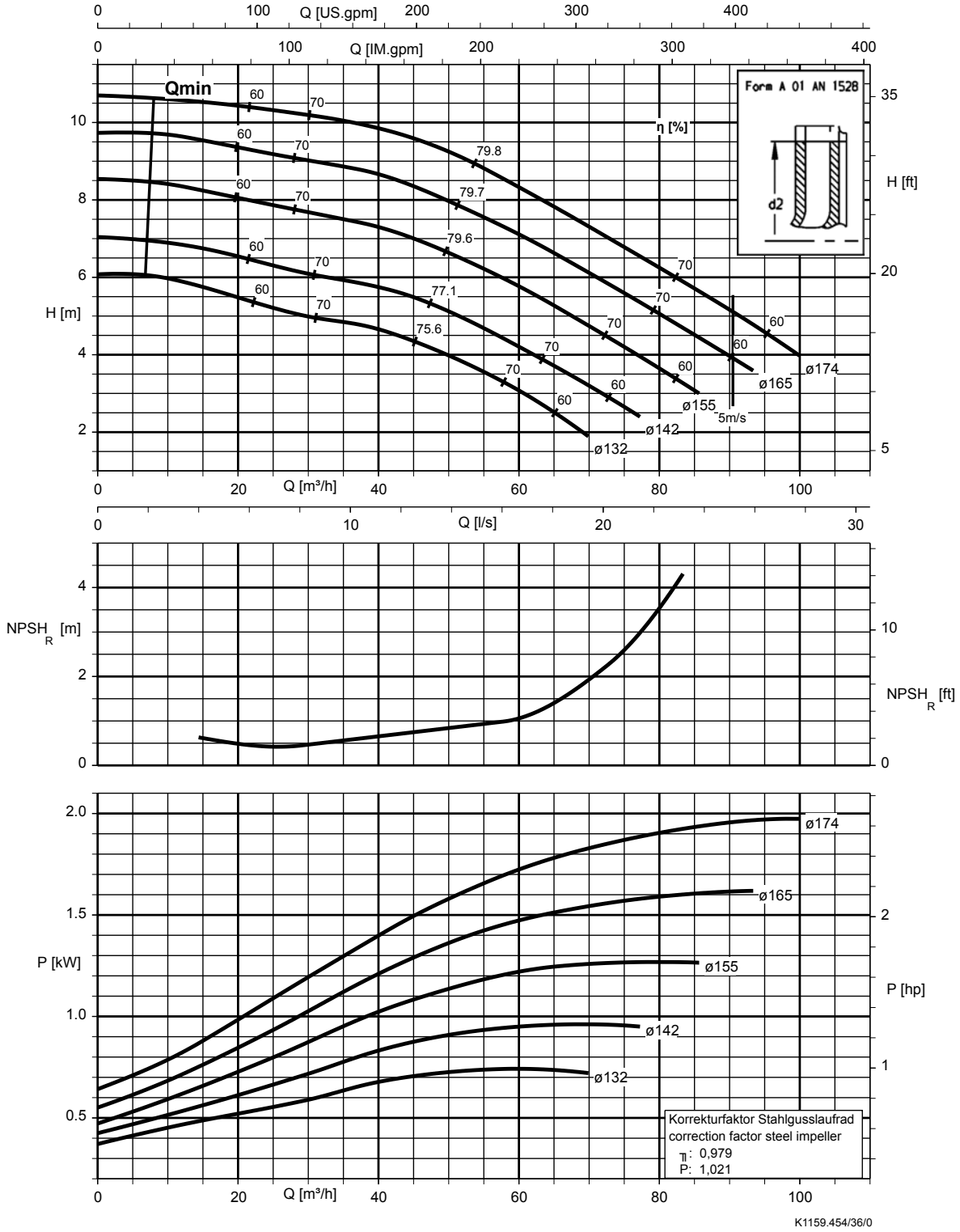
Etaline 65-65-160, n = 1450 rpm



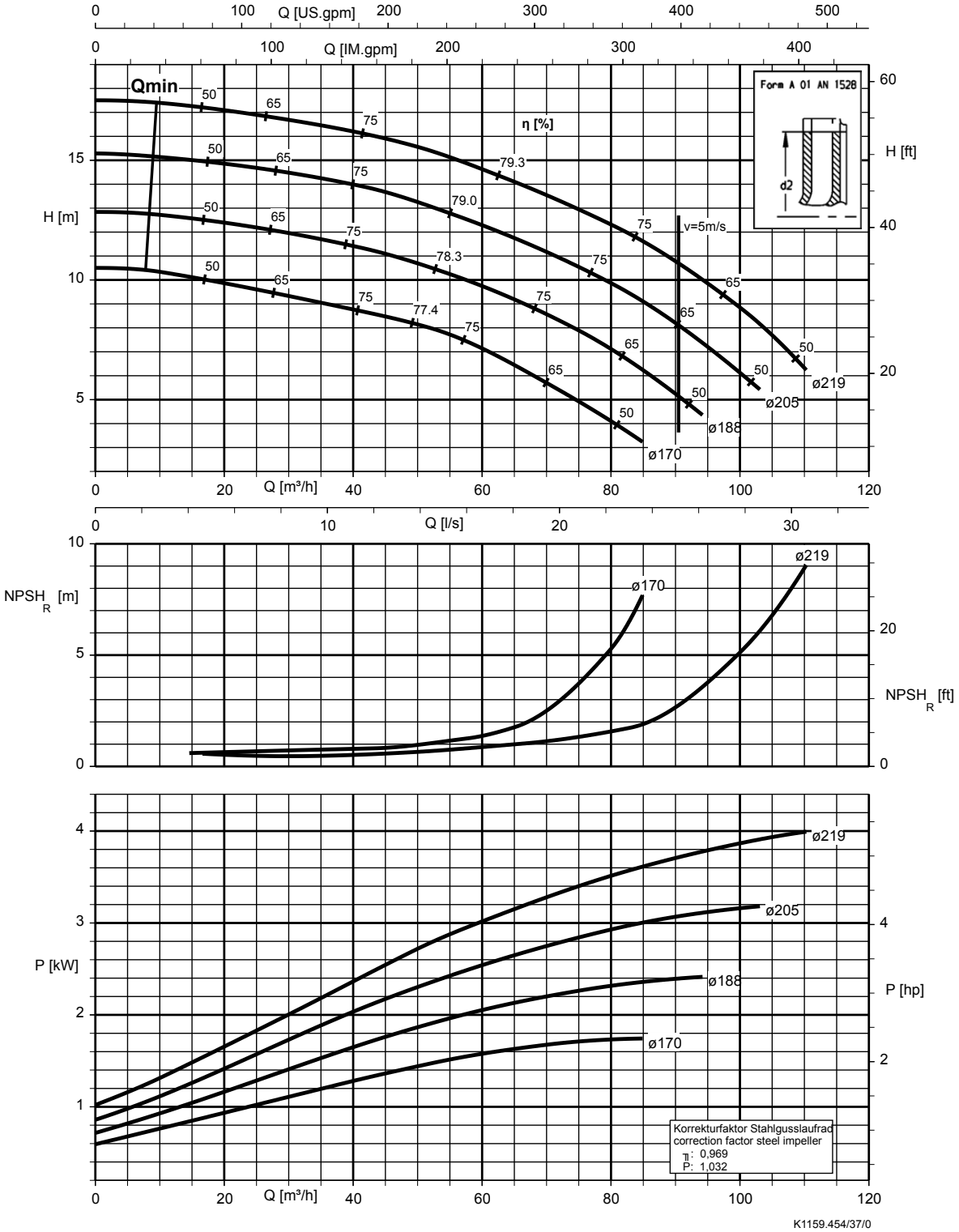
Etaline 65-65-250, n = 1450 rpm



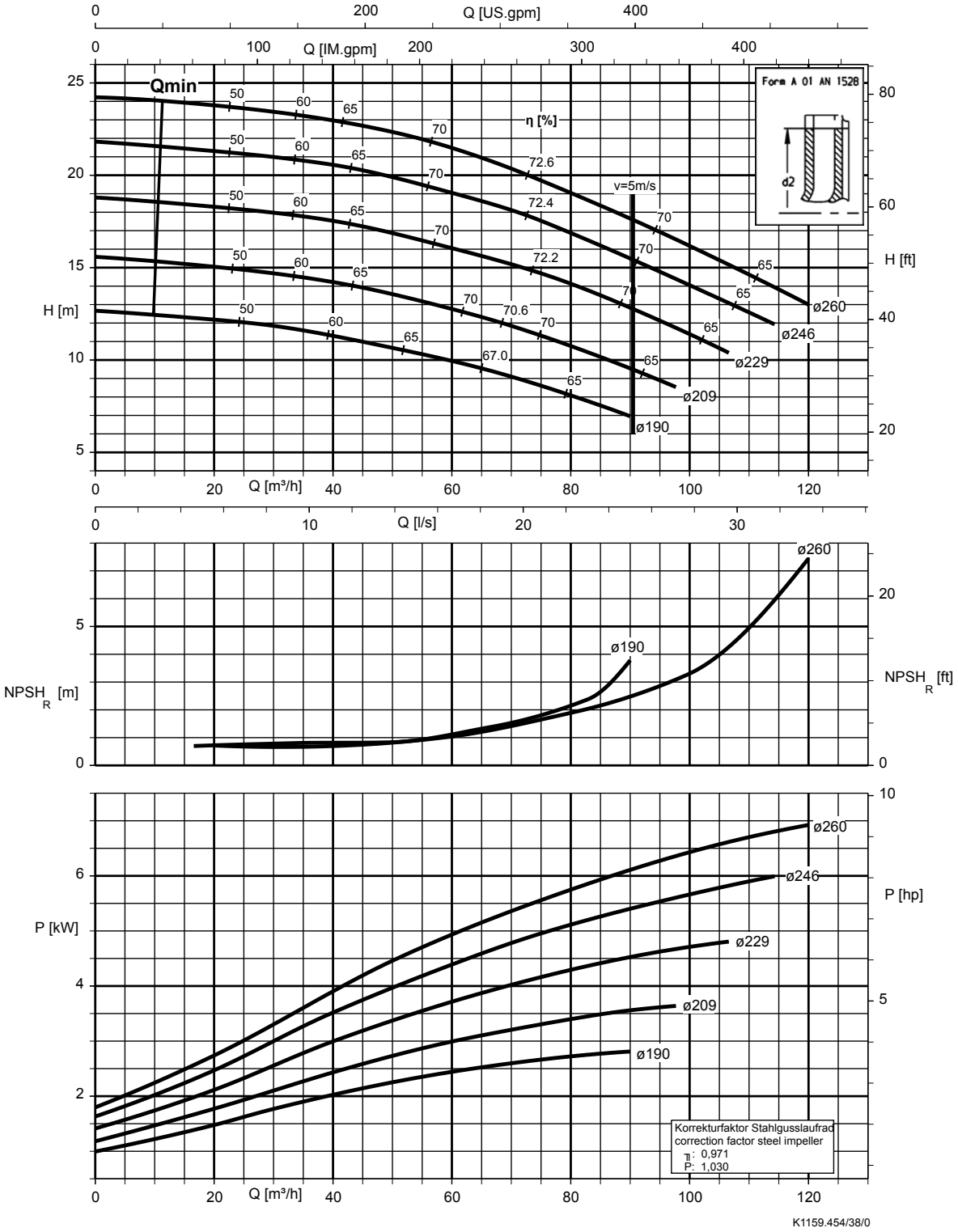
Etaline 80-80-160, n = 1450 rpm



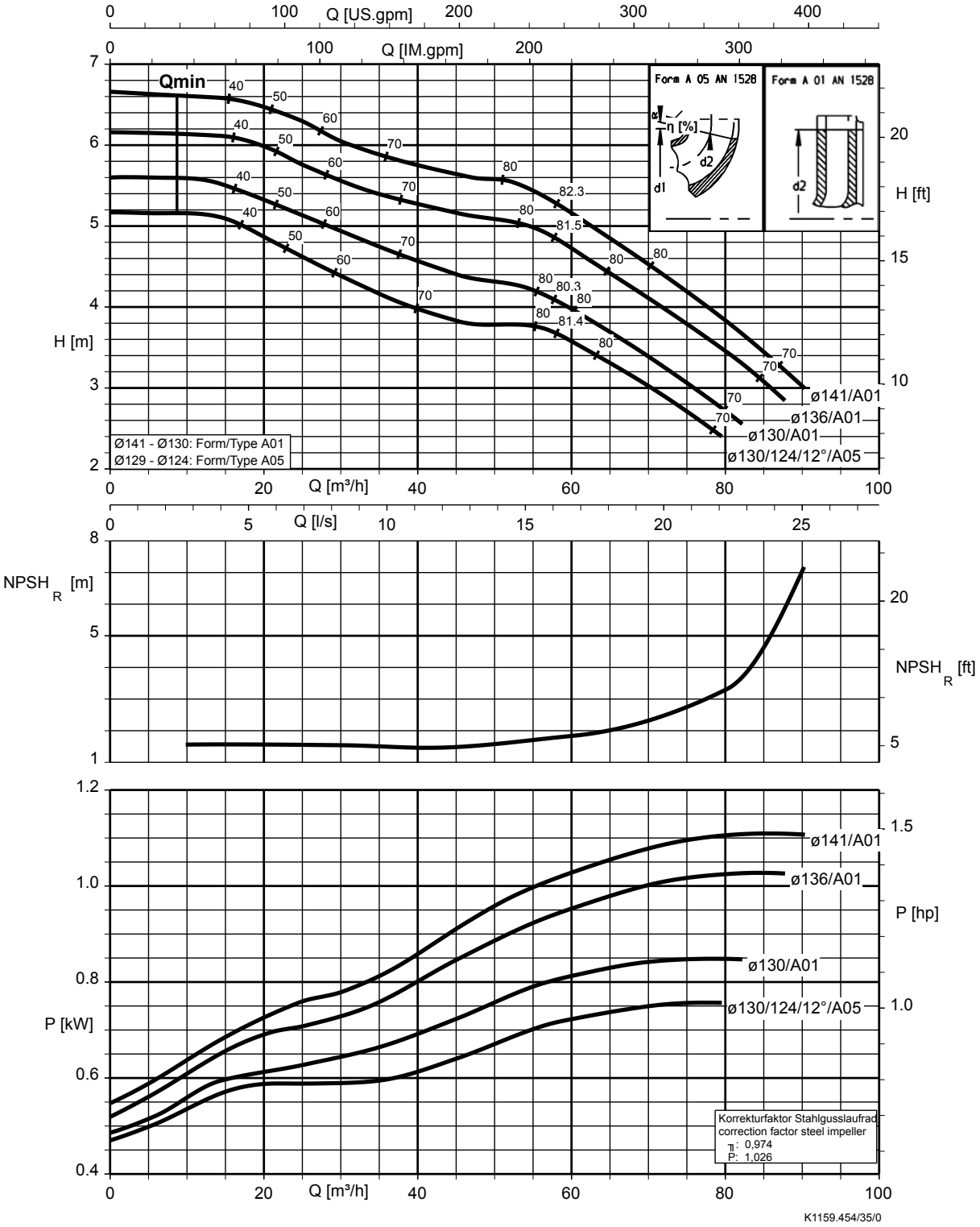
Etaline 80-80-200, n = 1450 rpm



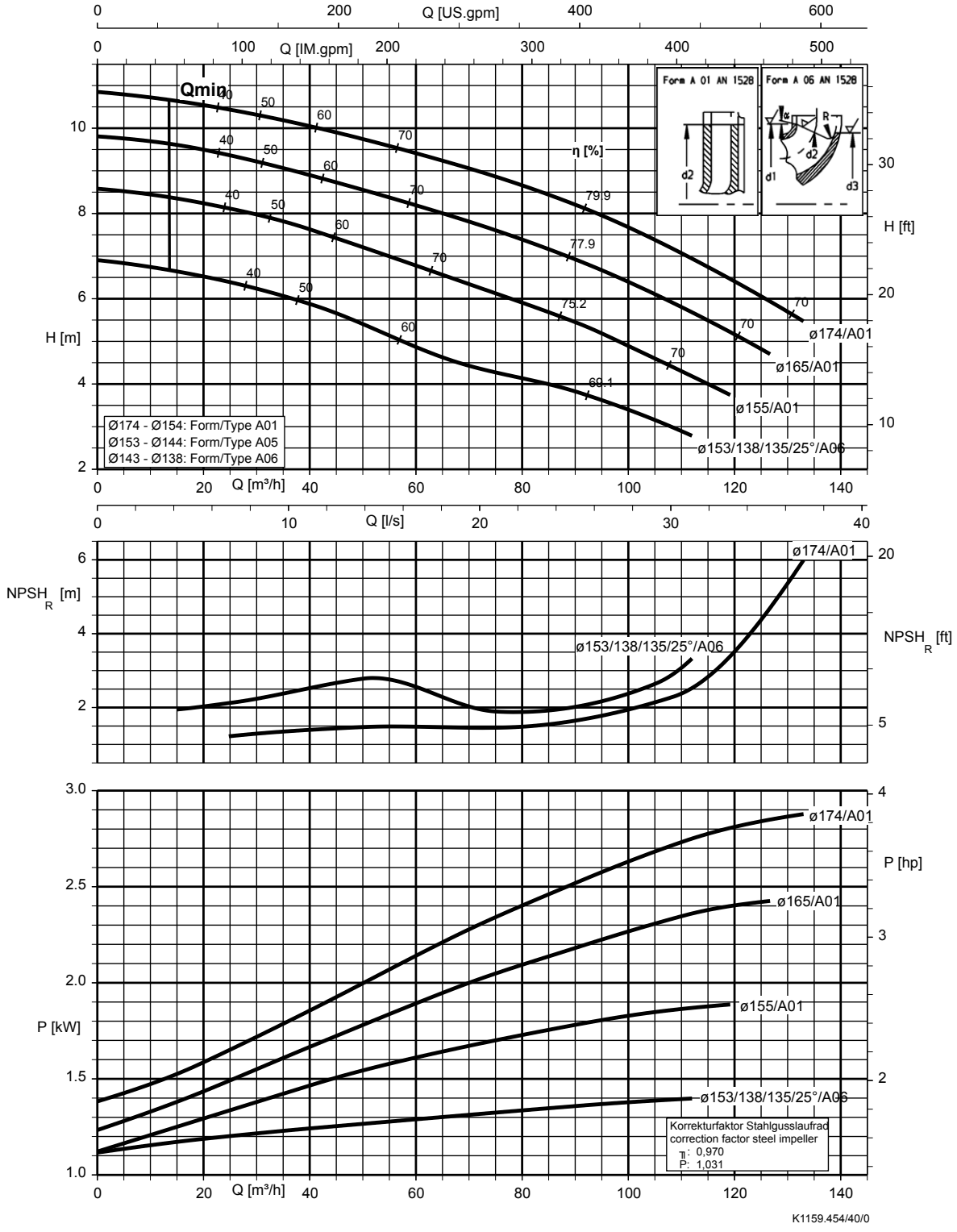
Etaline 80-80-250, n = 1450 rpm



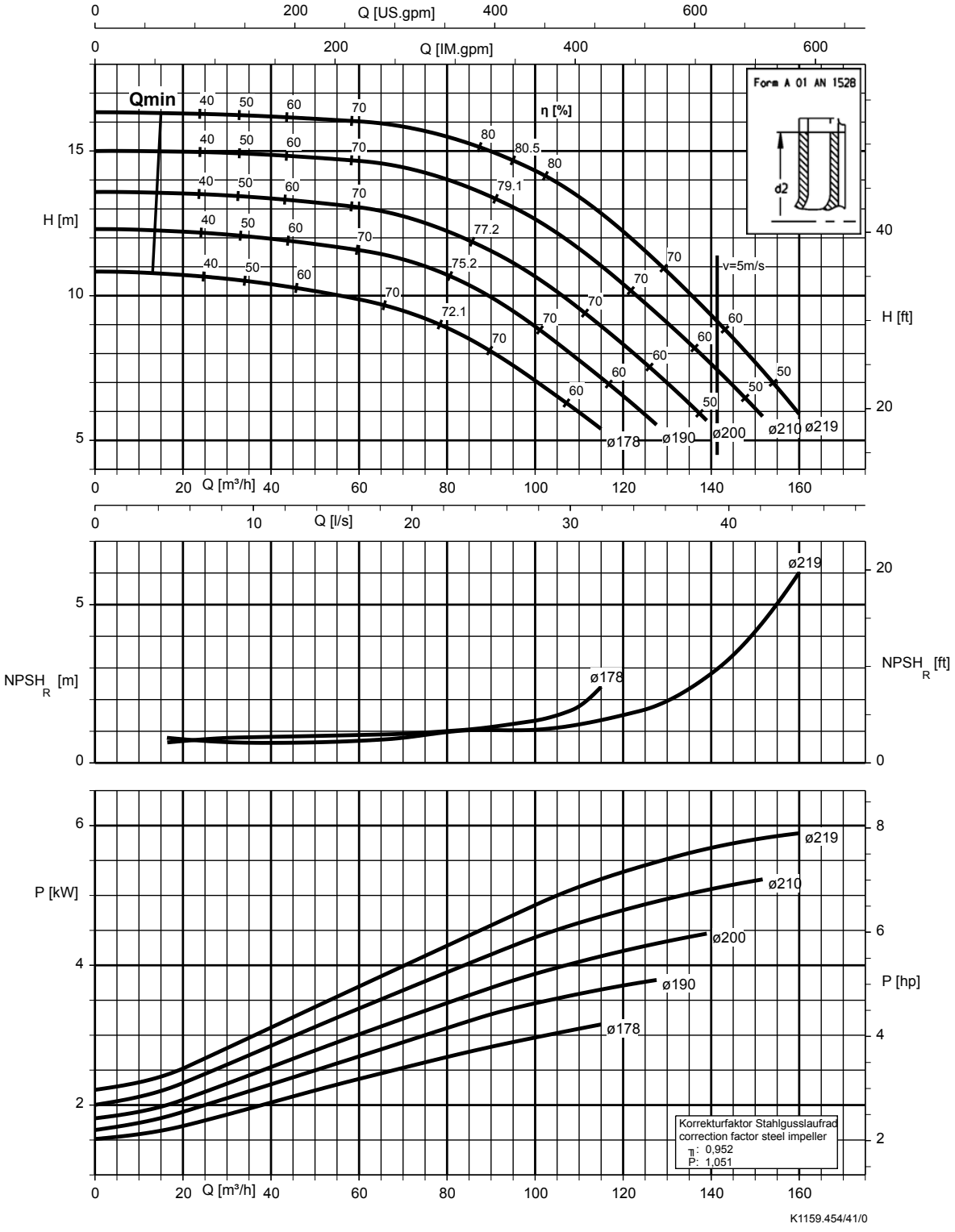
Etaline 100-100-125, n = 1450 rpm



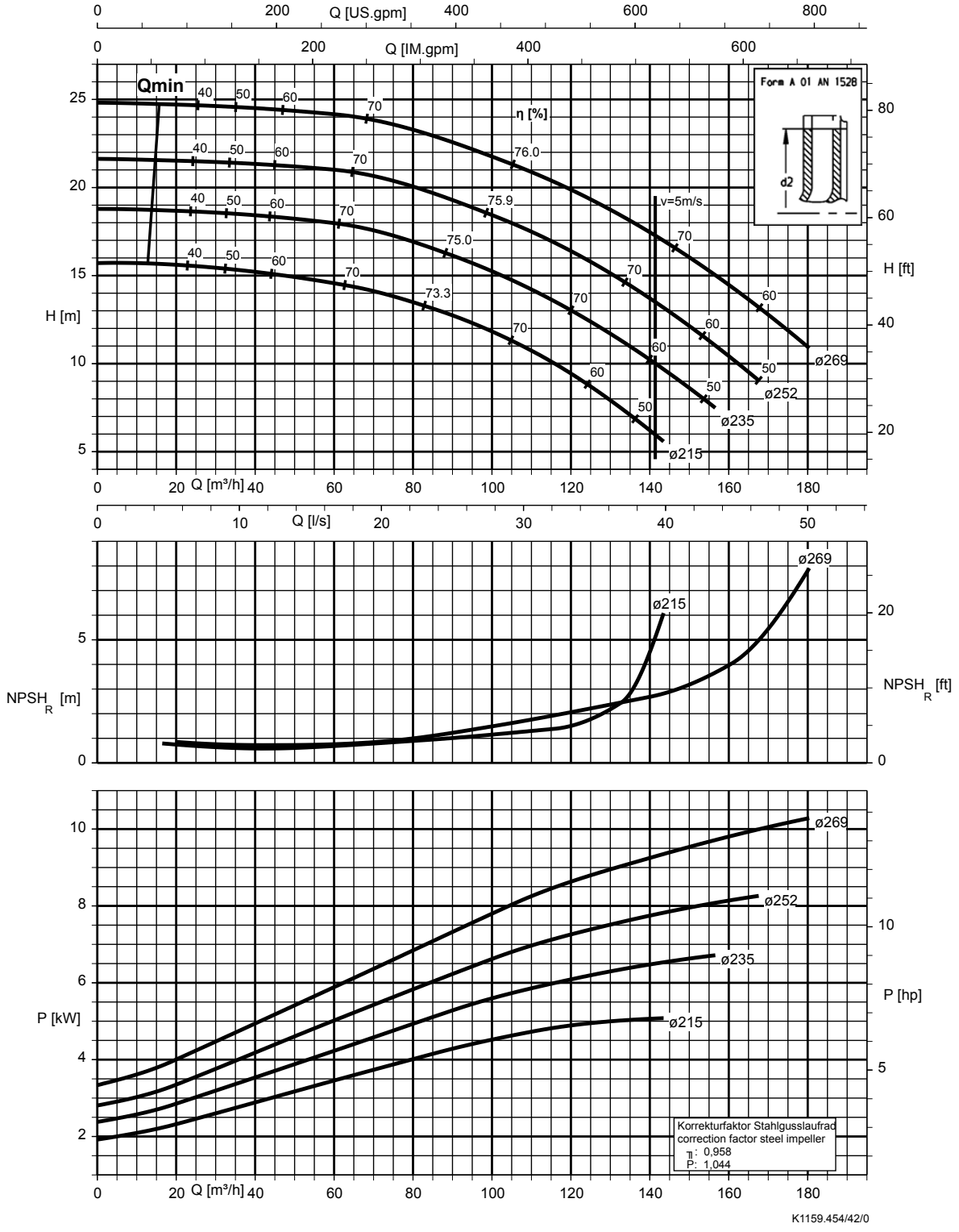
Etaline 100-100-160, n = 1450 rpm



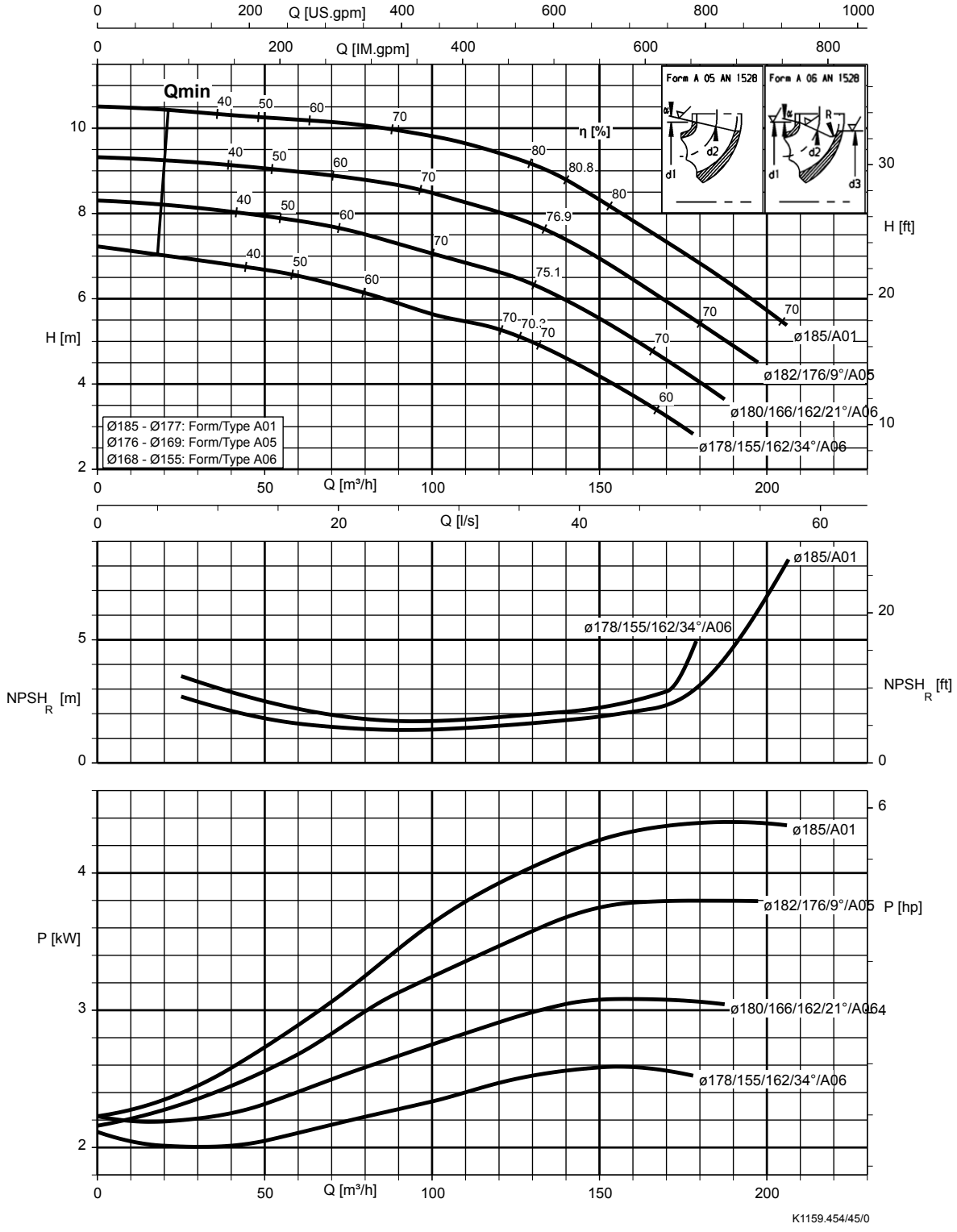
Etaline 100-100-200, n = 1450 rpm



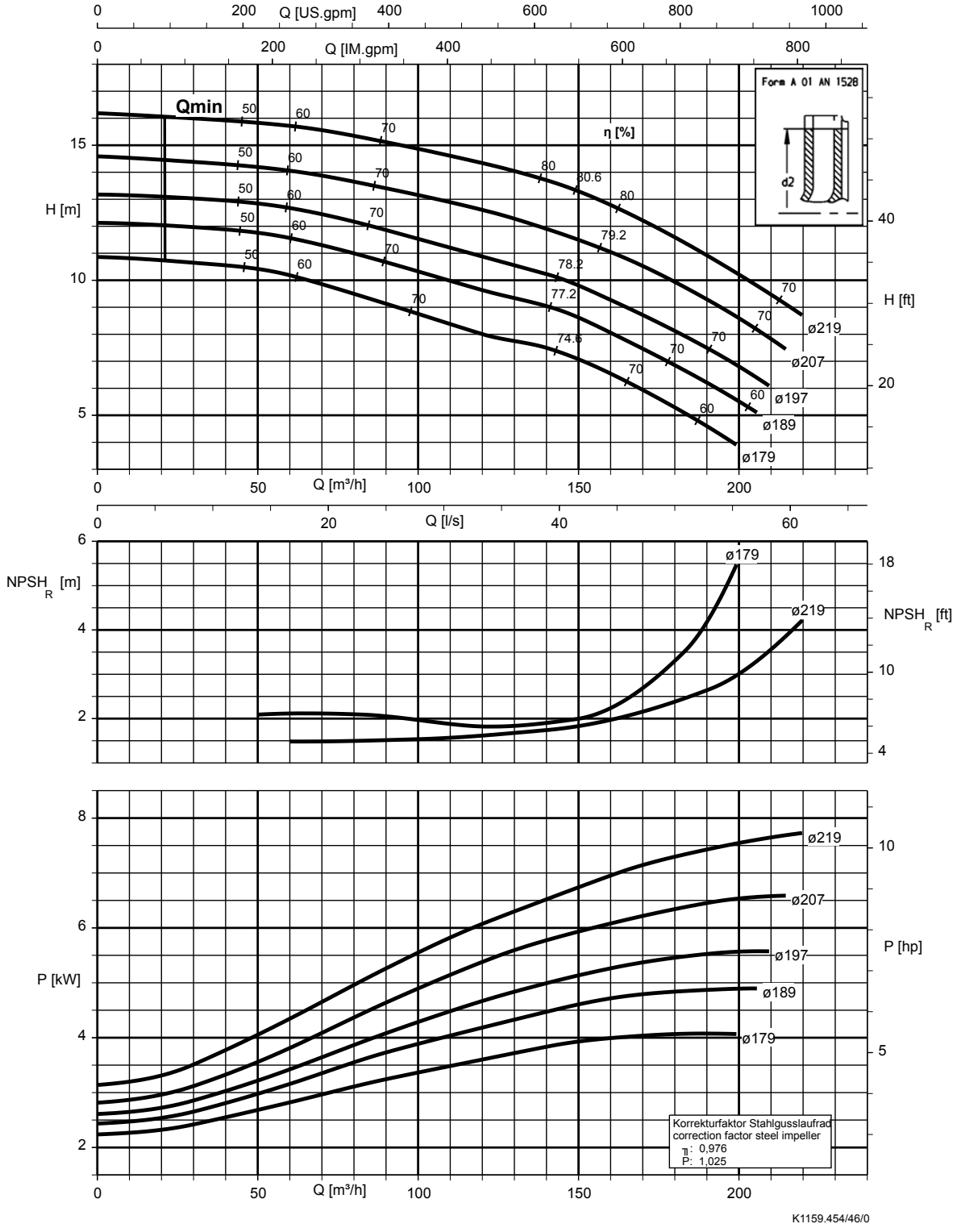
Etaline 100-100-250, n = 1450 rpm



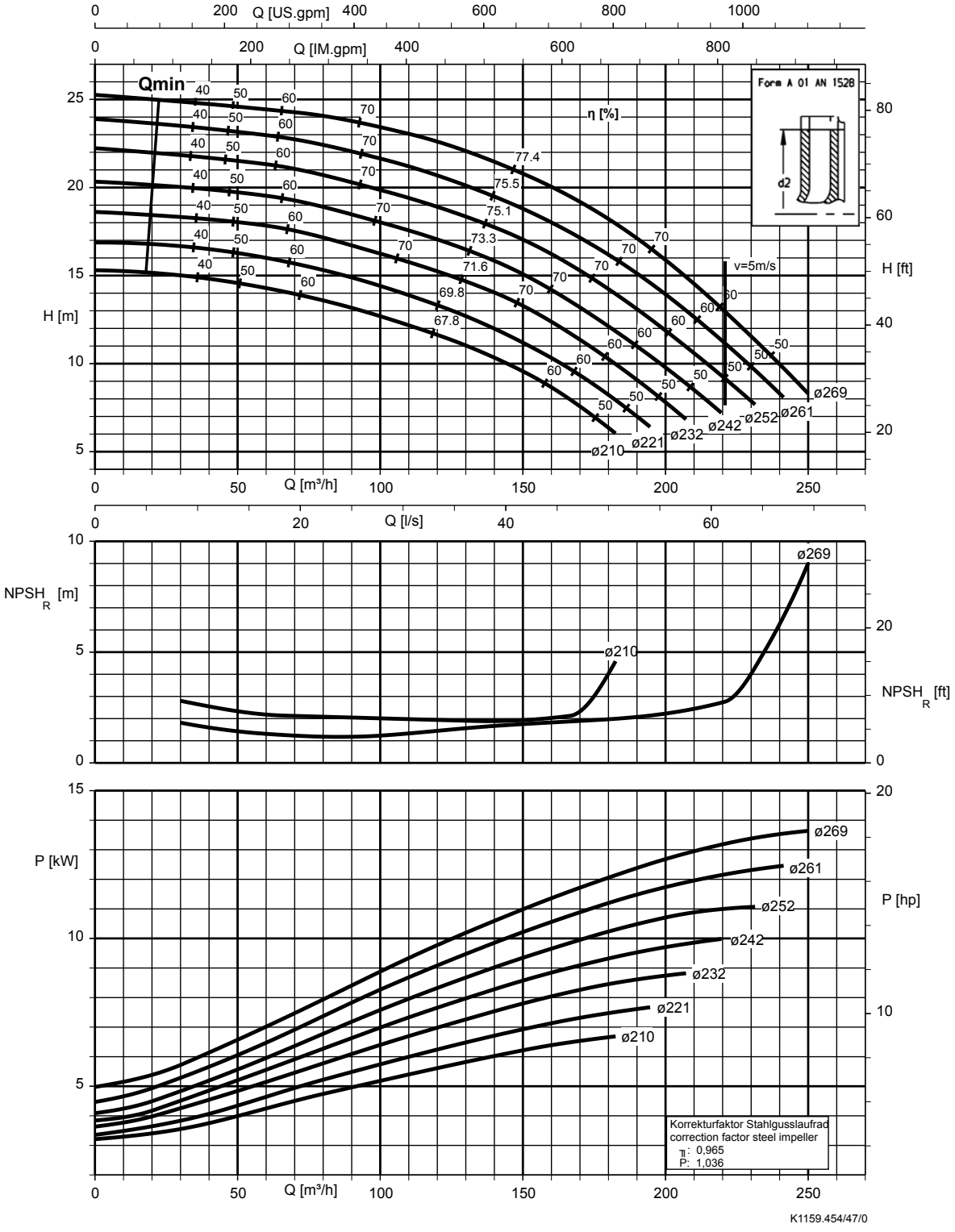
Etaline 125-125-160, n = 1450 rpm



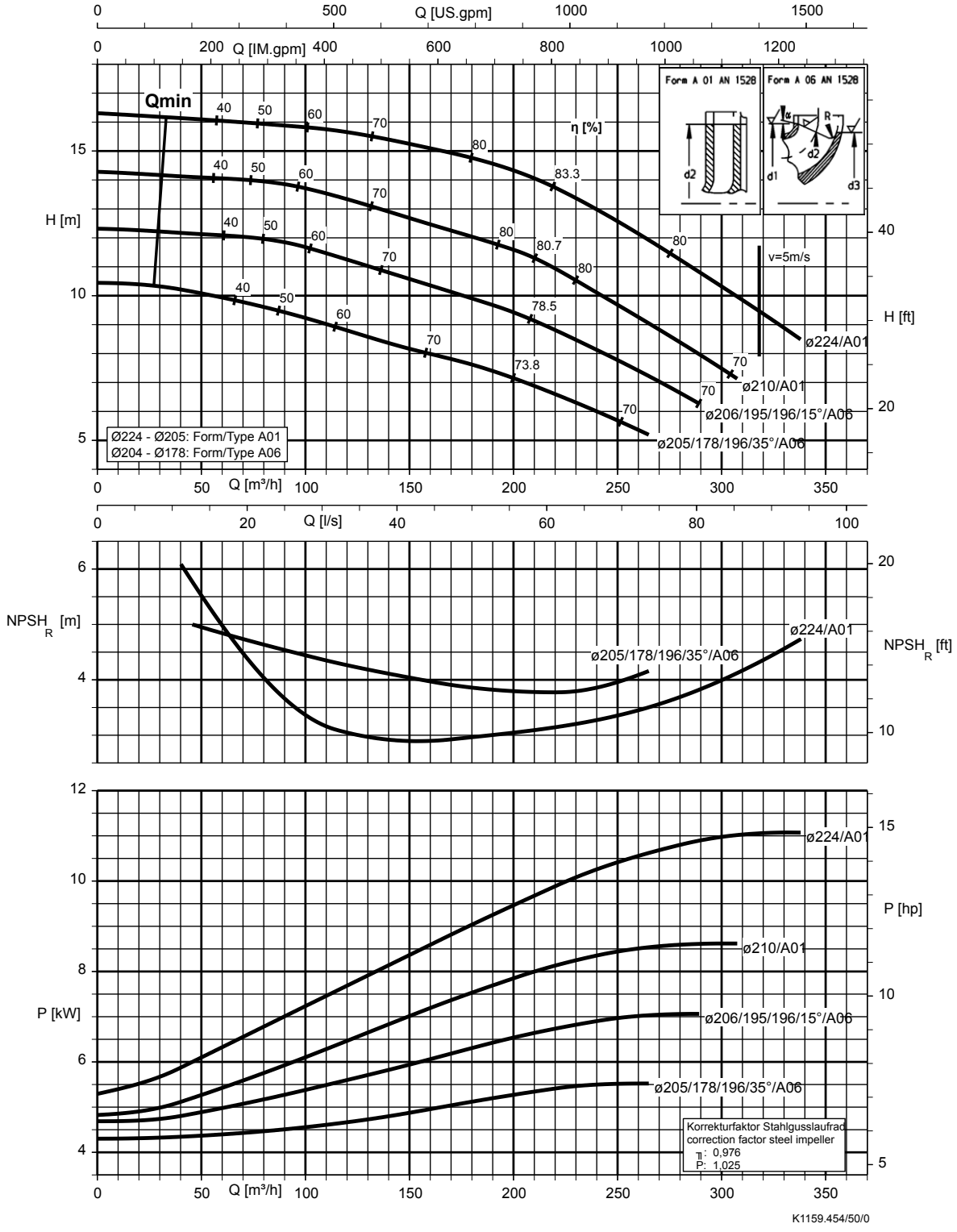
Etaline 125-125-200, n = 1450 rpm



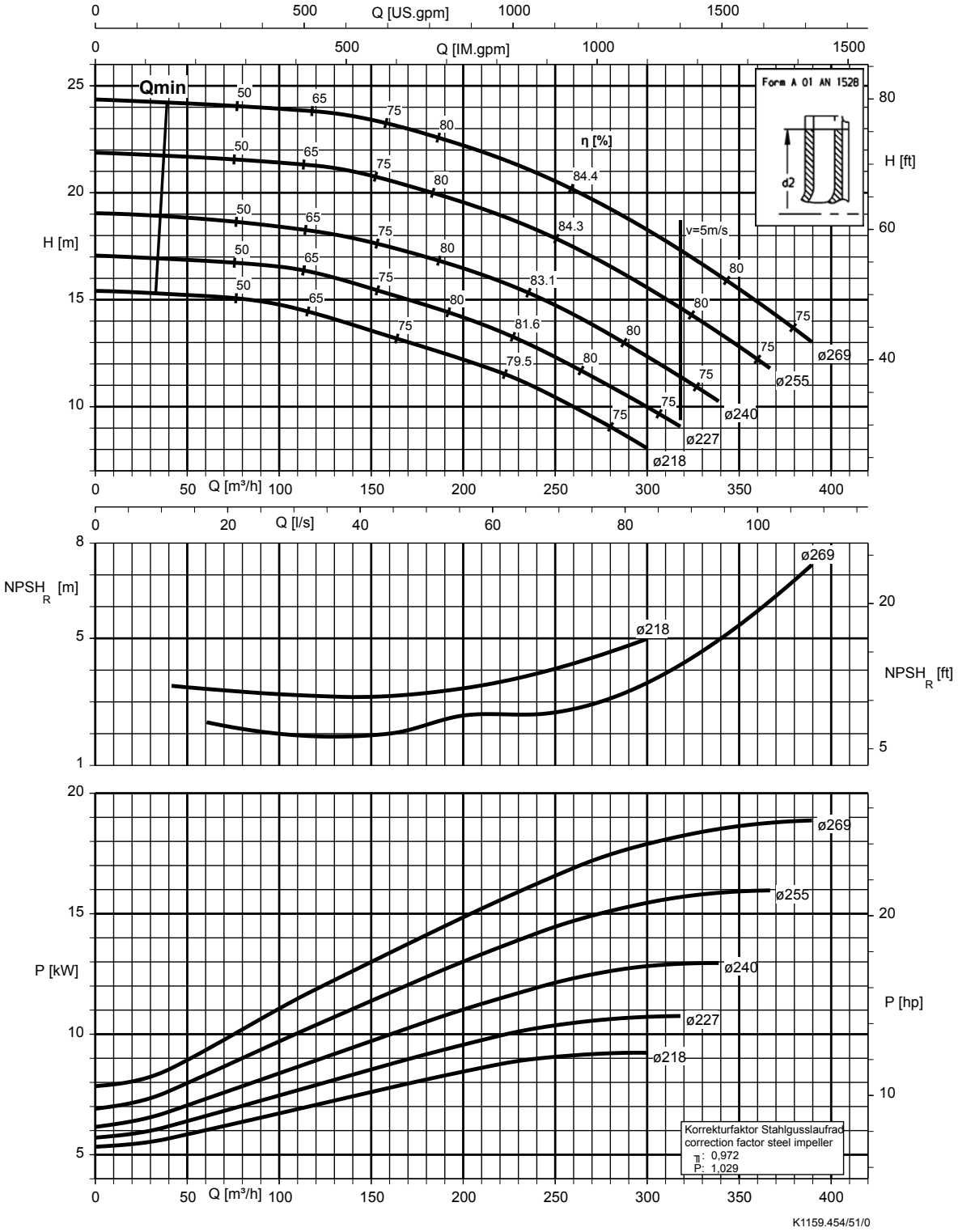
Etaline 125-125-250, n = 1450 rpm



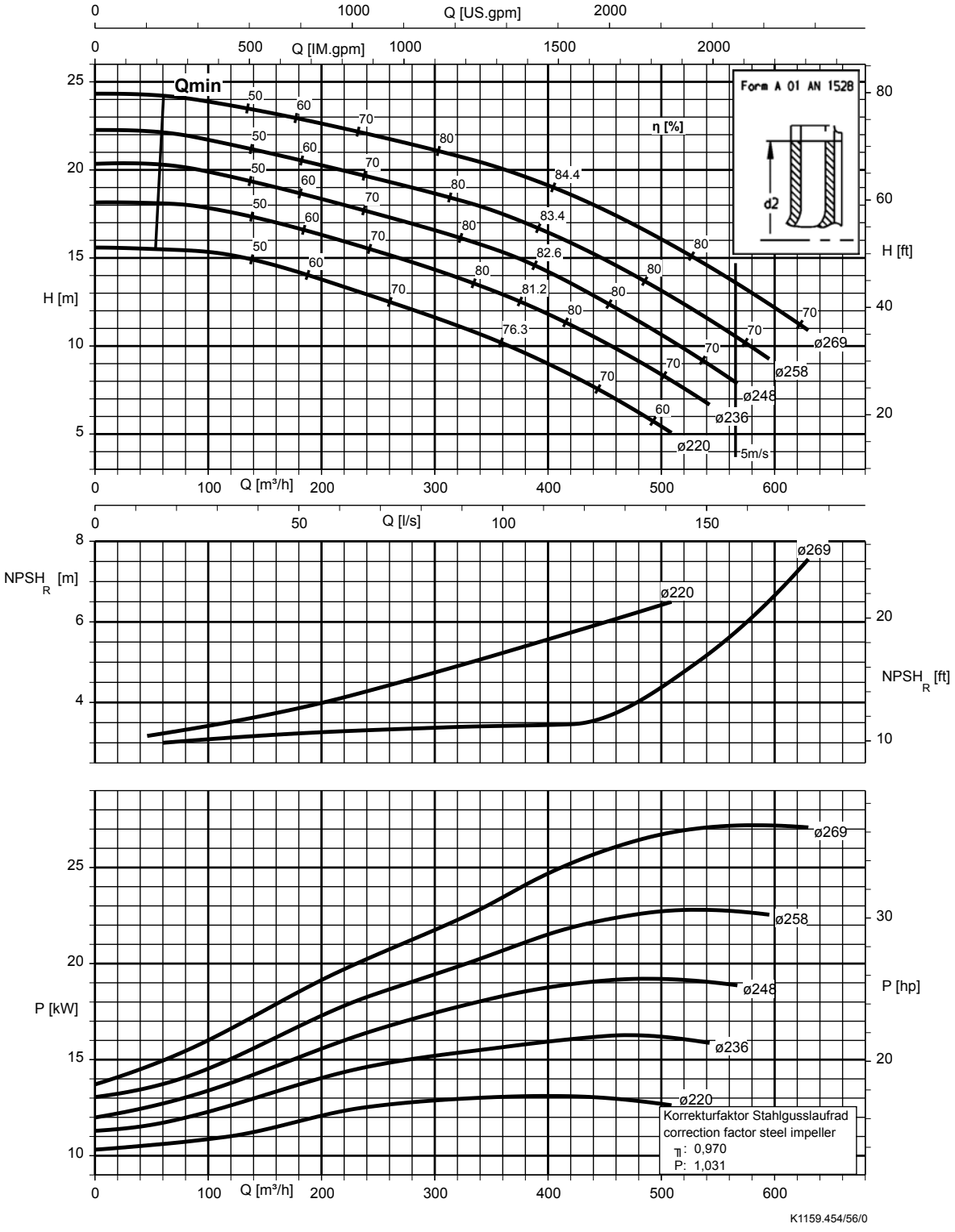
Etaline 150-150-200, n = 1450 rpm



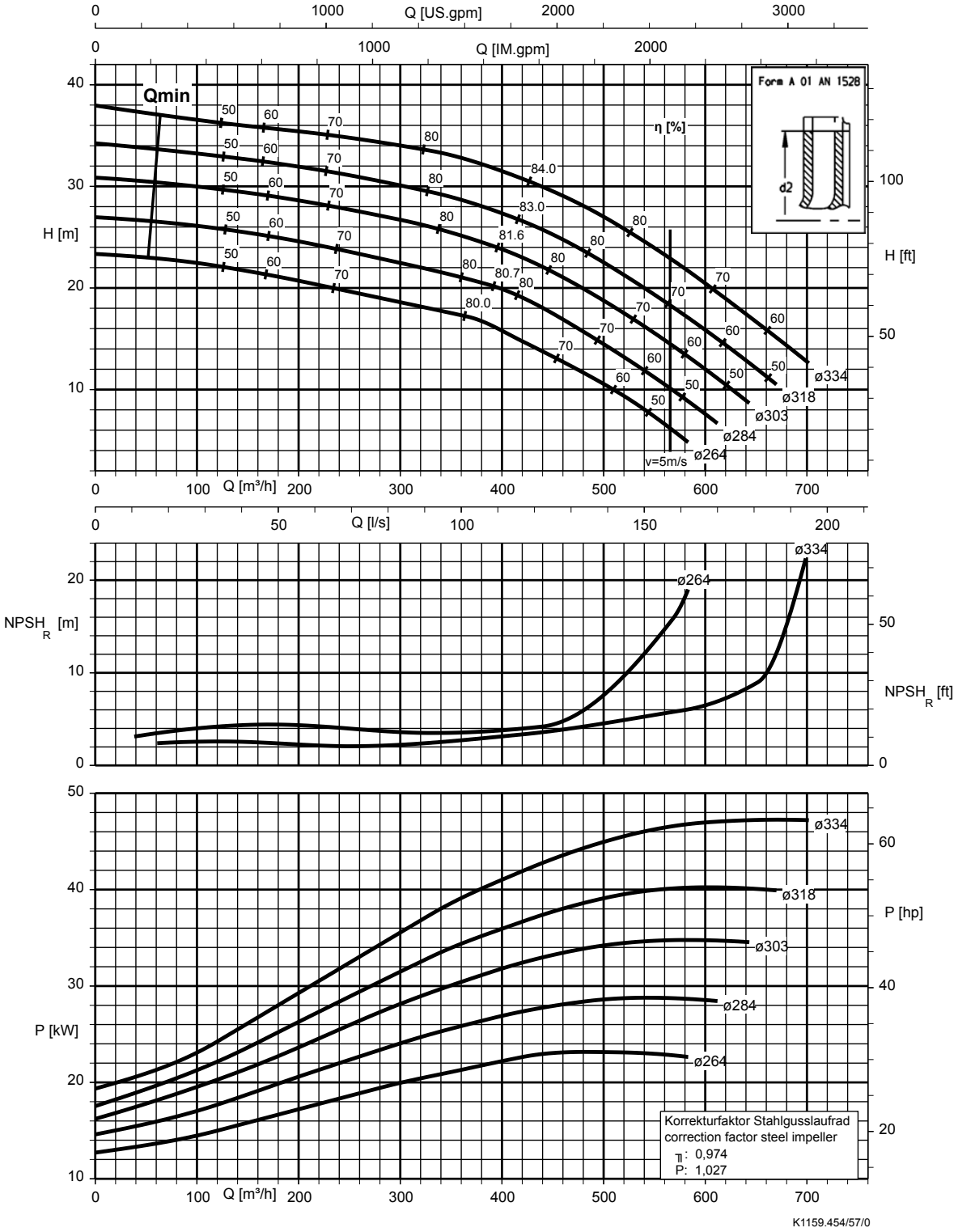
Etaline 150-150-250, n = 1450 rpm



Etaline 200-200-250, n = 1450 rpm

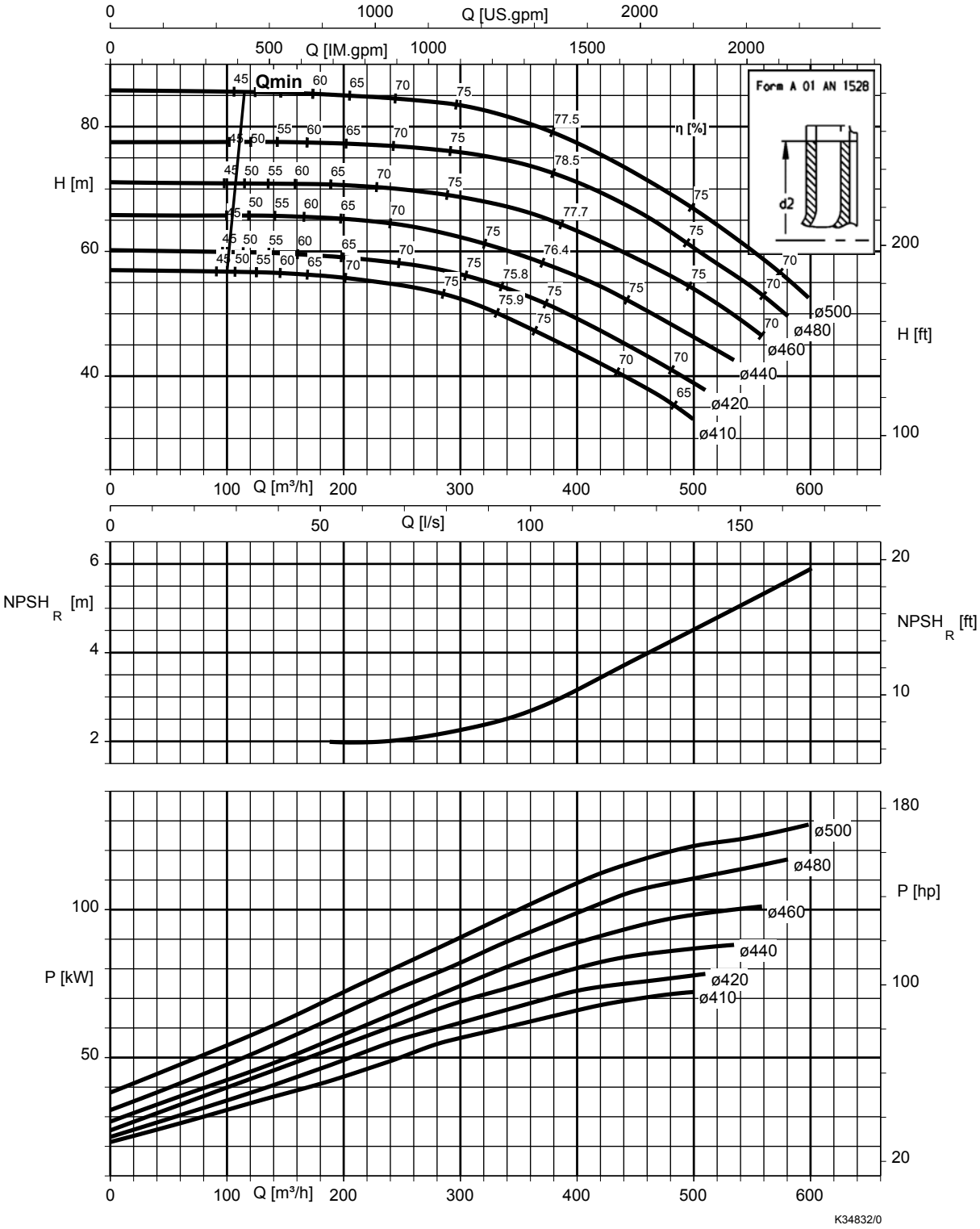


Etaline 200-200-315, n = 1450 rpm

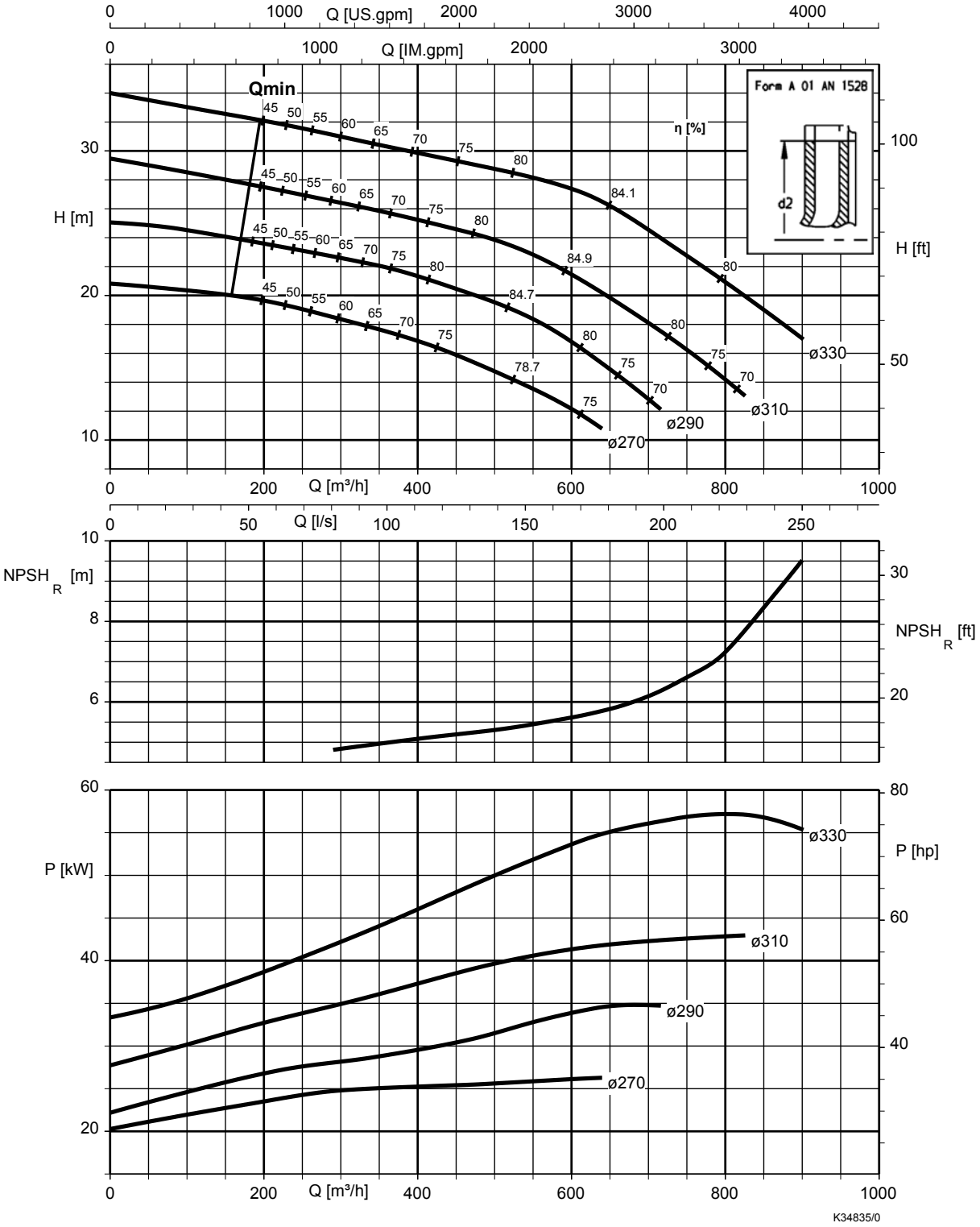


Etaline-R, n = 1450 rpm

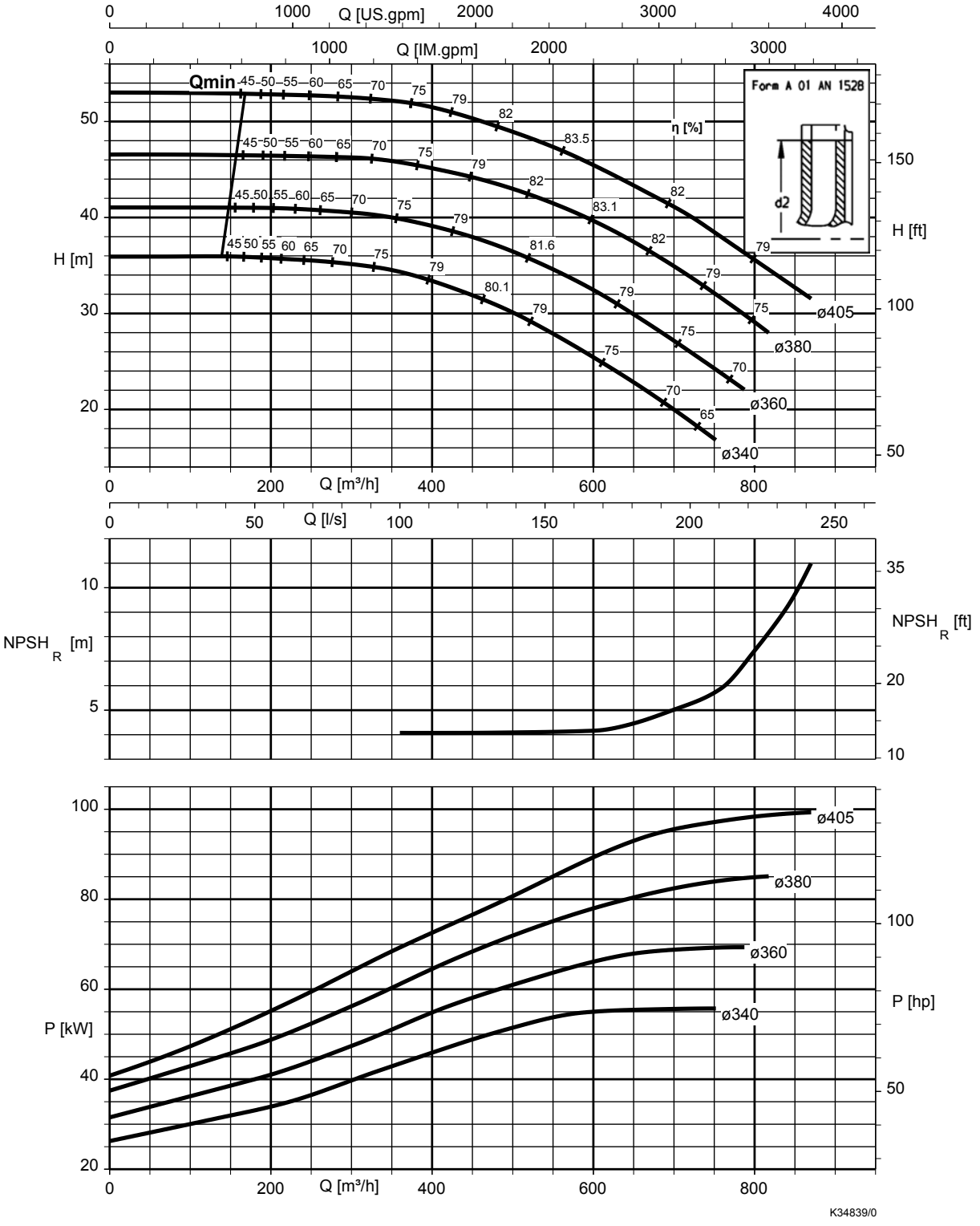
Etaline-R 150-500, n = 1450 rpm



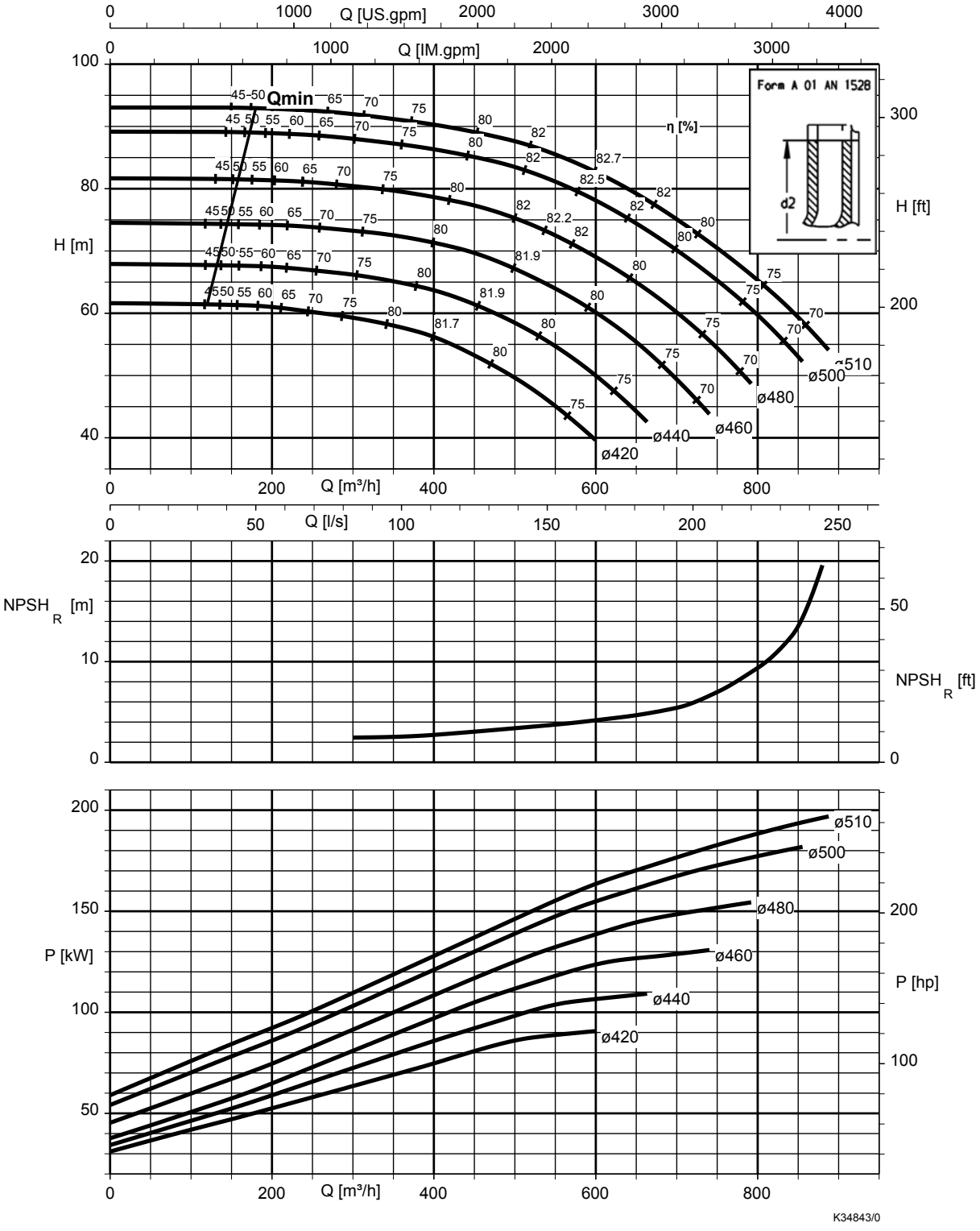
Etaline-R 200-330, n = 1450 rpm



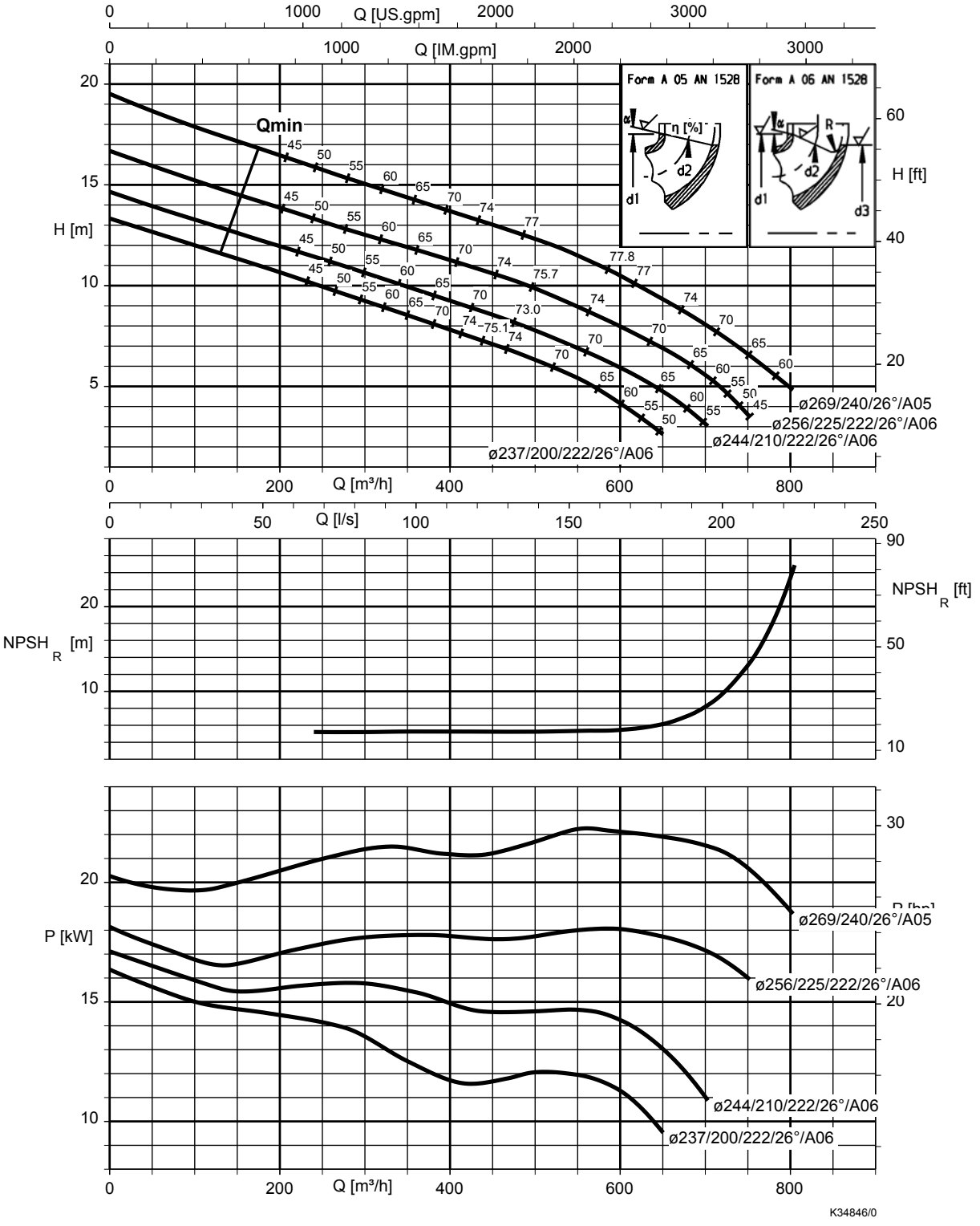
Etaline-R 200-400, n = 1450 rpm



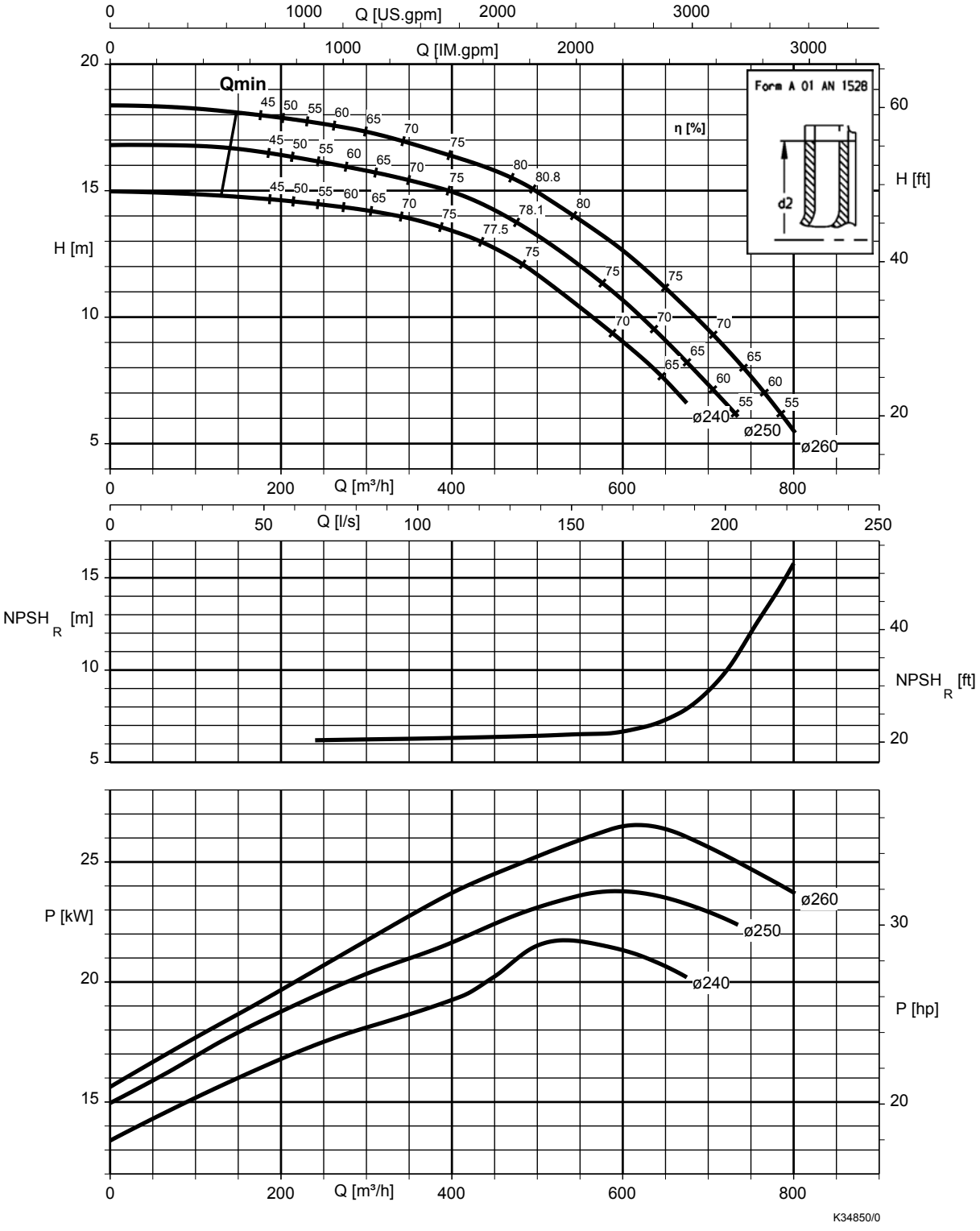
Etaline-R 200-500, n = 1450 rpm



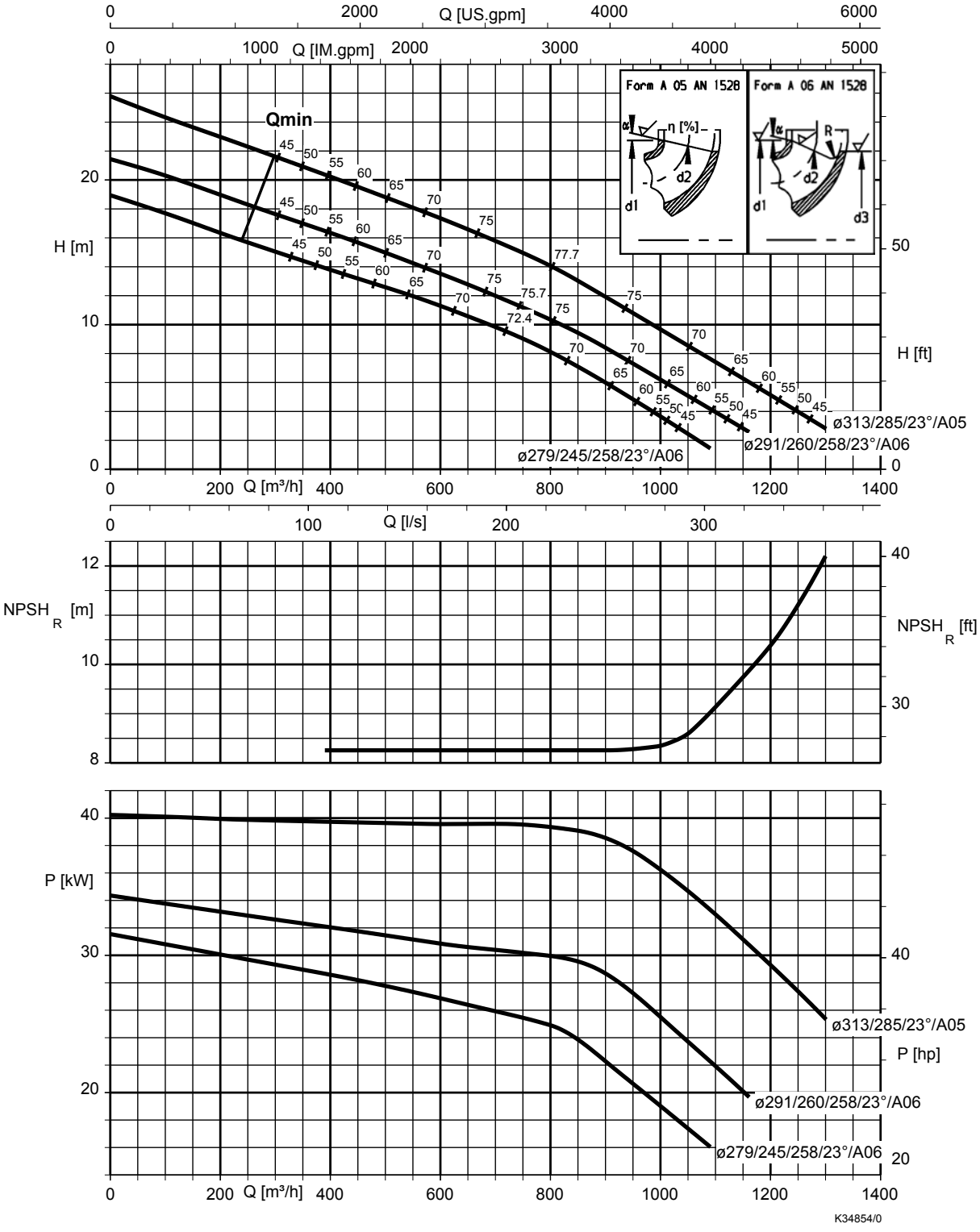
Etaline-R 250-250, n = 1450 rpm



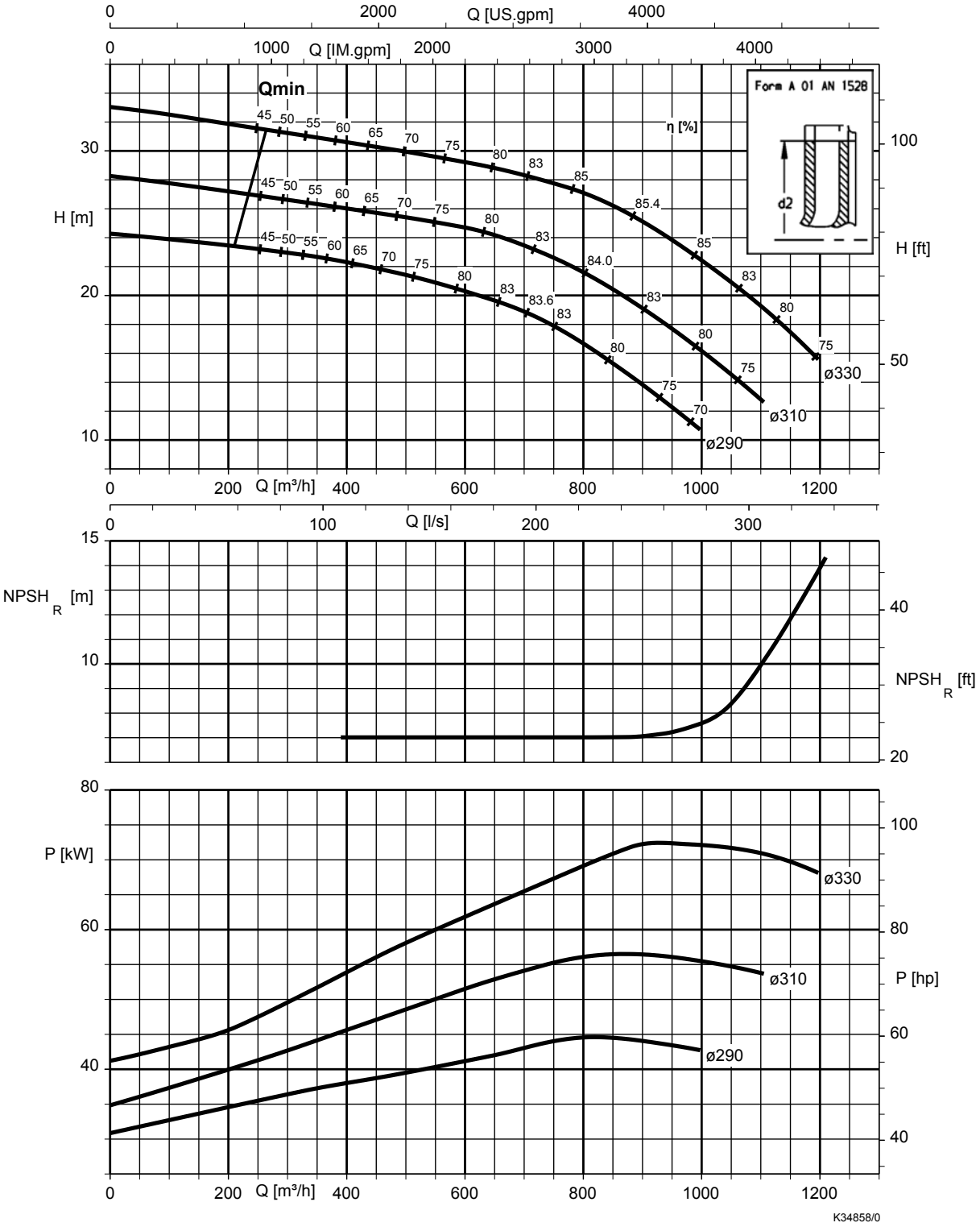
Etaline-R 250-260, n = 1450 rpm



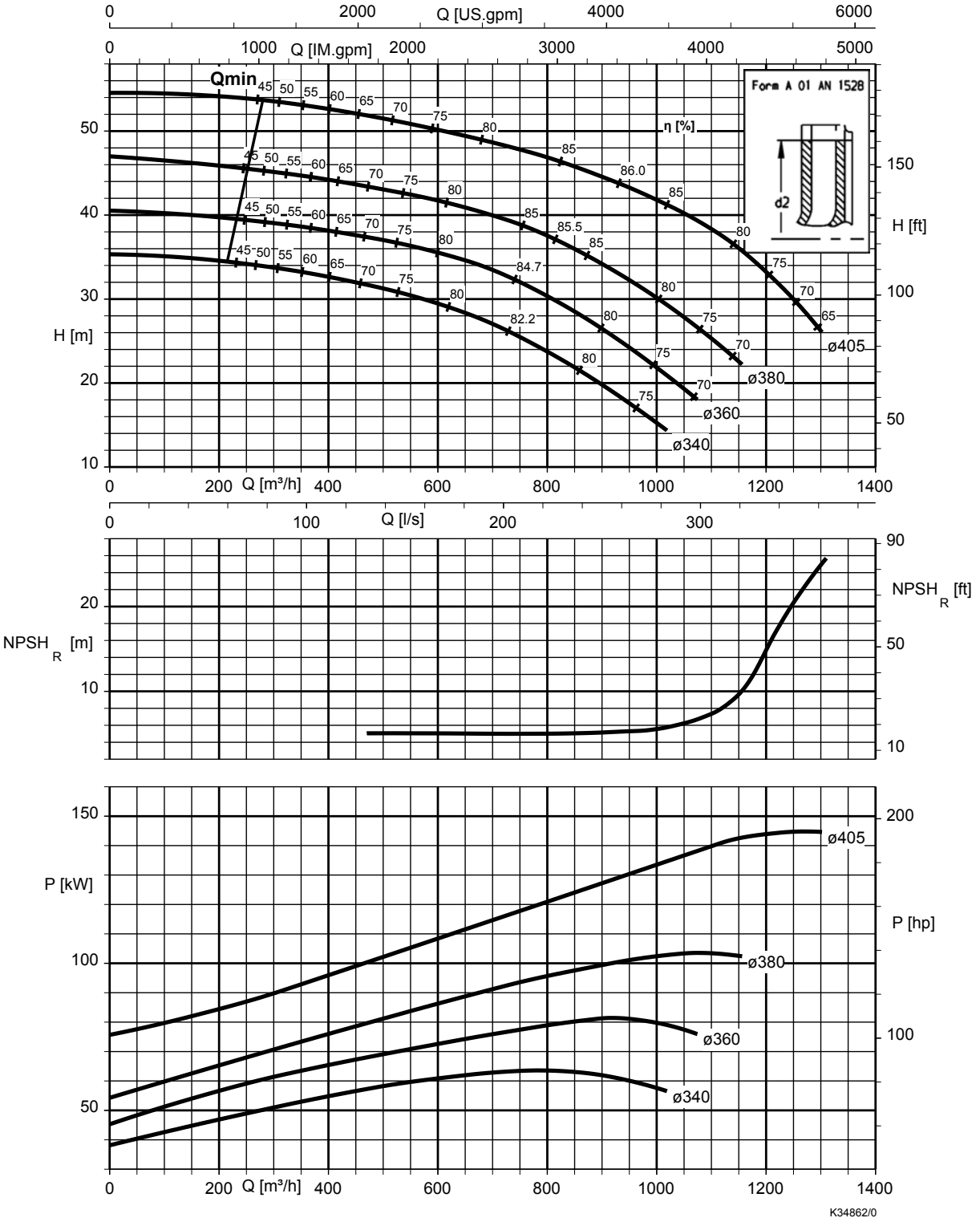
Etaline-R 250-300, n = 1450 rpm



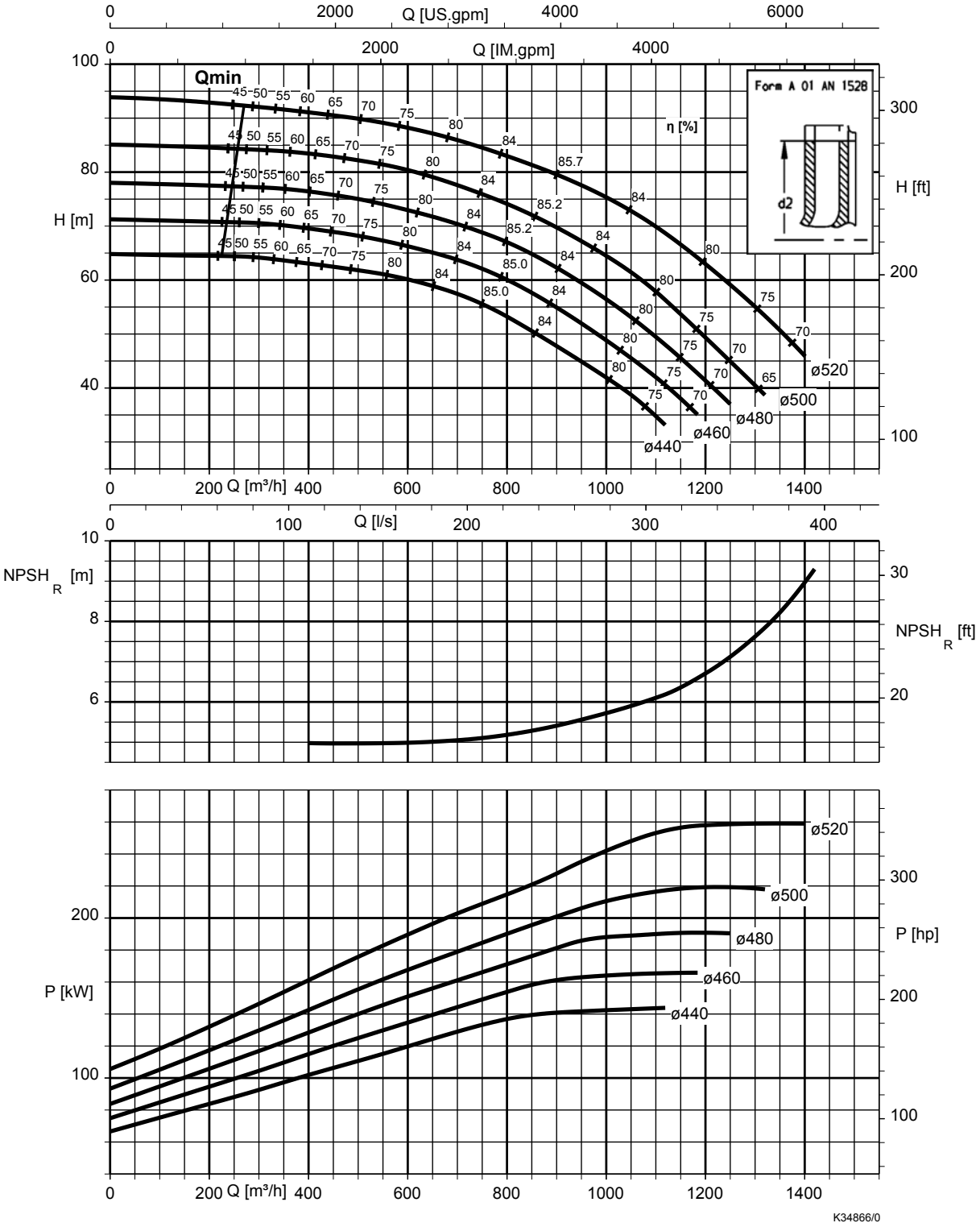
Etaline-R 250-330, n = 1450 rpm



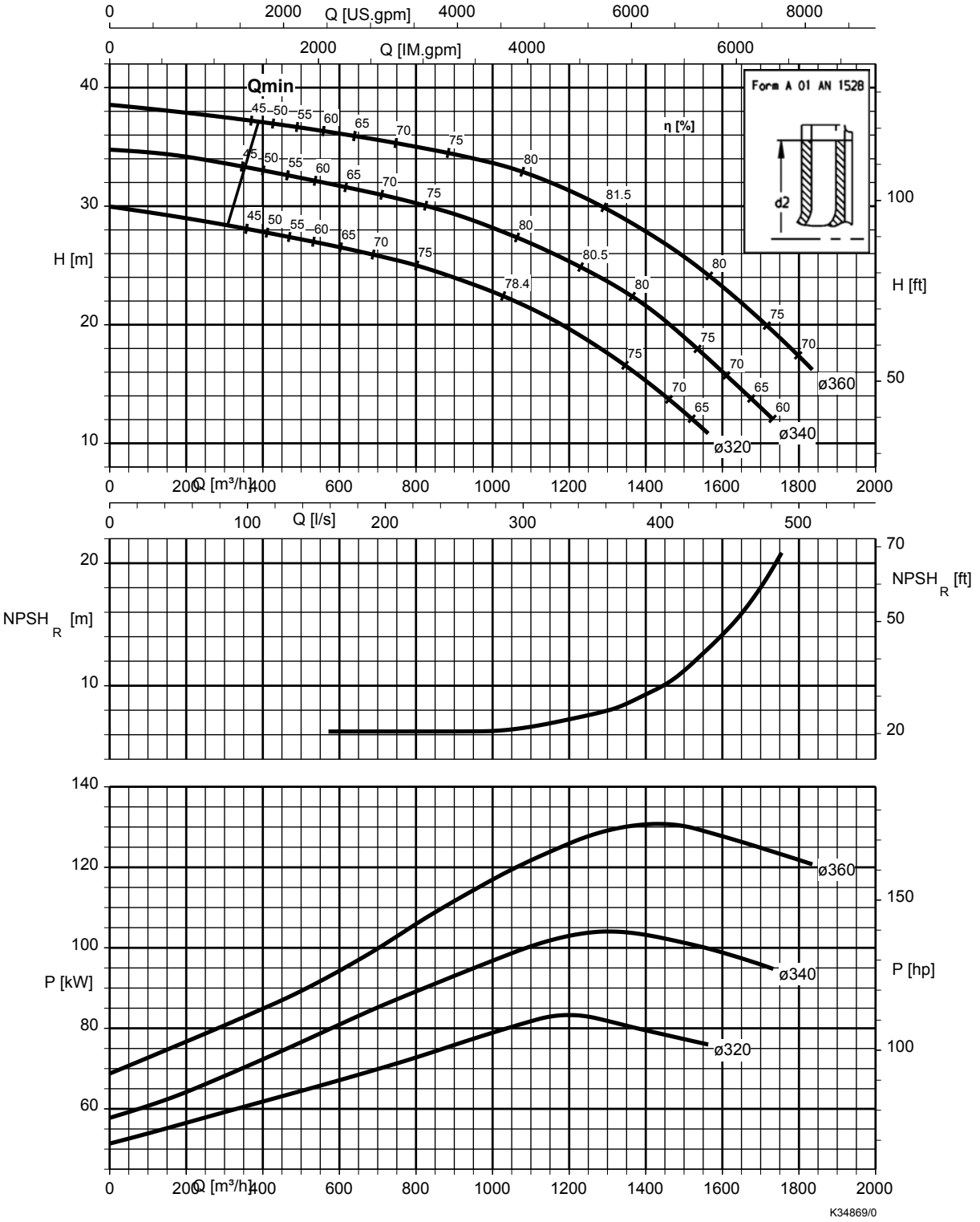
Etaline-R 250-400, n = 1450 rpm



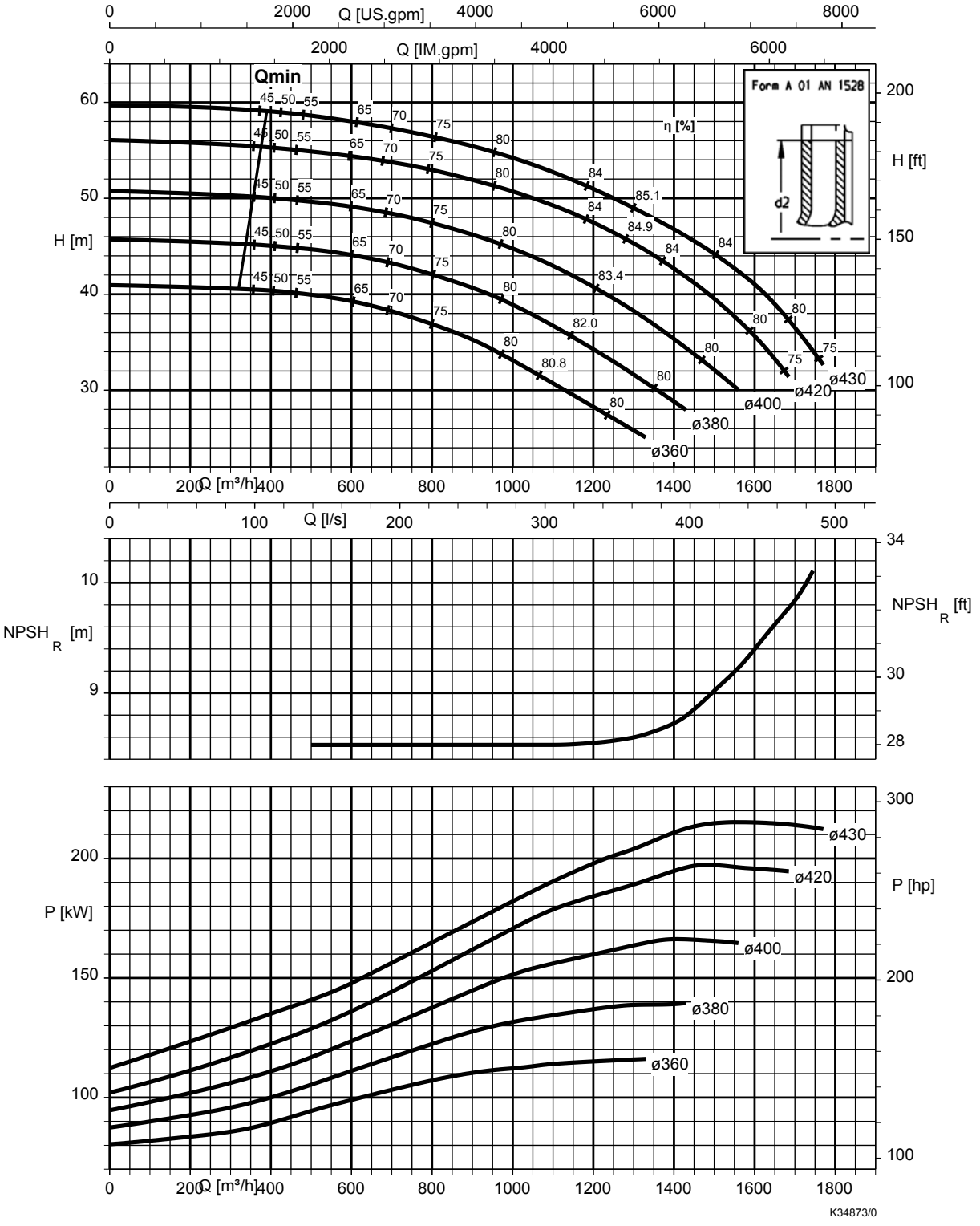
Etaline-R 250-500, n = 1450 rpm



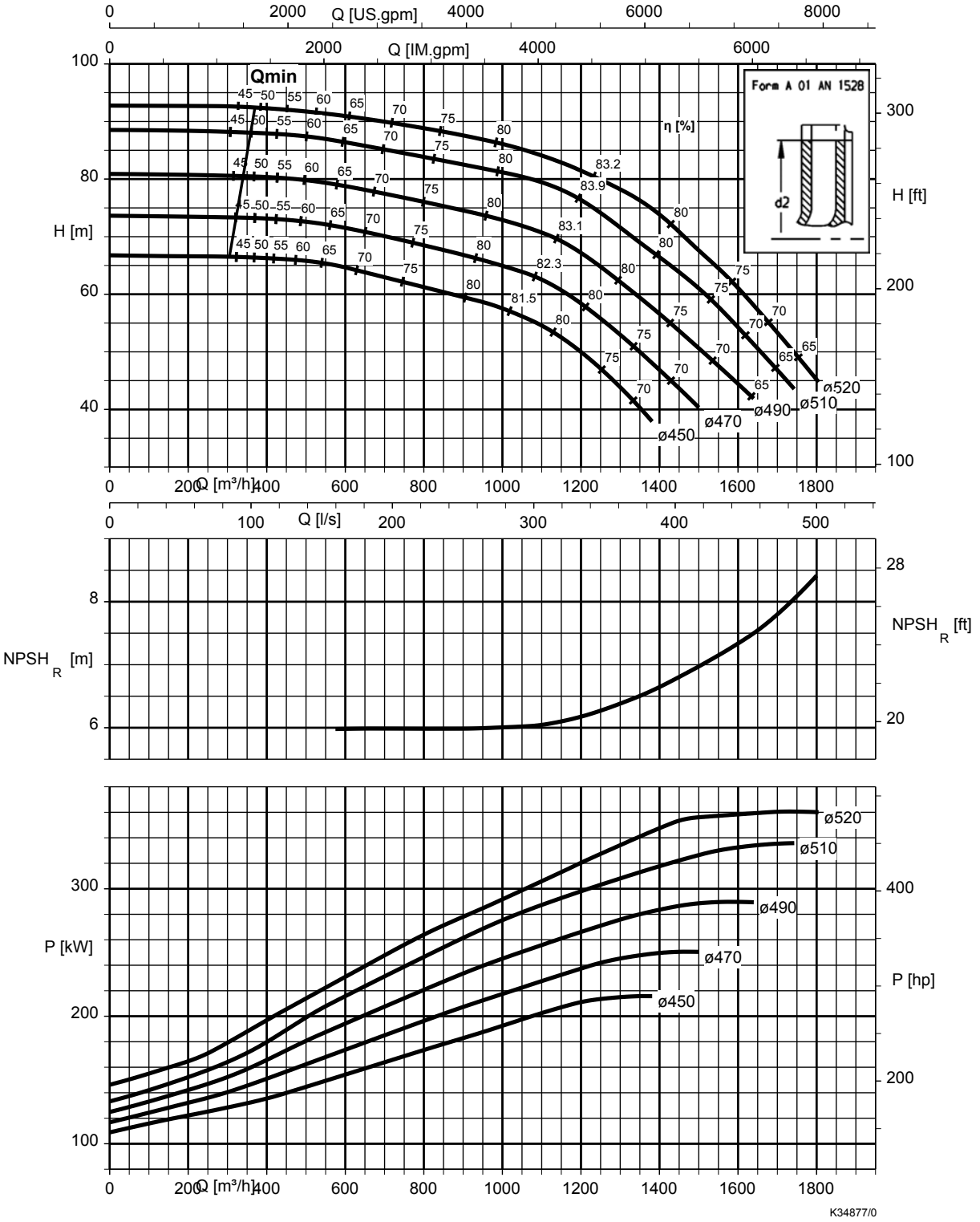
Etaline-R 300-360, n = 1450 rpm



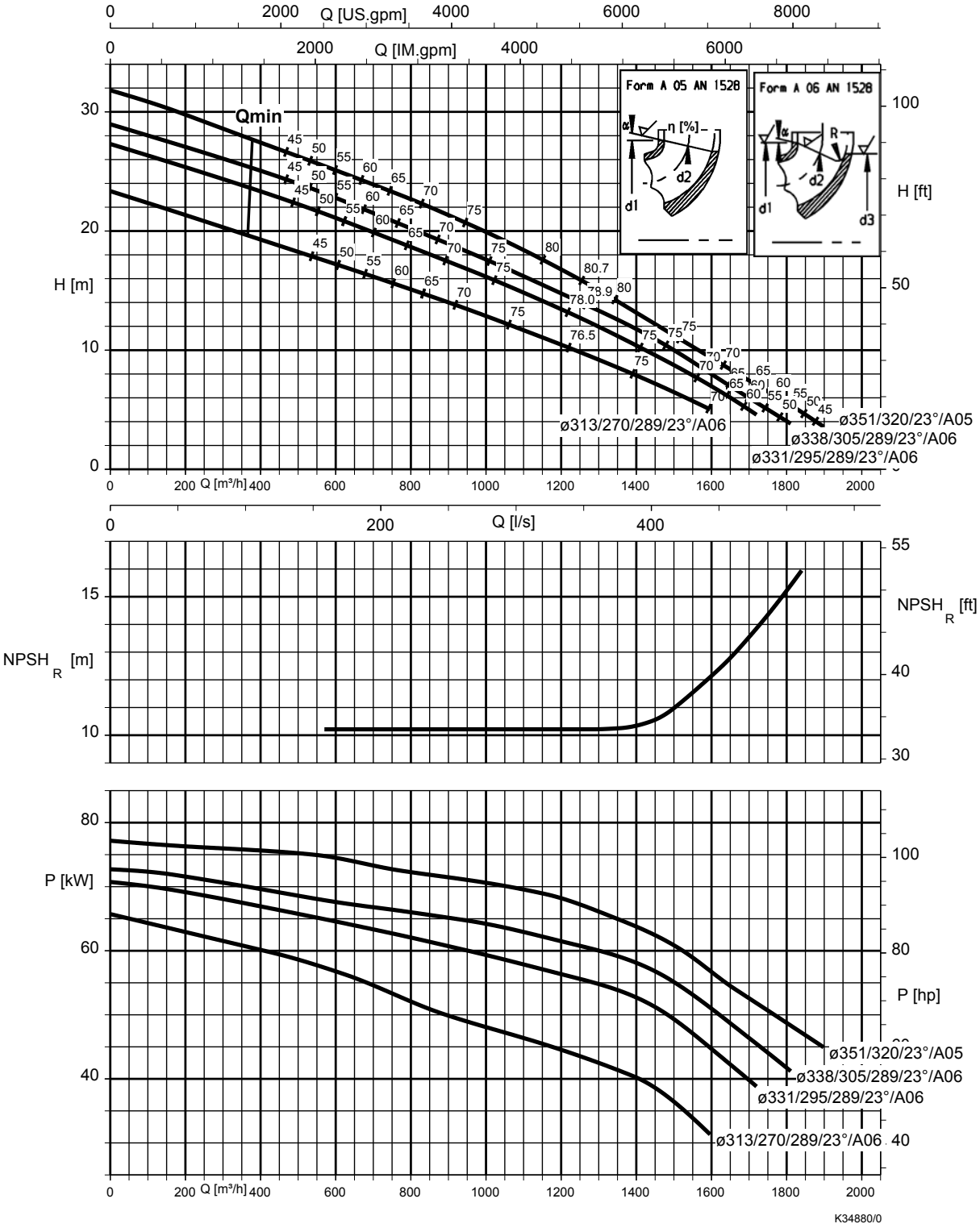
Etaline-R 300-400, n = 1450 rpm



Etaline-R 300-500, n = 1450 rpm



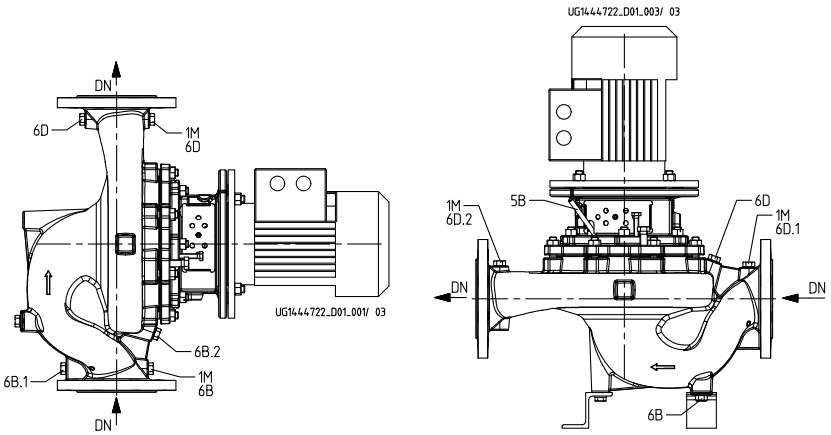
Etaline-R 350-340, n = 1450 rpm



Dimensions and connections

Etaline

Connections



Connections

Connection types

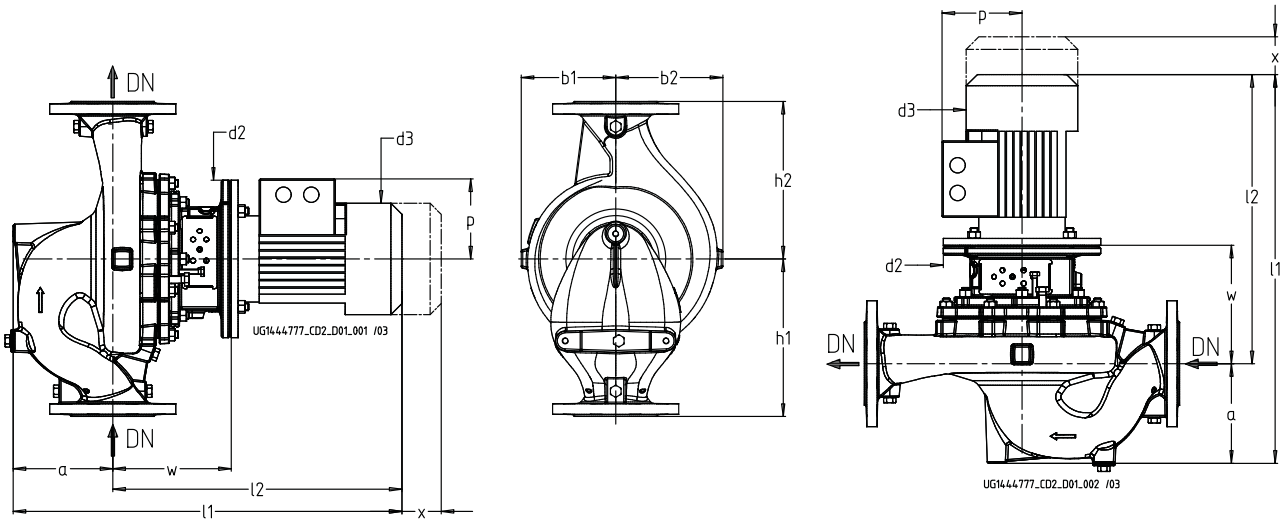
Connection	Description	Configuration	Position
1M	Pressure gauge connection	Drilled and closed, or pressure sensor for PumpMeter (if selected)	Suction and discharge flanges
5B	Vent connection for the mechanical seal chamber	Plugged with vent plug	Casing cover
6B, 6B.1, 6B.2	Fluid drain	Drilled and closed	Volute casing
6D, 6D.1, 6D.2	Fluid priming and venting	Drilled and closed	Volute casing

Connection[14)][mm]

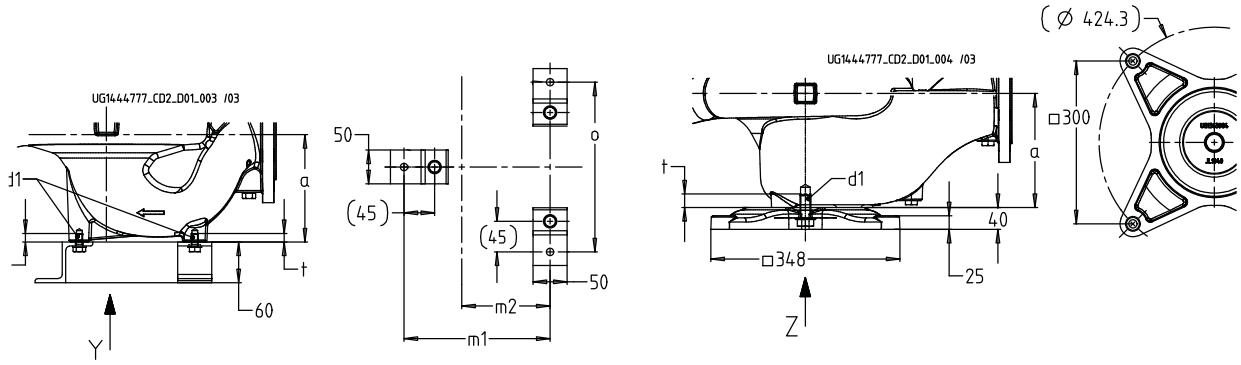
Size	1M, 5B, 6B/.1/.2, 6D/.1/.2
32-32-160	Rc1/4
32-32-200	Rc1/4
40-40-160	Rc1/4
40-40-250	Rc1/4
50-50-160	Rc1/4
50-50-250	Rc1/4
65-65-160	Rc1/4
65-65-250	Rc1/4
80-80-160	Rc3/8
80-80-200	Rc3/8
80-80-250	Rc3/8
100-100-125	Rc3/8
100-100-160	Rc3/8
100-100-200	Rc3/8
100-100-250	Rc3/8
125-125-160	Rc1/2
125-125-200	Rc1/2
125-125-250	Rc1/2
150-150-200	Rc1/2
150-150-250	Rc1/2
200-200-250	Rc1/2
200-200-315	Rc1/2

14) Rc=ISO 7/1

Etaline, n = 2900 rpm



Pump dimensions



Foundation fastening dimensions

Dimensions

Size	Motor	DN_1 15)	a	~b_1 16)	~b_2 16)	d_1	d_2	d_3	p	h_1	h_2	~l_1 16)	~l_2 16)	t	~x 16)	w	m_1	m_2	o
	[KW]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
32-32-160	1,1	32	87	119	131	M10	200	162	120	180	160	512	425	12,5	100	156	175	100	190
32-32-160	1,5	32	87	119	131	M10	200	190	128	180	160	525	438	12,5	100	156	175	100	190
32-32-160	2,2	32	87	119	131	M10	200	190	128	180	160	551	464	12,5	100	156	175	100	190
32-32-160	3,0	32	87	119	131	M10	250	213	135	180	160	604	517	12,5	100	170	175	100	190
32-32-160	4,0	32	87	119	131	M10	250	234	148	180	160	628	541	12,5	100	170	175	100	190
32-32-160	5,5	32	87	119	131	M10	300	266	167	180	160	693	606	12,5	100	193	175	100	190
32-32-160	7,5	32	87	119	131	M10	300	266	167	180	160	693	606	12,5	100	193	175	100	190
32-32-200	3,0	32	100	134	146	M10	250	213	135	250	190	617	517	12,5	100	170	175	100	190
32-32-200	4,0	32	100	134	146	M10	250	234	148	250	190	641	541	12,5	100	170	175	100	190
32-32-200	5,5	32	100	134	146	M10	300	266	167	250	190	706	606	12,5	100	193	175	100	190
32-32-200	7,5	32	100	134	146	M10	300	266	167	250	190	706	606	12,5	100	193	175	100	190
32-32-200	11,0	32	100	134	146	M10	350	325	197	250	190	872	772	12,5	100	226	175	100	190
32-32-200	15,0	32	100	134	146	M10	350	325	197	250	190	872	772	12,5	100	226	175	100	190
40-40-160	2,2	40	114	118	132	M10	200	190	128	180	160	578	464	12,5	100	156	165	90	190
40-40-160	3,0	40	114	118	132	M10	250	213	135	180	160	631	517	12,5	100	170	165	90	190
40-40-160	4,0	40	114	118	132	M10	250	234	148	180	160	655	541	12,5	100	170	165	90	190
40-40-160	5,5	40	114	118	132	M10	300	266	167	180	160	720	606	12,5	100	193	165	90	190
40-40-160	7,5	40	114	118	132	M10	300	266	167	180	160	720	606	12,5	100	193	165	90	190
40-40-160	11,0	40	114	118	132	M10	350	325	197	180	160	886	772	12,5	100	226	165	90	190

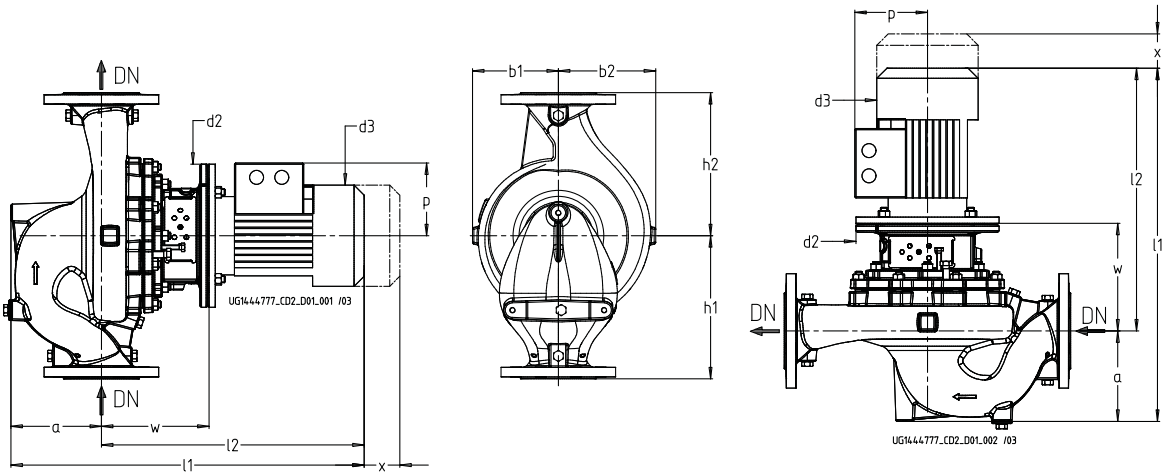
15) DN = EN 1092-2, PN 16
16) For the exact motor-related dimensions refer to the general arrangement drawing.

Size	Motor	DN_1 15)	a	~b_1 16)	~b_2 16)	d_1	d_2	d_3	p	h_1	h_2	~l_1 16)	~l_2 16)	t	~x 16)	w	m_1	m_2	o
	[KW]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
40-40-250	5,5	40	104	163	173	M10	300	266	167	220	220	714	610	12,5	100	197	175	100	190
40-40-250	7,5	40	104	163	173	M10	300	266	167	220	220	714	610	12,5	100	197	175	100	190
40-40-250	11,0	40	104	163	173	M10	350	325	197	220	220	880	776	12,5	100	230	175	100	190
40-40-250	15,0	40	104	163	173	M10	350	325	197	220	220	880	776	12,5	100	230	175	100	190
40-40-250	18,5	40	104	163	173	M10	350	325	197	220	220	886	782	12,5	100	230	175	100	190
40-40-250	22,0	40	104	163	173	M10	350	370	262	220	220	944	840	12,5	100	230	175	100	190
40-40-250	30,0	40	104	163	173	M10	400	422	305	220	220	1003	899	12,5	100	230	175	100	190
40-40-250	37,0	40	104	163	173	M10	400	422	305	220	220	1003	899	12,5	100	230	175	100	190
50-50-160	2,2	50	134	116	135	M10	200	190	128	250	190	598	464	12,5	100	156	175	100	190
50-50-160	3,0	50	134	116	135	M10	250	213	135	250	190	651	517	12,5	100	170	175	100	190
50-50-160	4,0	50	134	116	135	M10	250	234	148	250	190	675	541	12,5	100	170	175	100	190
50-50-160	5,5	50	134	116	135	M10	300	266	167	250	190	740	606	12,5	100	193	175	100	190
50-50-160	7,5	50	134	116	135	M10	300	266	167	250	190	740	606	12,5	100	193	175	100	190
50-50-160	11,0	50	134	116	135	M10	350	325	197	250	190	906	772	12,5	100	226	175	100	190
50-50-160	15,0	50	134	116	135	M10	350	325	197	250	190	906	772	12,5	100	226	175	100	190
50-50-250	7,5	50	129	167	182	M10	300	266	167	220	220	745	616	12,5	100	203	175	100	190
50-50-250	11,0	50	129	167	182	M10	350	325	197	220	220	911	782	12,5	100	236	175	100	190
50-50-250	15,0	50	129	167	182	M10	350	325	197	220	220	911	782	12,5	100	236	175	100	190
50-50-250	18,5	50	129	167	182	M10	350	325	197	220	220	917	788	12,5	100	236	175	100	190
50-50-250	22,0	50	129	167	182	M10	350	370	262	220	220	975	846	12,5	100	236	175	100	190
50-50-250	30,0	50	129	167	182	M10	400	422	305	220	220	1034	905	12,5	100	236	175	100	190
50-50-250	37,0	50	129	167	182	M10	400	422	305	220	220	1034	905	12,5	100	236	175	100	190
65-65-160	3,0	65	150	114	135	M10	250	213	135	270	170	667	517	12,5	100	170	175	110	210
65-65-160	4,0	65	150	114	135	M10	250	234	148	270	170	691	541	12,5	100	170	175	110	210
65-65-160	5,5	65	150	114	135	M10	300	266	167	270	170	756	606	12,5	100	193	175	110	210
65-65-160	7,5	65	150	114	135	M10	300	266	167	270	170	756	606	12,5	100	193	175	110	210
65-65-160	11,0	65	150	114	135	M10	350	325	197	270	170	922	772	12,5	100	226	175	110	210
65-65-160	15,0	65	150	114	135	M10	350	325	197	270	170	922	772	12,5	100	226	175	110	210
65-65-160	18,5	65	150	114	135	M10	350	325	197	270	170	928	778	12,5	100	226	175	110	210
65-65-160	22,0	65	150	114	135	M10	350	370	262	270	170	986	836	12,5	100	226	175	110	210
65-65-250	11,0	65	134	174	196	M10	350	325	197	225	250	931	797	12,5	100	251	175	100	220
65-65-250	15,0	65	134	174	196	M10	350	325	197	225	250	931	797	12,5	100	251	175	100	220
65-65-250	18,5	65	134	174	196	M10	350	325	197	225	250	937	803	12,5	100	251	175	100	220
65-65-250	22,0	65	134	174	196	M10	350	370	262	225	250	995	861	12,5	100	251	175	100	220
65-65-250	30,0	65	134	174	196	M10	400	422	305	225	250	1054	920	12,5	100	251	175	100	220
65-65-250	37,0	65	134	174	196	M10	400	422	305	225	250	1054	920	12,5	100	251	175	100	220
80-80-160	5,5	80	176	119	147	M10	300	266	167	260	180	782	606	12,5	100	193	175	100	230
80-80-160	7,5	80	176	119	147	M10	300	266	167	260	180	782	606	12,5	100	193	175	100	230
80-80-160	11,0	80	176	119	147	M10	350	325	197	260	180	948	772	12,5	100	226	175	100	230
80-80-160	15,0	80	176	119	147	M10	350	325	197	260	180	948	772	12,5	100	226	175	100	230
80-80-160	18,5	80	176	119	147	M10	350	325	197	260	180	954	778	12,5	100	226	175	100	230
80-80-160	22,0	80	176	119	147	M10	350	370	262	260	180	1012	836	12,5	100	226	175	100	230
80-80-160	30,0	80	176	119	147	M10	400	422	305	260	180	1071	895	12,5	100	226	175	100	230
80-80-200	11,0	80	158	150	170	M10	350	325	197	250	250	945	787	12,5	140	241	215	130	250
80-80-200	15,0	80	158	150	170	M10	350	325	197	250	250	945	787	12,5	140	241	215	130	250
80-80-200	18,5	80	158	150	170	M10	350	325	197	250	250	951	793	12,5	140	241	215	130	250
80-80-200	22,0	80	158	150	170	M10	350	370	262	250	250	1009	851	12,5	140	241	215	130	250
80-80-200	30,0	80	158	150	170	M10	400	422	305	250	250	1068	910	12,5	140	241	215	130	250
80-80-200	37,0	80	158	150	170	M10	400	422	305	250	250	1068	910	12,5	140	241	215	130	250
100-100-125	5,5	100	129	112	160	M10	300	266	167	230	220	744	615	12,5	100	202	195	100	230
100-100-125	7,5	100	129	112	160	M10	300	266	167	230	220	744	615	12,5	100	202	195	100	230
100-100-125	11,0	100	129	112	160	M10	350	325	197	230	220	910	781	12,5	100	235	195	100	230
100-100-125	15,0	100	129	112	160	M10	350	325	197	230	220	910	781	12,5	100	235	195	100	230
100-100-160	11,0	100	156	128	163	M20	350	325	197	245	205	948	792	25	140	246	-	-	-
100-100-160	15,0	100	156	128	163	M20	350	325	197	245	205	948	792	25	140	246	-	-	-
100-100-160	18,5	100	156	128	163	M20	350	325	197	245	205	954	798	25	140	246	-	-	-
100-100-160	22,0	100	156	128	163	M20	350	370	262	245	205	1012	856	25	140	246	-	-	-
100-100-160	30,0	100	156	128	163	M20	400	422	305	245	205	1071	915	25	140	246	-	-	-
100-100-160	37,0	100	156	128	163	M20	400	422	305	245	205	1071	915	25	140	246	-	-	-
125-125-160	18,5	125	203	182	226	M20	350	325	197	420	280	1001	798	25	140	246	-	-	-
125-125-160	22,0	125	203	182	226	M20	350	370	262	420	280	1059	856	25	140	246	-	-	-
125-125-160	30,0	125	203	182	226	M20	400	422	305	420	280	1118	915	25	140	246	-	-	-
125-125-160	37,0	125	203	182	226	M20	400	422	305	420	280	1118	915	25	140	246	-	-	-
125-125-160	45,0	125	203	182	226	M20	450	468	325	420	280	1235	1032	25	140	277	-	-	-
125-125-200	22,0	125	206	175	214	M20	350	370	262	380	320	1062	856	25	140	246	-	-	-
125-125-200	30,0	125	206	175	214	M20	400	422	305	380	320	1121	915	25	140	246	-	-	-
125-125-200	37,0	125	206	175	214	M20	400	422	305	380	320	1065	859	25	140	190	-	-	-
125-125-200	45,0	125	206	175	214	M20	450	468	325	380	320	1238	1032	25	140	277	-	-	-

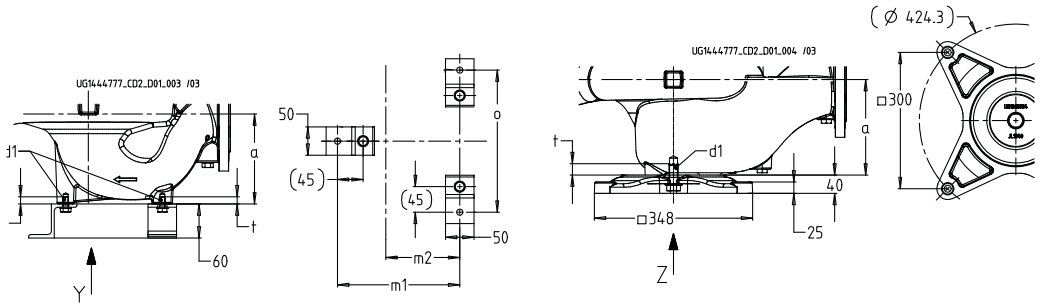
15) DN = EN 1092-2, PN 16

16) For the exact motor-related dimensions refer to the general arrangement drawing.

Etaline, n = 1450 rpm



Pump dimensions



Foundation fastening dimensions

Dimensions

Pump size	Motor	DN_1 17)	a	~b_1 18)	~b_2 18)	d_1	d_2	d_3	p	h_1	h_2	~l_1 18)	~l_2 18)	t	~x 18)	w	m_1	m_2	o
	[KW]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
32-32-160	0,25	32	87	119	131	M10	160	145	111	180	160	460	373	12,5	100	136	175	100	190
32-32-160	0,37	32	87	119	131	M10	160	145	111	180	160	460	373	12,5	100	136	175	100	190
32-32-160	0,55	32	87	119	131	M10	200	162	120	180	160	498	411	12,5	100	156	175	100	190
32-32-160	0,75	32	87	119	131	M10	200	162	120	180	160	498	411	12,5	100	156	175	100	190
32-32-160	1,1	32	87	119	131	M10	200	190	128	180	160	525	438	12,5	100	156	175	100	190
32-32-200	0,37	32	100	134	146	M10	160	145	111	250	190	473	373	12,5	100	136	175	100	190
32-32-200	0,55	32	100	134	146	M10	200	162	120	250	190	511	411	12,5	100	156	175	100	190
32-32-200	0,75	32	100	134	146	M10	200	162	120	250	190	511	411	12,5	100	156	175	100	190
32-32-200	1,1	32	100	134	146	M10	200	190	128	250	190	538	438	12,5	100	156	175	100	190
32-32-200	1,5	32	100	134	146	M10	200	190	128	250	190	564	464	12,5	100	156	175	100	190
32-32-200	2,2	32	100	134	146	M10	250	213	135	250	190	617	517	12,5	100	170	175	100	190
40-40-160	0,37	40	114	118	132	M10	160	145	111	180	160	487	373	12,5	100	136	165	90	190
40-40-160	0,55	40	114	118	132	M10	200	162	120	180	160	525	411	12,5	100	156	165	90	190
40-40-160	0,75	40	114	118	132	M10	200	162	120	180	160	525	411	12,5	100	156	165	90	190
40-40-160	1,1	40	114	118	132	M10	200	190	128	180	160	552	438	12,5	100	156	165	90	190
40-40-160	1,5	40	114	118	132	M10	200	190	128	180	160	578	464	12,5	100	156	165	90	190
40-40-250	0,75	40	104	163	173	M10	200	162	120	220	220	519	415	12,5	100	160	175	100	190
40-40-250	1,1	40	104	163	173	M10	200	190	128	220	220	546	442	12,5	100	160	175	100	190
40-40-250	1,5	40	104	163	173	M10	200	190	128	220	220	572	468	12,5	100	160	175	100	190
40-40-250	2,2	40	104	163	173	M10	250	213	135	220	220	625	521	12,5	100	174	175	100	190
40-40-250	3,0	40	104	163	173	M10	250	213	135	220	220	660	556	12,5	100	174	175	100	190
40-40-250	4,0	40	104	163	173	M10	250	234	148	220	220	649	545	12,5	100	174	175	100	190
40-40-250	5,5	40	104	163	173	M10	300	266	167	220	220	714	610	12,5	100	197	175	100	190
50-50-160	0,37	50	134	116	135	M10	160	145	111	250	190	507	373	12,5	100	136	175	100	190

17) DN = EN 1092-2, PN 16
18) For the exact motor-related dimensions refer to the general arrangement drawing.

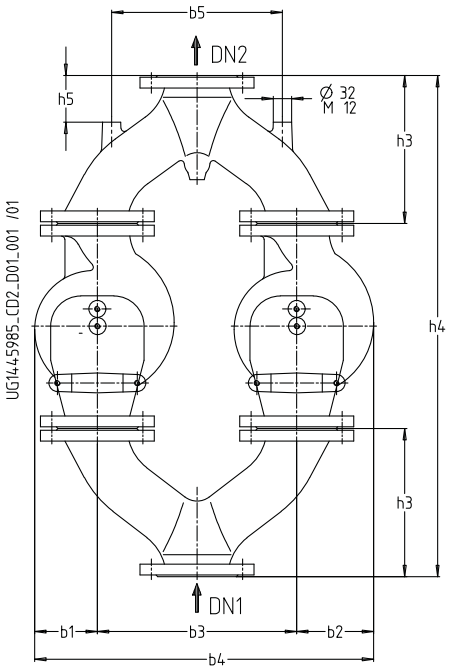
Pump size	Motor	DN_1 17)	a	~b_1 18)	~b_2 18)	d_1	d_2	d_3	p	h_1	h_2	~l_1 18)	~l_2 18)	t	~x 18)	w	m_1	m_2	o
	[KW]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
50-50-160	0,55	50	134	116	135	M10	200	162	120	250	190	545	411	12,5	100	156	175	100	190
50-50-160	0,75	50	134	116	135	M10	200	162	120	250	190	545	411	12,5	100	156	175	100	190
50-50-160	1,1	50	134	116	135	M10	200	190	128	250	190	572	438	12,5	100	156	175	100	190
50-50-160	1,5	50	134	116	135	M10	200	190	128	250	190	598	464	12,5	100	156	175	100	190
50-50-160	2,2	50	134	116	135	M10	250	213	135	250	190	651	517	12,5	100	170	175	100	190
50-50-250	1,1	50	129	167	182	M10	200	190	128	220	220	577	448	12,5	100	166	175	100	190
50-50-250	1,5	50	129	167	182	M10	200	190	128	220	220	603	474	12,5	100	166	175	100	190
50-50-250	2,2	50	129	167	182	M10	250	213	135	220	220	656	527	12,5	100	180	175	100	190
50-50-250	3,0	50	129	167	182	M10	250	213	135	220	220	691	562	12,5	100	180	175	100	190
50-50-250	4,0	50	129	167	182	M10	250	234	148	220	220	680	551	12,5	100	180	175	100	190
50-50-250	5,5	50	129	167	182	M10	300	266	167	220	220	745	616	12,5	100	203	175	100	190
50-50-250	7,5	50	129	167	182	M10	300	298	167	220	220	773	644	12,5	100	203	175	100	190
65-65-160	0,37	65	150	114	135	M10	160	145	111	270	170	523	373	12,5	100	136	175	110	210
65-65-160	0,55	65	150	114	135	M10	200	162	120	270	170	561	411	12,5	100	156	175	110	210
65-65-160	0,75	65	150	114	135	M10	200	162	120	270	170	561	411	12,5	100	156	175	110	210
65-65-160	1,1	65	150	114	135	M10	200	190	128	270	170	588	438	12,5	100	156	175	110	210
65-65-160	1,5	65	150	114	135	M10	200	190	128	270	170	614	464	12,5	100	156	175	110	210
65-65-160	2,2	65	150	114	135	M10	250	213	135	270	170	667	517	12,5	100	170	175	110	210
65-65-160	3,0	65	150	114	135	M10	250	213	135	270	170	702	552	12,5	100	170	175	110	210
65-65-250	1,5	65	134	174	196	M10	200	190	128	225	250	623	489	12,5	100	181	175	100	220
65-65-250	2,2	65	134	174	196	M10	250	213	135	225	250	676	542	12,5	100	195	175	100	220
65-65-250	3,0	65	134	174	196	M10	250	213	135	225	250	711	577	12,5	100	195	175	100	220
65-65-250	4,0	65	134	174	196	M10	250	234	148	225	250	700	566	12,5	100	195	175	100	220
65-65-250	5,5	65	134	174	196	M10	300	266	167	225	250	765	631	12,5	100	218	175	100	220
65-65-250	7,5	65	134	174	196	M10	300	298	167	225	250	793	659	12,5	100	218	175	100	220
65-65-250	11,0	65	134	174	196	M10	350	325	197	225	250	931	797	12,5	100	251	175	100	220
80-80-160	0,55	80	176	119	147	M10	160	145	111	260	180	569	393	12,5	100	156	175	100	230
80-80-160	0,75	80	176	119	147	M10	200	162	120	260	180	587	411	12,5	100	156	175	100	230
80-80-160	1,1	80	176	119	147	M10	200	190	128	260	180	614	438	12,5	100	156	175	100	230
80-80-160	1,5	80	176	119	147	M10	200	190	128	260	180	640	464	12,5	100	156	175	100	230
80-80-160	2,2	80	176	119	147	M10	250	213	135	260	180	693	517	12,5	100	170	175	100	230
80-80-160	3,0	80	176	119	147	M10	250	213	135	260	180	728	552	12,5	100	170	175	100	230
80-80-160	4,0	80	176	119	147	M10	250	234	148	260	180	717	541	12,5	100	170	175	100	230
80-80-200	1,1	80	158	150	170	M10	200	190	128	250	250	611	453	12,5	140	171	215	130	250
80-80-200	1,5	80	158	150	170	M10	200	190	128	250	250	637	479	12,5	140	171	215	130	250
80-80-200	2,2	80	158	150	170	M10	250	213	135	250	250	690	532	12,5	140	185	215	130	250
80-80-200	3,0	80	158	150	170	M10	250	213	135	250	250	725	567	12,5	140	185	215	130	250
80-80-200	4,0	80	158	150	170	M10	250	234	148	250	250	714	556	12,5	140	185	215	130	250
80-80-200	5,5	80	158	150	170	M10	300	266	167	250	250	779	621	12,5	140	208	215	130	250
80-80-200	7,5	80	158	150	170	M10	300	298	167	250	250	807	649	12,5	140	208	215	130	250
80-80-250	2,2	80	187	173	193	M10	250	213	135	350	270	724	537	12,5	140	190	180	105	230
80-80-250	3,0	80	187	173	193	M10	250	213	135	350	270	759	572	12,5	140	190	180	105	230
80-80-250	4,0	80	187	173	193	M10	250	234	148	350	270	748	561	12,5	140	190	180	105	230
80-80-250	5,5	80	187	173	193	M10	300	266	167	350	270	813	626	12,5	140	213	180	105	230
80-80-250	7,5	80	187	173	193	M10	300	298	167	350	270	841	654	12,5	140	213	180	105	230
80-80-250	11,0	80	187	173	193	M10	350	325	197	350	270	979	792	12,5	140	246	180	105	230
80-80-250	15,0	80	187	173	193	M10	350	325	197	350	270	985	798	12,5	140	246	180	105	230
100-100-125	0,75	100	129	112	160	M10	200	162	120	230	220	549	420	12,5	100	165	195	100	230
100-100-125	1,1	100	129	112	160	M10	200	190	128	230	220	576	447	12,5	100	165	195	100	230
100-100-125	1,5	100	129	112	160	M10	200	190	128	230	220	602	473	12,5	100	165	195	100	230
100-100-125	2,2	100	129	112	160	M10	250	213	135	230	220	655	526	12,5	100	179	195	100	230
100-100-160	1,5	100	156	128	163	M20	200	190	128	245	205	640	484	25	140	176	-	-	-
100-100-160	2,2	100	156	128	163	M20	250	213	135	245	205	693	537	25	140	190	-	-	-
100-100-160	3,0	100	156	128	163	M20	250	213	135	245	205	728	572	25	140	190	-	-	-
100-100-160	4,0	100	156	128	163	M20	250	234	148	245	205	717	561	25	140	190	-	-	-
100-100-160	5,5	100	156	128	163	M20	300	266	167	245	205	782	626	25	140	213	-	-	-
100-100-200	2,2	100	180	172	202	M20	250	213	135	305	245	717	537	25	140	190	-	-	-
100-100-200	3,0	100	180	172	202	M20	250	213	135	305	245	752	572	25	140	190	-	-	-
100-100-200	4,0	100	180	172	202	M20	250	234	148	305	245	741	561	25	140	190	-	-	-
100-100-200	5,5	100	180	172	202	M20	300	266	167	305	245	806	626	25	140	213	-	-	-
100-100-200	7,5	100	180	172	202	M20	300	298	167	305	245	834	654	25	140	213	-	-	-
100-100-200	11,0	100	180	172	202	M20	350	325	197	305	245	972	792	25	140	246	-	-	-
100-100-250	3,0	100	158	196	222	M20	250	213	135	290	260	754	596	25	140	214	-	-	-
100-100-250	4,0	100	158	196	222	M20	250	234	148	290	260	743	585	25	140	214	-	-	-
100-100-250	5,5	100	158	196	222	M20	300	266	167	290	260	808	650	25	140	237	-	-	-
100-100-250	7,5	100	158	196	222	M20	300	298	167	290	260	836	678	25	140	237	-	-	-
100-100-250	11,0	100	158	196	222	M20	350	325	197	290	260	974	816	25	140	270	-	-	-
100-100-250	15,0	100	158	196	222	M20	350	325	197	290	260	980	822	25	140	270	-	-	-
100-100-250	18,5	100	158	196	222	M20	350	370	262	290	260	1038	880	25	140	270	-	-	-

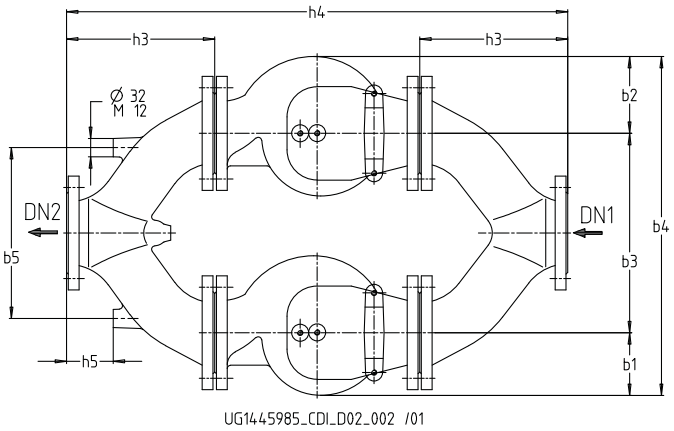
17) DN = EN 1092-2, PN 16

18) For the exact motor-related dimensions refer to the general arrangement drawing.

Pump size	Motor	DN_1 17)	a	~b_1 18)	~b_2 18)	d_1	d_2	d_3	p	h_1	h_2	~l_1 18)	~l_2 18)	t	~x 18)	w	m_1	m_2	o
	[KW]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
125-125-160	2,2	125	203	182	226	M20	250	213	135	420	280	740	537	25	140	190	-	-	-
125-125-160	3,0	125	203	182	226	M20	250	213	135	420	280	775	572	25	140	190	-	-	-
125-125-160	4,0	125	203	182	226	M20	250	234	148	420	280	764	561	25	140	190	-	-	-
125-125-160	5,5	125	203	182	226	M20	300	266	167	420	280	829	626	25	140	213	-	-	-
125-125-160	7,5	125	203	182	226	M20	300	298	167	420	280	857	654	25	140	213	-	-	-
125-125-200	3,0	125	206	175	214	M20	250	213	135	380	320	778	572	25	140	190	-	-	-
125-125-200	4,0	125	206	175	214	M20	250	234	148	380	320	767	561	25	140	190	-	-	-
125-125-200	5,5	125	206	175	214	M20	300	266	167	380	320	832	626	25	140	213	-	-	-
125-125-200	7,5	125	206	175	214	M20	300	298	167	380	320	860	654	25	140	213	-	-	-
125-125-200	11,0	125	206	175	214	M20	350	325	197	380	320	998	792	25	140	246	-	-	-
125-125-200	15,0	125	206	175	214	M20	350	325	197	380	320	1004	798	25	140	246	-	-	-
125-125-250	5,5	125	210	188	219	M20	300	266	167	380	320	836	626	25	140	213	-	-	-
125-125-250	7,5	125	210	188	219	M20	300	298	167	380	320	864	654	25	140	213	-	-	-
125-125-250	11,0	125	210	188	219	M20	350	325	197	380	320	1002	792	25	140	246	-	-	-
125-125-250	15,0	125	210	188	219	M20	350	325	197	380	320	1008	798	25	140	246	-	-	-
125-125-250	18,5	125	210	188	219	M20	350	370	262	380	320	1066	856	25	140	246	-	-	-
125-125-250	22,0	125	210	188	219	M20	350	370	262	380	320	1066	856	25	140	246	-	-	-
150-150-200	5,5	150	230	187	240	M20	300	266	167	385	315	856	626	25	140	213	-	-	-
150-150-200	7,5	150	230	187	240	M20	300	298	167	385	315	884	654	25	140	213	-	-	-
150-150-200	11,0	150	230	187	240	M20	350	325	197	385	315	1022	792	25	140	246	-	-	-
150-150-200	15,0	150	230	187	240	M20	350	325	197	385	315	1028	798	25	140	246	-	-	-
150-150-200	18,5	150	230	187	240	M20	350	370	262	385	315	1086	856	25	140	246	-	-	-
150-150-250	7,5	150	222	226	275	M20	300	298	167	370	330	891	669	25	140	228	-	-	-
150-150-250	11,0	150	222	226	275	M20	350	325	197	370	330	1029	807	25	140	261	-	-	-
150-150-250	15,0	150	222	226	275	M20	350	325	197	370	330	1035	813	25	140	261	-	-	-
150-150-250	18,5	150	222	226	275	M20	350	370	262	370	330	1093	871	25	140	261	-	-	-
150-150-250	22,0	150	222	226	275	M20	350	370	262	370	330	1093	871	25	140	261	-	-	-
150-150-250	30,0	150	222	226	275	M20	400	422	305	370	330	1152	930	25	140	261	-	-	-
150-150-250	37,0	150	222	226	275	M20	450	460	325	370	330	1209	987	25	140	292	-	-	-
200-200-250	11,0	200	222	233	303	M20	350	325	197	400	400	1067	845	25	140	299	-	-	-
200-200-250	15,0	200	222	233	303	M20	350	325	197	400	400	1073	851	25	140	299	-	-	-
200-200-250	18,5	200	222	233	303	M20	350	370	262	400	400	1131	909	25	140	299	-	-	-
200-200-250	22,0	200	222	233	303	M20	350	370	262	400	400	1131	909	25	140	299	-	-	-
200-200-250	30,0	200	222	233	303	M20	400	422	305	400	400	1190	968	25	140	299	-	-	-
200-200-250	37,0	200	222	233	303	M20	450	460	325	400	400	1247	1025	25	140	330	-	-	-
200-200-250	45,0	200	222	233	303	M20	450	468	325	400	400	1277	1055	25	140	330	-	-	-
200-200-315	22,0	200	255	259	318	M20	350	370	262	490	410	1141	886	25	140	276	-	-	-
200-200-315	30,0	200	255	259	318	M20	400	422	305	490	410	1200	945	25	140	276	-	-	-
200-200-315	37,0	200	255	259	318	M20	450	460	325	490	410	1257	1002	25	140	307	-	-	-
200-200-315	45,0	200	255	259	318	M20	450	468	325	490	410	1287	1032	25	140	307	-	-	-
200-200-315	55,0	200	255	259	318	M20	550	520	392	490	410	1391	1136	25	140	319	-	-	-

17) DN = EN 1092-2, PN 16
18) For the exact motor-related dimensions refer to the general arrangement drawing.





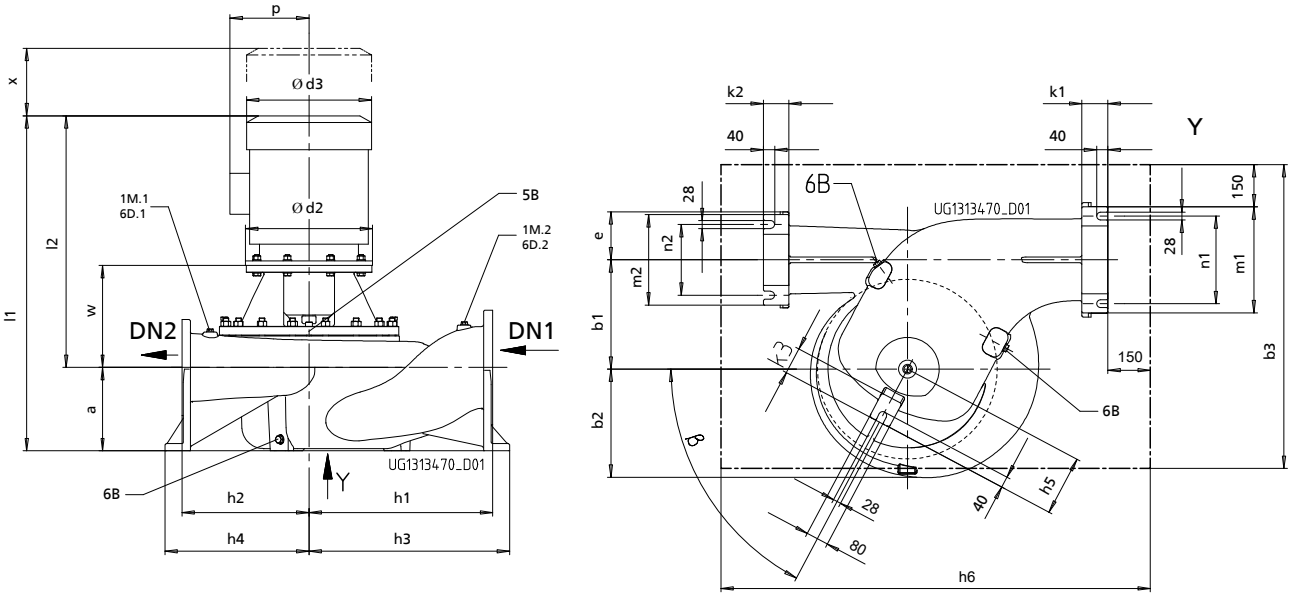
Dimensions of Y-pipes

Dimensions of Y-pipes

Pump size	Motor	DN_1 [19]	b_3	b_4	b_5	h_3	h_4	h_5
	[KW]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
40-40-160	0,37	40	275	480	230	190	722	60
40-40-160	0,55	40	275	480	230	190	722	60
40-40-160	0,75	40	275	480	230	190	722	60
40-40-160	1,1	40	275	480	230	190	722	60
40-40-160	1,5	40	275	480	230	190	722	60
50-50-160	0,37	50	300	481	230	210	862	65
50-50-160	0,55	50	300	481	230	210	862	65
50-50-160	0,75	50	300	481	230	210	862	65
50-50-160	1,1	50	300	481	230	210	862	65
50-50-160	1,5	50	300	481	230	210	862	65
50-50-160	2,2	50	300	481	230	210	862	65
65-65-160	0,37	65	325	549	300	230	902	82
65-65-160	0,55	65	325	549	300	230	902	82
65-65-160	0,75	65	325	549	300	230	902	82
65-65-160	1,1	65	325	549	300	230	902	82
65-65-160	1,5	65	325	549	300	230	902	82
65-65-160	2,2	65	325	549	300	230	902	82
65-65-160	3,0	65	325	549	300	230	902	82
80-80-160	0,55	80	350	566	300	260	962	82
80-80-160	0,75	80	350	566	300	260	962	82
80-80-160	1,1	80	350	566	300	260	962	82
80-80-160	1,5	80	350	566	300	260	962	82
80-80-160	2,2	80	350	566	300	260	962	82
80-80-160	3,0	80	350	566	300	260	962	82
80-80-160	4,0	80	350	566	300	260	962	82
100-100-125	0,75	100	325	572	300	295	1042	85
100-100-125	1,1	100	325	572	300	295	1042	85
100-100-125	1,5	100	325	572	300	295	1042	85
100-100-125	2,2	100	325	572	300	295	1042	85
100-100-160	1,5	100	325	591	300	295	1042	85
100-100-160	2,2	100	325	591	300	295	1042	85
100-100-160	3,0	100	325	591	300	295	1042	85
100-100-160	4,0	100	325	591	300	295	1042	85
100-100-160	5,5	100	325	591	300	295	1042	85

19) DN = EN 1092-2, PN 16

Etaline-R, n = 1450 rpm



Connection type

Connection	Description	Configuration	Position	Thread
1M.1/.2	Pressure gauge connection	Drilled and closed, or pressure sensor for PumpMeter (if selected)	Suction and discharge flanges	G1/2
5B	Vent connection for the mechanical seal chamber	Plugged with vent plug	Casing cover	G1/4
6B	Fluid drain	Drilled and closed	Casing	G3/4
6D.1/.2	Fluid priming and venting	Drilled and closed	Casing	G1/2

Dimensions [mm]

Pump size	DN_1 20)	DN_2 20)	a	b_1	b_2	b_3	d_2	d_3	e	h_1	h_2	h_3	h_4	h_5	h_6	k_1	k_2	k_3	l_1	l_2	m_1	m_2	n_1	n_2	p	w	x	β
150-500/3004	200	150	280	315	350	955	450	402	180	650	450	710	510	207	1520	90	86	75	1291	1011	320	260	250	190	300	352	200	50
150-500/3704	200	150	280	315	350	955	450	442	180	650	450	710	510	207	1520	90	86	75	1281	1001	320	260	250	190	325	352	200	50
150-500/4504	200	150	280	315	350	955	450	442	180	650	450	710	510	207	1520	90	86	75	1464	1184	320	260	250	190	325	361	200	50
150-500/5504	200	150	280	315	350	955	660	495	180	650	450	710	510	207	1520	90	86	75	1515	1235	320	260	250	190	392	418	200	50
150-500/7504	200	150	280	315	350	955	660	555	180	650	450	710	510	207	1520	90	86	75	1518	1238	320	260	250	190	432	418	200	50
150-500/9004	200	150	280	315	350	955	660	555	180	650	450	710	510	207	1520	90	86	75	1628	1348	320	260	250	190	432	418	200	50
150-500/11004	200	150	280	315	350	955	660	610	180	650	450	710	510	207	1520	90	86	75	1635	1355	320	260	250	190	495	425	200	50
150-500/13204	200	150	280	315	350	955	660	610	180	650	450	710	510	207	1520	90	86	75	1637	1357	320	260	250	190	495	425	200	50
150-500/16004	200	150	280	315	350	955	660	610	180	650	450	710	510	207	1520	90	86	75	1797	1517	320	260	250	190	495	425	200	50
200-330/1504	250	200	310	295	333	955	450	320	213	650	300	710	360	225	1370	85	82	105	1180	870	375	320	310	250	197	352	200	40
200-330/1854	250	200	310	295	333	955	450	363	213	650	300	710	360	225	1370	85	82	105	1264	954	375	320	310	250	262	352	200	40
200-330/2204	250	200	310	295	333	955	450	363	213	650	300	710	360	225	1370	85	82	105	1264	954	375	320	310	250	262	352	200	40
200-330/3004	250	200	310	295	333	955	450	402	213	650	300	710	360	225	1370	85	82	105	1321	1011	375	320	310	250	300	352	200	40
200-330/3704	250	200	310	295	333	955	450	442	213	650	300	710	360	225	1370	85	82	105	1320	1010	375	320	310	250	325	361	200	40
200-330/4504	250	200	310	295	333	955	450	442	213	650	300	710	360	225	1370	85	82	105	1494	1184	375	320	310	250	325	361	200	40
200-330/5504	250	200	310	295	333	955	660	495	213	650	300	710	360	225	1370	85	82	105	1488	1178	375	320	310	250	392	418	200	40
200-330/7504	250	200	310	295	333	955	660	555	213	650	300	710	360	225	1370	85	82	105	1548	1238	375	320	310	250	432	418	200	40
200-330/9004	250	200	310	295	333	955	660	555	213	650	300	710	360	225	1370	85	82	105	1658	1348	375	320	310	250	432	418	200	40
200-330/11004	250	200	310	295	333	955	660	610	213	650	300	710	360	225	1370	85	82	105	1667	1357	375	320	310	250	495	425	200	40
200-400/3004	250	200	295	290	351	975	450	402	213	700	400	760	460	225	1520	85	82	105	1306	1011	375	320	310	250	300	352	200	50
200-400/3704	250	200	295	290	351	975	450	442	213	700	400	760	460	225	1520	85	82	105	1305	1010	375	320	310	250	325	352	200	50
200-400/4504	250	200	295	290	351	975	450	442	213	700	400	760	460	225	1520	85	82	105	1479	1184	375	320	310	250	325	361	200	50
200-400/5504	250	200	295	290	351	975	660	495	213	700	400	760	460	225	1520	85	82	105	1473	1178	375	320	310	250	392	418	200	50
200-400/7504	250	200	295	290	351	975	660	555	213	700	400	760	460	225	1520	85	82	105	1533	1238	375	320	310	250	432	418	200	50
200-400/9004	250	200	295	290	351	975	660	555	213	700	400	760	460	225	1520	85	82	105	1643	1348	375	320	310	250	432	418	200	50
200-400/11004	250	200	295	290	351	975	660	610	213	700	400	760	460	225	1520	85	82	105	1652	1357	375	320	310	250	495	425	200	50
200-400/13204	250	200	295	290	351	975	660	610	213	700	400	760	460	225	1520	85	82	105	1812	1517	375	320	310	250	495	425	200	50
200-400/16004	250	200	295	290	351	975	660	610	213	700	400	760	460	225	1520	85	82	105	1812	1517	375	320	310	250	495	425	200	50
200-400/20004	250	200	295	290	351	975	660	610	213	700	400	760	460	225	1520	85	82	105	1952	1657	375	320	310	250	495	425	200	50
200-500/4504	250	200	295	397	385	1100	450	442	213	650	450	710	510	212	1520	85	82	95	1407	1112	375	320	310	250	325	352	200	50
200-500/5504	250	200	295	397	385	1100	660	495	213	650	450	710	510	212	1520	85	82	95	1473	1178	375	320	310	250	392	361	200	62

20) EN 1092-2, PN 25

Pump size	DN_1 20)	DN_2 20)	a	b_1	b_2	b_3	d_2	d_3	e	h_1	h_2	h_3	h_4	h_5	h_6	k_1	k_2	k_3	l_1	l_2	m_1	m_2	n_1	n_2	p	w	x	β
200-500/7504	250	200	295	397	385	1100	660	555	213	650	450	710	510	212	1520	85	82	95	1533	1238	375	320	310	250	432	418	200	62
200-500/9004	250	200	295	397	385	1100	660	555	213	650	450	710	510	212	1520	85	82	95	1643	1348	375	320	310	250	432	418	200	62
200-500/1004	250	200	295	397	385	1100	660	610	213	650	450	710	510	212	1520	85	82	95	1652	1357	375	320	310	250	495	425	200	62
200-500/13204	250	200	295	397	385	1100	660	610	213	650	450	710	510	212	1520	85	82	95	1812	1517	375	320	310	250	495	425	200	62
200-500/16004	250	200	295	397	385	1100	660	610	213	650	450	710	510	212	1520	85	82	95	1812	1517	375	320	310	250	495	425	200	62
200-500/20004	250	200	295	397	385	1100	660	610	213	650	450	710	510	212	1520	85	82	95	1952	1657	375	320	310	250	495	425	200	62
200-500/25004	250	200	295	397	385	1100	800	610	213	650	450	710	510	212	1520	85	82	95	2041	1746	375	320	310	250	495	454	200	62
250-250/754	250	250	320	265	322	910	450	267	203	555	345	615	405	215	1320	85	85	105	1166	846	375	375	310	310	167	435	200	40
250-250/1104	250	250	320	265	322	910	450	320	203	555	345	615	405	215	1320	85	85	105	1233	913	375	375	310	310	167	435	200	40
250-250/1504	250	250	320	265	322	910	450	320	203	555	345	615	405	215	1320	85	85	105	1275	955	375	375	310	310	197	437	200	40
250-250/1854	250	250	320	265	322	910	450	363	203	555	345	615	405	215	1320	85	85	105	1359	1039	375	375	310	310	262	437	200	40
250-250/2204	250	250	320	265	322	910	450	363	203	555	345	615	405	215	1320	85	85	105	1359	1039	375	375	310	310	300	437	200	40
250-250/3004	250	250	320	265	322	910	450	402	203	555	345	615	405	215	1320	85	85	105	1416	1096	375	375	310	310	300	437	200	40
250-250/3704	250	250	320	265	322	910	450	442	203	555	345	615	405	215	1320	85	85	105	1406	1086	375	375	310	310	325	437	200	40
250-250/4504	250	250	320	265	322	910	450	442	203	555	345	615	405	215	1320	85	85	105	1589	1269	375	375	310	310	325	446	200	40
250-260/1104	250	250	320	300	335	955	450	320	203	580	350	640	410	200	1350	85	85	90	1150	830	375	375	310	310	197	352	200	49
250-260/1504	250	250	320	300	335	955	450	320	203	580	350	640	410	200	1350	85	85	90	1190	870	375	375	310	310	197	352	200	49
250-260/1854	250	250	320	300	335	955	450	363	203	580	350	640	410	200	1350	85	85	90	1274	954	375	375	310	310	262	352	200	49
250-260/2204	250	250	320	300	335	955	450	402	203	580	350	640	410	200	1350	85	85	90	1274	954	375	375	310	310	262	352	200	49
250-260/3004	250	250	320	300	335	955	450	402	203	580	350	640	410	200	1350	85	85	90	1331	1011	375	375	310	310	300	352	200	49
250-260/3704	250	250	320	300	335	955	450	442	203	580	350	640	410	200	1350	85	85	90	1321	1001	375	375	310	310	325	352	200	49
250-260/4504	250	250	320	300	335	955	450	442	203	580	350	640	410	200	1350	85	85	90	1504	1184	375	375	310	310	325	361	200	49
250-260/5504	250	250	320	300	335	955	660	495	203	580	350	640	410	200	1350	85	85	90	1555	1235	375	375	310	310	392	418	200	49
250-300/1504	300	250	340	300	352	1015	450	320	243	650	450	710	510	225	1520	88	85	95	1325	985	430	375	360	310	197	467	250	50
250-300/1854	300	250	340	300	352	1015	450	363	243	650	450	710	510	225	1520	88	85	95	1409	1069	430	375	360	310	262	467	250	50
250-300/2204	300	250	340	300	352	1015	450	363	243	650	450	710	510	225	1520	88	85	95	1409	1069	430	375	360	310	262	467	250	50
250-300/3004	300	250	340	300	352	1015	450	402	243	650	450	710	510	225	1520	88	85	95	1466	1126	430	375	360	310	300	467	250	50
250-300/3704	300	250	340	300	352	1015	450	442	243	650	450	710	510	225	1520	88	85	95	1456	1116	430	375	360	310	325	467	250	50
250-300/4504	300	250	340	300	352	1015	450	442	243	650	450	710	510	225	1520	88	85	95	1639	1299	430	375	360	310	325	476	250	50
250-300/5504	300	250	340	300	352	1015	660	495	243	650	450	710	510	225	1520	88	85	95	1690	1350	430	375	360	310	392	533	250	50
250-300/7504	300	250	340	300	352	1015	660	555	243	650	450	710	510	225	1520	88	85	95	1593	1253	430	375	360	310	432	533	250	50
250-300/9004	300	250	340	300	352	1015	660	555	243	650	450	710	510	225	1520	88	85	95	1803	1463	430	375	360	310	432	533	250	50
250-330/220	300	250	385	325	355	1050	450	363	243	600	350	660	410	225	1370	88	85	95	1339	954	430	380	360	310	262	352	200	53
250-330/300	300	250	385	325	355	1050	450	402	243	600	350	660	410	225	1370	88	85	95	1396	1011	430	380	360	310	300	352	200	53
250-330/370	300	250	385	325	355	1050	450	442	243	600	350	660	410	225	1370	88	85	95	1386	1001	430	380	360	310	325	352	200	53
250-330/450	300	250	385	325	355	1050	450	442	243	600	350	660	410	225	1370	88	85	95	1569	1184	430	380	360	310	325	361	200	53
250-330/550	300	250	385	325	355	1050	660	495	243	600	350	660	410	225	1370	88	85	95	1620	1235	430	380	360	310	392	418	200	53
250-330/750	300	250	385	325	355	1050	660	555	243	600	350	660	410	225	1370	88	85	95	1623	1238	430	380	360	310	432	418	200	53
250-330/900	300	250	385	325	355	1050	660	555	243	600	350	660	410	225	1370	88	85	95	1733	1348	430	380	360	310	432	418	200	53
250-330/1100	300	250	385	325	355	1050	660	610	243	600	350	660	410	225	1370	88	85	95	1742	1357	430	380	360	310	495	425	200	53
250-330/13204	300	250	385	325	355	1050	660	610	243	600	350	660	410	225	1370	88	85	95	1902	1517	430	380	360	310	495	425	200	53
250-330/16004	300	250	385	325	355	1050	660	610	243	600	350	660	410	225	1370	88	85	95	1902	1517	430	380	360	310	495	425	200	53
250-400/3004	300	250	355	325	376	1065	450	402	243	750	450	810	510	255	1620	88	85	105	1410	1055	430	380	360	310	300	352	200	50
250-400/370	300	250	355	325	376	1065	450	442	243	750	450	810	510	255	1620	88	85	105	1386	1031	430	380	360	310	325	352	200	50
250-400/4504	300	250	355	325	376	1065	450	442	243	750	450	810	510	255	1620	88	85	105	1476	1121	430	380	360	310	325	361	200	50
250-400/5504	300	250	355	325	376	1065	660	555	243	750	450	810	510	255	1620	88	85	105	1590	1235	430	380	360	310	392	418	200	50
250-400/7504	300	250	355	325	376	1065	660	555	243	750	450	810	510	255	1620	88	85	105	1593	1238	430	380	360	310	432	418	200	50
250-400/9004	300	250	355	325	376	1065	660	555	243	750	450	810	510	255	1620	88	85	105	1703	1348	430	380	360	310	432	418	200	50
250-400/11004	300	250	355	325	376	1065	660	610	243	750	450	810	510	255	1620	88	85	105	1712	1357	430	380	360	310	495	425	200	50
250-400/13204	300	250	355	325	376	1065	660	610	243	750	450	810	510	255	1620	88	85	105	1872	1517	430	380	360	310	495	425	200	50
250-400/16004	300	250	355	325	376	1065	660	610	243	750	450	810	510	255	1620	88	85	105	1872	1517	430	380	360	310	495	425	200	50
250-400/20004	300	250	355	325	376	1065	660	610	243	750	450	810	510	255	1620	88	85	105	2012	1657	430	380	360	310	495	425	200	50
250-400/25004	300	250	355	325	376	1065	800	610	243	750	450	810	510	255	1620	88	85	105	2101	1746	430	380	360	310	495	454	200	50
250-500/7504	300	250	360	425	443	1160	660	555	243	800	500	860	560	230	1720	88	85	95	1598	1238	430	375	360	310	432	418	200	55
250-500/9004	300	250	360	425	443	1160	660	555	243	800	500	860	560	230	1720	88	85	95	1708	1348	430	375	360	310	432	418	200	55
250-500/11004	300	250	360	425	443	1160	660	610	243	800	500	860	560	230	1720	88	85	95	1717	1357	430	375	360	310	495	425	200	55
250-500/13204	300	250	360	425	443	1160	660	610	243	800	500	860	560	230	1720	88	85	95	1877	1517	430	375	360	310	495	425	200	55
250-500/16004	300	250	360	425	443	1160	660	610	243	800	500	860	560	230	1720	88	85	95	1877	1517	430	375	360	310	495	425	200	55
250-500/20004	300	250	360	425	443	1160	660	610	243	800	500	860	560	230	1720	88	85	95	2017	1657	430	375	360	310	495	425	200	55
250-500/25004	300	250	360	425	443	1160	800	710	243	800	500	860	560	230	1720	88	85	95	2106	1746	430	375	360	310	570	454	200	55
250-500/31504	300	250	360	425	443	1160	800	710	243	800	500	860	560	230	1720	88	85	95	2190	1830	430	375	360	310	570	454	200	55
300-360/3704	300	300	435	387	458	1100	450	442	243	800	450	860	510	240	1670	88	87,5	105	1447	1012	430	430	360	360	325	363	250	45
300-360/4504	300	300	435	387	458	1100	450	442	243	800	450	860	510	240	1670	88	87,5	105	1621	1186	430	430	360	360	325	363	250	45
300-360/5504	300	300	435	387	458	1100	660	495	243	800	450	860	510	240	1670	88	87,5	105	1667	1237	430	430	360	360	392	420	250	45
300-360/7504	300	300	435	387	458	1100	660	555	243	800	450	860	510	240	1670	88	87,5	105	1670	1240	430	430	360	360	432	420	250	45
300-360/9004	300	300	435	387	458	1100	660	555	243	800	450	860	510	240	1670	88	87,5	105	1780	1350	430	430	360	360	432	420	250	45
300-360/11004	300	300	435	387	458	1100	660	610	243	800	450	860	510	240	1670	88	87,5	105	1789	1359	430	430	360	360	495	427	250	45
300-360/13204	300	300	435	387	458	1100	660	610	243	800	450	860	510	240	1670	88	87,5	105	1949	1519	430	430	360	360	495	427	250	45
300-360/16004	300	300	435	387	458	1100	660	610	243	800	450	860	510	240	1670	88	87,5	105	1954	1519	430	430	360	360	495	427	250	45
300-360/20004	300	300	435	387	458	1100	660	610	243	800	450	860	510	240	1670	88	87,5	105	2094	1659	430	430	360	360	495	427	250	45
300-400/5504	350	300	410	425	439	1200	660	495	278	800	500	860	560	245	1720	90	87,5	95	1645	1235	490	430	420	360	392	418	250	53,5
300-400/7504	350	300	410	425	439	1200	660	555	278	800	500	860	560	245	1720	90	87,5	95	1748	1338	490	430	420	360	432	418	250	53,5
300-400/9004	350	300	410	425	439	1200	660	555	278	800	500	860	560	245	1720	90	87,5	95	1758	1348	490	430	420	360	432	418	250	53,5
300-400/11004	350	300	410	425	439	1200	660	610	278	800	500	860	560	245	1720	90	87,5	95	1767	1357	490	430	420	360	495	425	250	53,5
300-400/13204	350	300	410	425	439	1200	660	610	278	800	500	860	560	245	1720	90	87,5	95	1927	1517	490	430	420	360	495	425	250	53,5
300-400/16004	350	300	410	425	439	1200	660	610	278	800	500	860	560	245	1720	90	87,5	95	1927	1517	490	430	420	360	495	425	250	53,5
300-400/20004	350	300	410	425	439	1200	660	610	278	800	500	860	560	245	1720	90	87,5	95	2067	1657	490	430	420	360	495	425	250	53,5
300-400/25004	350	300	410	425	439	1200	800	610	278	800	500	860	560	245	1720	90	87,5	95	2156	1746	490	430	420	360	495	454	250	53,5
300-400/31504	350	300	410	425	439	1200	800	610	278	800	500	860	560	245	1720	90	87,5	95	2240	1830	490	430	420	360	495	454	250	53,5
300-500/1104	350	300	395	450	456	1235	660	610	278	800	500	860	560	255	1720	90	88	105	1747	1357	490	430	420	360	495	425	250	54
300-500/13204	350	300	395	450	456	1235	660	610	278	800	500	860	560	255	1720	90	88	105	1907	1517	490	430	420	360	495	425	250	54
300-500/16004	350	300	395	450	456	1235	660	610	278	800	500	860	560	255	1720	90	88	105	1912	1517	490	430	420	360	495	425	250	54

20) EN 1092-2, PN 25

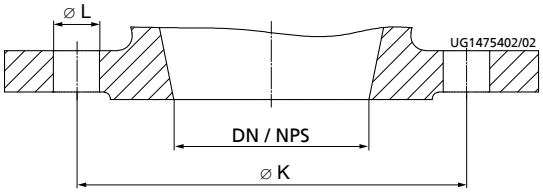
Pump size	DN_1 20)	DN_2 20)	a	b_1	b_2	b_3	d_2	d_3	e	h_1	h_2	h_3	h_4	h_5	h_6	k_1	k_2	k_3	l_1	l_2	m_1	m_2	n_1	n_2	p	w	x	β
300-500/20004	350	300	395	450	456	1235	660	610	278	800	500	860	560	255	1720	90	88	105	2052	1657	490	430	420	360	495	425	250	54
300-500/25004	350	300	395	450	456	1235	800	710	278	800	500	860	560	255	1720	90	88	105	2141	1746	490	430	420	360	570	454	250	54
300-500/31504	350	300	395	450	456	1235	800	710	278	800	500	860	560	255	1720	90	88	105	2225	1830	490	430	420	360	570	454	250	54
350-340/2204	350	350	380	315	386	1075	450	363	278	750	450	810	510	235	1045	90	90	95	1469	1089	490	490	420	420	262	487	250	50
350-340/3004	350	350	380	315	386	1075	450	402	278	750	450	810	510	235	1045	90	90	95	1526	1146	490	490	420	420	300	487	250	50
350-340/3704	350	350	380	315	386	1075	450	442	278	750	450	810	510	235	1045	90	90	95	1690	1310	490	490	420	420	325	487	250	50
350-340/4504	350	350	380	315	386	1075	450	442	278	750	450	810	510	235	1045	90	90	95	1636	1256	490	490	420	420	325	496	250	50
350-340/5504	350	350	380	315	386	1075	660	495	278	750	450	810	510	235	1045	90	90	95	1750	1370	490	490	420	420	392	553	250	50
350-340/7504	350	350	380	315	386	1075	660	555	278	750	450	810	510	235	1045	90	90	95	1753	1373	490	490	420	420	432	553	250	50
350-340/9004	350	350	380	315	386	1075	660	555	278	750	450	810	510	235	1045	90	90	95	1863	1483	490	490	420	420	432	553	250	50
350-340/11004	350	350	380	315	386	1075	660	610	278	750	450	810	510	235	1045	90	90	95	1872	1492	490	490	420	420	495	560	250	50
350-340/13204	350	350	380	315	386	1075	660	610	278	750	450	810	510	235	1045	90	90	95	2032	1652	490	490	420	420	495	560	250	50

Flange design

Flange design by materials

Material variant	Standard	Nominal size	Pressure class
Etaline			
G, GB, GC	EN 1092-2	DN 32 - DN 200	PN 16
	Drilled to ASME B16.1[21)]	DN 32 - DN 200	Class 125
Etaline-R			
SN, SCN, SMN	EN 1092-2	DN 150 - DN 350	PN 25
	Drilled to ASME B16.1[21)]	DN 150 - DN 350	Class 125
GN, GCN, MN	Drilled to EN1092-2	DN 150 - DN 350	PN16
			PN 10
	Drilled to ASME B16.1[21)]	DN 150 - DN 350	Class 125

Flange dimensions



Flange dimensions

Flange dimensions [mm]

DN/ NPS	Etaline				Etaline-R							
	Standard											
	EN 1092-2		ASME B 16.1		EN 1092-2						ASME B 16.1	
	Material											
	G		G		S		G, M		G, M		G, M, S	
	PN 16		Class 125		PN 25		PN 16		PN 10		Class 125	
	Ø K	Number of holes	Ø K	Number of holes	Ø K	Number of holes	Ø K	Number of holes	Ø K	Number of holes	Ø K	Number of holes
32/ NPS11/4	100	4×∅19	88,9	4×∅15.7	-	-	-	-	-	-	-	-
40/ NPS11/2	110	4×∅19	98,6	4×∅15.7	-	-	-	-	-	-	-	-
50/ NPS2	125	4×∅19	120,7	4×∅19.1	-	-	-	-	-	-	-	-
65/ NPS21/2	145	4×∅19	139,7	4×∅19.1	-	-	-	-	-	-	-	-
80/ NPS3	160	8×∅19	152,4	4×∅19.1	-	-	-	-	-	-	-	-
100/ NPS4	180	8×∅19	190,5	8×∅19.1	-	-	-	-	-	-	-	-
125/ NPS5	210	8×∅19	215,9	8×∅22.4	-	-	-	-	-	-	-	-
150/ NPS6	240	8×∅23	241,3	8×∅22.4	250	8×∅28	240	8×∅23	240	8×∅23	241,3	8×∅22.4
200/ NPS8	295	12×∅23	298,5	8×∅22.4	310	12×∅28	295	12×∅23	295	8×∅23	298,5	8×∅22.4

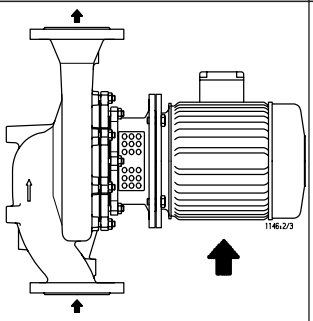
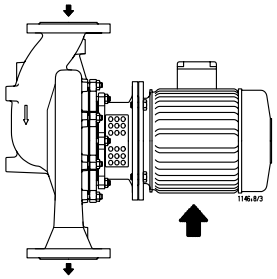
20) EN 1092-2, PN 25
21) DN 80 machined like DN 100

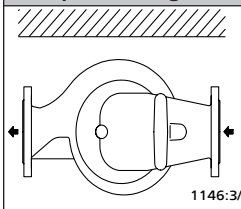
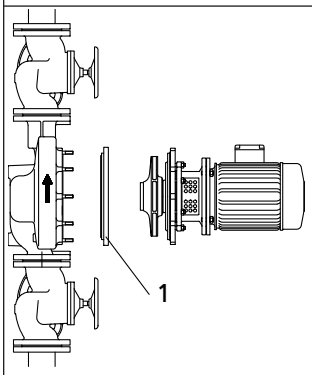
DN/ NPS	Etaline				Etaline-R							
	Standard											
	EN 1092-2		ASME B 16.1		EN 1092-2						ASME B 16.1	
	Material											
	G		G		S		G, M		G, M		G, M, S	
	PN 16		Class 125		PN 25		PN 16		PN 10		Class 125	
	Ø K	Number of holes	Ø K	Number of holes	Ø K	Number of holes	Ø K	Number of holes	Ø K	Number of holes	Ø K	Number of holes
250/ NPS10	-	-	-	-	370	12×∅31	355	12×∅28	350	12×∅23	362	12×∅25.4
300/ NPS12	-	-	-	-	430	16×∅31	410	12×∅28	400	12×∅23	431,8	12×∅25.4
350/ NPS14	-	-	-	-	490	16×∅34	470	16×∅28	460	16×∅23	476,3	12×∅28.4

Typical installation positions

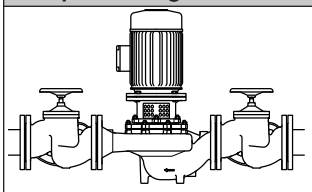
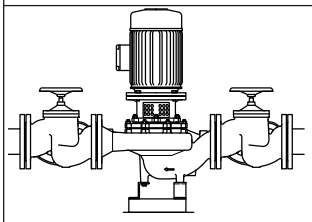
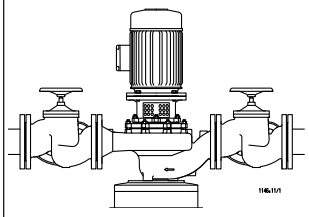
Etaline

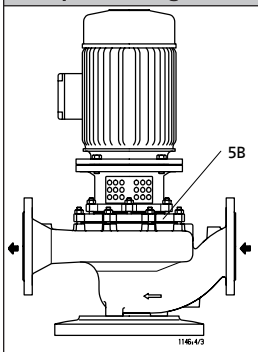
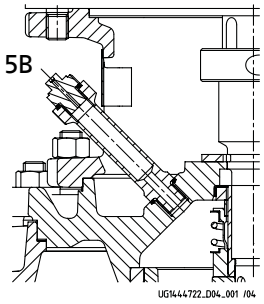
Horizontal installation

Example drawing	Particularities
 Direction of flow from bottom to top	Direction of flow from bottom to top Note: Motors of size 180 (18.5 kW) and above on pump sets with horizontal motor axis require adequate support! The foot fastening holes on the motor housing can be used for this purpose.
 Direction of flow from top to bottom	Direction of flow from top to bottom The volute casing and/or back pull-out unit must be turned by 180° so that the terminal box remains in its current position on the top. Note: Motors of size 180 (18.5 kW) and above on pump sets with horizontal motor axis require adequate support! The foot fastening holes on the motor housing can be used for this purpose.

Example drawing	Particularities
 Horizontal installation	Horizontal installation (for example under the ceiling) The volute casing and/or back pull-out unit must be turned by 90° so that the terminal box remains in its current position on the top.
 Installation with blind flange	1 = Blind flange (accessories) If one of the pumps needs to be serviced, the pump chamber can be shut off by a blind flange so that the system remains operational.

Vertical installation

Example drawing	Particularities
 Vertical installation without feet	Fastening without feet Anchor the piping in close proximity to the pump.
 Vertical installation with angle feet	Fasten sizes 32-32-160 to 100-100-125 with three angle feet (St 37, accessories).
 Vertical installation with pump foot	Fasten sizes 100-100-160 to 200-200-315 with pump foot (grey cast iron, accessories).

Example drawing	Particularities
 Vertical installation - Information about vent valve	Provide a vent valve to prevent dry running of the mechanical seal. (Pumps which have been ordered for vertical installation are supplied with a vent valve.) For vertical installation with the motor on top, use connection 5B for venting.
 Vent, mechanical seal chamber	The mechanical seal chamber can be vented with the vent valve 5B.

Accessories

Pump accessories

Overview of accessories

Component	Connection		Mat. No.	[kg]
Pump foot for vertical installation	Etaline 32-32–160 to 100-100–125[22)]		47077960	1.5
	Etaline 100-100–160 to 200-200–315[23)]		01614068	12.4
Vent valve 5B[24)] for vertical installation				
Blind flange comprising blind flange and gasket	Etaline 32/40/50/65/80/100-160, 100-125		01536669	6.7
	Etaline 32/80/100/125/150-200, 125-160		01536670	12.4
	Etaline 40/50/65/80/190/125/150/200-250		01536671	14.7
	Etaline 200-315		01536672	22.2
Y-pipes for dual-pump stations, grey cast iron, with hexagon head bolts, nuts and gaskets; flanges drilled to DIN 2501 PN 16	DN 40	Suction side	40000688	10.6
	DN 40	Discharge side	40000679	13
	DN 50	Suction side	40000689	13.5
	DN 50	Discharge side	40000680	16
	DN 65	Suction side	40000690	18.3
	DN 65	Discharge side	40000681	20.4
	DN 80	Suction side	48936065	25
	DN 80	Discharge side	48936202	28.1
	DN 100	Suction side	40000692	31
	DN 100	Discharge side	40000440	34

22) Three pump feet with bolts
23) One pump foot with bolt
24) Can only be processed via KSB EasySelect (configurable range)

Electrical accessories

Further electrical accessories

Component	Description
	**PumpMeter** intelligent pressure transmitter The PumpMeter device is an intelligent pressure transmitter for pumps, with on-site display of measured values and operating data. The device comprises two pressure sensors and a display unit. It records the load profile of the pump in order to indicate any potential for optimising energy efficiency and availability. PumpMeter is supplied completely assembled and parameterised for the pump it is used with. It is ready for operation as soon as the M12 plug connector is plugged in.
	**PumpDrive** self-cooling frequency inverter PumpDrive is a modular, self-cooling frequency inverter which enables continuously variable speed control of asynchronous motors and synchronous reluctance motors (PumpDrive S) by means of analog standard signals, a field bus or the control panel. The parts of the PumpDrive housing which are in contact with the atmosphere are free from paint-wetting impairment substances. Mounting options: ▪ Motor-mounted ▪ Wall-mounted ▪ Cabinet-mounted
	**KSB SuPremE motor** Magnetless synchronous reluctance motor of efficiency class IE4 in compliance with IEC CD 60034-30 Ed. 2, 05-2011 for operation with a KSB PumpDrive S variable speed control system, no rotor position sensors needed

General assembly drawings

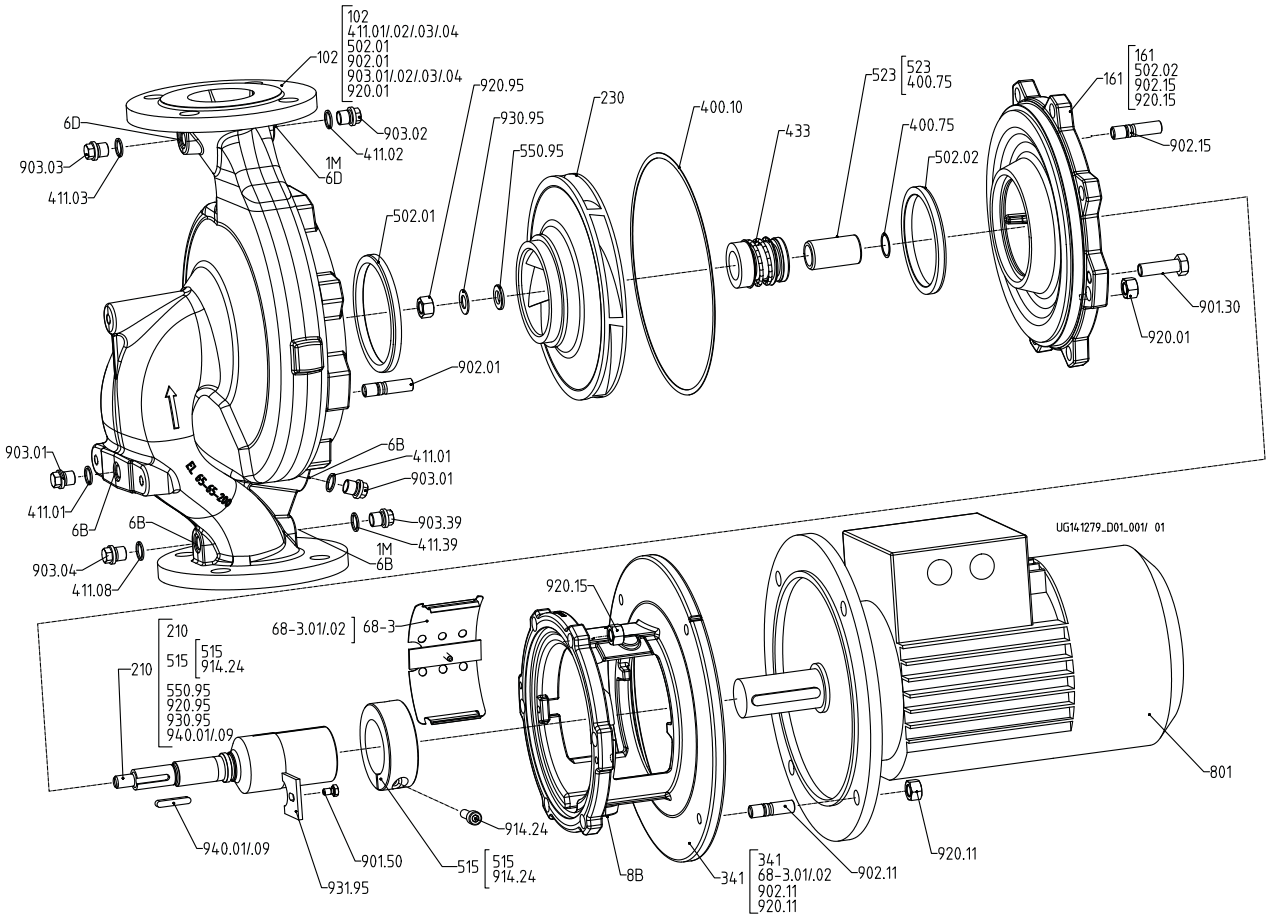
Etaline

Variant with bolted casing cover

[Supplied in packaging units only

This view applies to the following pump sizes:

32-32-200 40-40-250 50-50-250 65-65-250 80-80-200 80-80-250 100-100-250 125-125-250 150-150-250 200-200-250 200-200-315



Variant with bolted casing cover

List of components

Part No.	Description	Part No.	Description
102	Volute casing	901.30/.50	Hexagon head bolt
161	Casing cover	902.01/.11/.15	Stud
210	Shaft	903.01/.02/.03/.04/.08/.39	Screw plug
230	Impeller	914.24	Hexagon socket head cap screw
341	Drive lantern	920.01/.11/.15/.95	Hexagon nut
400.10/.75	Gasket	930.95	Safety device
411.01/.02/.03/.04/.08/.39	O-ring	931.95	Lock washer
433	Mechanical seal	940.01/.09	Key
502.01/.02	Casing wear ring		
515	Taper lock ring	**Auxiliary connections**	
523	Shaft sleeve	1M	Pressure gauge
550.95	Disc [25]	6B	Fluid drain

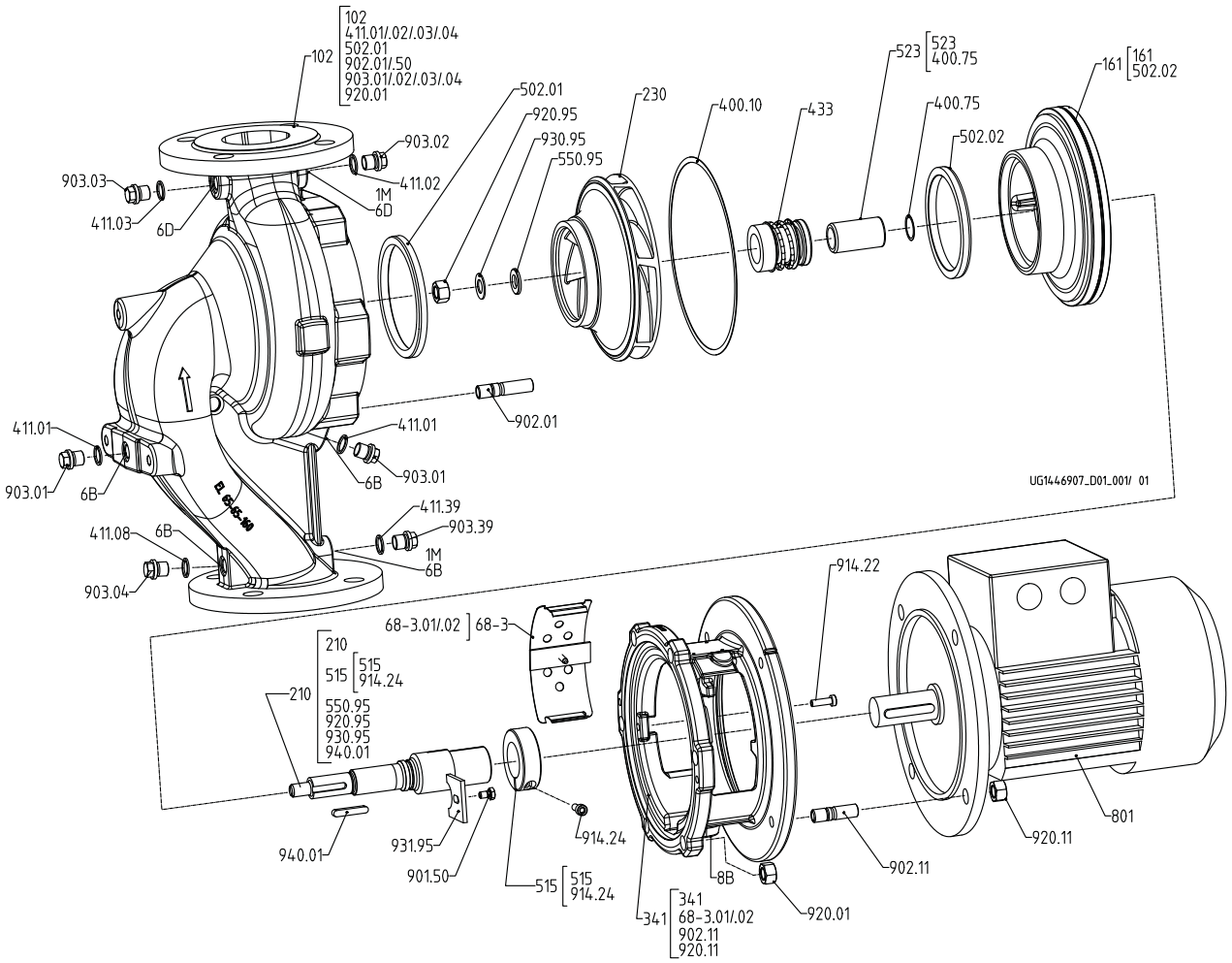
Part No.	Description	Part No.	Description
68-3.01/.02	Cover plate	6D	Fluid priming and venting
801	Flanged motor	8B	Leakage drain

Variant with clamped casing cover

[Supplied in packaging units only

This view applies to the following pump sizes:

32-32-160 40-40-160 50-50-160 65-65-160 80-80-160 100-100-125 100-100-160 100-100-200 125-125-160 125-125-200 150-150-200



Pump set with single mechanical seal and clamped casing cover

List of components

Part No.	Description	Part No.	Description
102	Volute casing	901.50	Hexagon head bolt
161	Casing cover	902.01/.11/.50	Stud
210	Shaft	903.01/.02/.03/.04/.08/.39	Screw plug
230	Impeller	914.22/.24	Hexagon socket head cap screw
341	Drive lantern	920.01/.11/.95	Hexagon nut
400.10/.75	Gasket	930.95	Safety device
411.01/.02/.03/.04/.08/.39	O-ring	931.95	Lock washer
433	Mechanical seal	940.01	Key

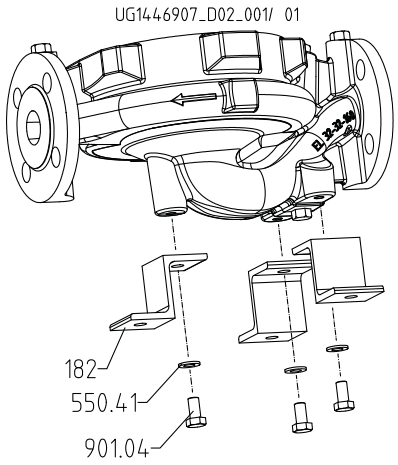
25) For shaft unit 25 only

Part No.	Description	Part No.	Description
502.01/.02	Casing wear ring		
515	Taper lock ring	**Auxiliary connections**	
523	Shaft sleeve	1M	Pressure gauge
550.95	Disc [26)]	6B	Fluid drain
68-3.01/.02	Cover plate	6D	Fluid priming and venting
801	Flanged motor	8B	Leakage drain

Variant with pump feet for vertical installation

This view applies to the following pump sizes:

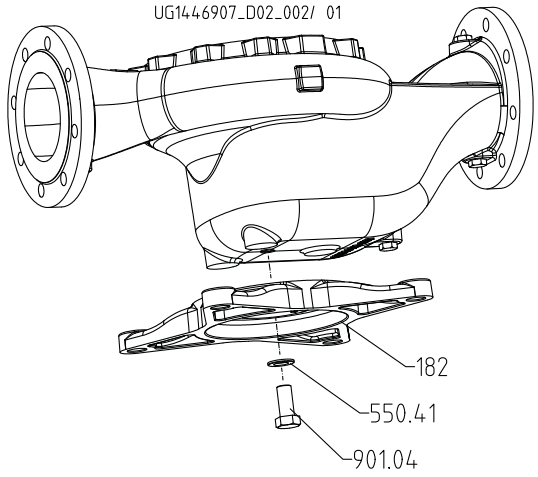
32-32-160 40-40-160 50-50-160 65-65-160 80-80-160 100-100-125



Vertical installation with angle feet

This view applies to the following pump sizes:

100-100-160 100-100-250 125-125-250 150-150-250 200-200-250
200-200-315



Vertical installation with pump foot

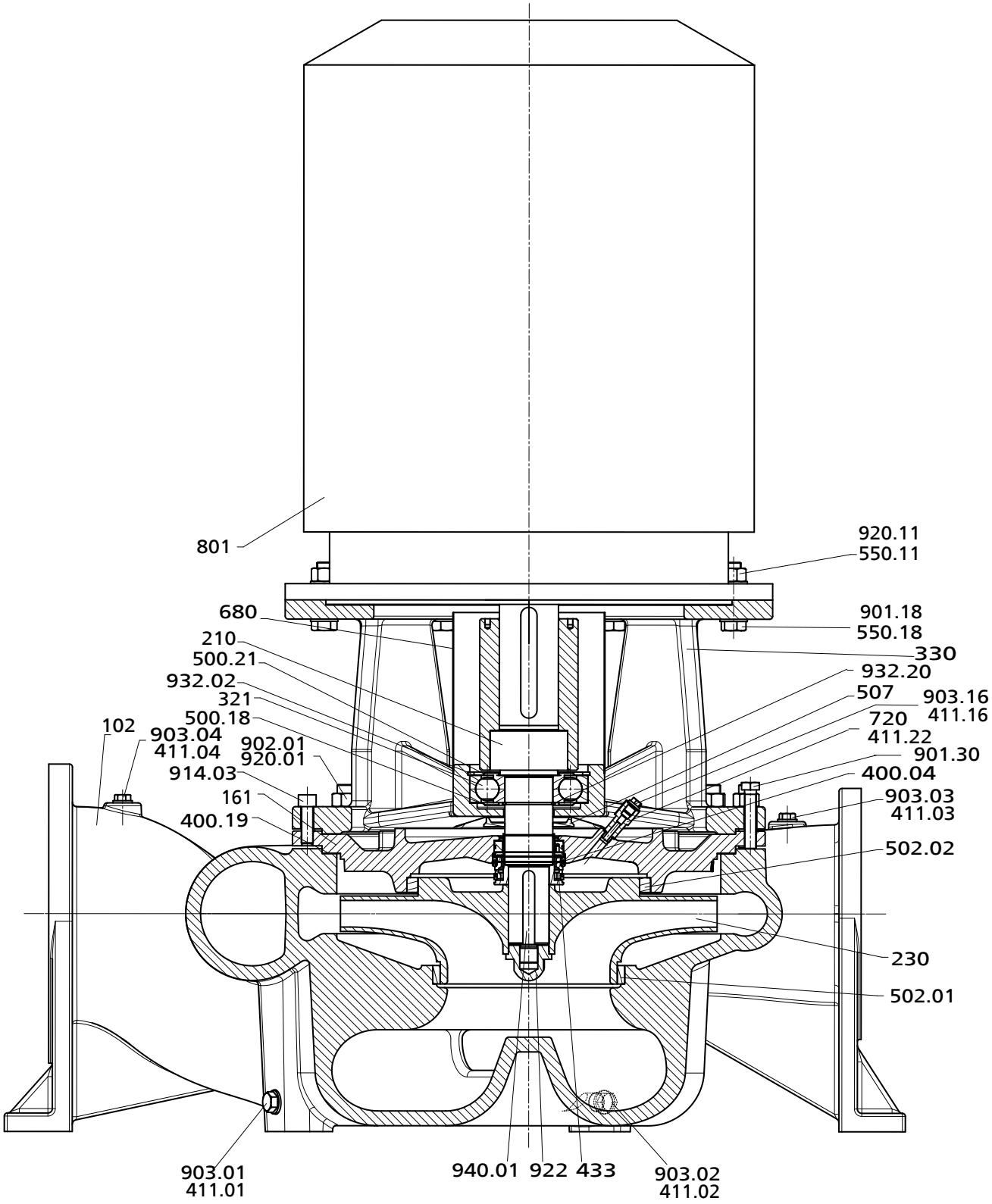
26) For shaft unit 25 only

List of components

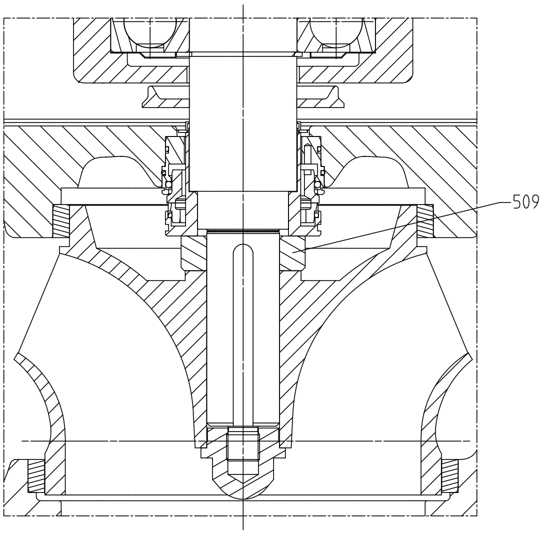
Part No.	Description
182	Foot
550.41	Disc
901.04	Hexagon head bolt

Etaline-R

General assembly drawing with list of components



General assembly drawing



Design with intermediate ring (for sizes 250-250, 250-300, 350-340 only)

List of components

Part No.	Description	Part No.	Description
102	Volute casing	550.11/.18	Disc
161	Casing cover	680	Guard
210	Shaft	720	Fitting
230	Impeller	801	Flanged motor
321	Radial ball bearing	901.18/.30	Hexagon head bolt
330	Bearing bracket	902.01	Stud
400.04/.19	Gasket	903.01/.02/.03/.04/.16	Screw plug
411.01/.02/.03/.04/.16/.22	Joint ring	914.03	Hexagon socket head cap screw
433	Mechanical seal	920.01/.11	Nut
500.18/.21	Ring	922	Impeller nut
502.01/.02	Casing wear ring	932.02/.20	Circlip
507	Thrower	940.01	Key
509[27]	Intermediate ring		

Detailed designation (Etaline only)

Product code example

Position																																											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
E	T	L	-	0	3	2	-	0	3	2	-	1	6	0	-	G	G	-	A	A	1	1	D	2	0	0	3	0	4	e	x	B	S	I	E	I	E	3	P	D	2	E	M
See name plate and data sheet																									See data sheet								-										

Key to the designation

Position		Code	Description
1-4	Pump type		
		ETLY	Etaline SYT
		ETL-	Etaline
5-16	Size		
		032	Nominal suction nozzle diameter [mm]
		032	Nominal discharge nozzle diameter [mm]
		160	Nominal impeller diameter [mm]
17	Pump casing material		
		G	JL 1040/A48CL35
		S	JS 1030

27) For sizes 250-250, 250-300, 250-340 only

Position		Code	Description
18	Impeller material		
		G	JL 1040/A48CL35
		C	1.4408/A743CF8M
		B	CC480K-GS/B30 C90700
19	Design		
		-	Standard
		X	Special design BT3D, BT3
20	Casing cover		
		A	Conical seal chamber
21	Seal variants		
		B	Dead-end arrangement (for Etaline SYT only)
		E	External circulation
		V	Conical seal chamber with vent
		A	Conical seal chamber
22-23	Seal code		
		06	U3BEGG (WE 25, 35)
		07	Q1Q1EGG
		08	AQ1VGG
		09	U3U3VGG
		10	Q1Q1X4GG
		11	BQ1EGG
		22	AQ1EGG (WE 55)
24	Scope of supply		
		A	Pump only (Fig. 0)
		D	Pump, baseplate, coupling, coupling guard, motor
25	Shaft unit		
		2	Shaft unit 25
		3	Shaft unit 35
		5	Shaft unit 55
26-29	Motor rating		
		0002	0.2 KW
		0003	0.3 KW
		0005	0.5 KW
		0007	0.7 KW
		0011	1.1 kW
		0015	1.5 kW
		0022	2.2 kW
		0030	3.0 KW
		0040	4.0 KW
		0055	5.5 kW
		0075	7.5 kW
		0110	11.0 KW
		0150	15.0 KW
		0185	18.5 kW
		0220	22.0 KW
		0300	30.0 KW
		0370	37.0 KW
		0450	45.0 KW
		0550	55.0 KW
30	Number of poles		
		2	2-pole
		4	4-pole
31-32	Explosion protection		
		Ex	Explosion-proof motor
		--	Without explosion-proof motor
33	Product generation		
		B	Product generation Etaline / Etaline SYT GP
34-36	Motor manufacturer		
		KSB	KSB
		SIE	Siemens
		LOH	Loher
		HAL	Halter
37-39	Efficiency class		
		IE1	IE1

Position		Code	Description
		IE2	IE2
		IE3	IE3
		IE4	IE4
40-43	PumpDrive		
		PDB	PumpDrive 1st generation, Basic
		PDA	PumpDrive 1st generation, Advanced
		PD2	PumpDrive 2nd generation
		PD2E	PumpDrive 2nd generation, Eco
44	PumpMeter		
		M	With PumpMeter

23.10.2014

1159.5/01-EN

LENNTECH
info@lenntech.com Tel. +31-152-610-900
www.lenntech.com Fax. +31-152-616-289