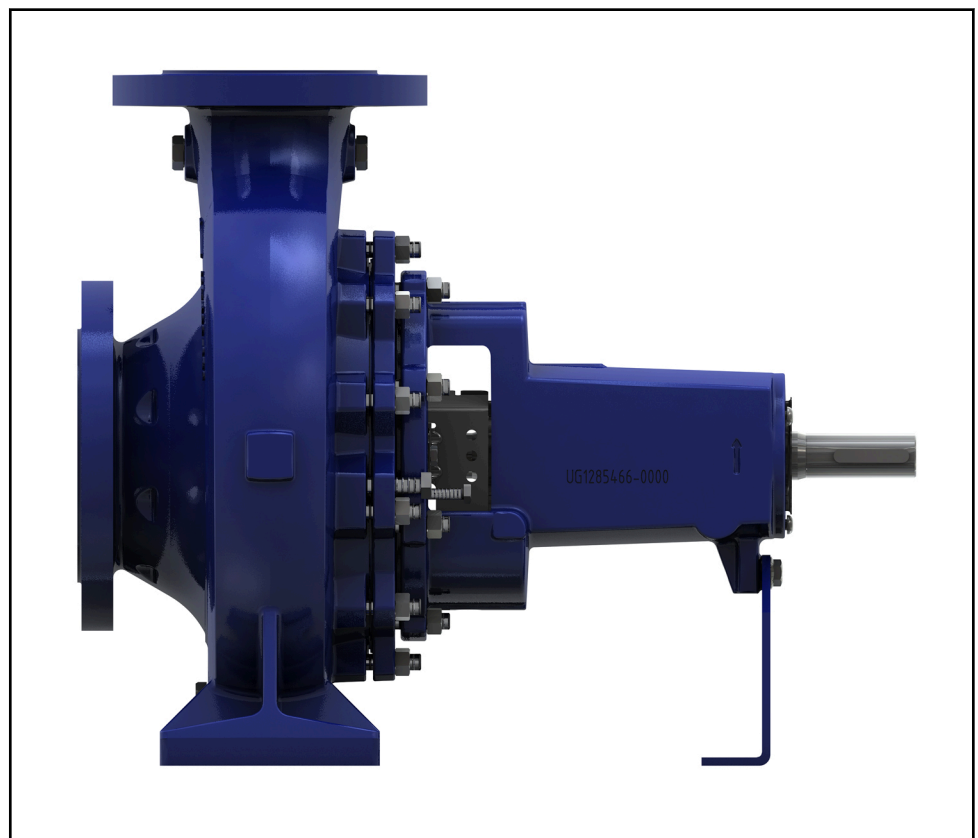


Wassernormpumpe

**Etanorm**

50 Hz

**Kennlinienheft**



## **Impressum**

Kennlinienheft Etanorm

KSB Aktiengesellschaft

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Generell gilt: Technische Änderungen vorbehalten.

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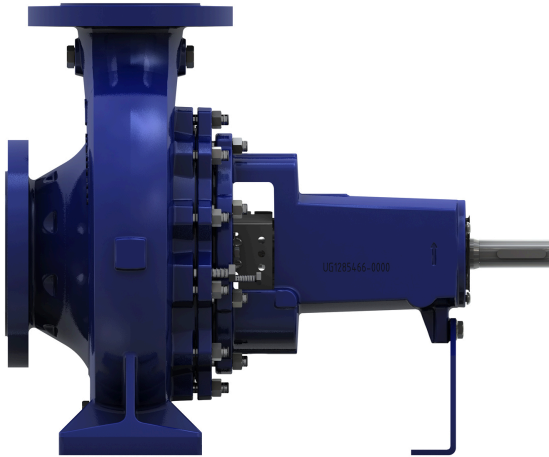
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## Kreiselpumpen mit Wellendichtung

### Wassernormpumpen

### Etanorm



#### Allgemein

**Abnahmeklasse:** Kennlinien gemäß ISO 9906-Klasse 3B

#### NPSH-Werte

Die in den Kennlinien angegebenen NPSH-Messwerte entsprechen einem Förderhöhenabfall von 3%.

#### NPSH-Wert im Teillastgebiet

NPSH-Werte für Förderströme kleiner als  $Q = 0,3 \times Q_{opt}$  können nur mit sehr hohem Aufwand gemessen werden. Der Nachweis von NPSH-Werten im Teillastgebiet wird nicht erbracht.

#### Dichte des Fördermediums

Die Förderhöhen und Leistungsangaben gelten für Fördermedien mit einer Dichte  $\rho = 1,0 \text{ kg/dm}^3$  und einer kinematischen Viskosität  $\nu$  bis max.  $20 \text{ mm}^2/\text{s}$ . Ist die Dichte  $\neq 1,0$ , muss die Leistungsangabe mit  $\rho$  multipliziert werden. Bei Viskositäten  $>20 \text{ mm}^2/\text{s}$  müssen entsprechende Kaltwasserdaten berechnet werden und der Einfluss auf die Pumpenleistung ermittelt werden.

#### Reibleistung

Bei bestimmten Ausführungen (verstärkte Lagerung, bestimmte Wellendichtungen) müssen Reibleistungen berücksichtigt werden und als Zusatzleistung im Datenblatt angegeben werden.

#### Abwertefaktoren

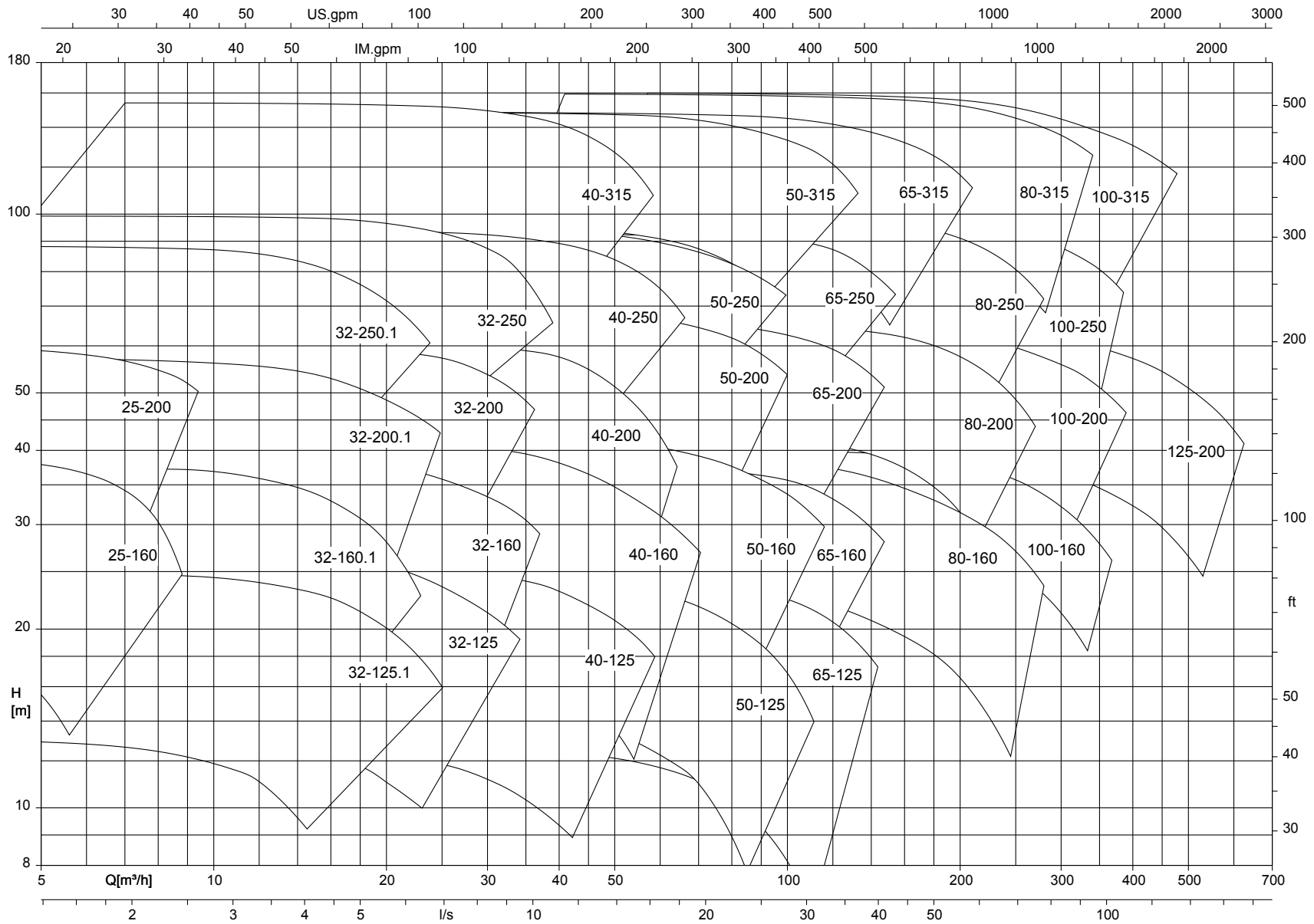
Die Kennlinien gelten für Pumpen mit Gusseisen- bzw. Bronze-Laufrädern. Bei Verwendung eines Laufrads aus einem Stahlgusswerkstoff müssen Wirkungsgrad und Leistung bei betroffenen Baugrößen mit den in den Kennlinien angegebenen Abwertefaktoren korrigiert werden.

## Baugrößenübersicht

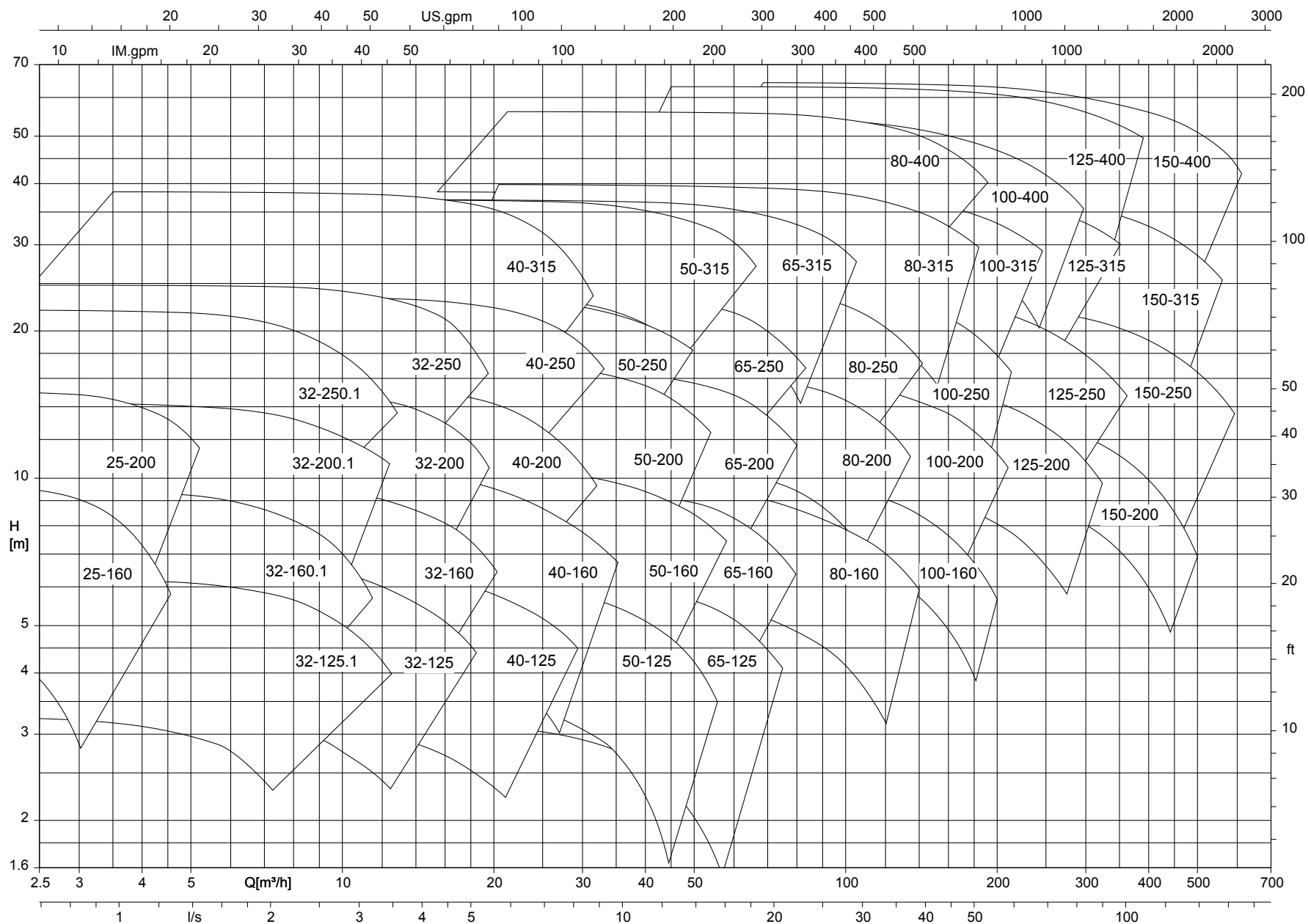
### Baugrößenübersicht

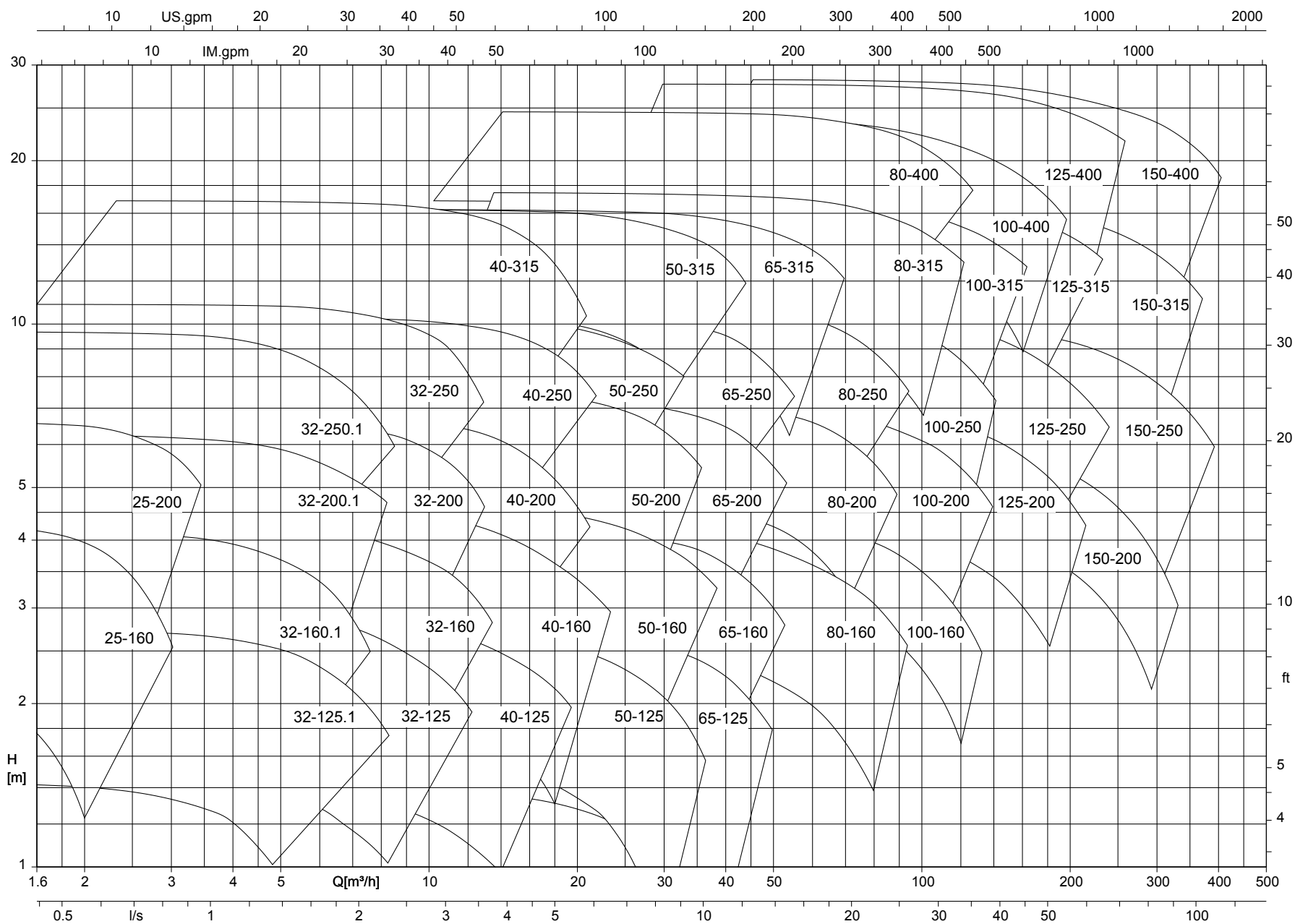
Baugröße	Drehzahl [min <sup>-1</sup> ]		
	2900	1450	960
040-025-160	(⇒ Seite 9)	(⇒ Seite 43)	(⇒ Seite 86)
040-025-200	(⇒ Seite 10)	(⇒ Seite 44)	(⇒ Seite 87)
050-032-125.1	(⇒ Seite 11)	(⇒ Seite 45)	(⇒ Seite 88)
050-032-160.1	(⇒ Seite 12)	(⇒ Seite 46)	(⇒ Seite 89)
050-032-200.1	(⇒ Seite 13)	(⇒ Seite 47)	(⇒ Seite 90)
050-032-250.1	(⇒ Seite 14)	(⇒ Seite 48)	(⇒ Seite 91)
050-032-125	(⇒ Seite 15)	(⇒ Seite 49)	(⇒ Seite 92)
050-032-160	(⇒ Seite 16)	(⇒ Seite 50)	(⇒ Seite 93)
050-032-200	(⇒ Seite 17)	(⇒ Seite 51)	(⇒ Seite 94)
050-032-250	(⇒ Seite 18)	(⇒ Seite 52)	(⇒ Seite 95)
065-040-125	(⇒ Seite 19)	(⇒ Seite 53)	(⇒ Seite 96)
065-040-160	(⇒ Seite 20)	(⇒ Seite 54)	(⇒ Seite 97)
065-040-200	(⇒ Seite 21)	(⇒ Seite 55)	(⇒ Seite 98)
065-040-250	(⇒ Seite 22)	(⇒ Seite 56)	(⇒ Seite 99)
065-040-315	(⇒ Seite 23)	(⇒ Seite 57)	(⇒ Seite 100)
065-050-125	(⇒ Seite 24)	(⇒ Seite 58)	(⇒ Seite 101)
065-050-160	(⇒ Seite 25)	(⇒ Seite 59)	(⇒ Seite 102)
065-050-200	(⇒ Seite 26)	(⇒ Seite 60)	(⇒ Seite 103)
065-050-250	(⇒ Seite 27)	(⇒ Seite 61)	(⇒ Seite 104)
065-050-315	(⇒ Seite 28)	(⇒ Seite 62)	(⇒ Seite 105)
080-065-125	(⇒ Seite 29)	(⇒ Seite 63)	(⇒ Seite 106)
080-065-160	(⇒ Seite 30)	(⇒ Seite 64)	(⇒ Seite 107)
080-065-200	(⇒ Seite 31)	(⇒ Seite 65)	(⇒ Seite 108)
080-065-250	(⇒ Seite 32)	(⇒ Seite 66)	(⇒ Seite 109)
080-065-315	(⇒ Seite 33)	(⇒ Seite 67)	(⇒ Seite 110)
100-080-160	(⇒ Seite 34)	(⇒ Seite 68)	(⇒ Seite 111)
100-080-200	(⇒ Seite 35)	(⇒ Seite 69)	(⇒ Seite 112)
100-080-250	(⇒ Seite 36)	(⇒ Seite 70)	(⇒ Seite 113)
100-080-315	(⇒ Seite 37)	(⇒ Seite 71)	(⇒ Seite 114)
100-080-400	-	(⇒ Seite 72)	(⇒ Seite 115)
125-100-160	(⇒ Seite 38)	(⇒ Seite 73)	(⇒ Seite 116)
125-100-200	(⇒ Seite 39)	(⇒ Seite 74)	(⇒ Seite 117)
125-100-250	(⇒ Seite 40)	(⇒ Seite 75)	(⇒ Seite 118)
125-100-315	(⇒ Seite 41)	(⇒ Seite 76)	(⇒ Seite 119)
125-100-400	-	(⇒ Seite 77)	(⇒ Seite 120)
150-125-200	(⇒ Seite 42)	(⇒ Seite 78)	(⇒ Seite 121)
150-125-250	-	(⇒ Seite 79)	(⇒ Seite 122)
150-125-315	-	(⇒ Seite 80)	(⇒ Seite 123)
150-125-400	-	(⇒ Seite 81)	(⇒ Seite 124)
200-150-200	-	(⇒ Seite 82)	(⇒ Seite 125)
200-150-250	-	(⇒ Seite 83)	(⇒ Seite 126)
200-150-315	-	(⇒ Seite 84)	(⇒ Seite 127)
200-150-400	-	(⇒ Seite 85)	(⇒ Seite 128)

## Kennfelder

Etanorm,  $n = 2900 \text{ min}^{-1}$ 

Etanorm,  $n = 1450 \text{ min}^{-1}$

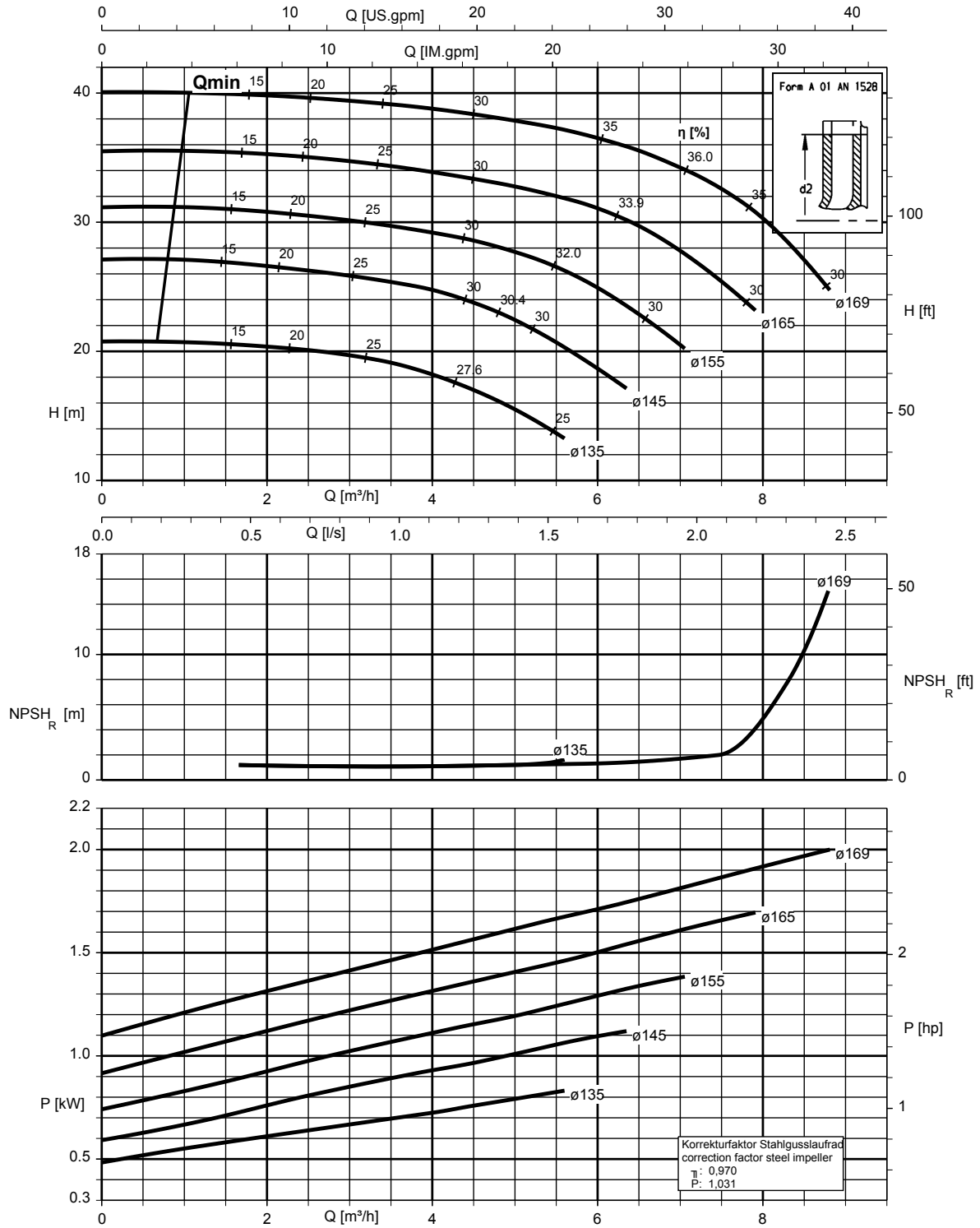


Etanorm,  $n = 960 \text{ min}^{-1}$ 

## Kennlinien

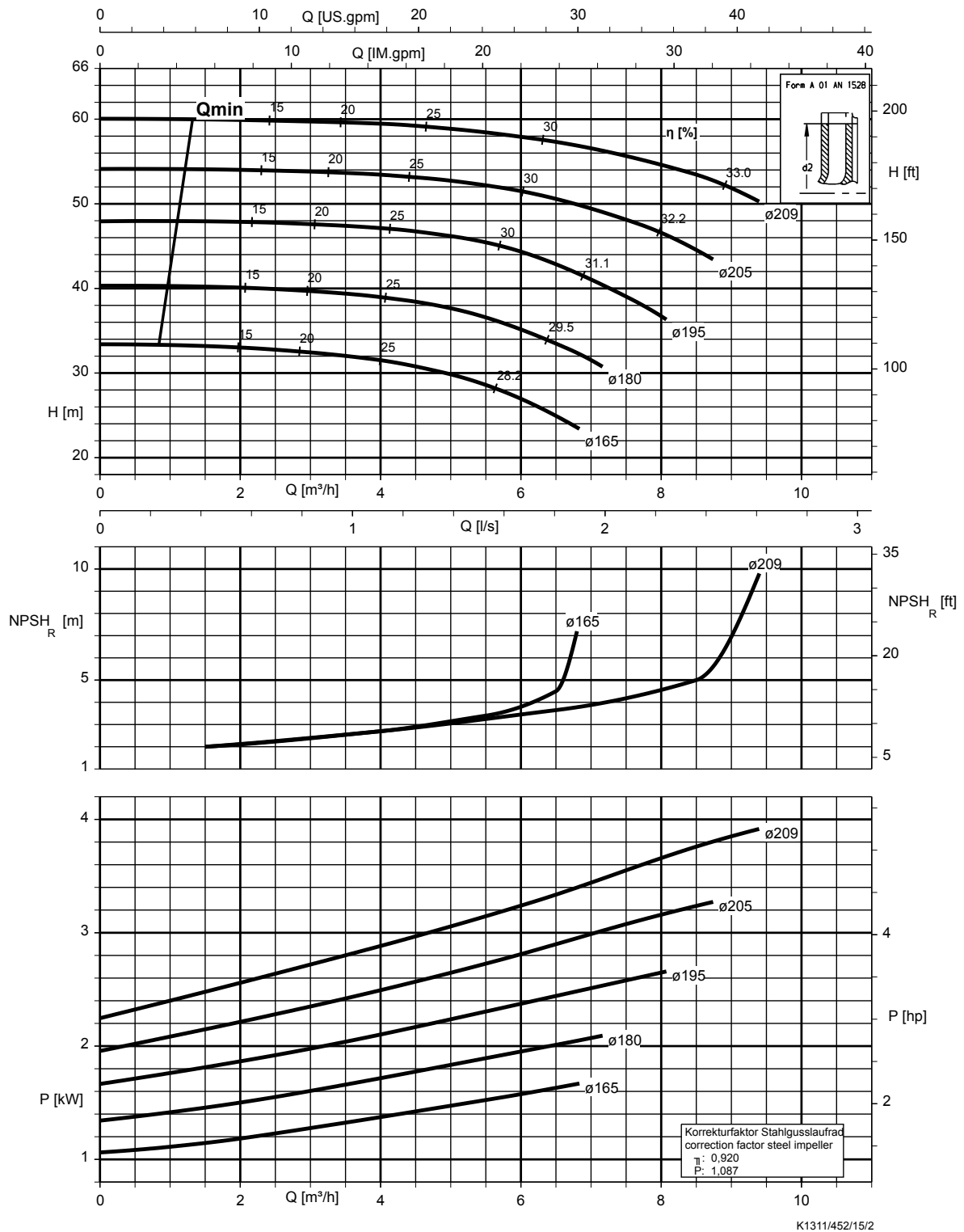
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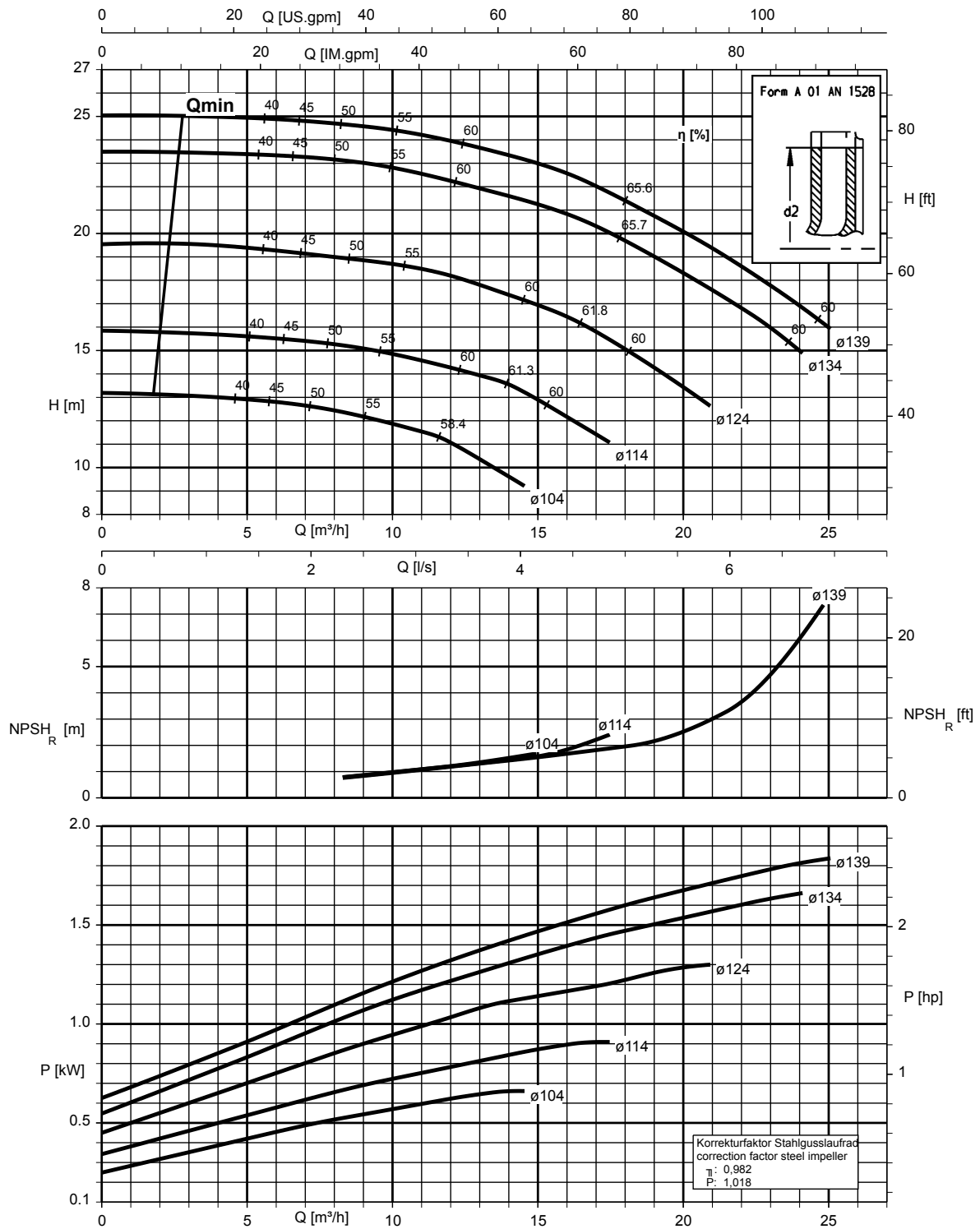


K1311.452/14/2

Etanorm 040-025-200,  $n = 2900 \text{ min}^{-1}$

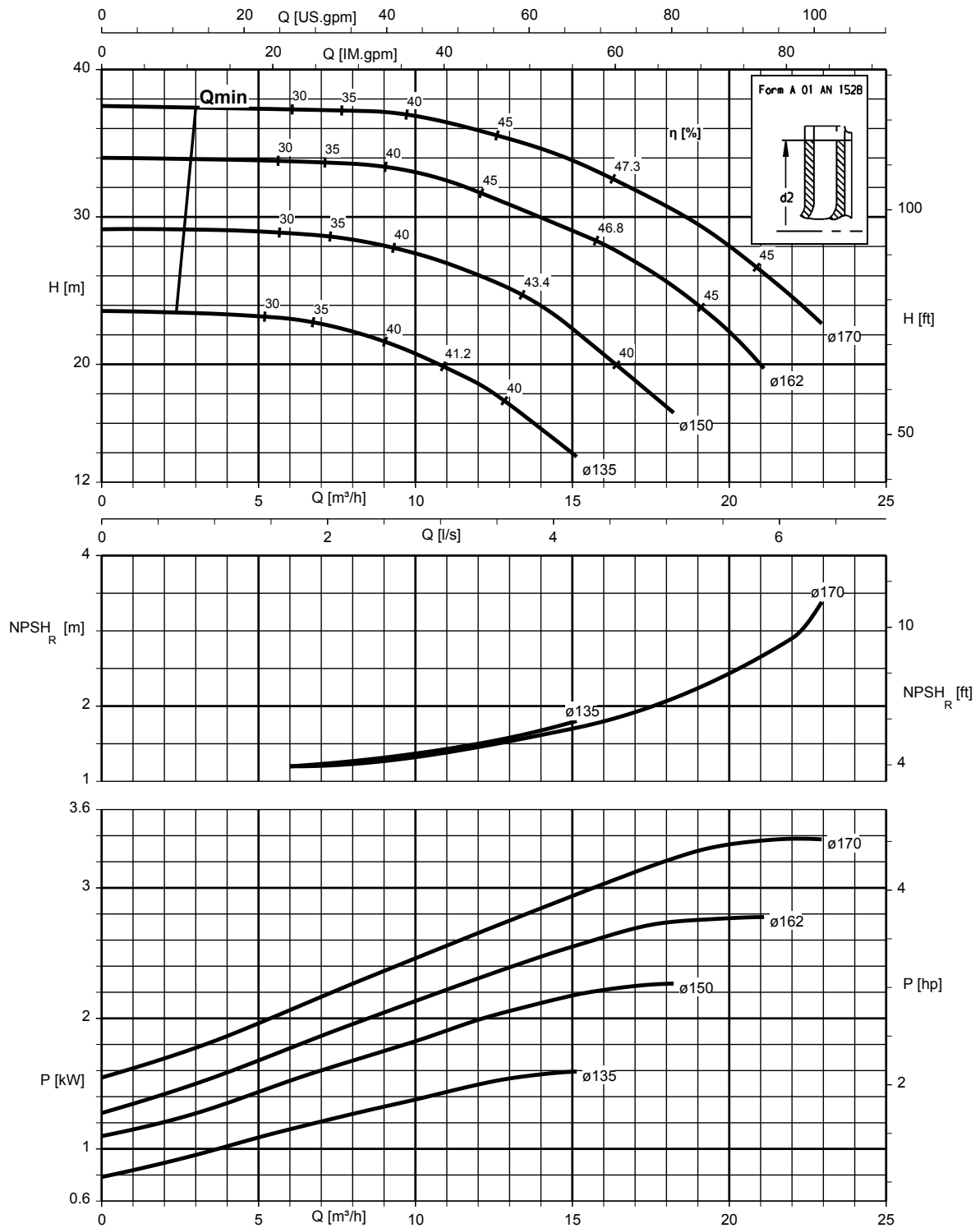


Etanorm 050-032-125.1,  $n = 2900 \text{ min}^{-1}$



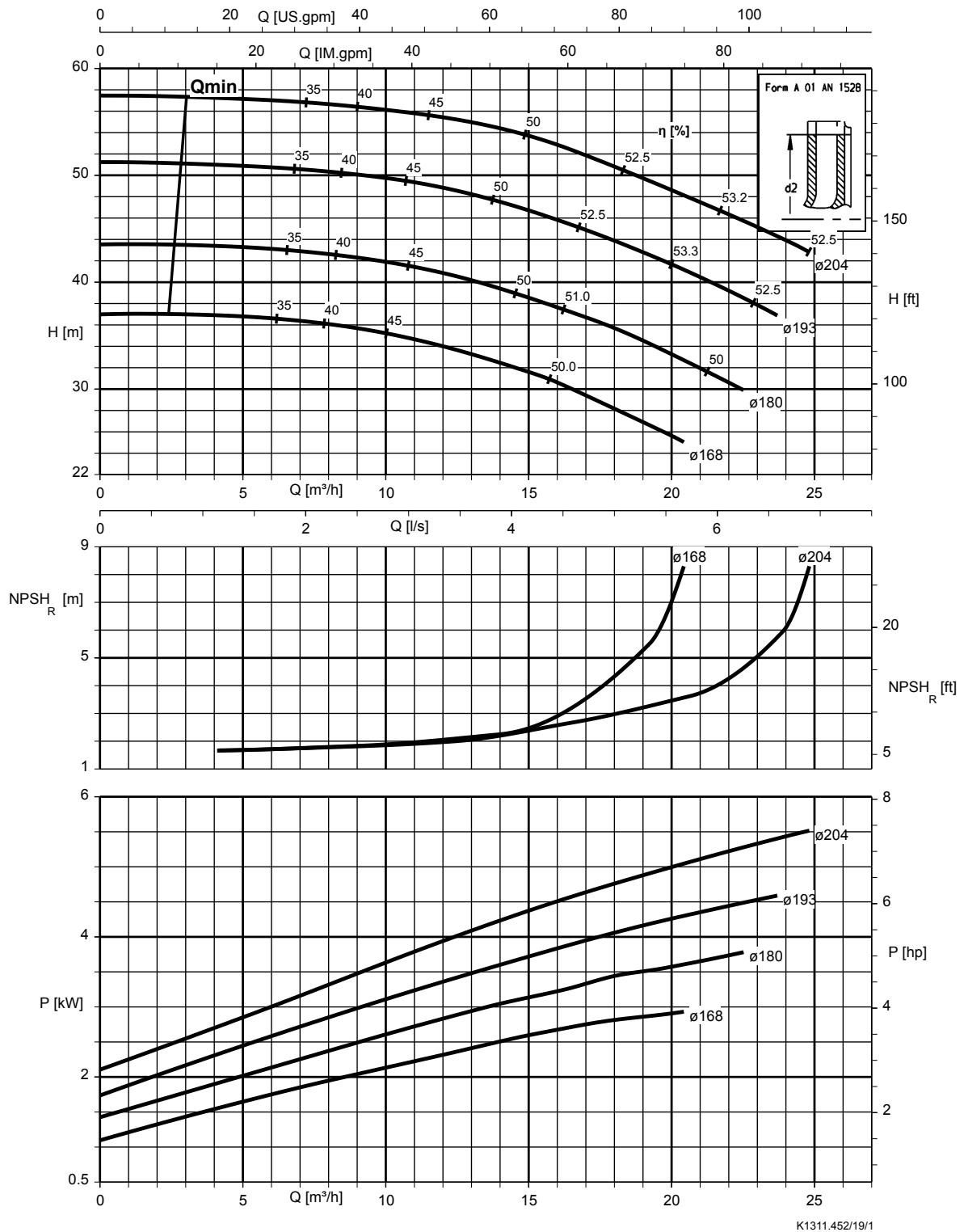
K1311.452/17/1

Etanorm 050-032-160.1,  $n = 2900 \text{ min}^{-1}$

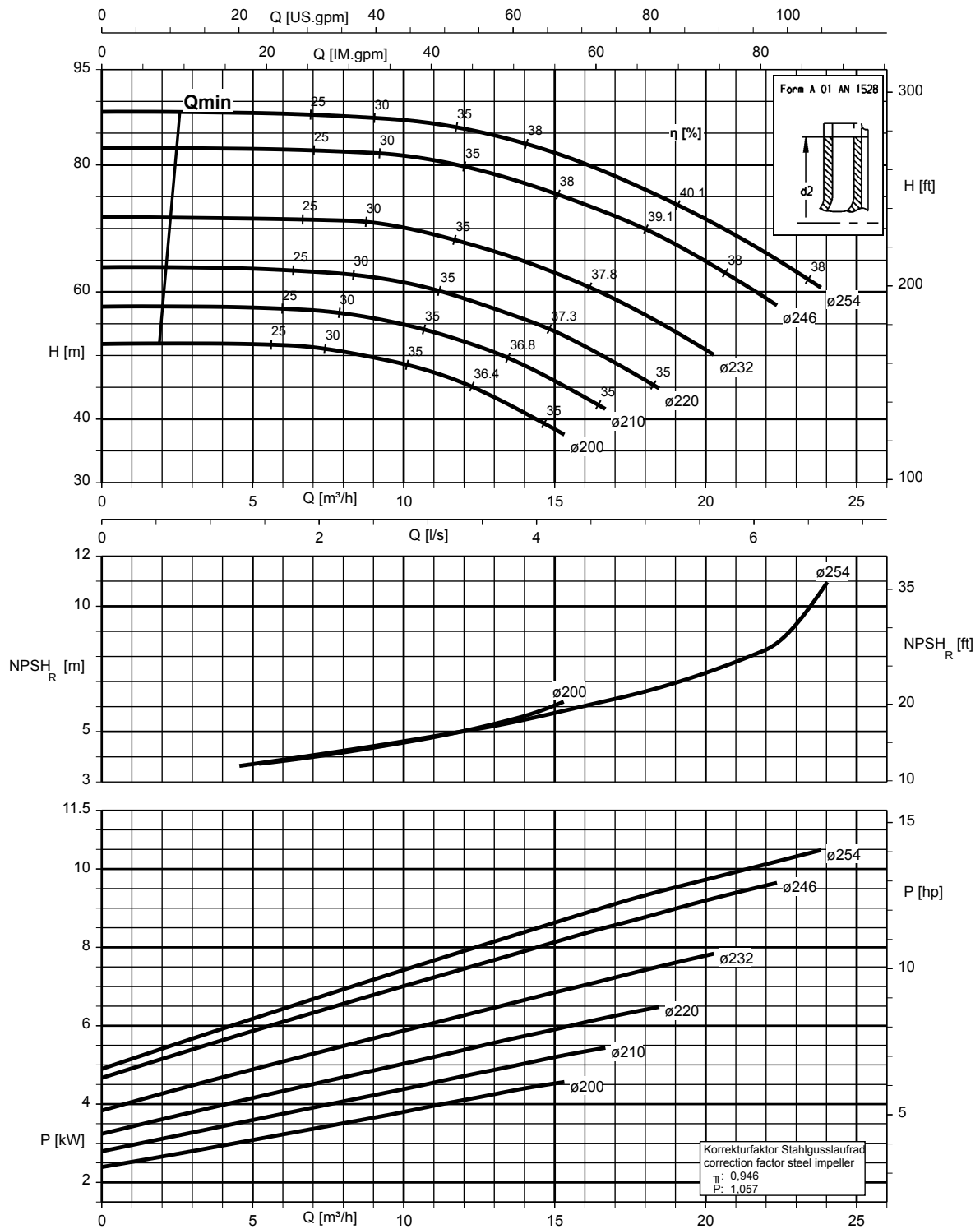


K1311.452/18/1

Etanorm 050-032-200.1,  $n = 2900 \text{ min}^{-1}$

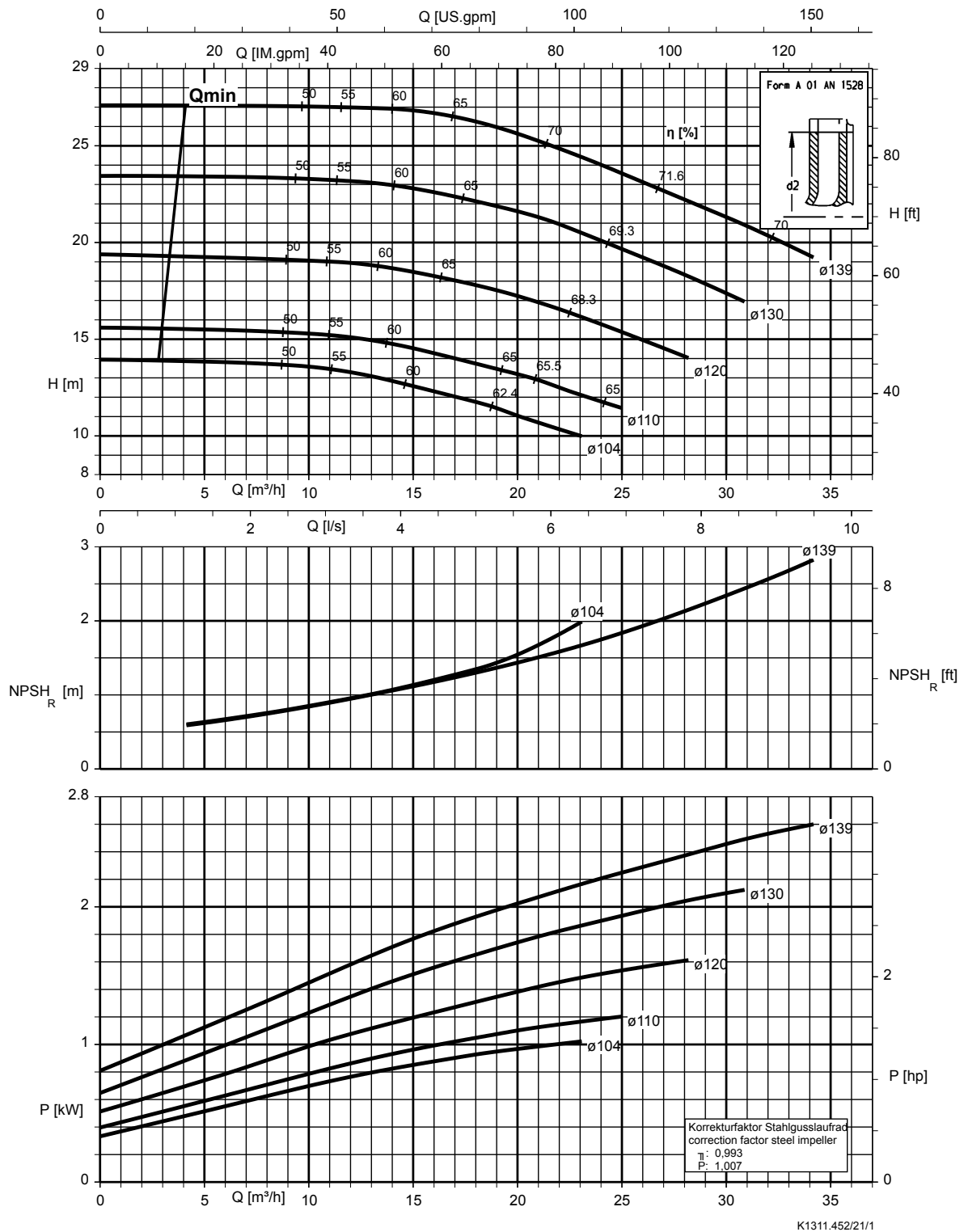


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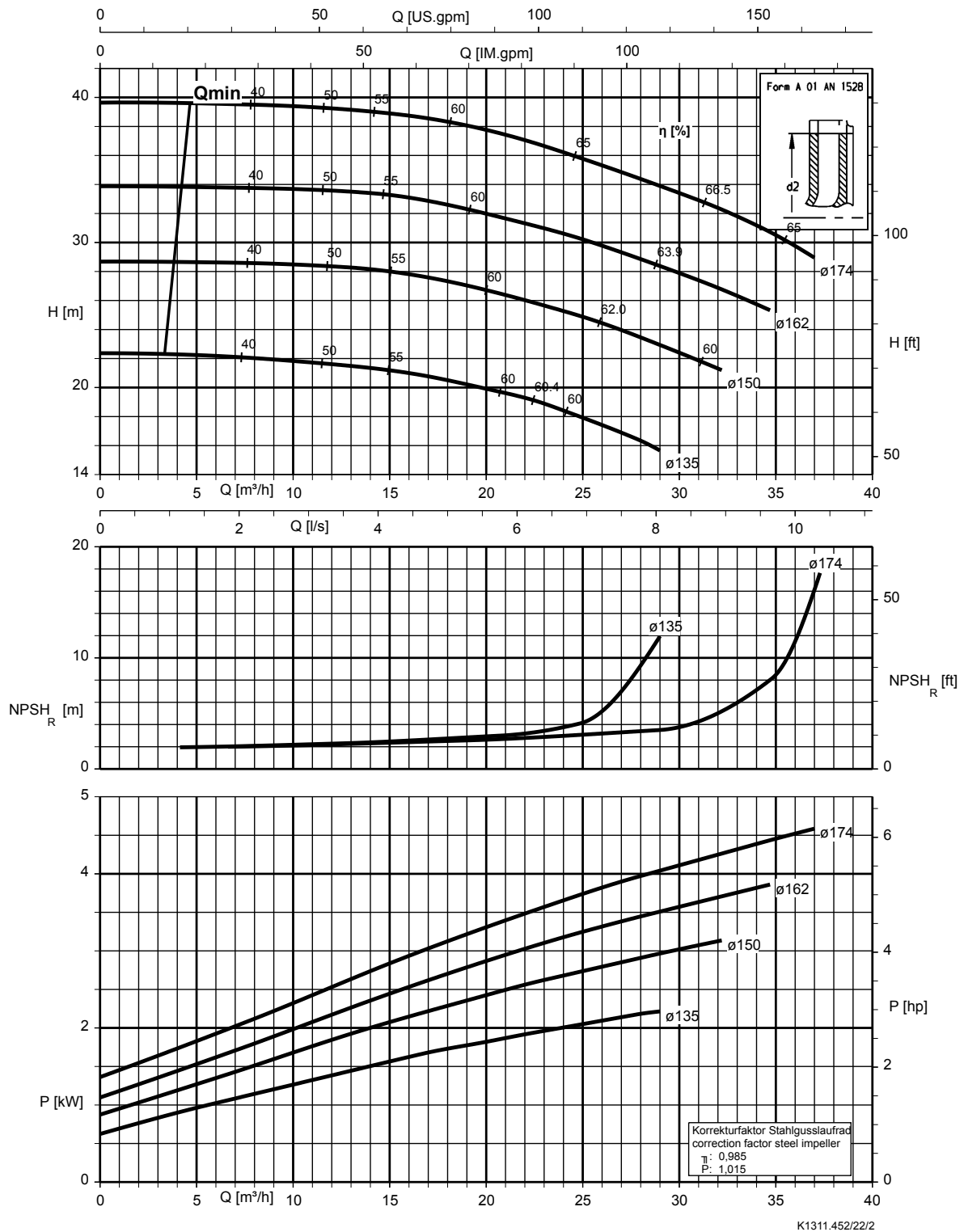


K1311.452/20/2

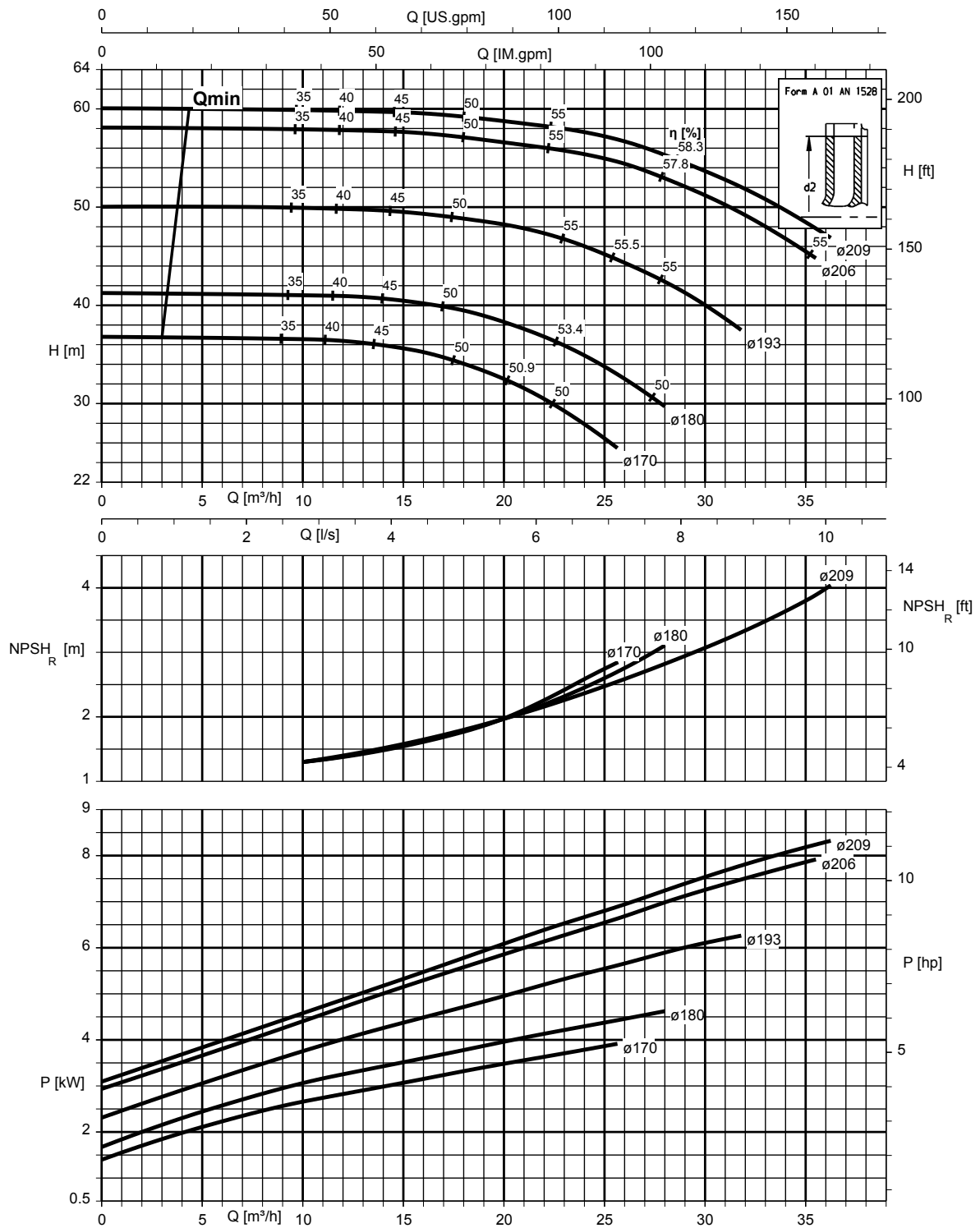
Etanorm 050-032-125,  $n = 2900 \text{ min}^{-1}$



Etanorm 050-032-160,  $n = 2900 \text{ min}^{-1}$

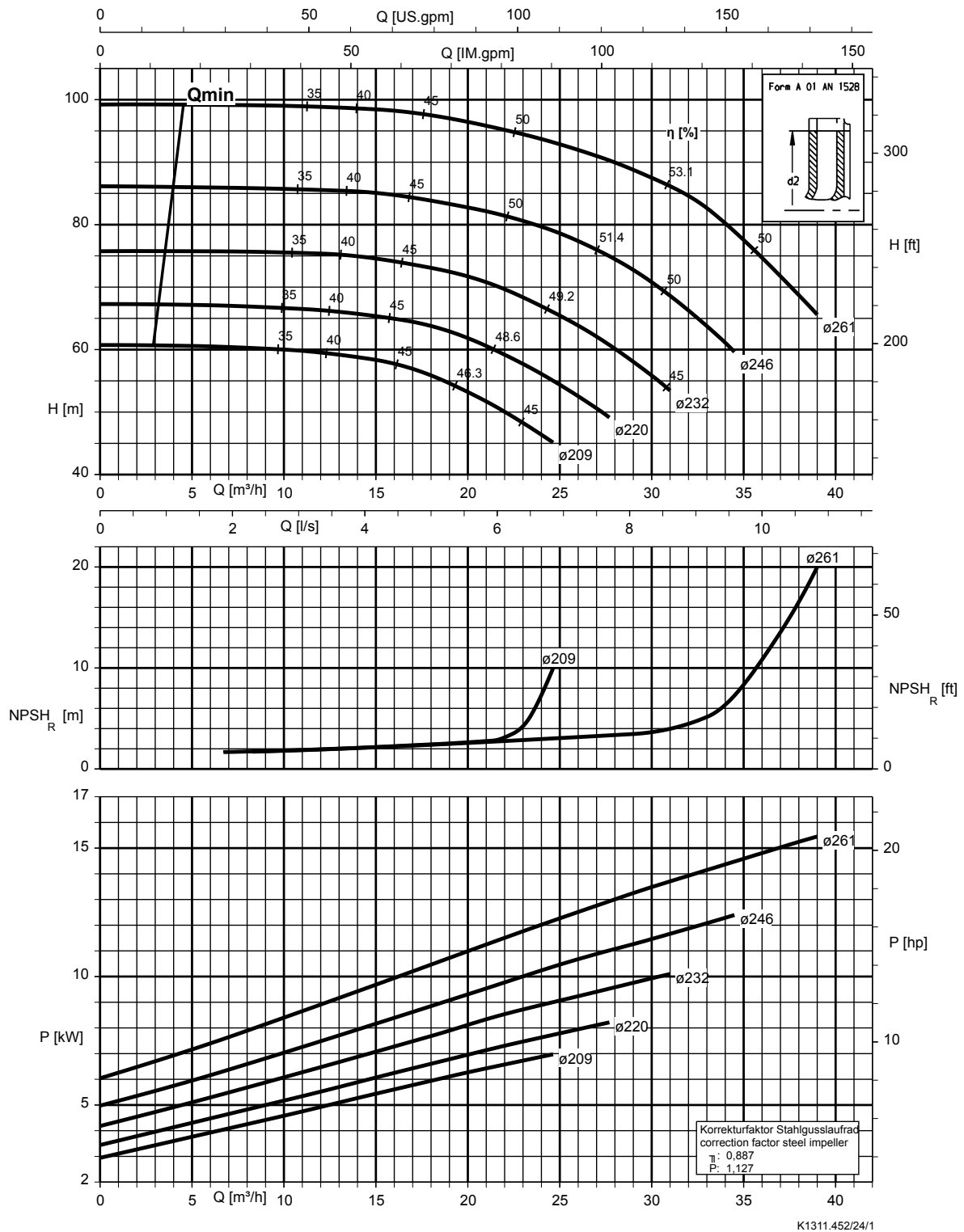


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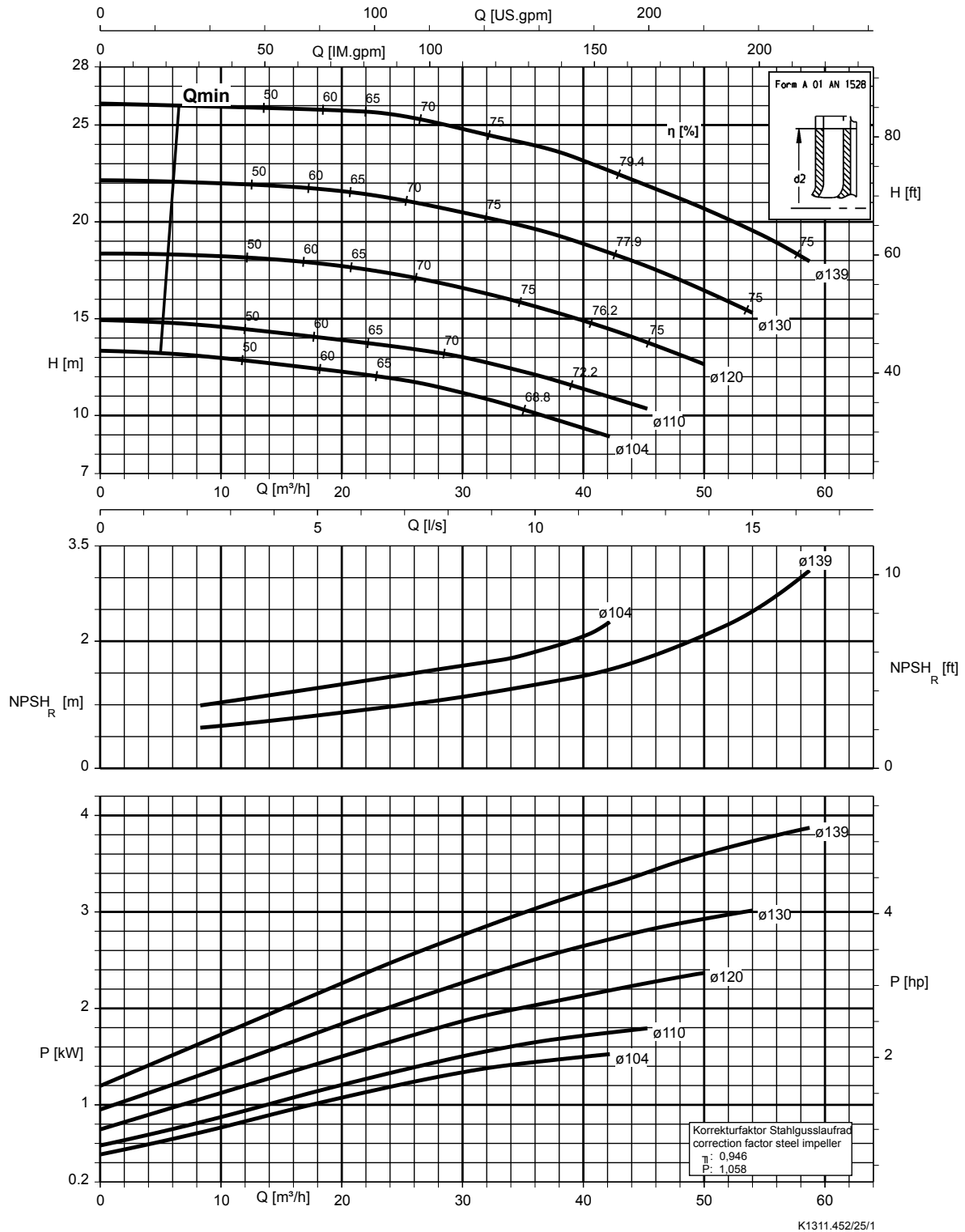


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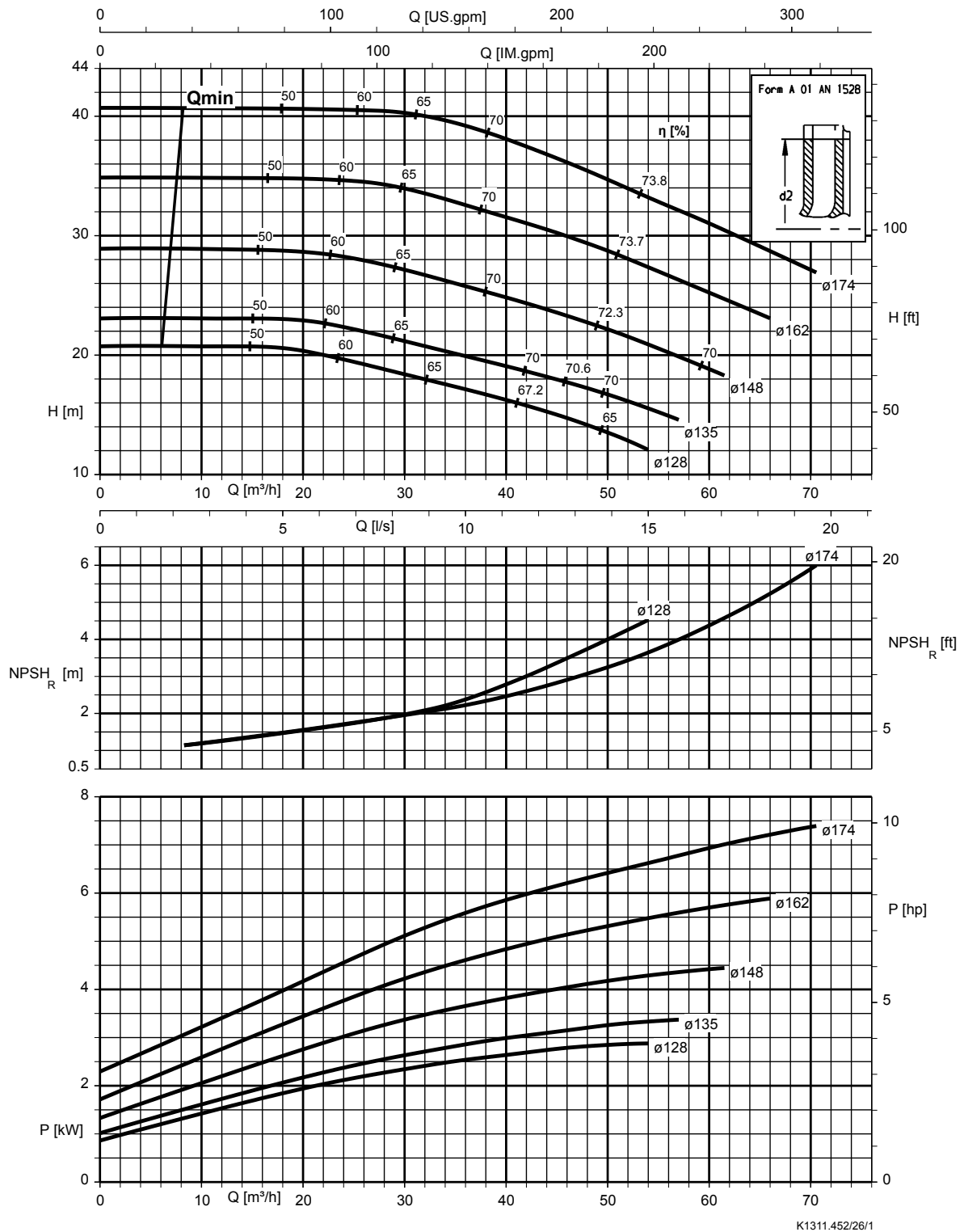
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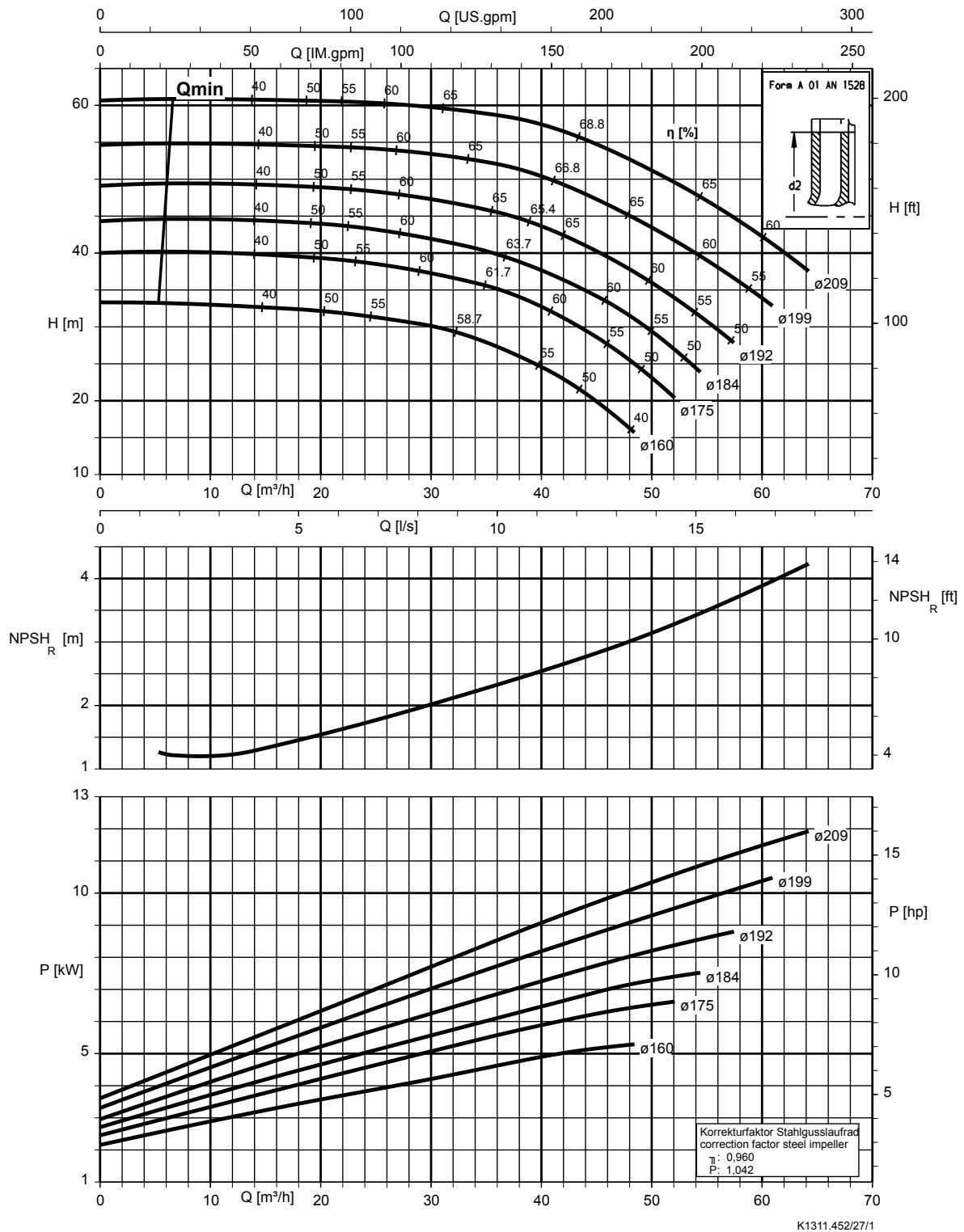
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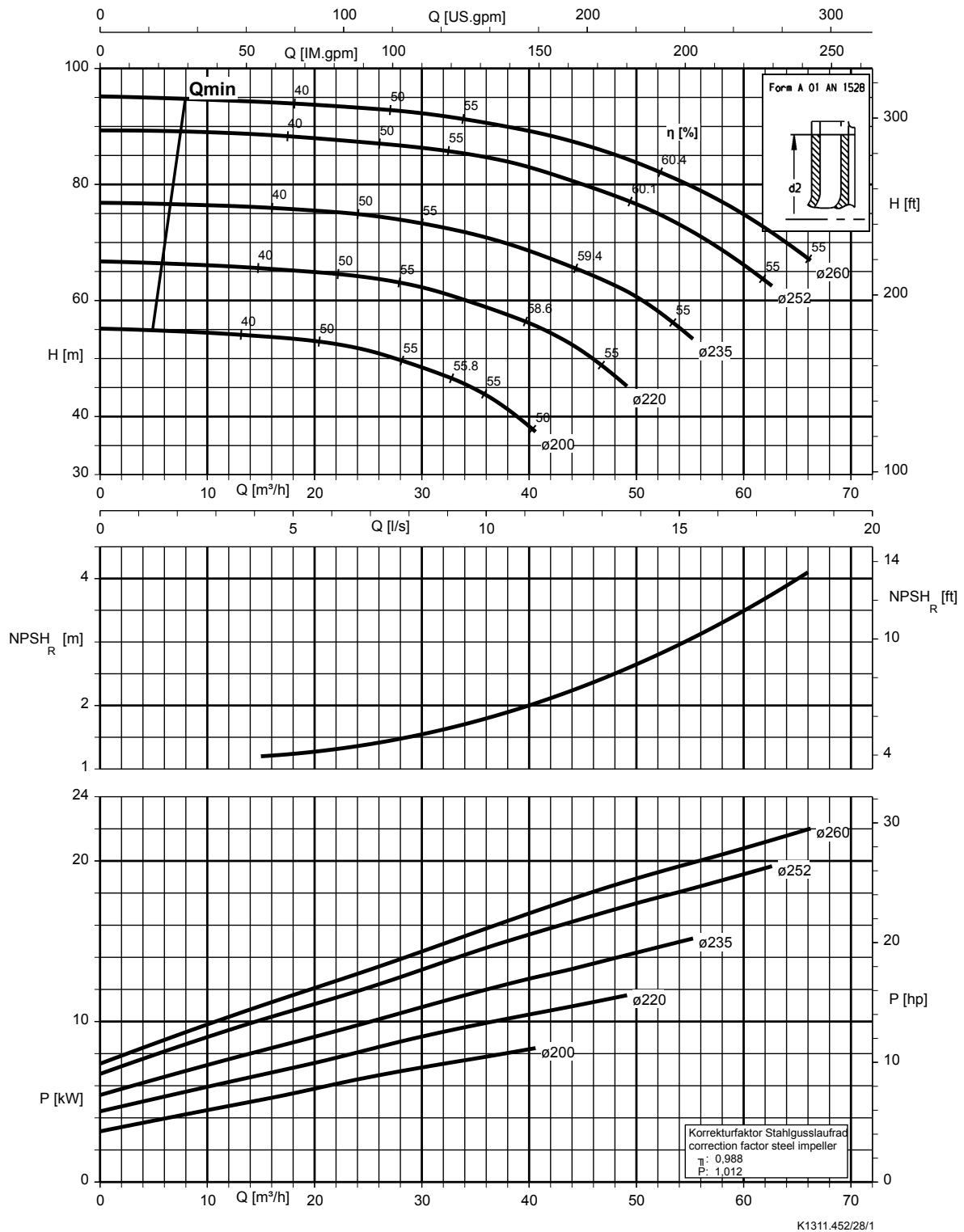
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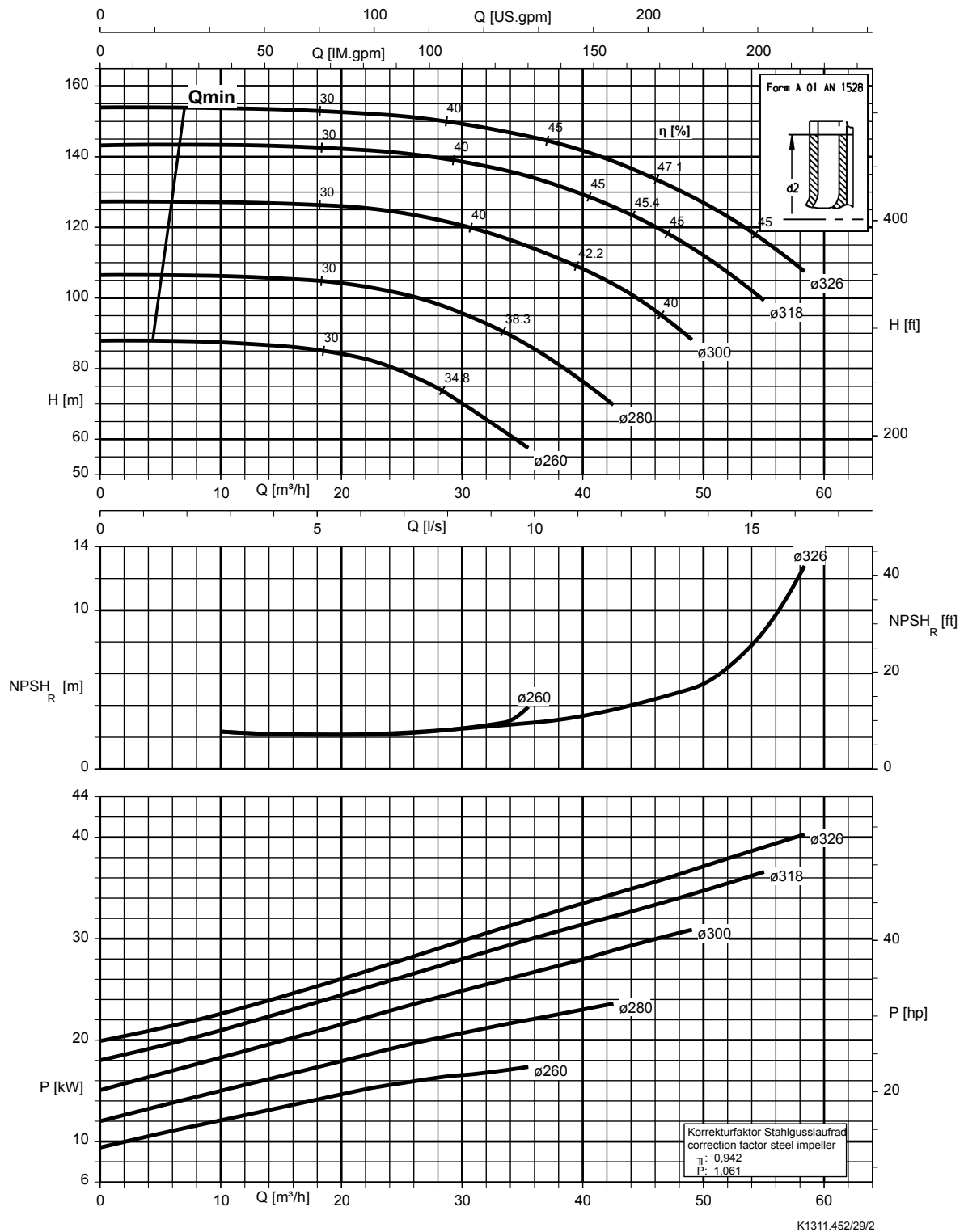
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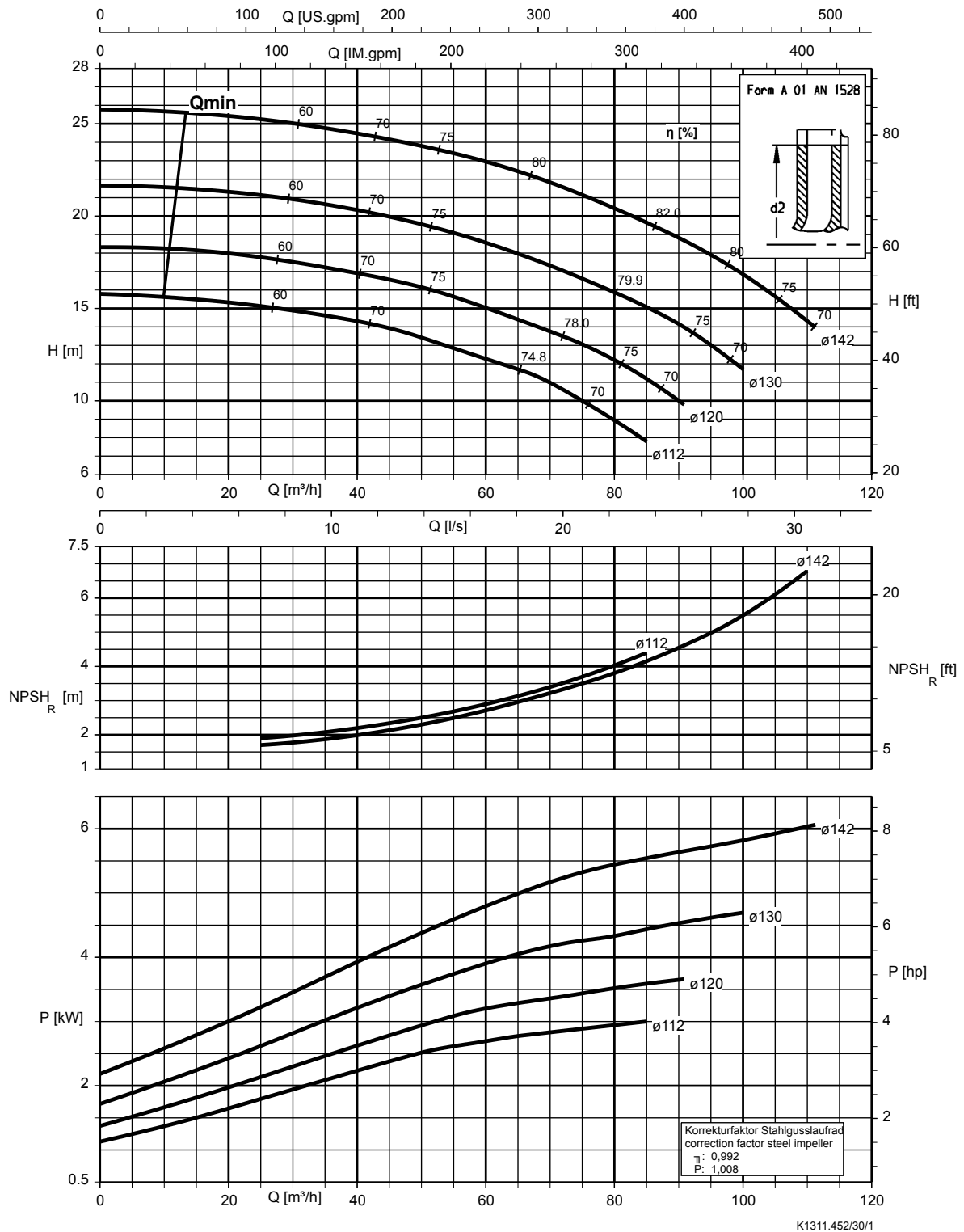
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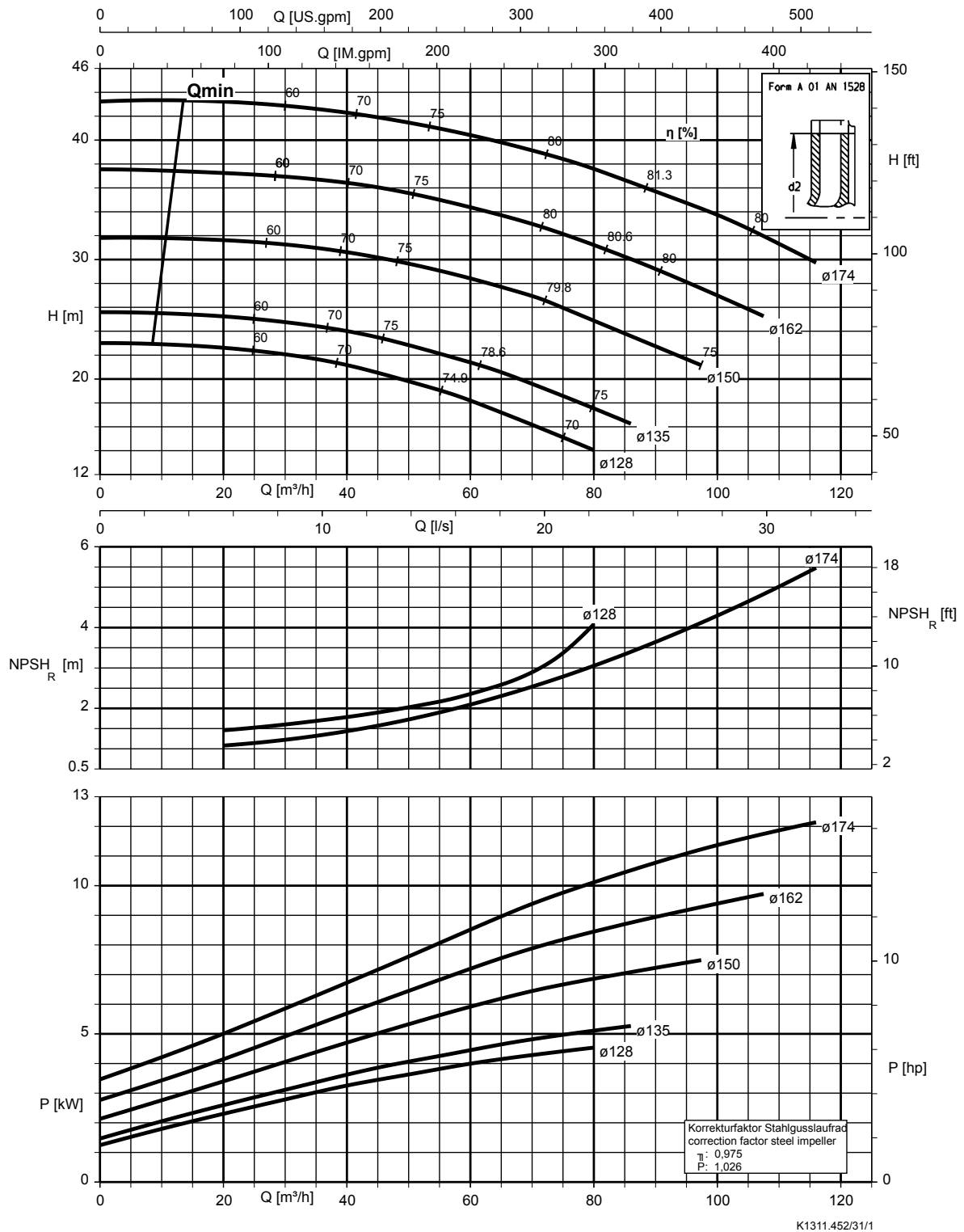
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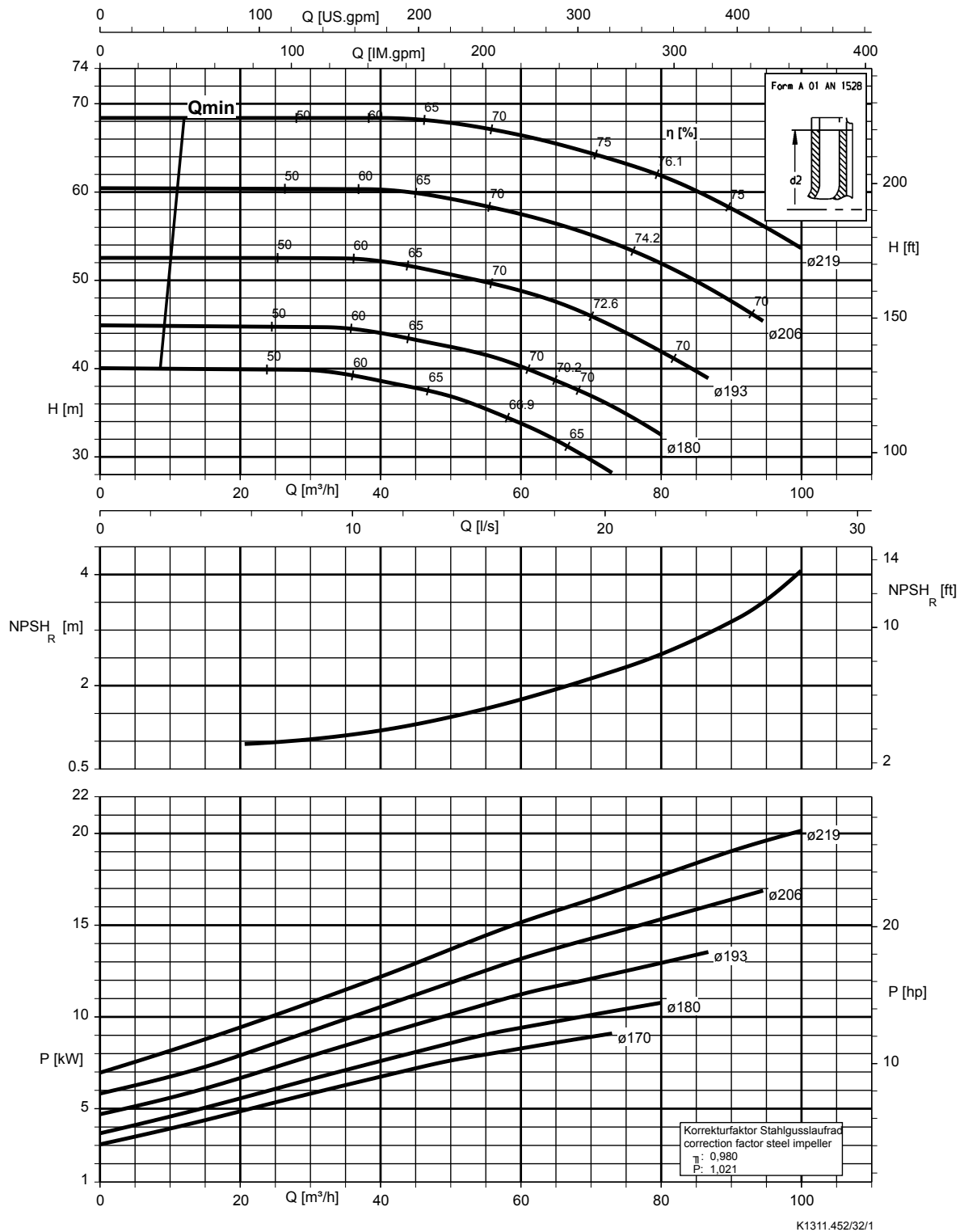
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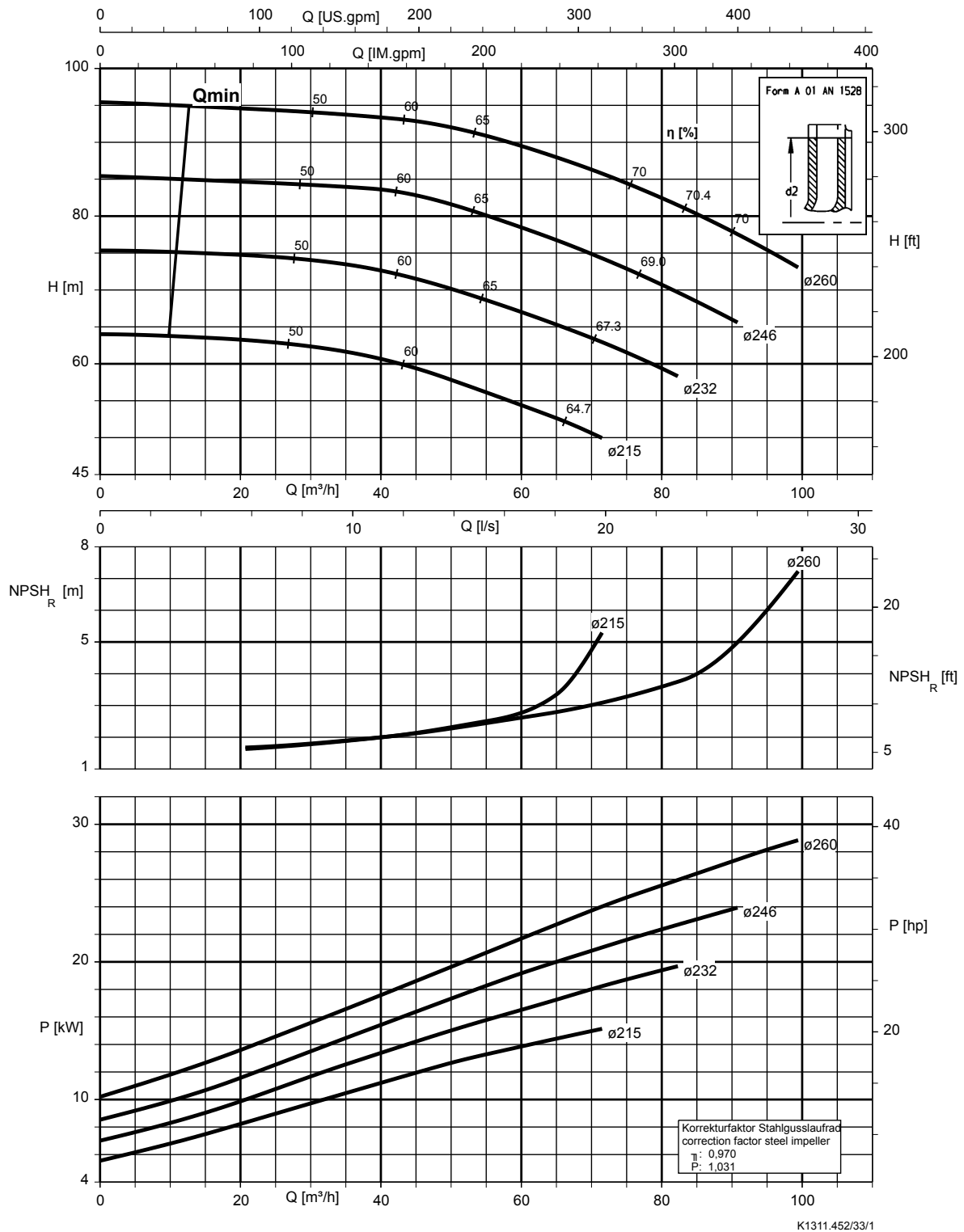
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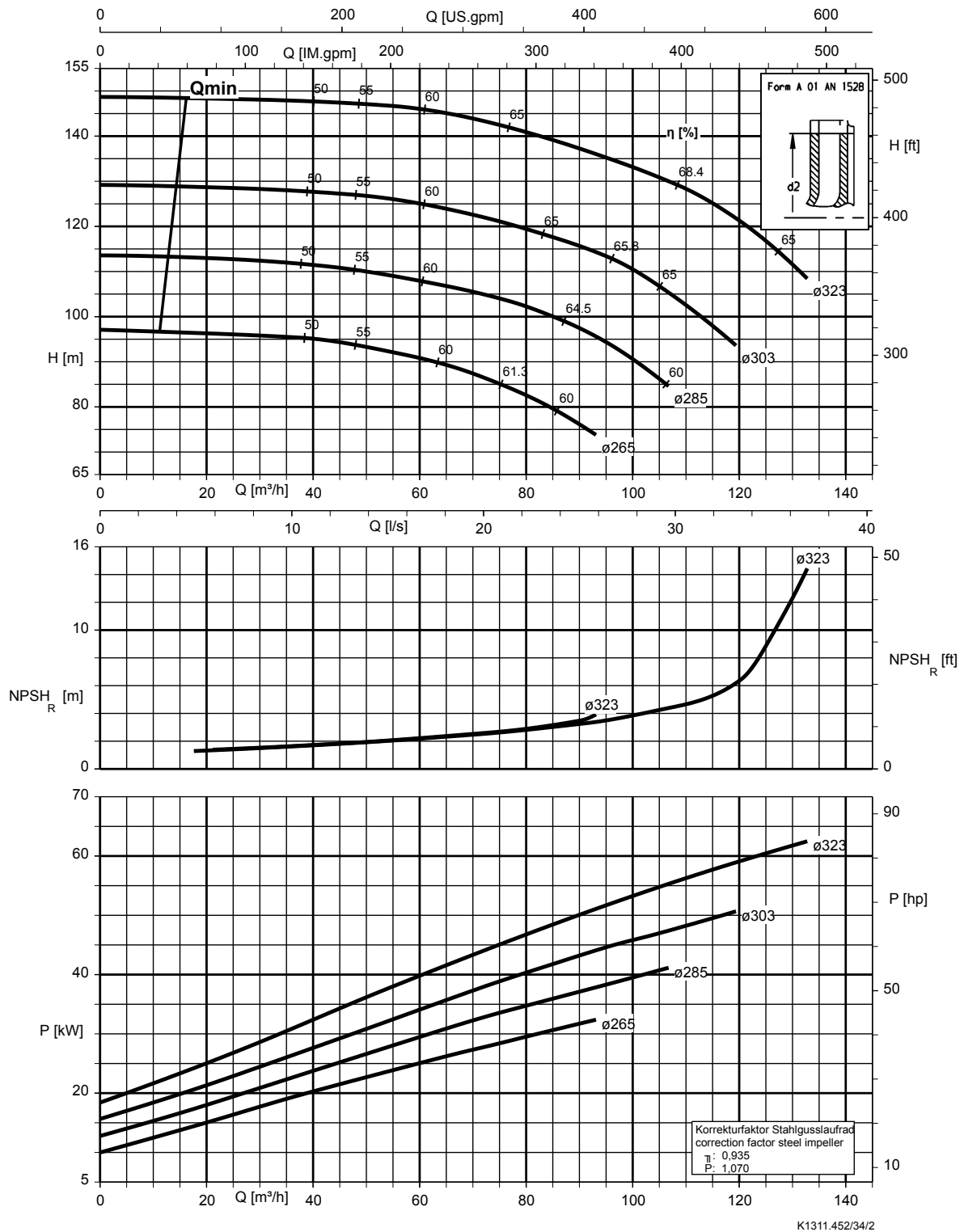
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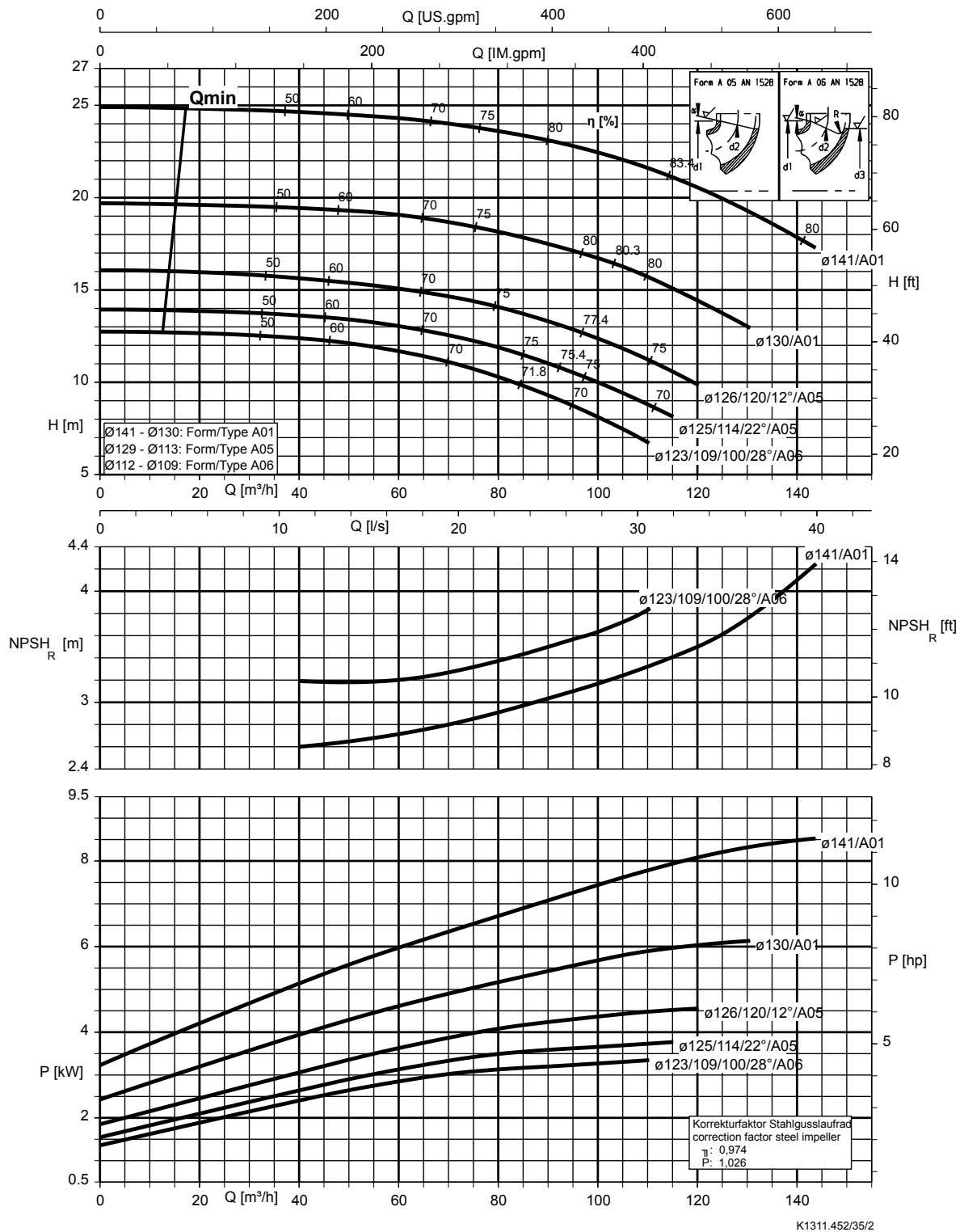
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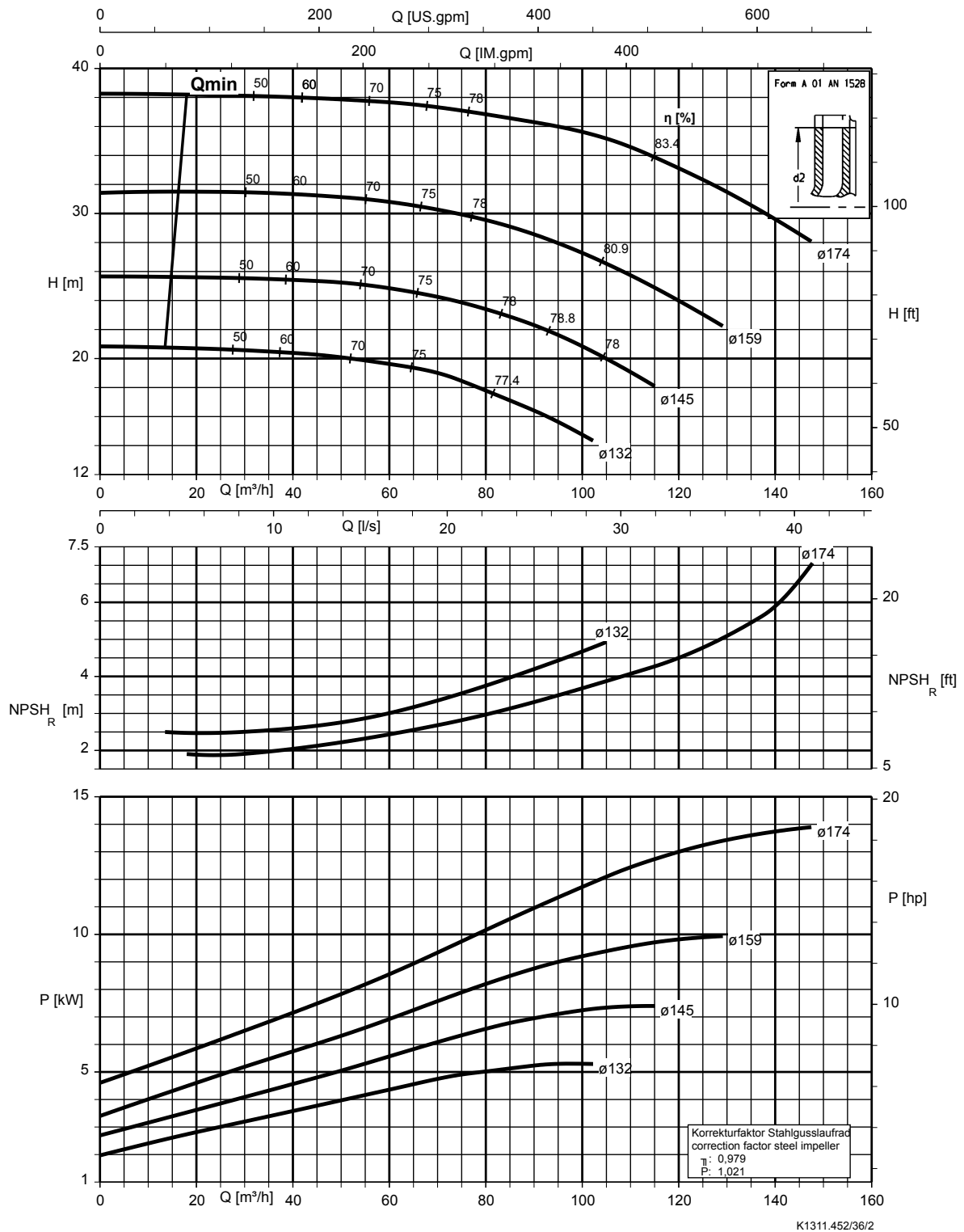
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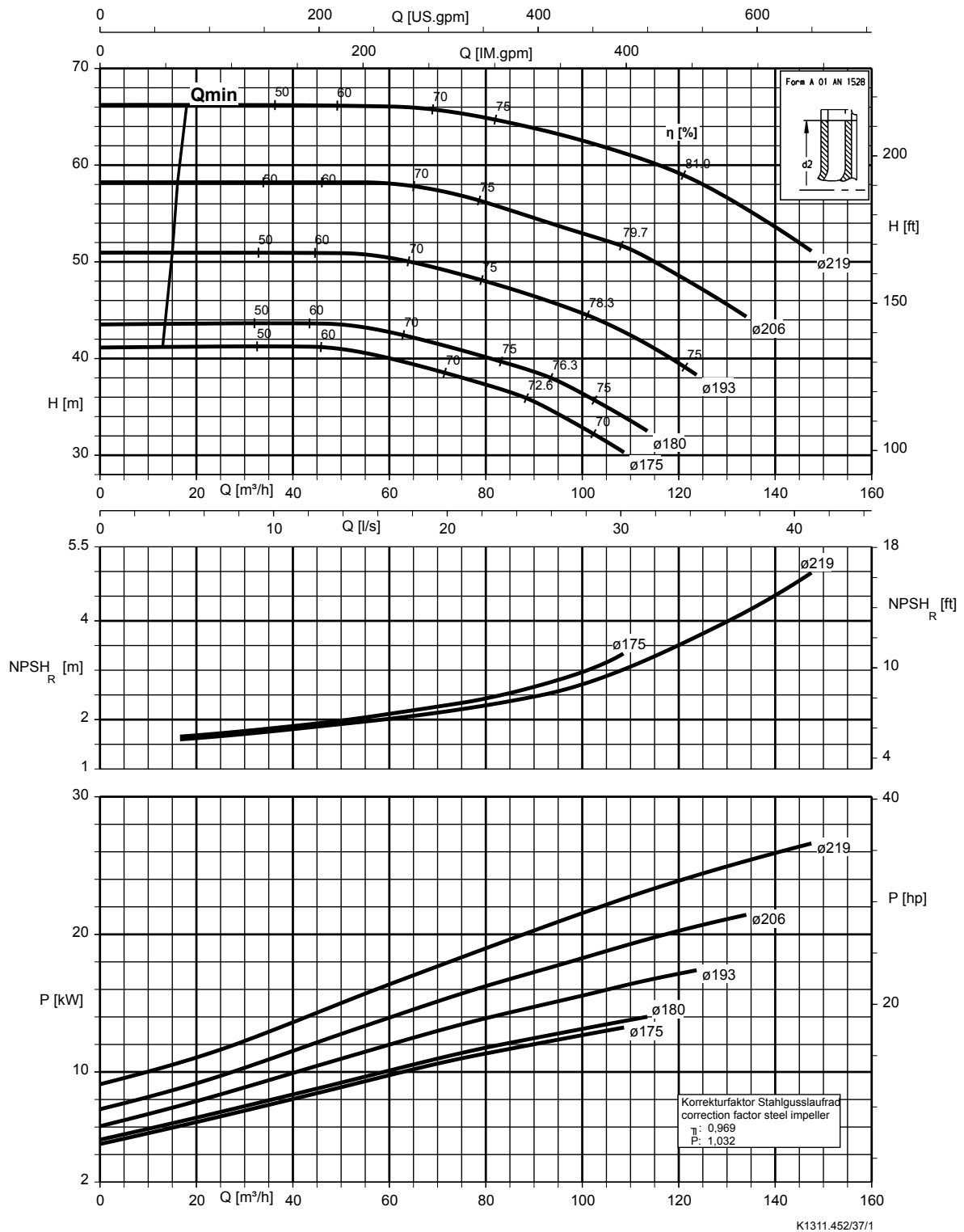
Etanorm 080-065-125,  $n = 2900 \text{ min}^{-1}$



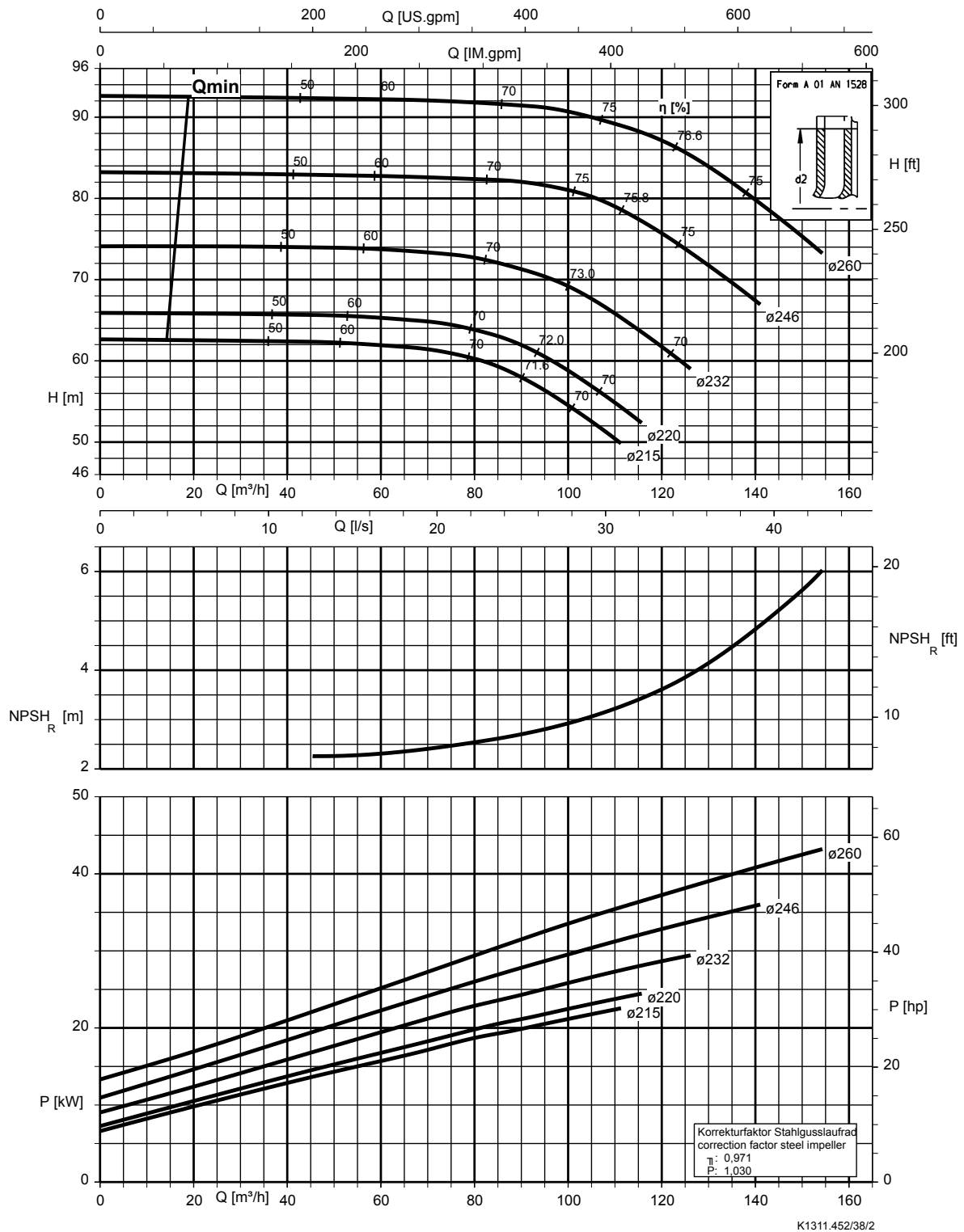
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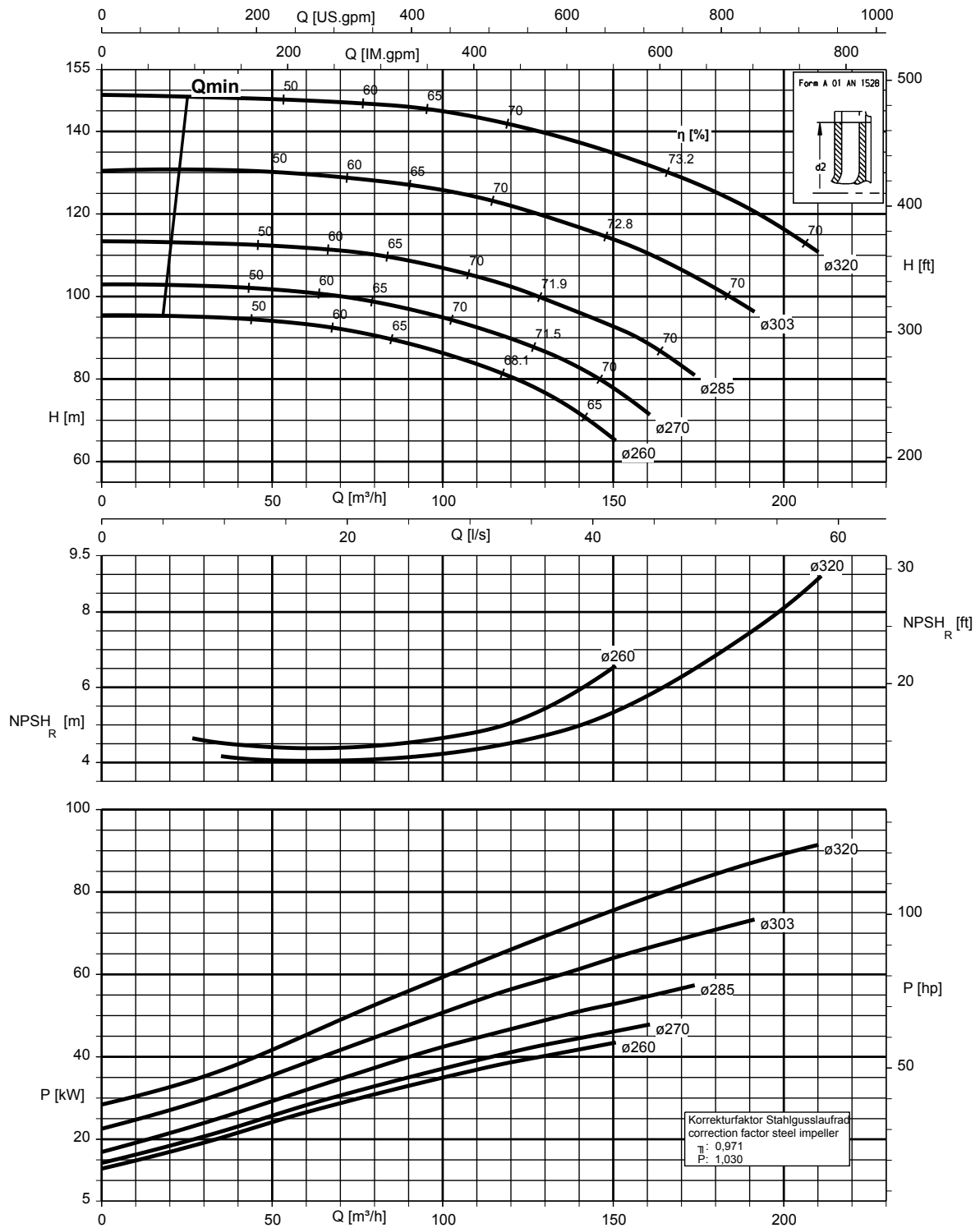
Etanorm 080-065-200,  $n = 2900 \text{ min}^{-1}$



Etanorm 080-065-250,  $n = 2900 \text{ min}^{-1}$

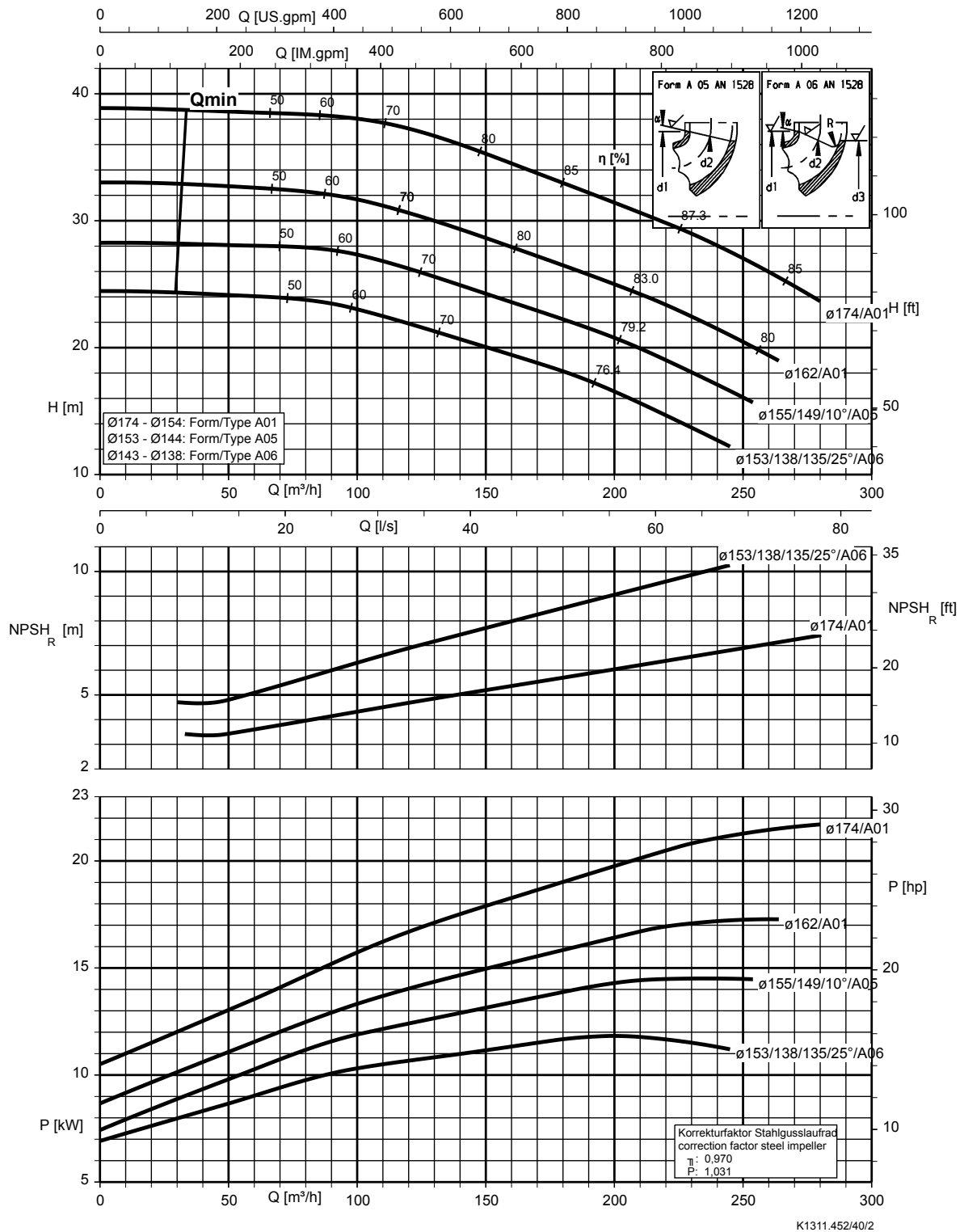


Etanorm 080-065-315,  $n = 2900 \text{ min}^{-1}$

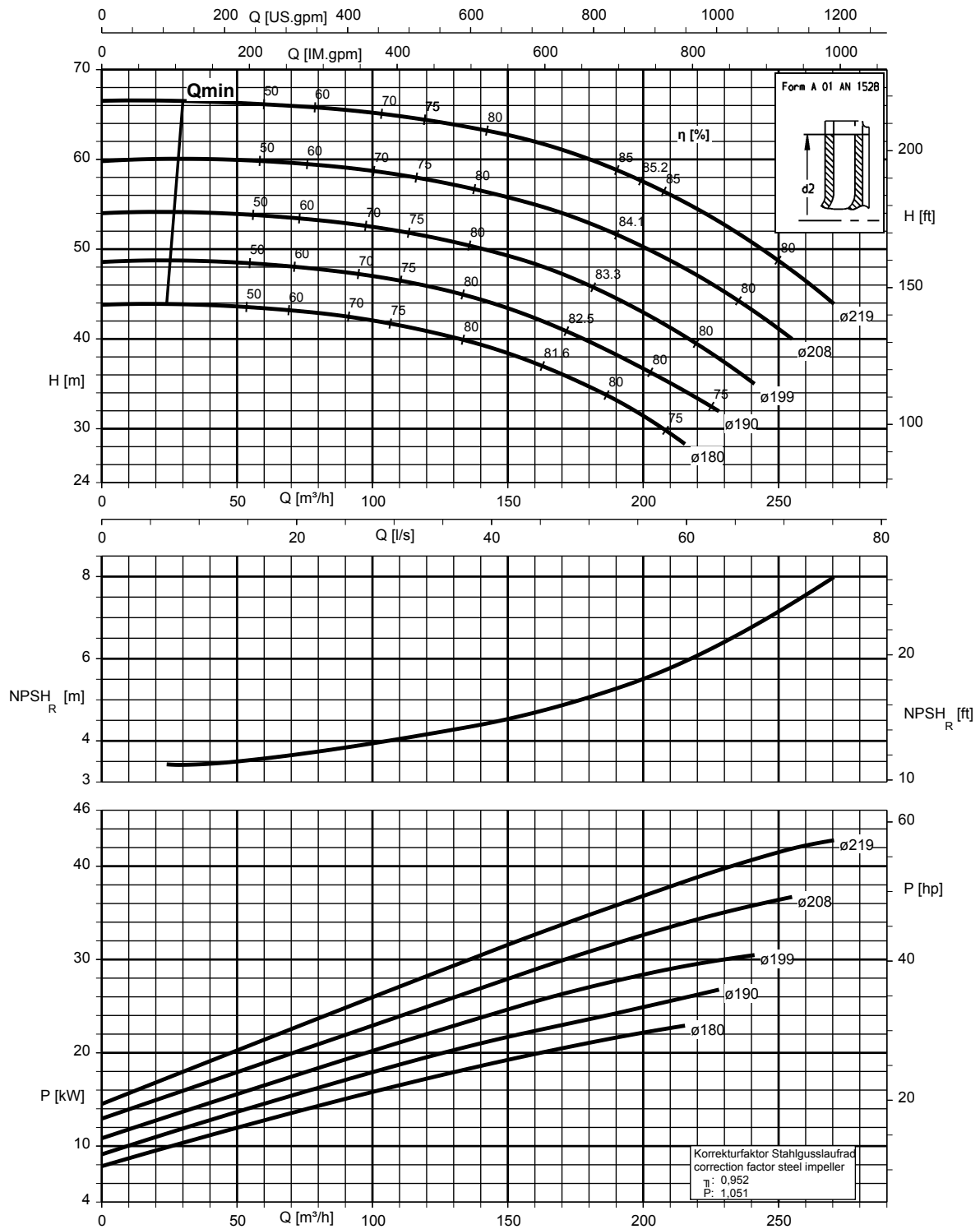


K1311.452/39/1

Etanorm 100-080-160,  $n = 2900 \text{ min}^{-1}$

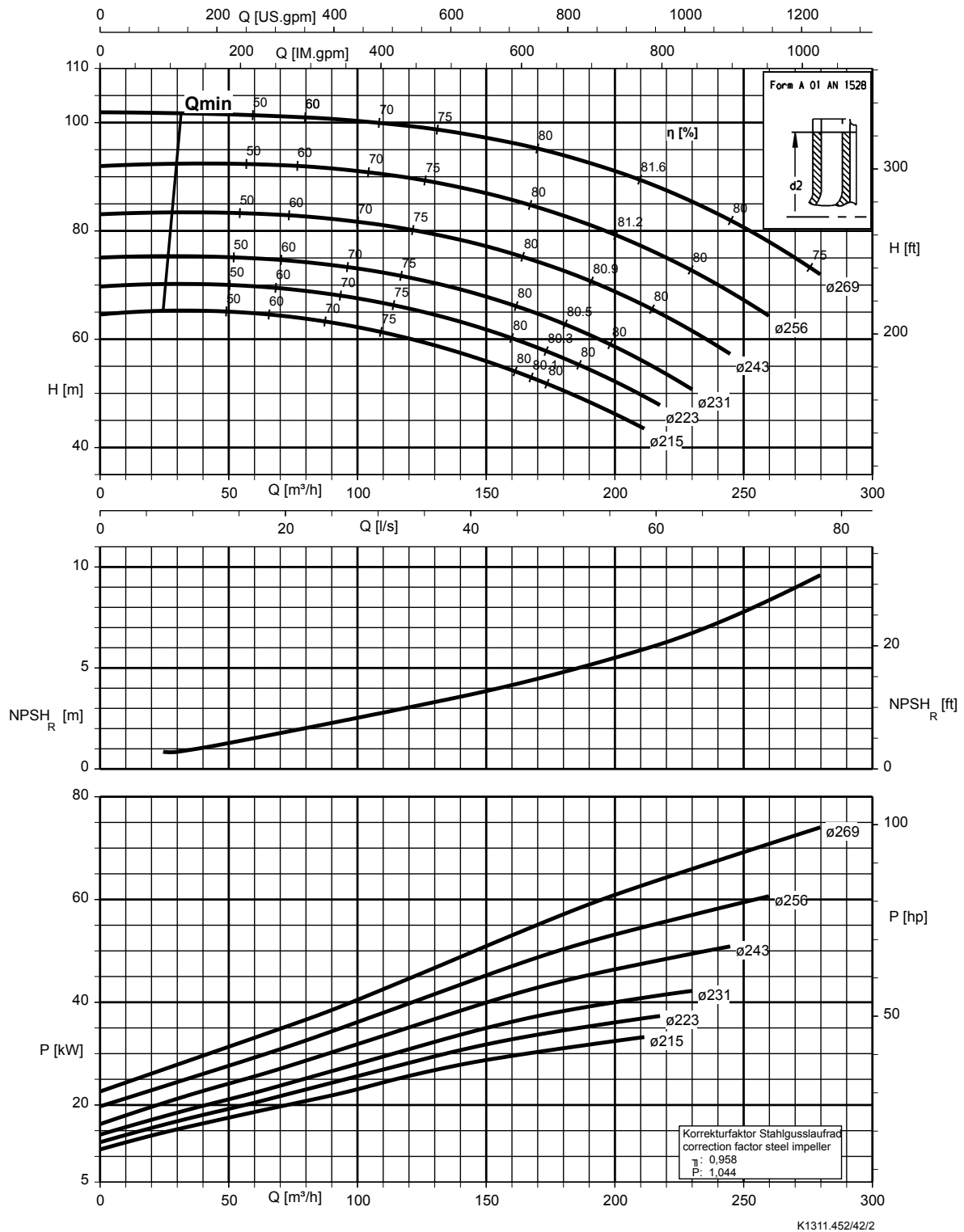


Etanorm 100-080-200,  $n = 2900 \text{ min}^{-1}$

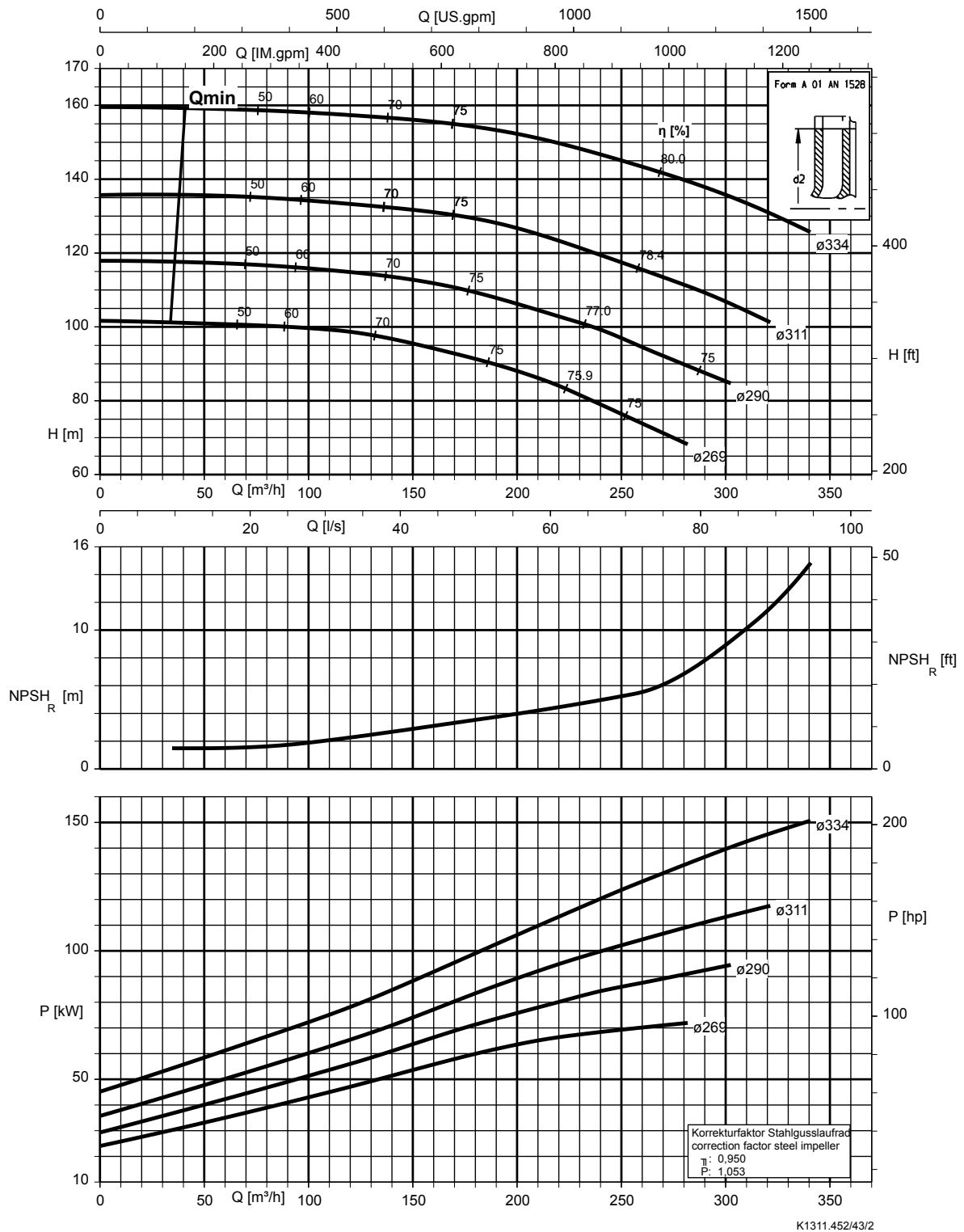


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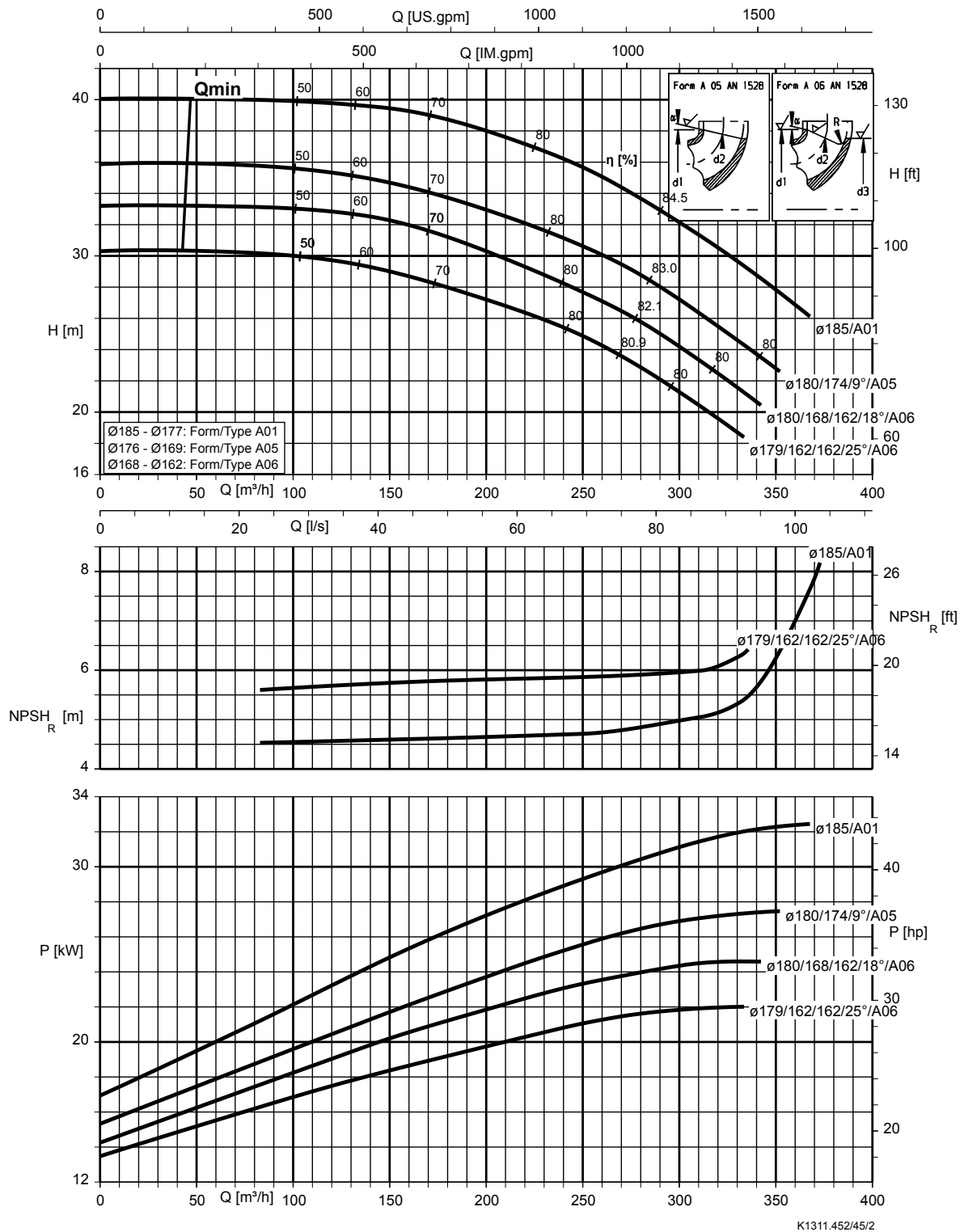
Etanorm 100-080-250,  $n = 2900 \text{ min}^{-1}$



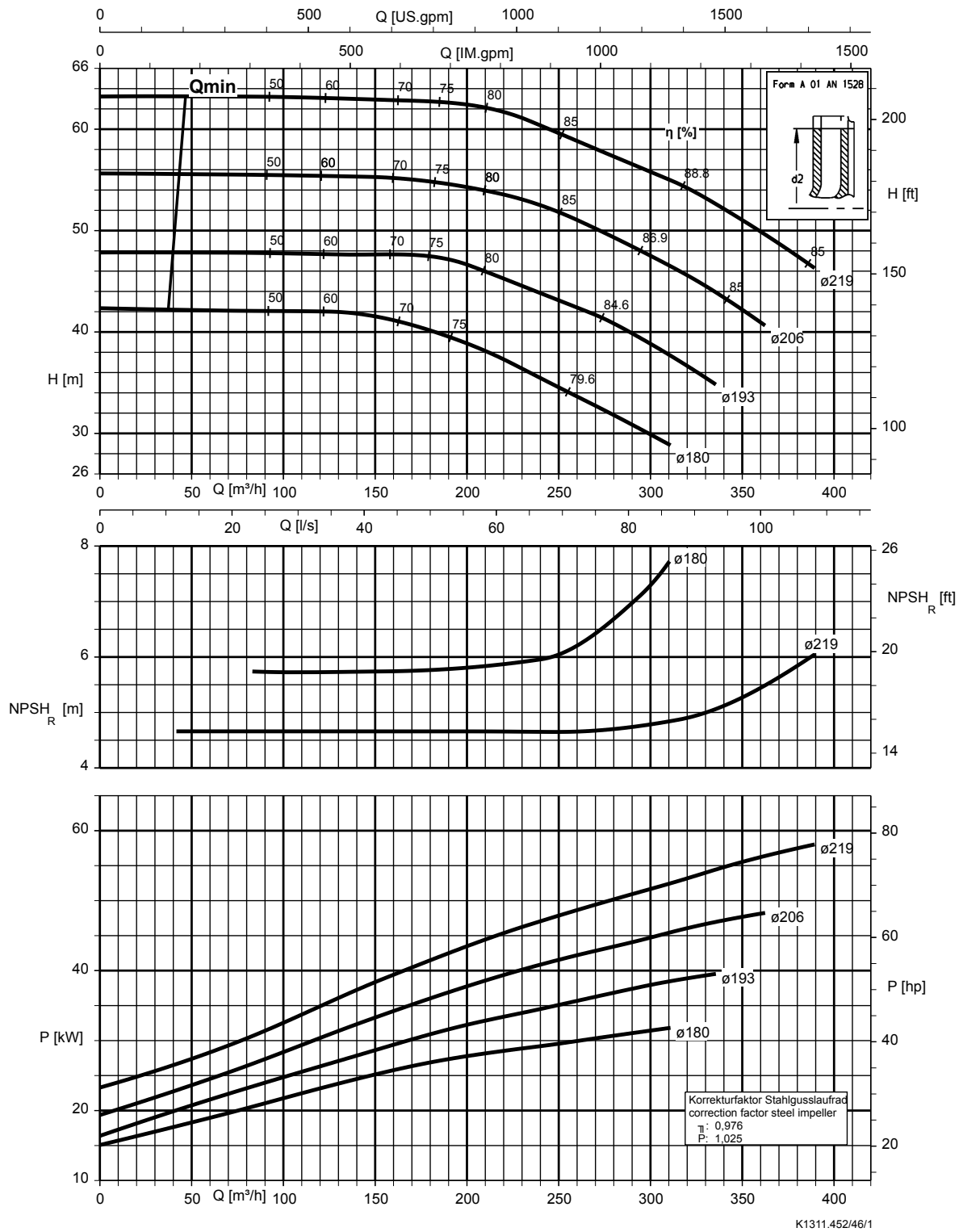
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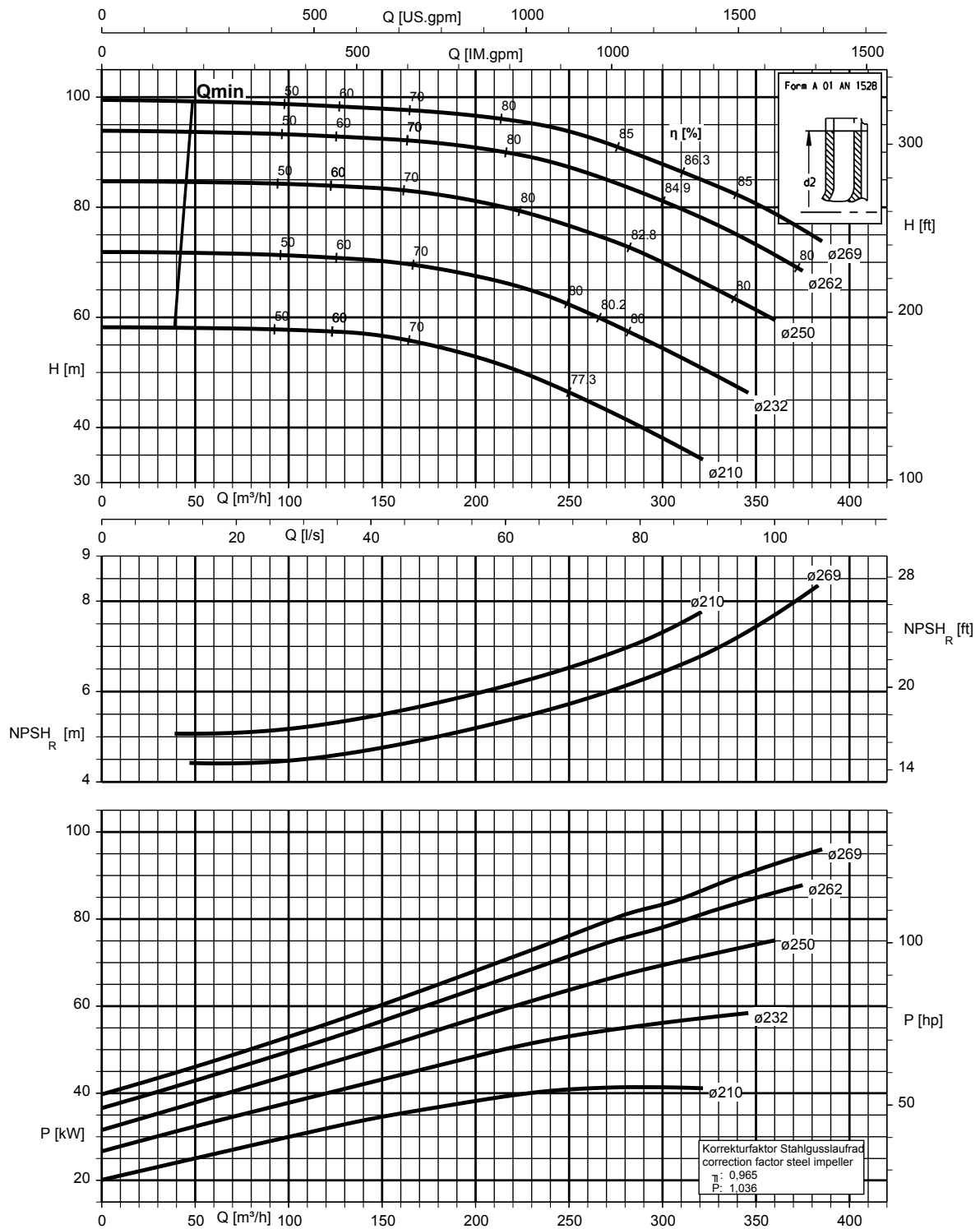
Etanorm 125-100-160,  $n = 2900 \text{ min}^{-1}$



Etanorm 125-100-200,  $n = 2900 \text{ min}^{-1}$

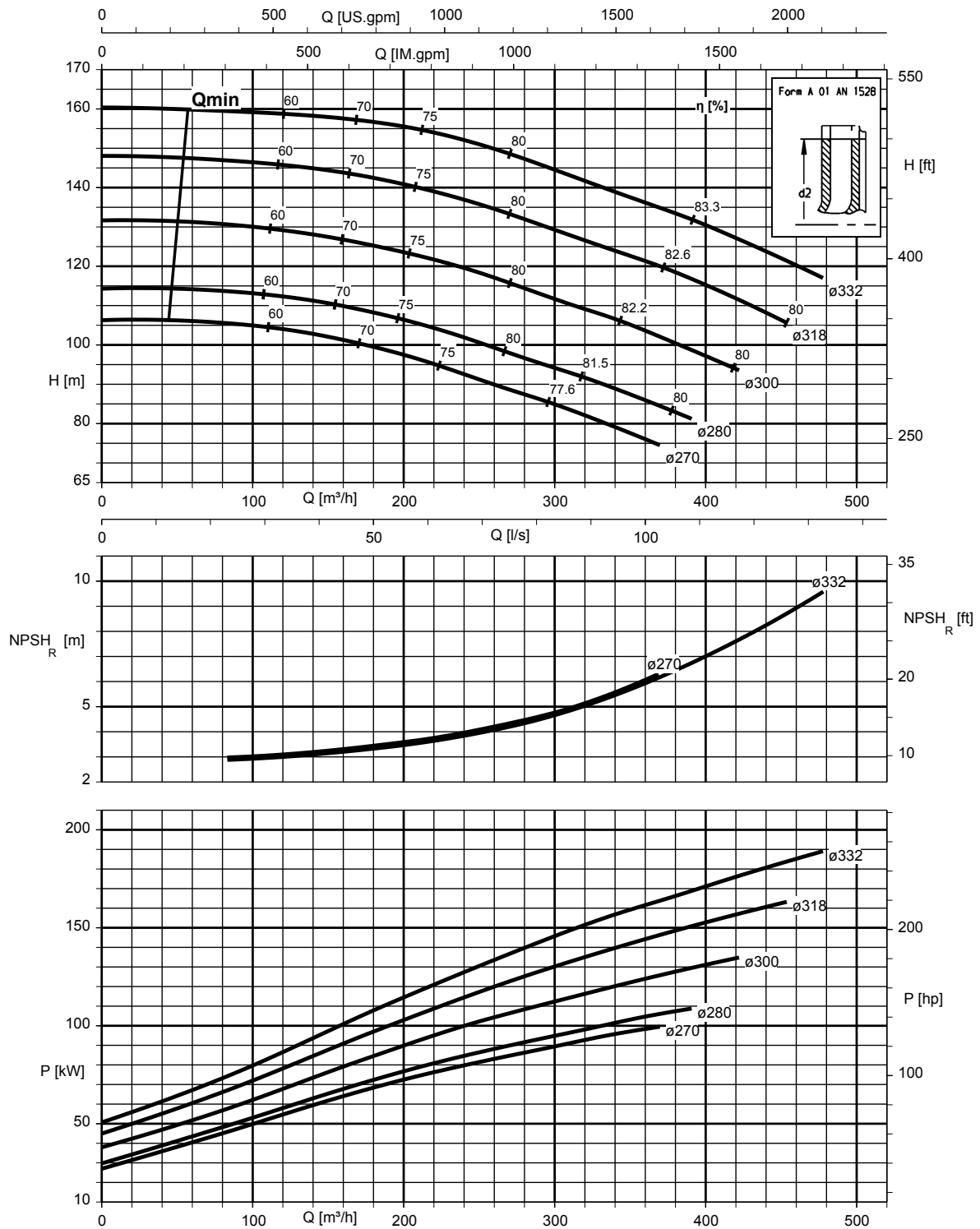


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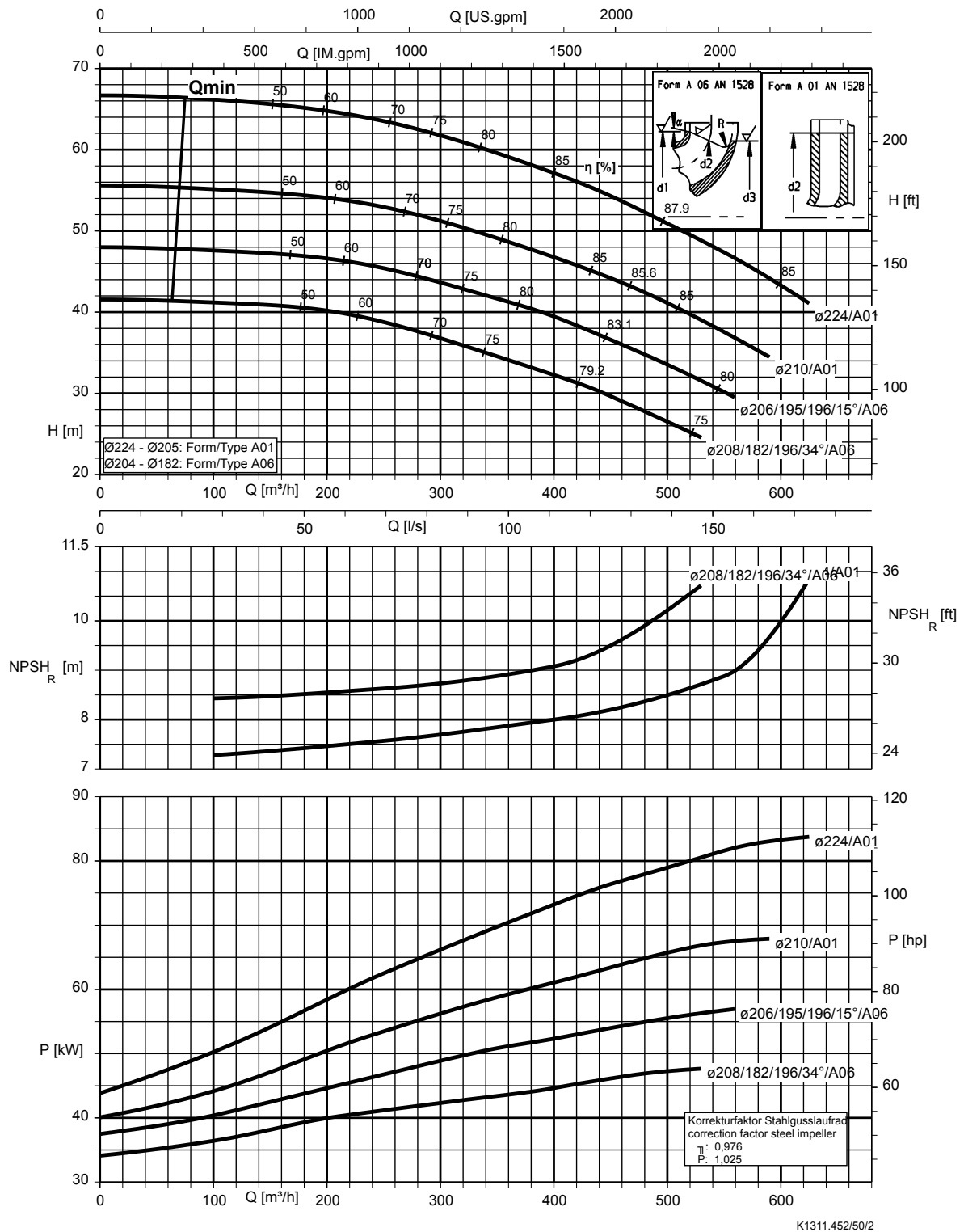
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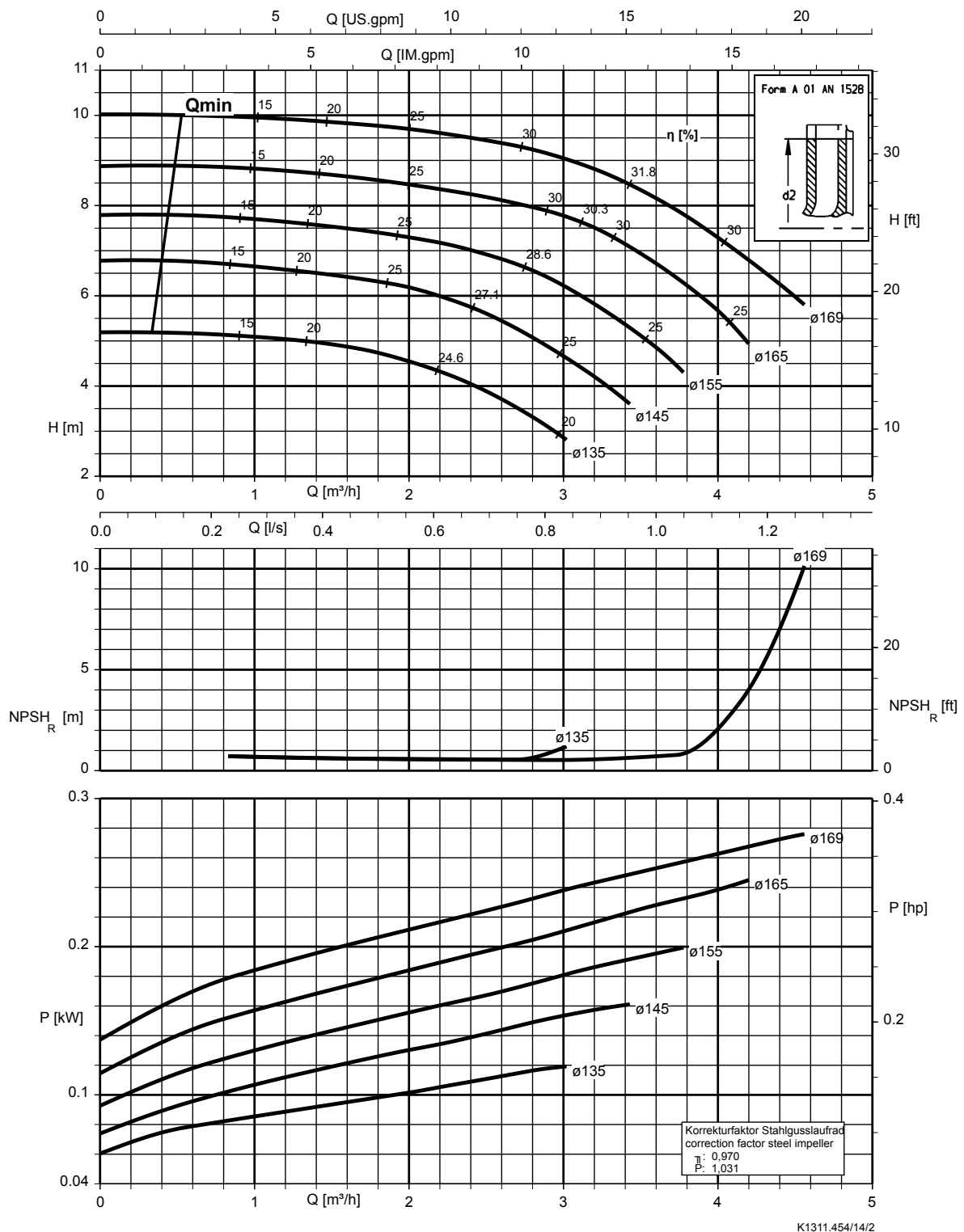
K1311.452/48/1

Etanorm 150-125-200,  $n = 2900 \text{ min}^{-1}$

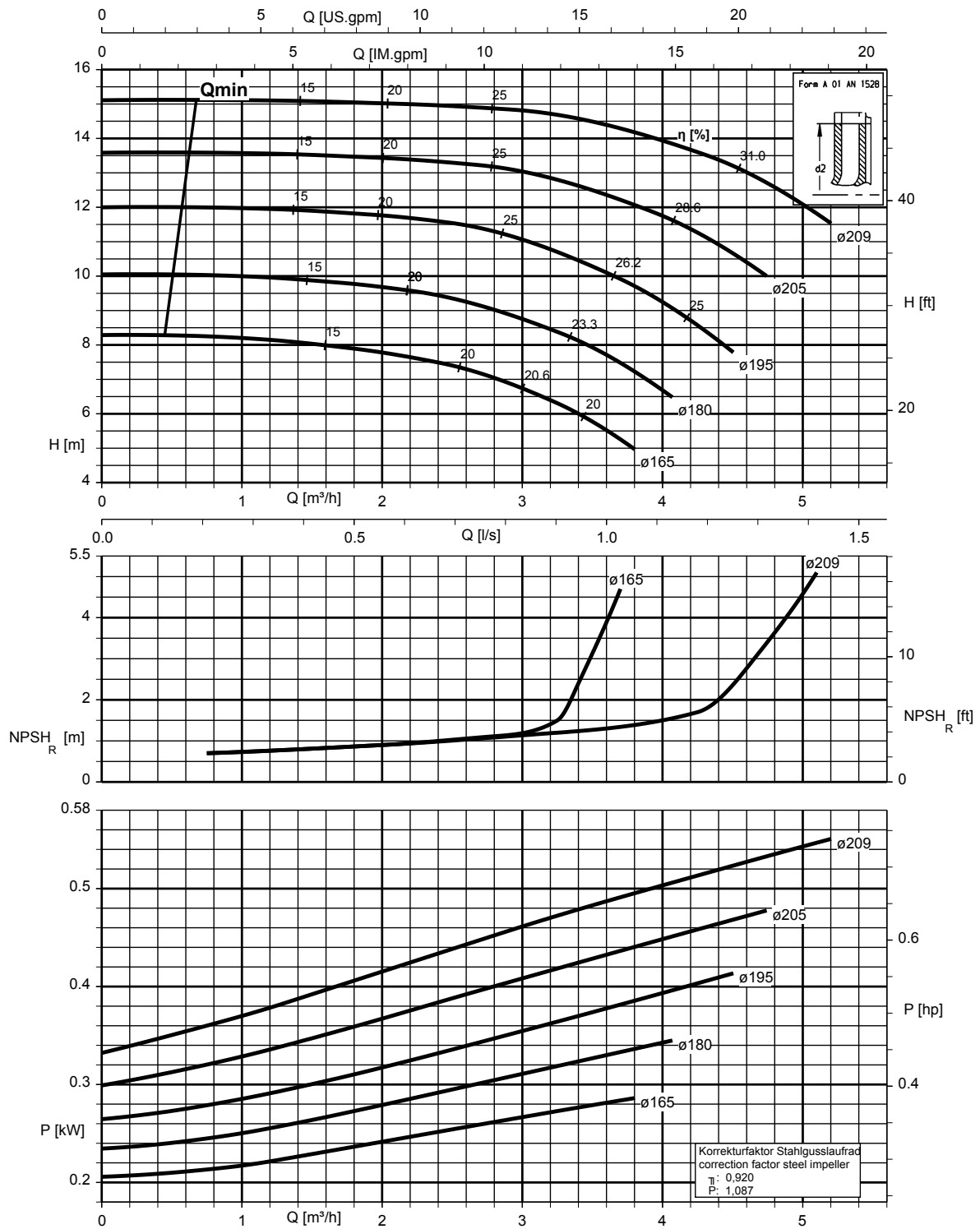


$n = 1450 \text{ min}^{-1}$

Etanorm 040-025-160,  $n = 1450 \text{ min}^{-1}$

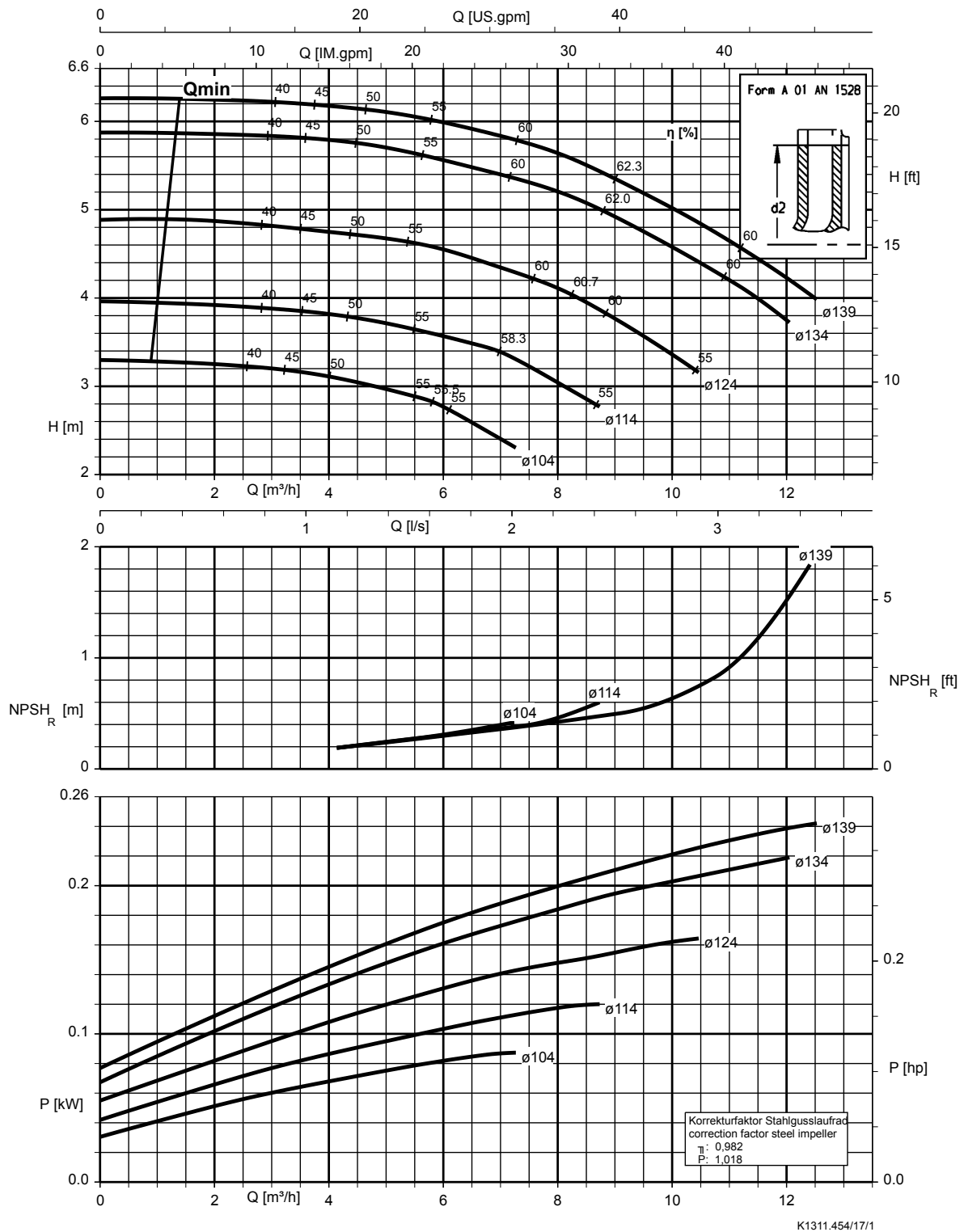


Etanorm 040-025-200,  $n = 1450 \text{ min}^{-1}$

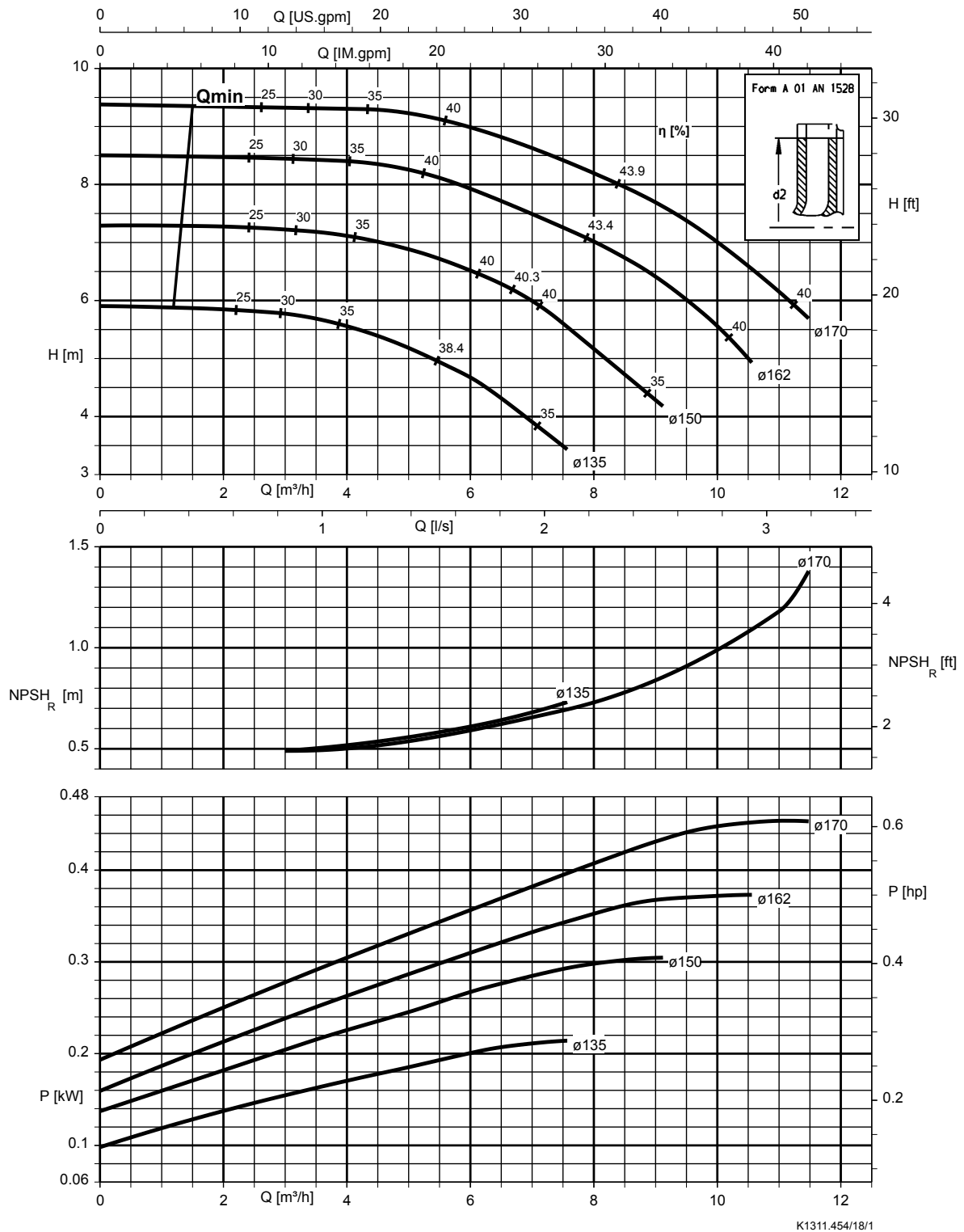


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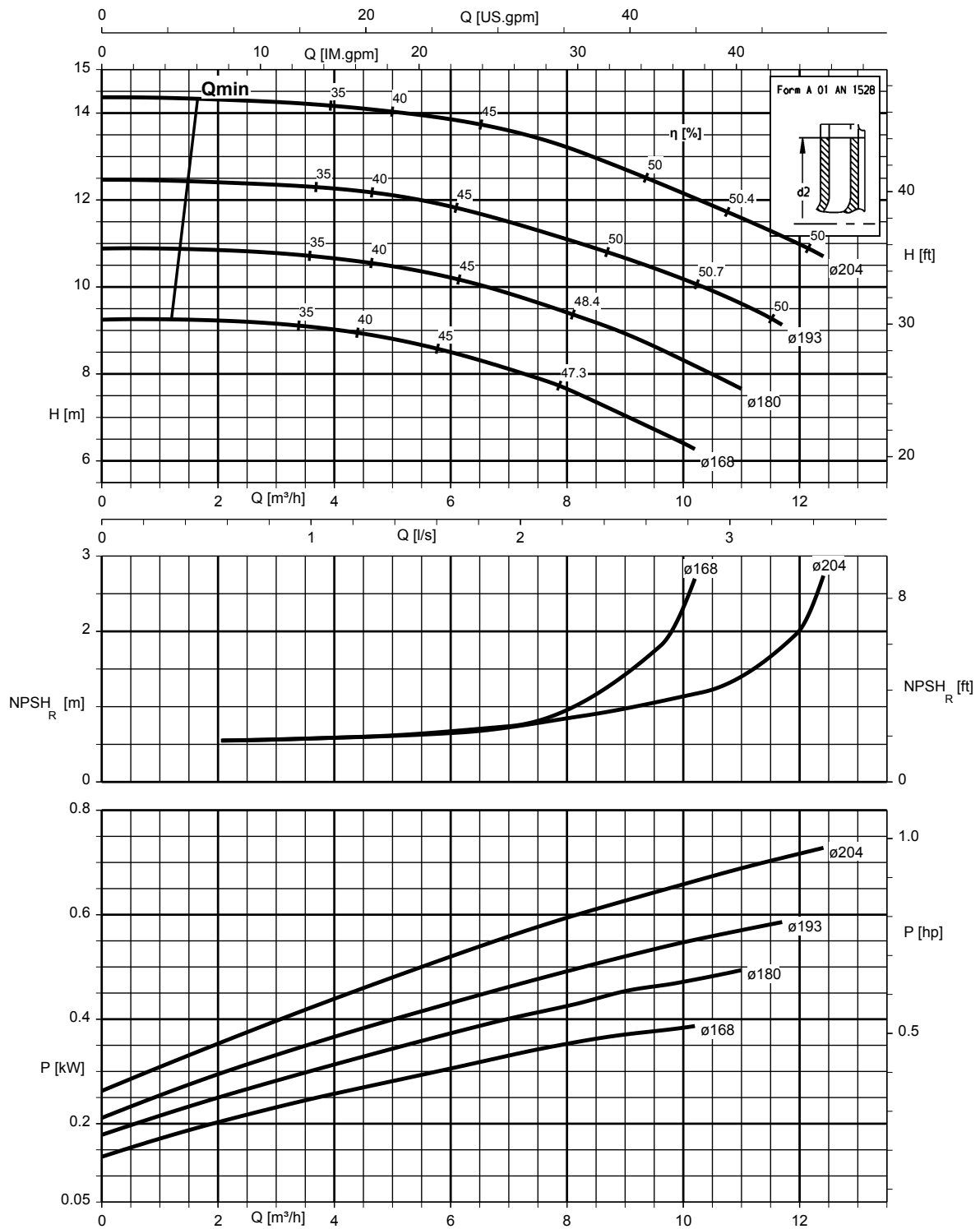
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Etanorm 050-032-160.1,  $n = 1450 \text{ min}^{-1}$

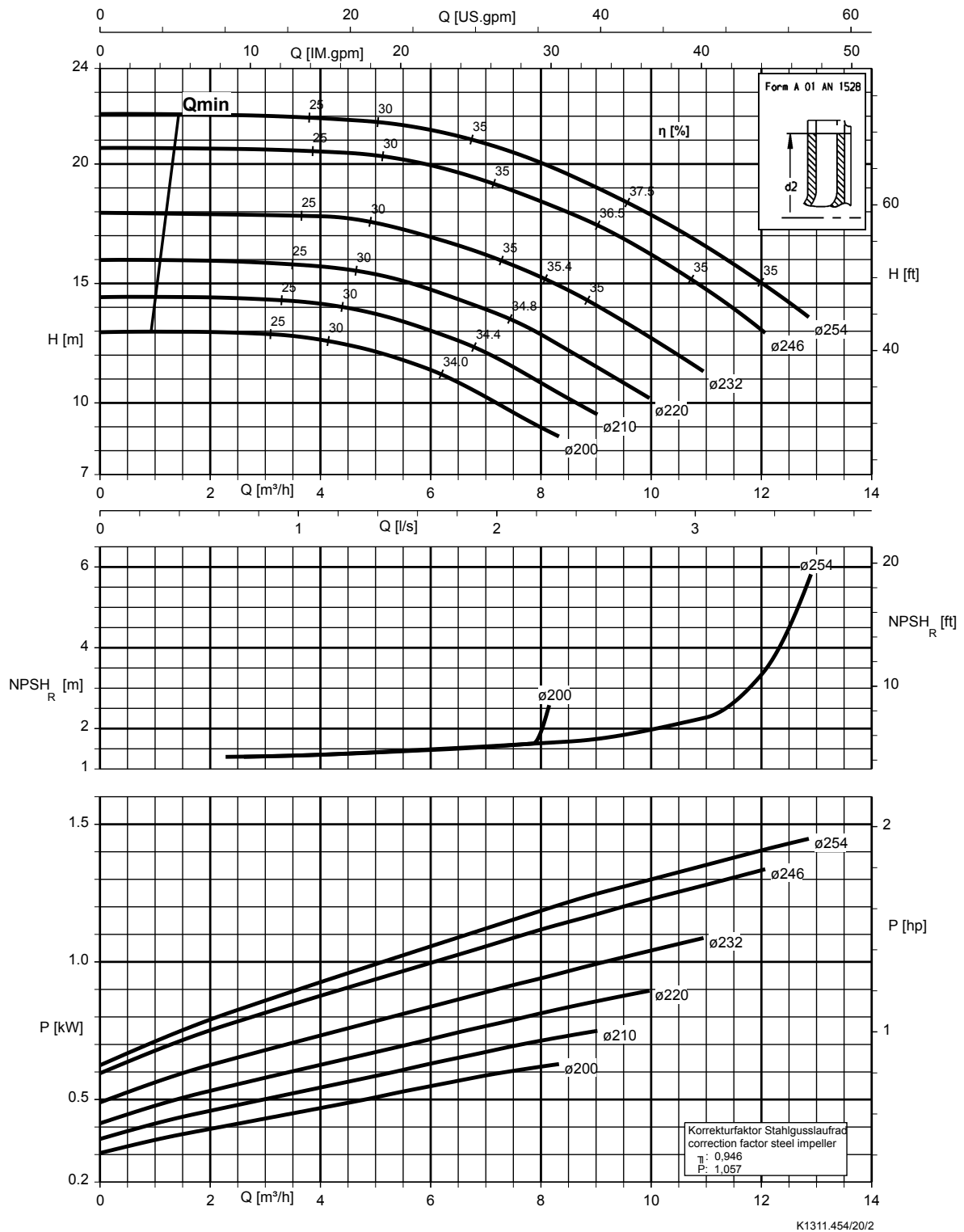


Etanorm 050-032-200.1,  $n = 1450 \text{ min}^{-1}$

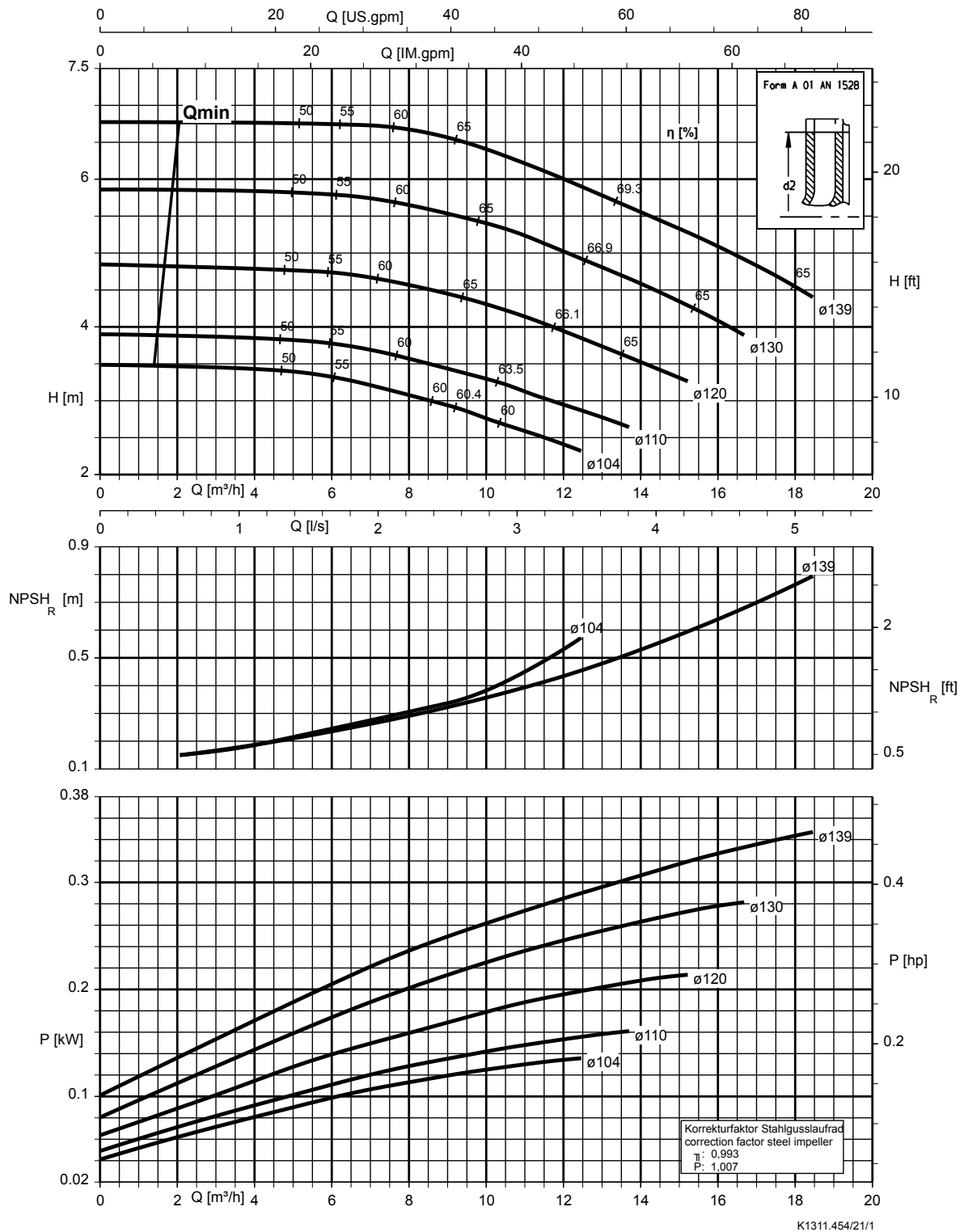


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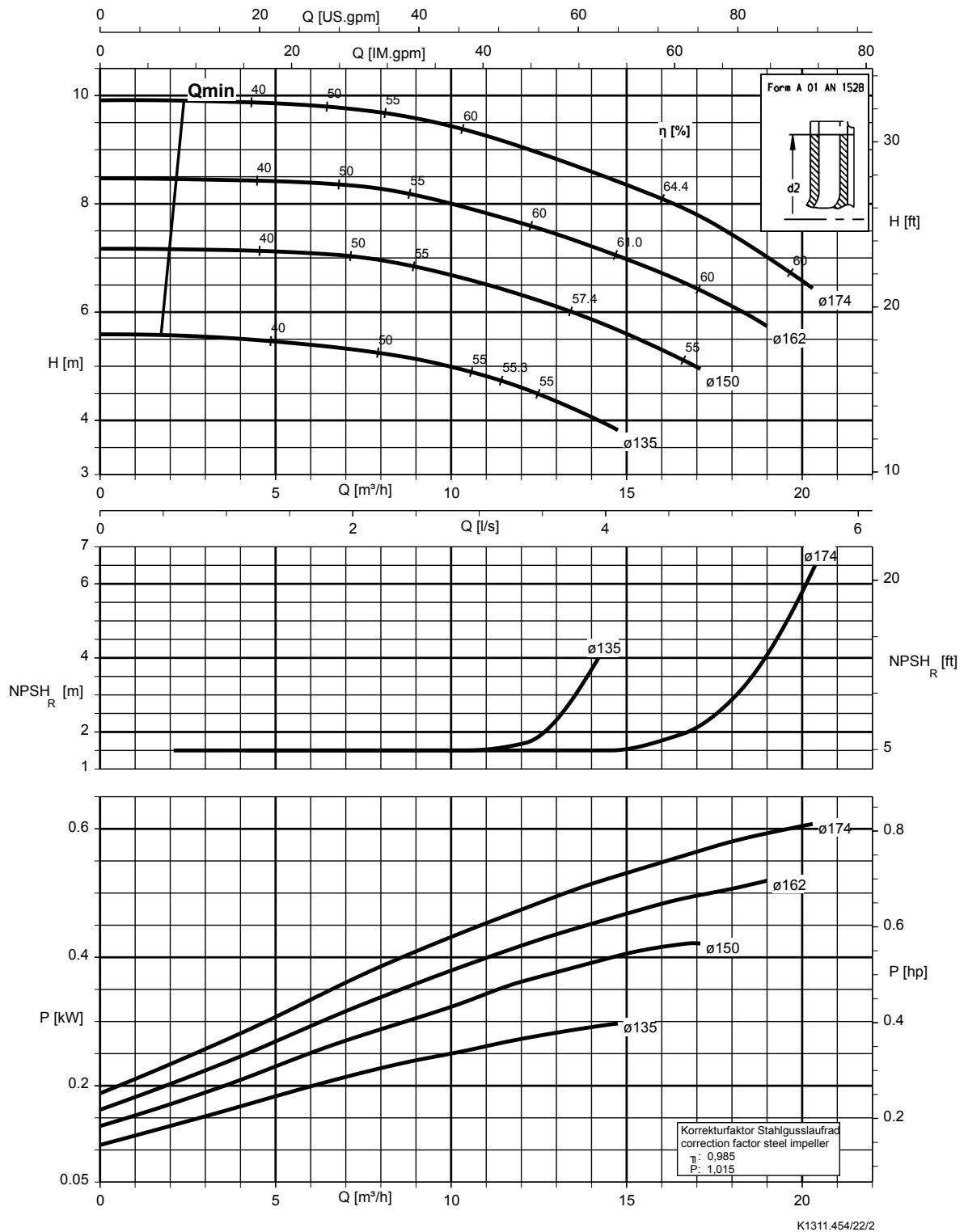
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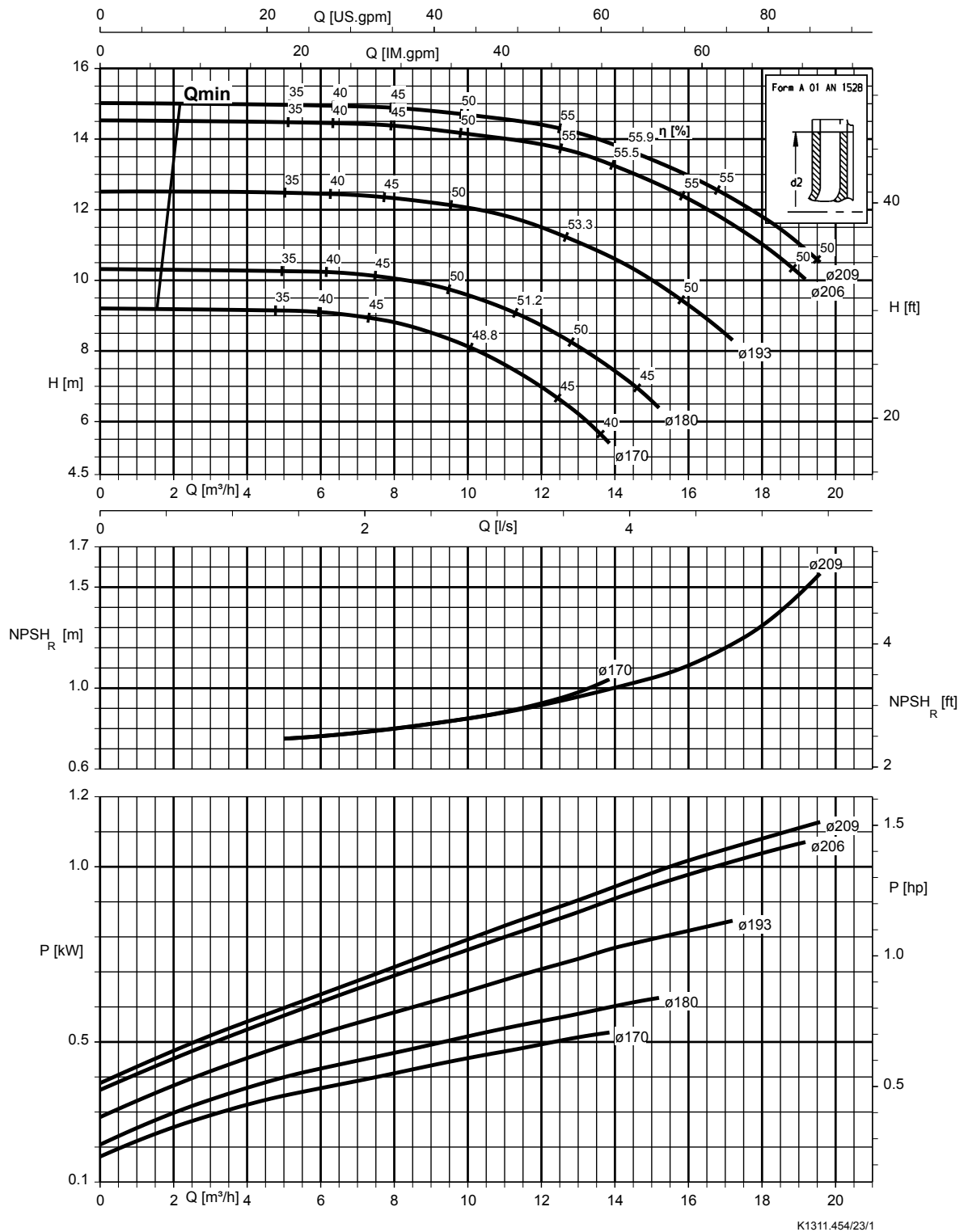
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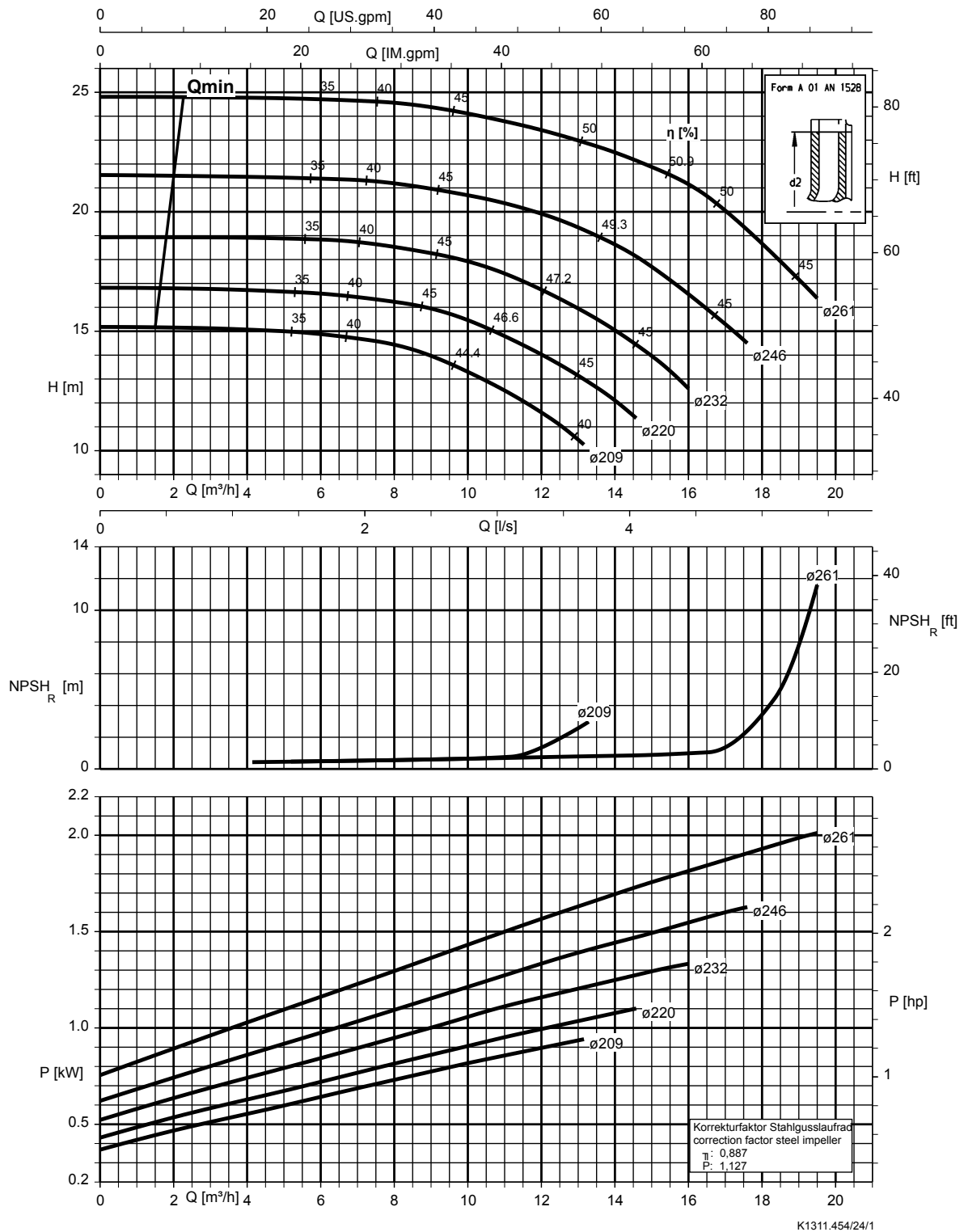
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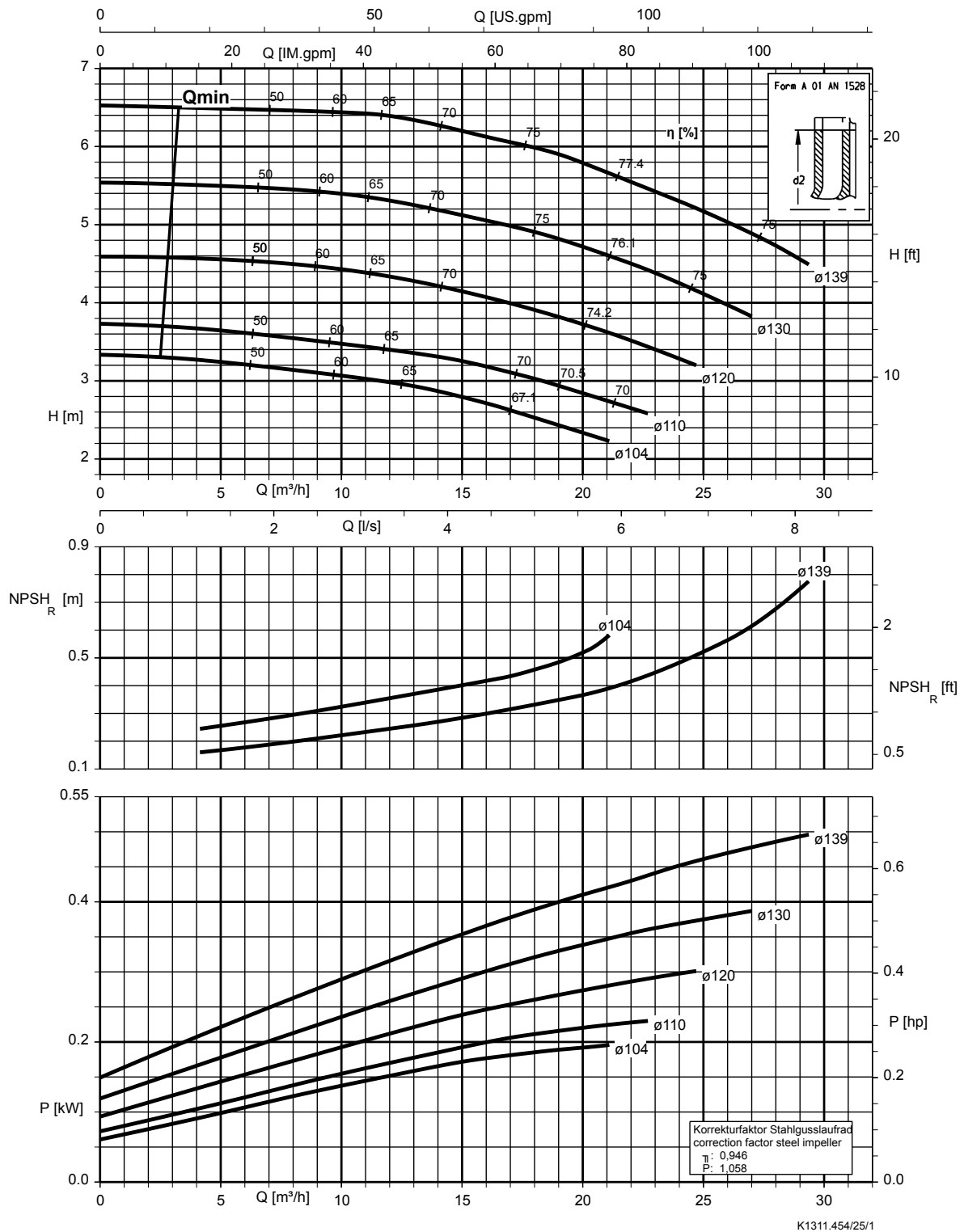
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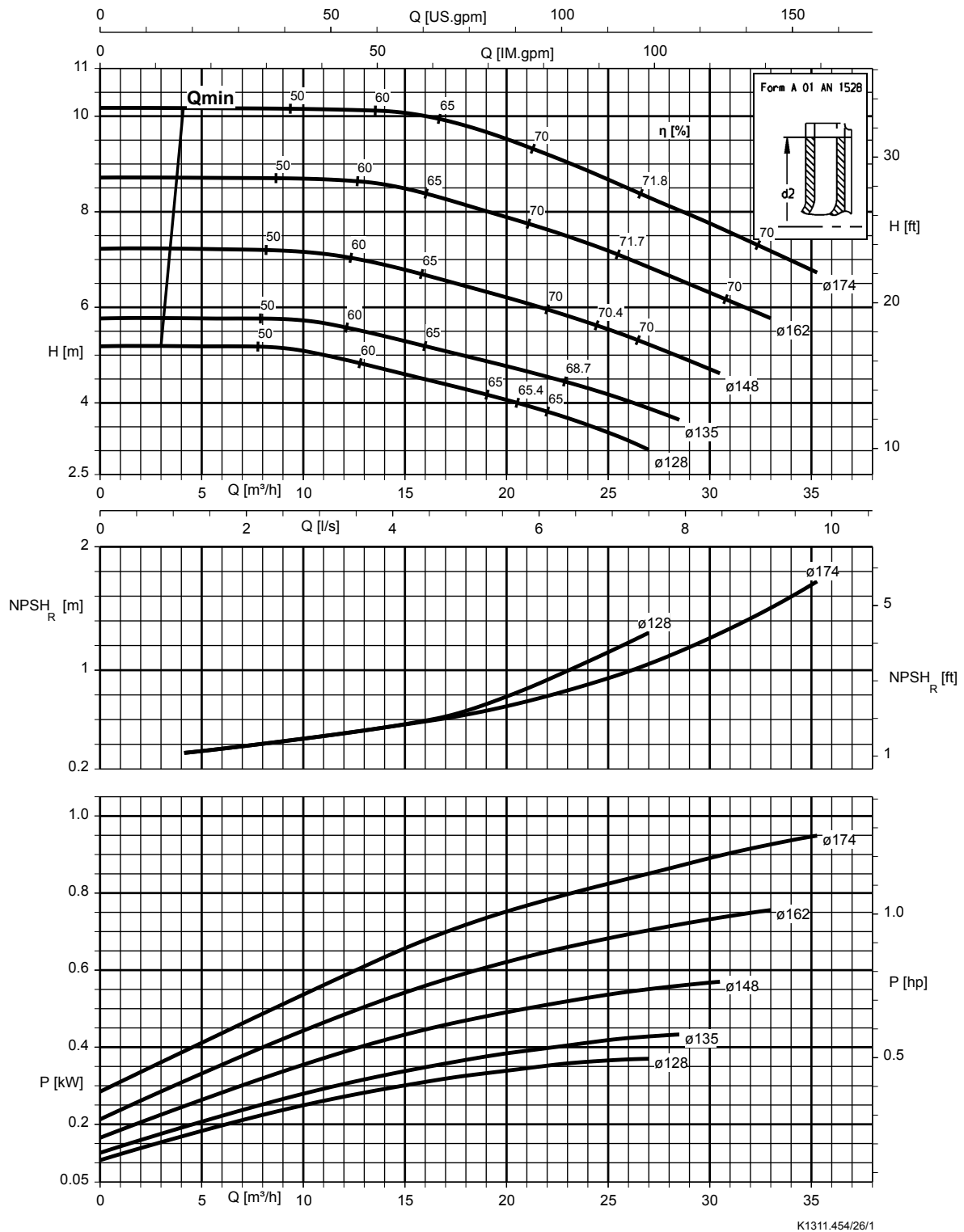
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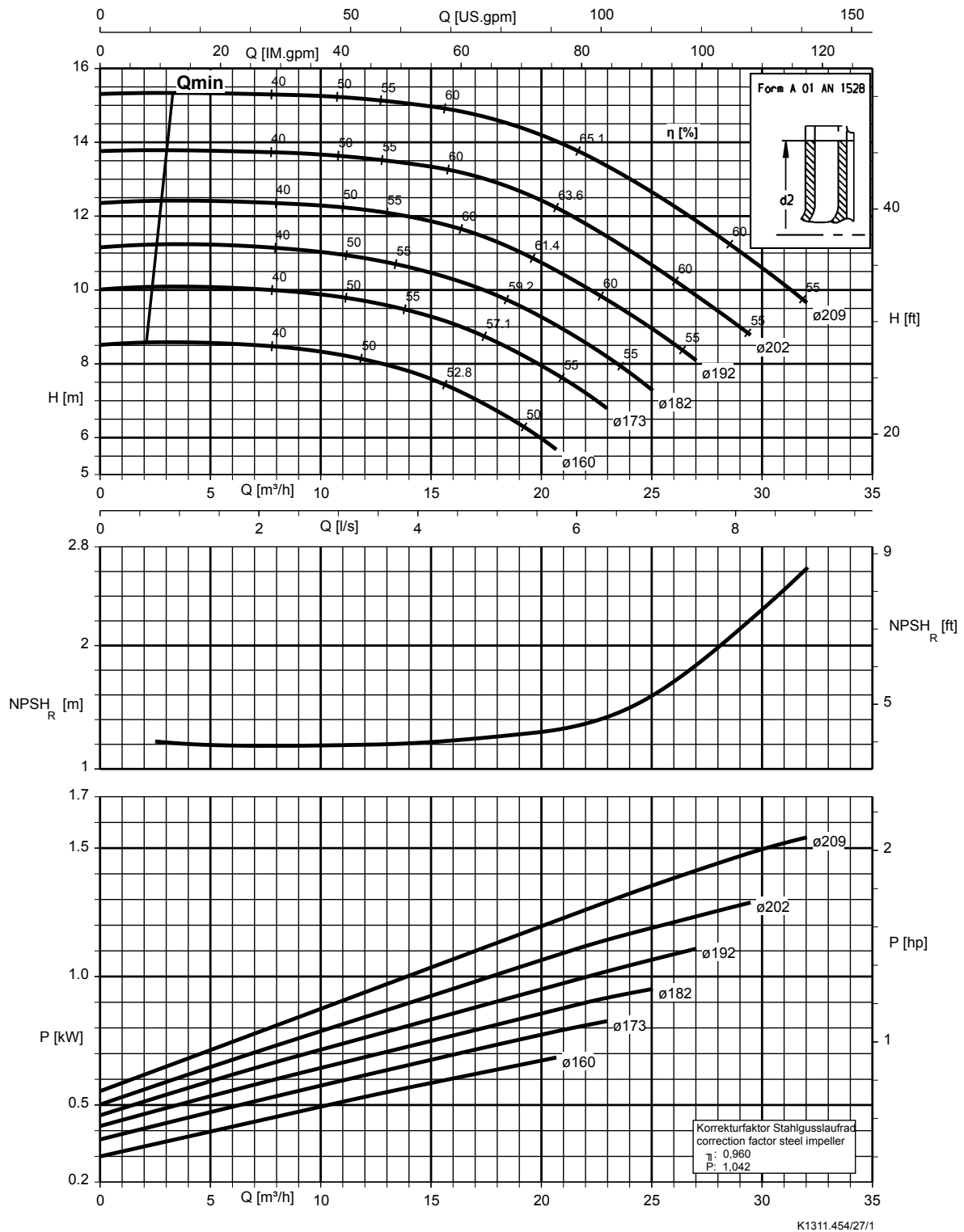
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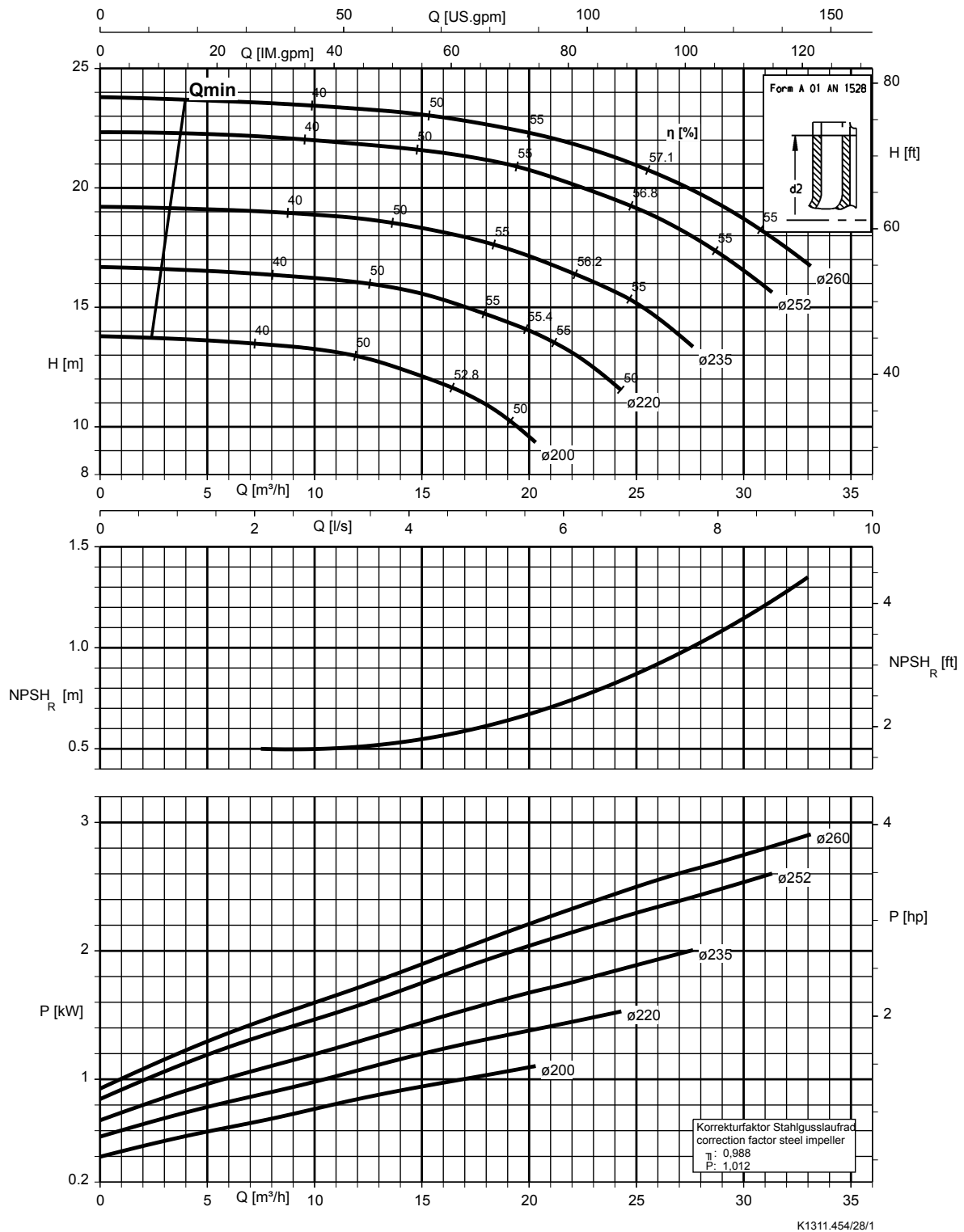
Etanorm 065-040-160,  $n = 1450 \text{ min}^{-1}$



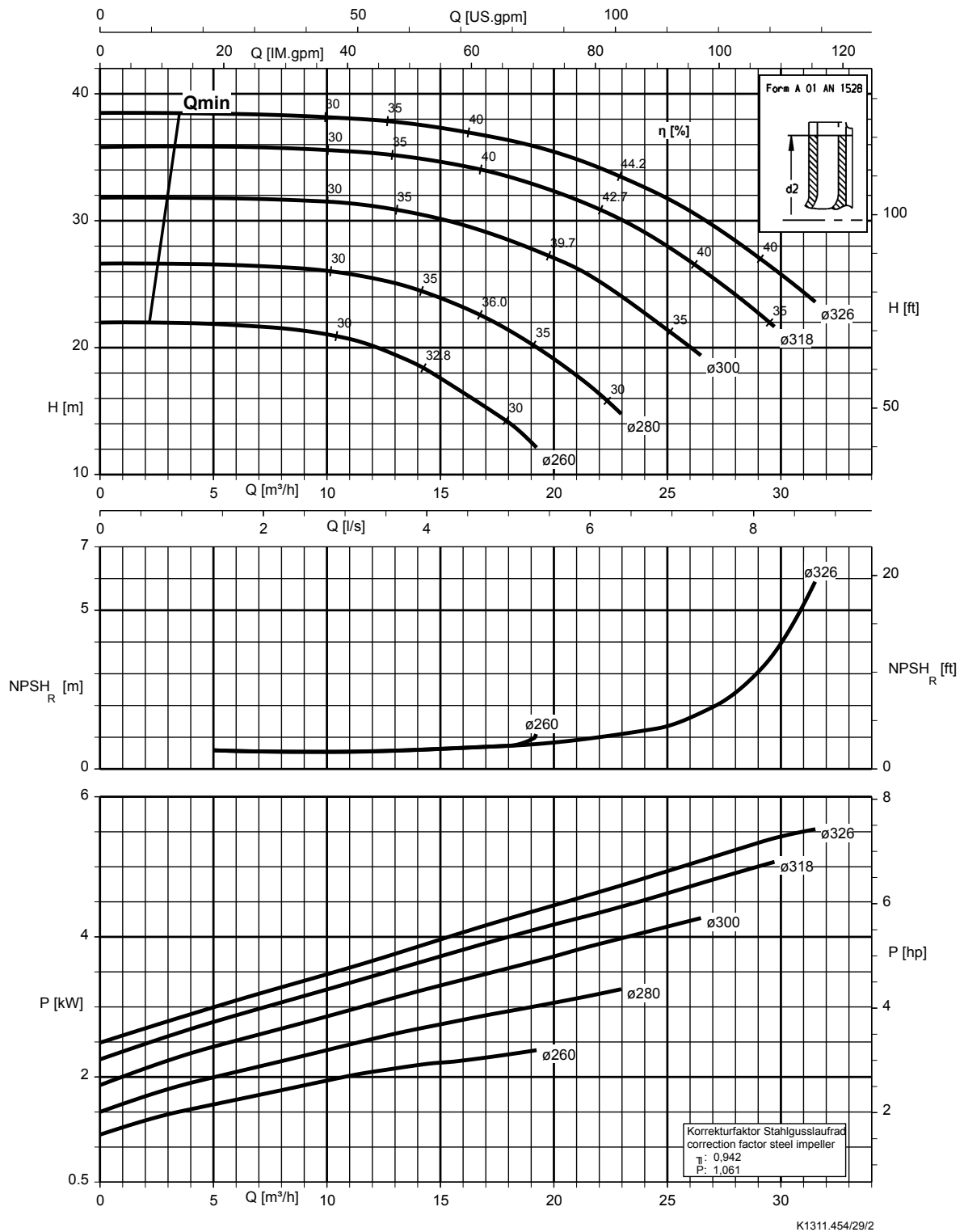
Etanorm 065-040-200,  $n = 1450 \text{ min}^{-1}$



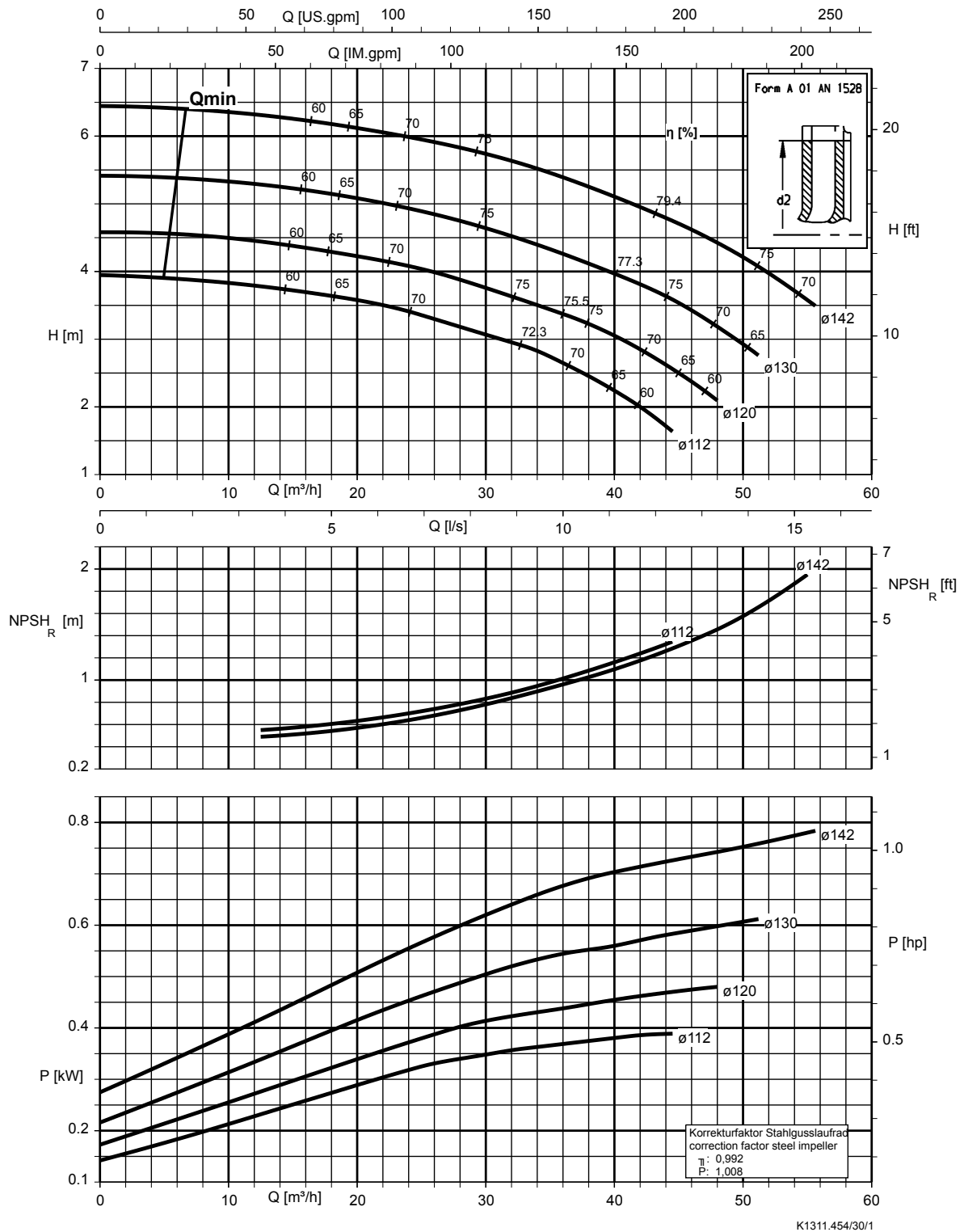
Etanorm 065-040-250,  $n = 1450 \text{ min}^{-1}$



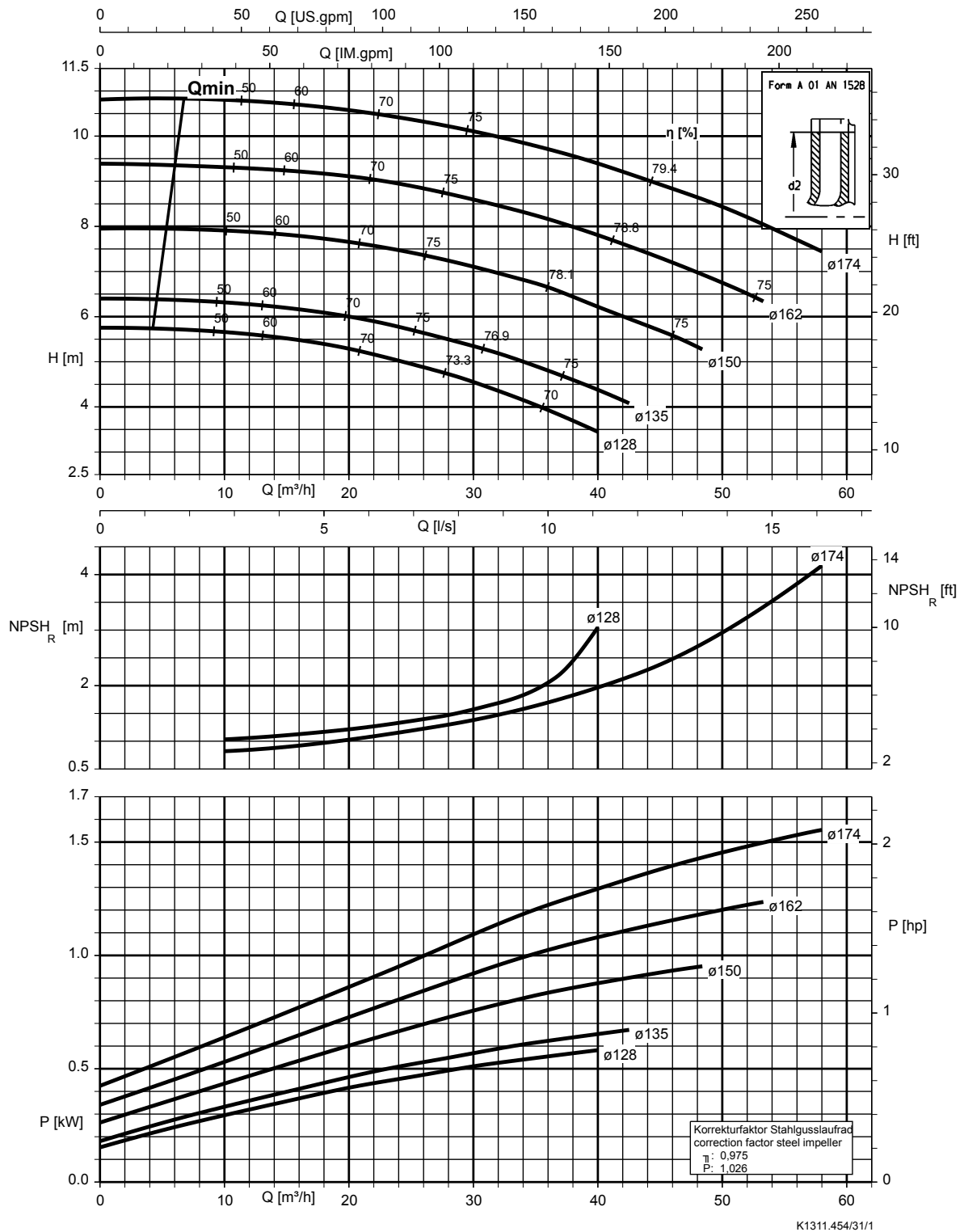
Etanorm 065-040-315,  $n = 1450 \text{ min}^{-1}$



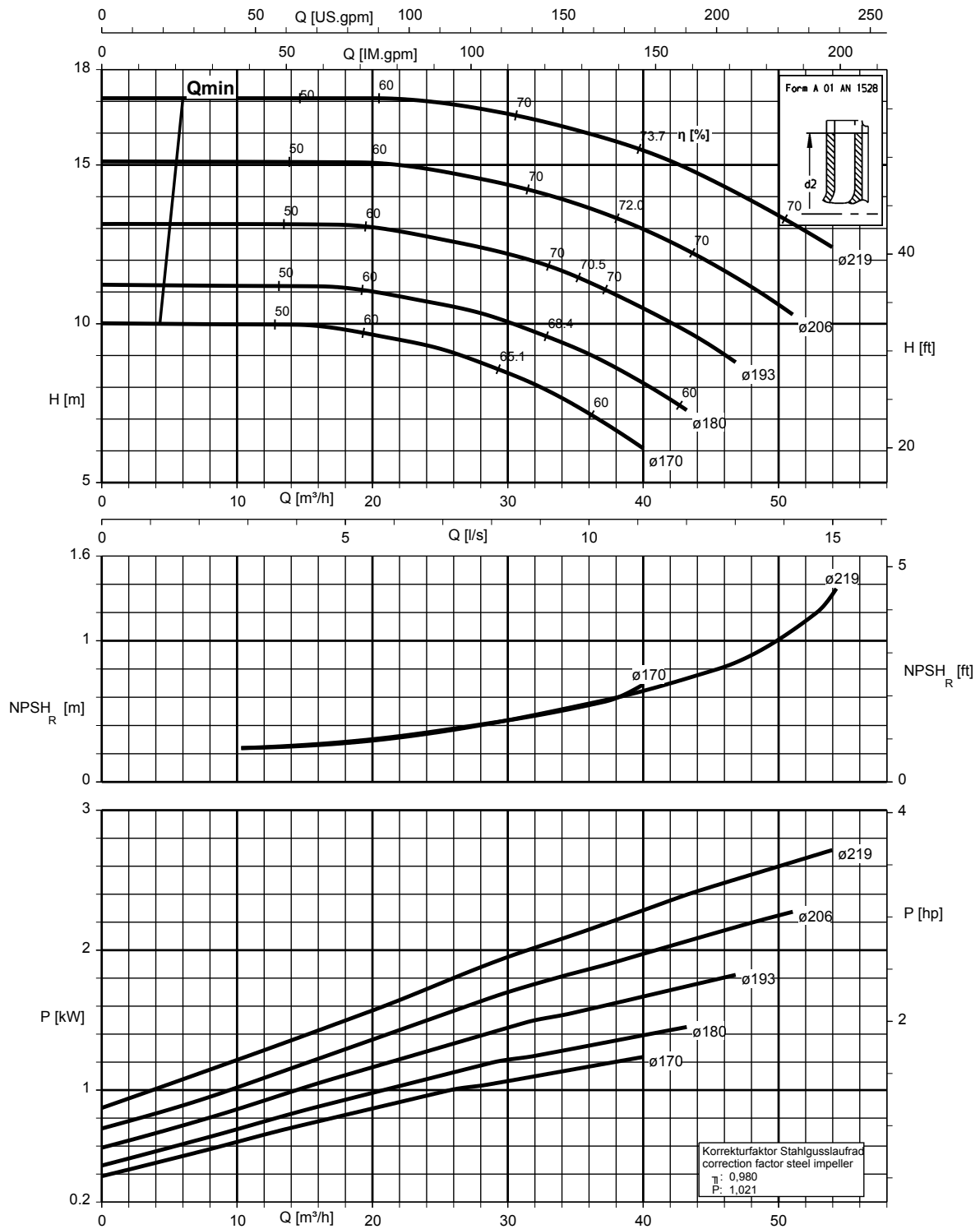
Etanorm 065-050-125,  $n = 1450 \text{ min}^{-1}$



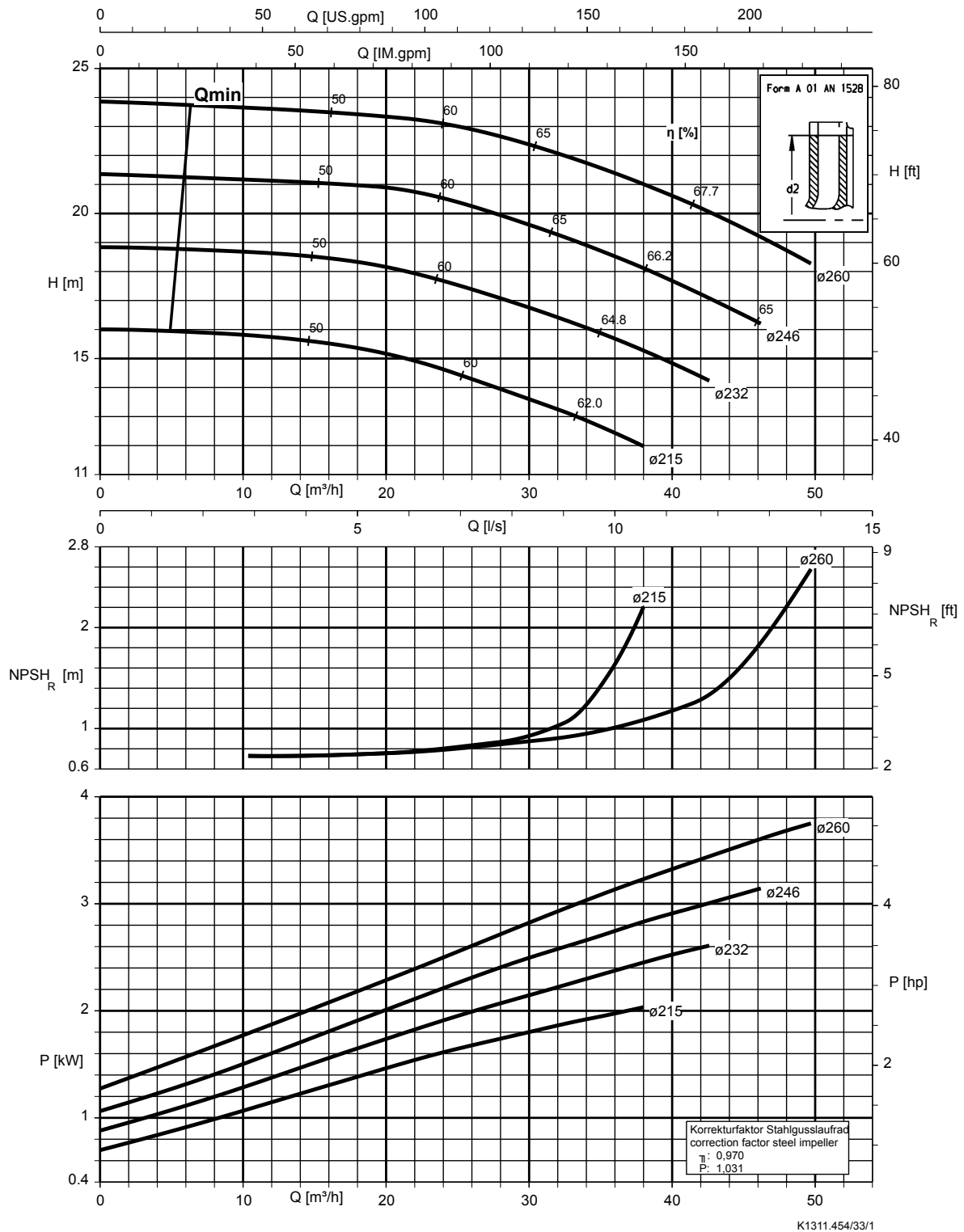
Etanorm 065-050-160,  $n = 1450 \text{ min}^{-1}$



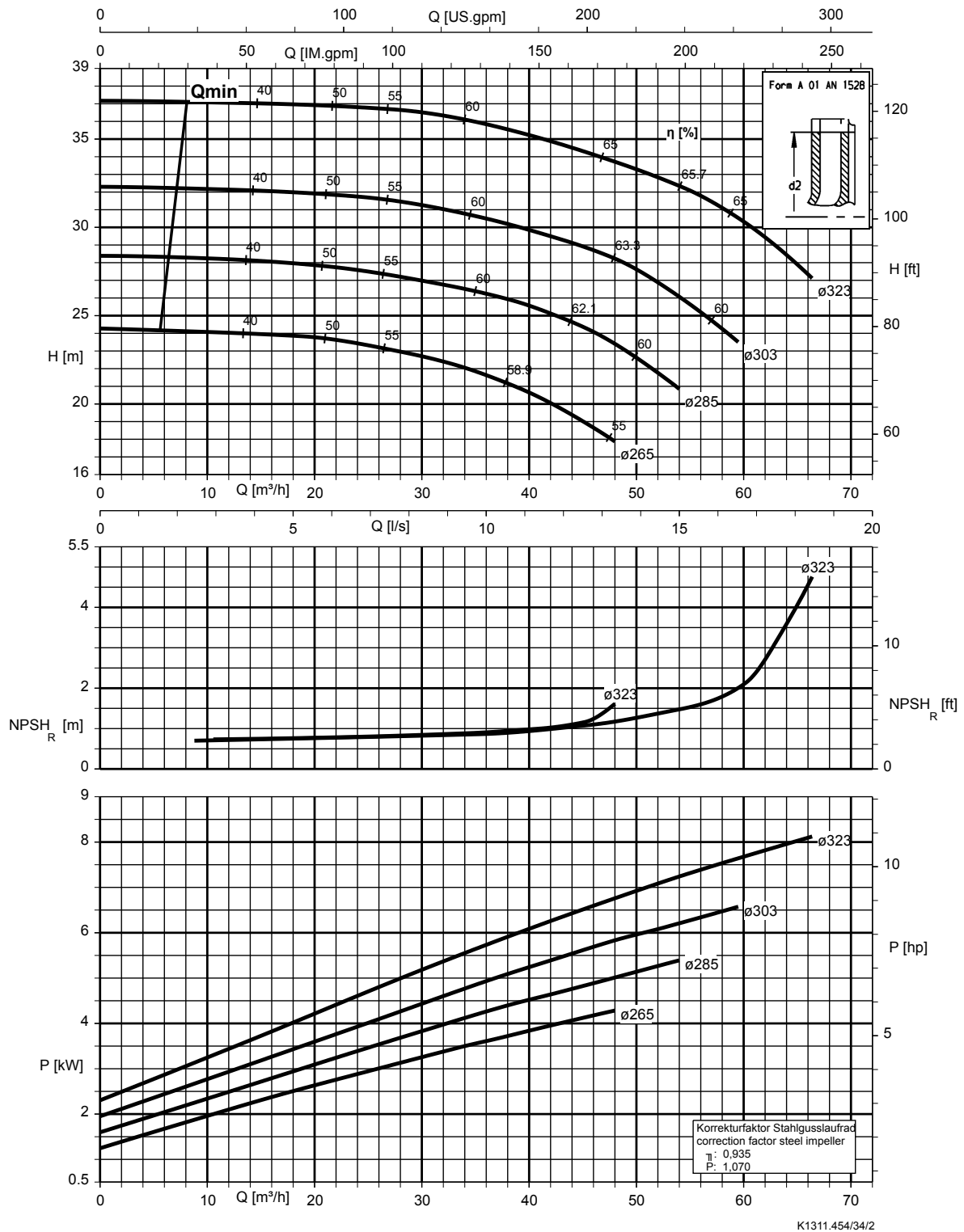
Etanorm 065-050-200,  $n = 1450 \text{ min}^{-1}$



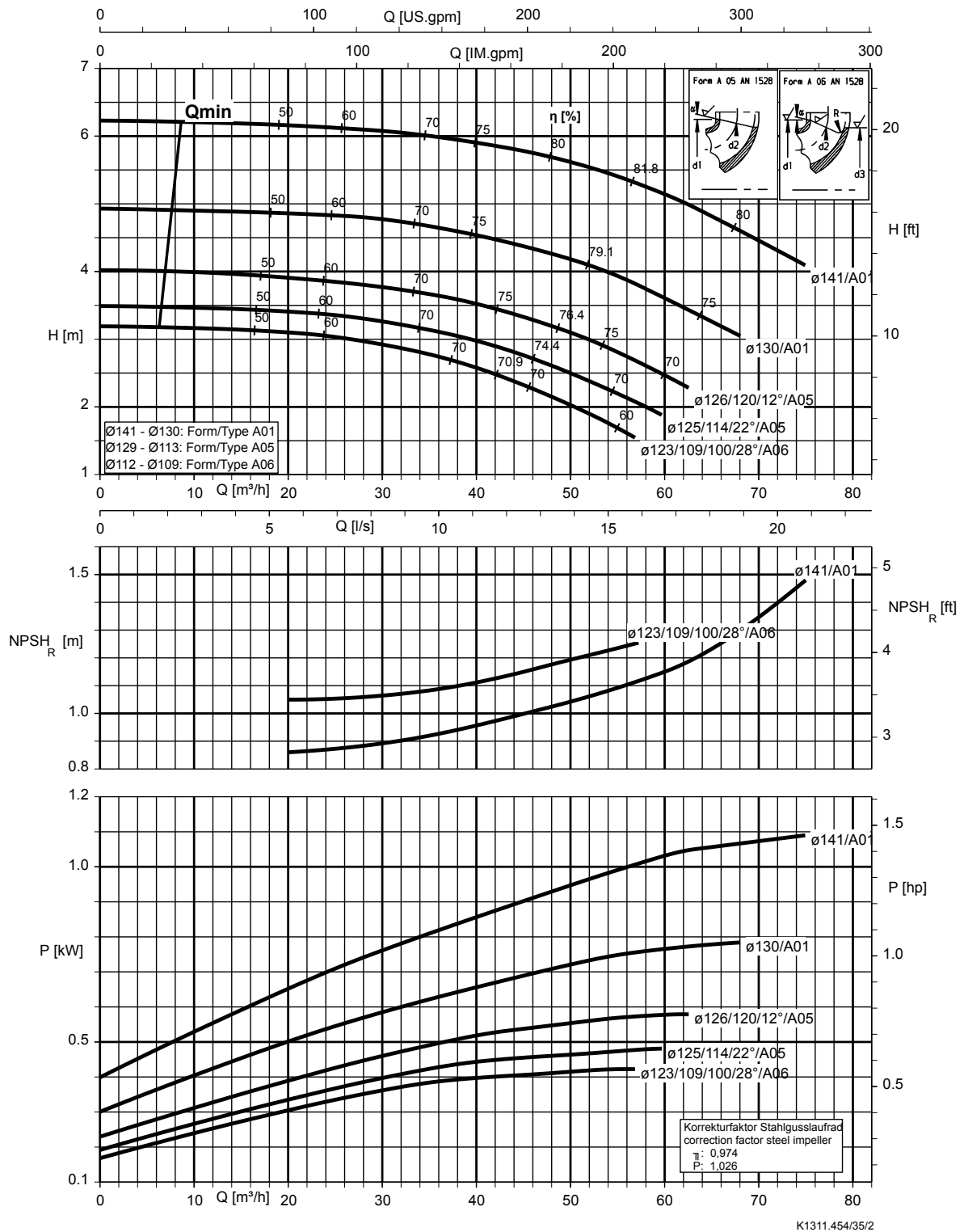
Etanorm 065-050-250,  $n = 1450 \text{ min}^{-1}$



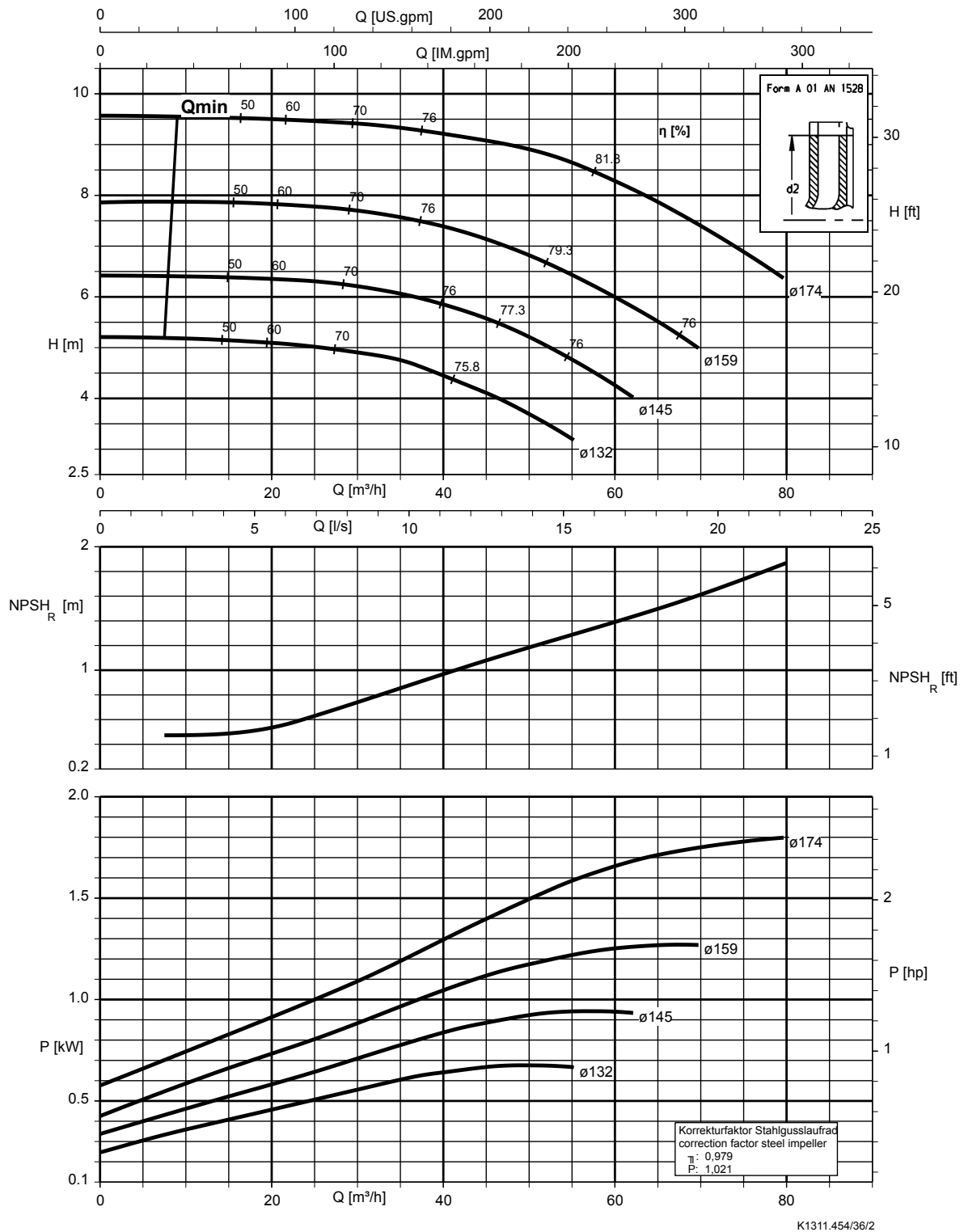
Etanorm 065-050-315,  $n = 1450 \text{ min}^{-1}$



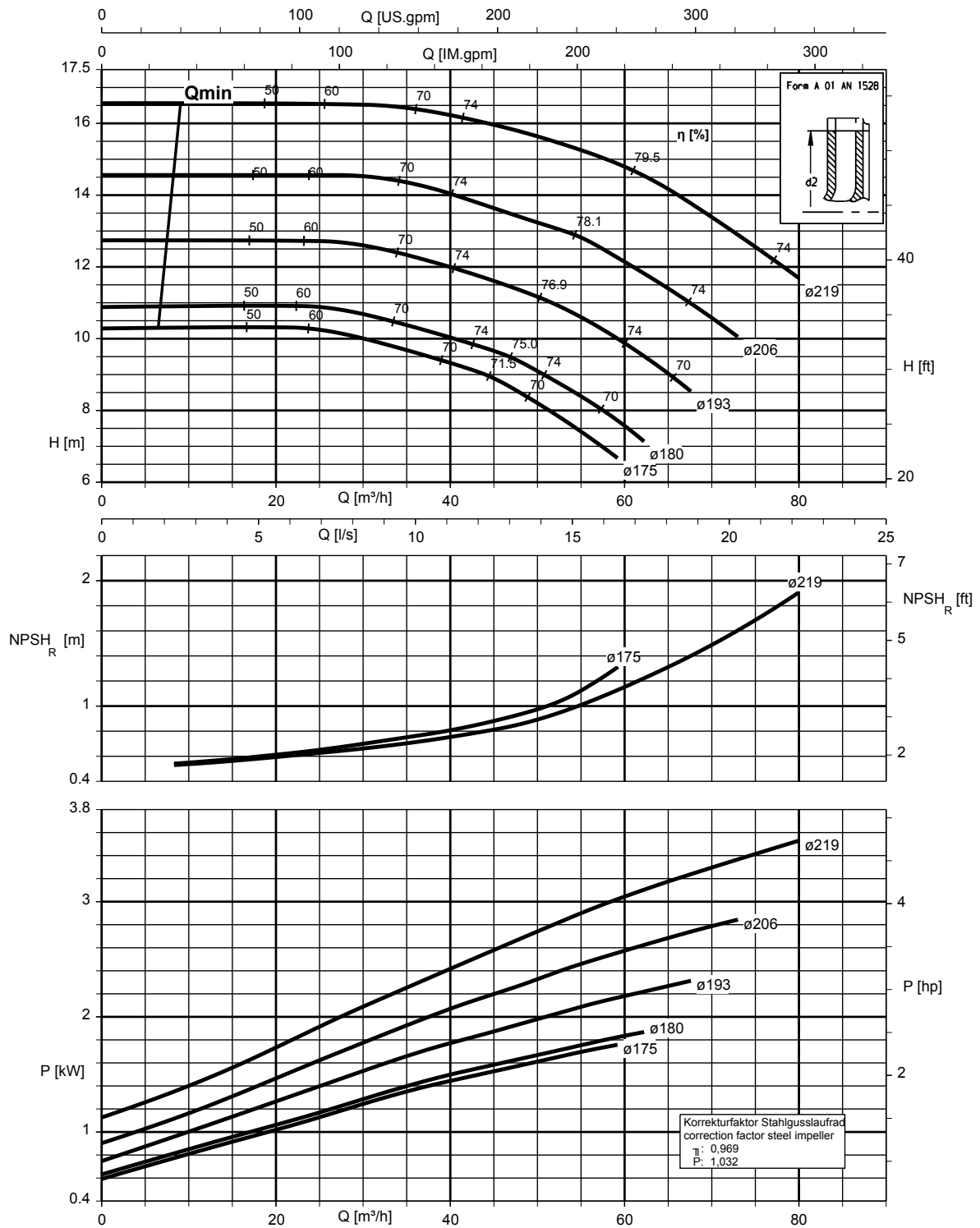
Etanorm 080-065-125,  $n = 1450 \text{ min}^{-1}$



Etanorm 080-065-160,  $n = 1450 \text{ min}^{-1}$

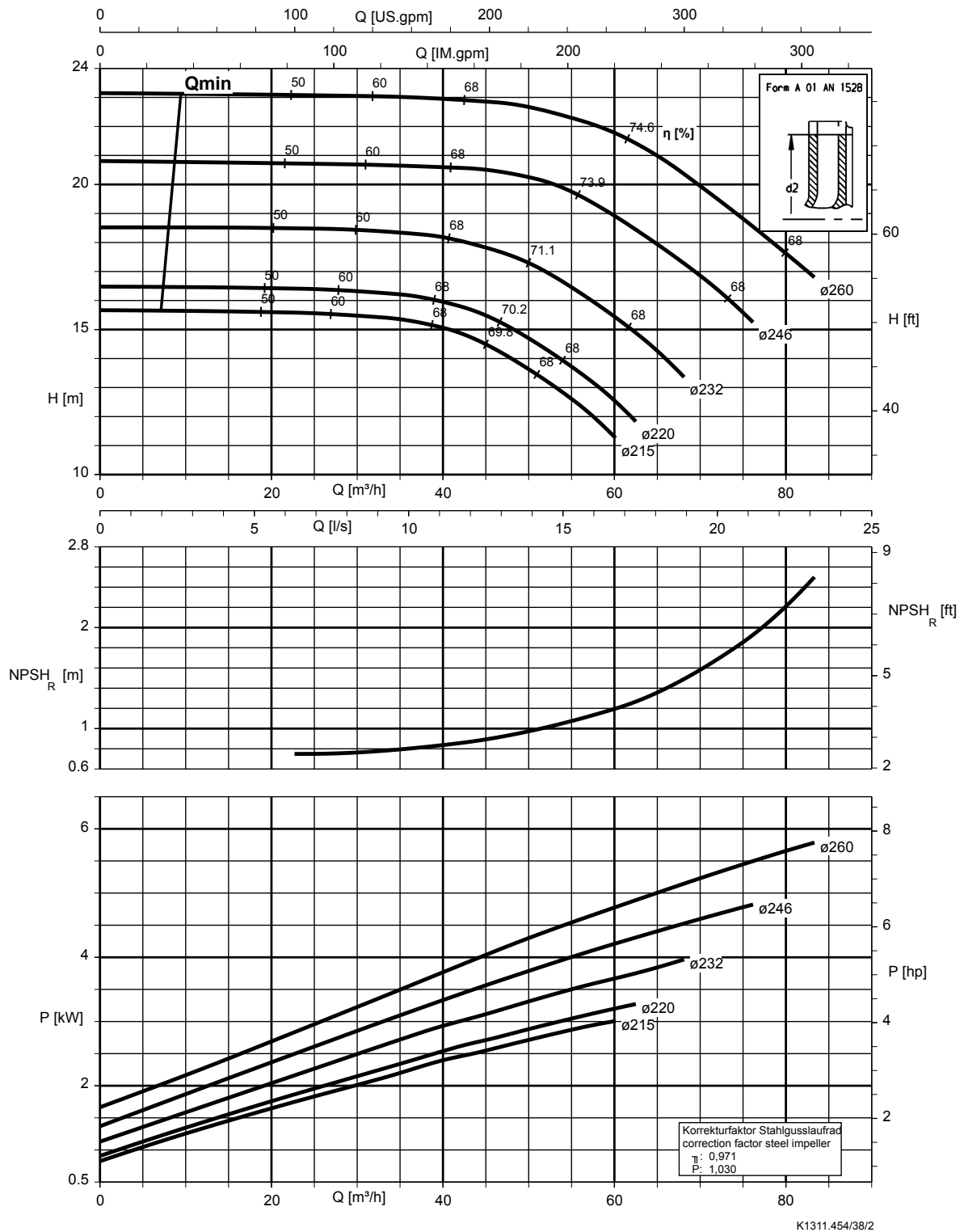


Etanorm 080-065-200,  $n = 1450 \text{ min}^{-1}$

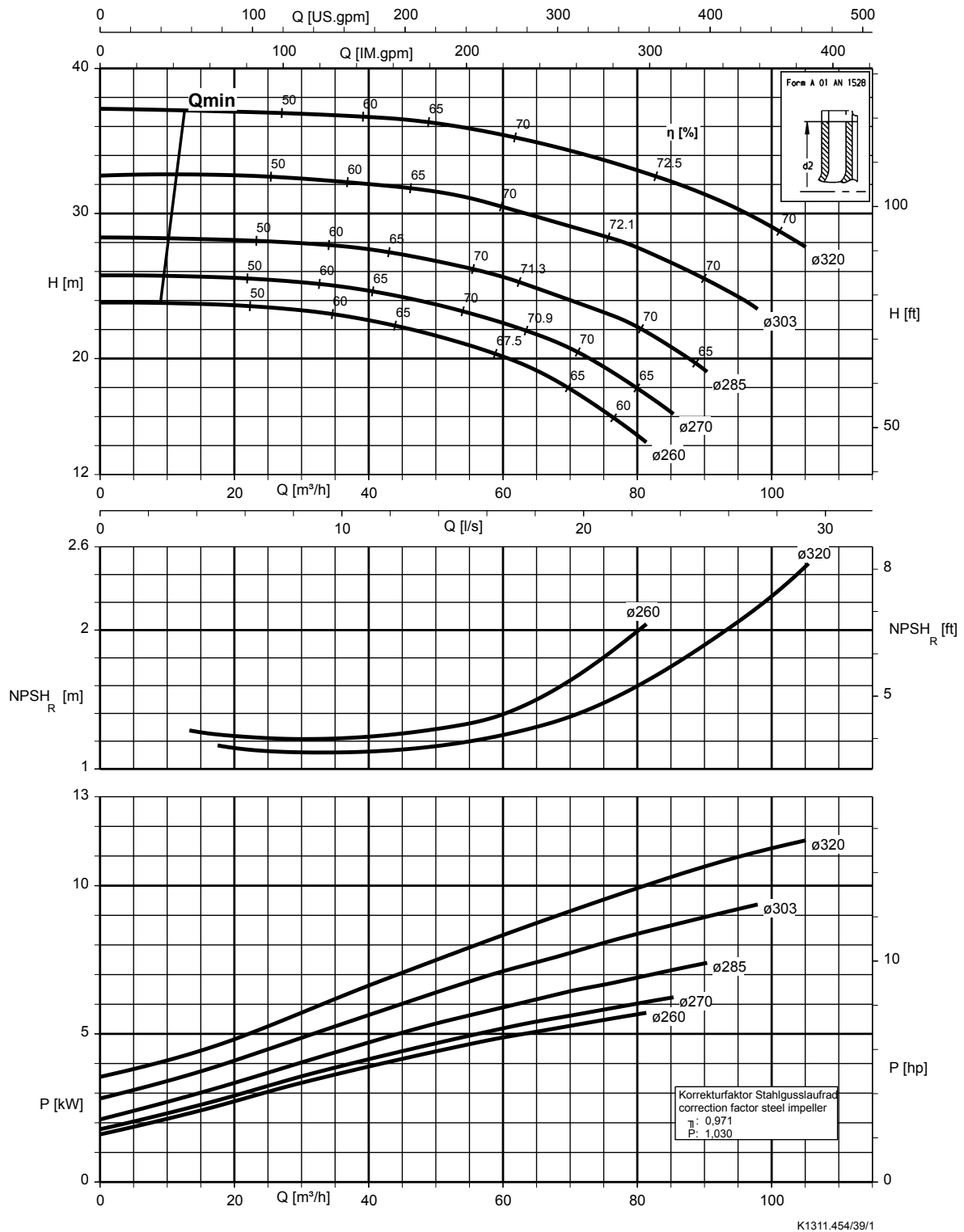


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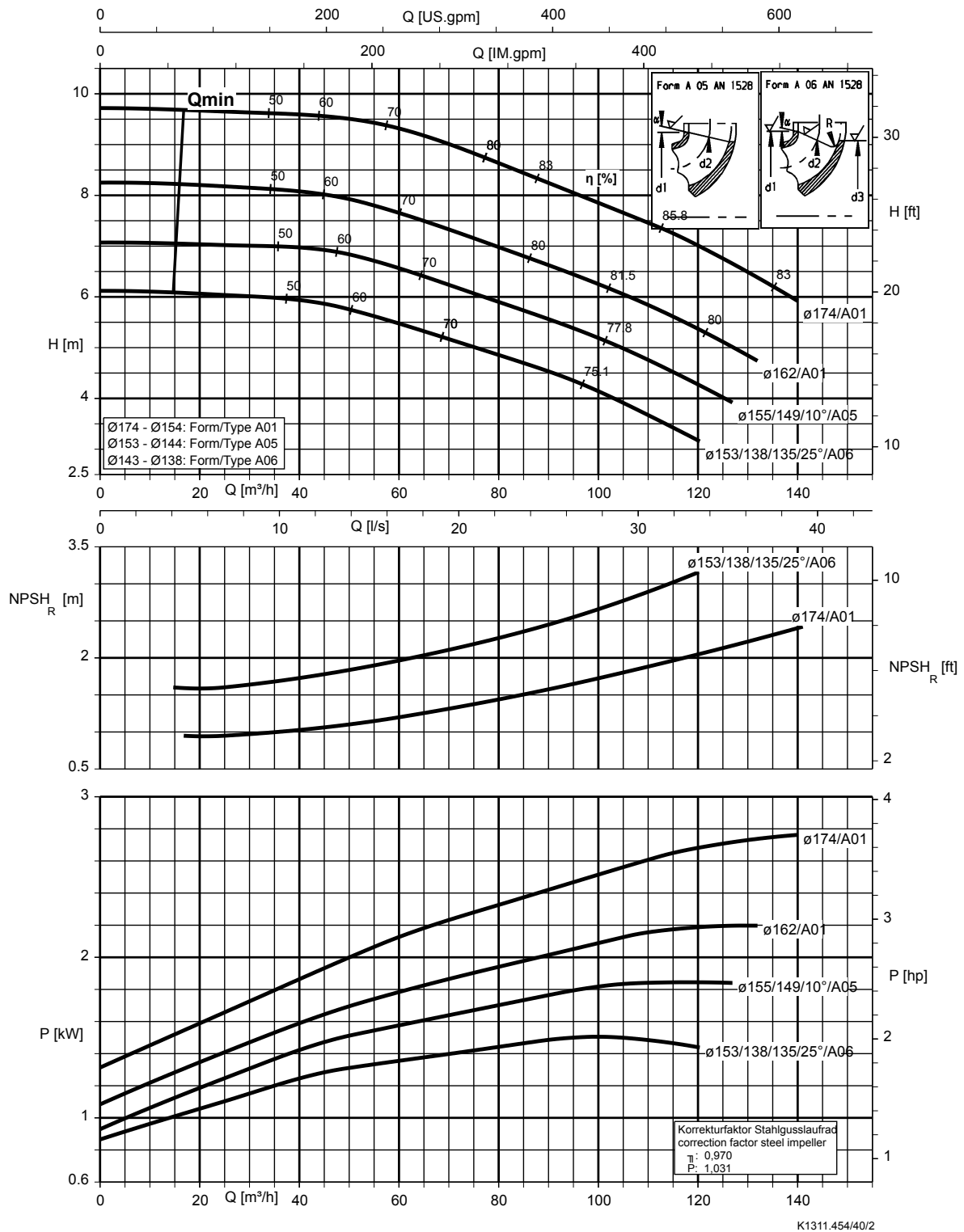
Etanorm 080-065-250,  $n = 1450 \text{ min}^{-1}$



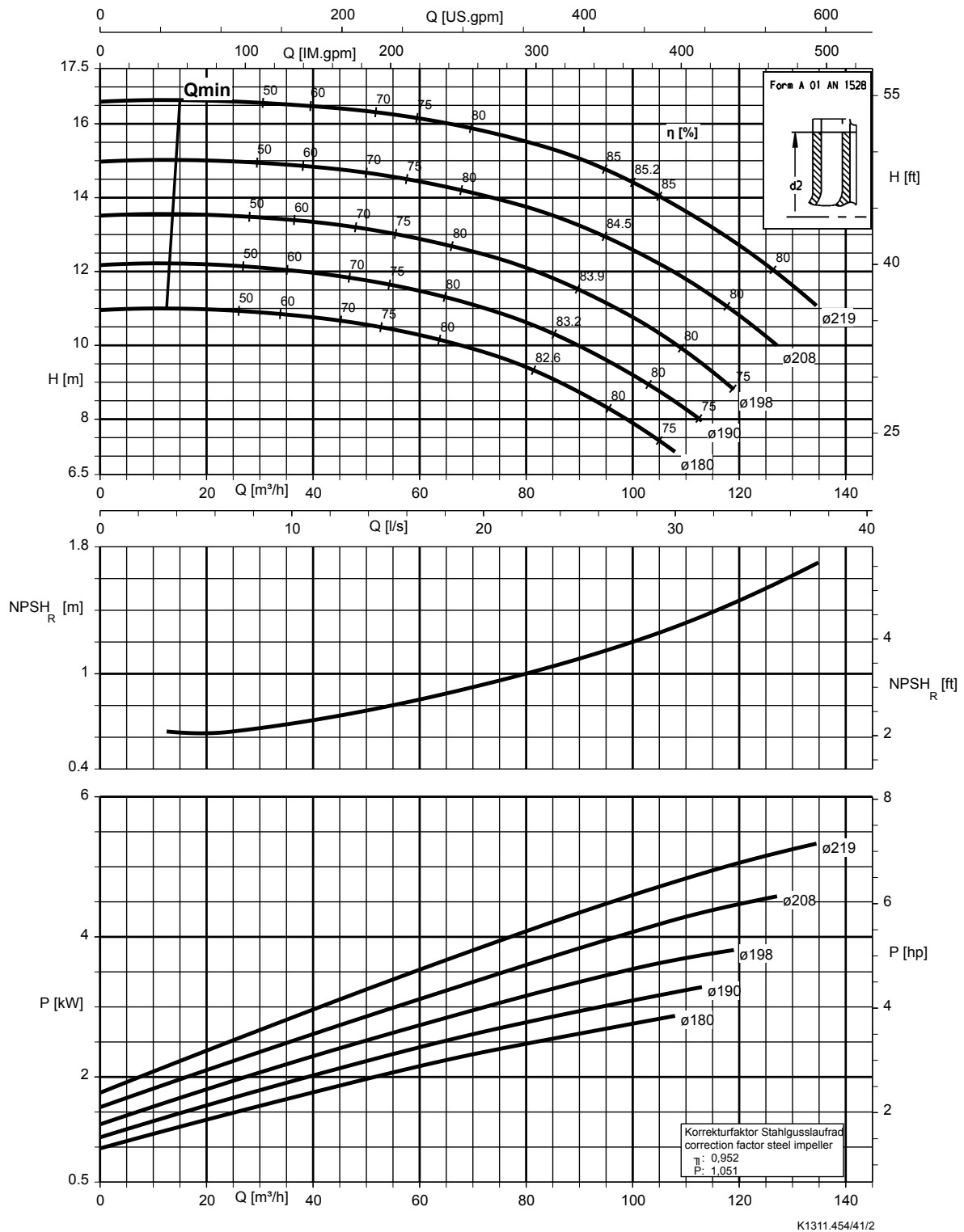
Etanorm 080-065-315,  $n = 1450 \text{ min}^{-1}$



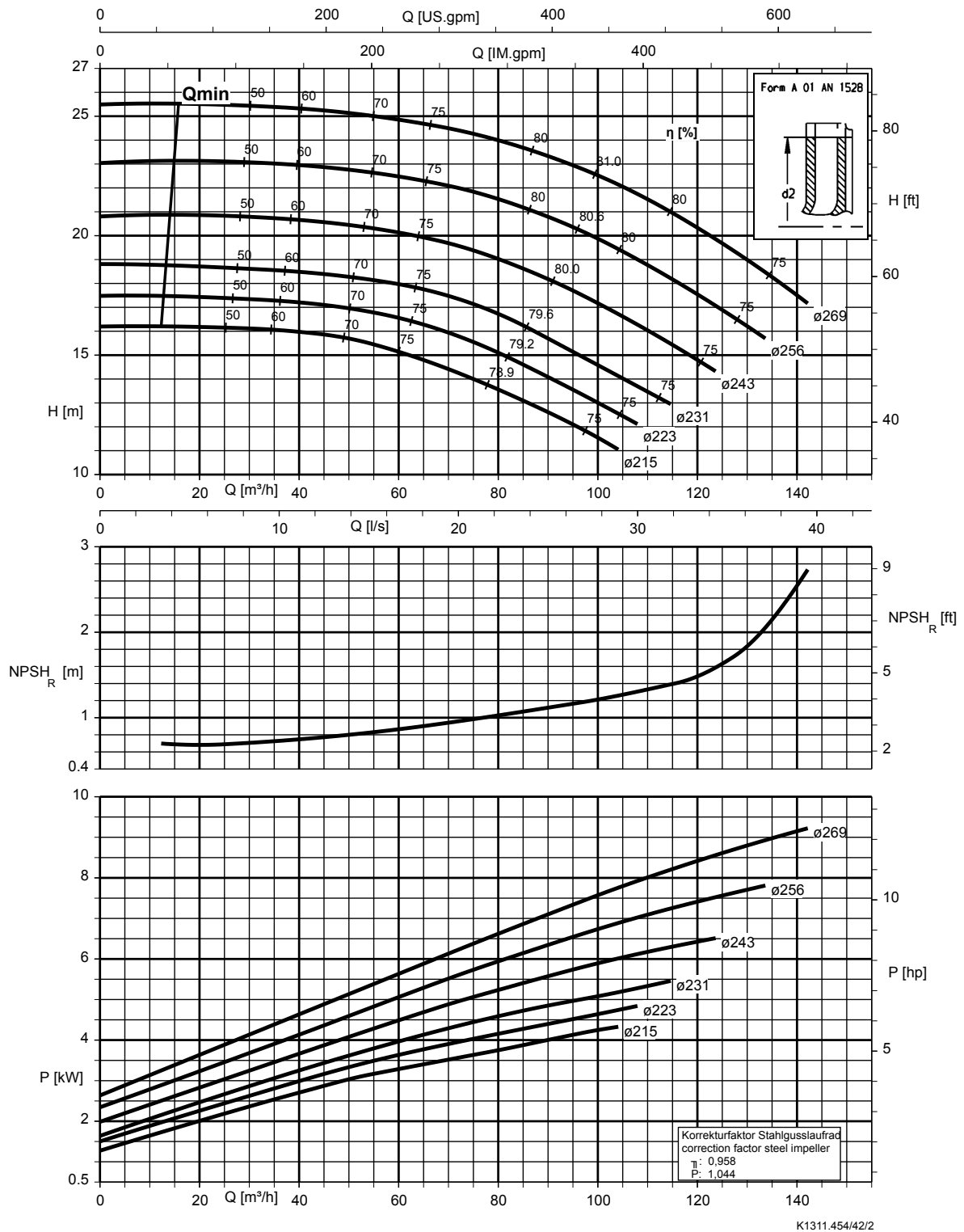
Etanorm 100-080-160,  $n = 1450 \text{ min}^{-1}$



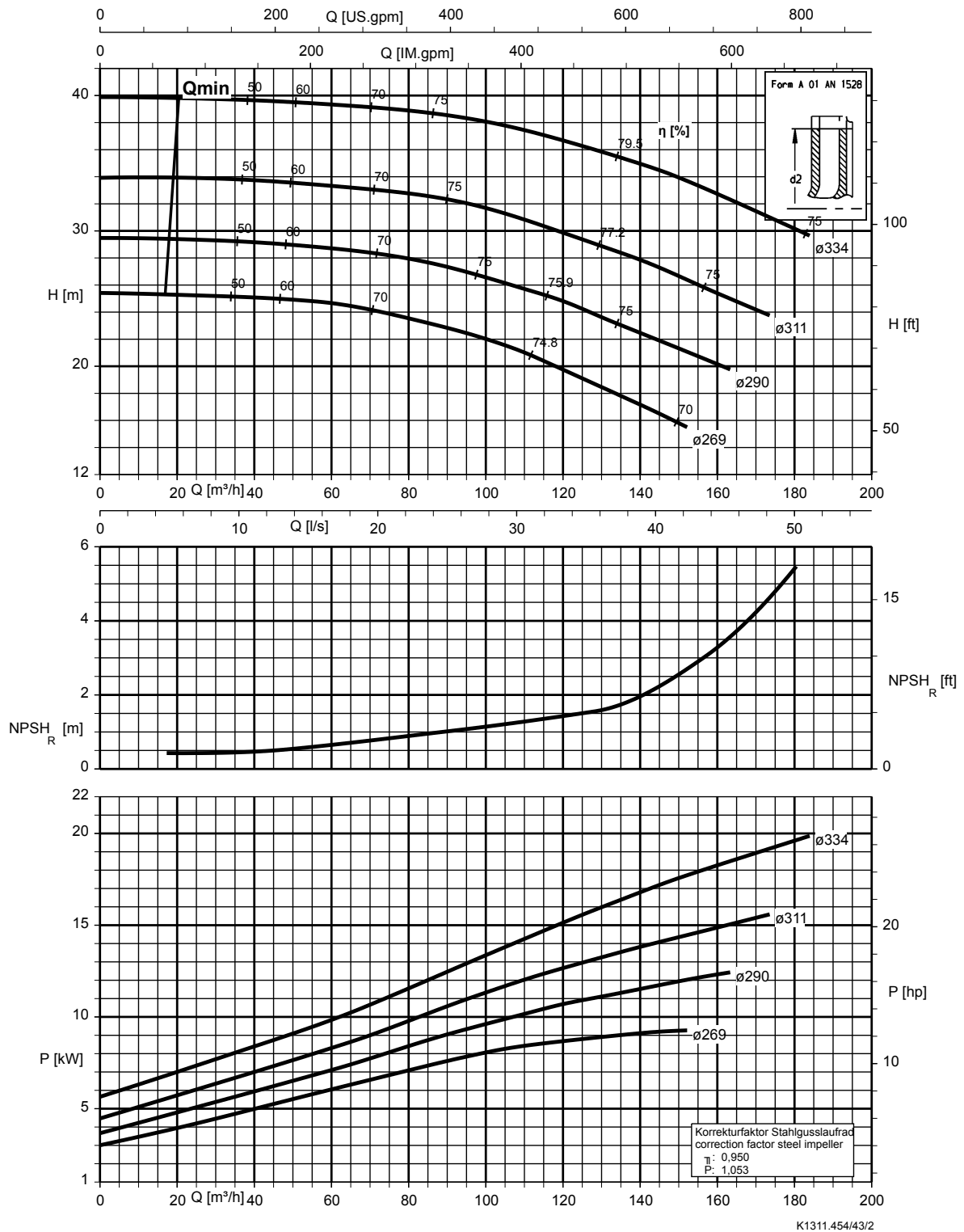
Etanorm 100-080-200,  $n = 1450 \text{ min}^{-1}$



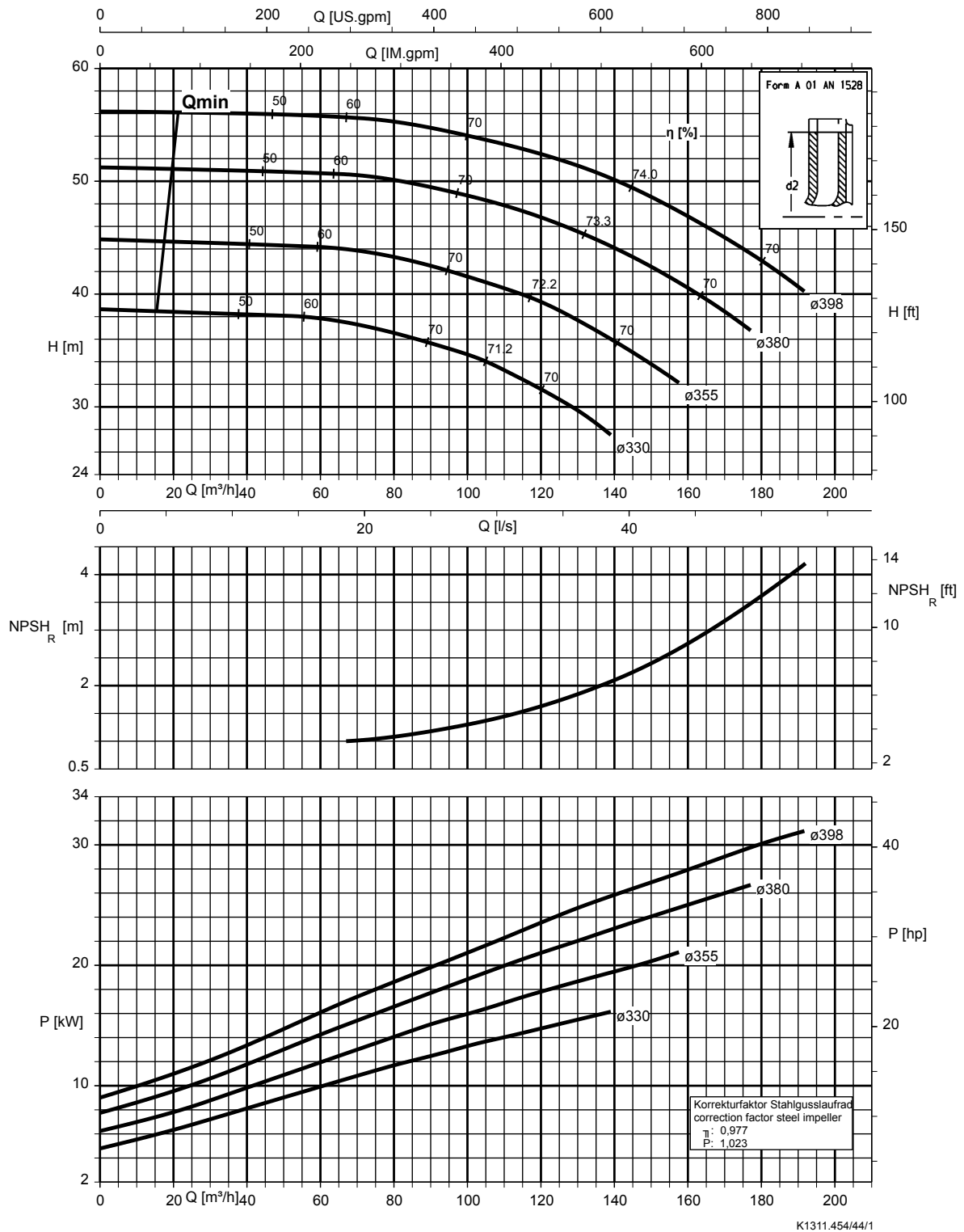
Etanorm 100-080-250,  $n = 1450 \text{ min}^{-1}$



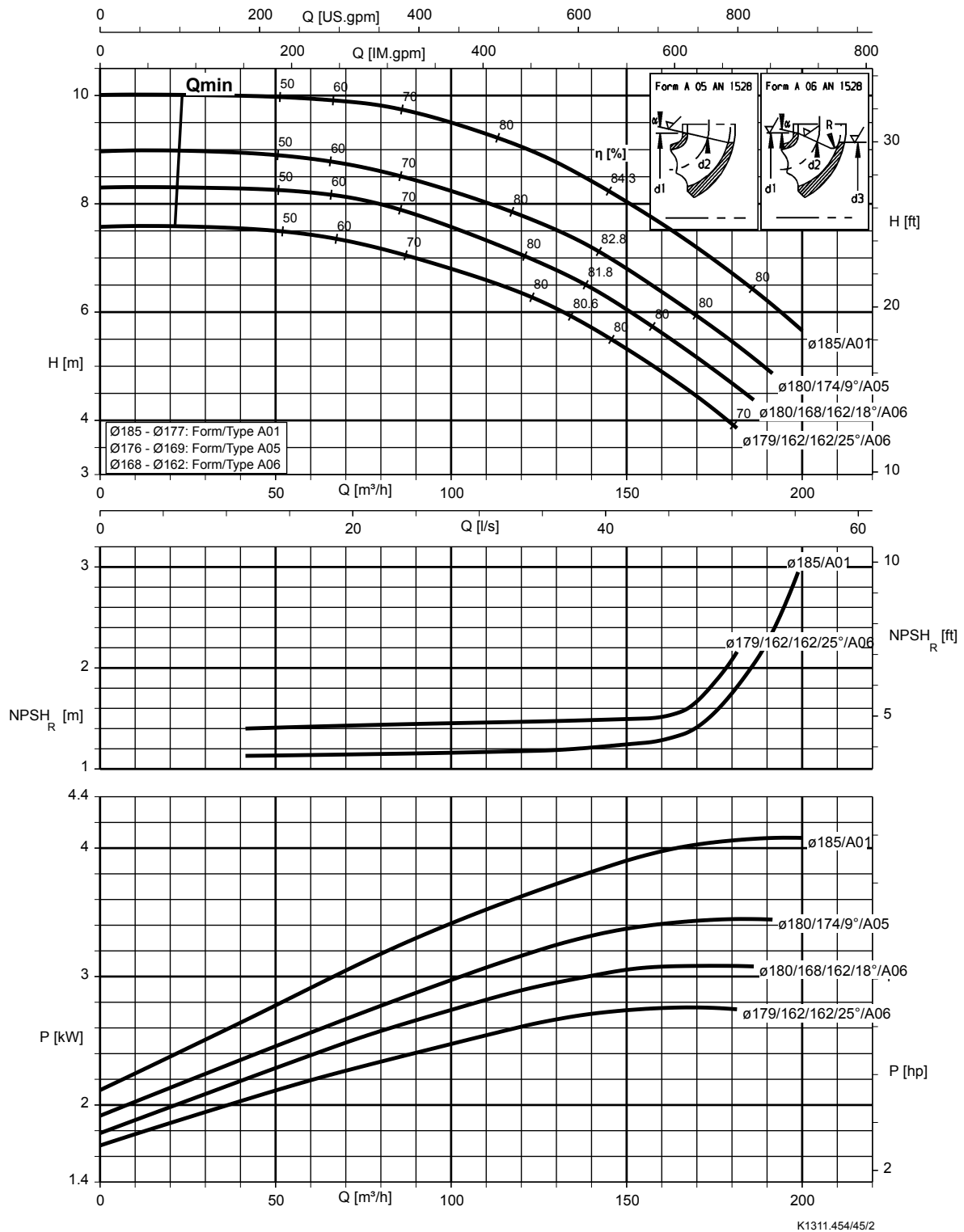
Etanorm 100-080-315,  $n = 1450 \text{ min}^{-1}$



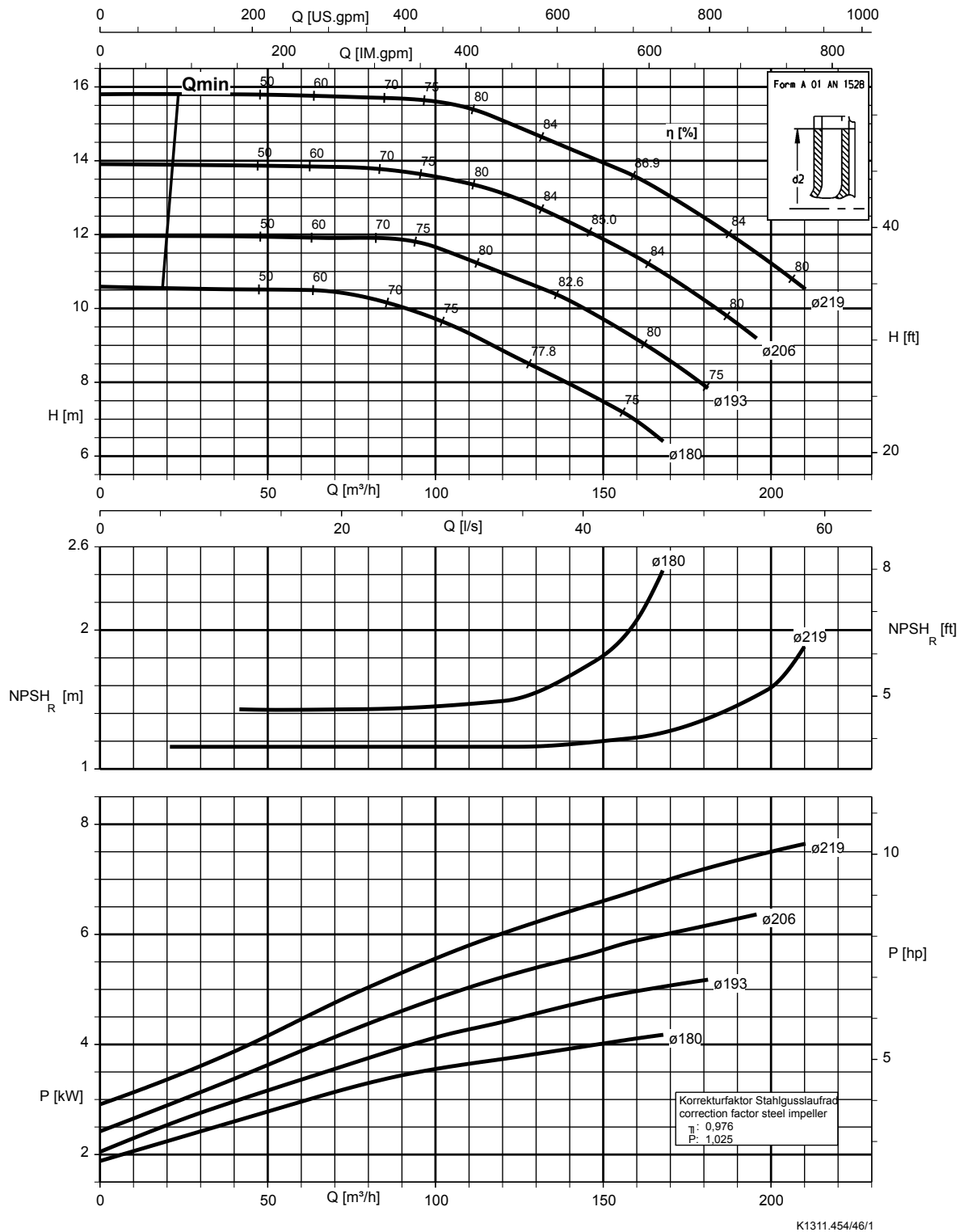
Etanorm 100-080-400,  $n = 1450 \text{ min}^{-1}$



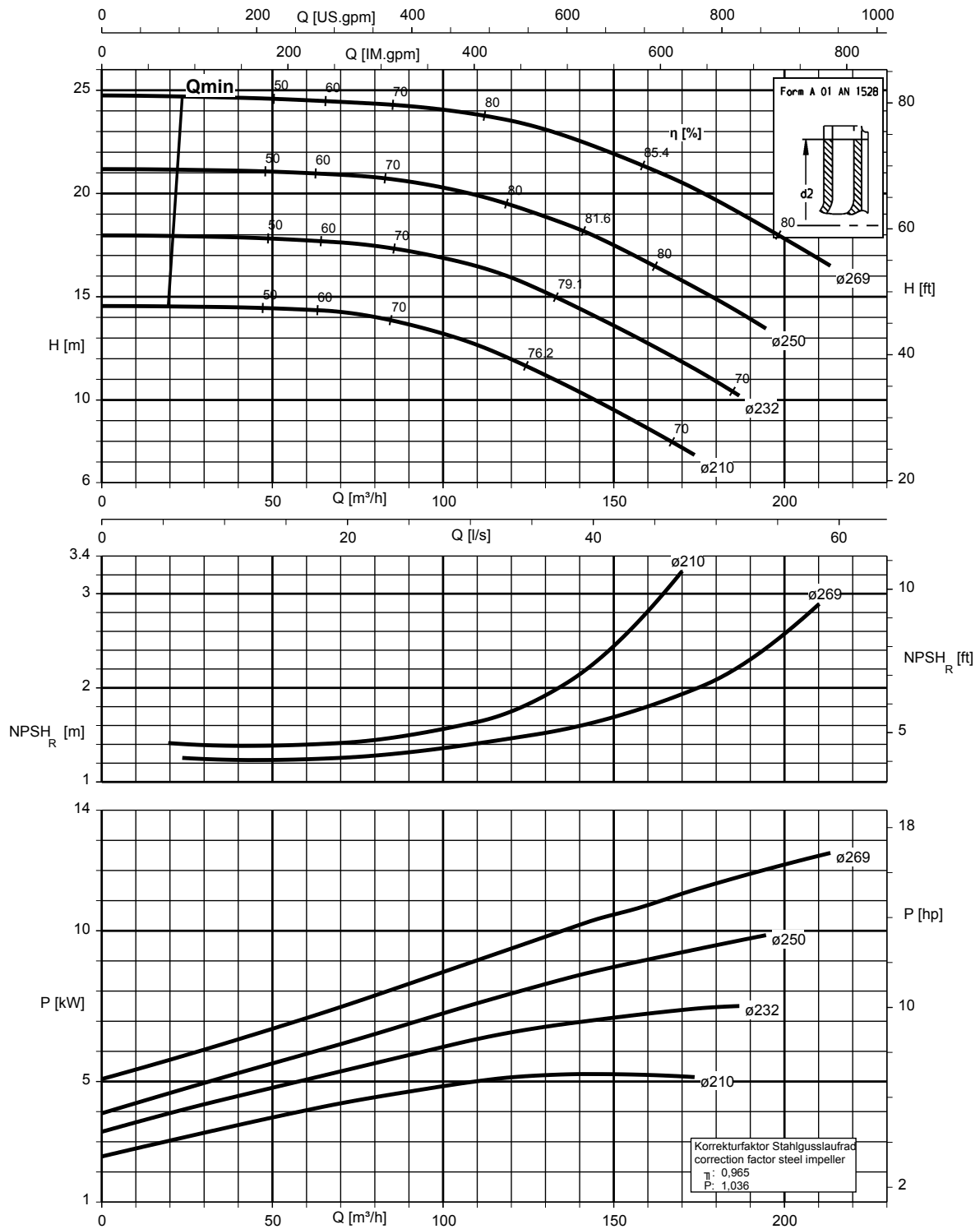
**Etanorm 125-100-160,  $n = 1450 \text{ min}^{-1}$**



Etanorm 125-100-200,  $n = 1450 \text{ min}^{-1}$

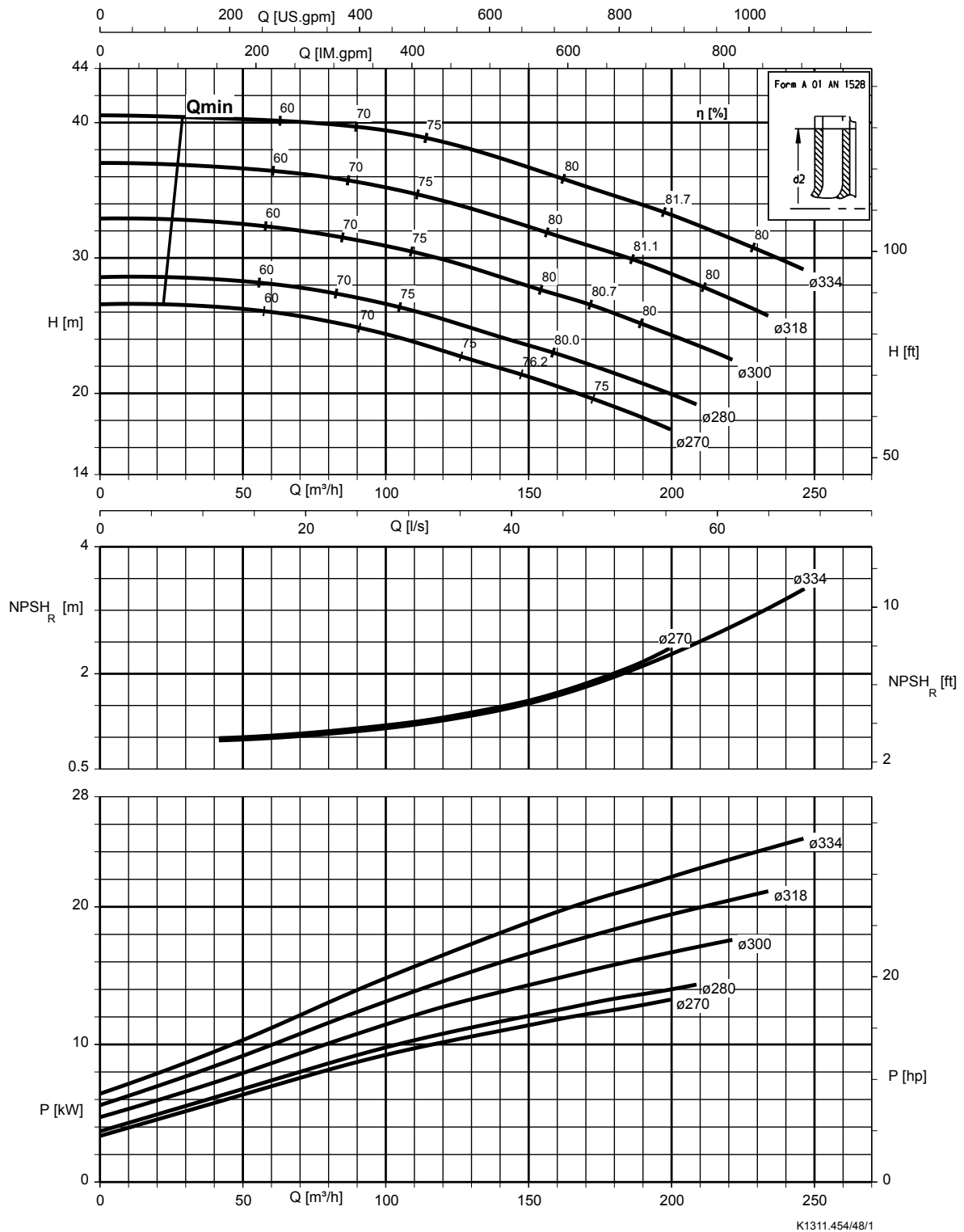


Etanorm 125-100-250,  $n = 1450 \text{ min}^{-1}$

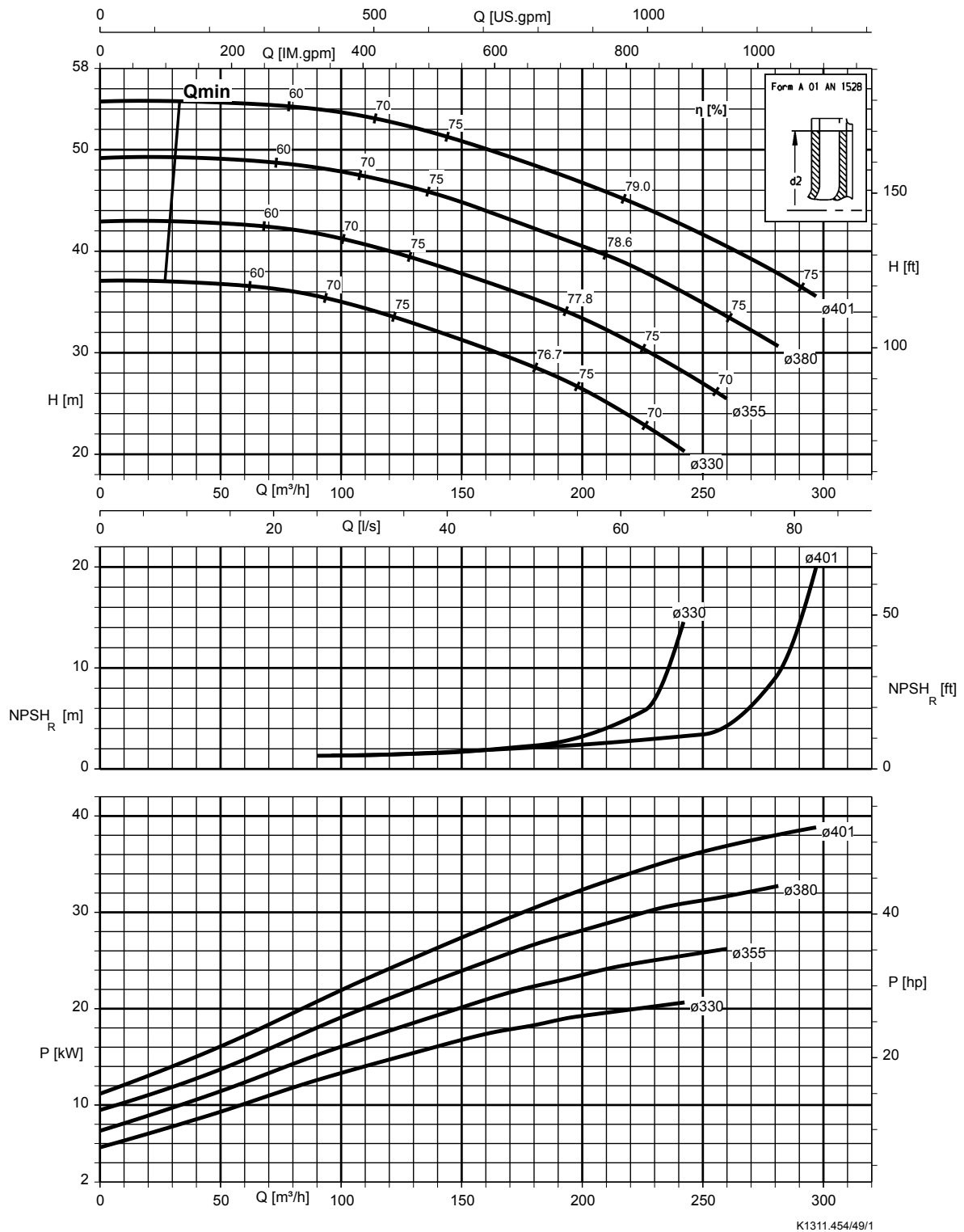


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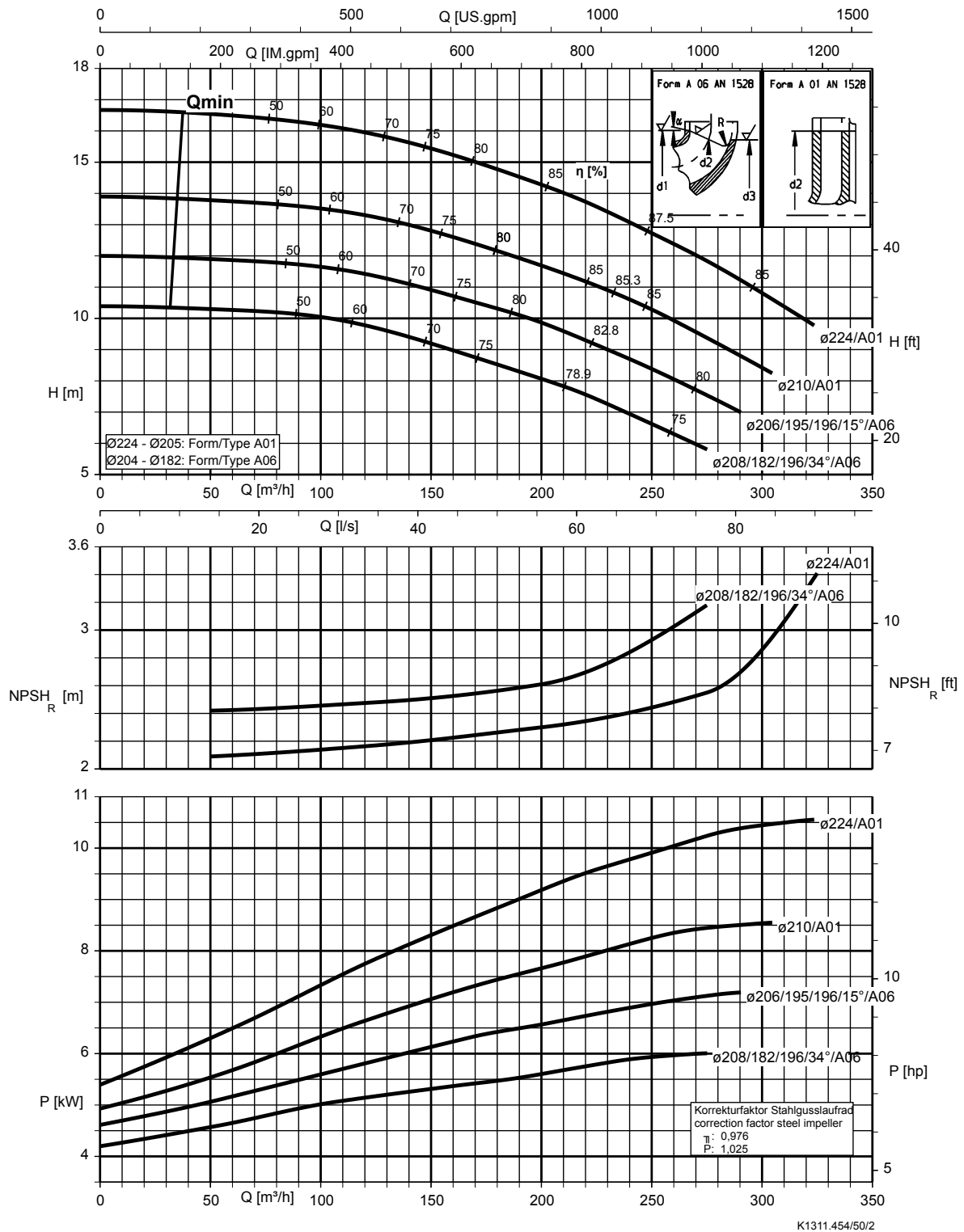
**Etanorm 125-100-315, n = 1450 min<sup>-1</sup>**



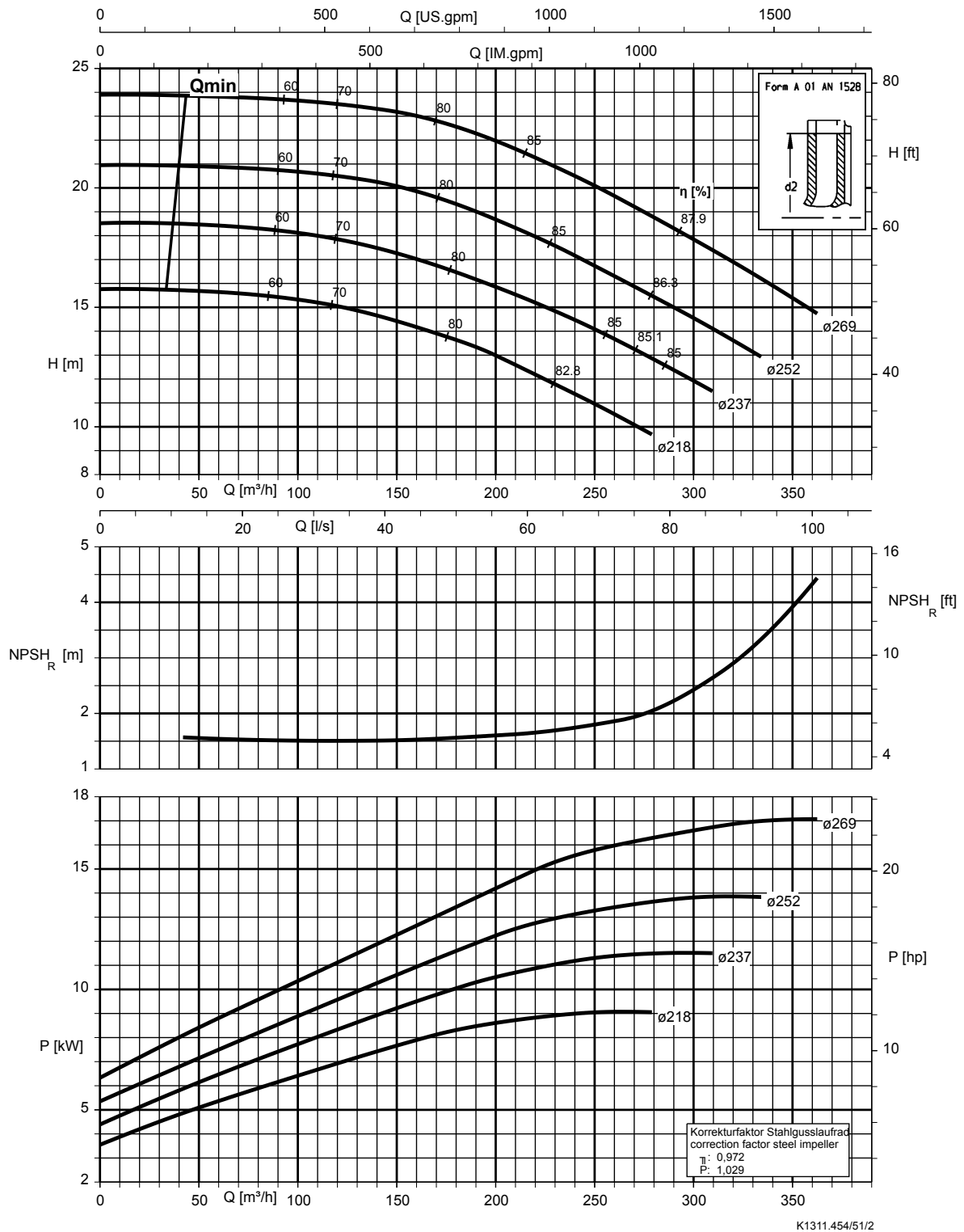
Etanorm 125-100-400,  $n = 1450 \text{ min}^{-1}$



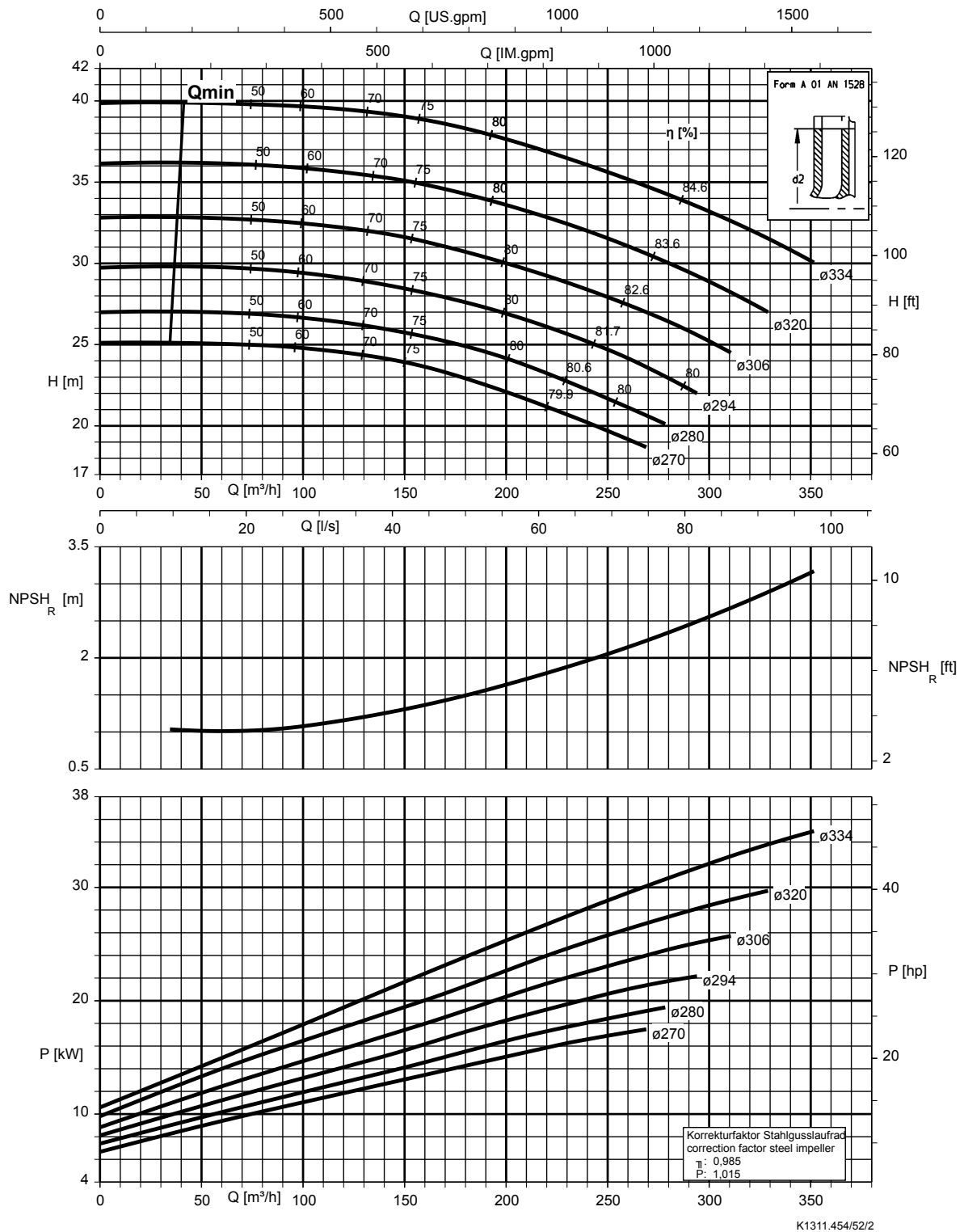
Etanorm 150-125-200,  $n = 1450 \text{ min}^{-1}$



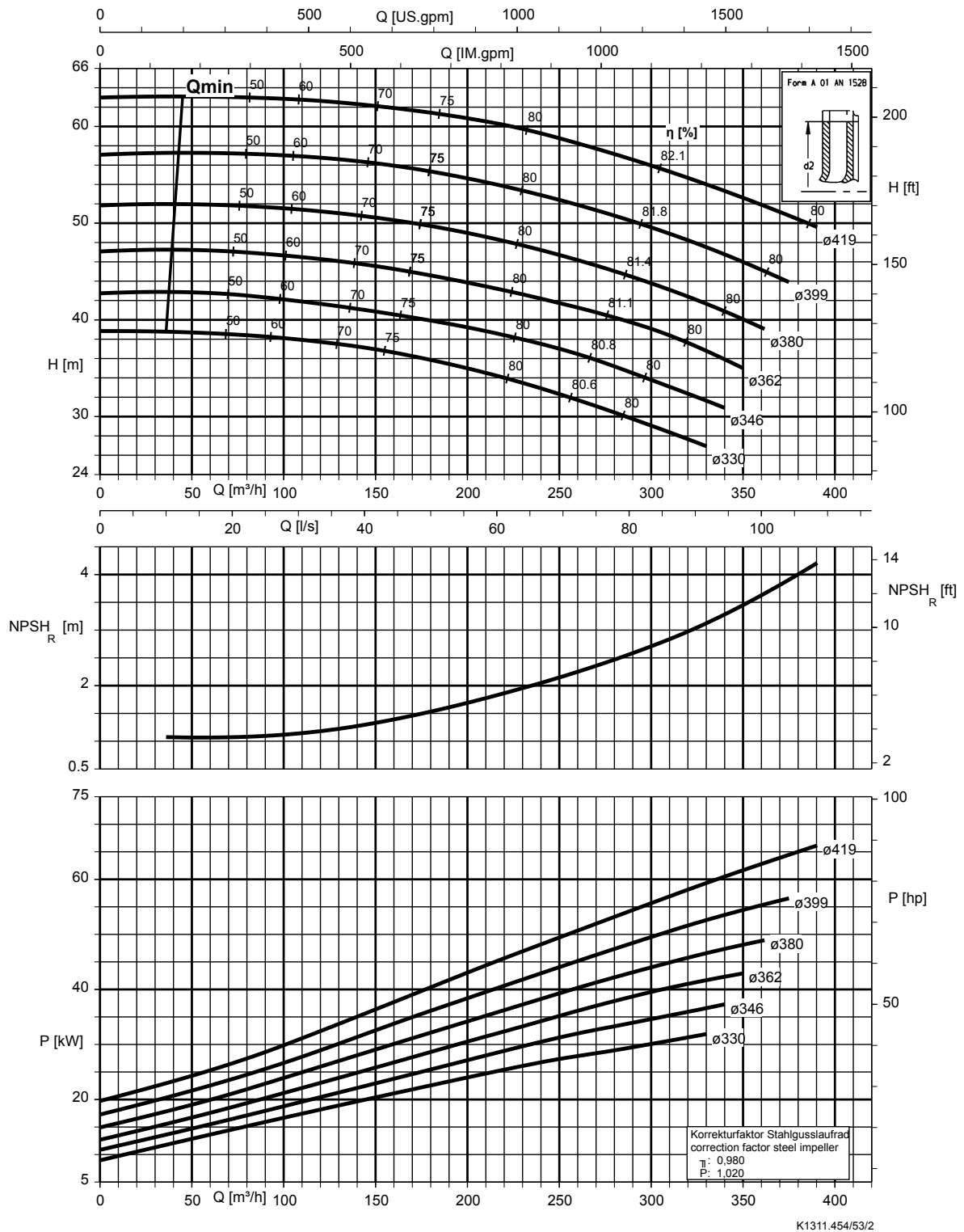
Etanorm 150-125-250,  $n = 1450 \text{ min}^{-1}$



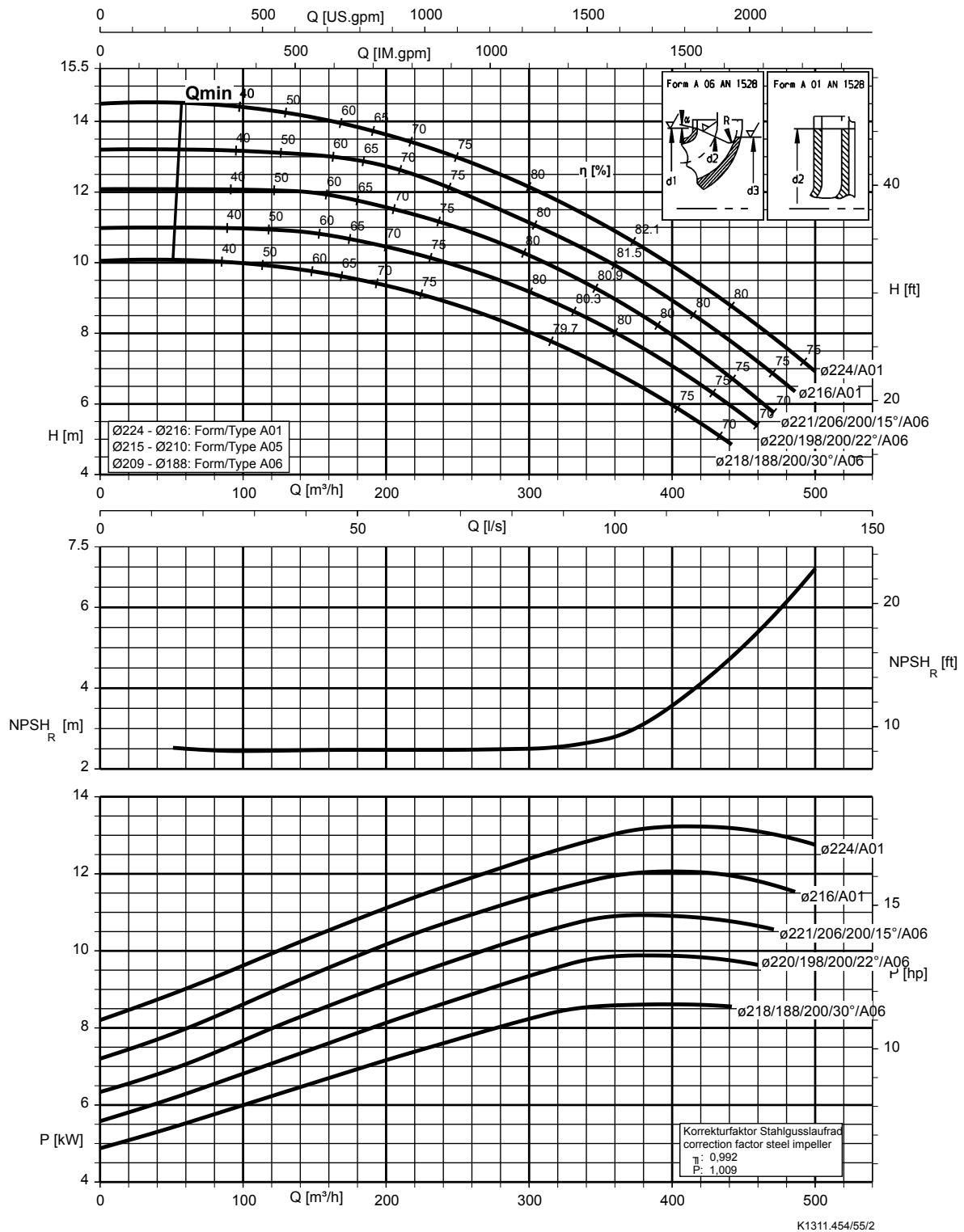
Etanorm 150-125-315,  $n = 1450 \text{ min}^{-1}$



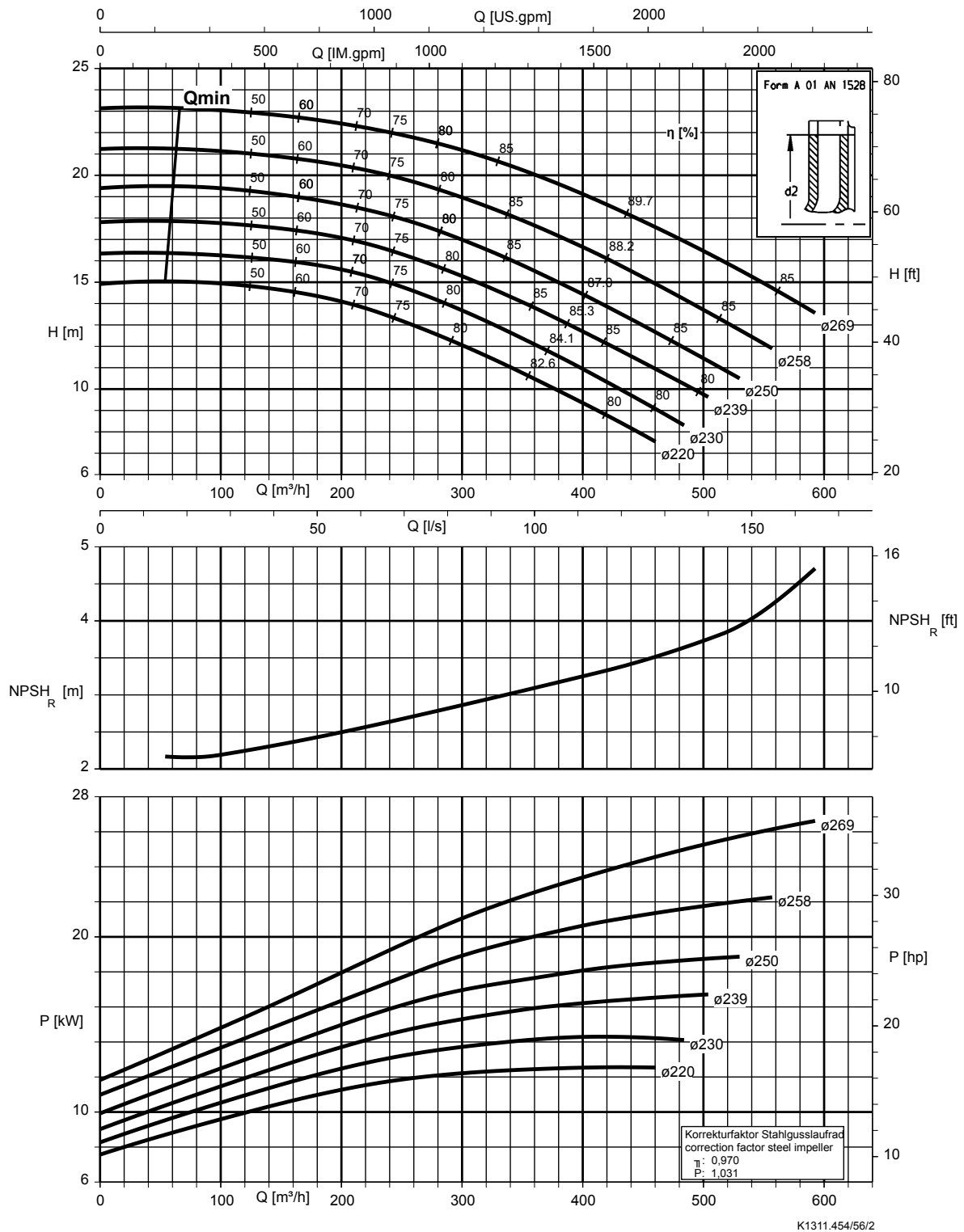
Etanorm 150-125-400,  $n = 1450 \text{ min}^{-1}$



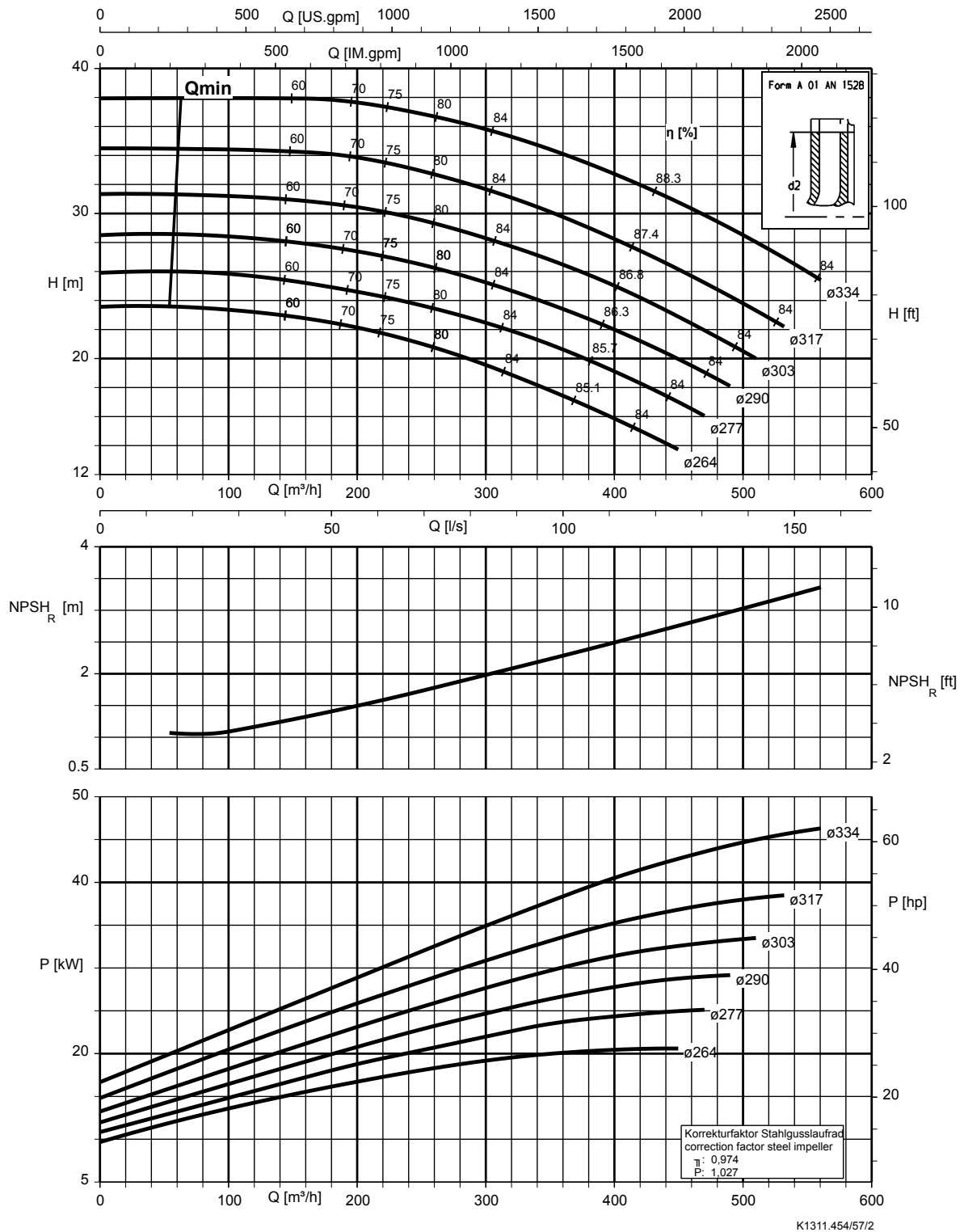
Etanorm 200-150-200,  $n = 1450 \text{ min}^{-1}$



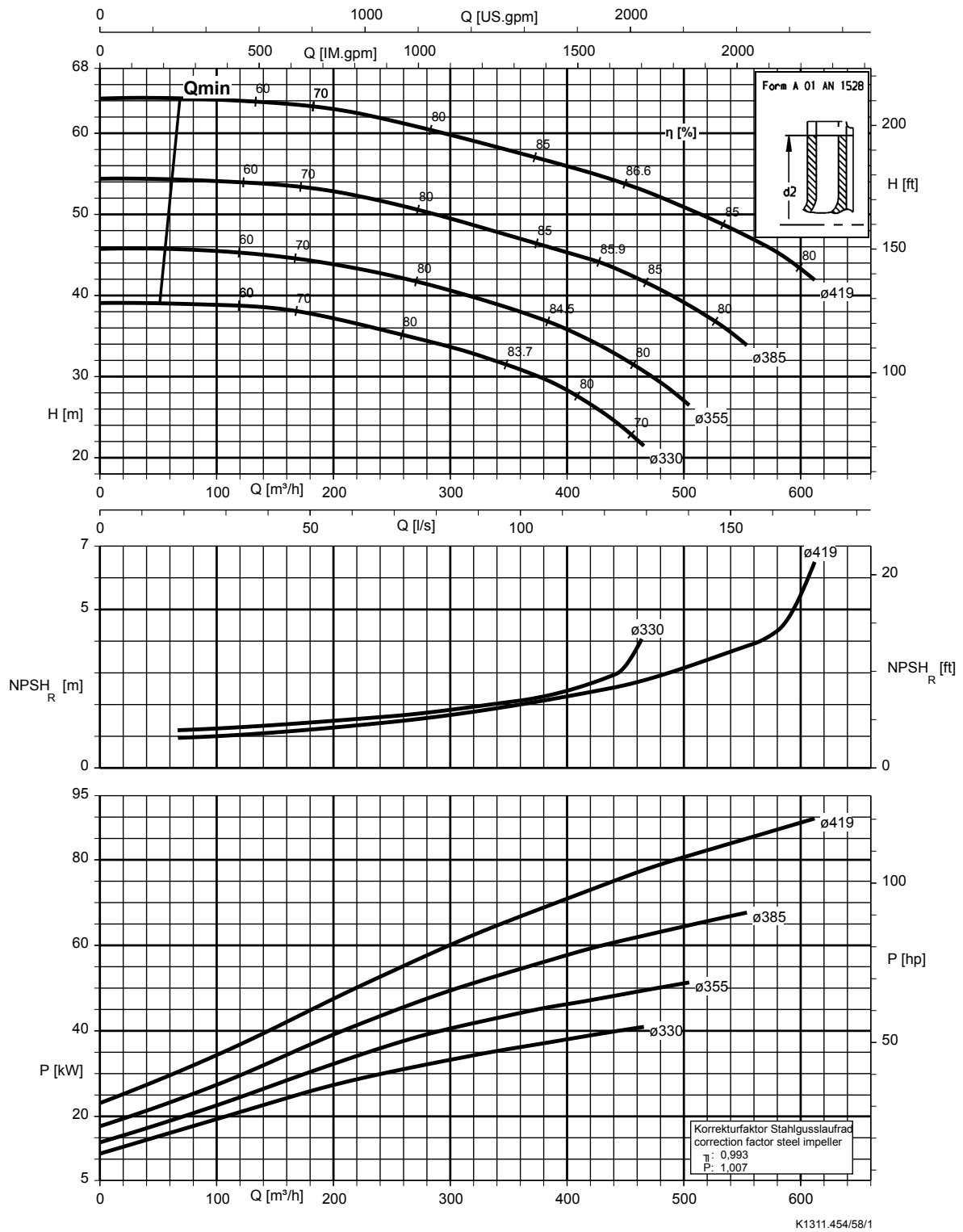
Etanorm 200-150-250,  $n = 1450 \text{ min}^{-1}$



Etanorm 200-150-315,  $n = 1450 \text{ min}^{-1}$

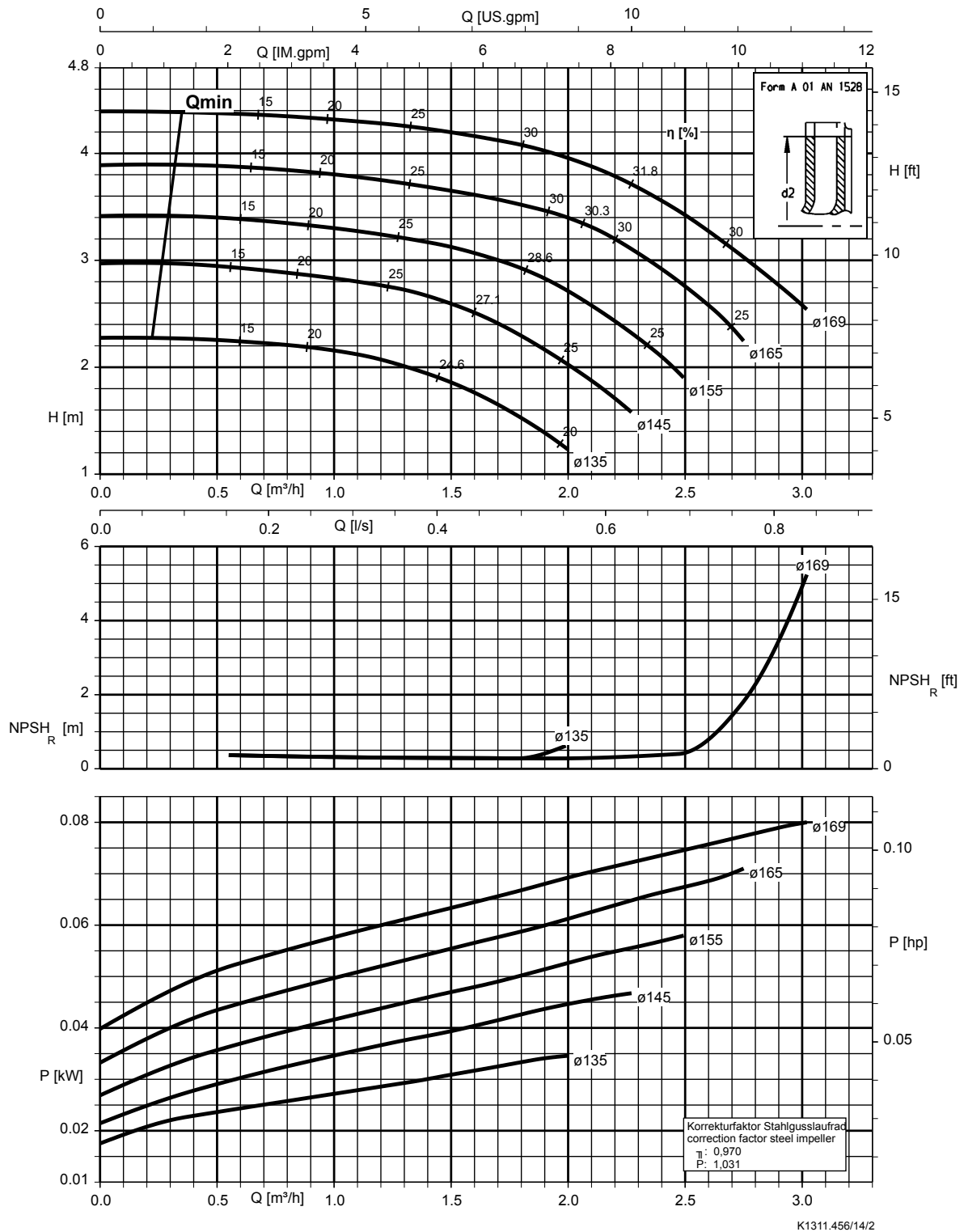


Etanorm 200-150-400,  $n = 1450 \text{ min}^{-1}$

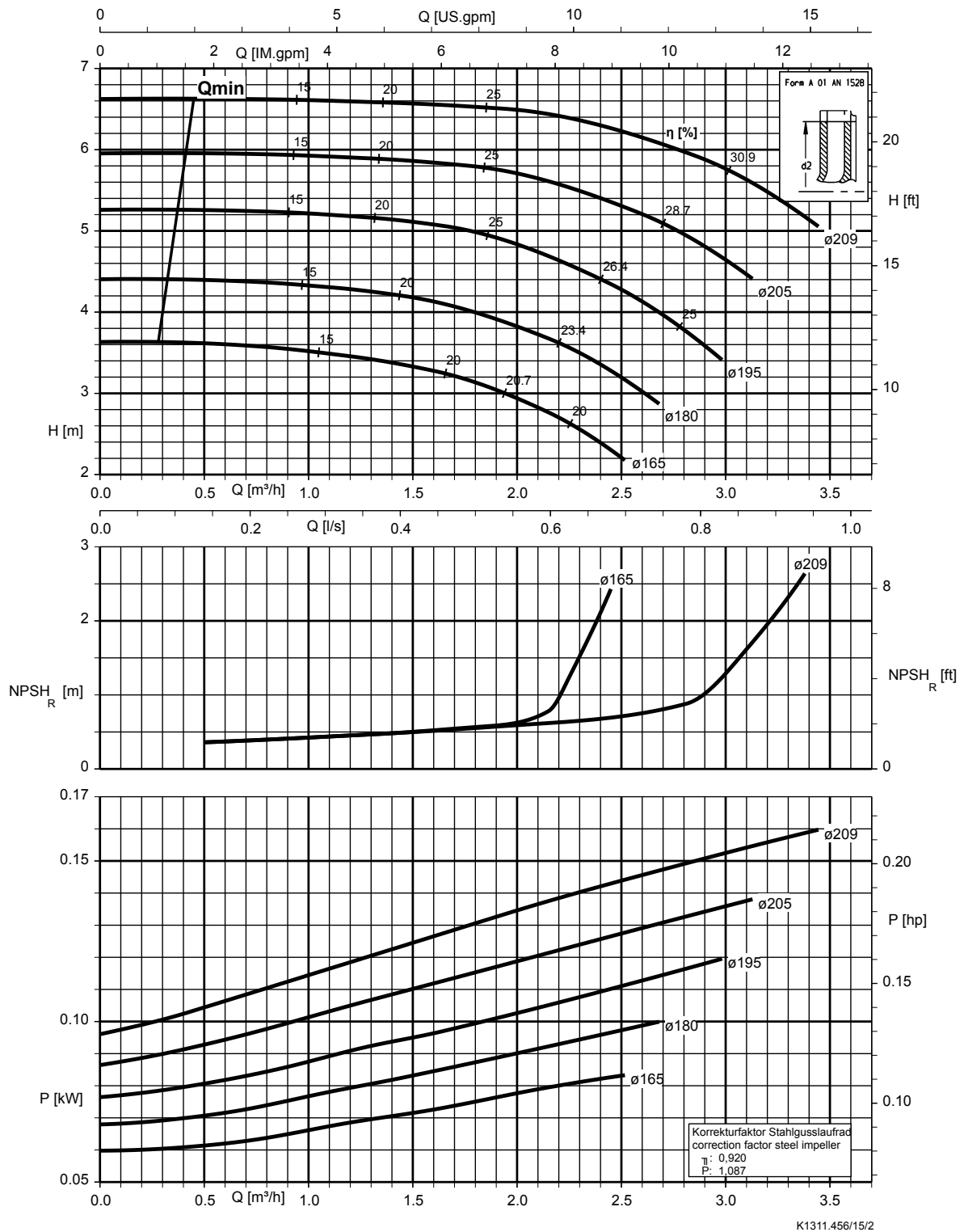


$n = 960 \text{ min}^{-1}$

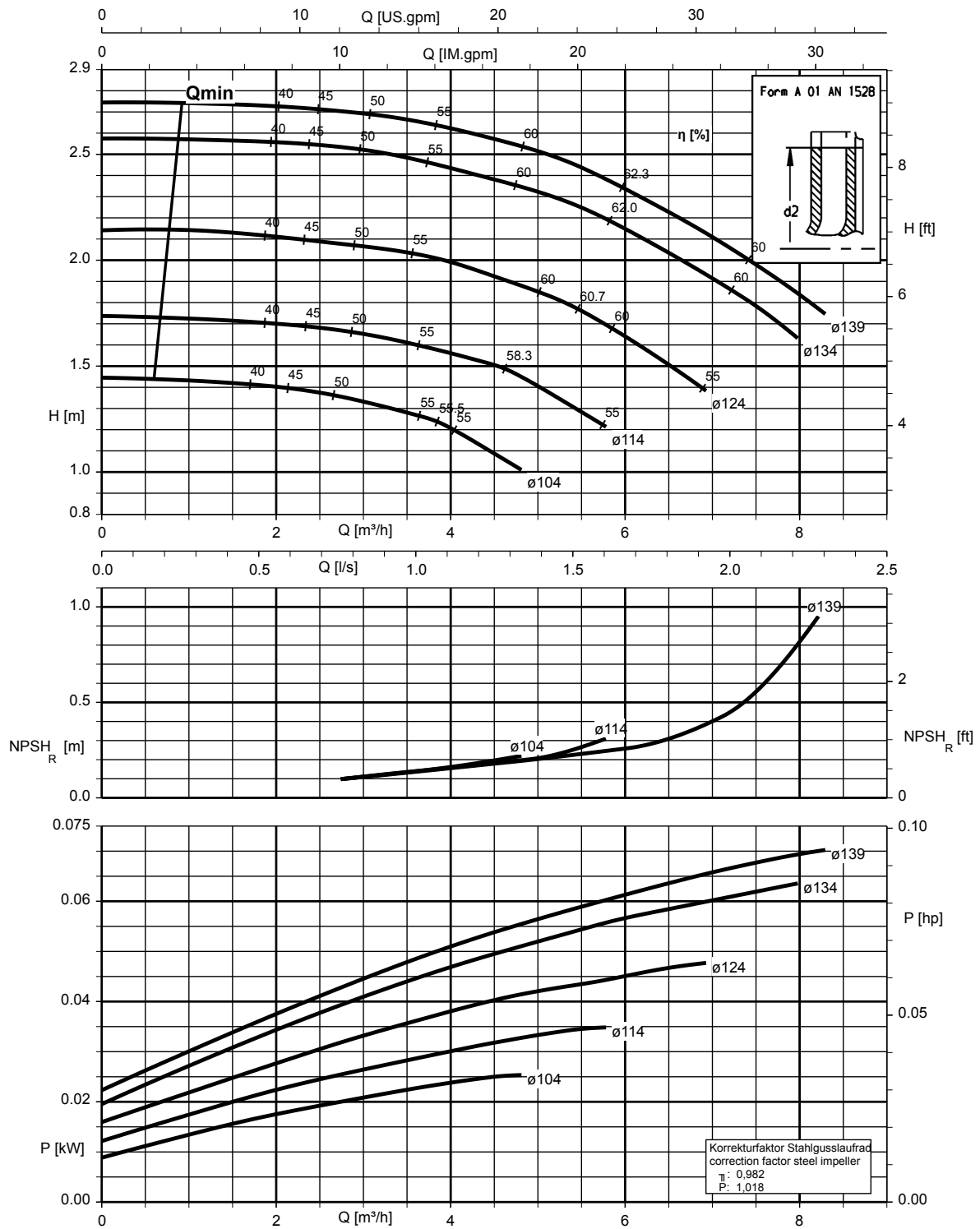
Etanorm 040-025-160,  $n = 960 \text{ min}^{-1}$



Etanorm 040-025-200,  $n = 960 \text{ min}^{-1}$

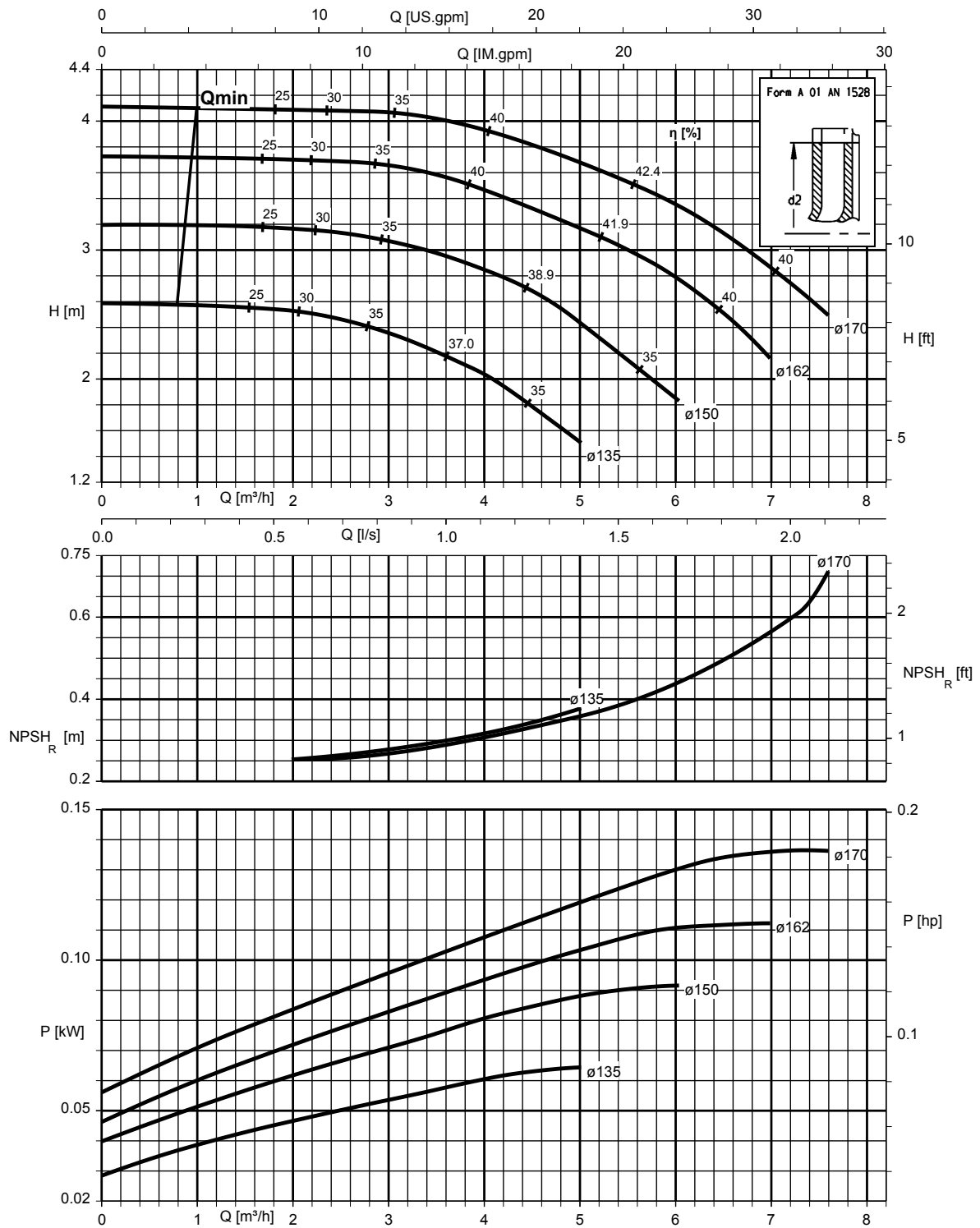


Etanorm 050-032-125.1,  $n = 960 \text{ min}^{-1}$



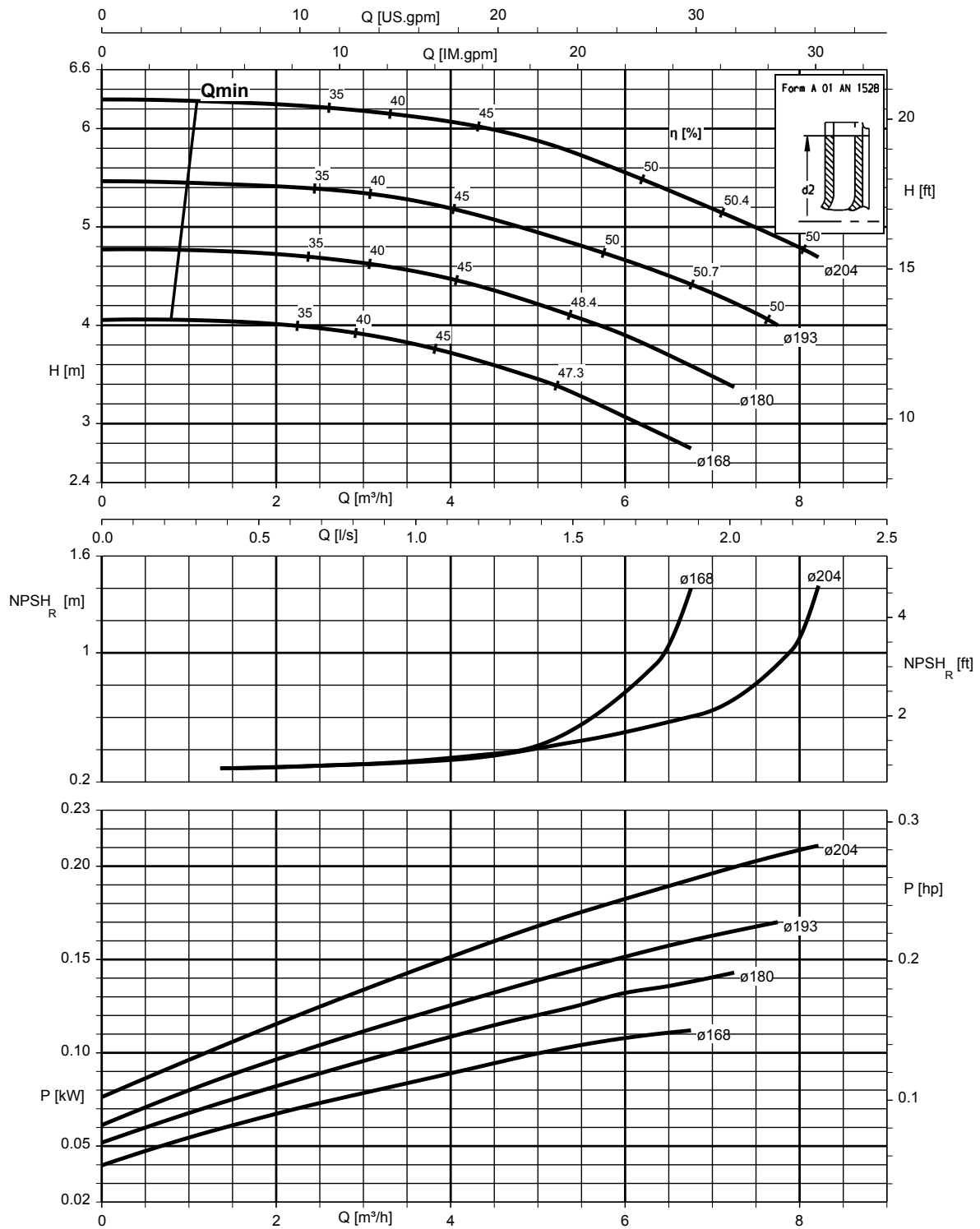
K1311.456/17/1

Etanorm 050-032-160.1,  $n = 960 \text{ min}^{-1}$



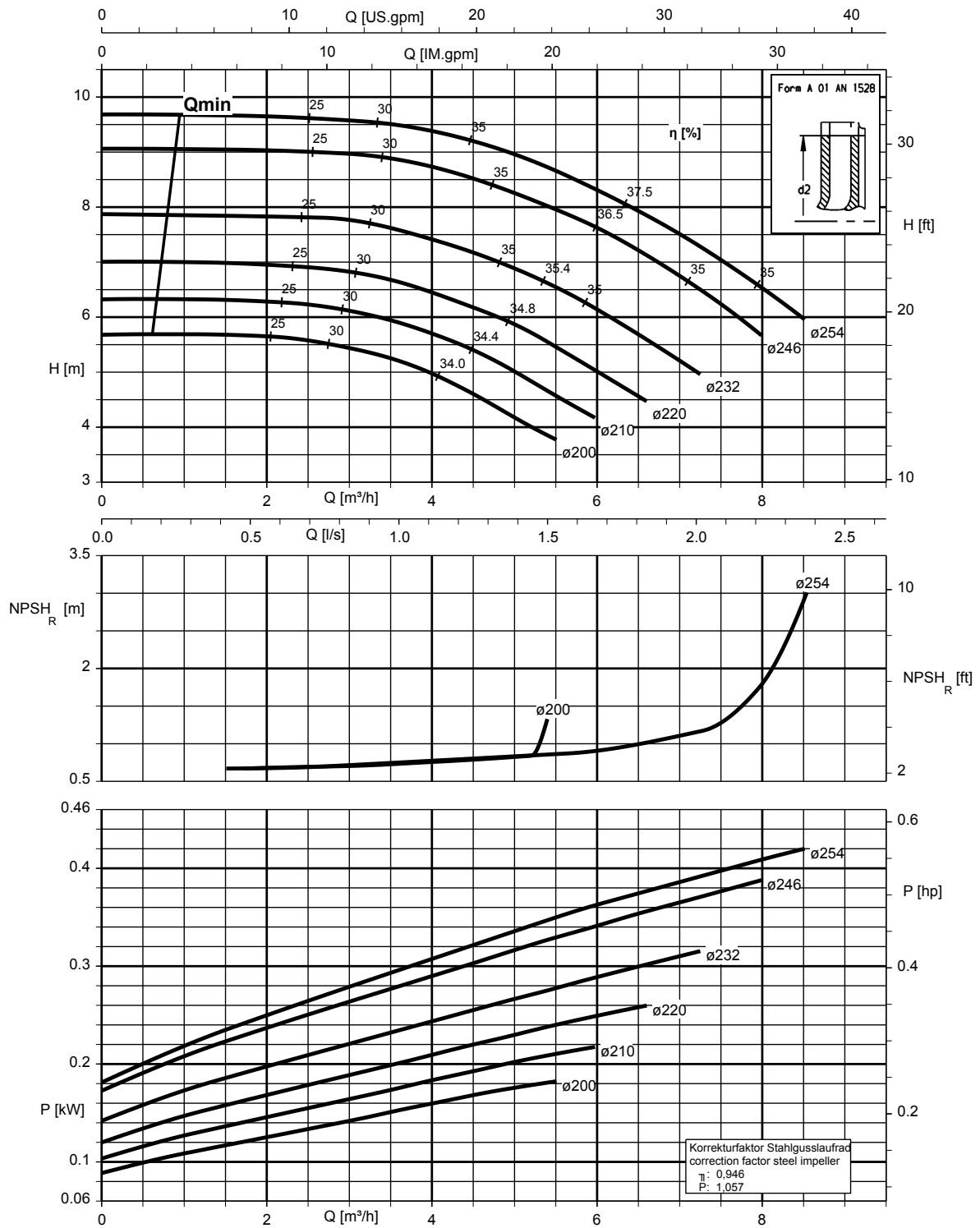
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Etanorm 050-032-200.1,  $n = 960 \text{ min}^{-1}$



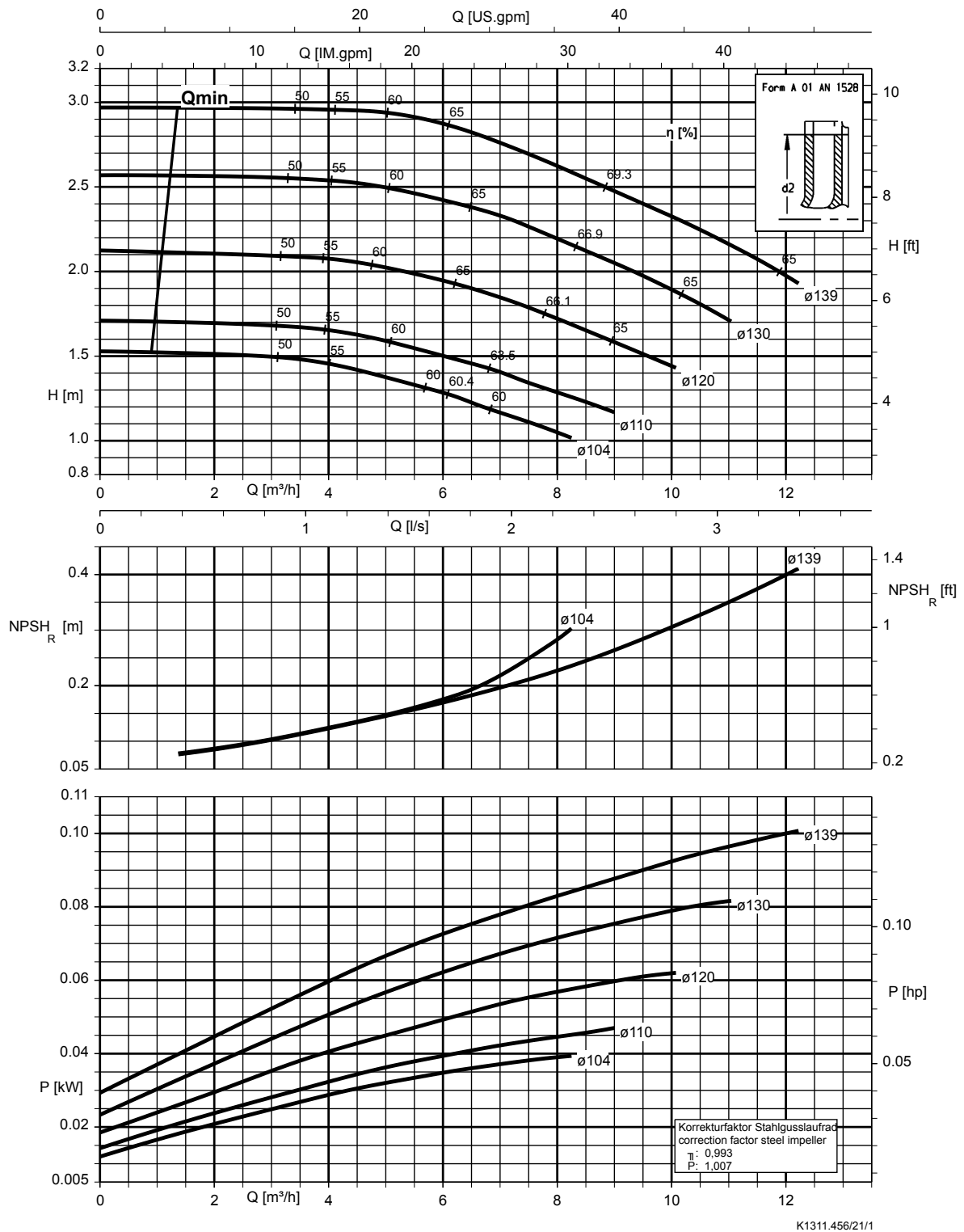
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Etanorm 050-032-250.1,  $n = 960 \text{ min}^{-1}$

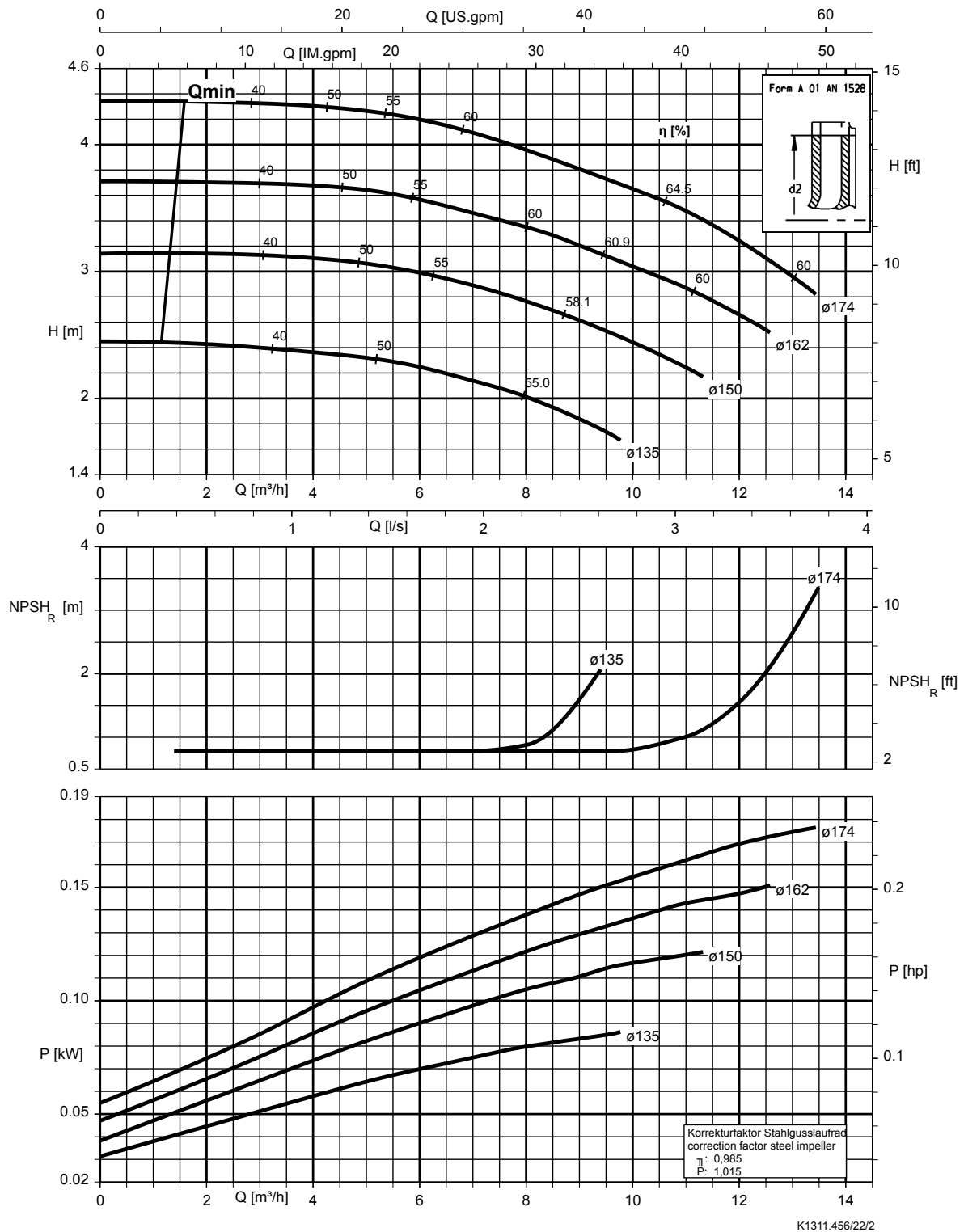


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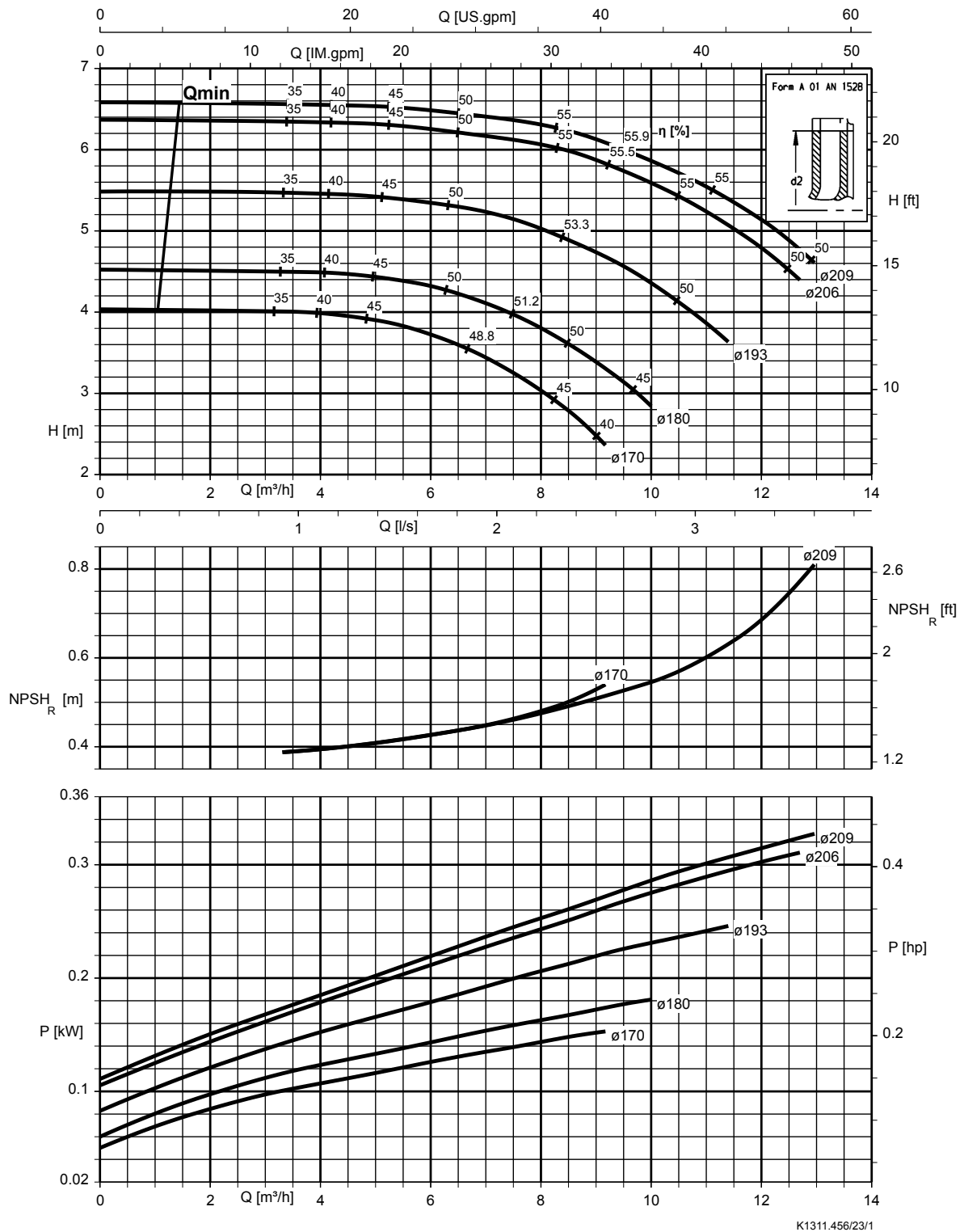
Etanorm 050-032-125,  $n = 960 \text{ min}^{-1}$



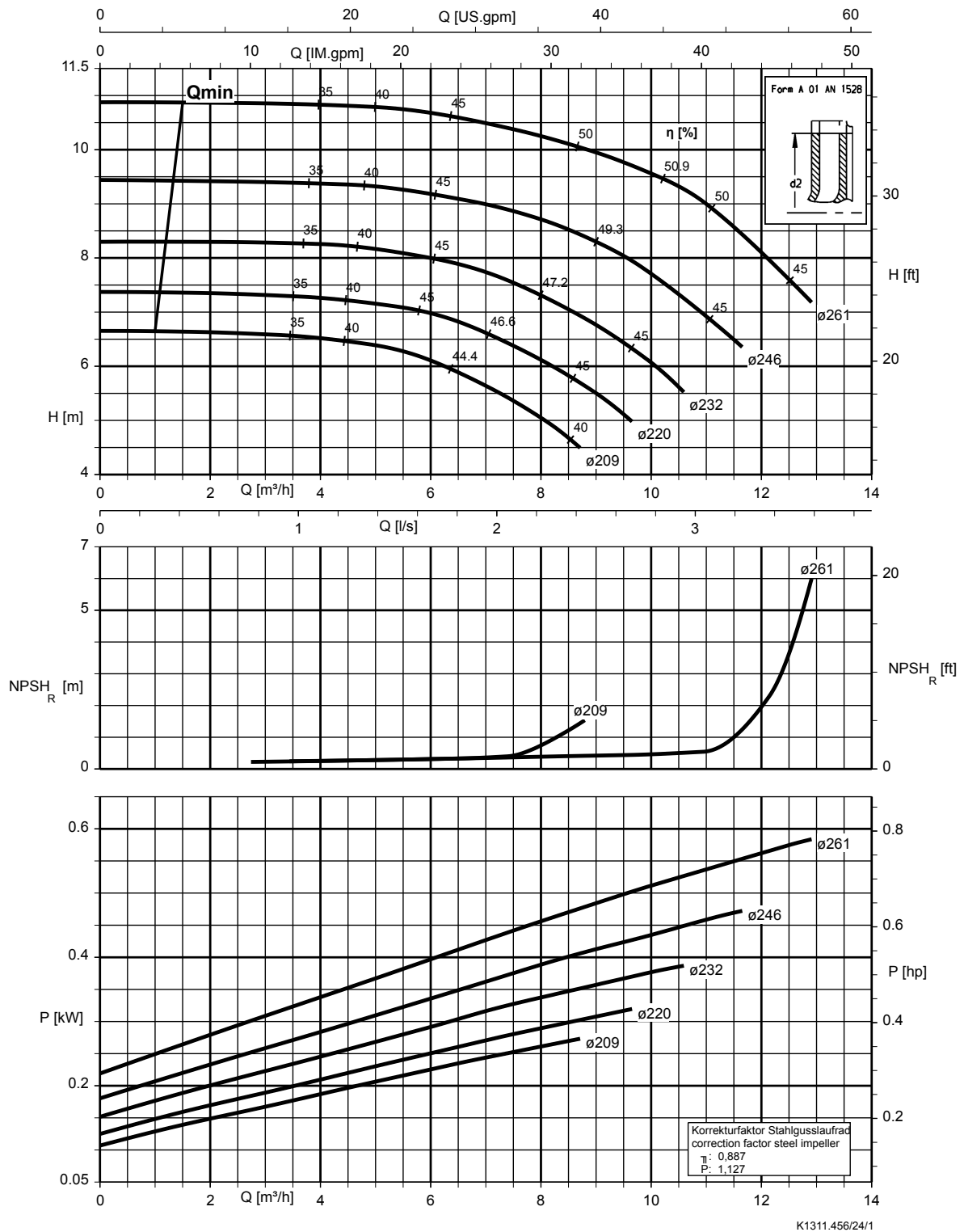
Etanorm 050-032-160,  $n = 960 \text{ min}^{-1}$



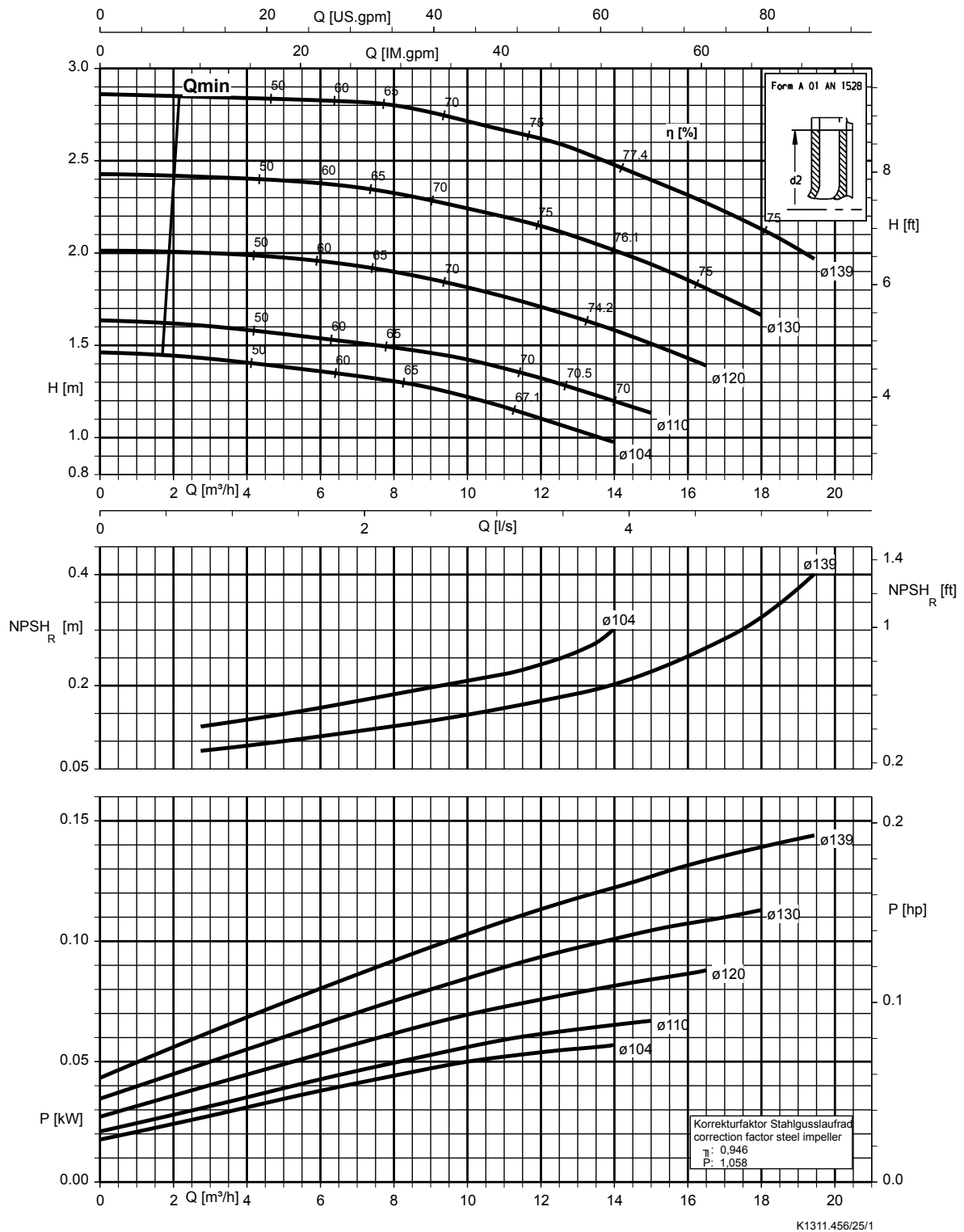
Etanorm 050-032-200,  $n = 960 \text{ min}^{-1}$



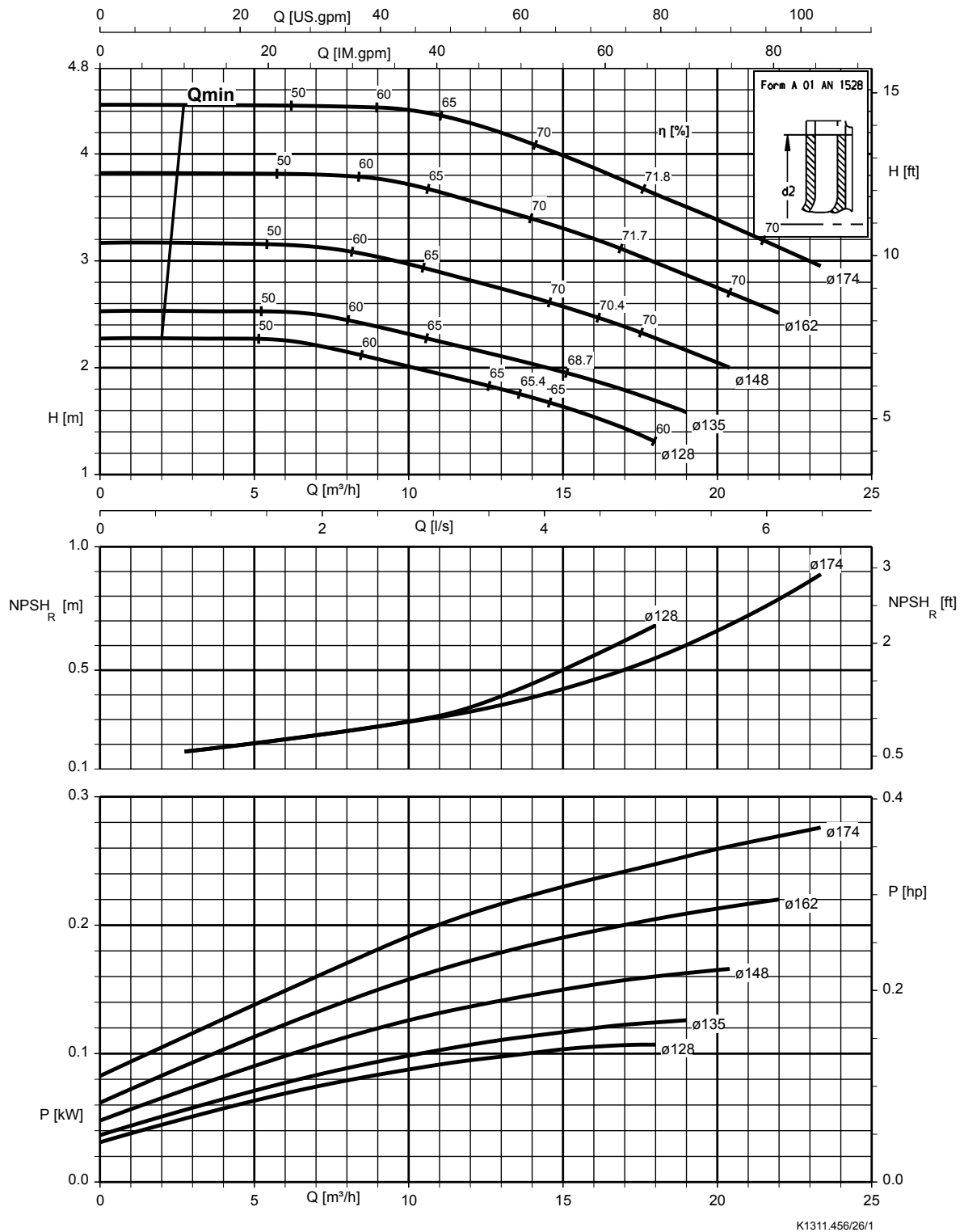
Etanorm 050-032-250,  $n = 960 \text{ min}^{-1}$



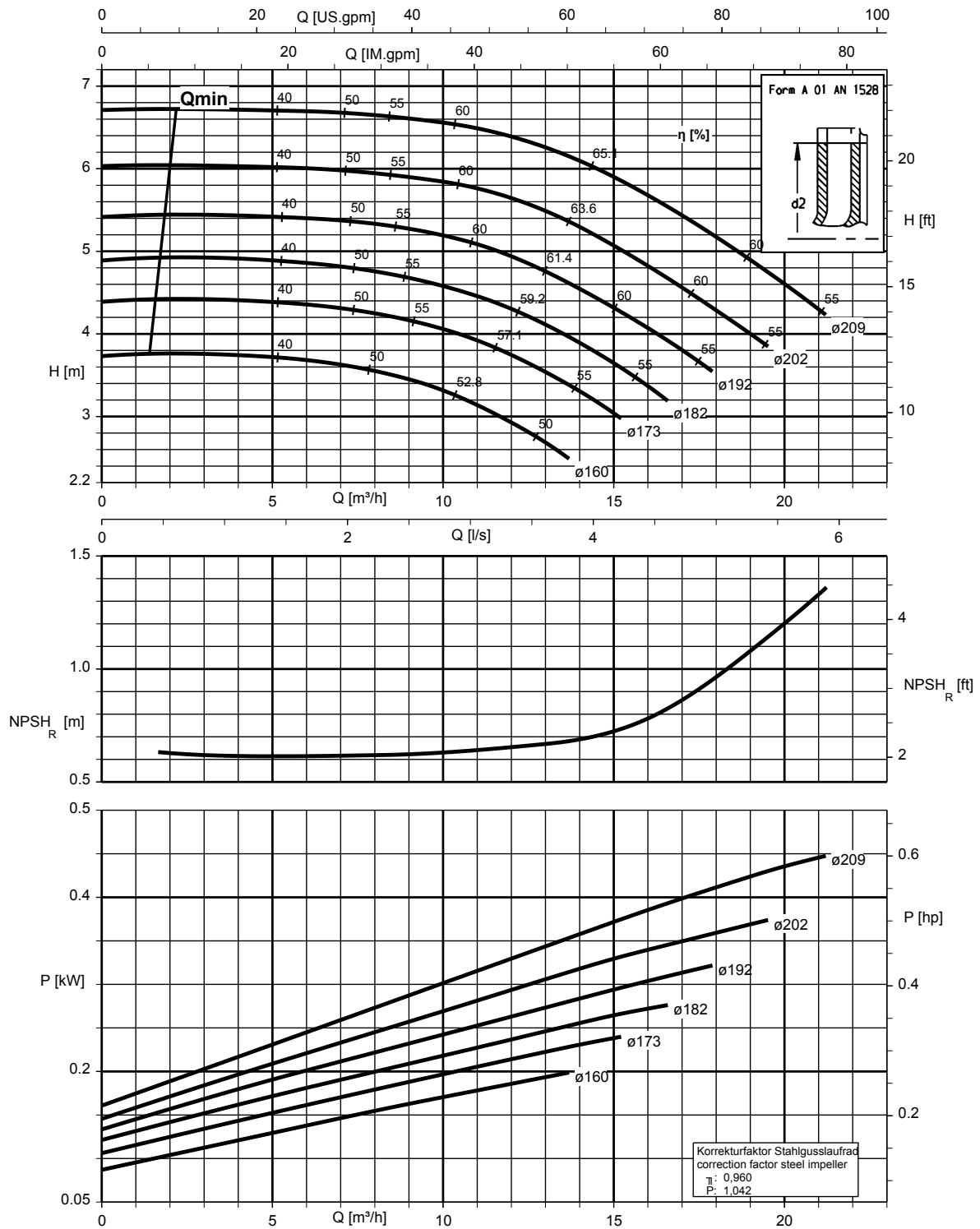
Etanorm 065-040-125,  $n = 960 \text{ min}^{-1}$



Etanorm 065-040-160,  $n = 960 \text{ min}^{-1}$

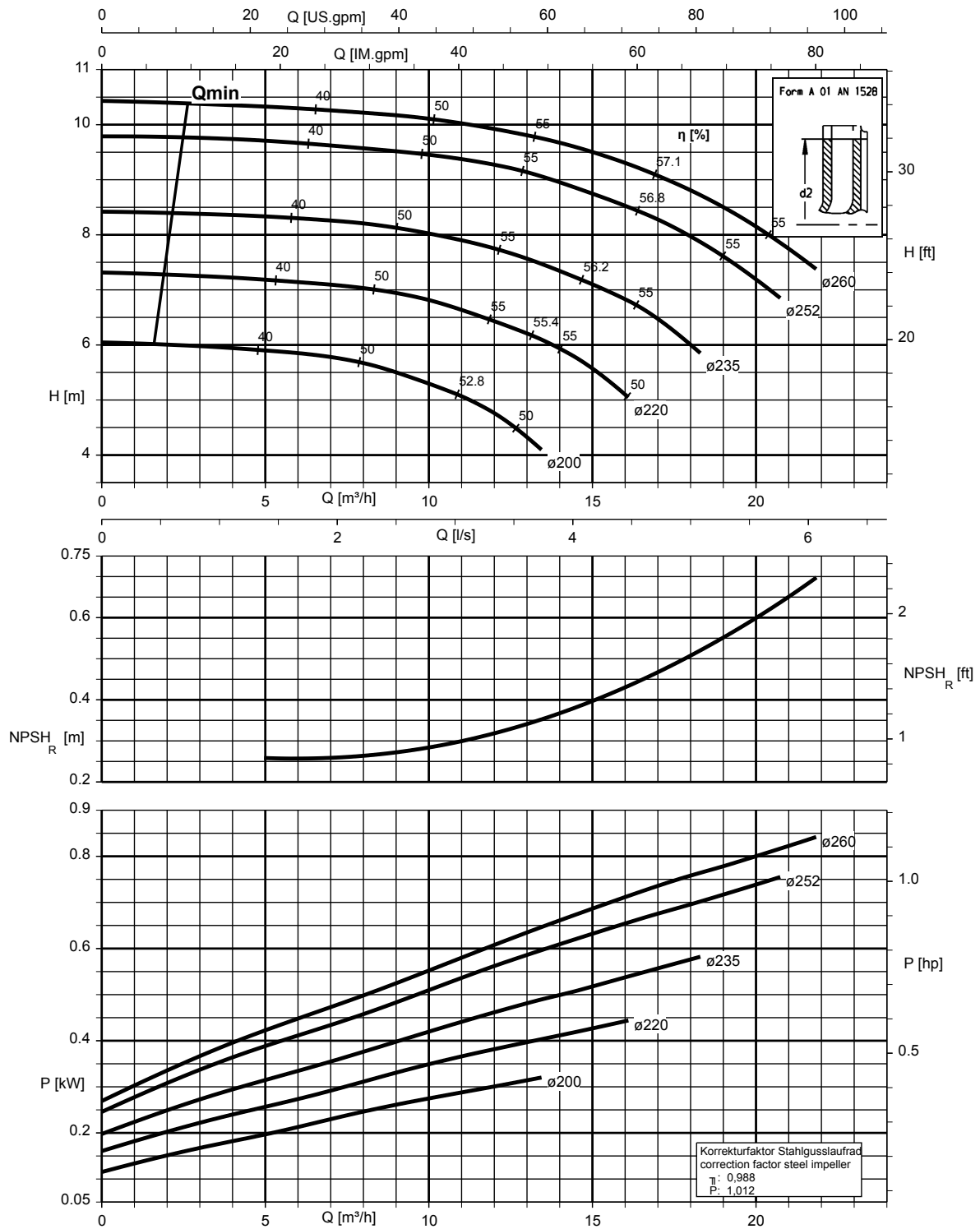


Etanorm 065-040-200,  $n = 960 \text{ min}^{-1}$



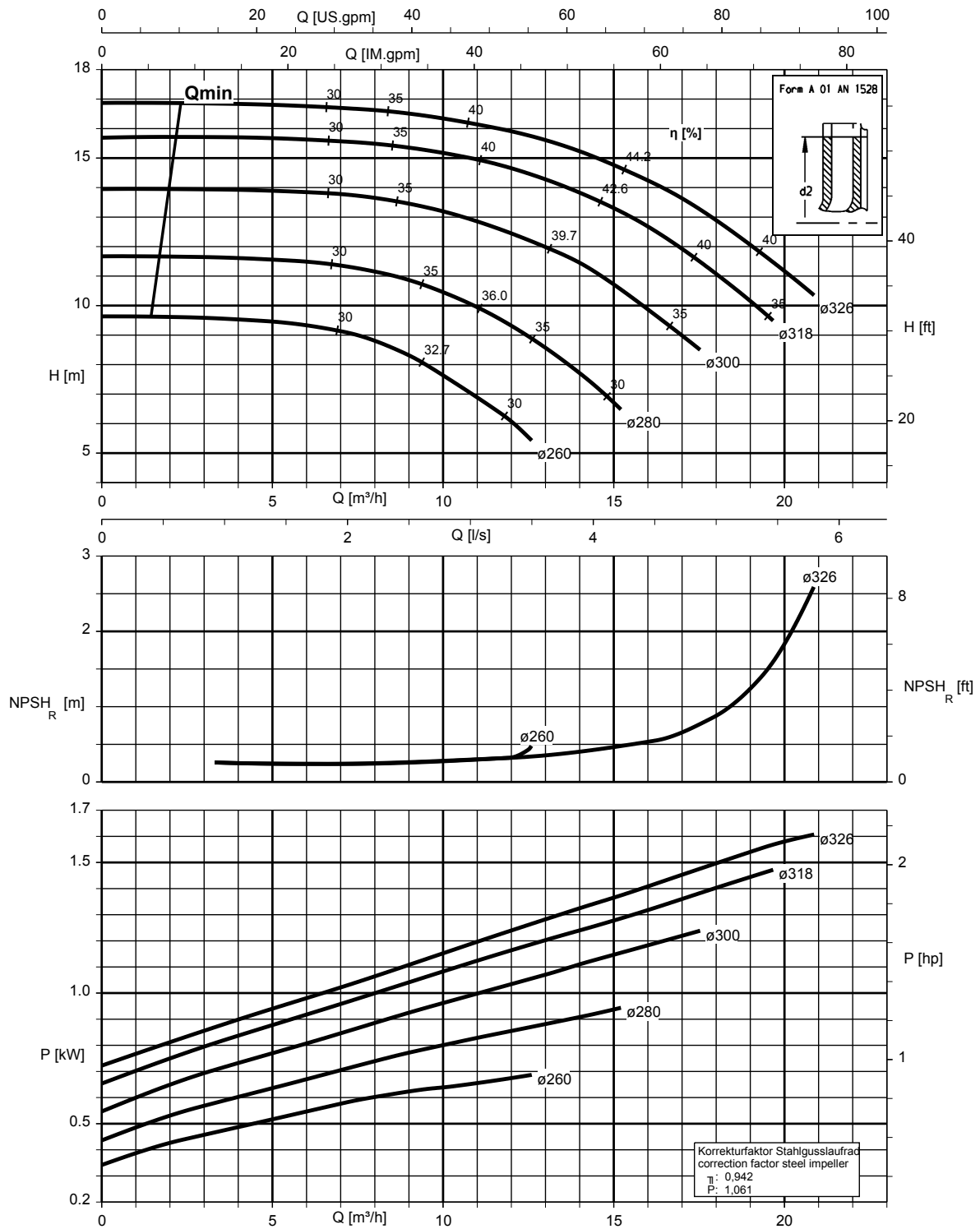
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Etanorm 065-040-250,  $n = 960 \text{ min}^{-1}$



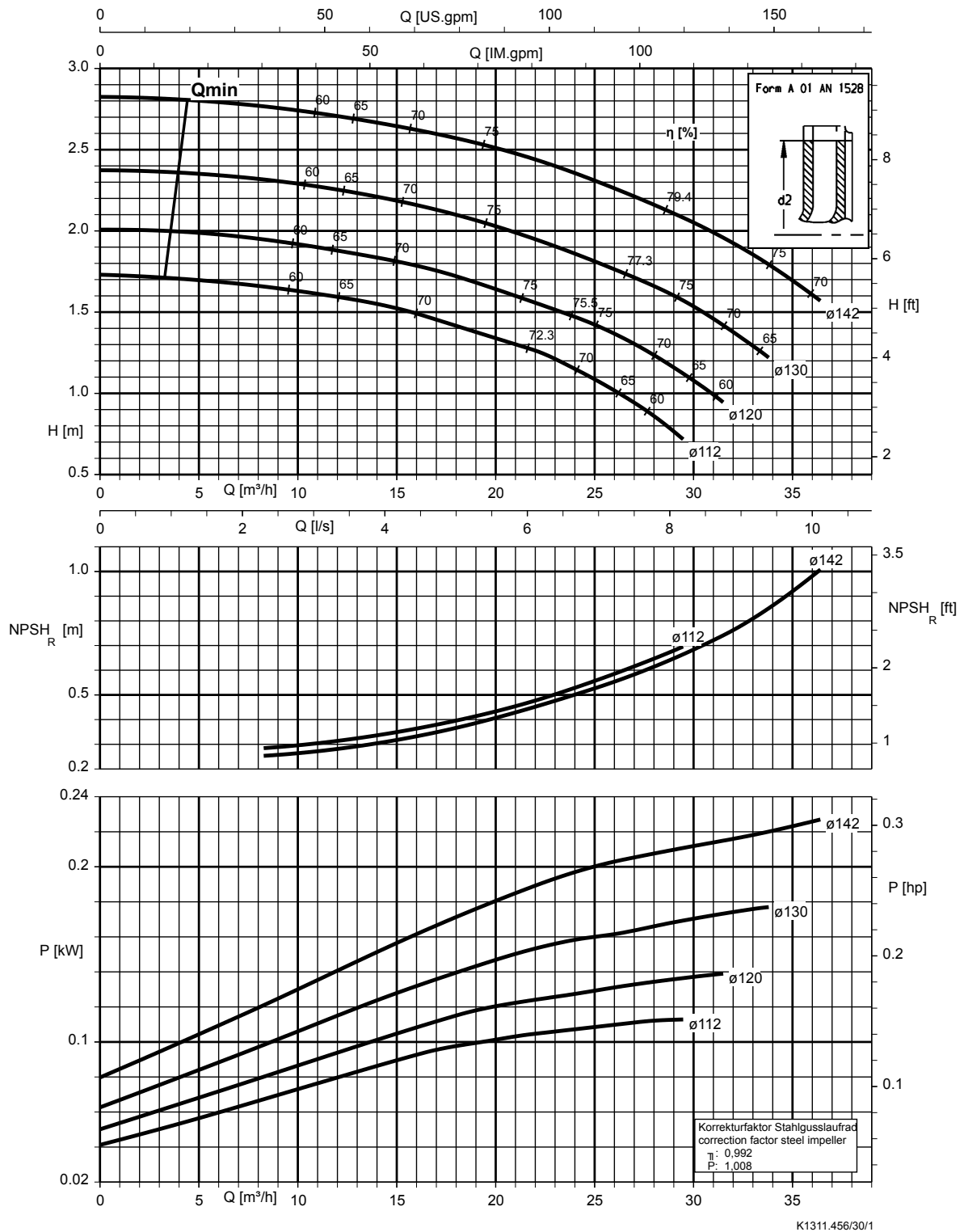
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Etanorm 065-040-315,  $n = 960 \text{ min}^{-1}$

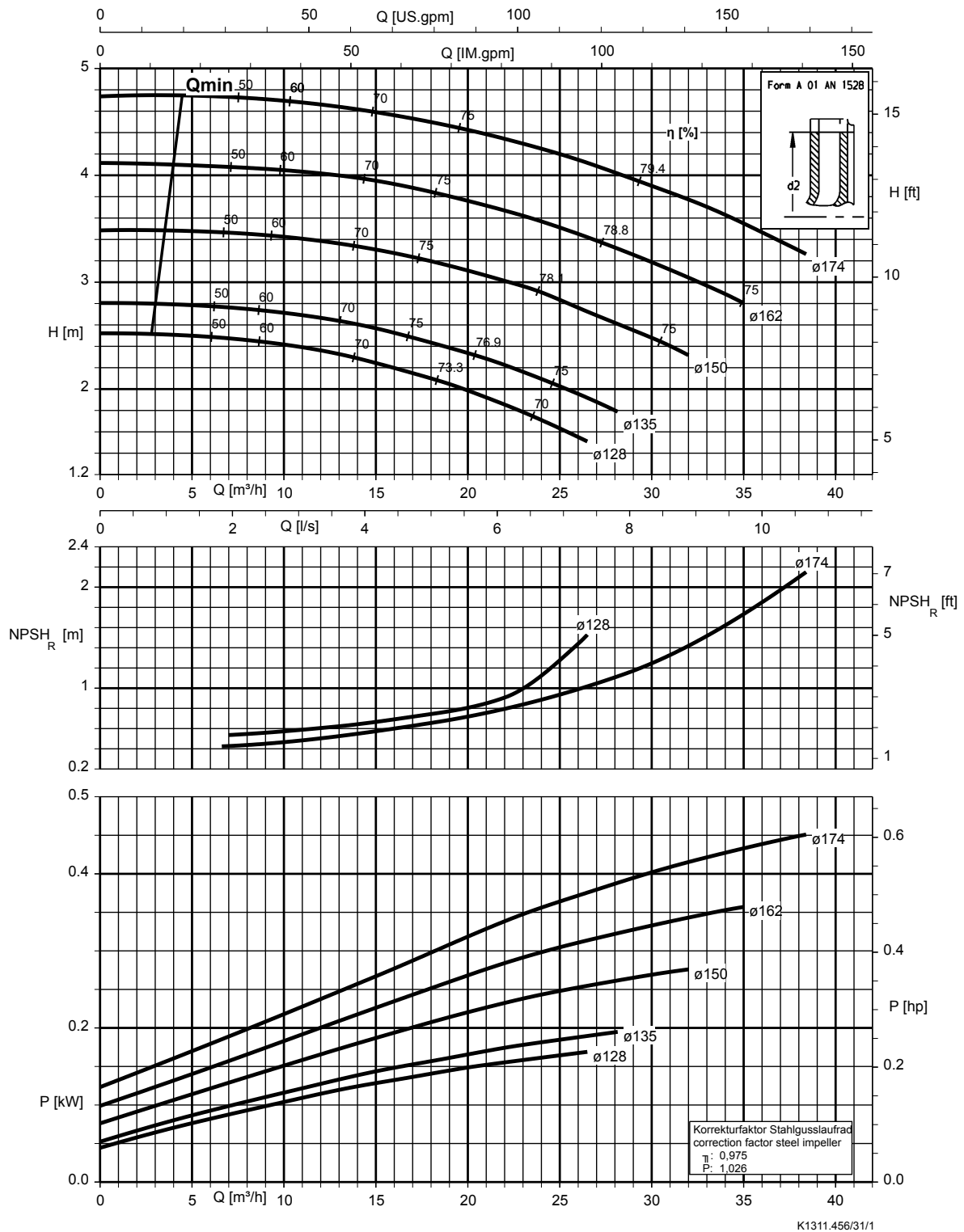


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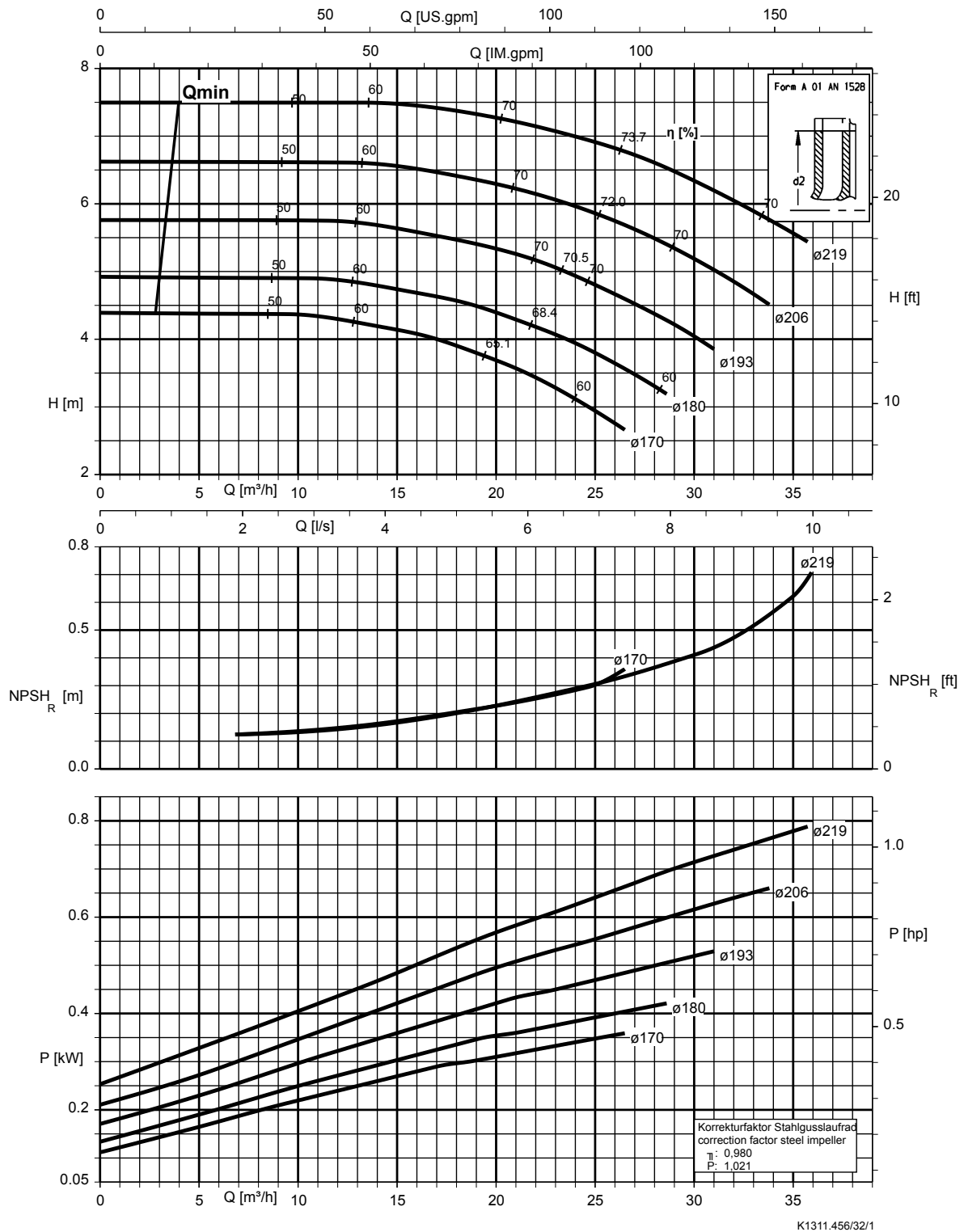
Etanorm 065-050-125,  $n = 960 \text{ min}^{-1}$



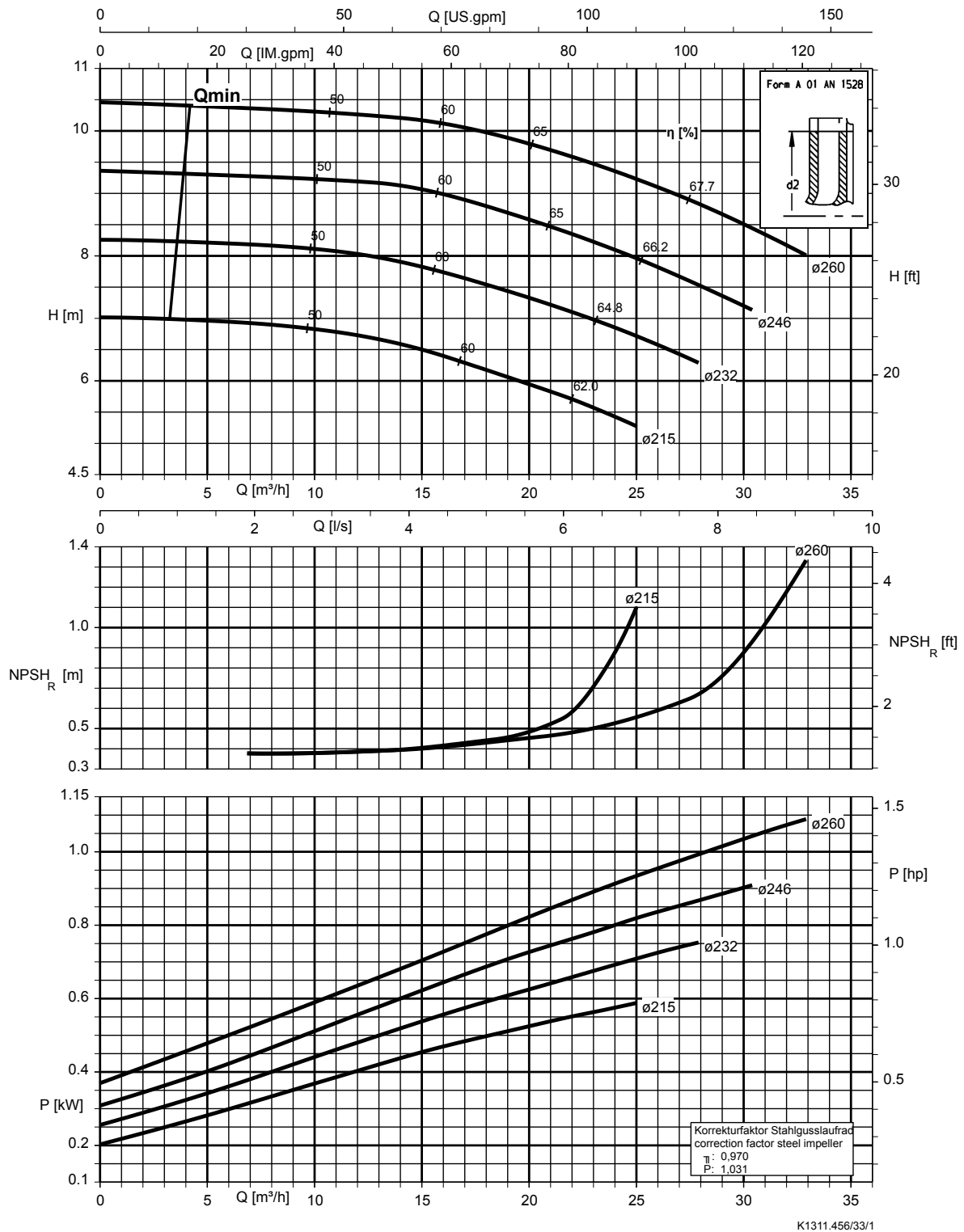
Etanorm 065-050-160,  $n = 960 \text{ min}^{-1}$



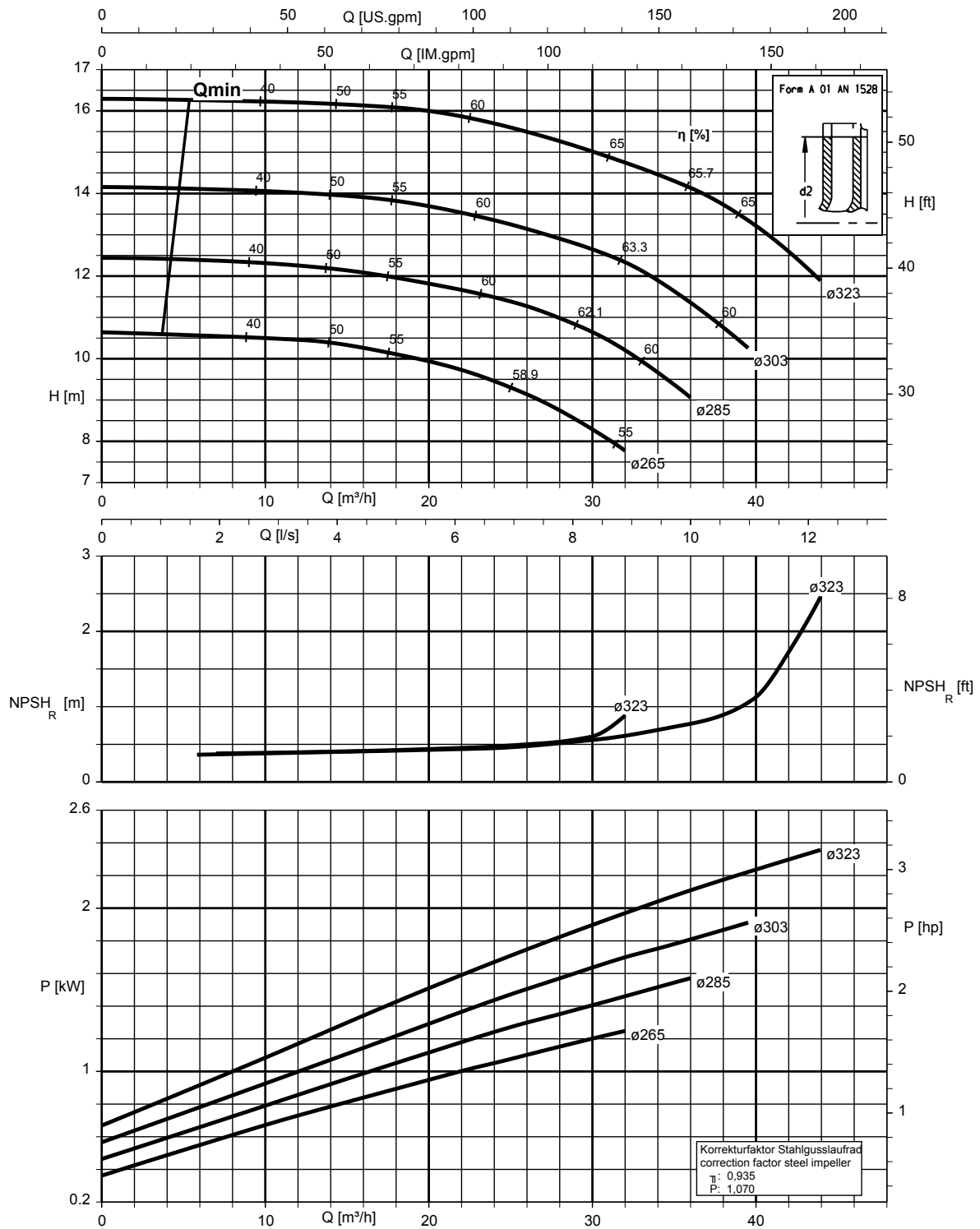
Etanorm 065-050-200,  $n = 960 \text{ min}^{-1}$



Etanorm 065-050-250,  $n = 960 \text{ min}^{-1}$

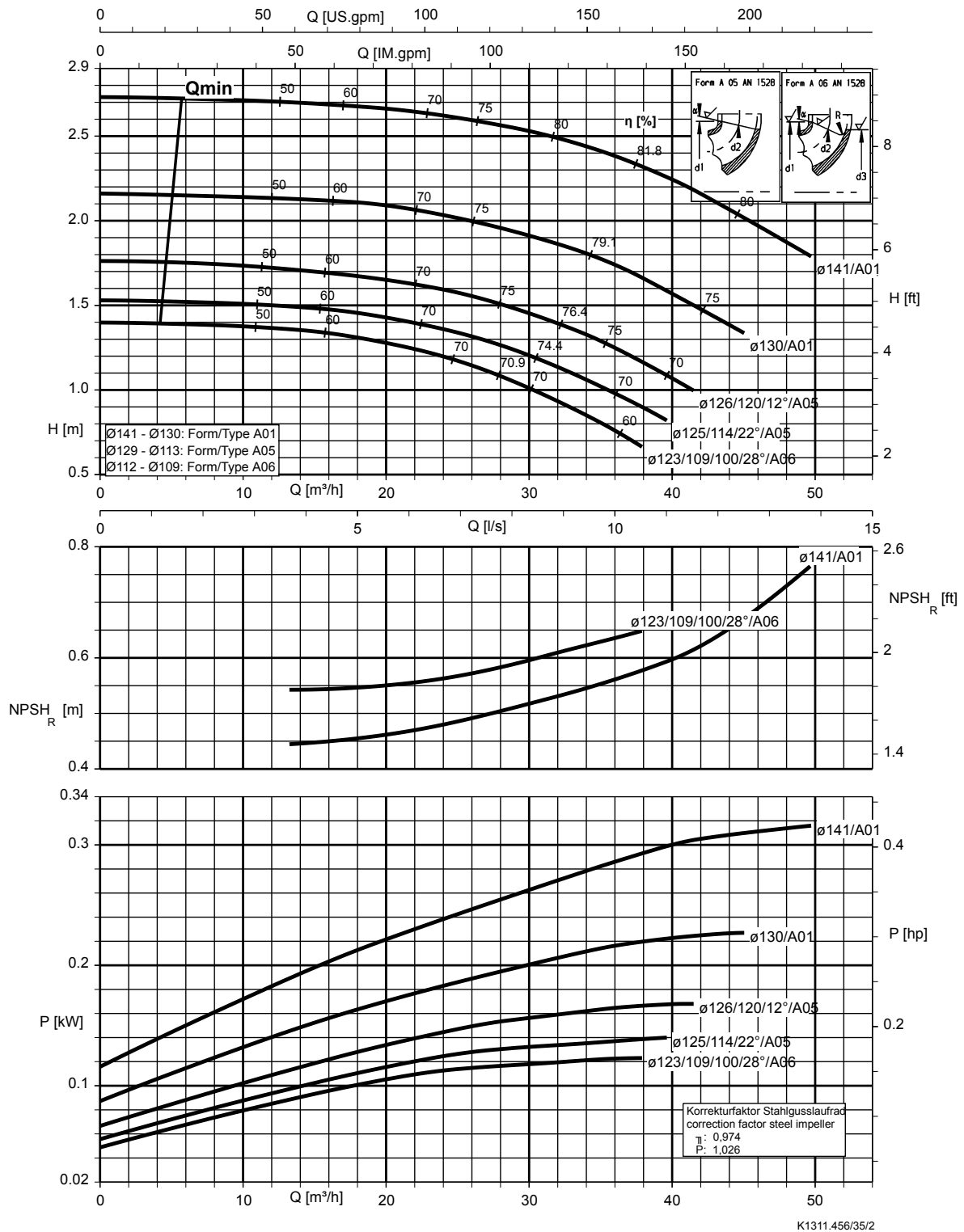


Etanorm 065-050-315,  $n = 960 \text{ min}^{-1}$

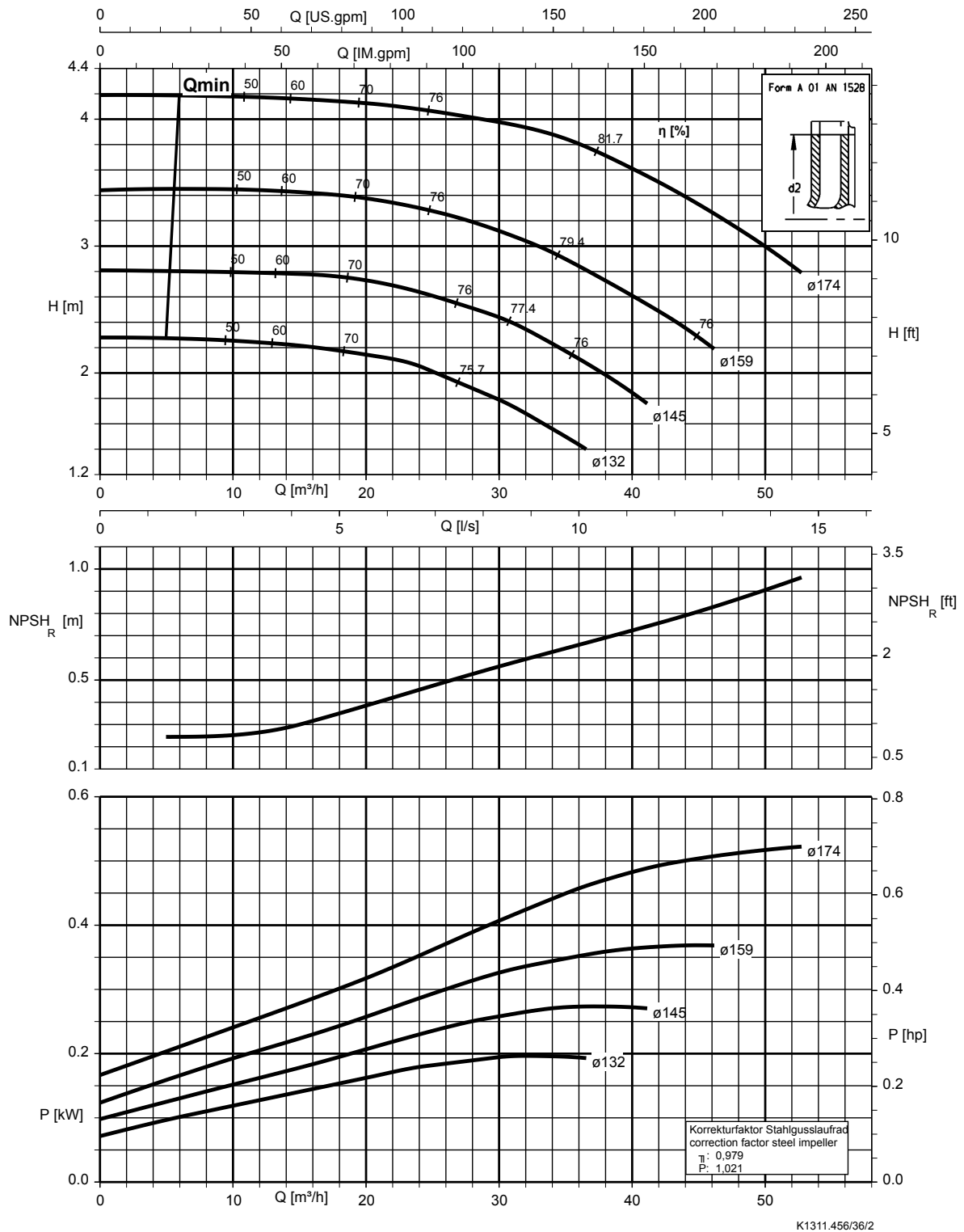


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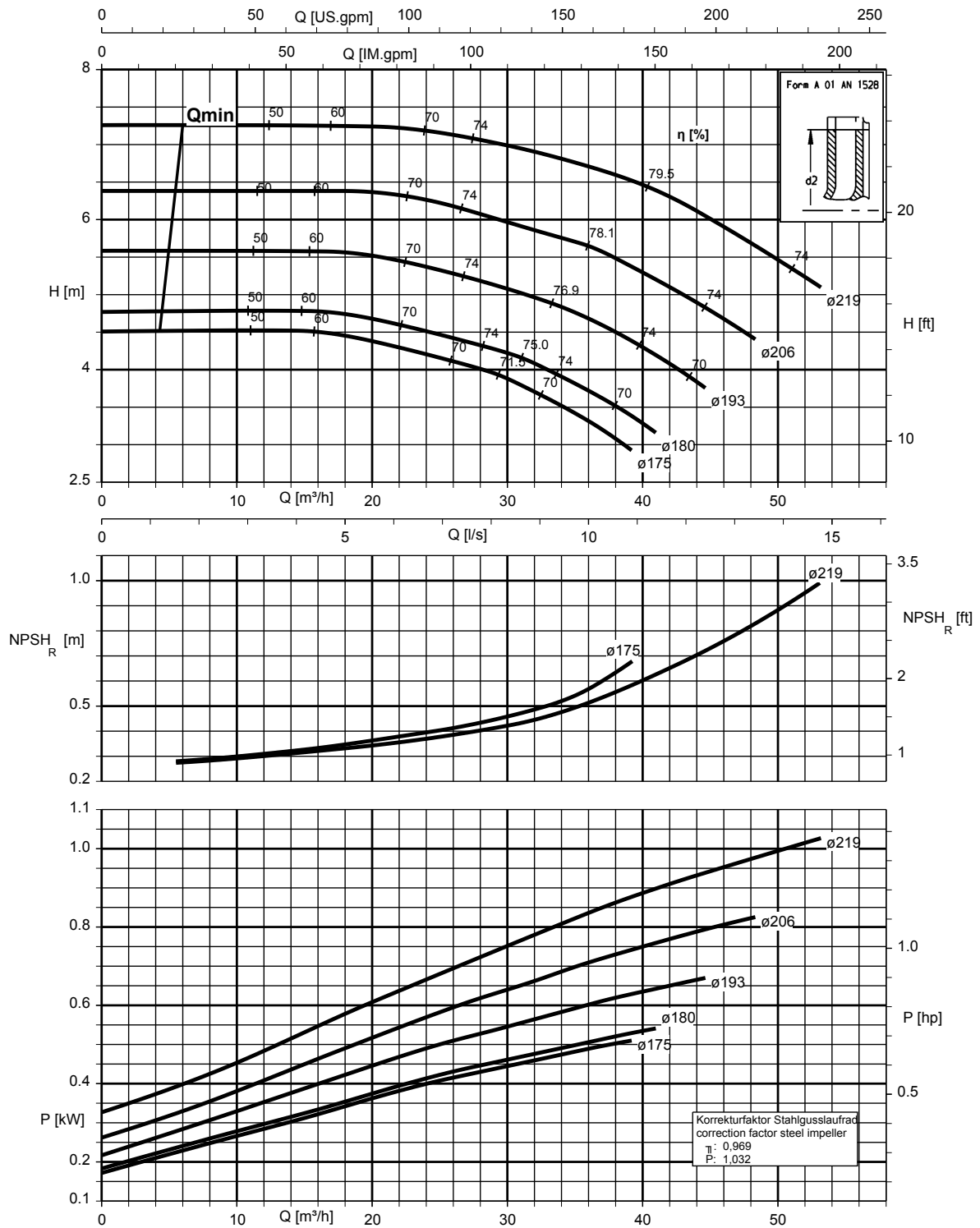
Etanorm 080-065-125,  $n = 960 \text{ min}^{-1}$



Etanorm 080-065-160,  $n = 960 \text{ min}^{-1}$

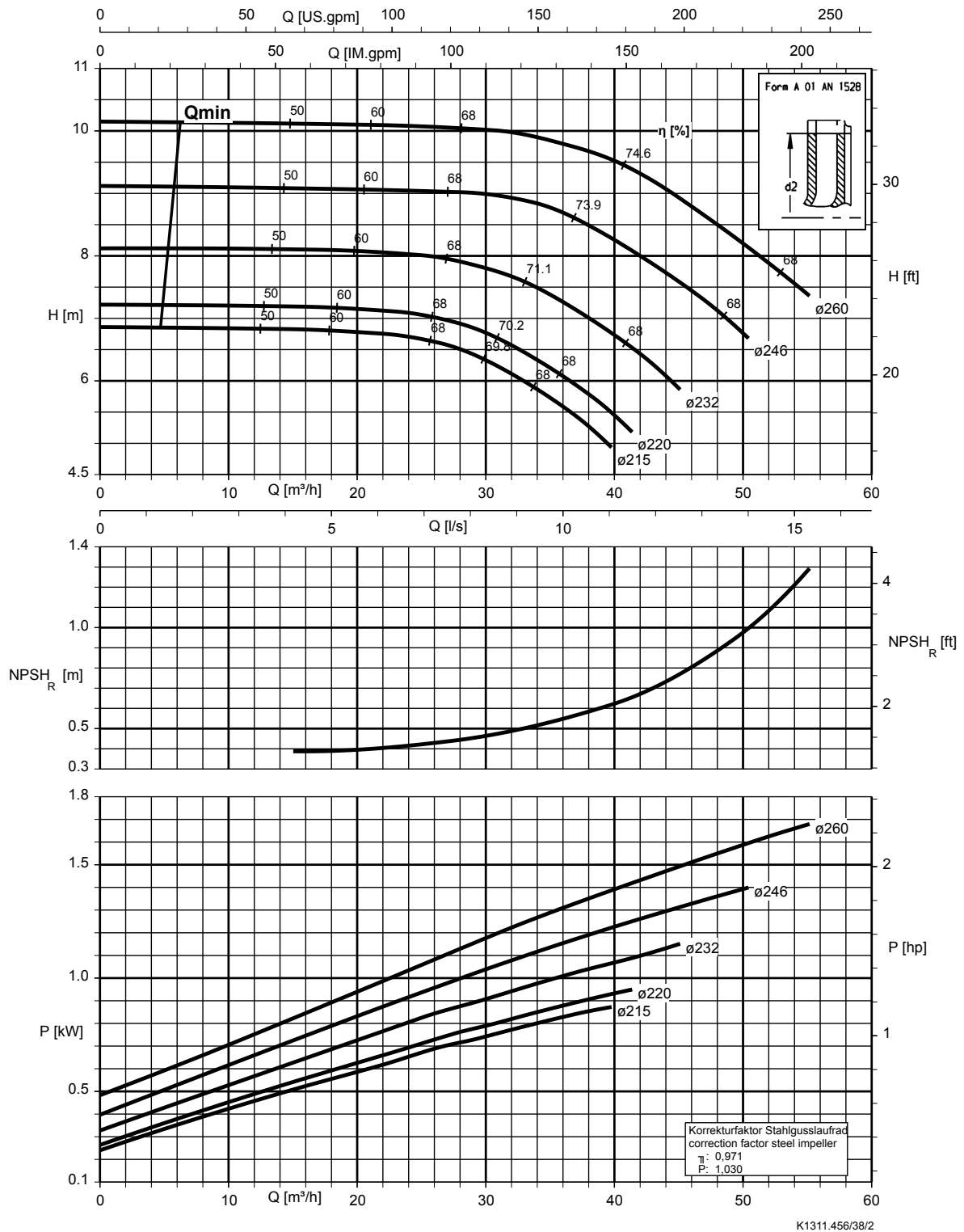


Etanorm 080-065-200,  $n = 960 \text{ min}^{-1}$

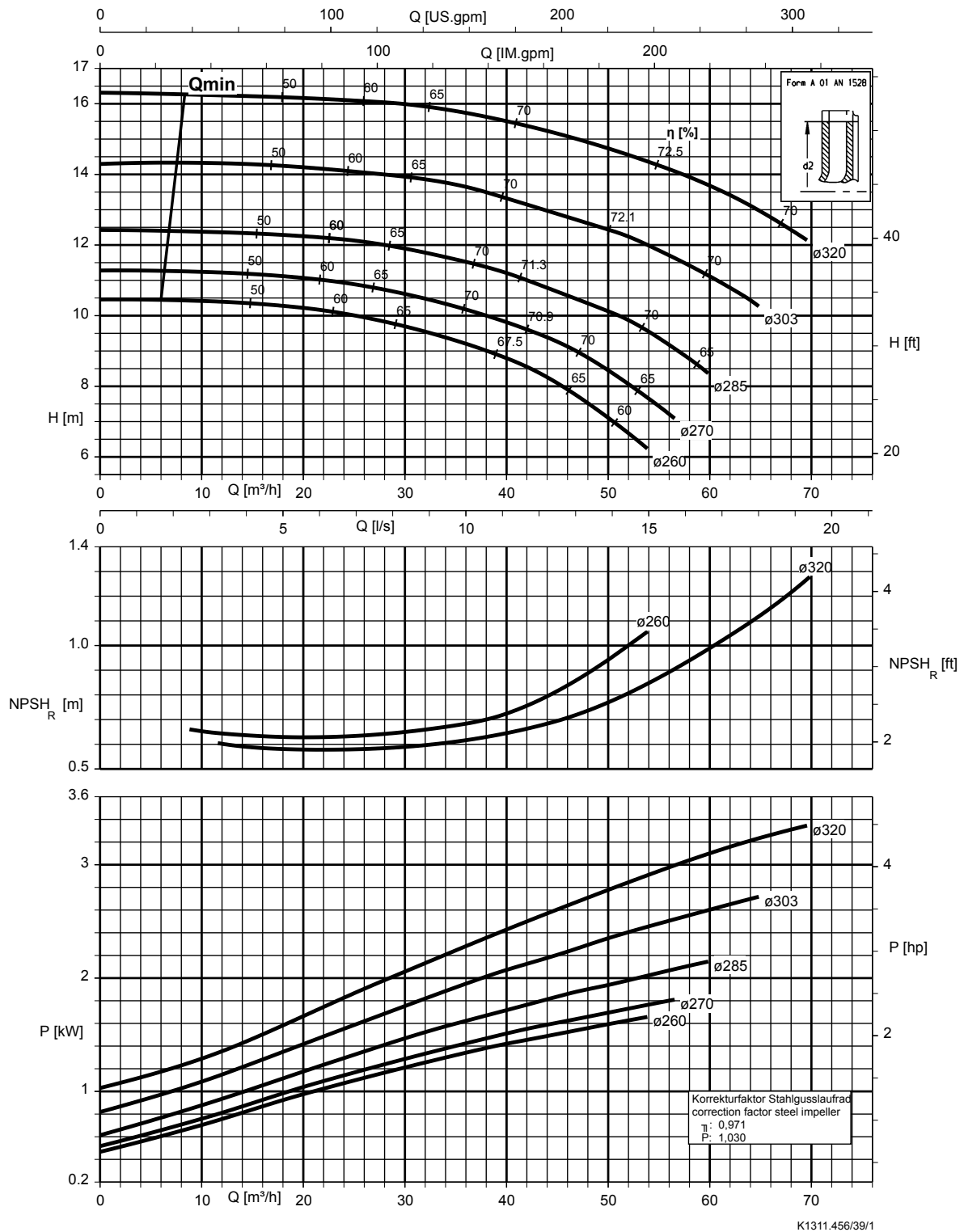


K1311.456/37/1

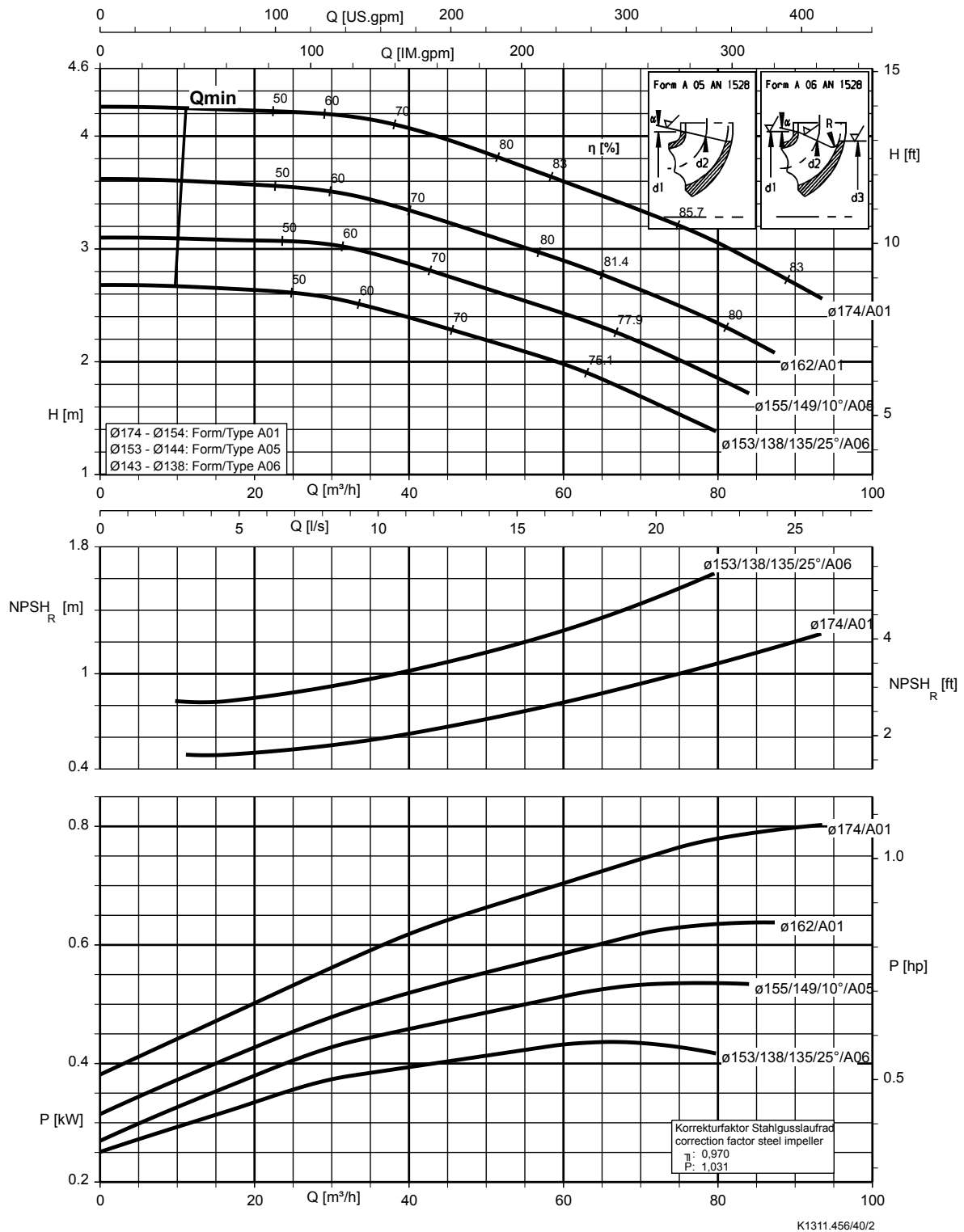
Etanorm 080-065-250,  $n = 960 \text{ min}^{-1}$



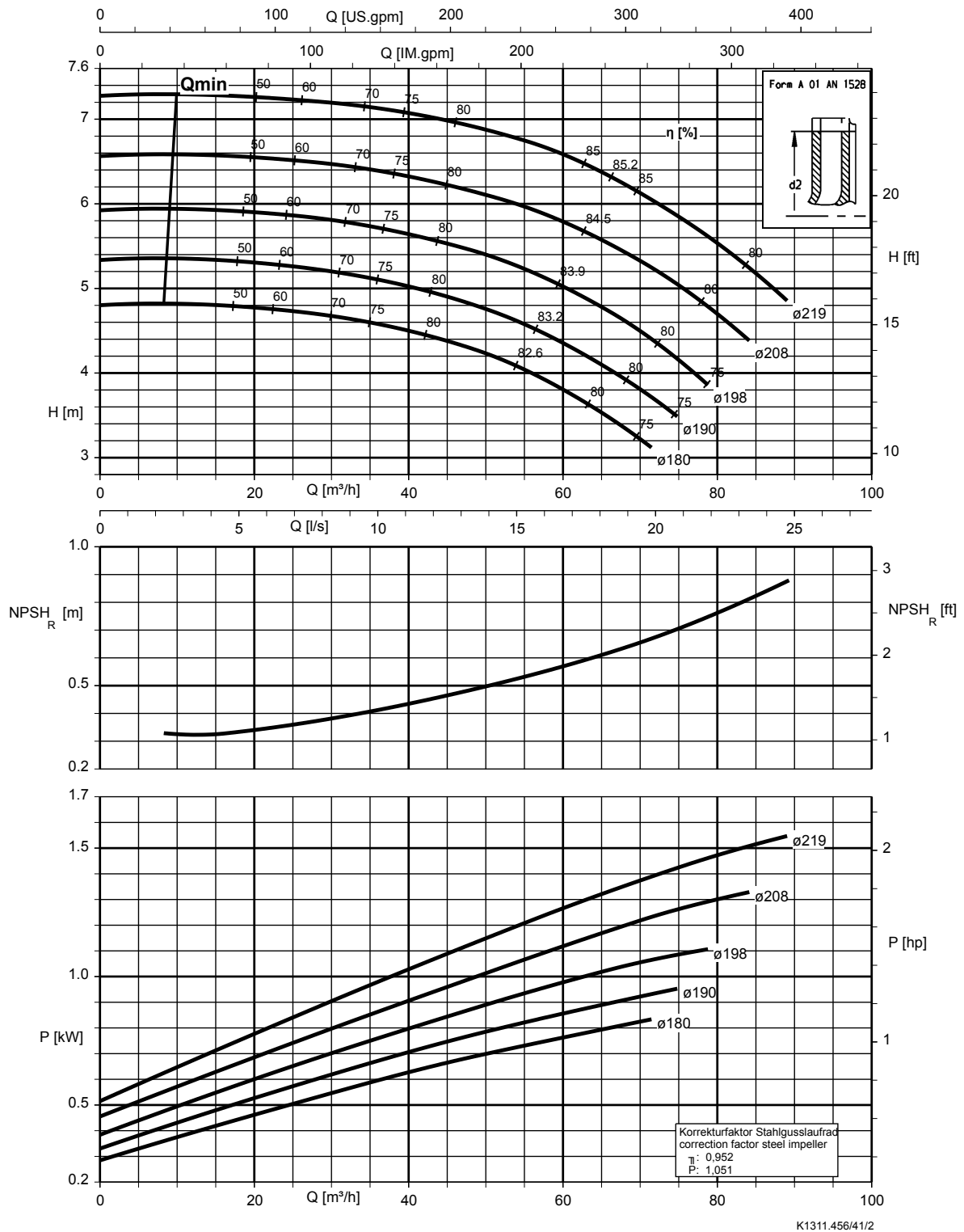
Etanorm 080-065-315,  $n = 960 \text{ min}^{-1}$



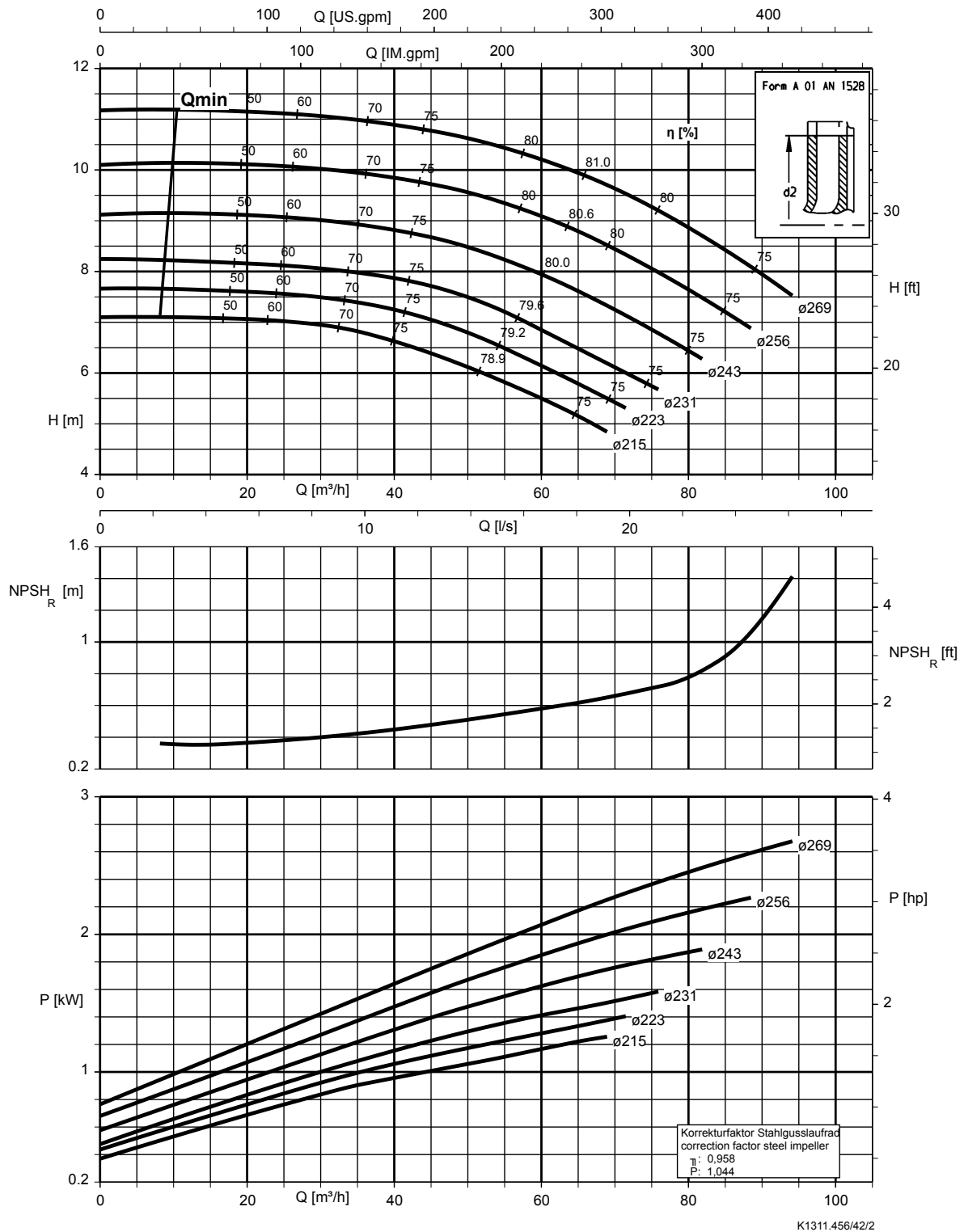
Etanorm 100-080-160,  $n = 960 \text{ min}^{-1}$



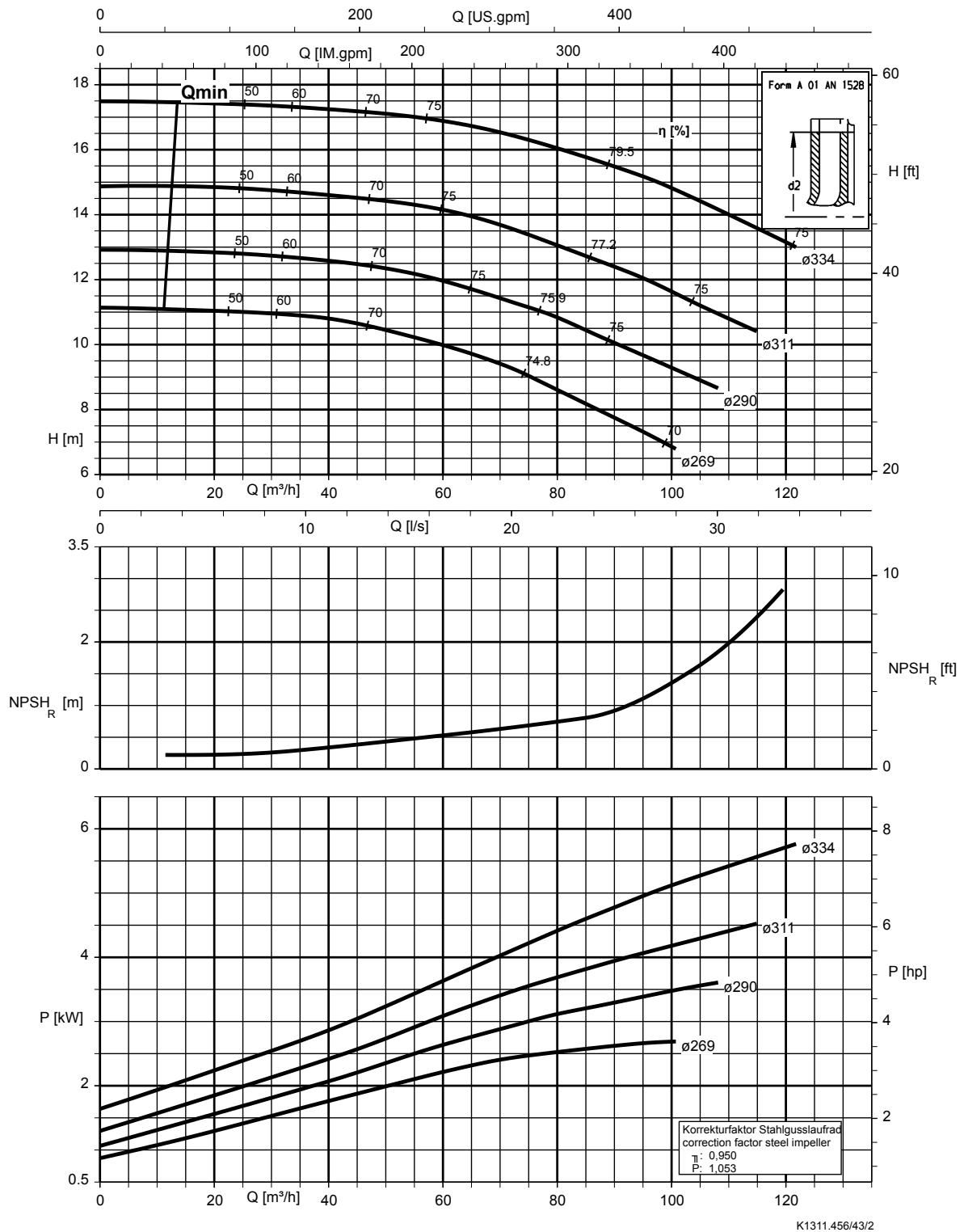
Etanorm 100-080-200,  $n = 960 \text{ min}^{-1}$



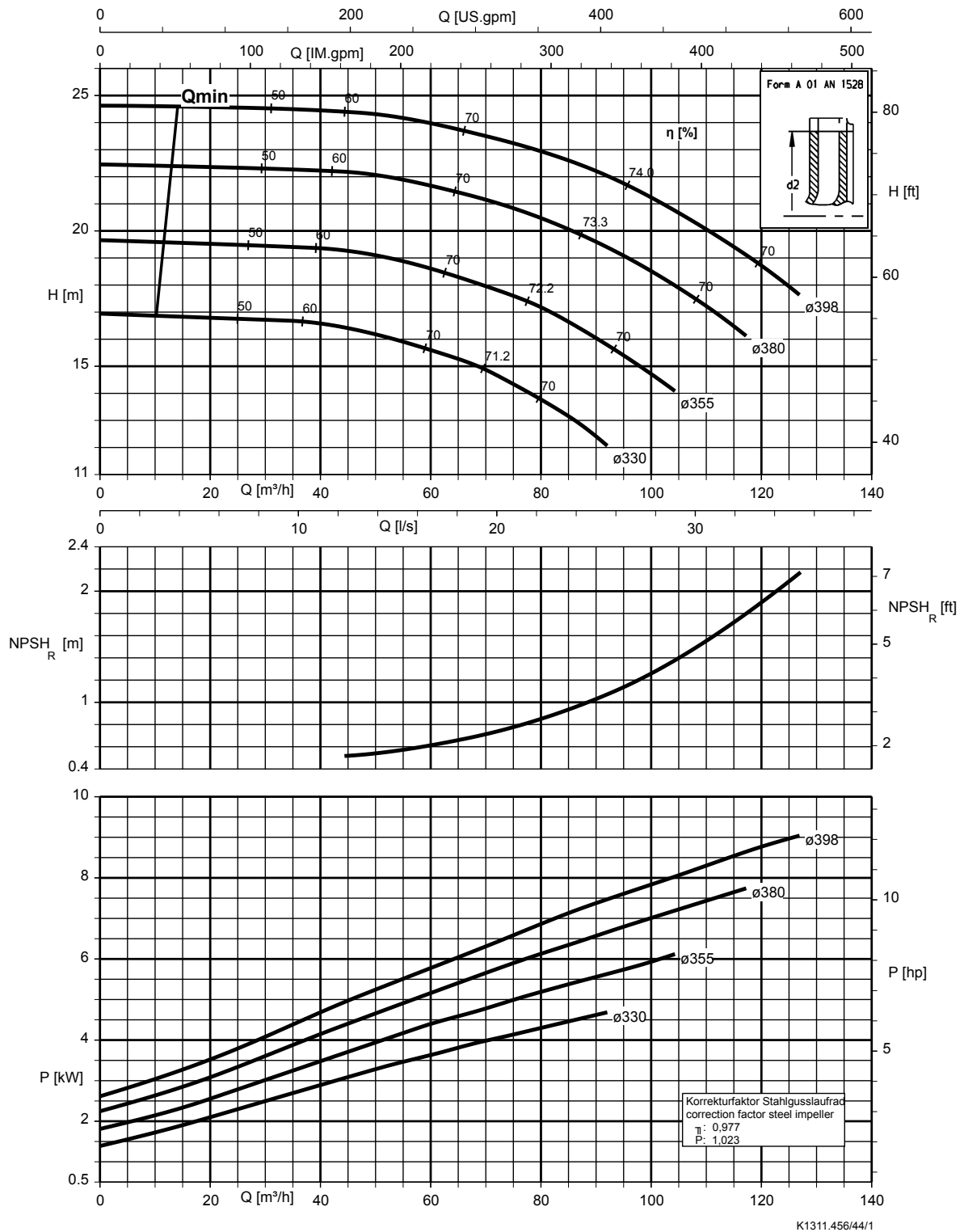
Etanorm 100-080-250,  $n = 960 \text{ min}^{-1}$



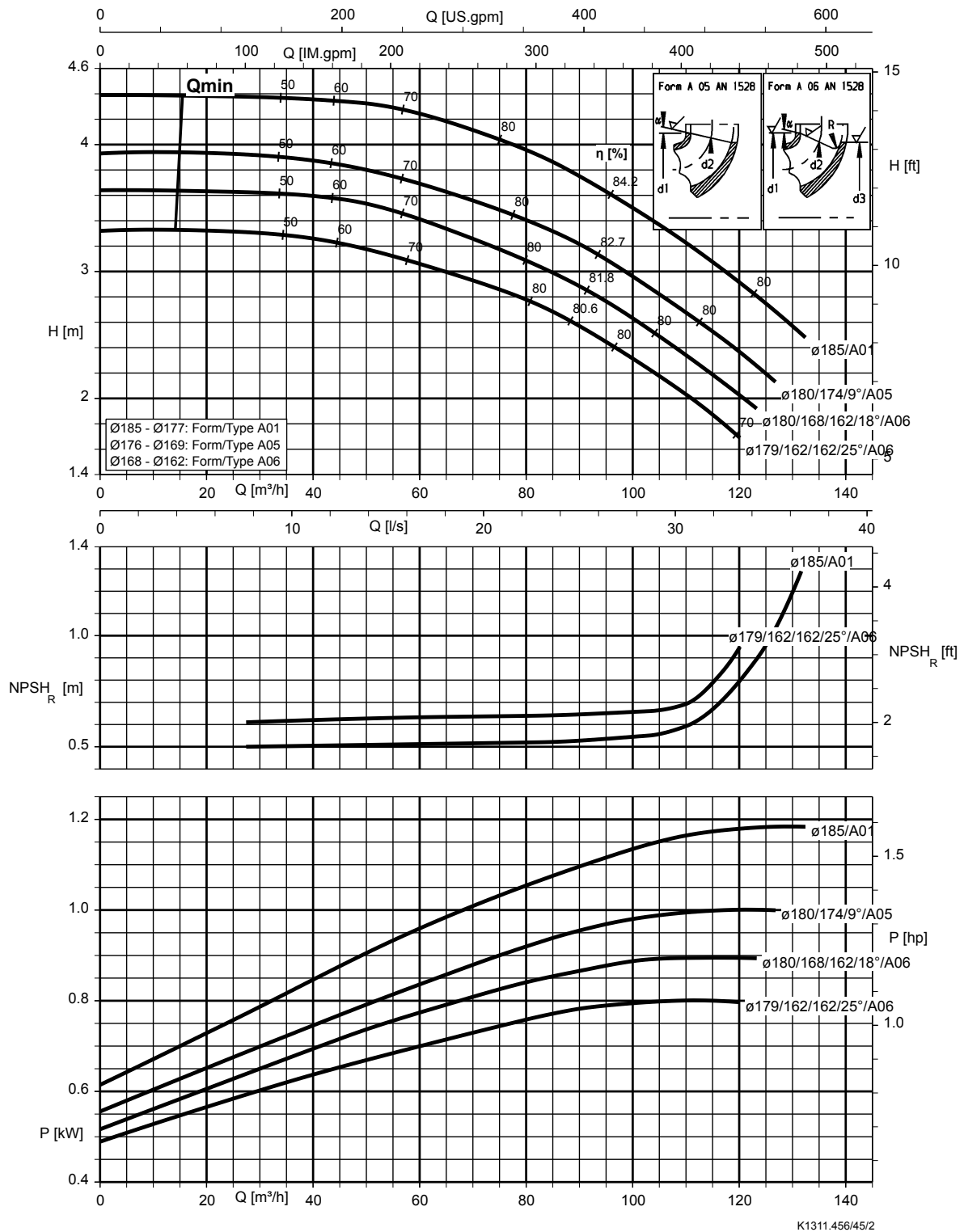
Etanorm 100-080-315,  $n = 960 \text{ min}^{-1}$



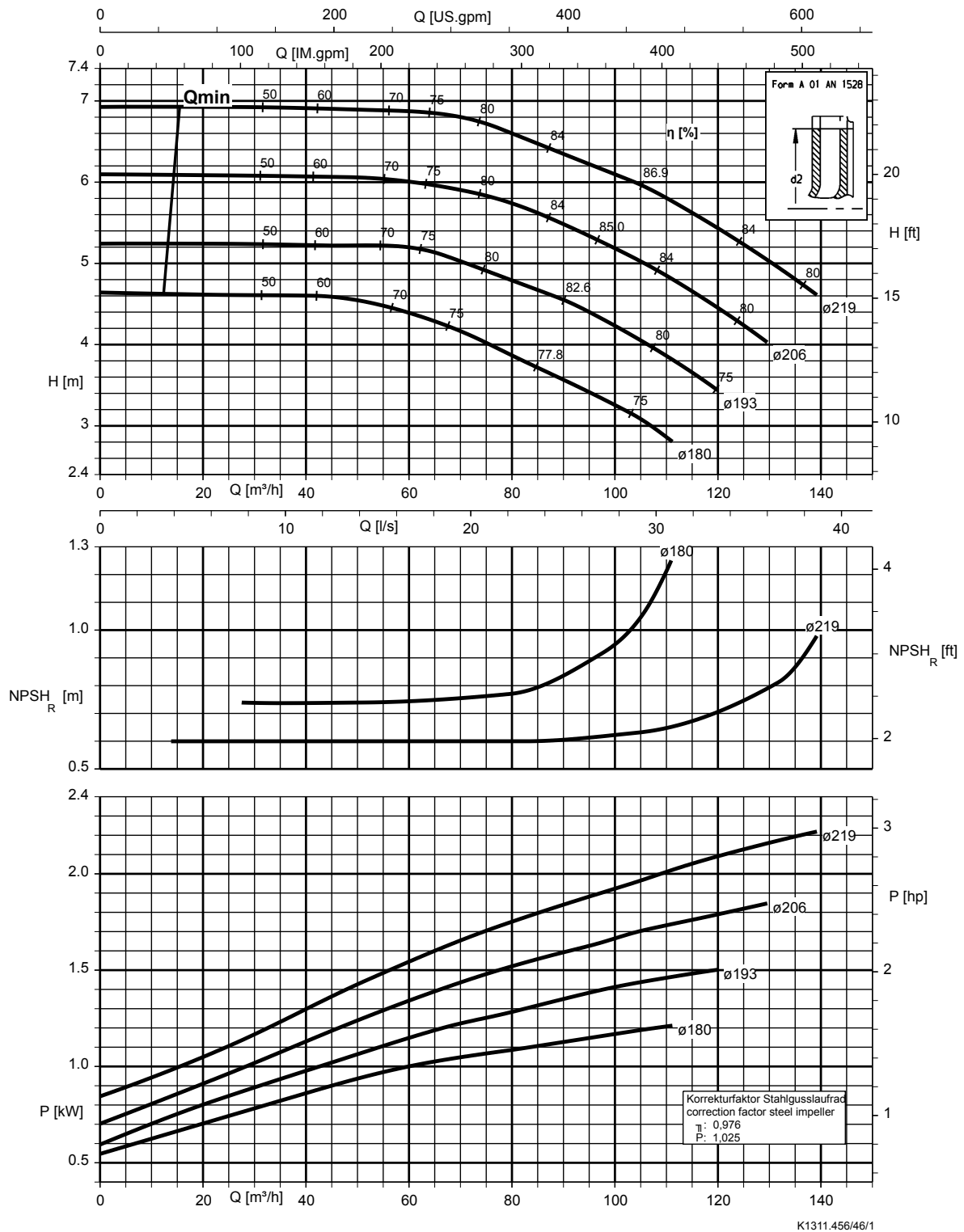
Etanorm 100-080-400,  $n = 960 \text{ min}^{-1}$



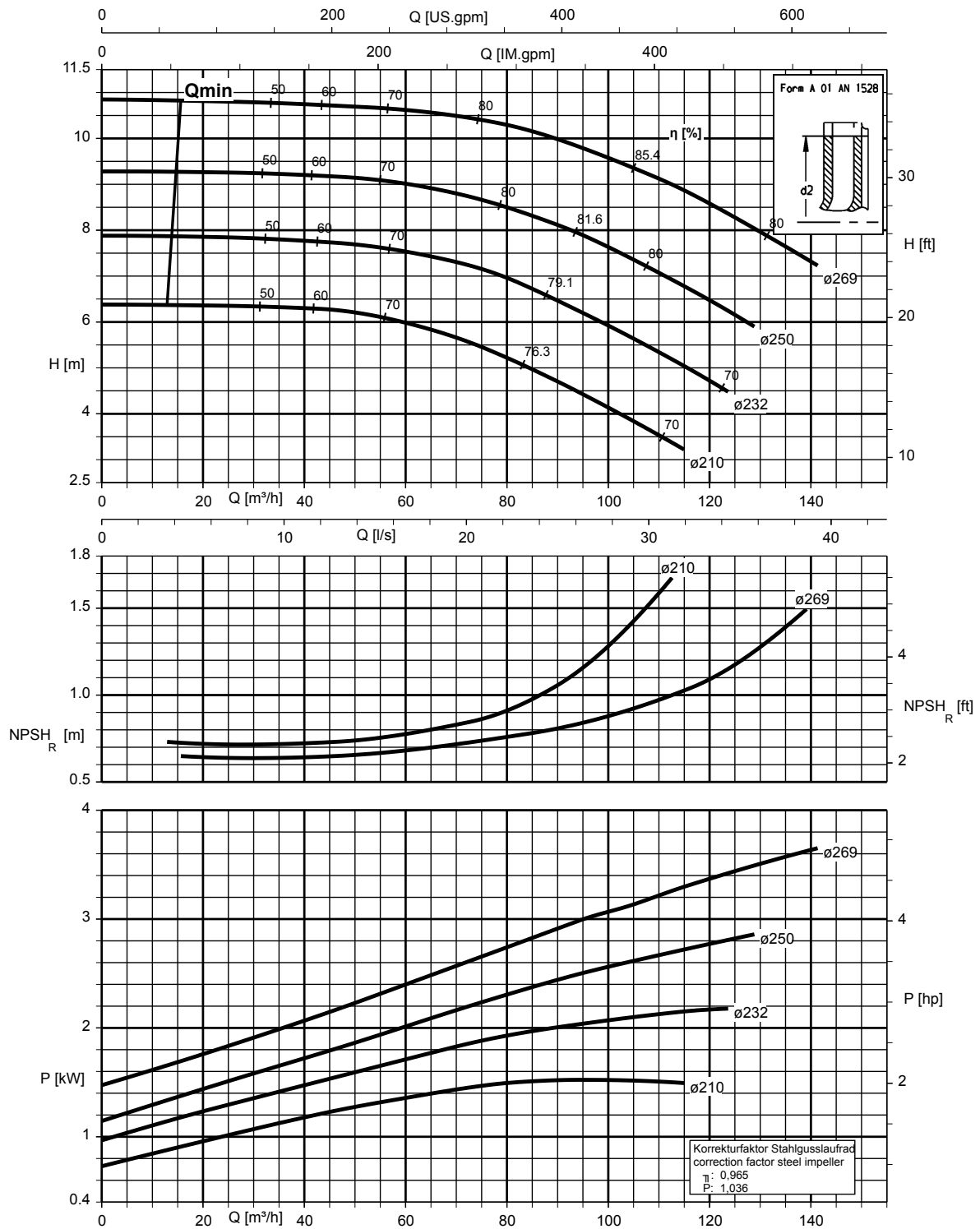
Etanorm 125-100-160,  $n = 960 \text{ min}^{-1}$



Etanorm 125-100-200,  $n = 960 \text{ min}^{-1}$

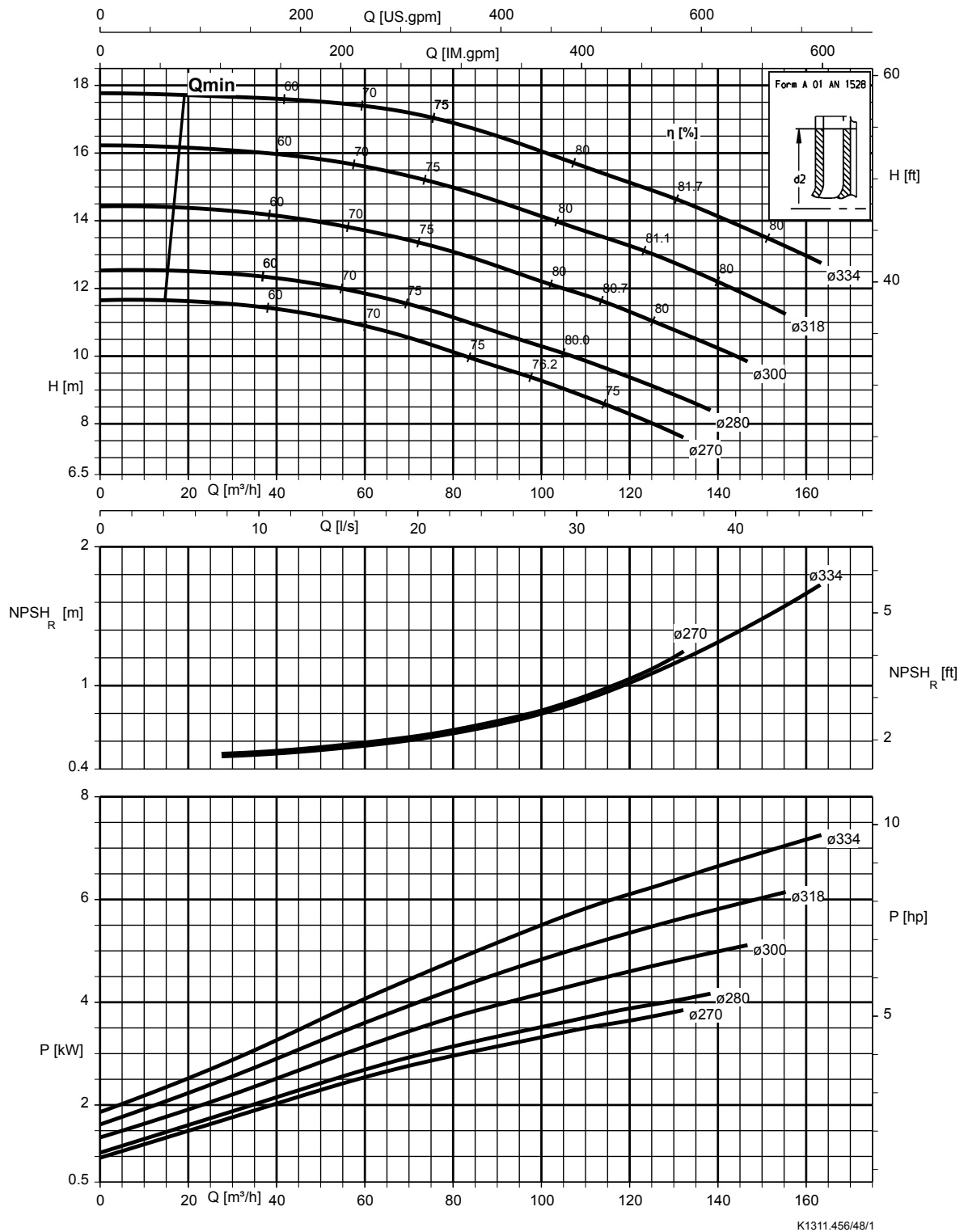


Etanorm 125-100-250,  $n = 960 \text{ min}^{-1}$

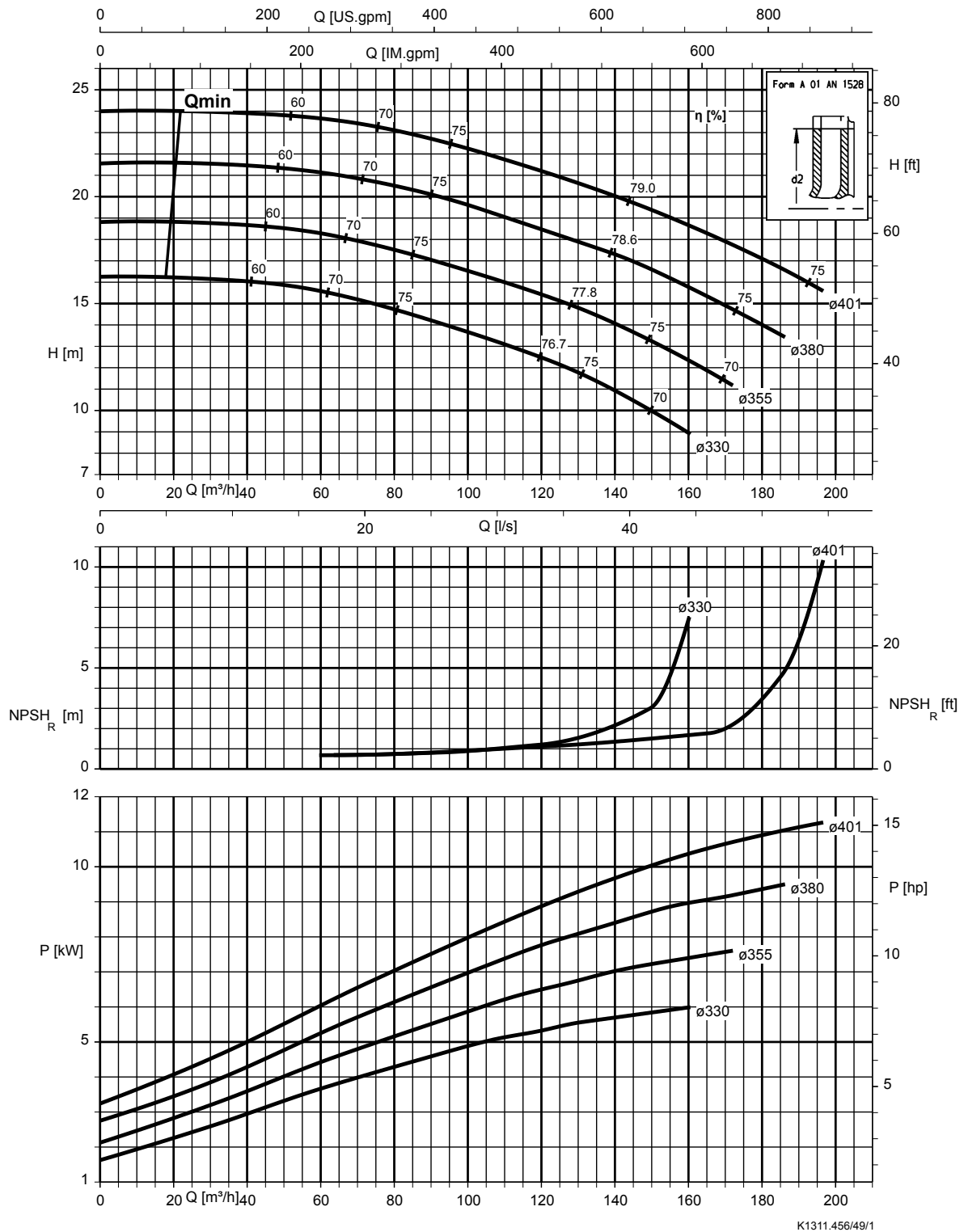


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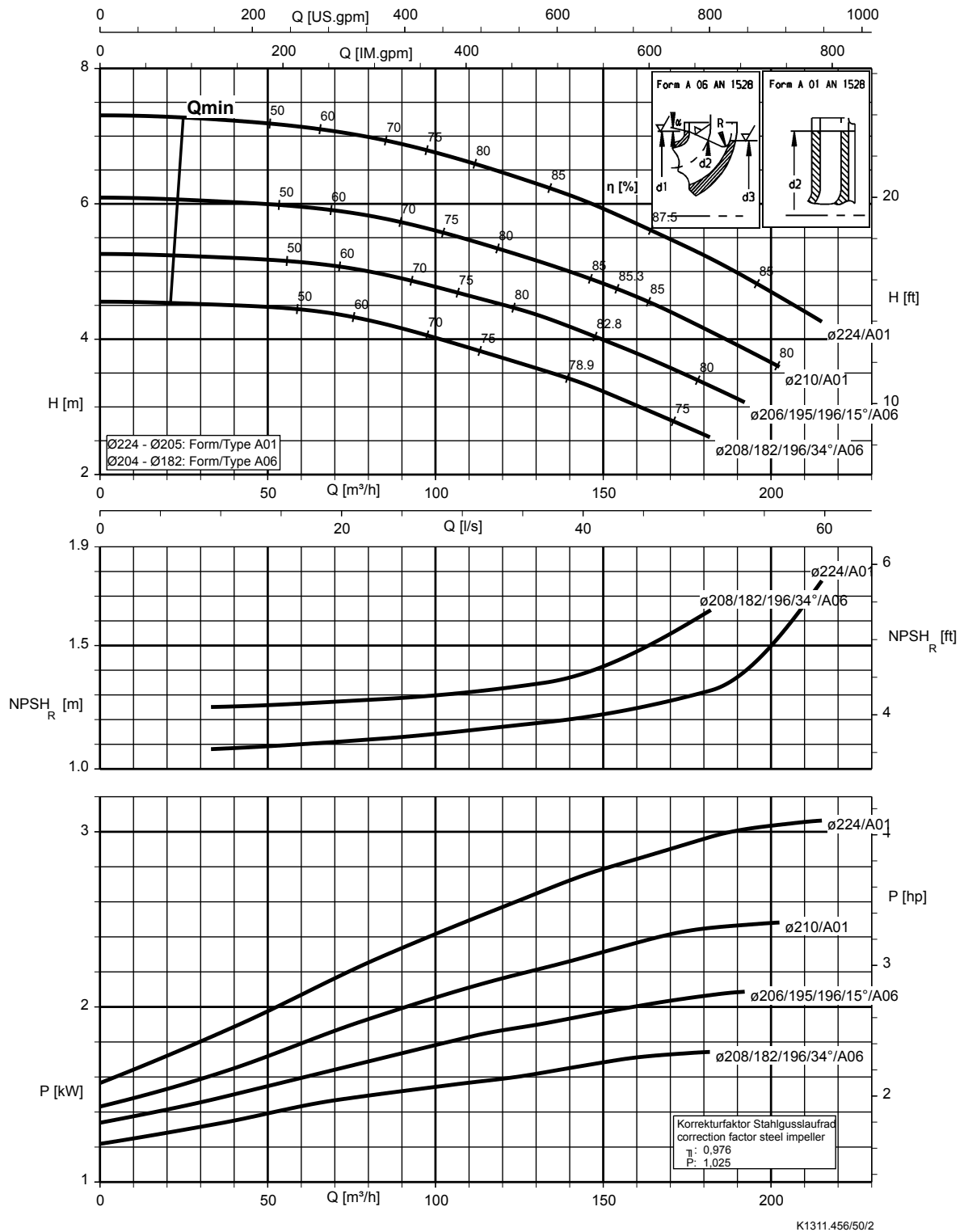
Etanorm 125-100-315,  $n = 960 \text{ min}^{-1}$



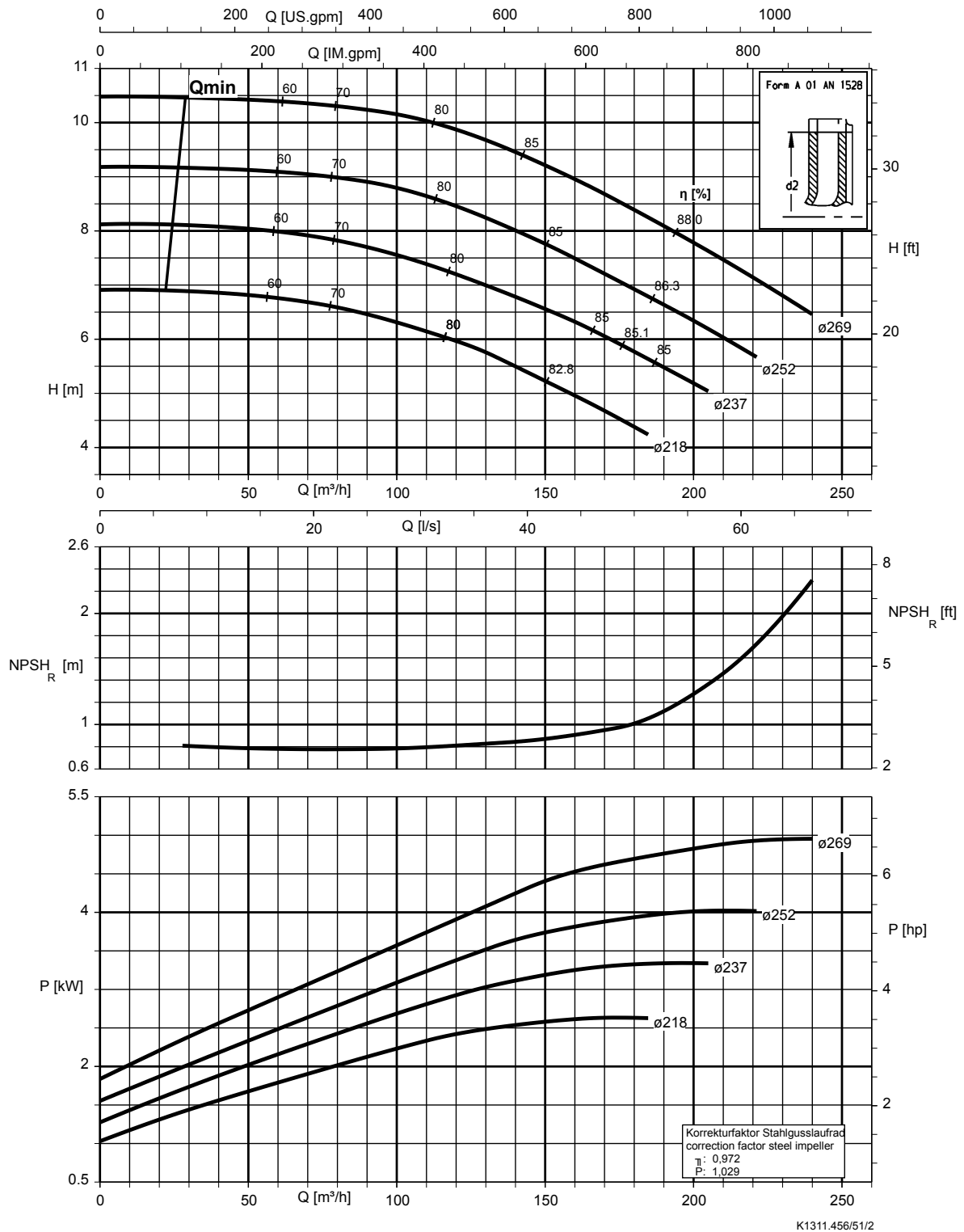
Etanorm 125-100-400,  $n = 960 \text{ min}^{-1}$



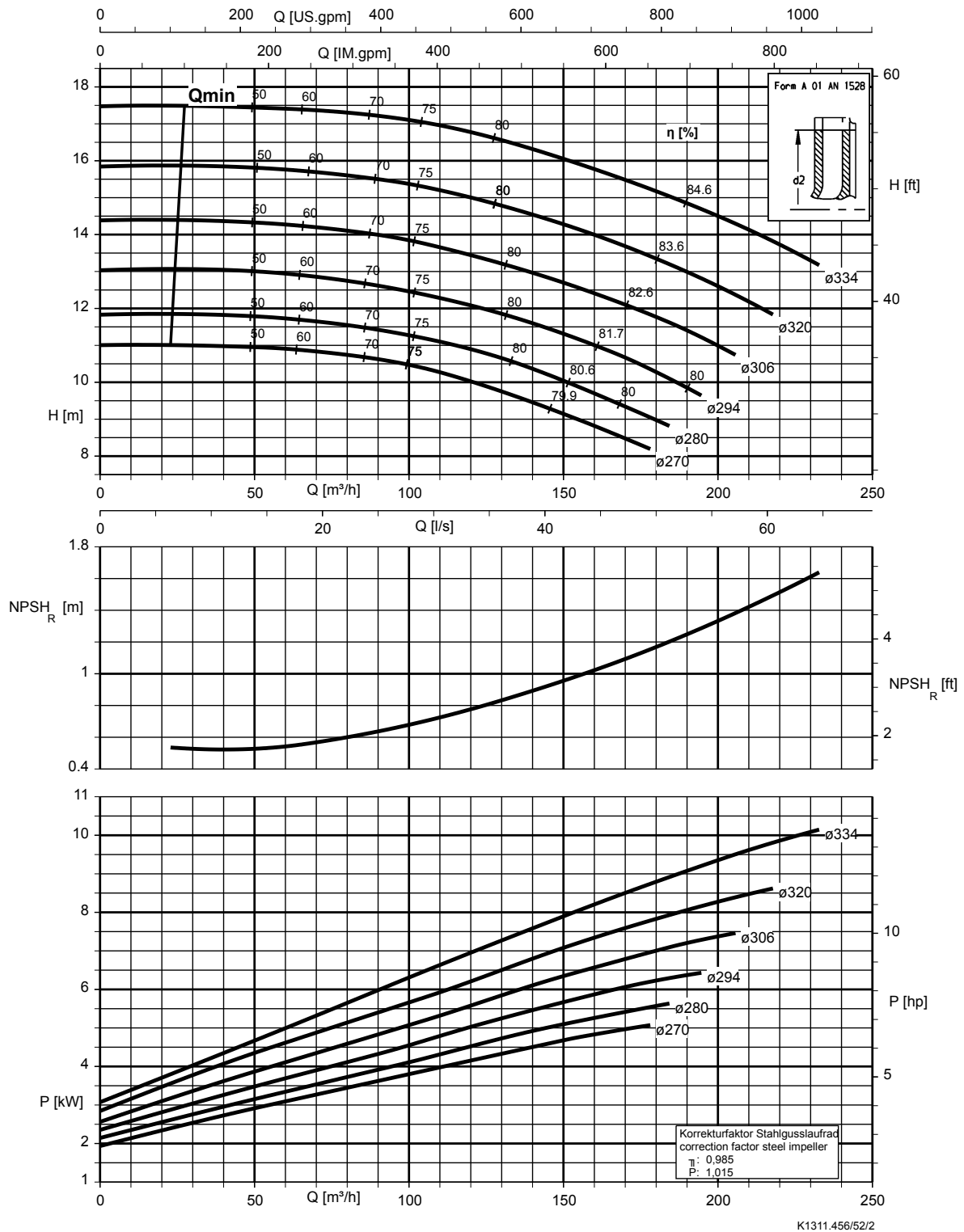
Etanorm 150-125-200,  $n = 960 \text{ min}^{-1}$



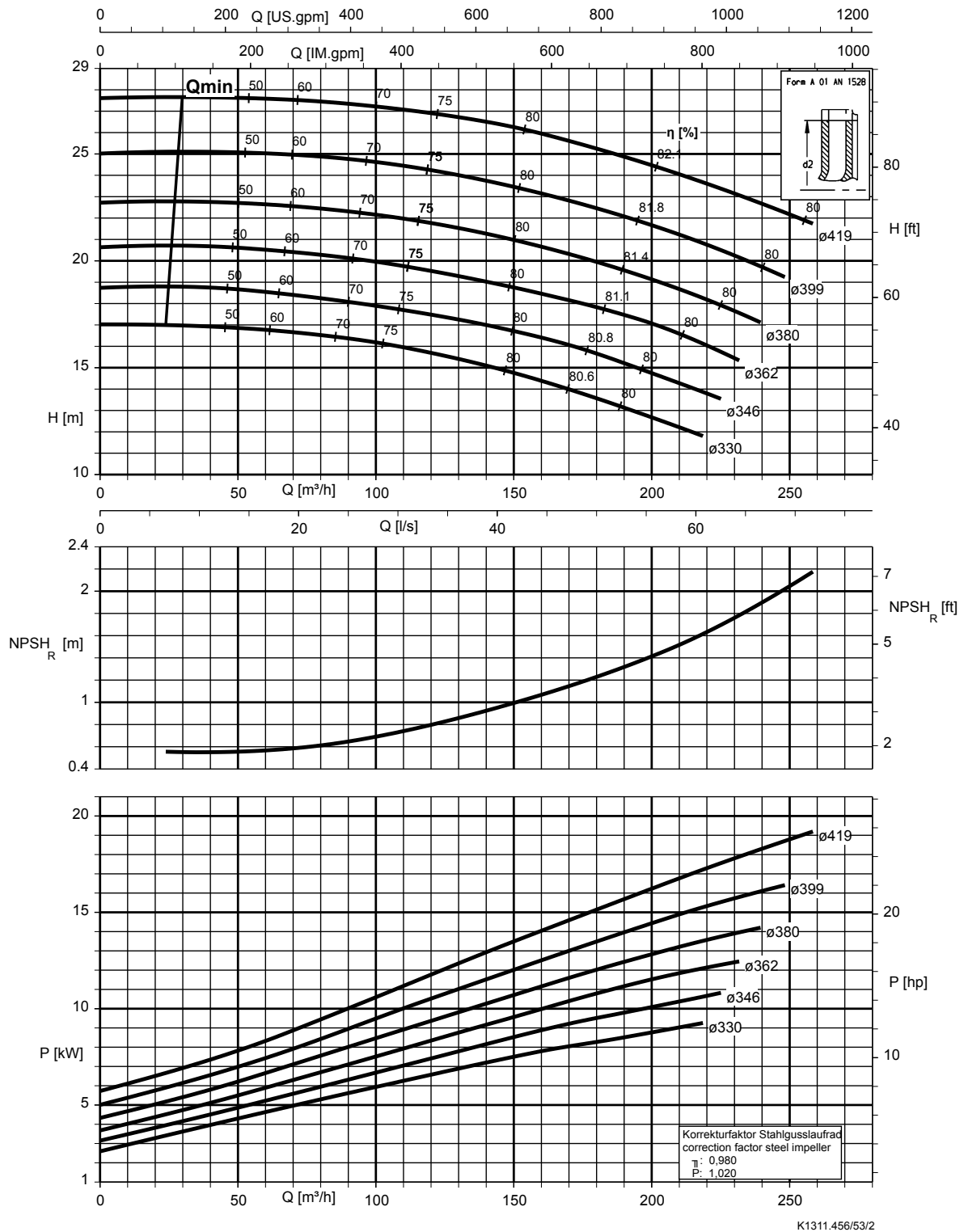
Etanorm 150-125-250,  $n = 960 \text{ min}^{-1}$



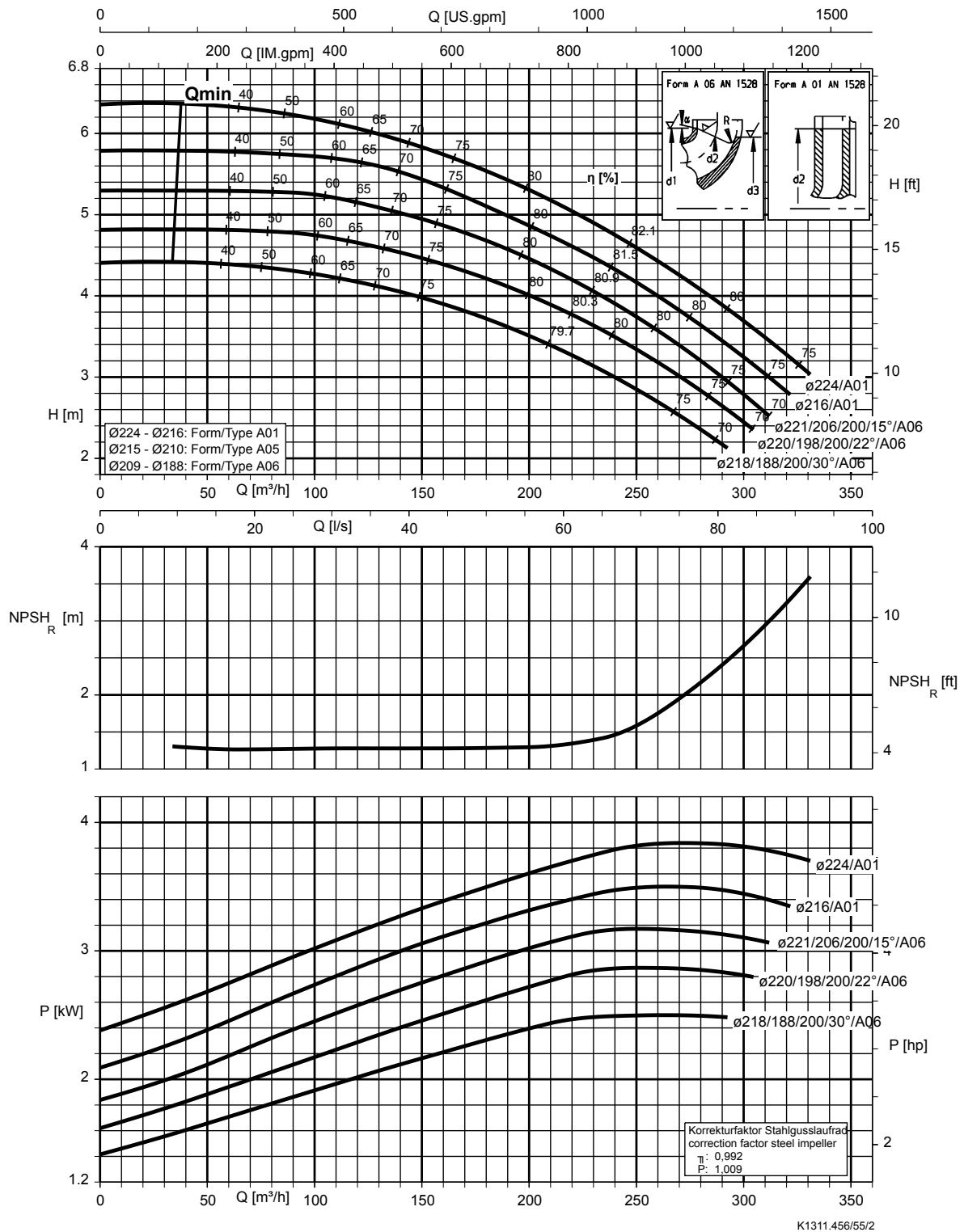
Etanorm 150-125-315,  $n = 960 \text{ min}^{-1}$



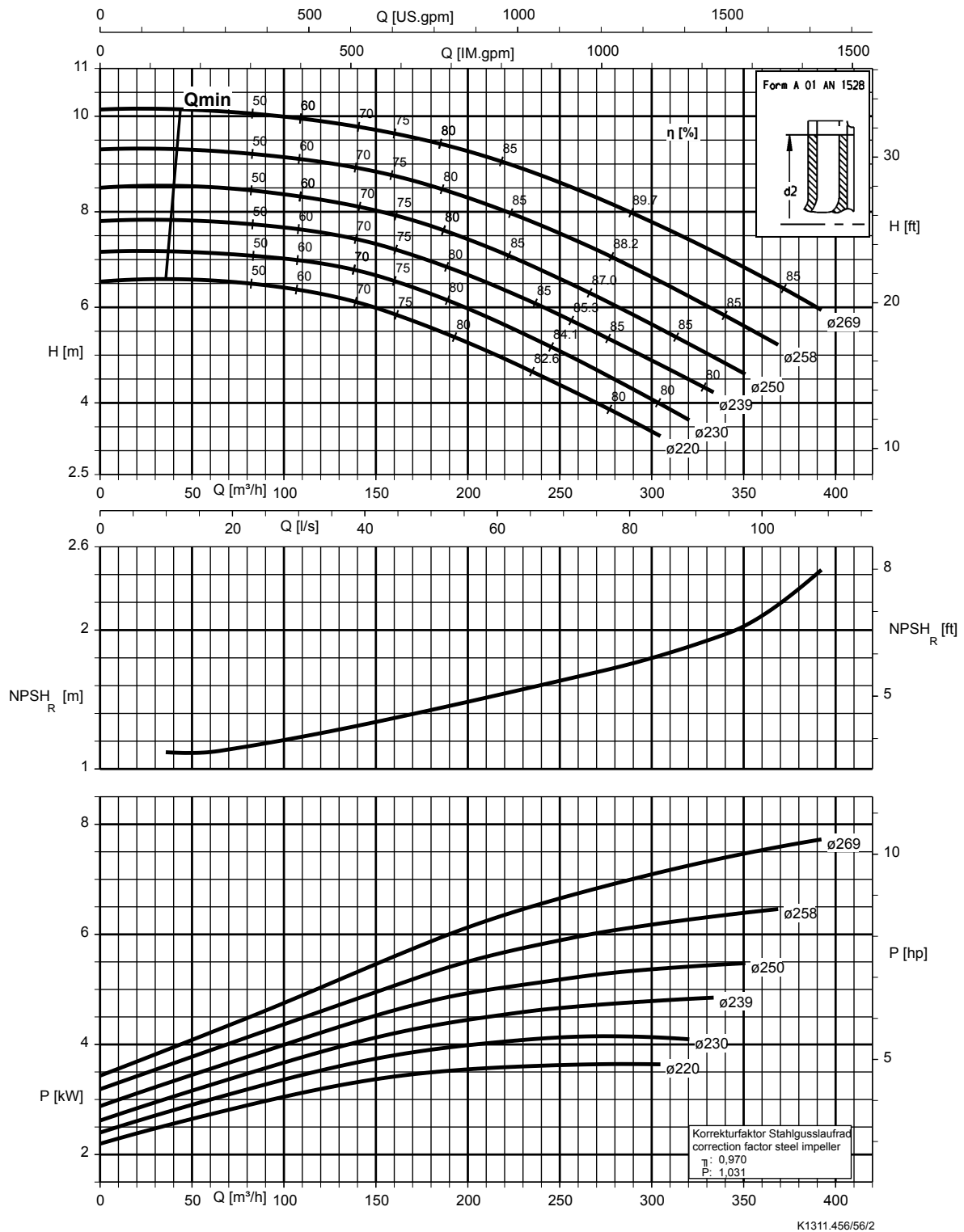
Etanorm 150-125-400,  $n = 960 \text{ min}^{-1}$



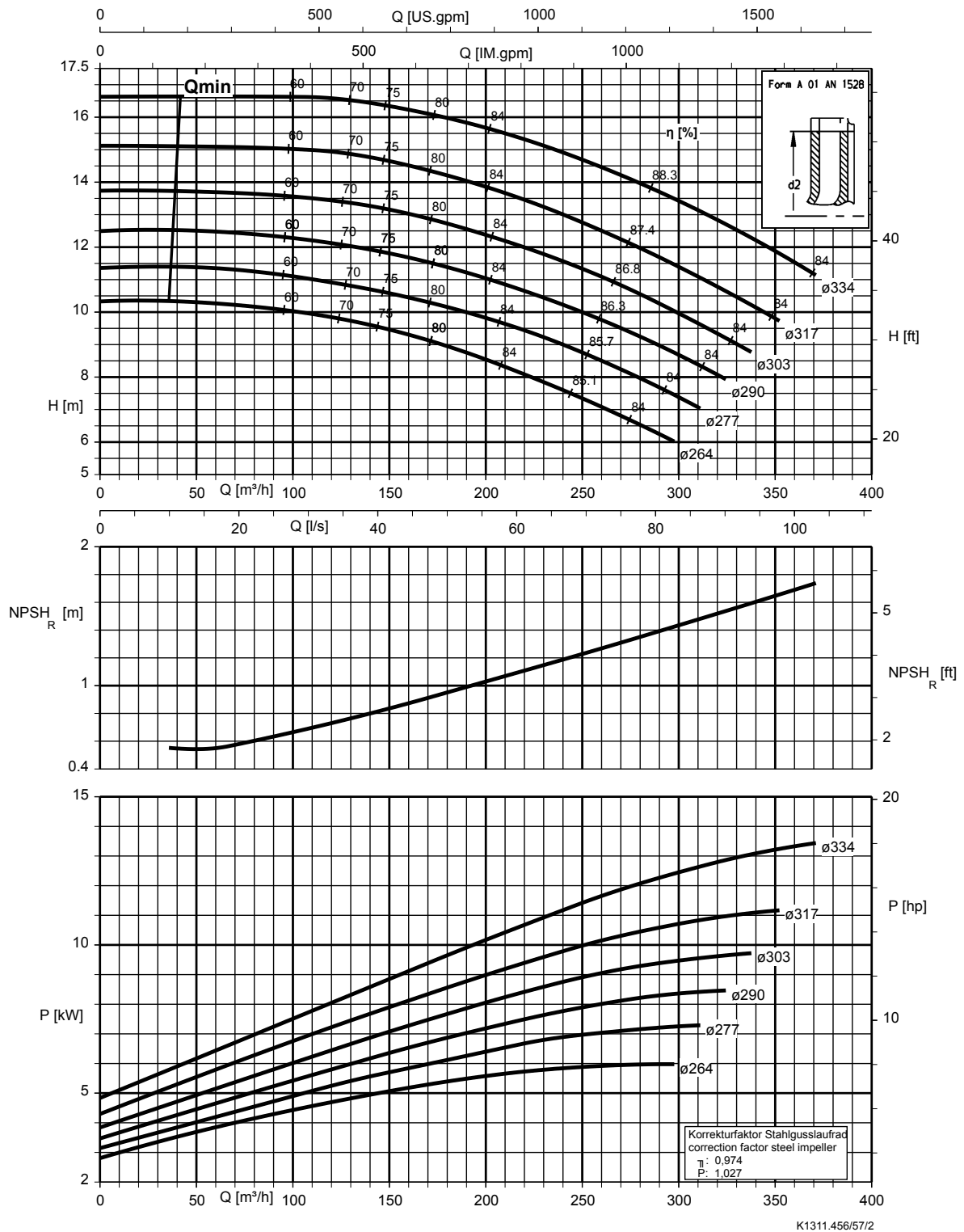
Etanorm 200-150-200,  $n = 960 \text{ min}^{-1}$



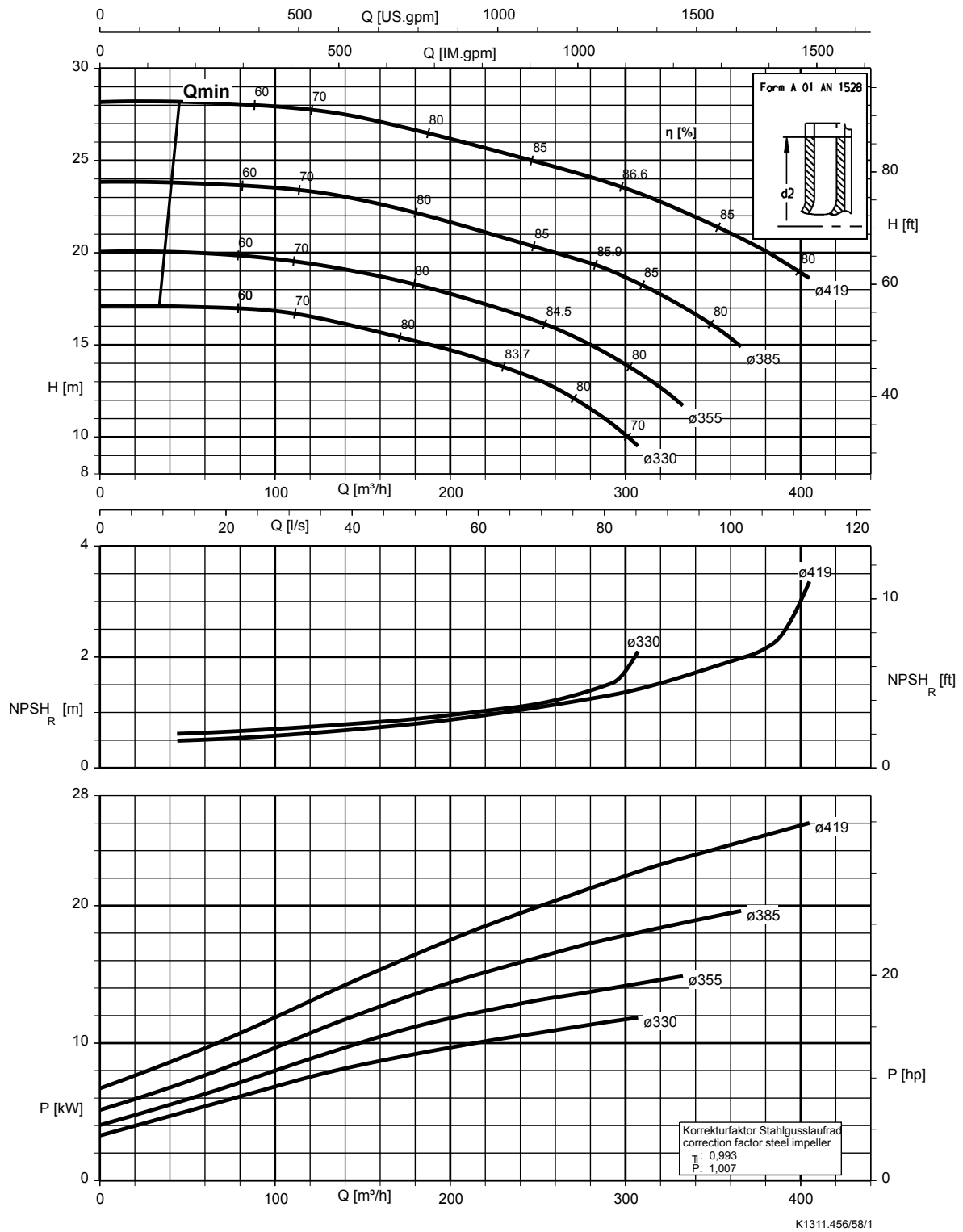
Etanorm 200-150-250,  $n = 960 \text{ min}^{-1}$



Etanorm 200-150-315,  $n = 960 \text{ min}^{-1}$



Etanorm 200-150-400,  $n = 960 \text{ min}^{-1}$







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