

Pompe à volute à installation sèche

**KWP**

50 Hz  
Roue K

**Courbier**



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Courbier KWP

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## Pompes centrifuges avec garniture d'étanchéité d'arbre

Pompe à volute, à installation sèche

**KWP**



### Généralités

**Classe de réception :** courbes caractéristiques selon ISO 9906  
Classe 2B

#### Valeurs NPSH

Les valeurs NPSH indiquées sur les courbes caractéristiques correspondent à une chute de 3 % de la hauteur manométrique. Elles sont des valeurs minimales. Elles sont valables pour de l'eau dégazée. Pour des raisons de sécurité, majorer les valeurs des courbes d'au moins 0,5 m pour l'application. Si les roues sont réalisées

en CeramikPolySiC (identifiables pour le chiffre 8 ou 9 à la fin de la désignation de la taille), majorer les valeurs d'au moins 3 m à partir de la taille de pompe DN 400.

#### Valeur NPSH dans la plage de charge partielle

La mesure des valeurs NPSH pour les débits inférieurs à  $Q = 0,3 \times Q_{opt}$  est très complexe. Des informations sur les valeurs NPSH dans la plage de charge partielle ne sont pas fournies.

#### Densité du fluide pompé

Les hauteurs manométriques et les puissances indiquées sont valables pour tous les fluides pompés dont la densité  $\rho = 1,0 \text{ kg/dm}^3$  et la viscosité cinématique  $\nu$  est égale ou inférieure à  $20 \text{ mm}^2/\text{s}$ . Si la densité  $\neq 1,0$ , multiplier la puissance indiquée par  $\rho$ . Pour les viscosités  $> 20 \text{ mm}^2/\text{s}$ , il convient de calculer les données correspondantes à l'eau froide et de déterminer l'incidence sur la puissance de la pompe.

#### Rognage de la roue

Un rognage de la roue est possible pour chaque diamètre jusqu'au diamètre minimum déterminé.

#### Limites d'utilisation

Respecter les limites d'utilisation dues aux matériaux ou à la version.

Sauf spécification contraire dans les courbes ou les fiches des spécifications, les règles suivantes s'appliquent :

- Service occasionnel
  - Pour les tailles  $< \text{DN } 600$  :  $Q_{min}^{1)} = 0,1 \times Q_{opt}^{2)}$
  - Pour les tailles  $\geq \text{DN } 600$  :  $Q_{min}^{1)} = 0,4 \times Q_{opt}^{2)}$
- Service continu
  - Pour les tailles  $\leq \text{DN } 125$  :  $Q_{min}^{1)} = 0,2 \times Q_{opt}^{2)}$
  - Pour les tailles  $\geq \text{DN } 150$  :  $Q_{min}^{1)} = 0,3 \times Q_{opt}^{2)}$
  - Pour fonctionnement à 2 pôles :  $Q_{max} = 1,1 \times Q_{opt}^{2)}$
  - Pour fonctionnement à 4 pôles :  $Q_{max} = 1,25 \times Q_{opt}^{2)}$

Les valeurs verticales relatives à  $Q_{max}$  indiquées dans certaines courbes caractéristiques décrivent le débit  $Q_{max}$  indépendamment de la vitesse de rotation en tant que fonction de  $v_s = 7,5 \text{ m/s}^{3)}$

#### Puissance nominale du moteur

Les puissances nominales du moteur indiquées sont valables dans les conditions suivantes :

- Températures ambiantes jusqu'à  $40^\circ\text{C}$
- Altitude d'installation jusqu'à 1 000 m au-dessus du niveau de la mer
- Tensions de 230 / 400 V - 400 / 690 V

### Caractéristiques techniques de l'hydraulique

Caractéristiques techniques de l'hydraulique

| Tailles     | Support de palier | Passage libre<br>[mm] | Nombre d'aubes | Diamètre de roue |              |
|-------------|-------------------|-----------------------|----------------|------------------|--------------|
|             |                   |                       |                | Max.<br>[mm]     | min.<br>[mm] |
| 065-040-250 | P03ax             | 15                    | 3              | 260              | 170          |
| 065-050-200 | P03ax             | 34                    | 2              | 209              | 120          |
| 080-065-200 | P03ax             | 46                    | 2              | 209              | 145          |
| 080-040-315 | P04ax             | 15                    | 2              | 320              | 230          |
| 080-050-400 | P04ax             | 15                    | 2              | 408              | 330          |
| 080-065-315 | P04ax             | 42                    | 2              | 320              | 230          |
| 080-065-313 | P04ax             | 15                    | 5              | 320              | 230          |
| 080-065-400 | P04ax             | 34                    | 2              | 408              | 330          |
| 100-080-250 | P03ax             | 50                    | 2              | 260              | 170          |
| 100-080-315 | P04ax             | 44                    | 2              | 320              | 260          |
| 100-080-400 | P05ax             | 46                    | 2              | 404              | 280          |

- 1) Débit minimum autorisé
- 2) Débit au point de rendement maximal
- 3) Vitesse d'écoulement dans la tuyauterie, côté aspiration

| Tailles     | Support de palier   | Passage libre | Nombre d'aubes | Diamètre de roue |      |
|-------------|---------------------|---------------|----------------|------------------|------|
|             |                     |               |                | Max.             | min. |
|             |                     | [mm]          |                | [mm]             | [mm] |
| 100-080-403 | P05ax               | 16            | 5              | 404              | 280  |
| 125-080-500 | P06x                | 20            | 3              | 504              | 380  |
| 125-100-250 | P04ax               | 60            | 2              | 260              | 180  |
| 125-100-253 | P04ax               | 28            | 6              | 260              | 180  |
| 125-100-315 | P04ax               | 54            | 2              | 320              | 230  |
| 125-100-400 | P05ax               | 50            | 2              | 404              | 280  |
| 125-100-403 | P05ax               | 20            | 6              | 404              | 280  |
| 150-125-500 | P06x                | 50            | 3              | 504              | 350  |
| 150-125-503 | P06x                | 21            | 6              | 509              | 350  |
| 150-150-315 | P05ax               | 88            | 2              | 320              | 260  |
| 150-150-400 | P05ax               | 64            | 3              | 404              | 320  |
| 150-150-403 | P05ax               | 41            | 5              | 404              | 320  |
| 200-200-320 | P05ax               | 75            | 3              | 320              | 257  |
| 200-200-400 | P06x                | 80            | 3              | 403              | 320  |
| 200-200-403 | P06x                | 40            | 6              | 404              | 320  |
| 200-200-500 | P08xs, P10ax, P12sx | 75            | 3              | 504              | 400  |
| 200-200-501 | P08xs, P10ax, P12sx | 75            | 3              | 504              | 400  |
| 200-200-503 | P08xs, P10ax, P12sx | 40            | 5              | 504              | 400  |
| 250-250-315 | P06x                | 70            | 3              | 324              | 285  |
| 250-250-400 | P08xs, P10ax        | 80            | 3              | 409              | 338  |
| 250-250-403 | P08xs, P10ax        | 44            | 5              | 409              | 340  |
| 250-250-500 | P08xs, P10ax, P12sx | 85            | 3              | 504              | 400  |
| 250-250-503 | P08xs, P10ax, P12sx | 48            | 6              | 504              | 400  |
| 250-250-505 | P08xs, P10ax, P12sx | 70            | 4              | 504              | 436  |
| 250-250-630 | P08xs, P10ax, P12sx | 86            | 4              | 630              | 500  |
| 250-250-634 | P08xs, P10ax, P12sx | 41            | 5              | 630              | 480  |
| 300-300-400 | P08xs, P10ax        | 85            | 3              | 409              | 320  |
| 300-300-500 | P08xs, P10ax, P12sx | 89            | 3              | 504              | 400  |
| 300-300-503 | P08xs, P10ax, P12sx | 50            | 5              | 504              | 420  |
| 350-350-400 | P08xs, P10ax        | 110           | 3              | 408              | 330  |
| 350-350-500 | P08xs, P10ax, P12sx | 110           | 3              | 508              | 390  |
| 350-350-503 | P08xs, P10ax, P12sx | 65            | 5              | 508              | 472  |
| 350-350-504 | P08xs, P10ax, P12sx | 55            | 5              | 507              | 460  |
| 350-350-630 | P08xs, P10ax, P12sx | 135           | 3              | 630              | 500  |
| 350-350-633 | P08xs, P10ax, P12sx | 75            | 5              | 630              | 500  |
| 400-400-500 | P08xs, P10ax, P12sx | 123           | 3              | 508              | 430  |
| 400-400-503 | P08xs, P10ax, P12sx | 90            | 4              | 508              | 445  |
| 400-400-533 | P10ax, P12sx        | 90            | 5              | 538              | 496  |
| 400-400-583 | P10ax, P12sx        | 90            | 5              | 600              | 550  |
| 500-400-710 | P10ax, P12sx, P16ax | 160           | 3              | 730              | 630  |
| 500-400-713 | P10ax, P12sx, P16ax | 65            | 5              | 730              | 630  |
| 500-500-544 | P10ax, P12sx        | 75            | 4              | 572              | 495  |
| 500-500-630 | P10ax, P12sx, P16ax | 142           | 3              | 636              | 528  |
| 500-500-633 | P10ax, P12sx, P16ax | 90            | 5              | 636              | 534  |
| 500-500-634 | P10ax, P12sx, P16ax | 85            | 5              | 636              | 554  |
| 500-500-635 | P10ax, P12sx, P16ax | 75            | 5              | 636              | 565  |
| 500-500-637 | P10ax, P12sx, P16ax | 85            | 5              | 636              | 540  |
| 600-600-663 | P12sx               | 80            | 5              | 700              | 620  |
| 600-600-669 | P12sx               | 80            | 5              | 700              | 630  |
| 600-600-710 | P12sx, P16ax        | 165           | 3              | 716              | 650  |
| 600-600-753 | P16ax               | 112           | 5              | 750              | 675  |
| 600-600-803 | P16ax               | 100           | 5              | 780              | 718  |
| 600-600-813 | P16ax               | 95            | 5              | 830              | 710  |
| 600-600-824 | P16ax               | 95            | 5              | 794              | 720  |
| 600-600-825 | P16ax               | 95            | 5              | 800              | 709  |
| 600-600-873 | P16ax               | 97            | 5              | 880              | 800  |
| 600-600-923 | P20sx               | 113           | 5              | 930              | 840  |
| 700-700-923 | P20sx               | 115           | 5              | 870              | 765  |
| 700-700-929 | P20sx               | 100           | 6              | 870              | 780  |

| Tailles      | Support de palier | Passage libre | Nombre d'aubes | Diamètre de roue |      |
|--------------|-------------------|---------------|----------------|------------------|------|
|              |                   |               |                | Max.             | min. |
|              |                   | [mm]          |                | [mm]             | [mm] |
| 800-700-953  | P20sx             | 110           | 5              | 940              | 834  |
| 800-700-959  | P20sx             | 105           | 5              | 940              | 820  |
| 800-800-934  | P20sx             | 115           | 5              | 950              | 845  |
| 800-800-939  | P20sx             | 86            | 6              | 950              | 854  |
| 800-900-883  | P20sx             | 155           | 4              | 855              | 750  |
| 900-900-1133 | P20sx             | 140           | 5              | 1120             | 1018 |
| 900-900-1134 | P20sx             | 150           | 5              | 1120             | 1008 |
| 900-900-1138 | P20sx             | 120           | 6              | 1122             | 1006 |
| 900-900-1139 | P20sx             | 110           | 6              | 1120             | 980  |

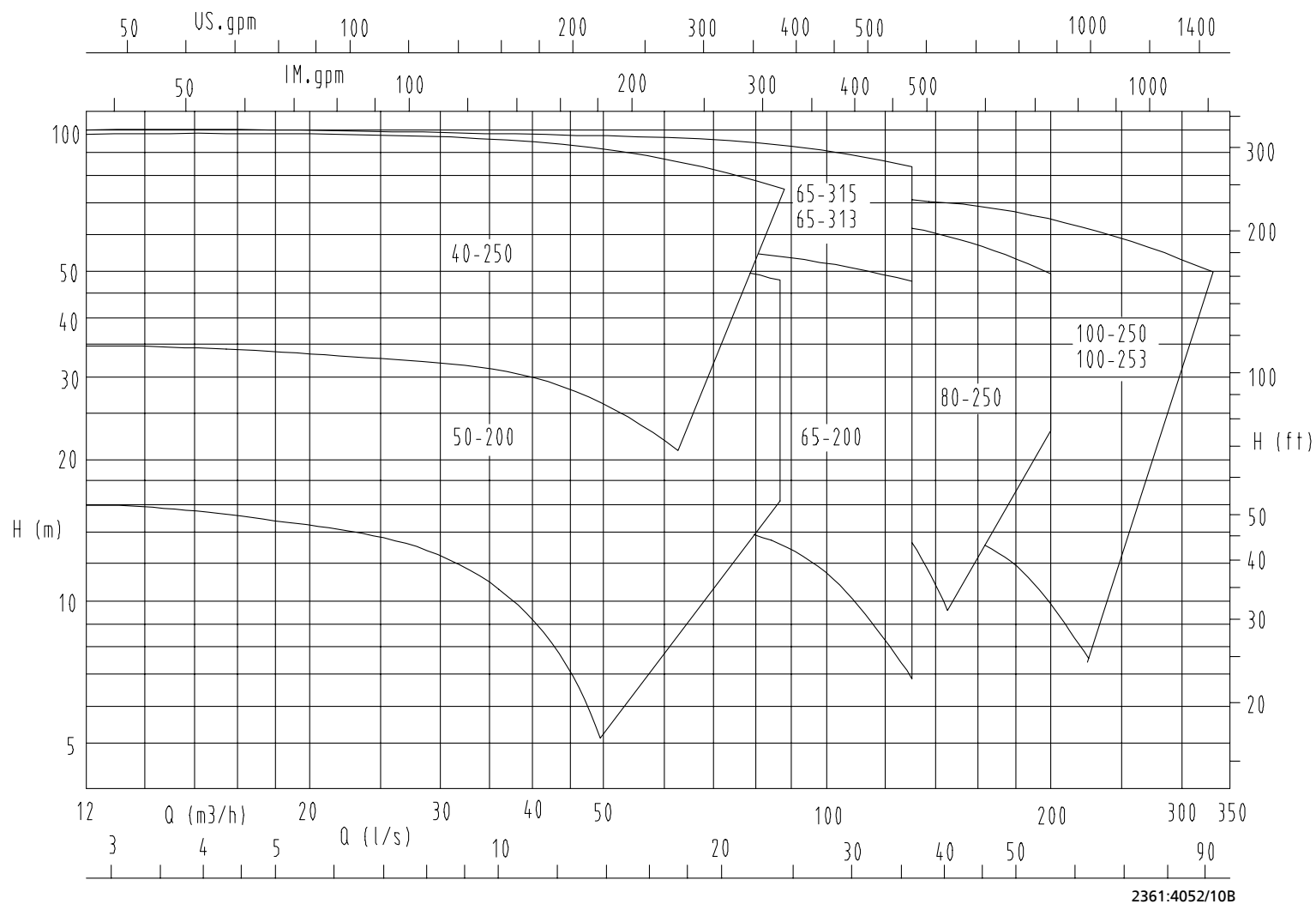
## Récapitulatif des tailles

Récapitulatif des tailles KWP K

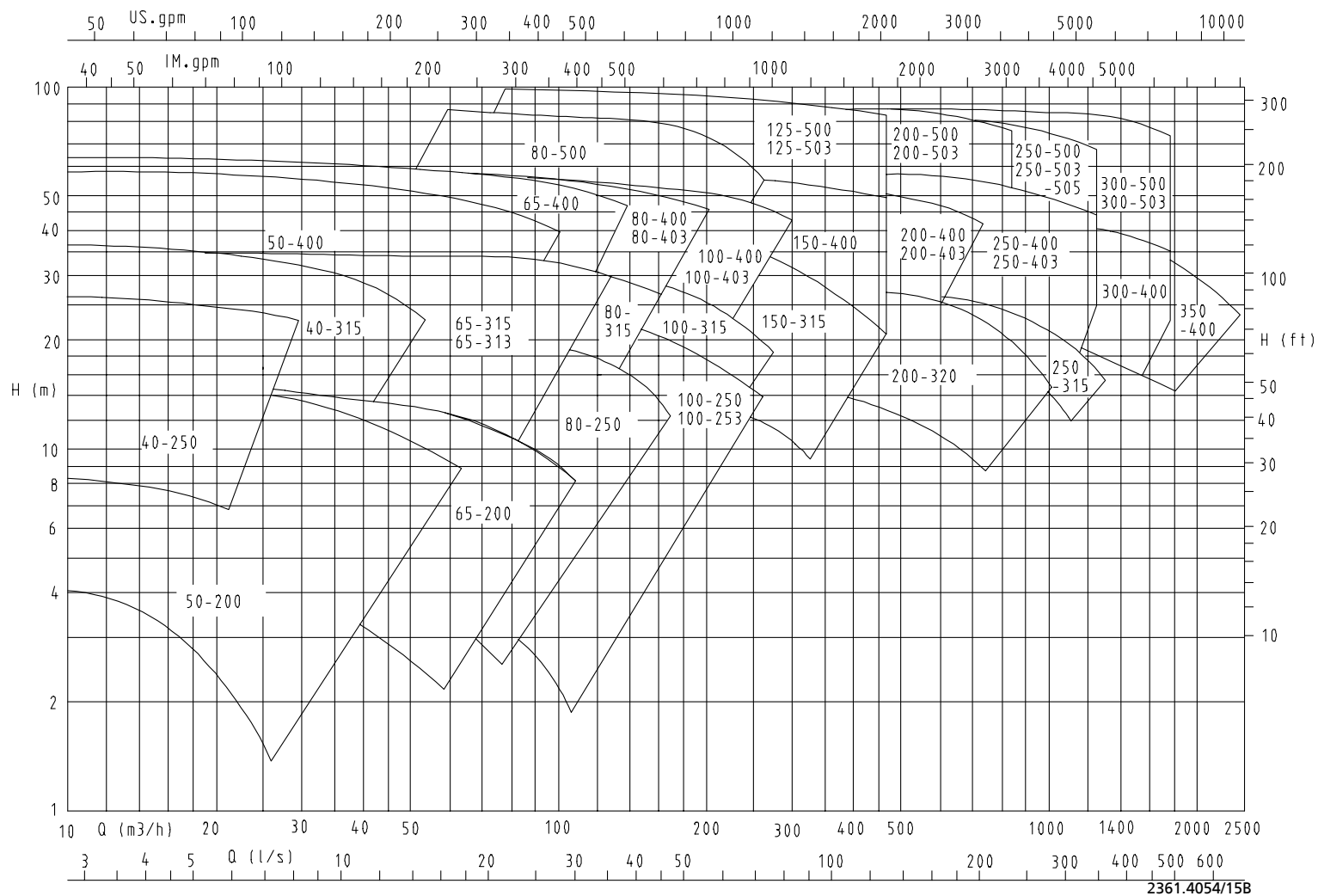
| Taille      | Vitesse de rotation [t/min ] |             |             |              |              |     |
|-------------|------------------------------|-------------|-------------|--------------|--------------|-----|
|             | 2900                         | 1450        | 960         | 725          | 580          | 480 |
| 065-040-250 | (⇒ page 14)                  | (⇒ page 22) | (⇒ page 61) | -            | -            | -   |
| 080-040-315 | -                            | (⇒ page 24) | (⇒ page 63) | -            | -            | -   |
| 065-050-200 | (⇒ page 15)                  | (⇒ page 23) | (⇒ page 62) | -            | -            | -   |
| 080-050-400 | -                            | (⇒ page 25) | (⇒ page 64) | -            | -            | -   |
| 080-065-200 | (⇒ page 16)                  | (⇒ page 26) | (⇒ page 65) | -            | -            | -   |
| 080-065-315 | (⇒ page 17)                  | (⇒ page 28) | (⇒ page 67) | -            | -            | -   |
| 080-065-313 | (⇒ page 18)                  | (⇒ page 27) | (⇒ page 66) | -            | -            | -   |
| 080-065-400 | -                            | (⇒ page 29) | (⇒ page 68) | -            | -            | -   |
| 100-080-250 | (⇒ page 19)                  | (⇒ page 30) | (⇒ page 69) | -            | -            | -   |
| 100-080-315 | -                            | (⇒ page 31) | (⇒ page 70) | -            | -            | -   |
| 100-080-400 | -                            | (⇒ page 32) | (⇒ page 71) | -            | -            | -   |
| 100-080-403 | -                            | (⇒ page 33) | (⇒ page 72) | -            | -            | -   |
| 125-080-500 | -                            | (⇒ page 34) | (⇒ page 73) | (⇒ page 119) | -            | -   |
| 125-100-250 | (⇒ page 20)                  | (⇒ page 35) | (⇒ page 74) | -            | -            | -   |
| 125-100-253 | (⇒ page 21)                  | (⇒ page 36) | (⇒ page 75) | -            | -            | -   |
| 125-100-315 | -                            | (⇒ page 37) | (⇒ page 76) | -            | -            | -   |
| 125-100-400 | -                            | (⇒ page 38) | (⇒ page 77) | -            | -            | -   |
| 125-100-403 | -                            | (⇒ page 39) | (⇒ page 78) | -            | -            | -   |
| 150-125-500 | -                            | (⇒ page 40) | (⇒ page 79) | (⇒ page 120) | -            | -   |
| 150-125-503 | -                            | (⇒ page 41) | (⇒ page 80) | (⇒ page 121) | -            | -   |
| 150-150-315 | -                            | (⇒ page 42) | (⇒ page 81) | (⇒ page 122) | -            | -   |
| 150-150-400 | -                            | (⇒ page 43) | (⇒ page 82) | (⇒ page 123) | -            | -   |
| 150-150-403 | -                            | (⇒ page 44) | (⇒ page 83) | (⇒ page 124) | -            | -   |
| 200-200-320 | -                            | (⇒ page 45) | (⇒ page 84) | (⇒ page 125) | -            | -   |
| 200-200-400 | -                            | (⇒ page 46) | (⇒ page 85) | (⇒ page 126) | -            | -   |
| 200-200-403 | -                            | (⇒ page 47) | (⇒ page 86) | (⇒ page 127) | -            | -   |
| 200-200-500 | -                            | (⇒ page 48) | -           | -            | -            | -   |
| 200-200-501 | -                            | -           | (⇒ page 87) | (⇒ page 128) | -            | -   |
| 200-200-503 | -                            | (⇒ page 49) | (⇒ page 88) | (⇒ page 129) | -            | -   |
| 250-250-315 | -                            | (⇒ page 50) | (⇒ page 89) | (⇒ page 130) | -            | -   |
| 250-250-400 | -                            | (⇒ page 51) | (⇒ page 90) | (⇒ page 131) | -            | -   |
| 250-250-403 | -                            | (⇒ page 52) | (⇒ page 91) | (⇒ page 132) | -            | -   |
| 250-250-500 | -                            | (⇒ page 53) | (⇒ page 92) | (⇒ page 133) | -            | -   |
| 250-250-503 | -                            | (⇒ page 54) | (⇒ page 93) | (⇒ page 134) | -            | -   |
| 250-250-505 | -                            | (⇒ page 55) | (⇒ page 94) | (⇒ page 135) | -            | -   |
| 250-250-630 | -                            | -           | (⇒ page 95) | (⇒ page 136) | (⇒ page 168) | -   |
| 250-250-634 | -                            | -           | (⇒ page 96) | (⇒ page 137) | (⇒ page 169) | -   |
| 300-300-400 | -                            | (⇒ page 56) | (⇒ page 97) | (⇒ page 138) | -            | -   |
| 300-300-401 | -                            | (⇒ page 57) | (⇒ page 98) | (⇒ page 139) | -            | -   |
| 300-300-500 | -                            | (⇒ page 58) | (⇒ page 99) | (⇒ page 140) | -            | -   |

| Taille       | Vitesse de rotation [t/min ] |             |              |              |              |              |
|--------------|------------------------------|-------------|--------------|--------------|--------------|--------------|
|              | 2900                         | 1450        | 960          | 725          | 580          | 480          |
| 300-300-503  | -                            | (⇒ page 59) | (⇒ page 100) | (⇒ page 141) | -            | -            |
| 350-350-400  | -                            | (⇒ page 60) | (⇒ page 101) | (⇒ page 142) | -            | -            |
| 350-350-500  | -                            | -           | (⇒ page 102) | (⇒ page 143) | -            | -            |
| 350-350-503  | -                            | -           | (⇒ page 103) | (⇒ page 144) | -            | -            |
| 350-350-504  | -                            | -           | (⇒ page 104) | (⇒ page 145) | -            | -            |
| 350-350-630  | -                            | -           | (⇒ page 105) | (⇒ page 146) | (⇒ page 170) | -            |
| 350-350-633  | -                            | -           | (⇒ page 106) | (⇒ page 147) | (⇒ page 171) | -            |
| 400-400-500  | -                            | -           | (⇒ page 107) | (⇒ page 148) | -            | -            |
| 400-400-503  | -                            | -           | (⇒ page 108) | (⇒ page 149) | -            | -            |
| 400-400-533  | -                            | -           | (⇒ page 109) | (⇒ page 150) | (⇒ page 172) | -            |
| 400-400-583  | -                            | -           | (⇒ page 110) | (⇒ page 151) | (⇒ page 173) | -            |
| 500-400-710  | -                            | -           | (⇒ page 111) | (⇒ page 152) | (⇒ page 174) | (⇒ page 200) |
| 500-400-713  | -                            | -           | (⇒ page 112) | (⇒ page 153) | (⇒ page 175) | (⇒ page 201) |
| 500-500-544  | -                            | -           | (⇒ page 113) | (⇒ page 154) | (⇒ page 176) | -            |
| 500-500-630  | -                            | -           | (⇒ page 114) | (⇒ page 155) | (⇒ page 177) | -            |
| 500-500-633  | -                            | -           | (⇒ page 115) | (⇒ page 156) | (⇒ page 178) | -            |
| 500-500-634  | -                            | -           | (⇒ page 116) | (⇒ page 157) | (⇒ page 179) | -            |
| 500-500-635  | -                            | -           | (⇒ page 117) | (⇒ page 158) | (⇒ page 180) | -            |
| 500-500-637  | -                            | -           | (⇒ page 118) | (⇒ page 159) | (⇒ page 181) | -            |
| 600-600-663  | -                            | -           | -            | (⇒ page 160) | (⇒ page 182) | -            |
| 600-600-669  | -                            | -           | -            | (⇒ page 161) | (⇒ page 183) | -            |
| 600-600-710  | -                            | -           | -            | (⇒ page 162) | (⇒ page 184) | (⇒ page 202) |
| 600-600-753  | -                            | -           | -            | (⇒ page 163) | (⇒ page 185) | (⇒ page 203) |
| 600-600-803  | -                            | -           | -            | (⇒ page 164) | (⇒ page 186) | (⇒ page 204) |
| 600-600-813  | -                            | -           | -            | (⇒ page 165) | (⇒ page 187) | (⇒ page 205) |
| 600-600-824  | -                            | -           | -            | (⇒ page 166) | (⇒ page 188) | (⇒ page 206) |
| 600-600-825  | -                            | -           | -            | (⇒ page 167) | (⇒ page 189) | (⇒ page 207) |
| 600-600-873  | -                            | -           | -            | -            | (⇒ page 190) | (⇒ page 208) |
| 600-600-923  | -                            | -           | -            | -            | (⇒ page 191) | (⇒ page 209) |
| 700-700-923  | -                            | -           | -            | -            | (⇒ page 192) | (⇒ page 210) |
| 700-700-929  | -                            | -           | -            | -            | (⇒ page 193) | (⇒ page 211) |
| 800-700-953  | -                            | -           | -            | -            | (⇒ page 194) | (⇒ page 212) |
| 800-700-959  | -                            | -           | -            | -            | (⇒ page 195) | (⇒ page 213) |
| 800-800-934  | -                            | -           | -            | -            | (⇒ page 196) | (⇒ page 214) |
| 800-800-935  | -                            | -           | -            | -            | (⇒ page 197) | (⇒ page 215) |
| 800-800-939  | -                            | -           | -            | -            | (⇒ page 198) | (⇒ page 216) |
| 800-900-883  | -                            | -           | -            | -            | (⇒ page 199) | (⇒ page 217) |
| 900-900-1133 | -                            | -           | -            | -            | -            | (⇒ page 218) |
| 900-900-1134 | -                            | -           | -            | -            | -            | (⇒ page 219) |
| 900-900-1138 | -                            | -           | -            | -            | -            | (⇒ page 220) |
| 900-900-1139 | -                            | -           | -            | -            | -            | (⇒ page 221) |

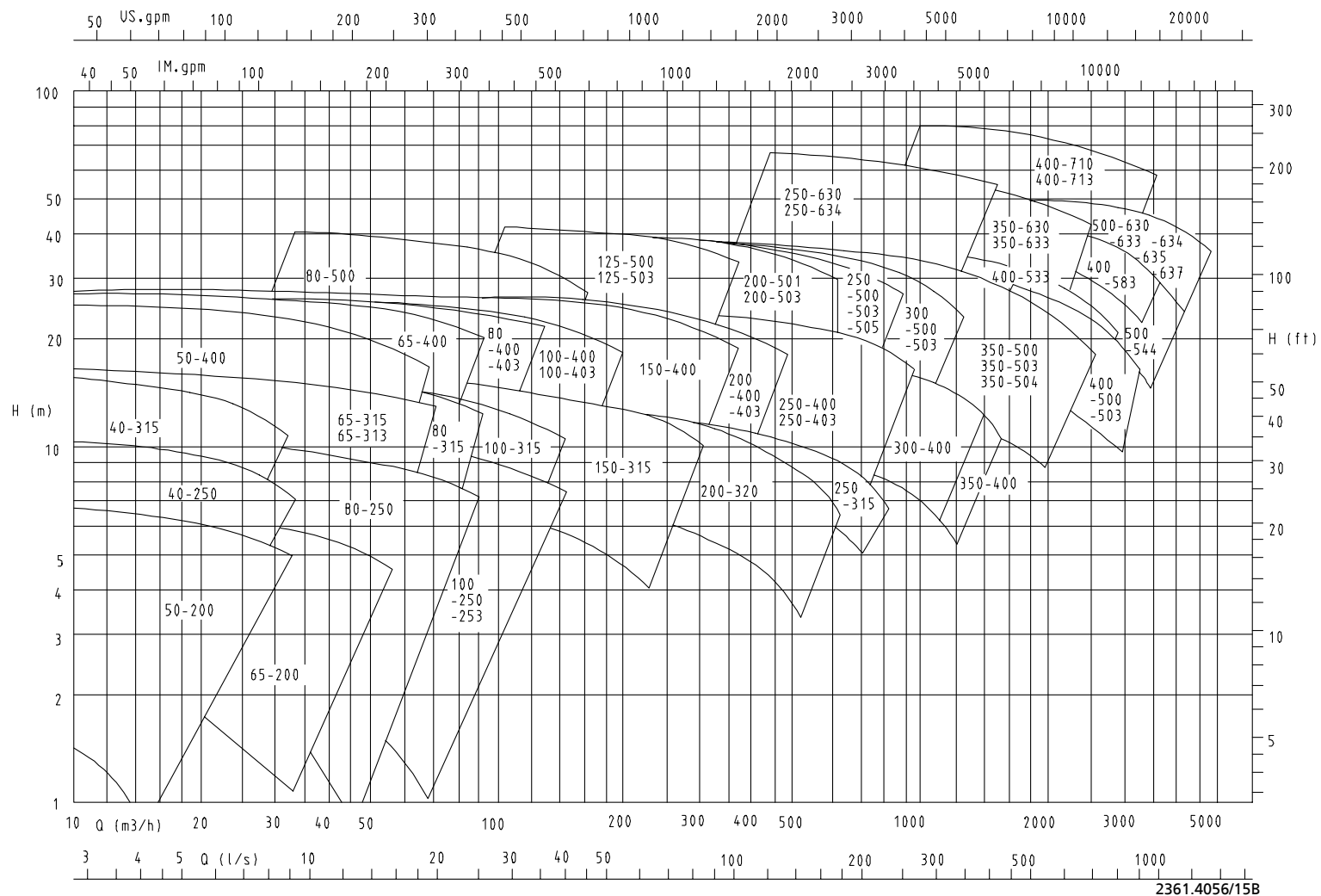
Grilles de sélection  
KWP K, n = 2900 t/min



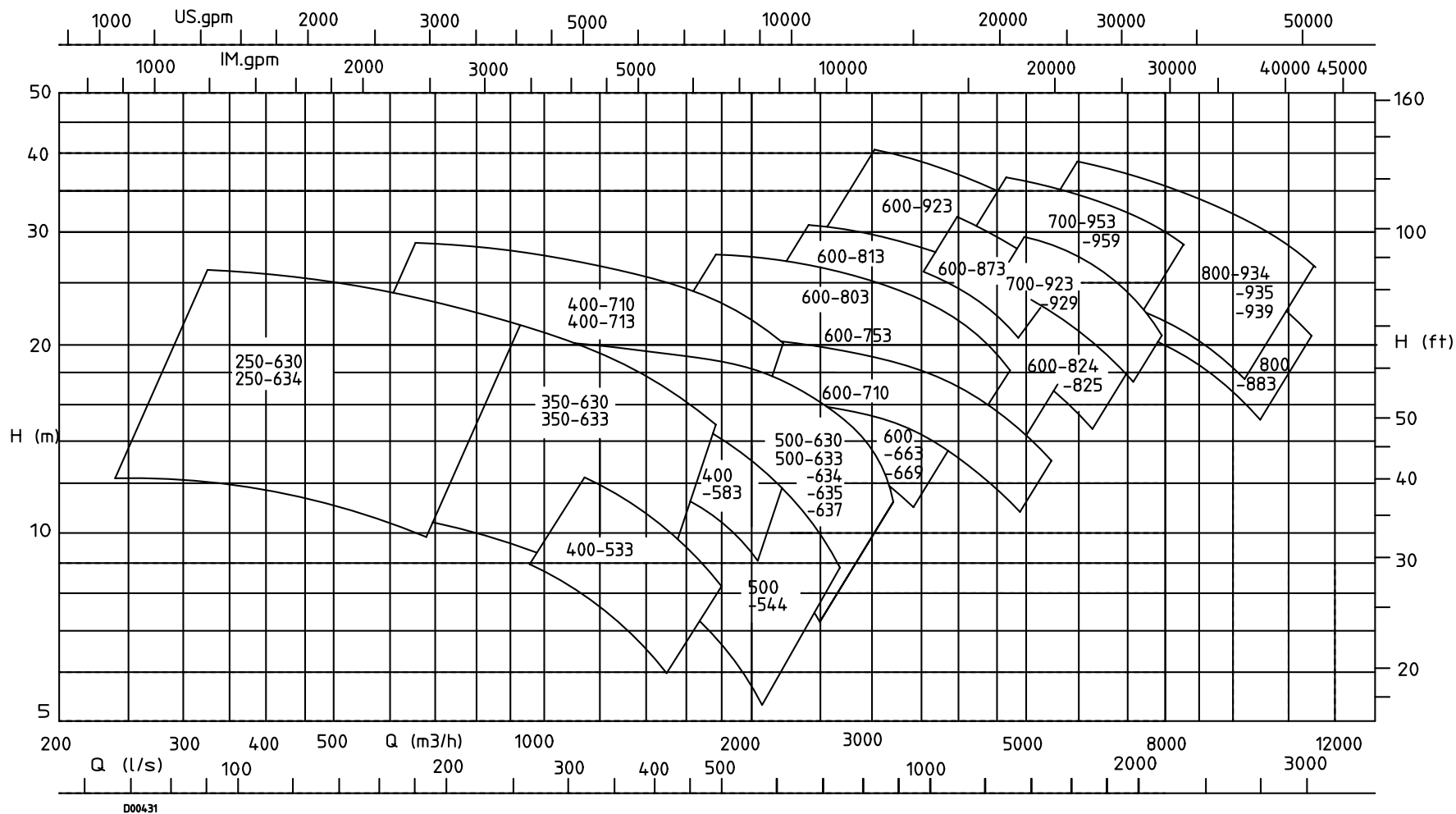
KWP K, n = 1450 t/min



**KWP K, n = 960 t/min**

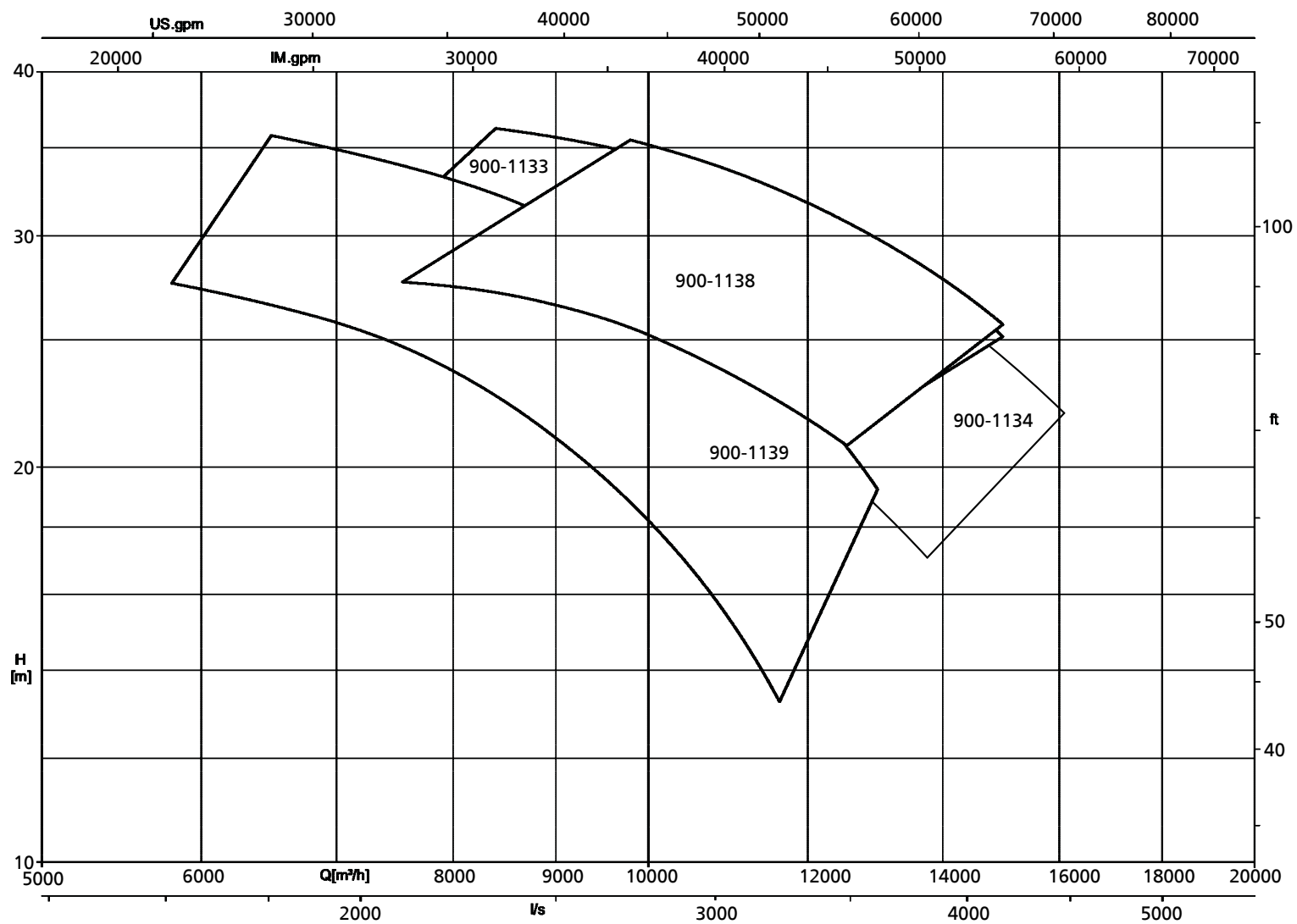


KWP K, n = 580 t/min



D00431

KWP K, n = 480 t/min

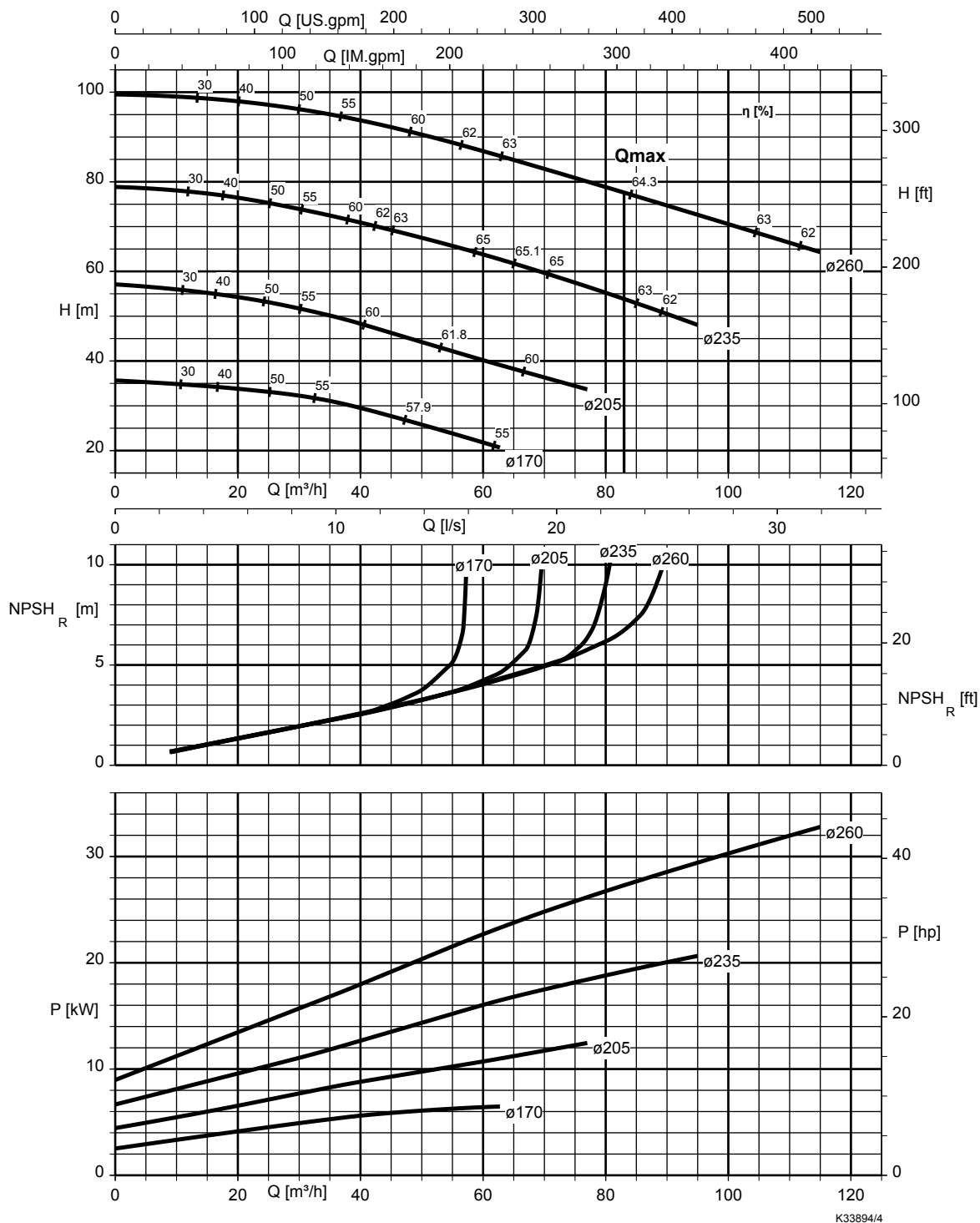


## Courbes caractéristiques

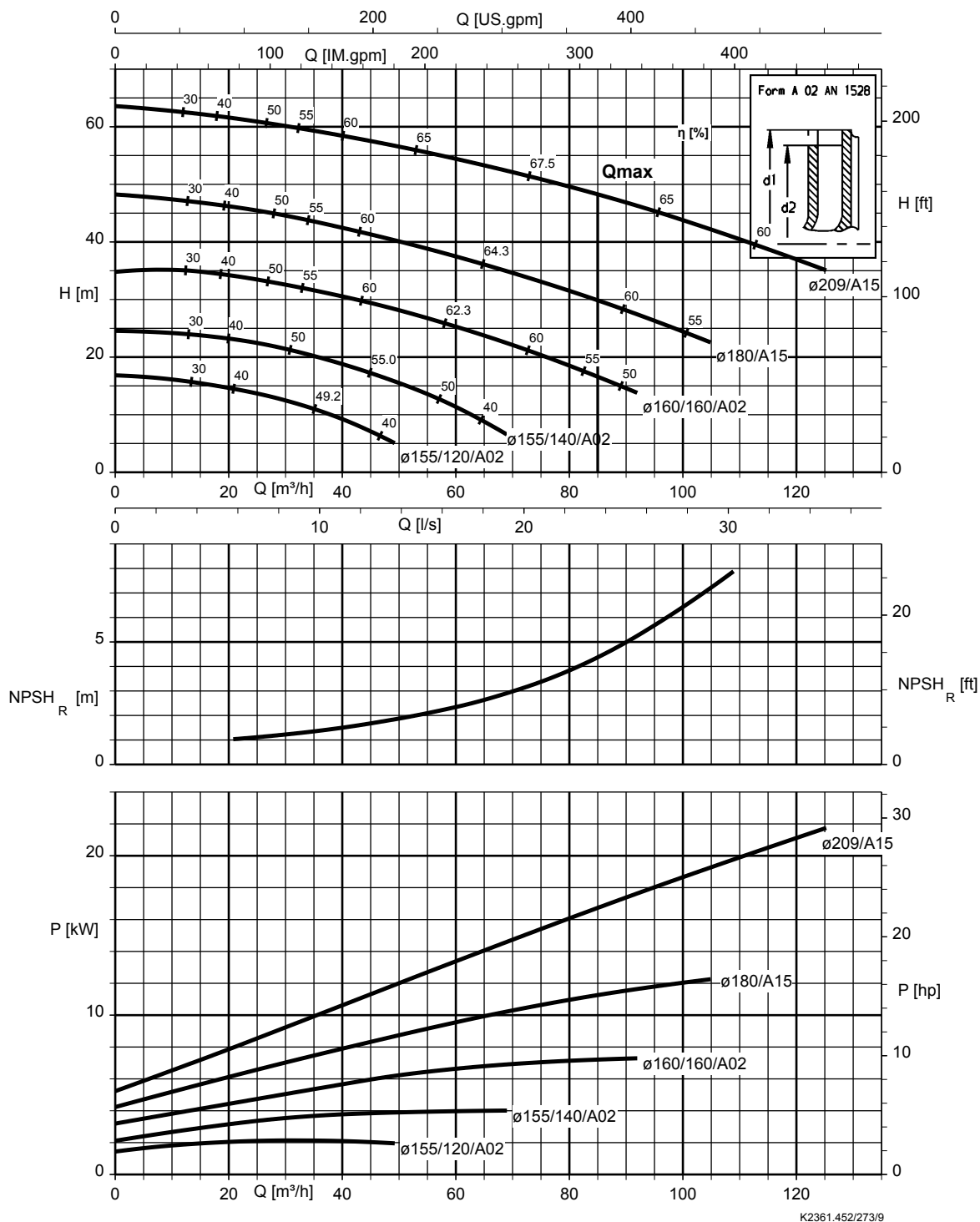
### Roue K

$n = 2900 \text{ t/min}$

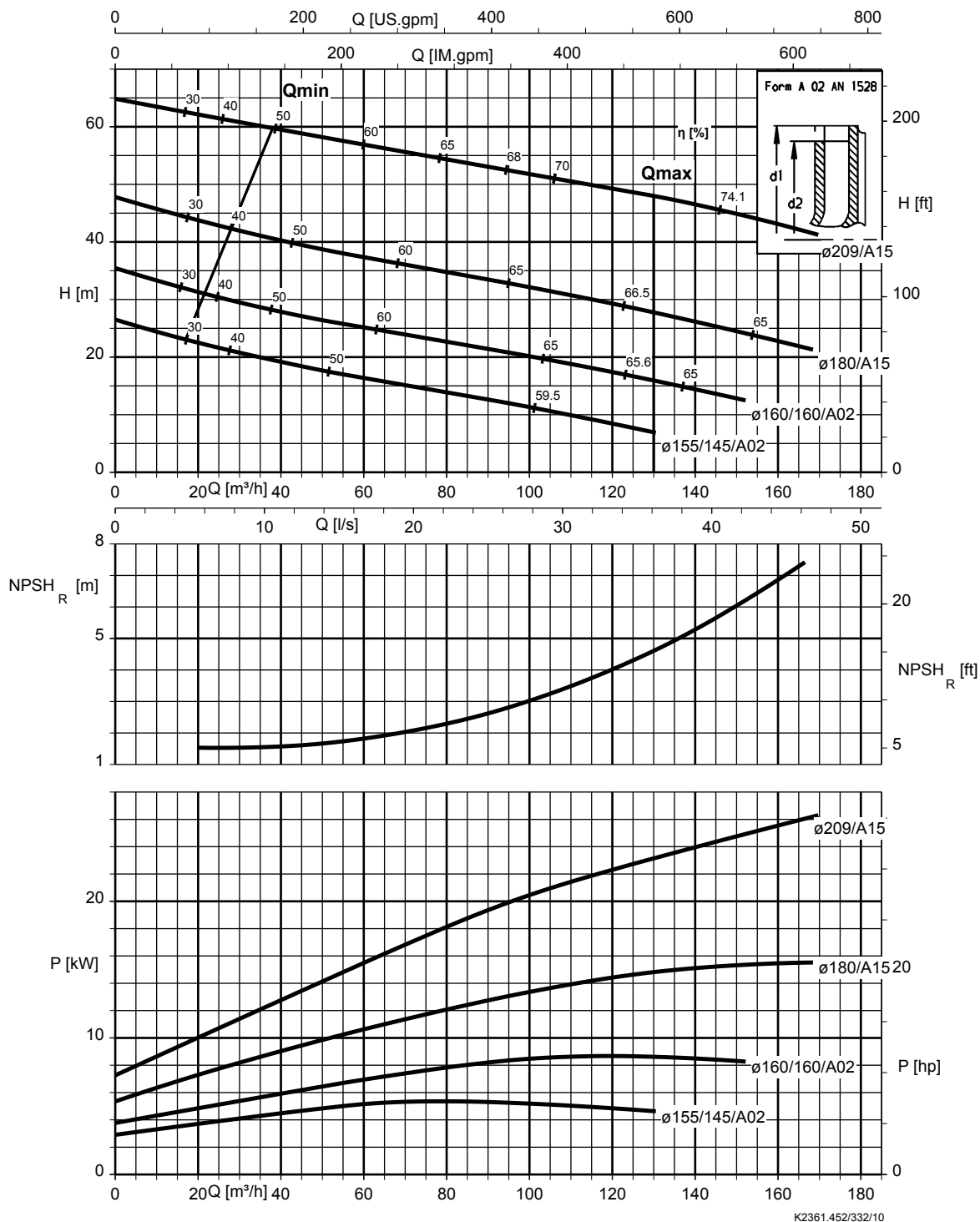
KWP K 065-040-250,  $n = 2900 \text{ t/min}$



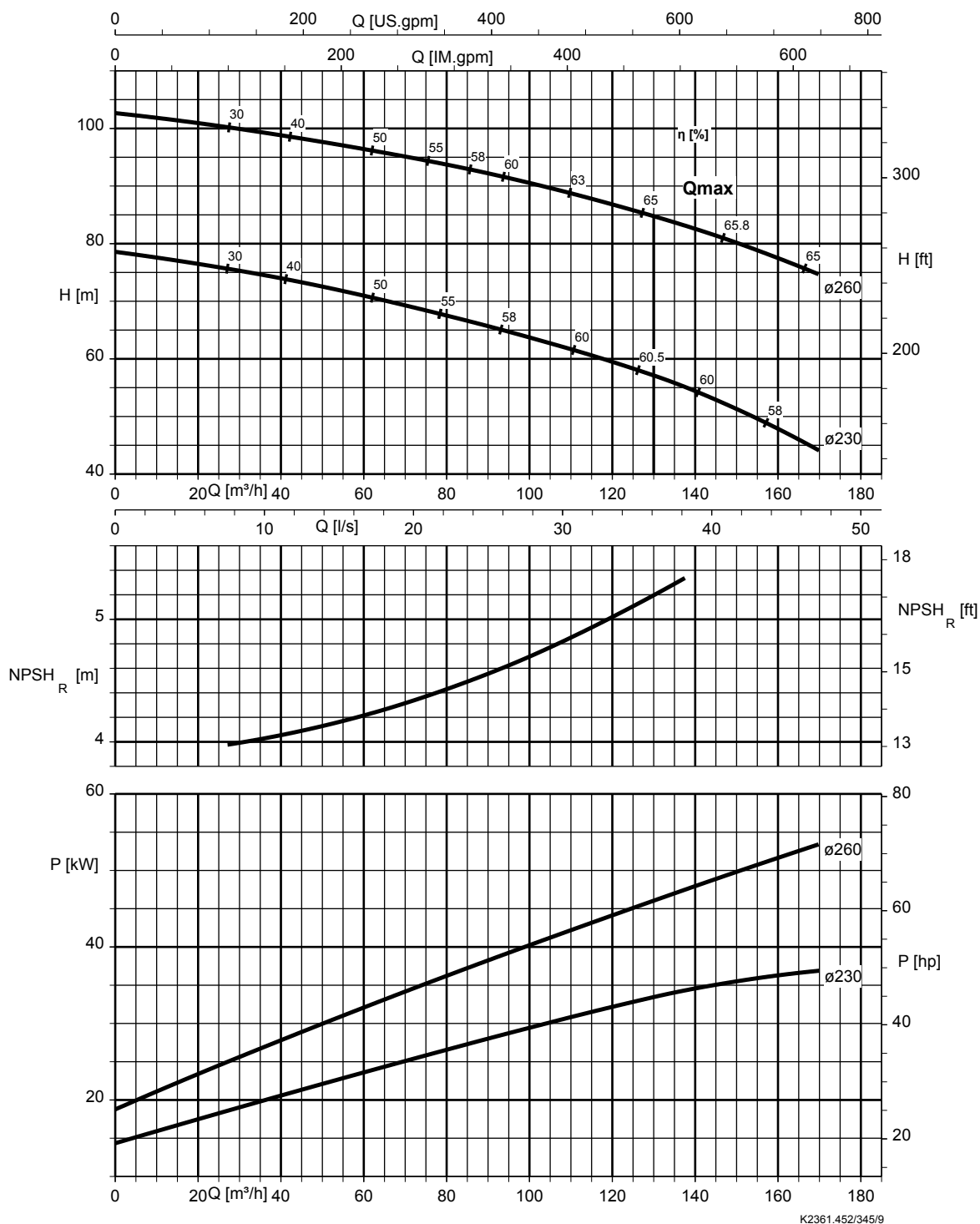
KWP K 065-050-200,  $n = 2900 \text{ t/min}$



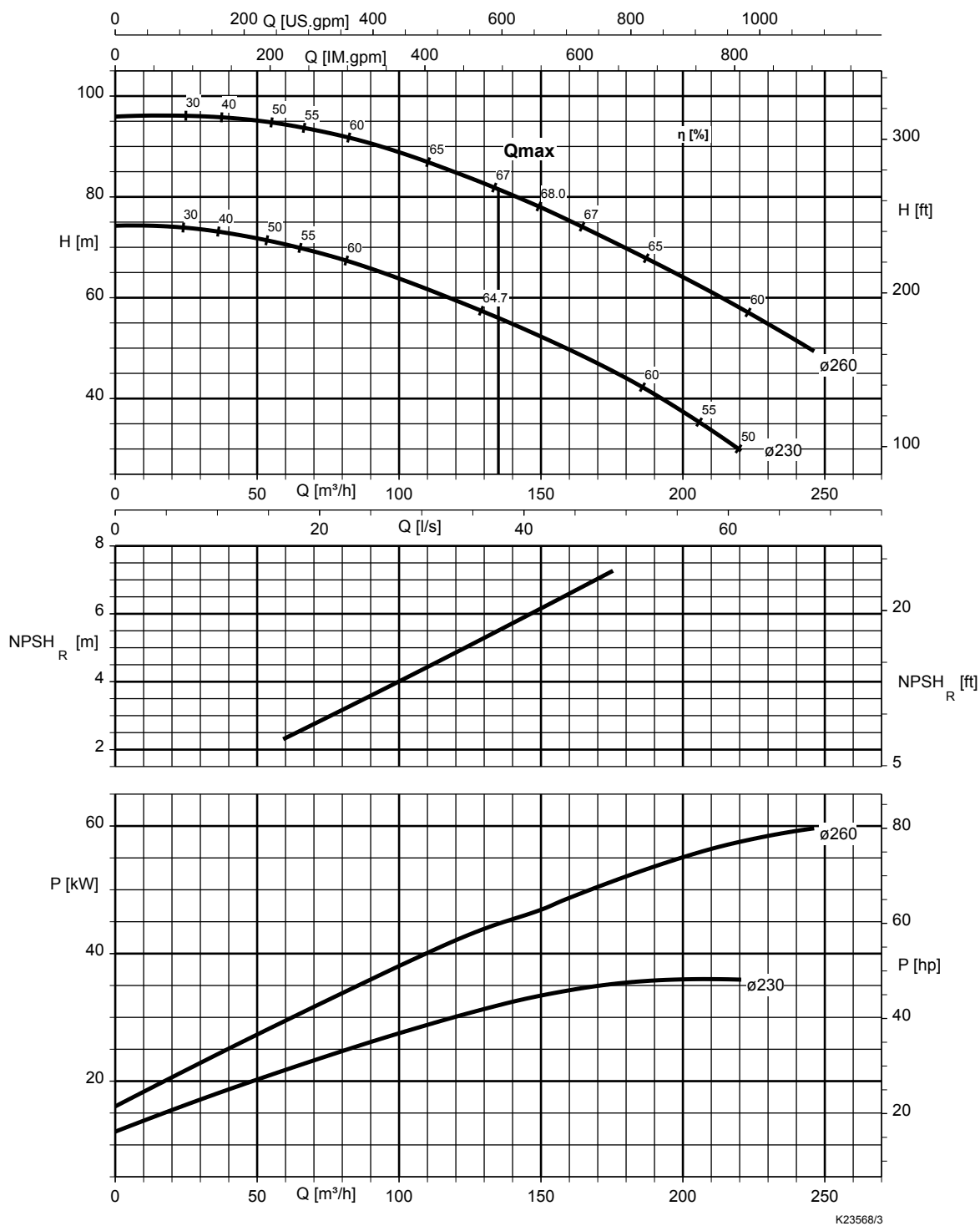
KWP K 080-065-200,  $n = 2900 \text{ t/min}$



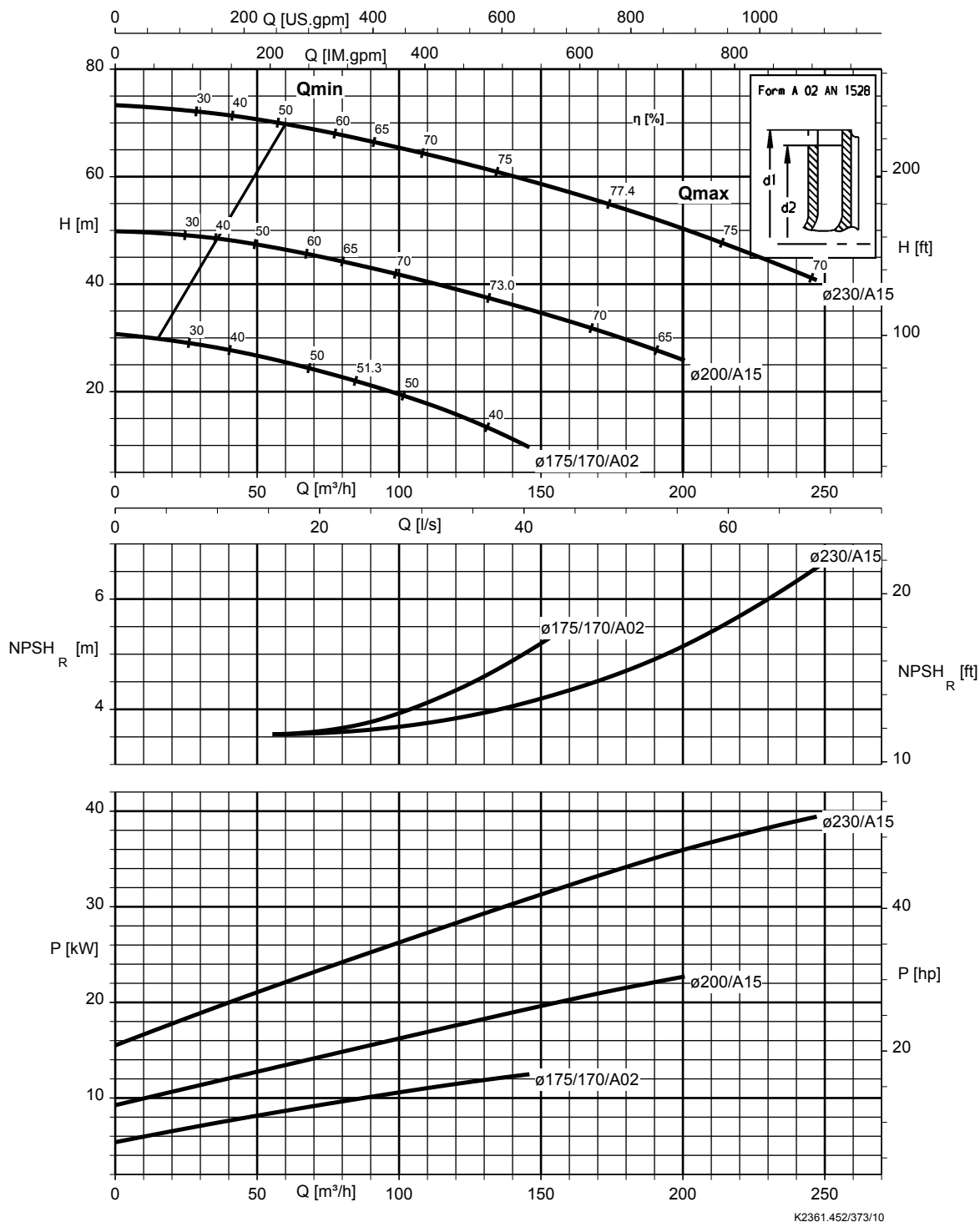
KWP K 080-065-315,  $n = 2900 \text{ t/min}$



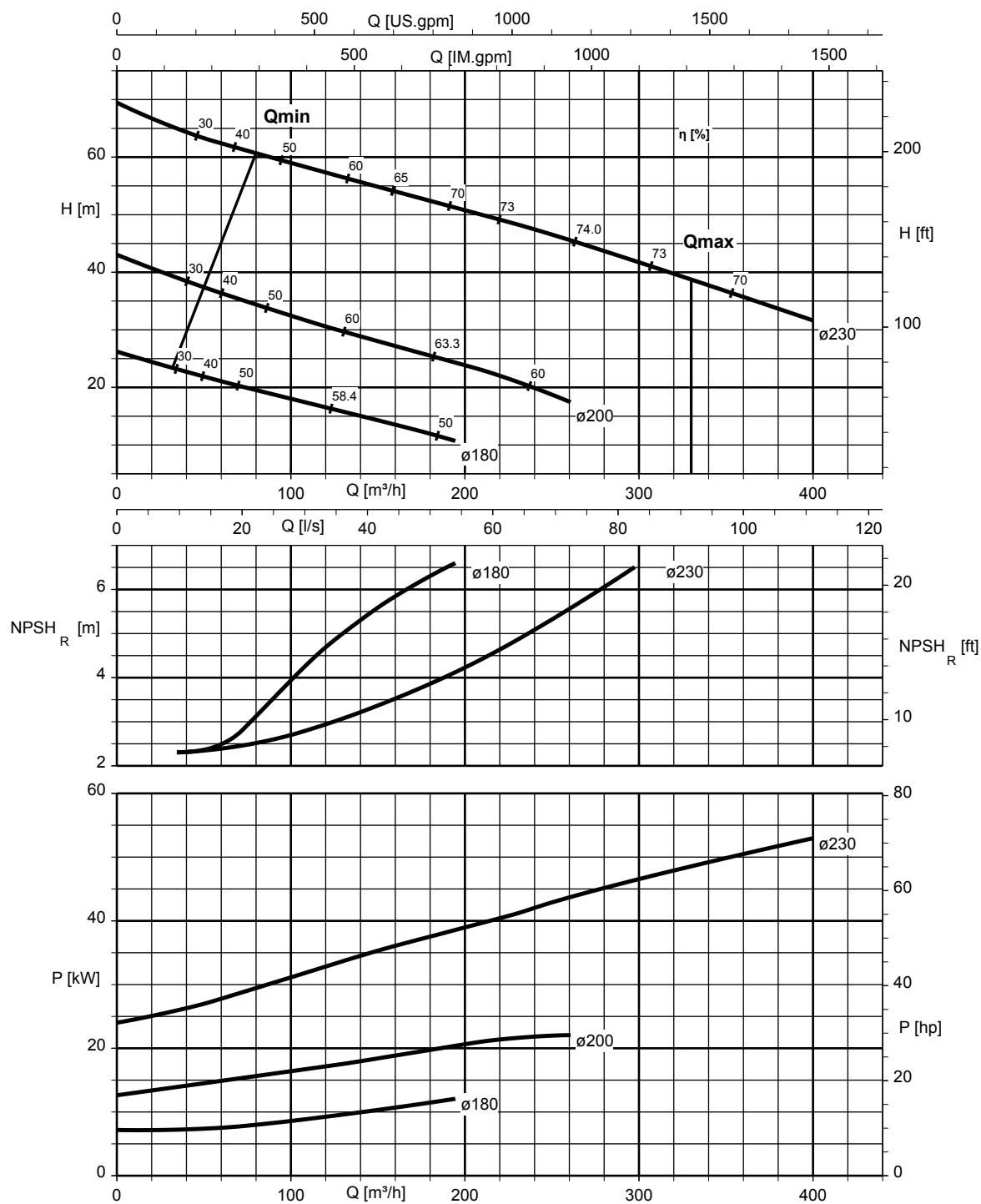
KWP K 080-065-313,  $n = 2900 \text{ t/min}$



KWP K 100-080-250, n = 2900 t/min

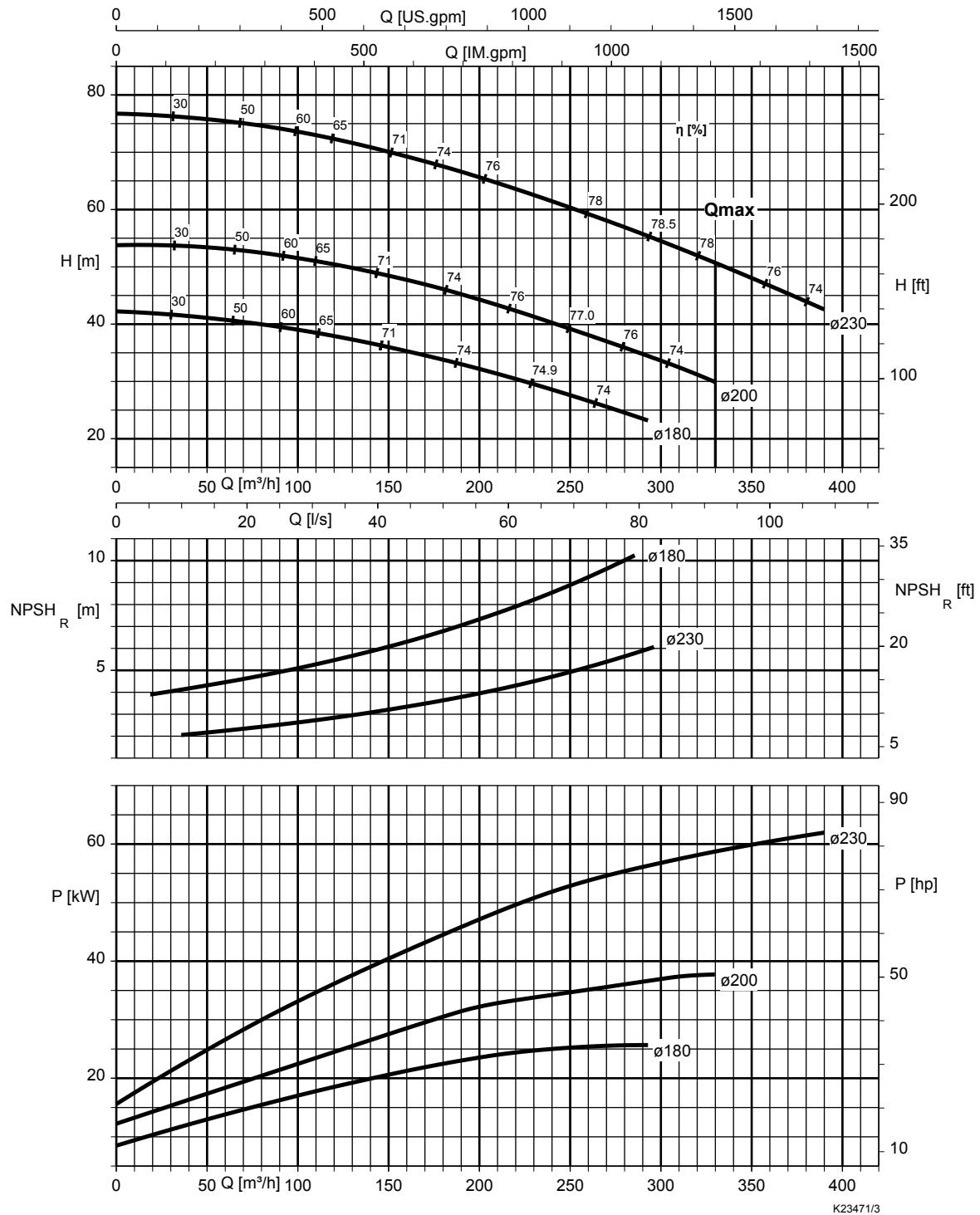


KWP K 125-100-250,  $n = 2900 \text{ t/min}$



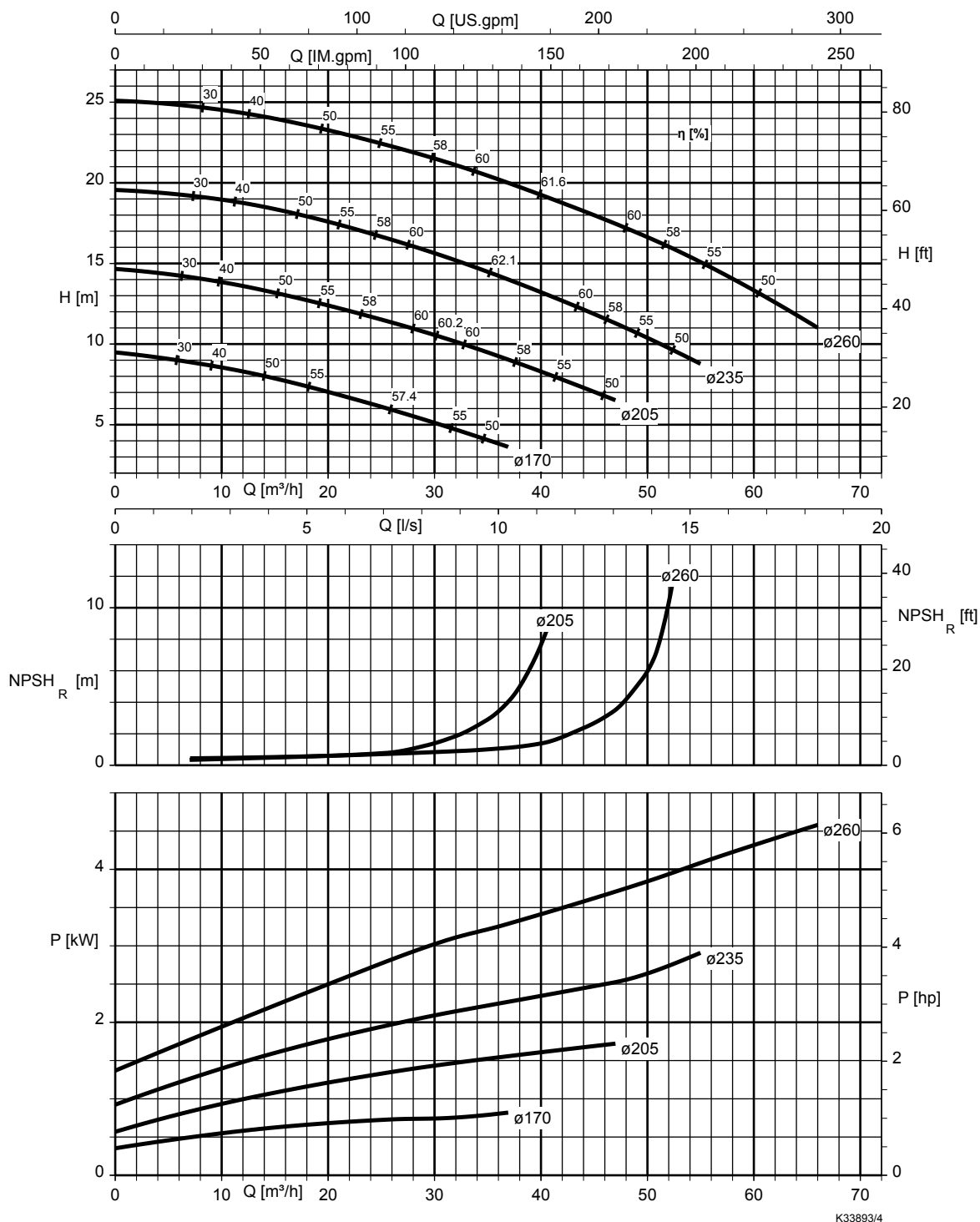
K2361.452/403/12

KWP K 125-100-253, n = 2900 t/min

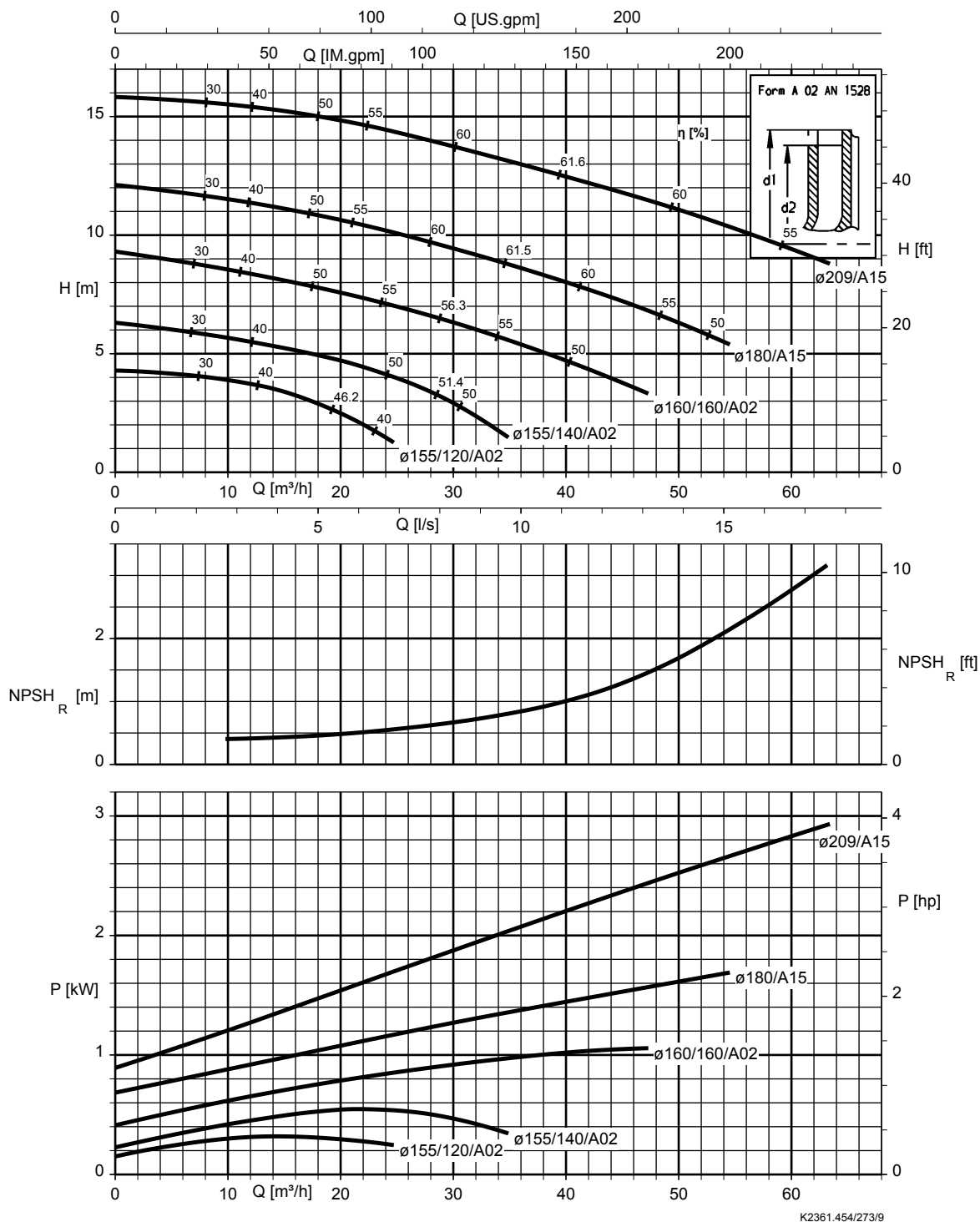


$n = 1450 \text{ t/min}$

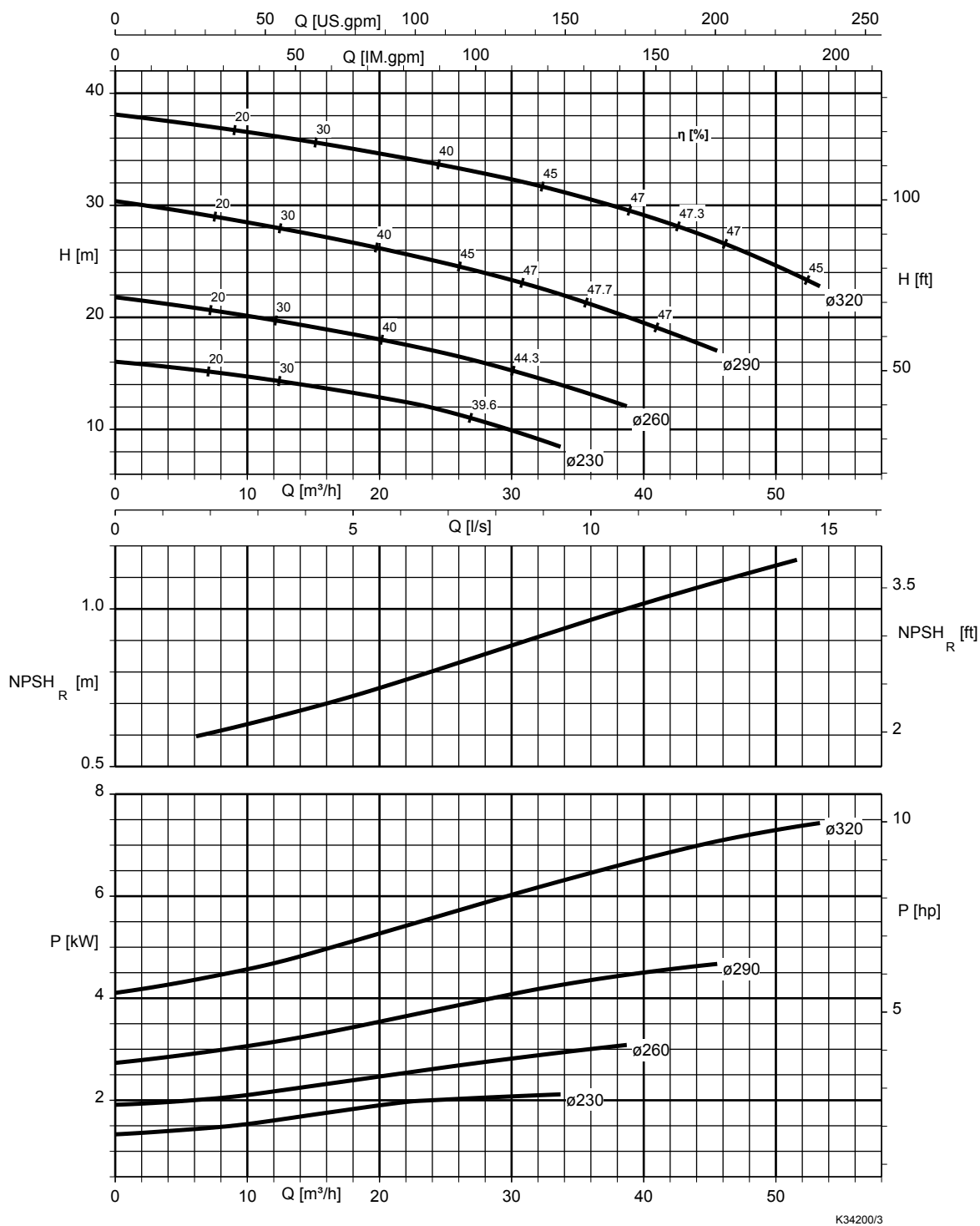
KWP K 065-040-250,  $n = 1450 \text{ t/min}$



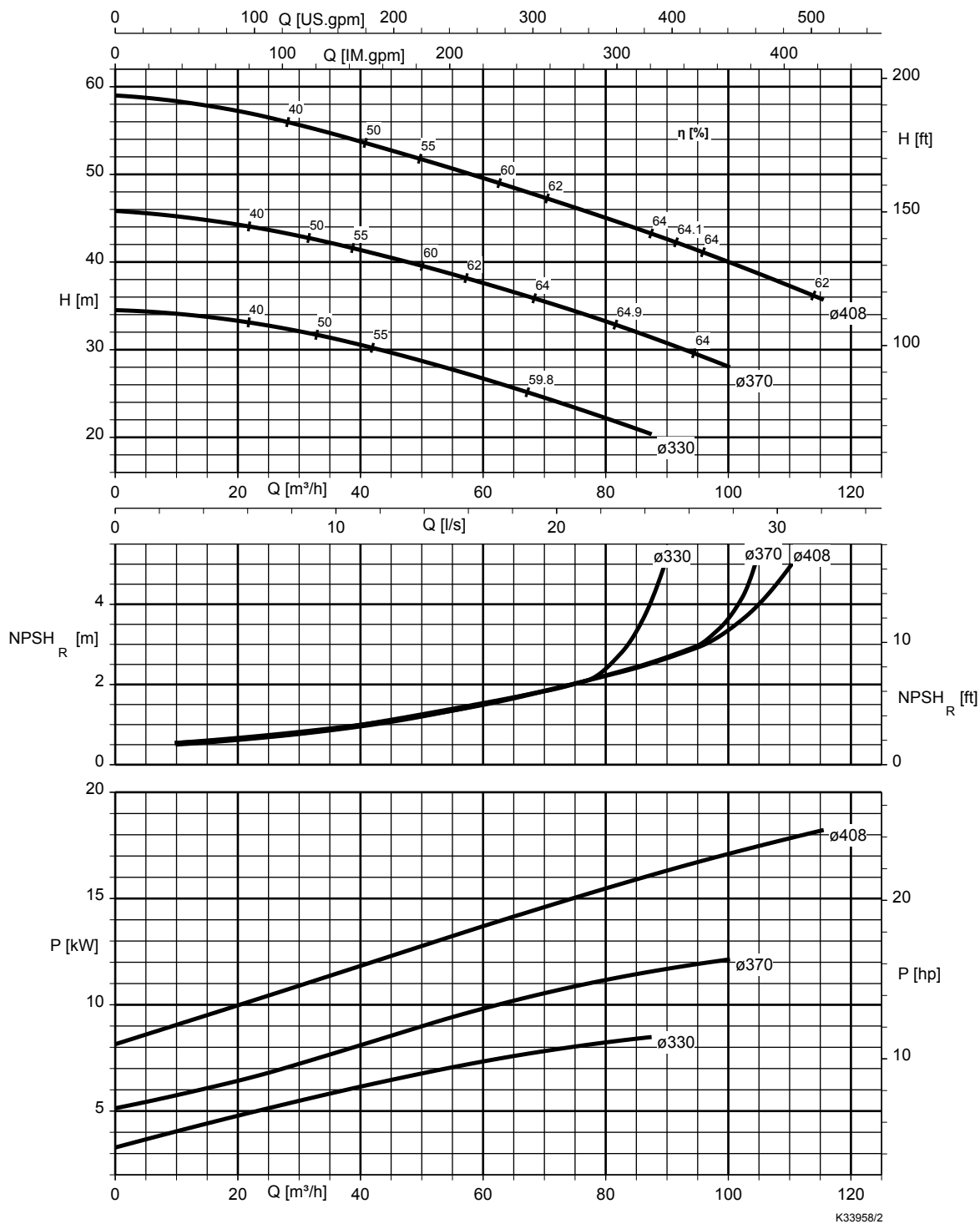
KWP K 065-050-200, n = 1450 t/min



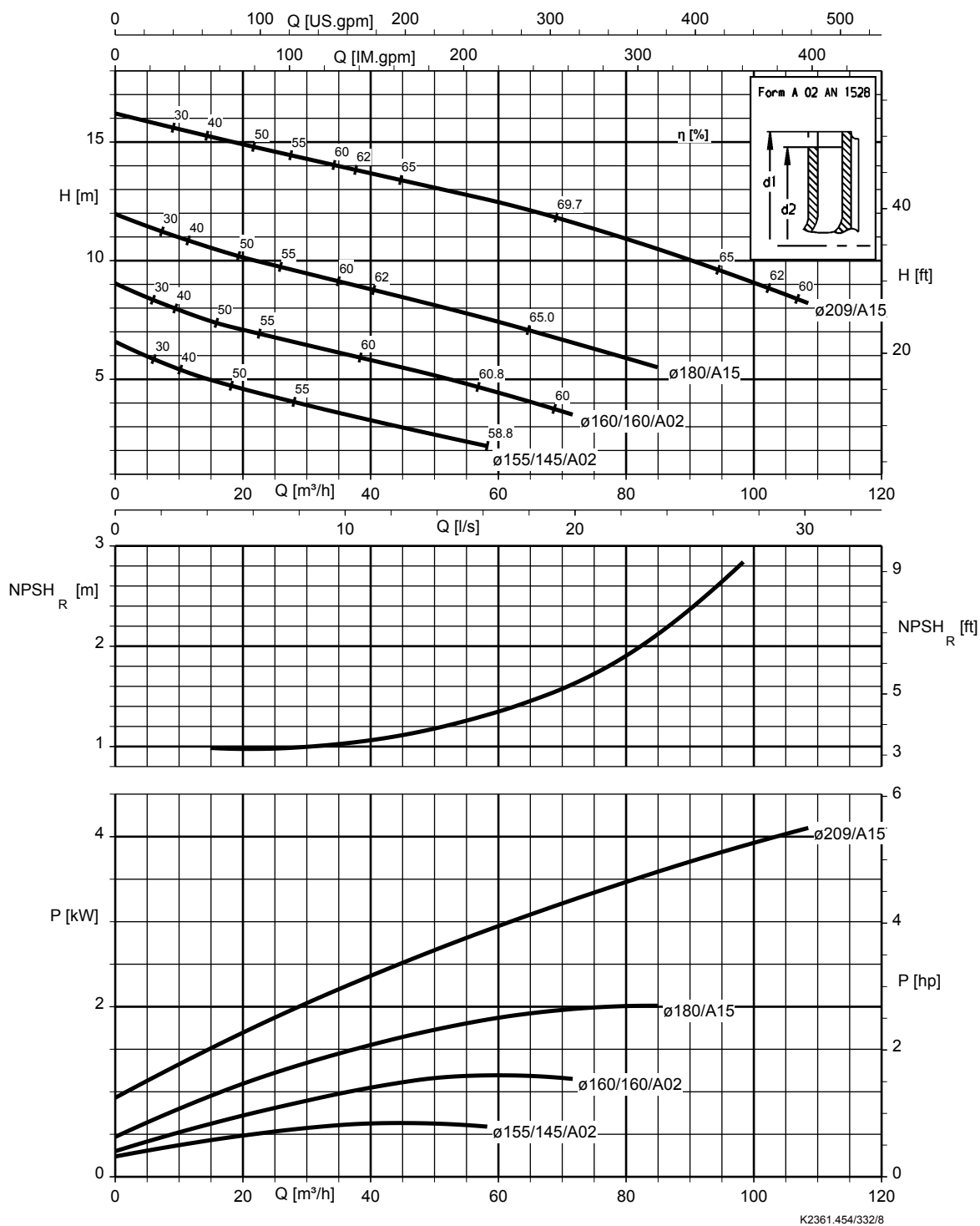
KWP K 080-040-315,  $n = 1450 \text{ t/min}$



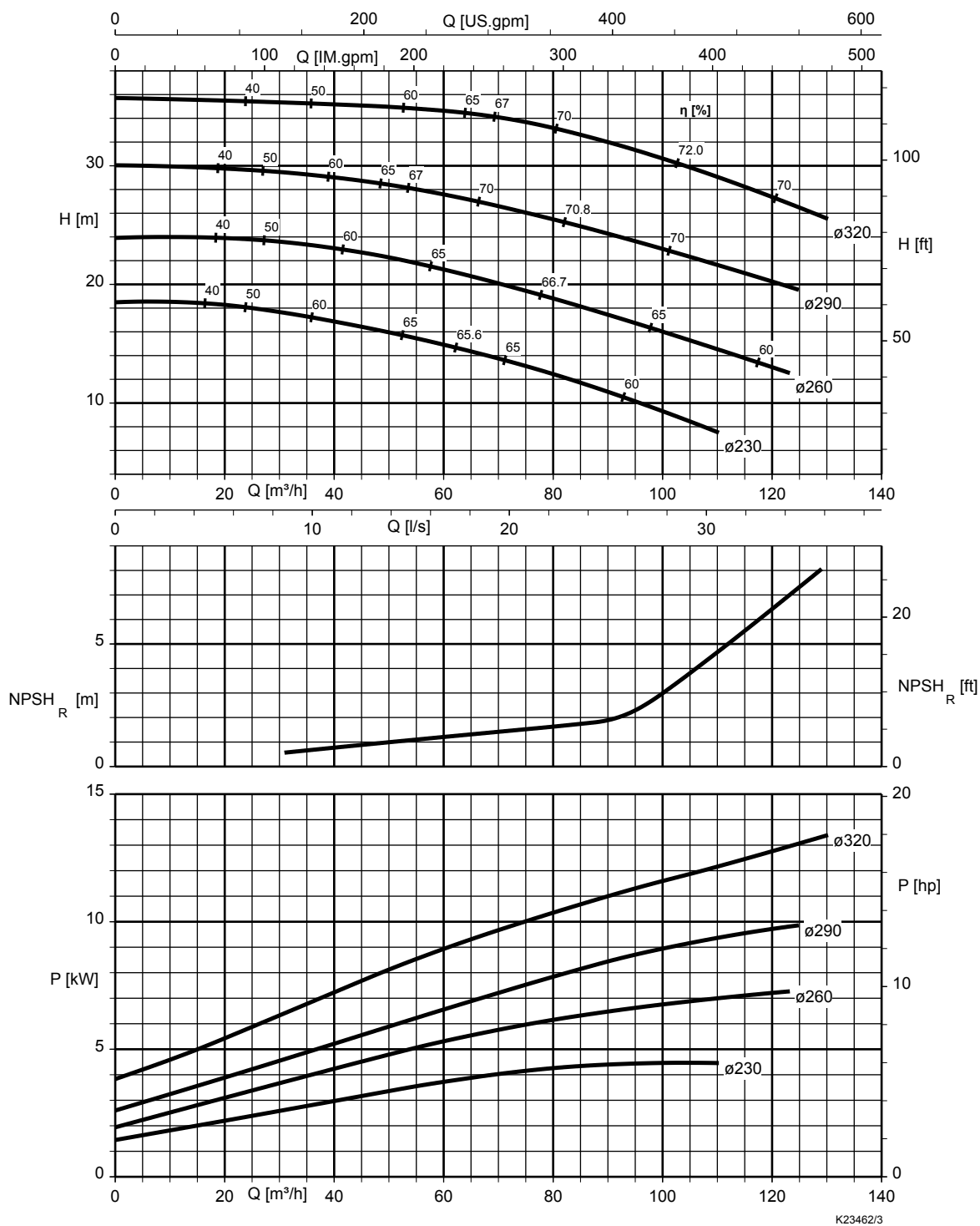
KWP K 080-050-400,  $n = 1450 \text{ t/min}$



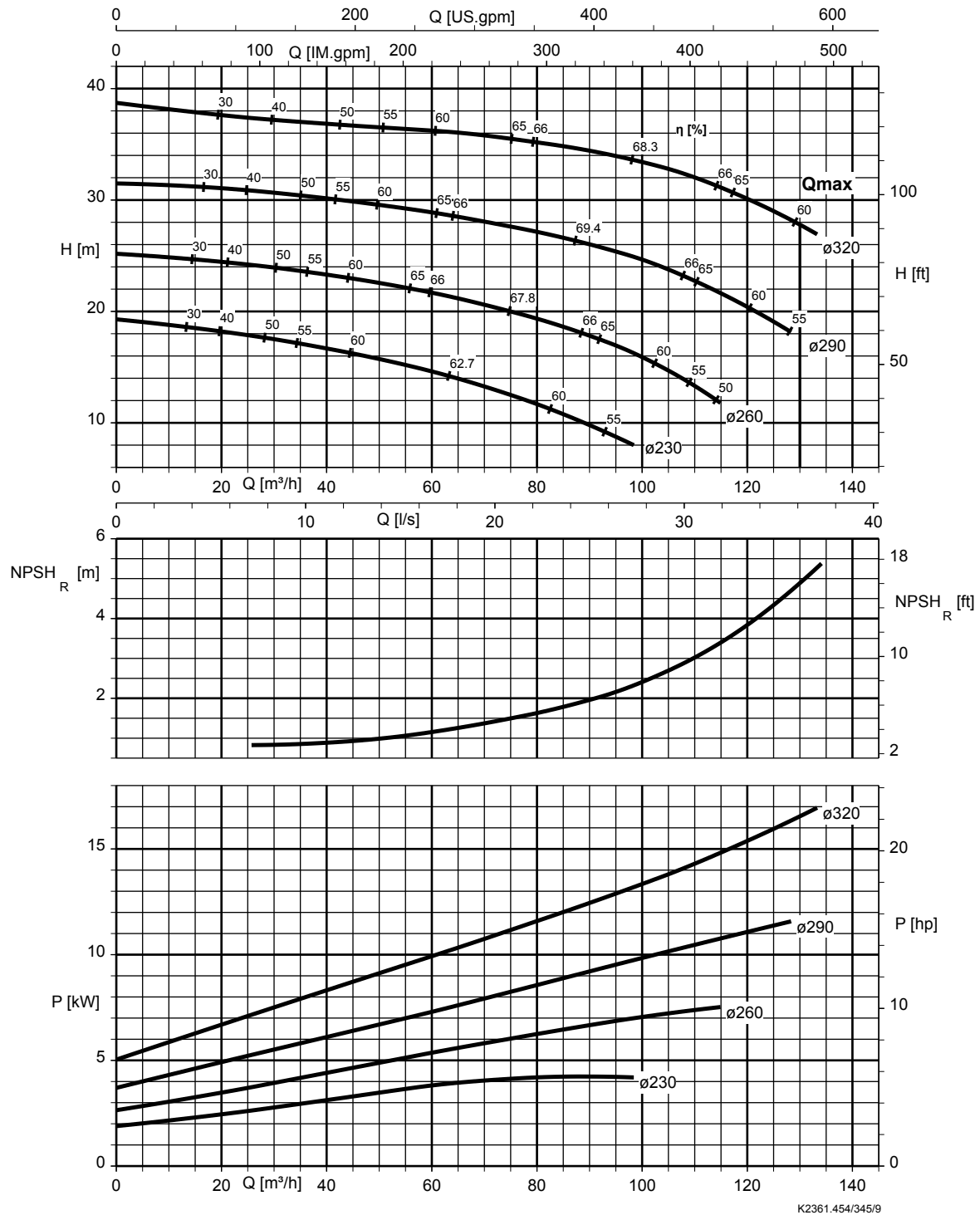
KWP K 080-065-200,  $n = 1450 \text{ t/min}$



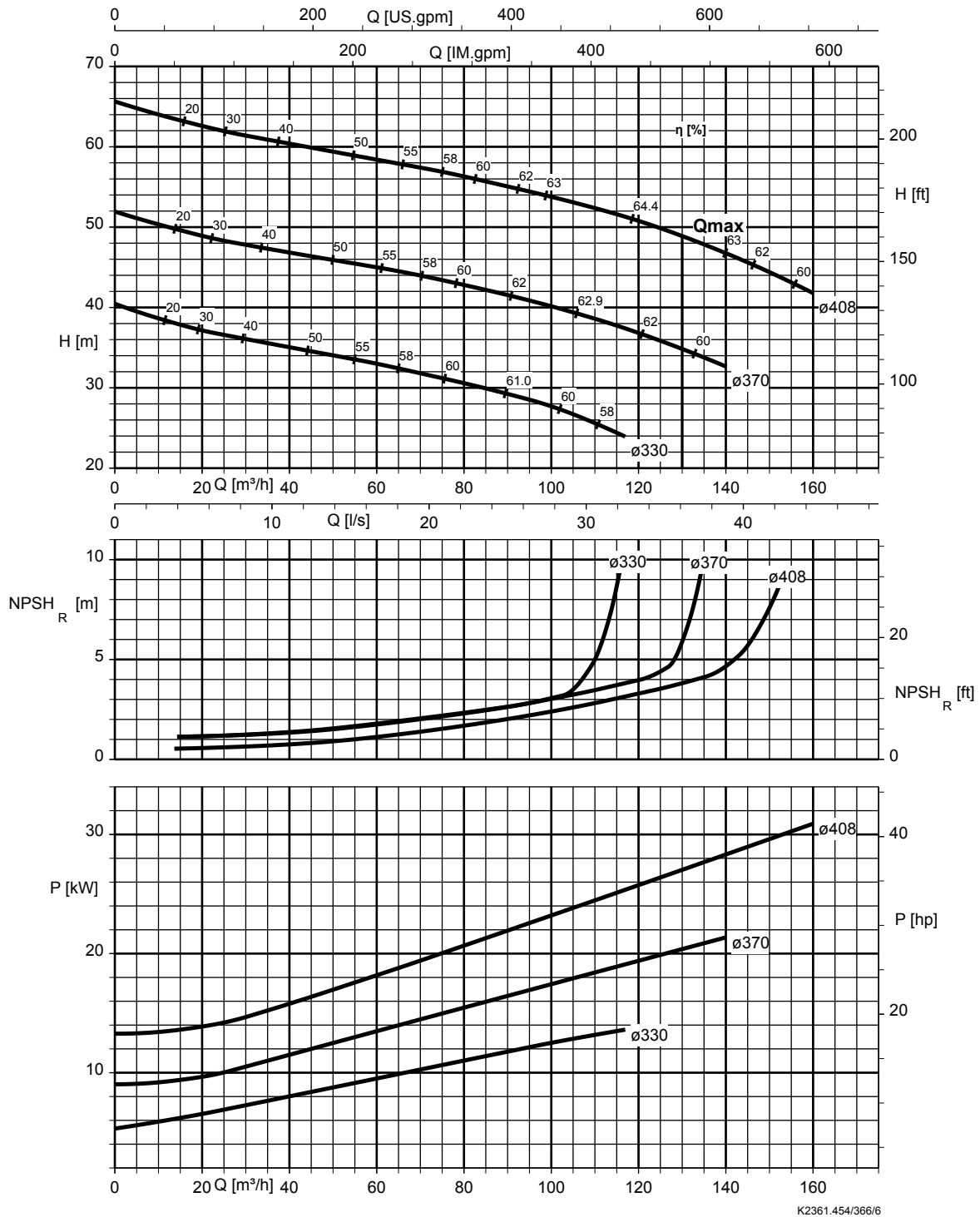
KWP K 080-065-313,  $n = 1450 \text{ t/min}$



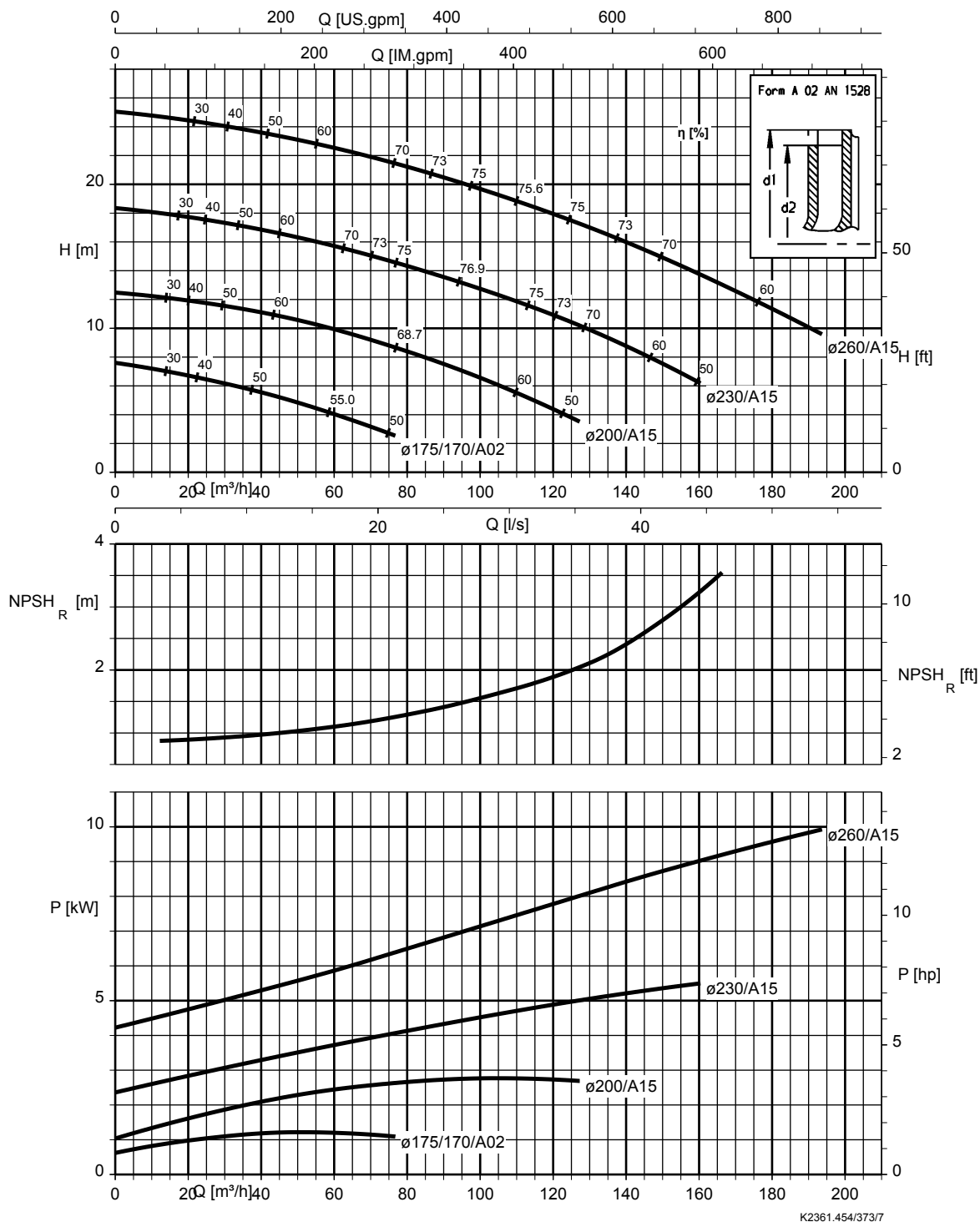
KWP K 080-065-315,  $n = 1450 \text{ t/min}$



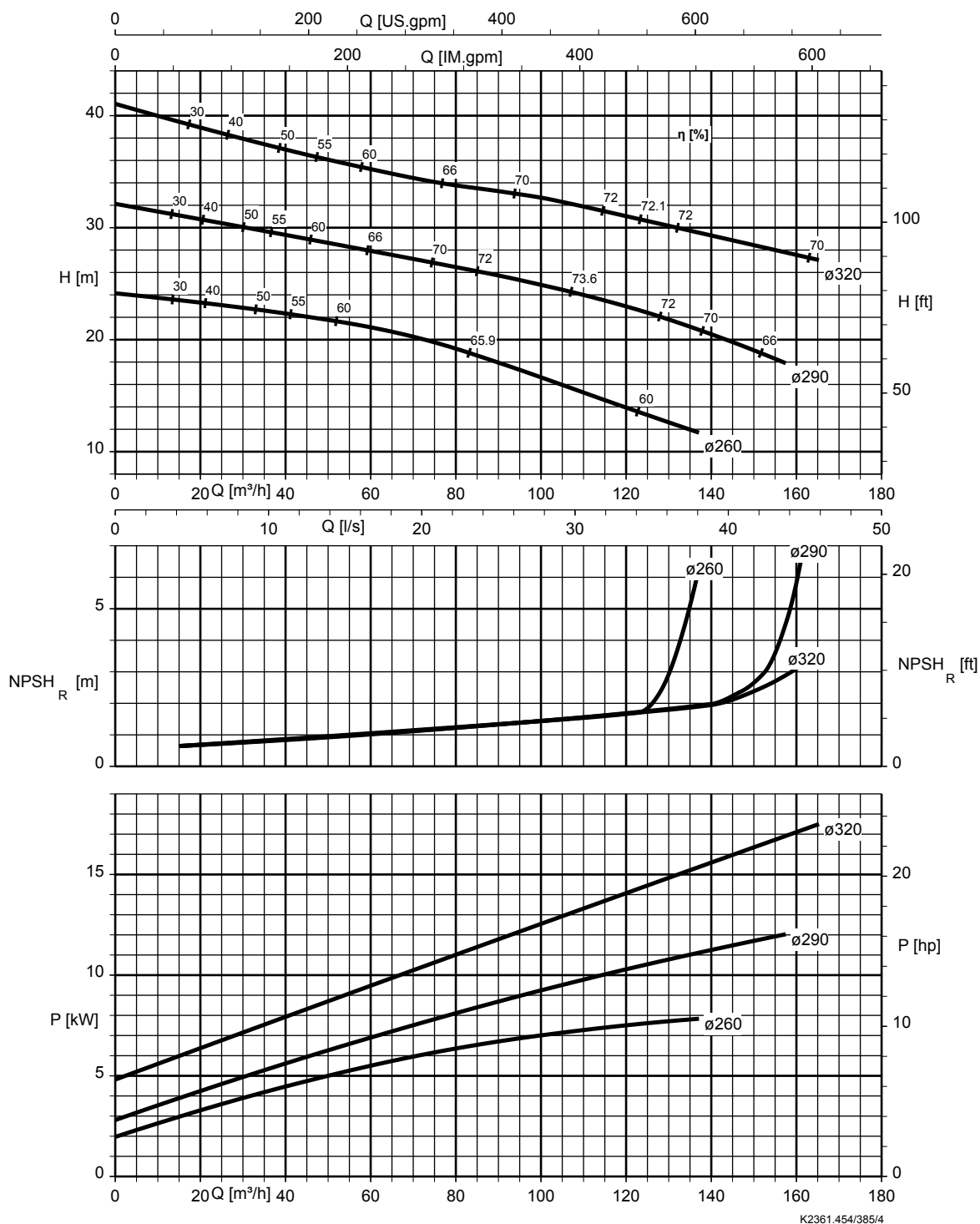
KWP K 080-065-400,  $n = 1450 \text{ t/min}$



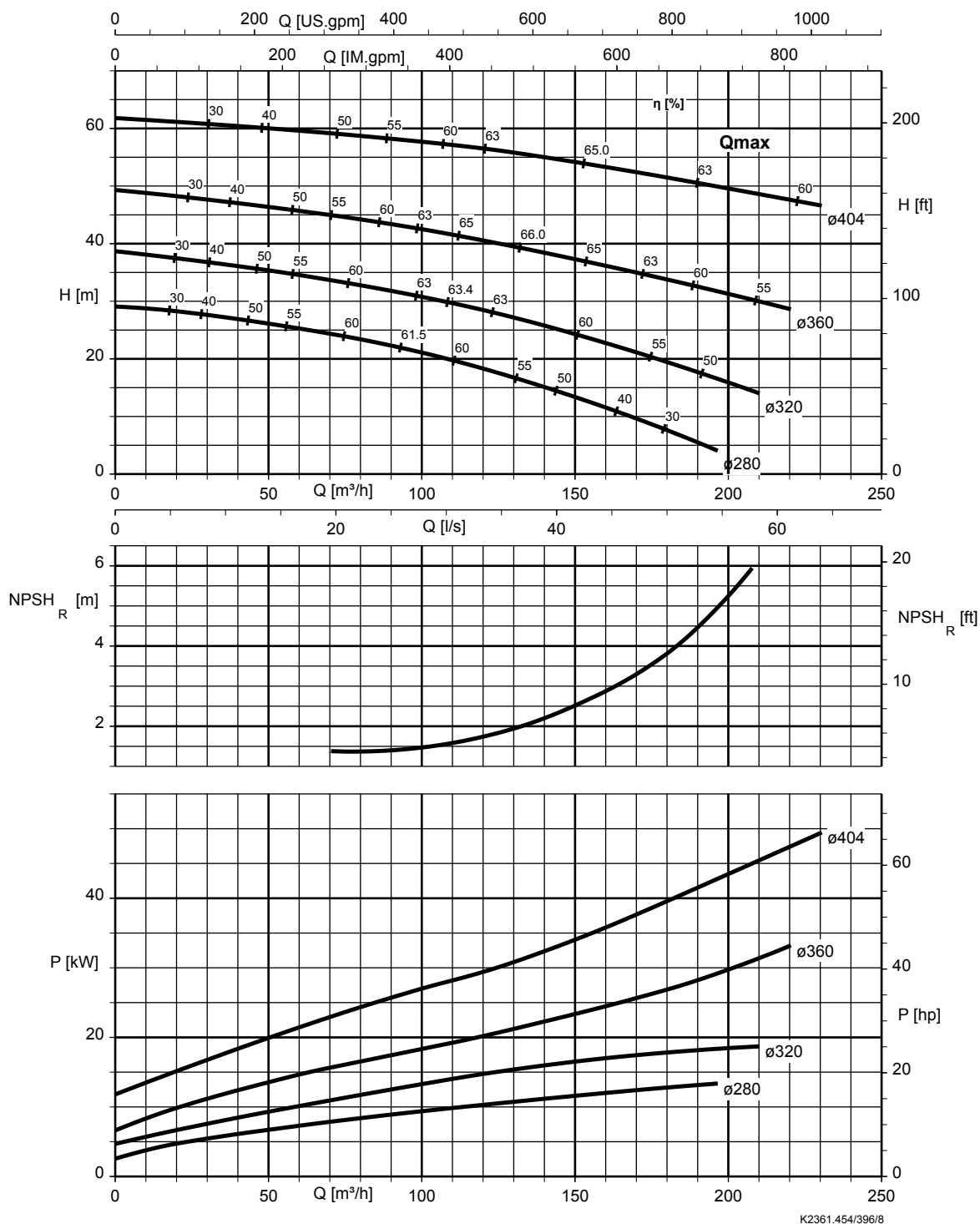
KWP K 100-080-250,  $n = 1450$  t/min



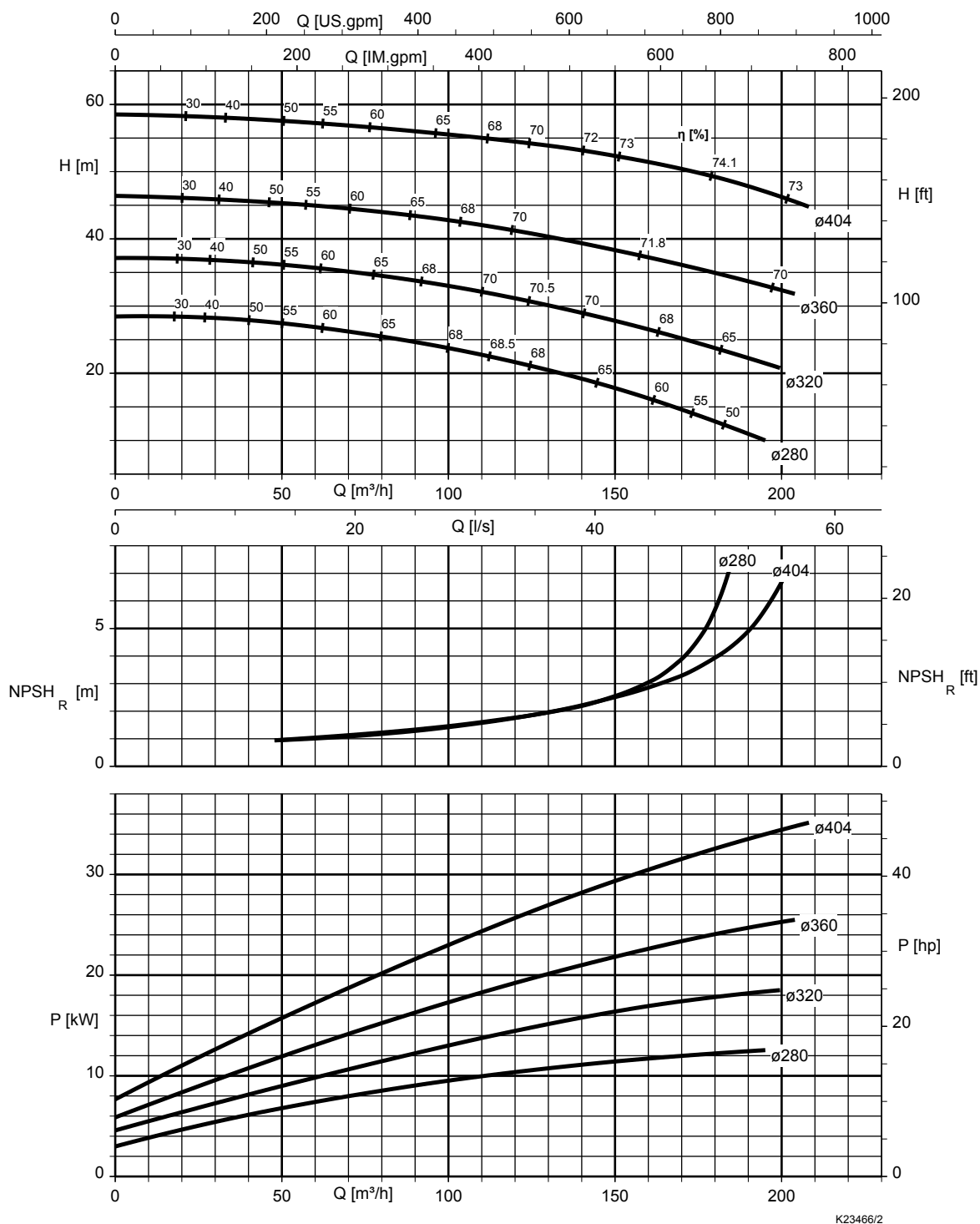
KWP K 100-080-315,  $n = 1450 \text{ t/min}$



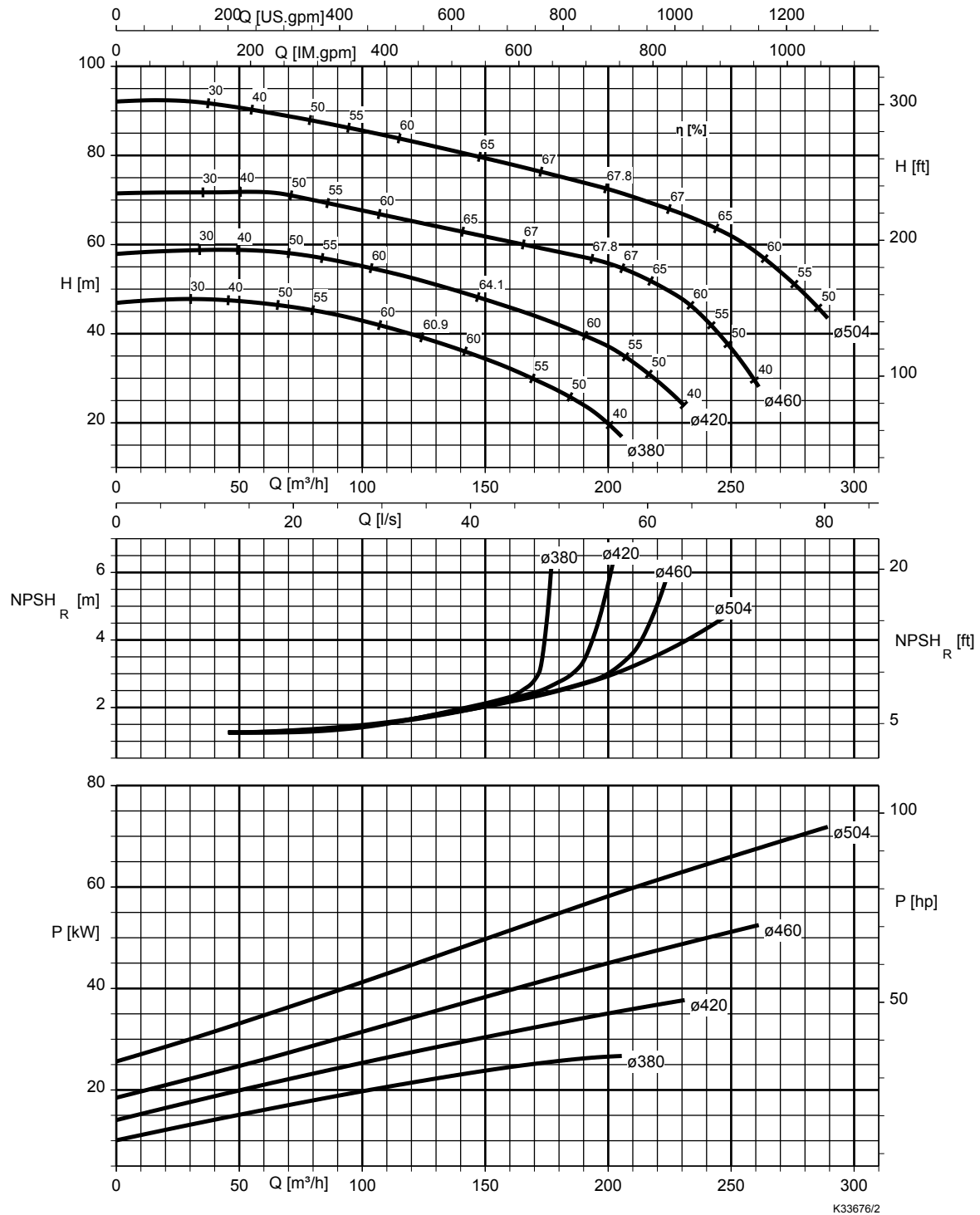
KWP K 100-080-400,  $n = 1450 \text{ t/min}$



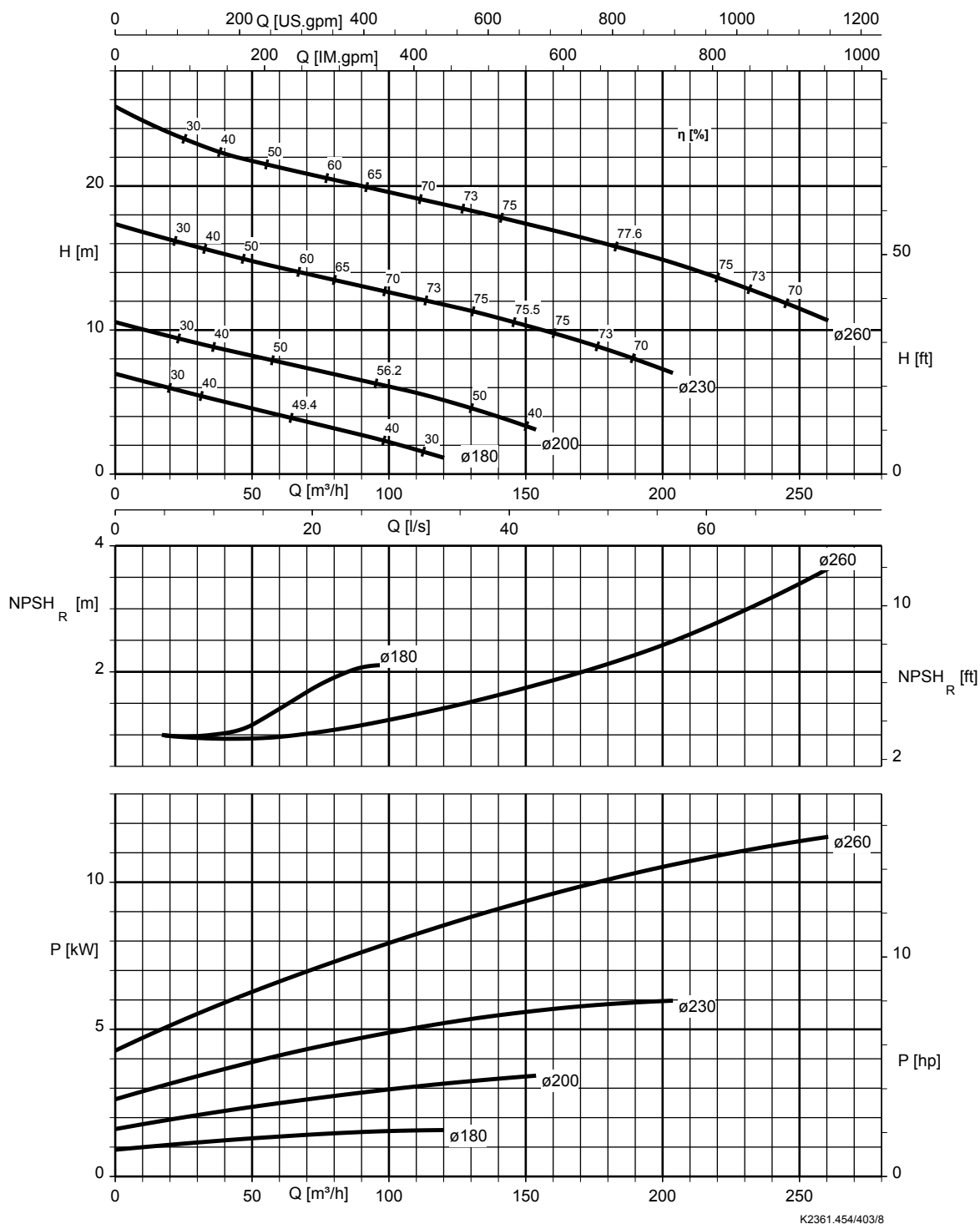
KWP K 100-080-403,  $n = 1450 \text{ t/min}$



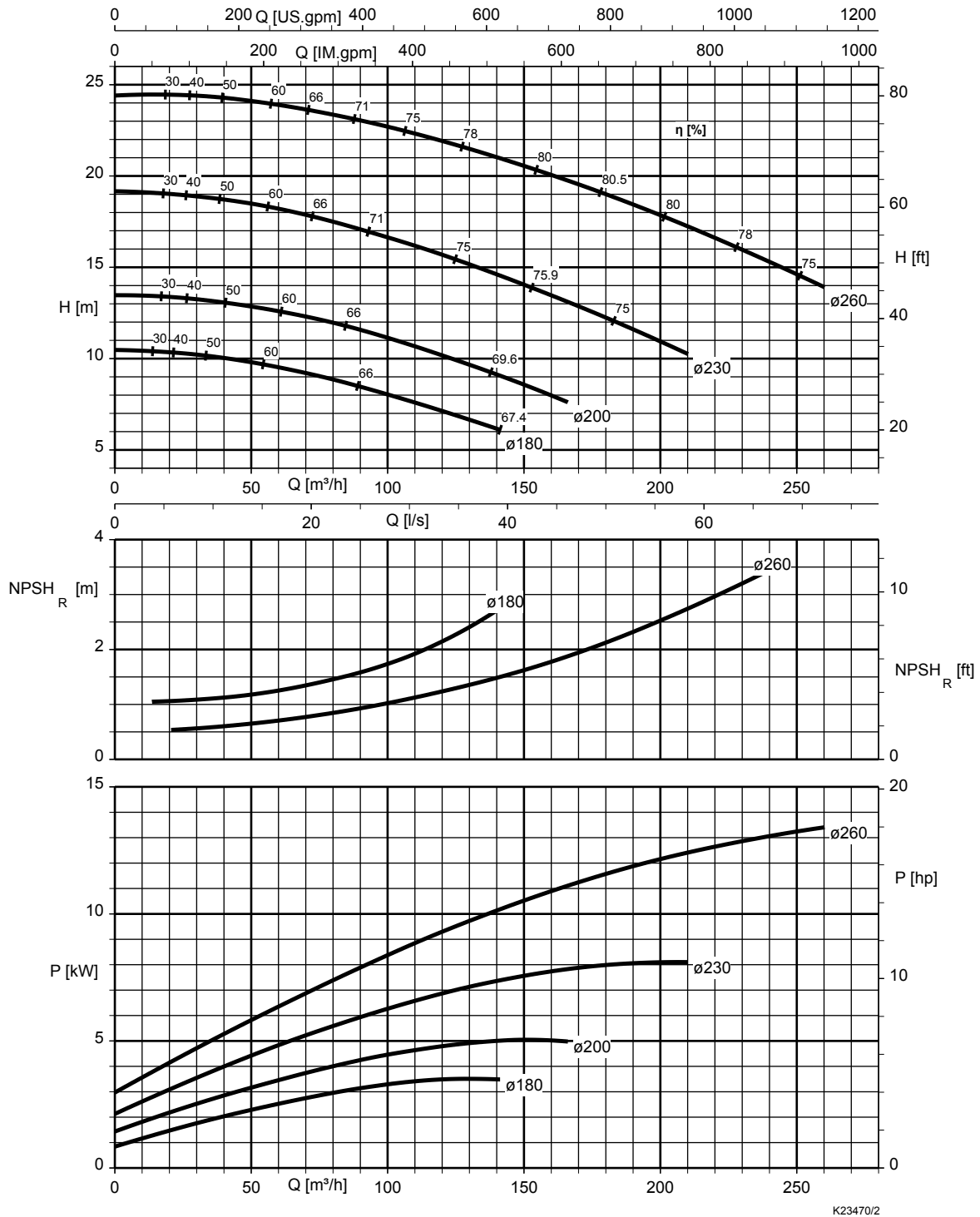
KWP K 125-080-500,  $n = 1450 \text{ t/min}$



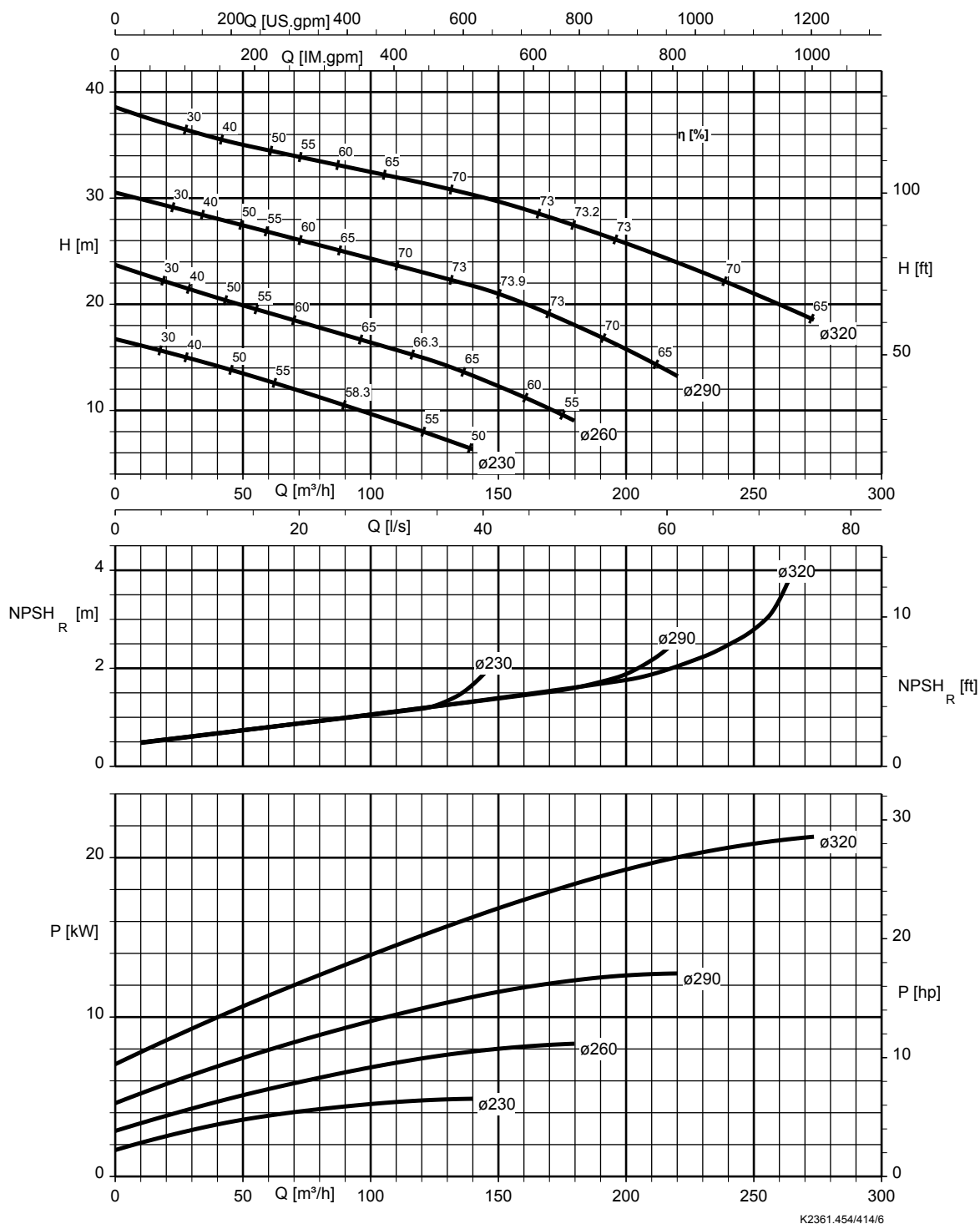
KWP K 125-100-250, n = 1450 t/min



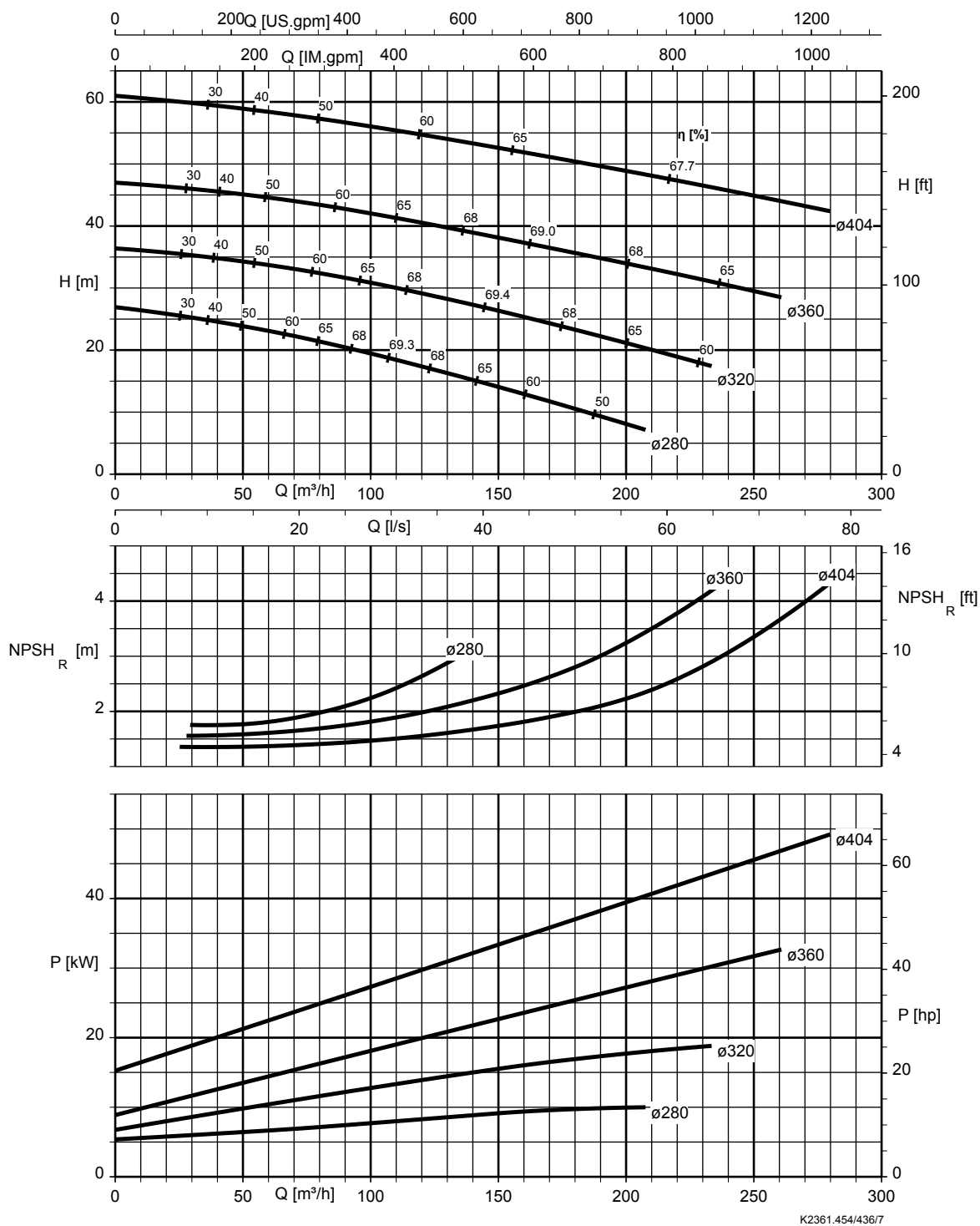
KWP K 125-100-253,  $n = 1450 \text{ t/min}$



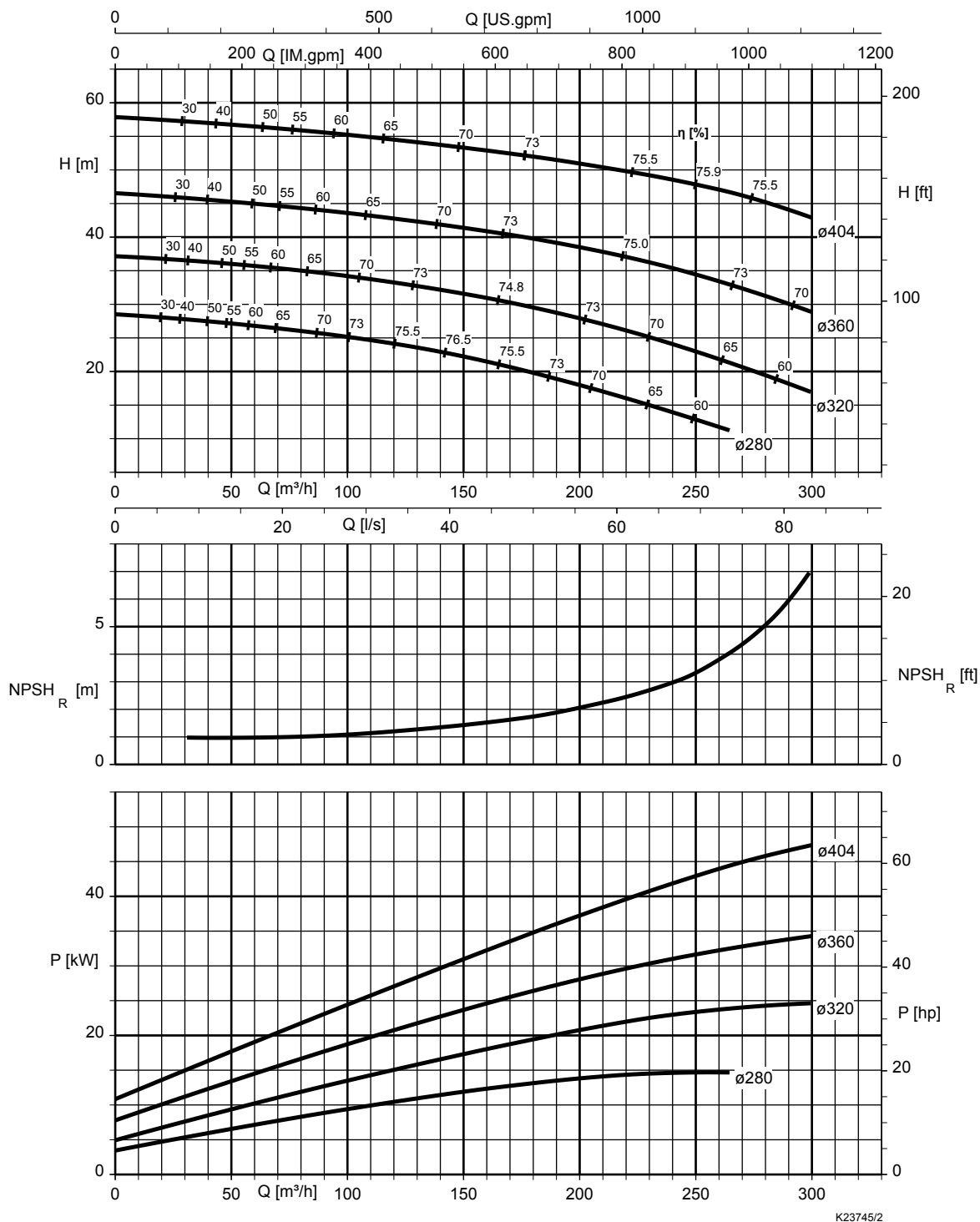
KWP K 125-100-315,  $n = 1450 \text{ t/min}$



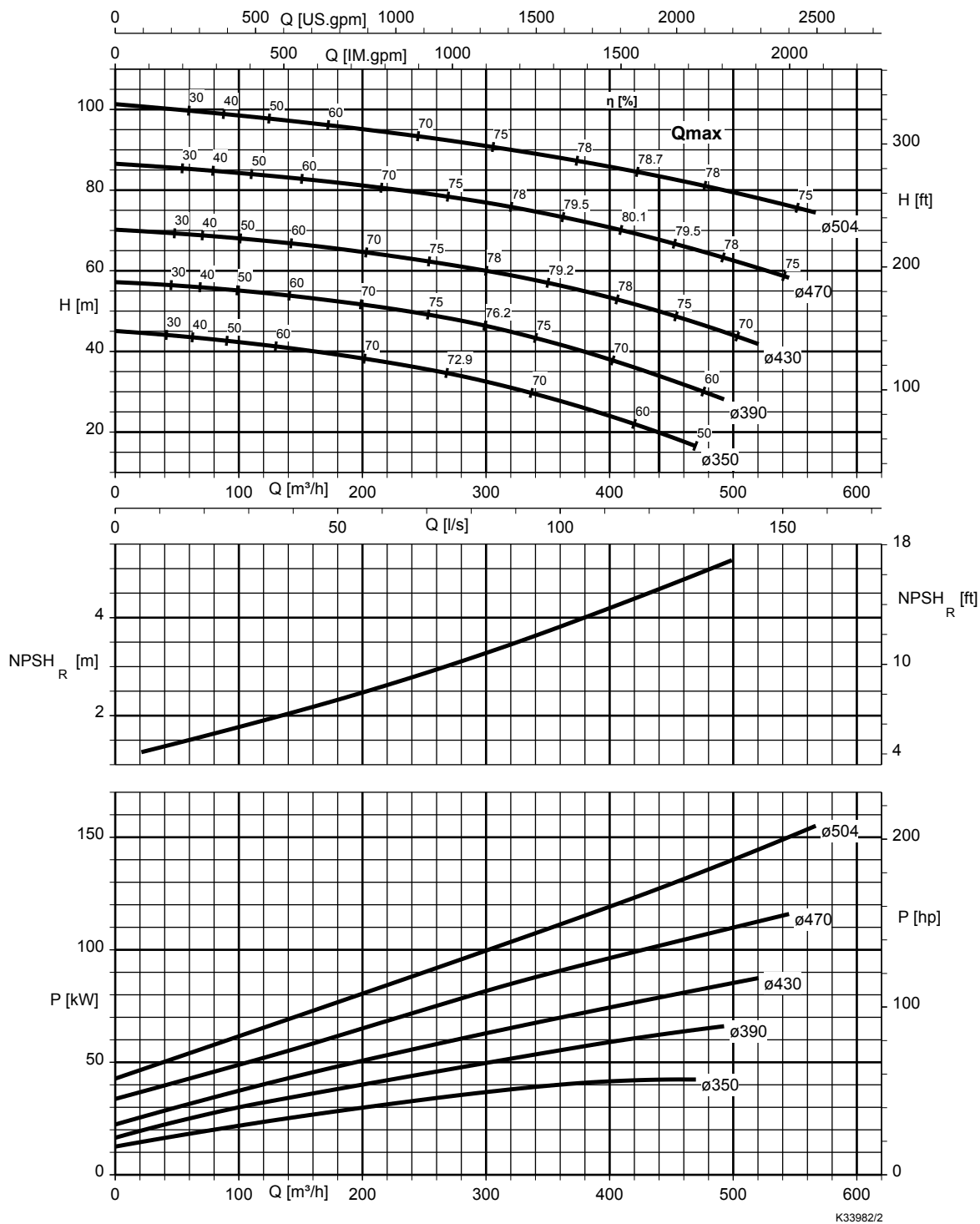
KWP K 125-100-400,  $n = 1450 \text{ t/min}$



KWP K 125-100-403,  $n = 1450 \text{ t/min}$

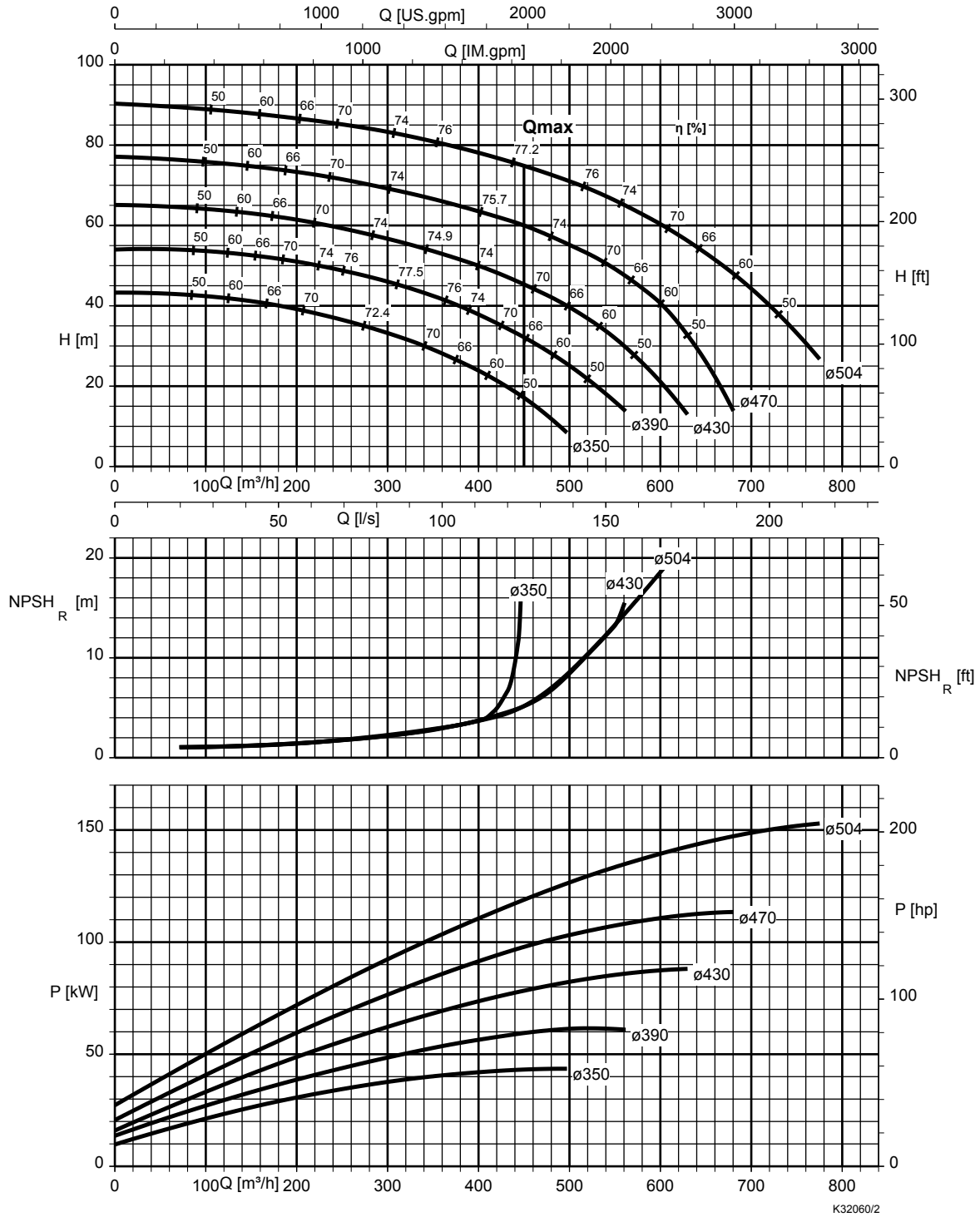


KWP K 150-125-500, n = 1450 t/min

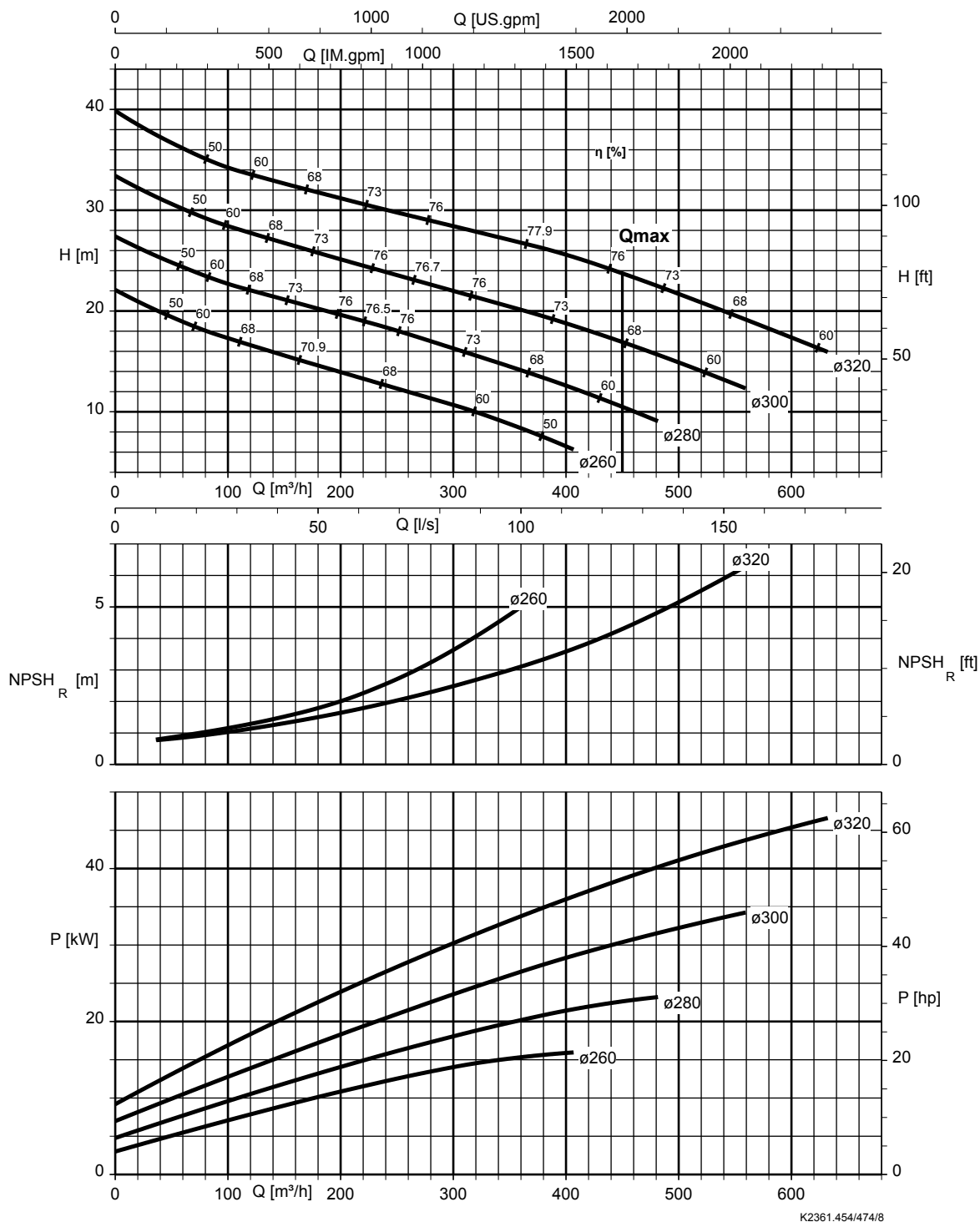


K33982/2

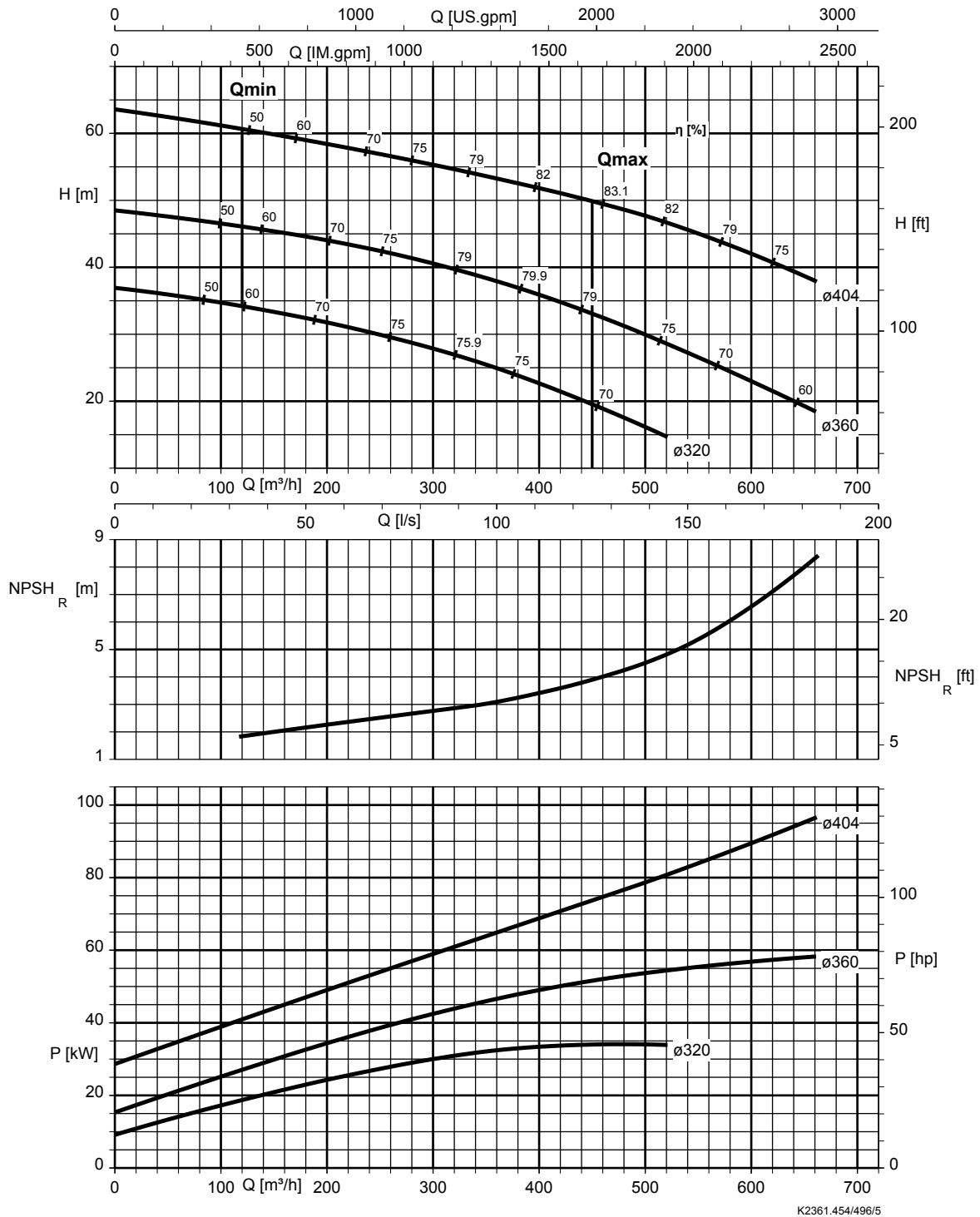
KWP K 150-125-503, n = 1450 t/min



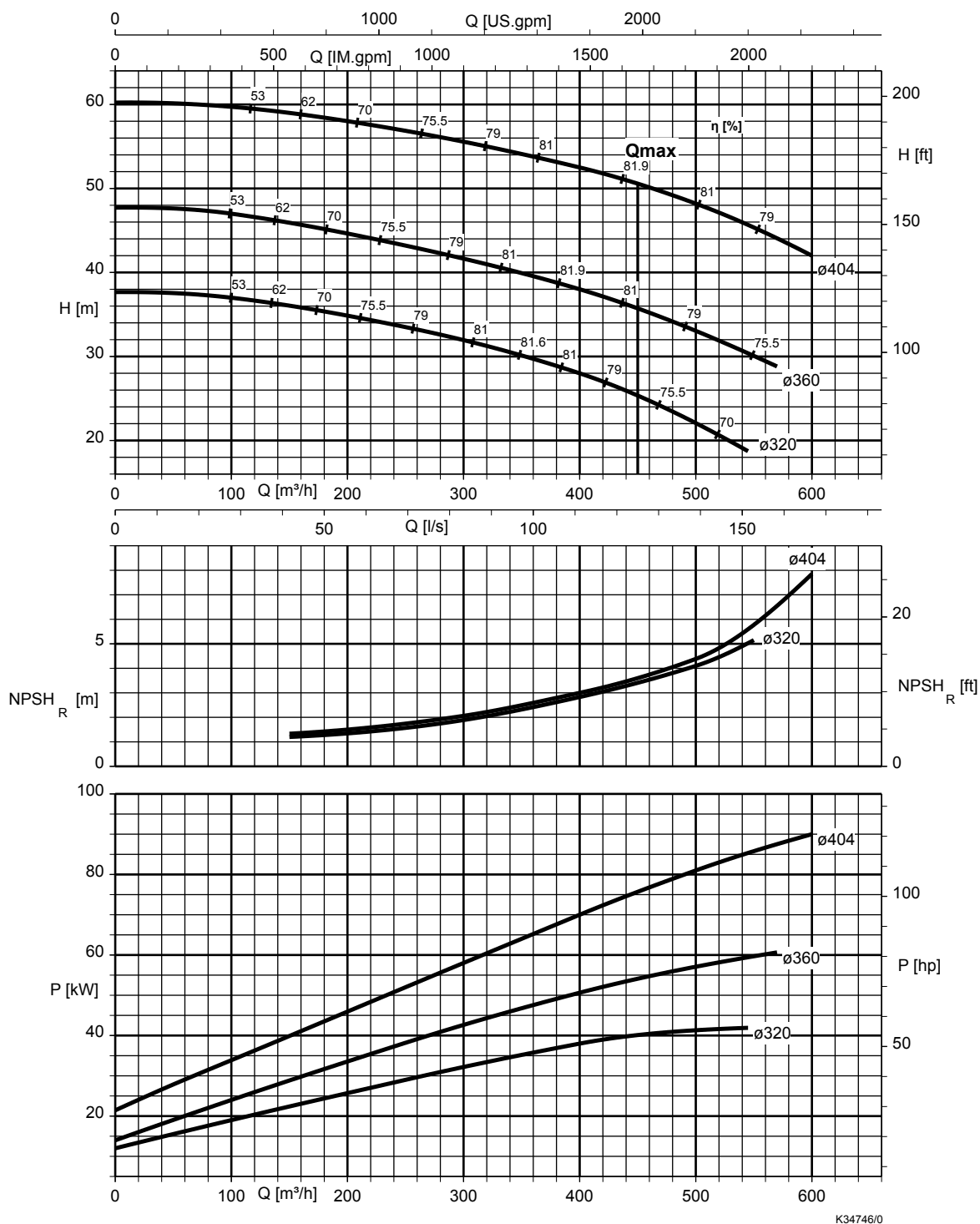
KWP K 150-150-315,  $n = 1450 \text{ t/min}$



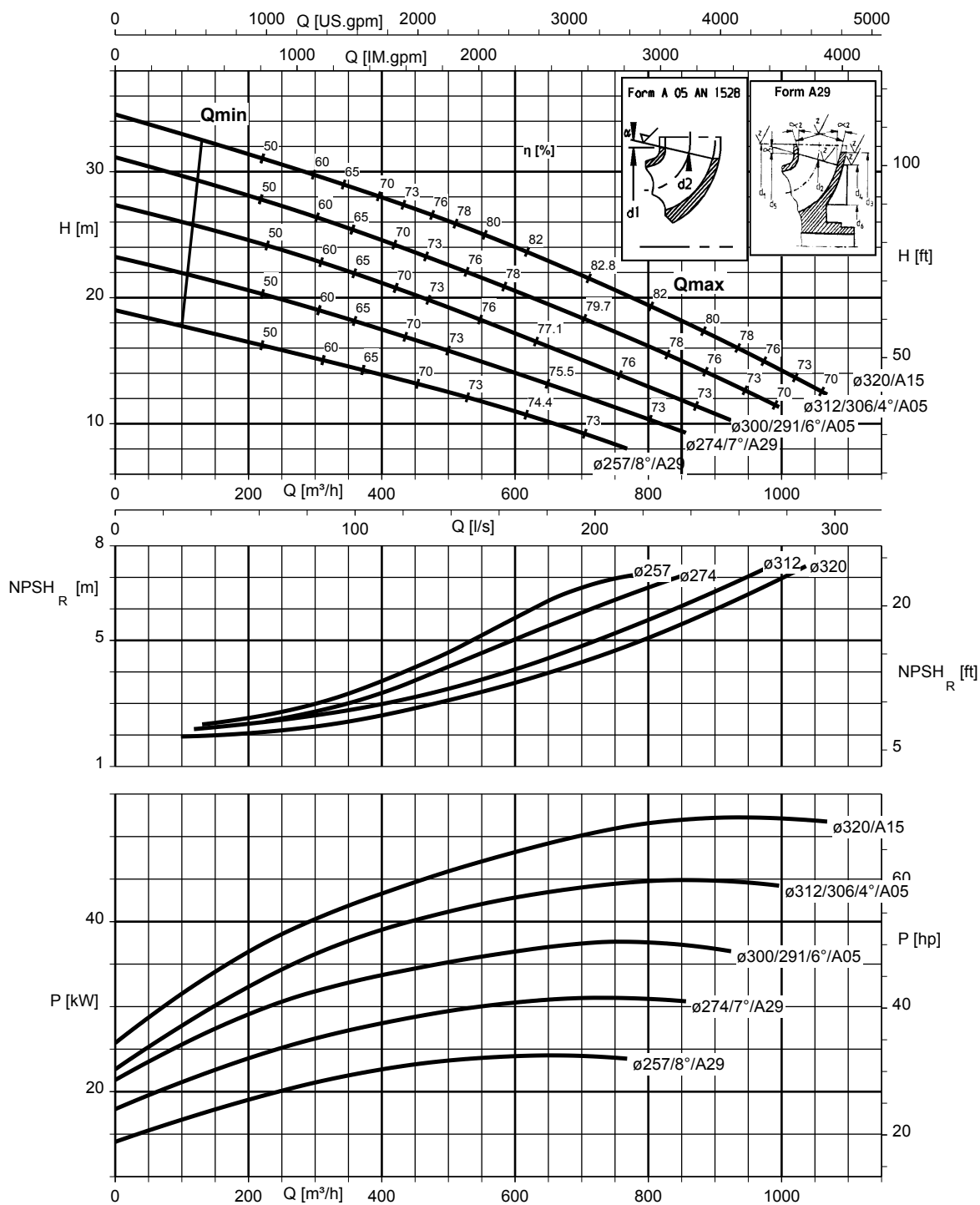
KWP K 150-150-400, n = 1450 t/min



KWP K 150-150-403,  $n = 1450 \text{ t/min}$

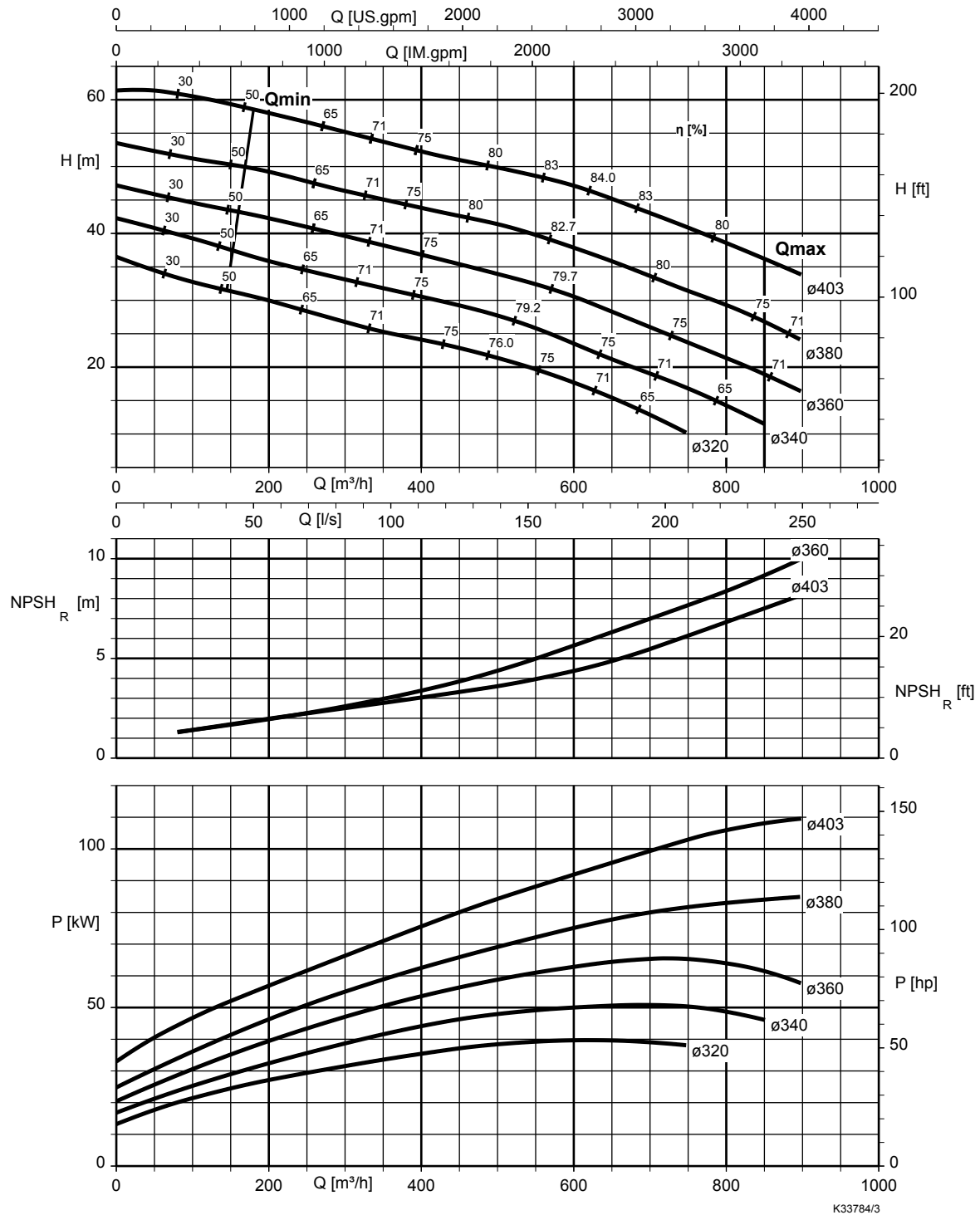


KWP K 200-200-320,  $n = 1450$  t/min

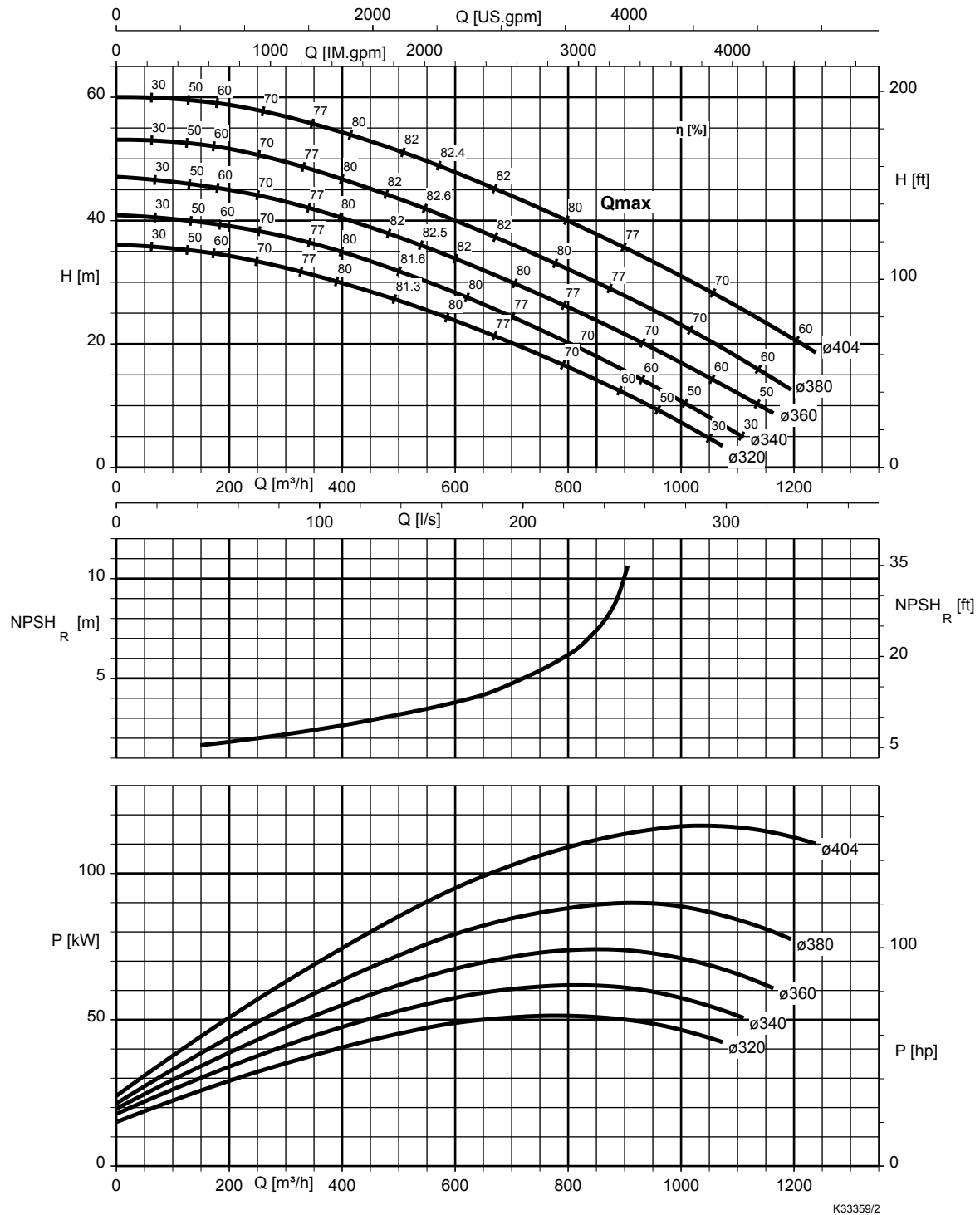


K34437/3

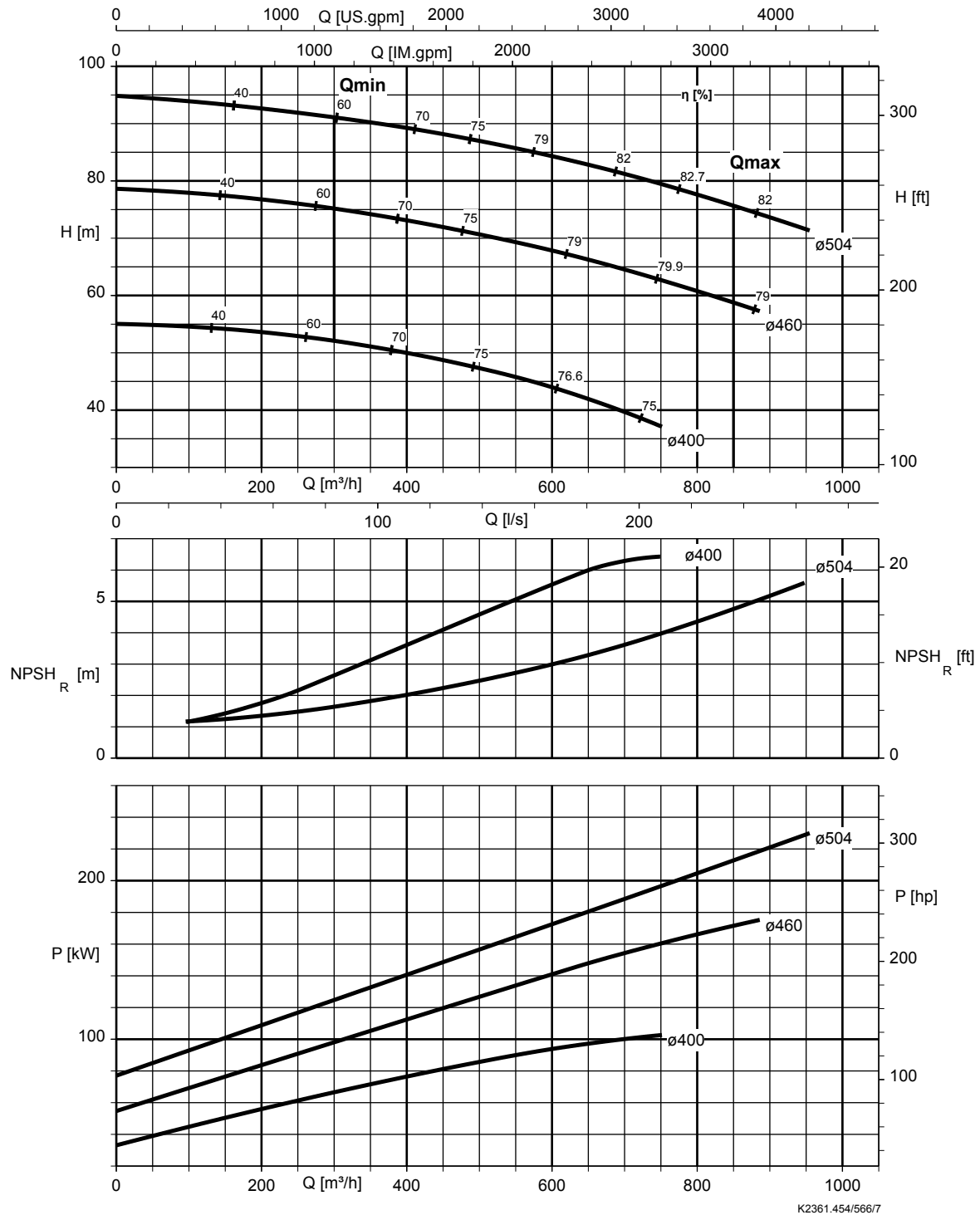
KWP K 200-200-400,  $n = 1450 \text{ t/min}$



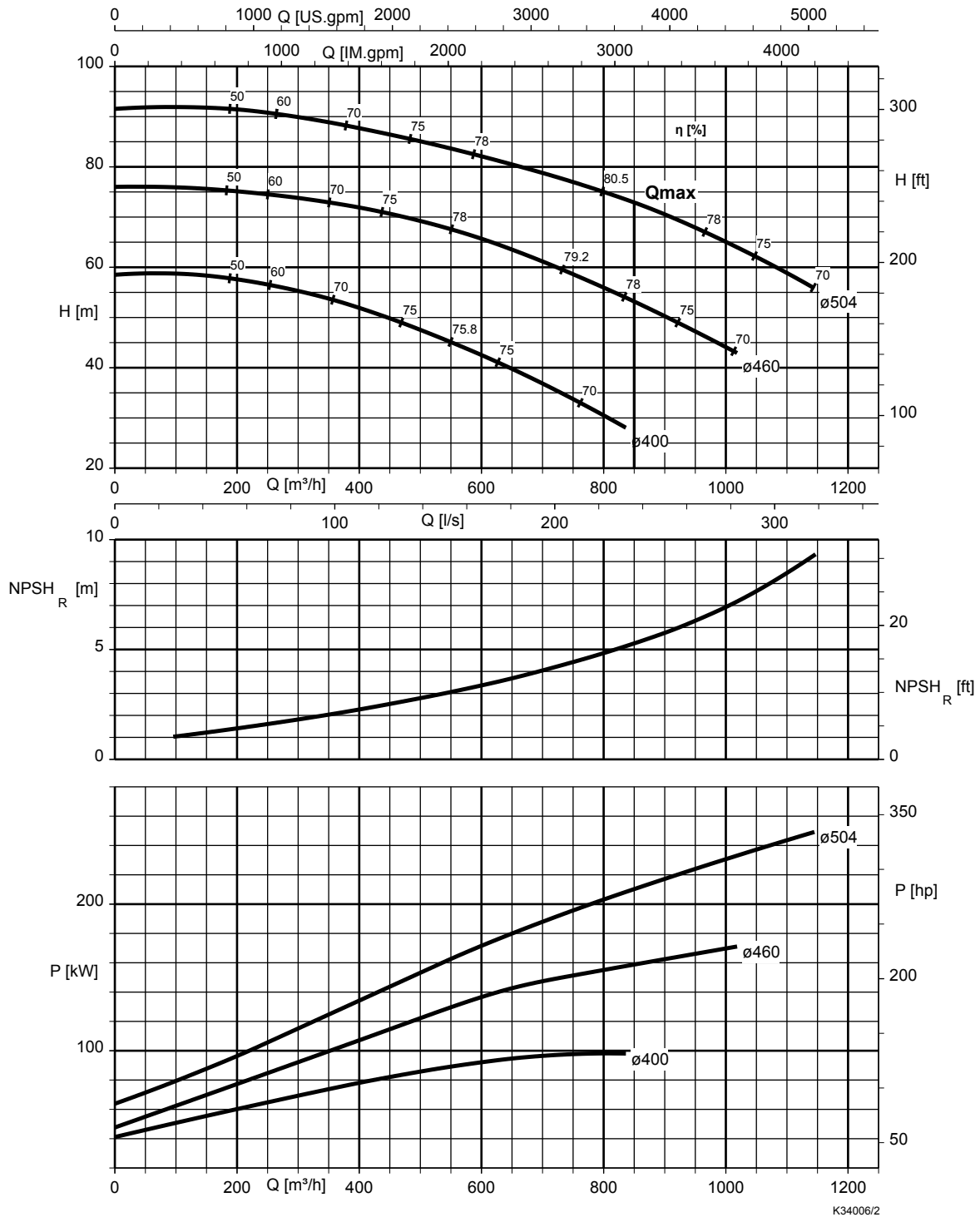
KWP K 200-200-403,  $n = 1450 \text{ t/min}$



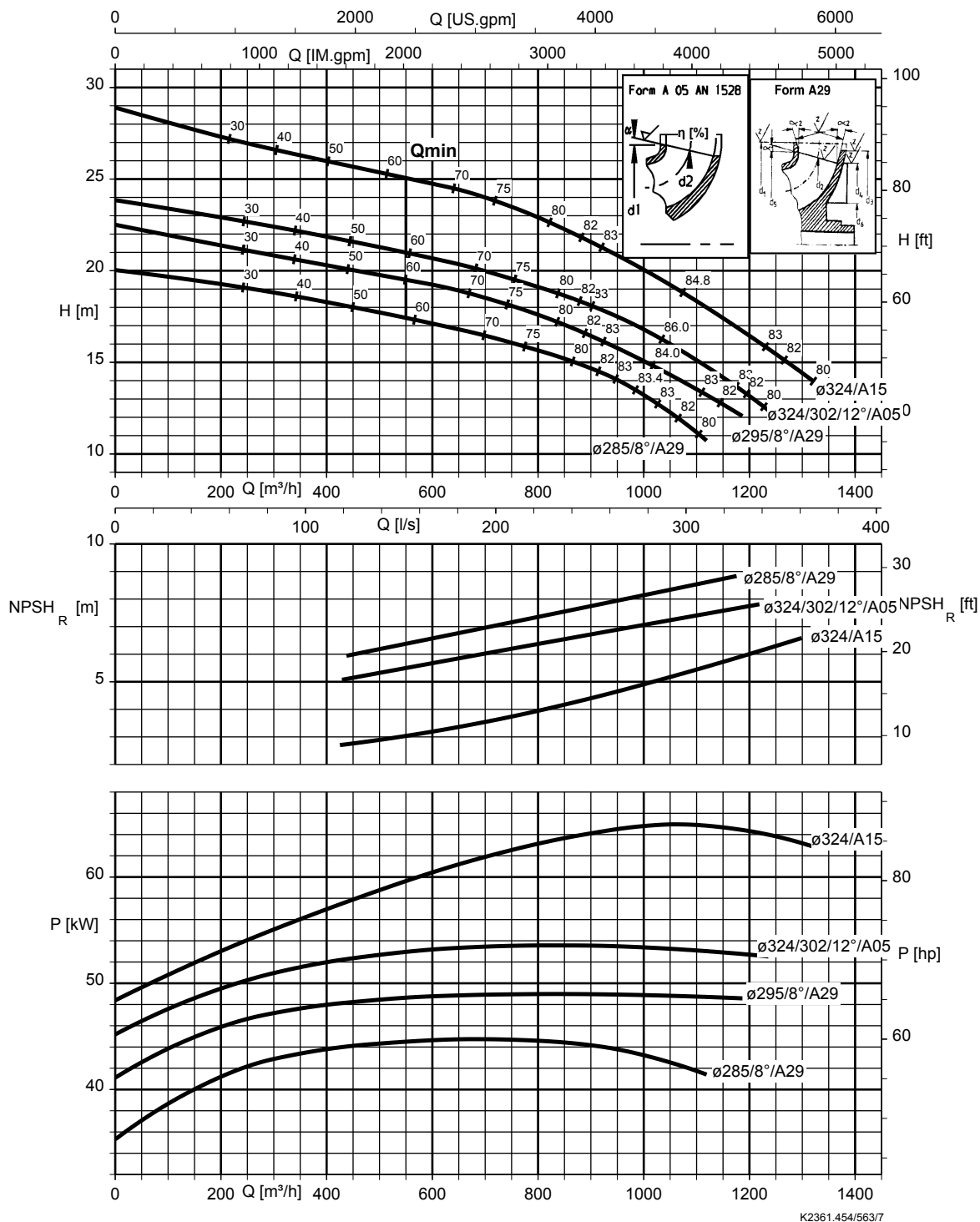
KWP K 200-200-500,  $n = 1450 \text{ t/min}$



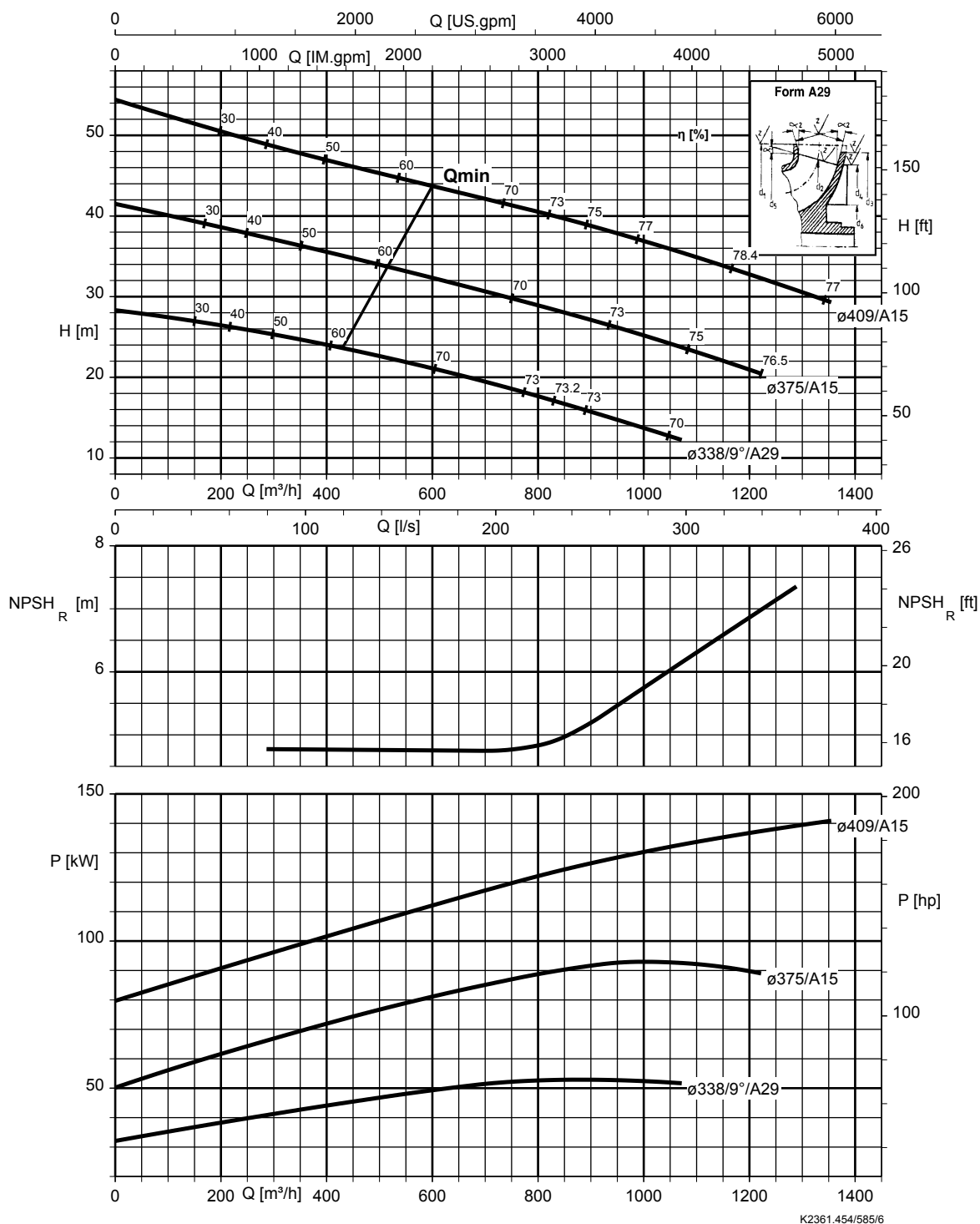
KWP K 200-200-503,  $n = 1450 \text{ t/min}$



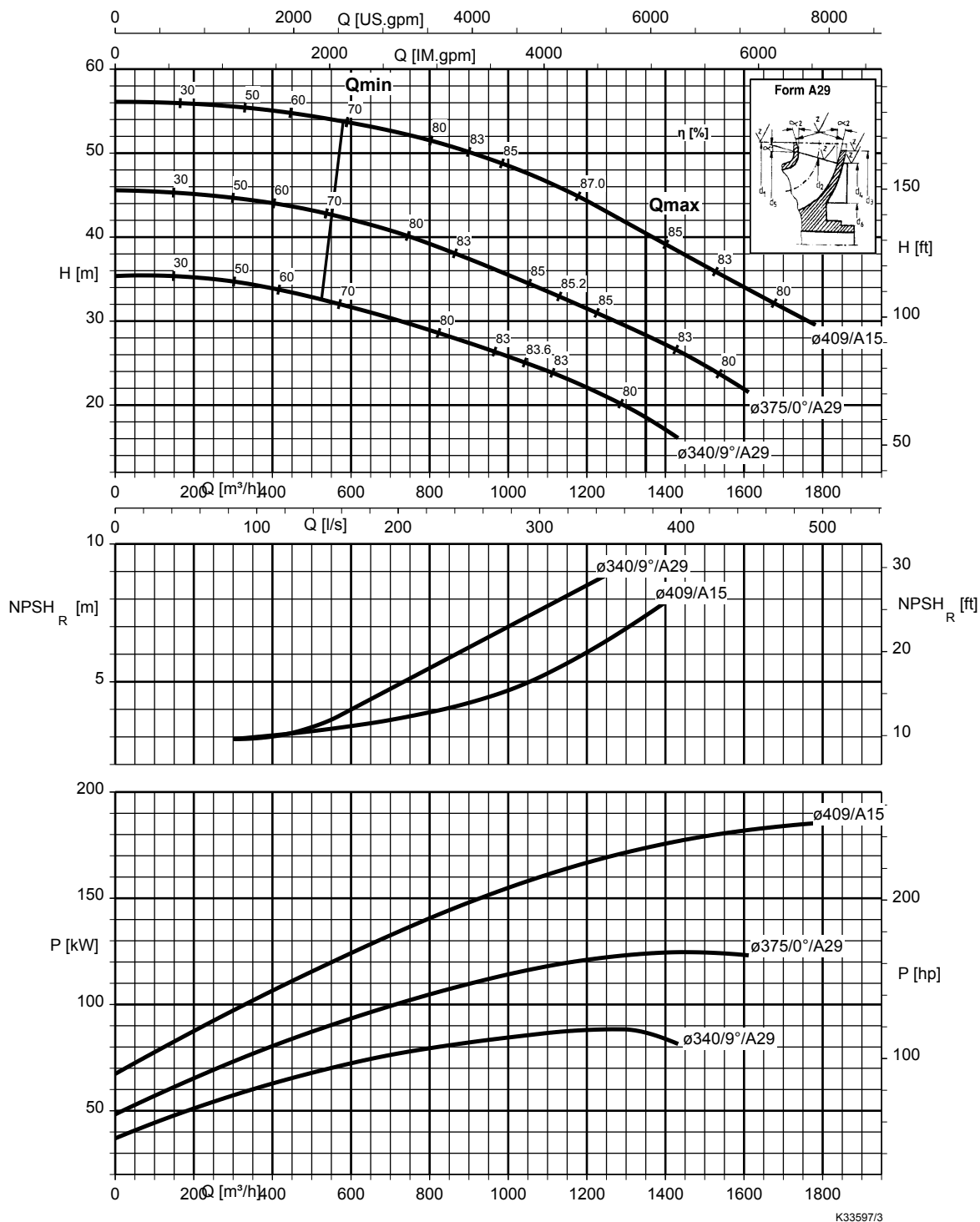
KWP K 250-250-315, n = 1450 t/min



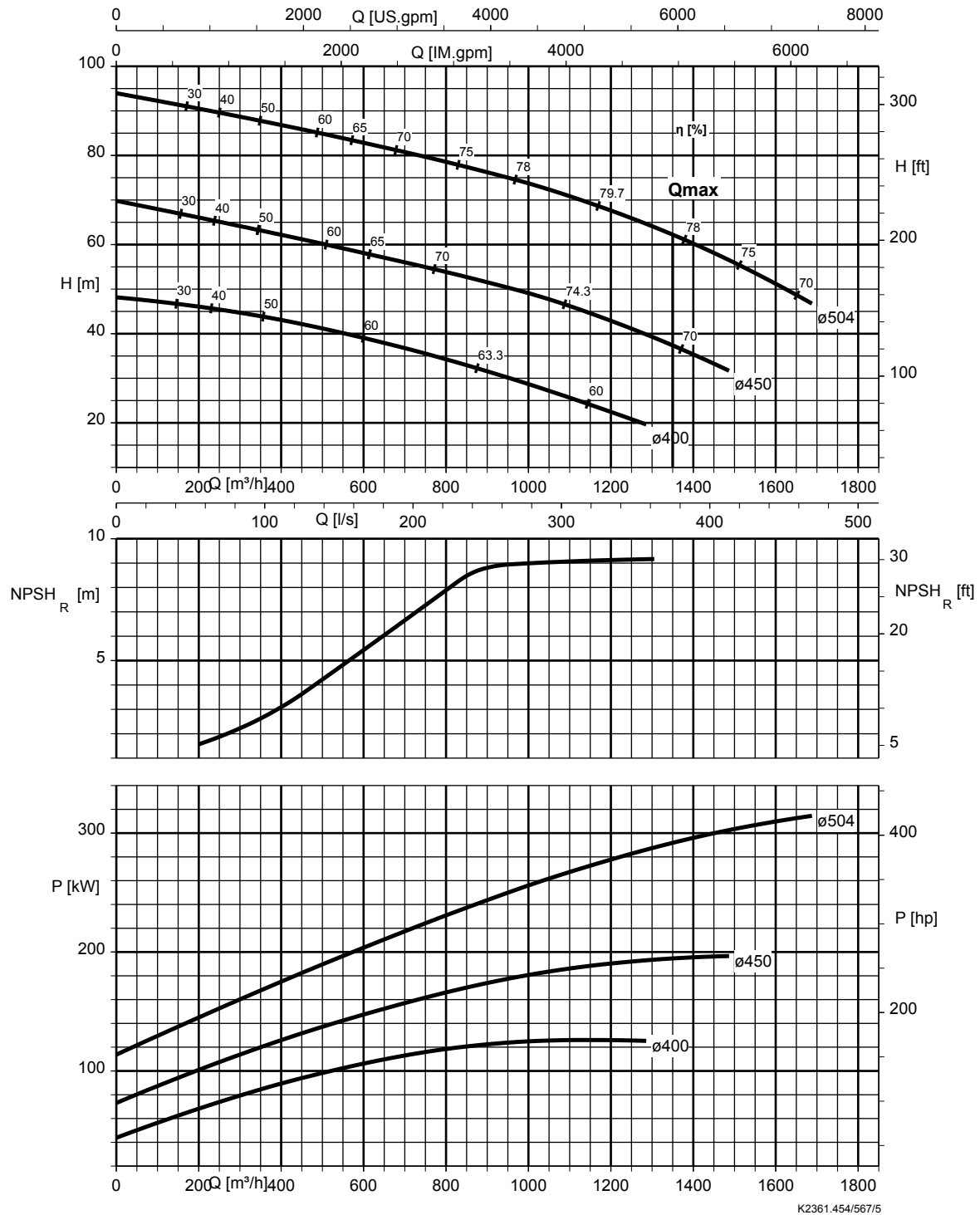
KWP K 250-250-400,  $n = 1450 \text{ t/min}$



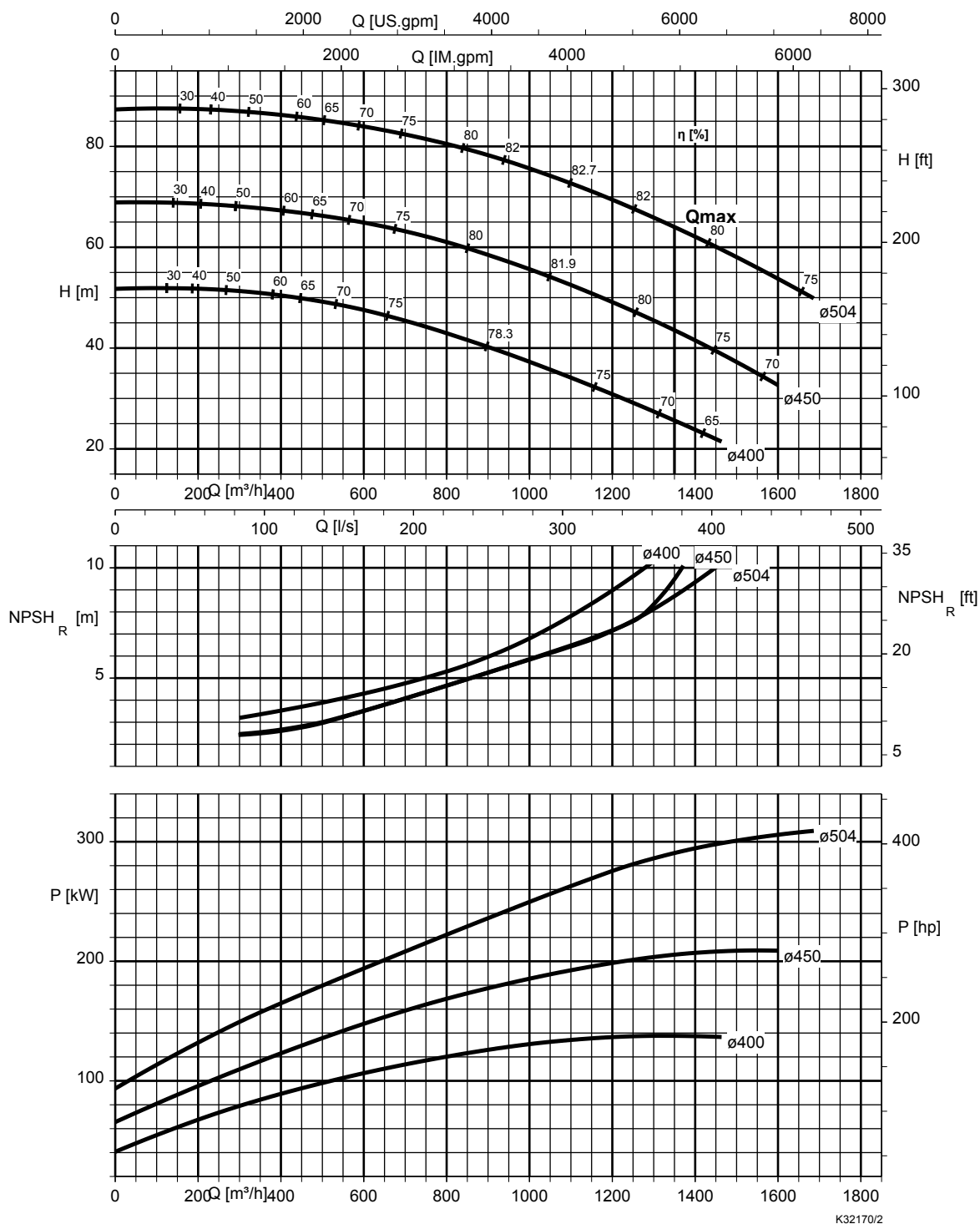
KWP K 250-250-403,  $n = 1450 \text{ t/min}$



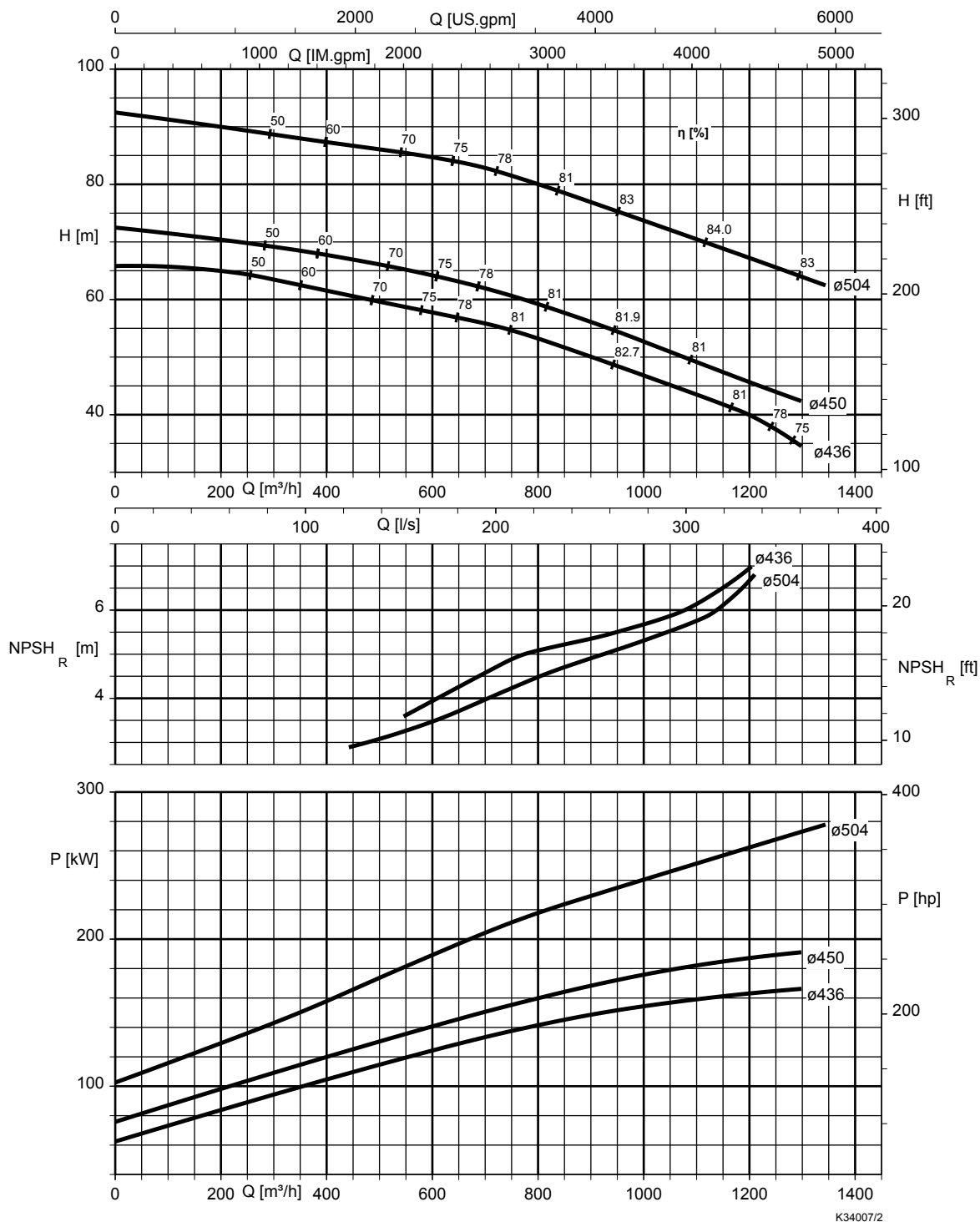
KWP K 250-250-500, n = 1450 t/min



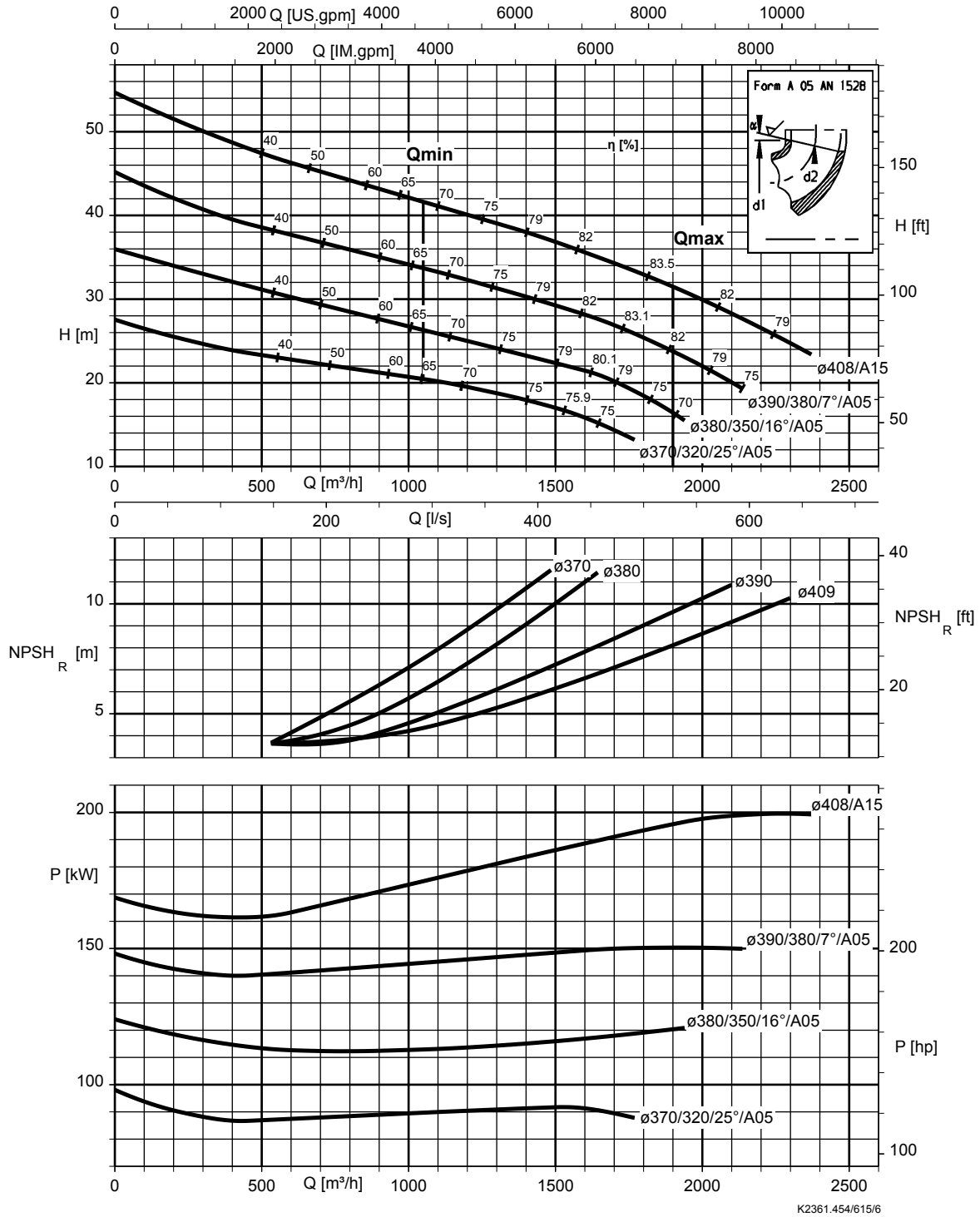
KWP K 250-250-503,  $n = 1450 \text{ t/min}$



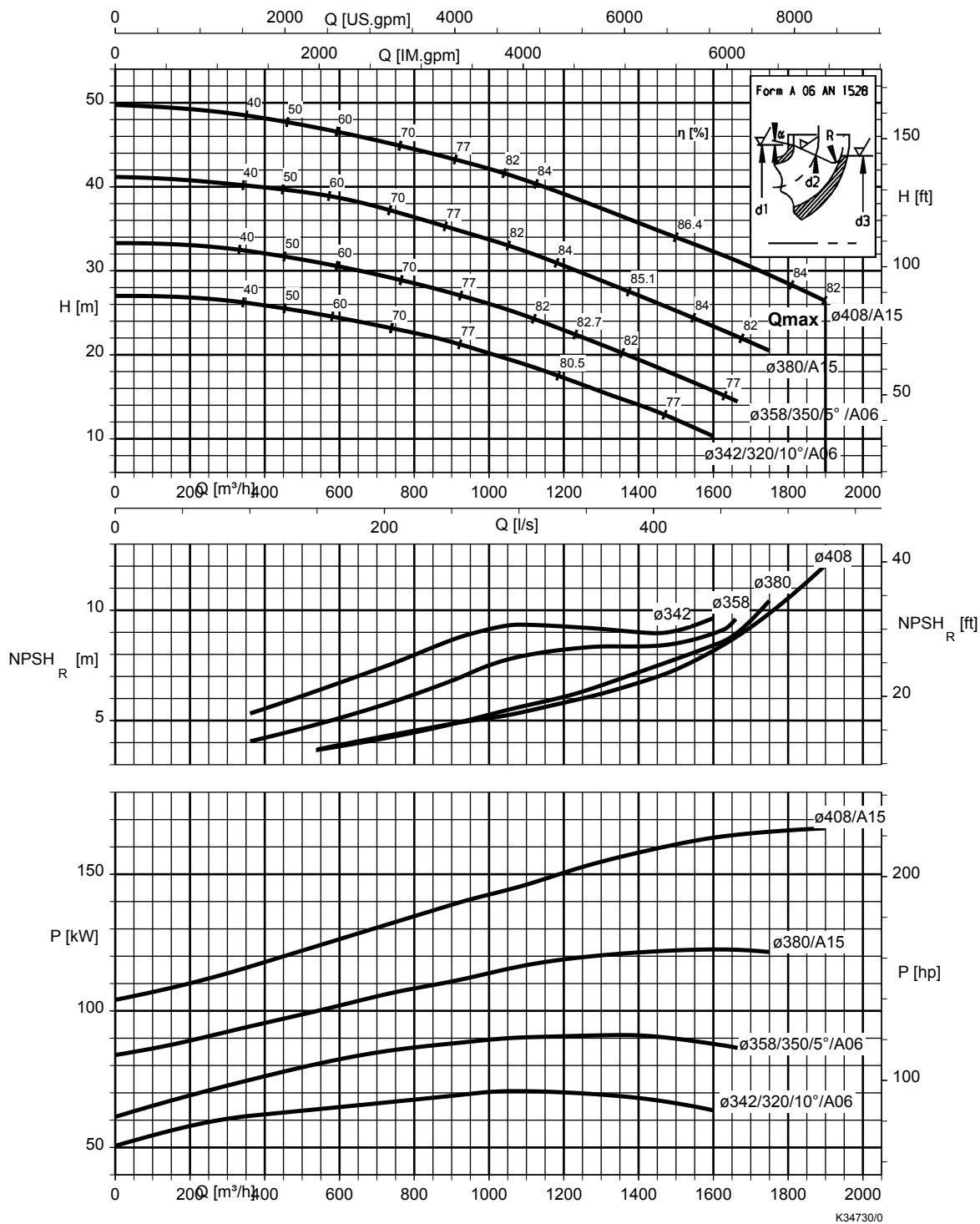
KWP K 250-250-505,  $n = 1450 \text{ t/min}$



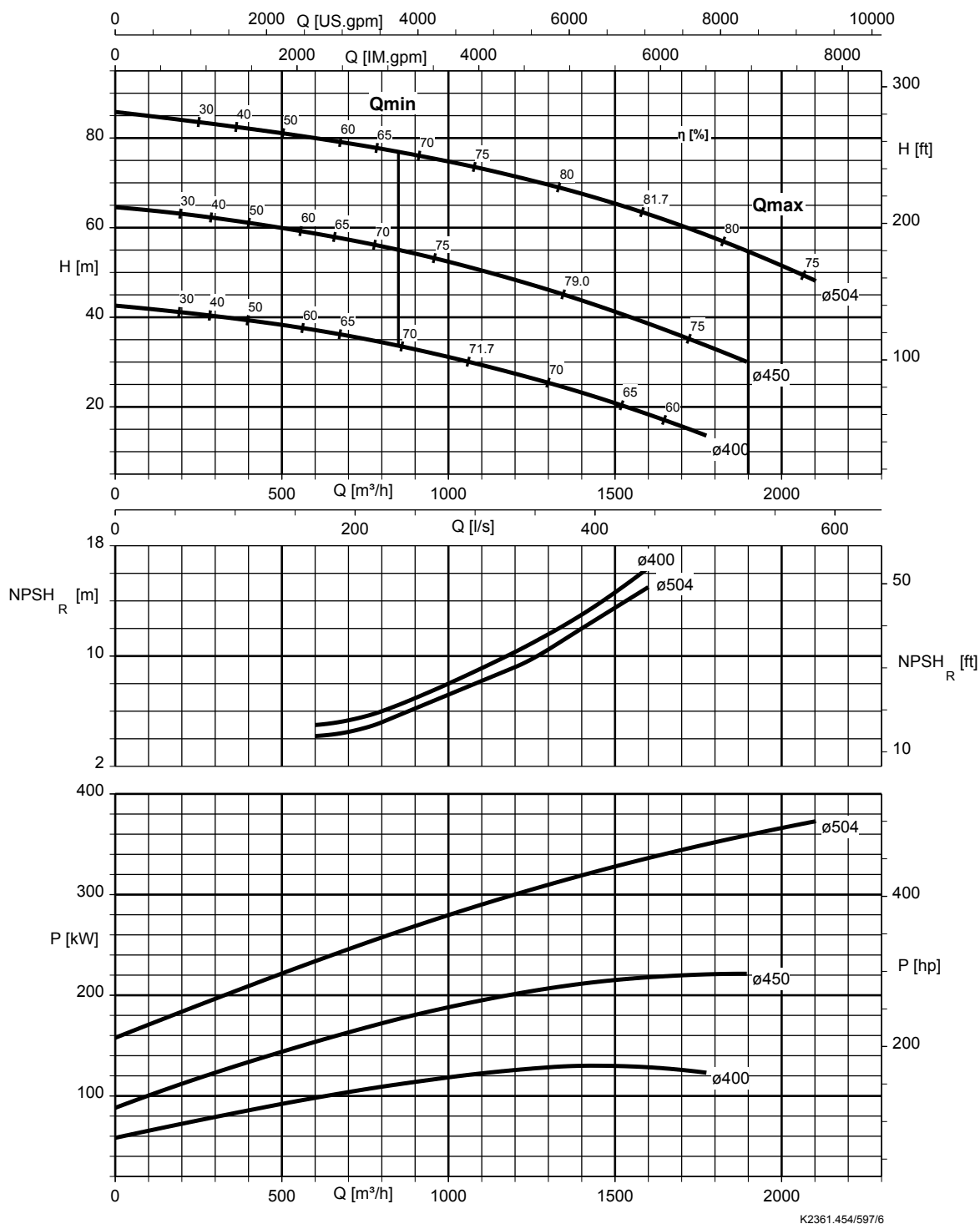
KWP K 300-300-400,  $n = 1450 \text{ t/min}$



KWP K 300-300-401,  $n = 1450 \text{ t/min}$

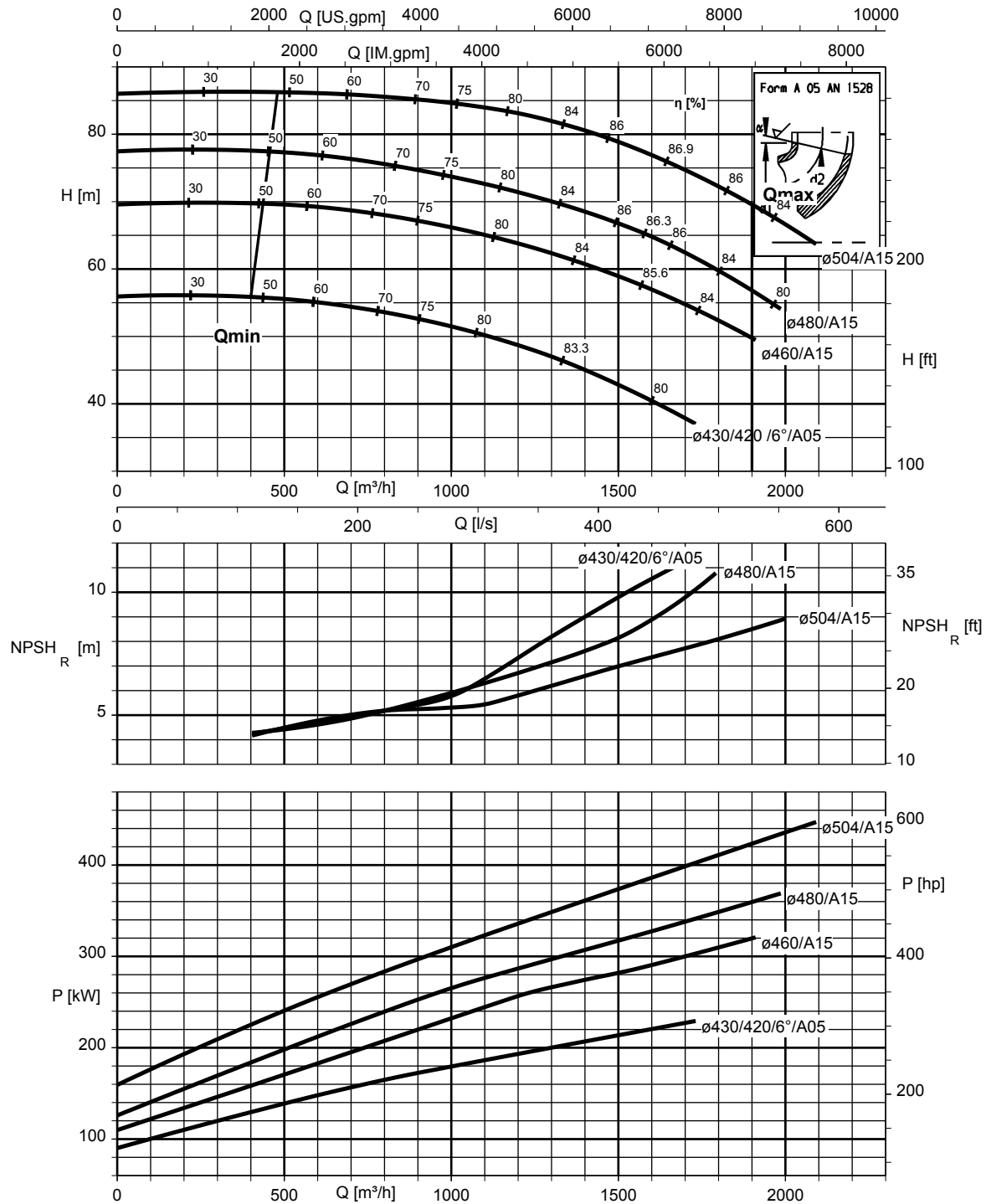


KWP K 300-300-500, n = 1450 t/min



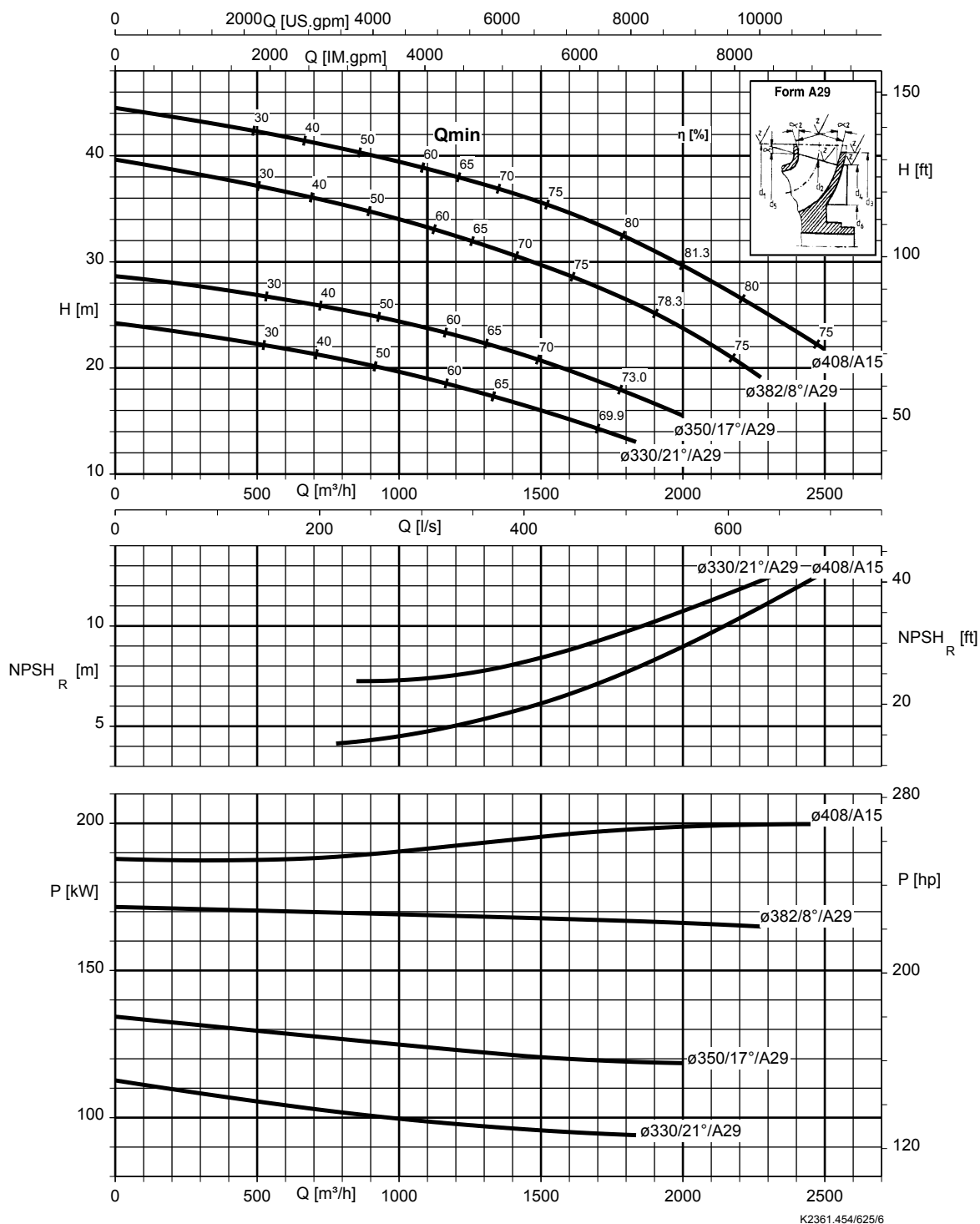
K2361.454/597/6

KWP K 300-300-503,  $n = 1450 \text{ t/min}$



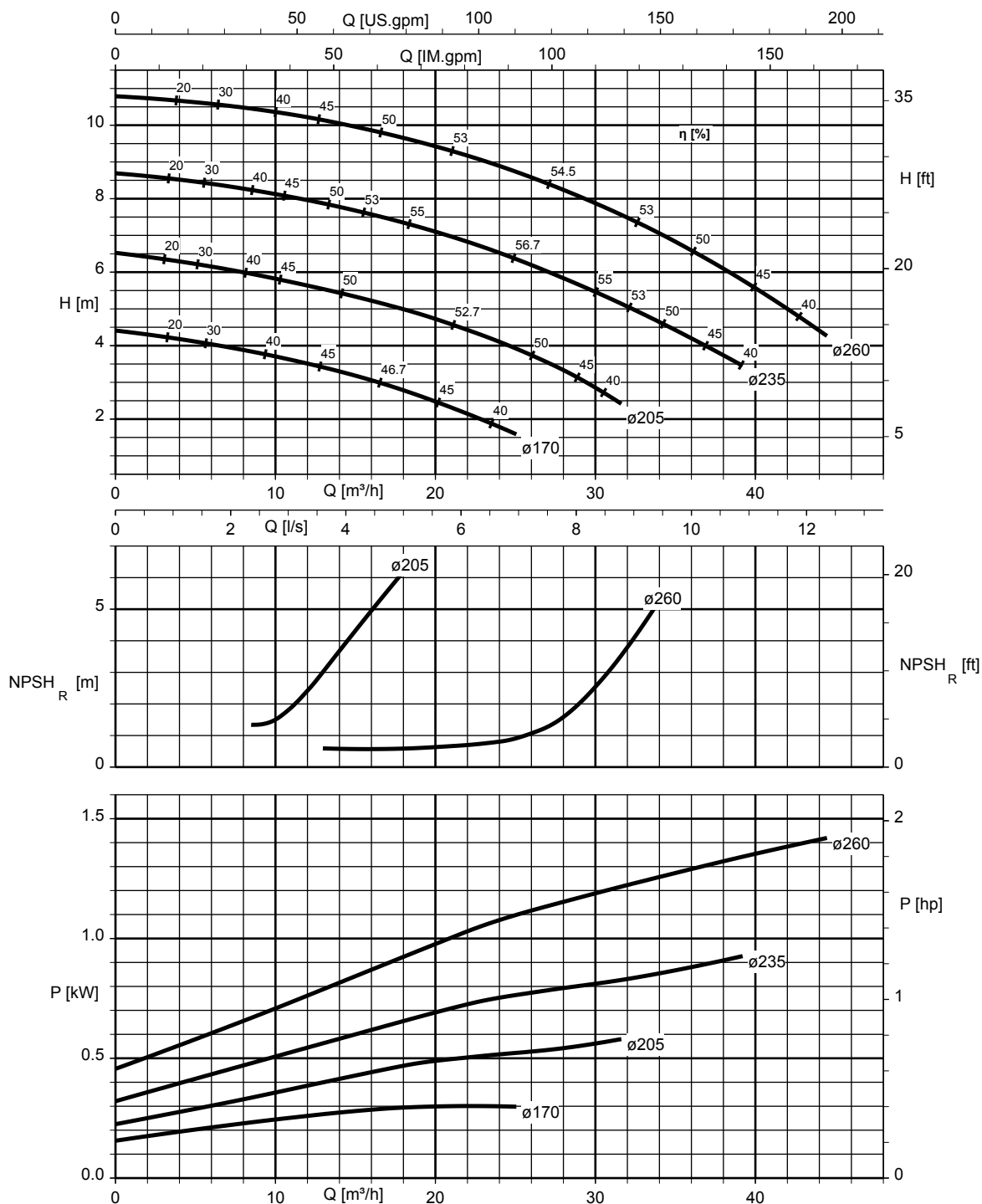
K33759/2

KWP K 350-350-400,  $n = 1450$  t/min



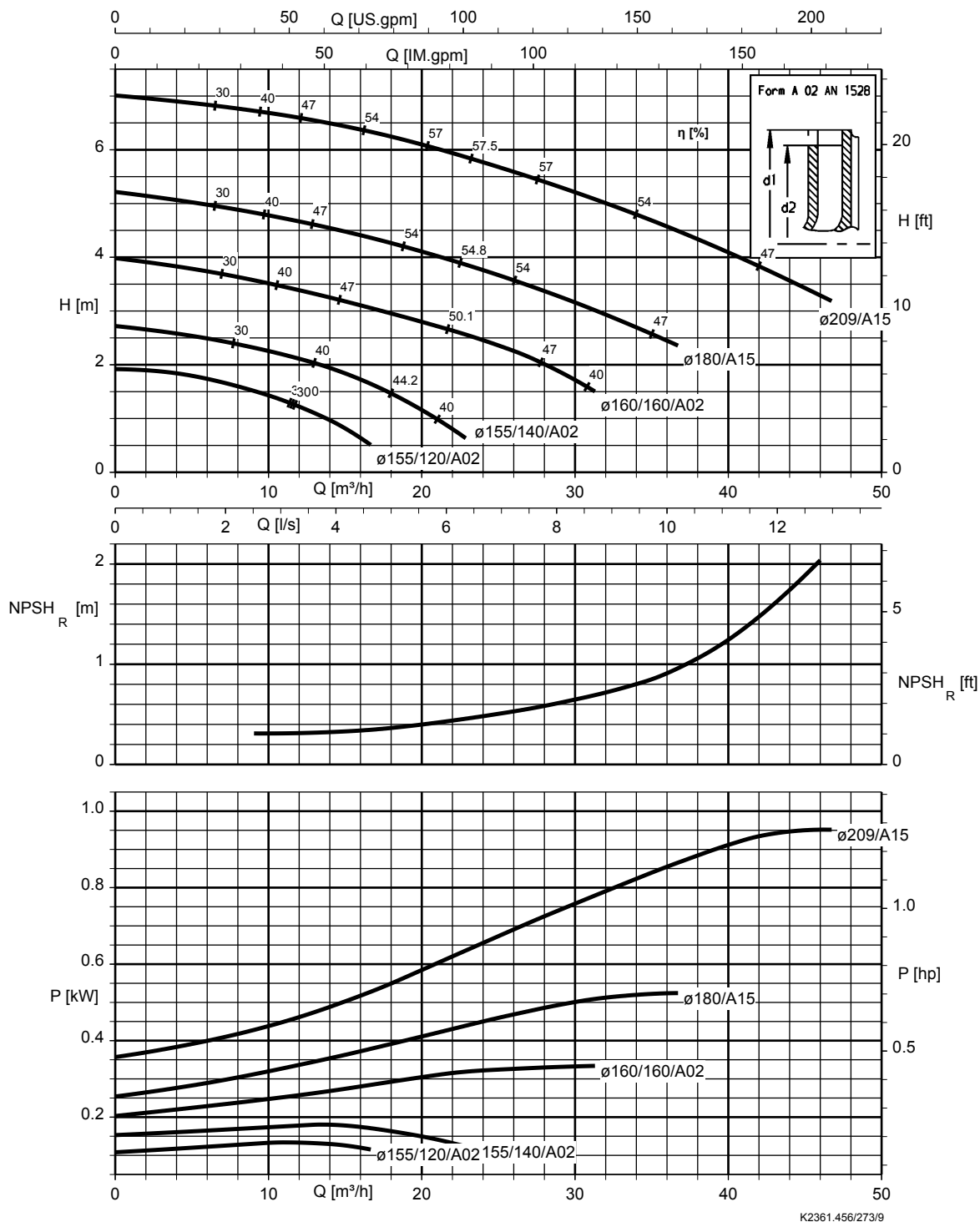
$n = 960 \text{ t/min}$

KWP K 065-040-250,  $n = 960 \text{ t/min}$

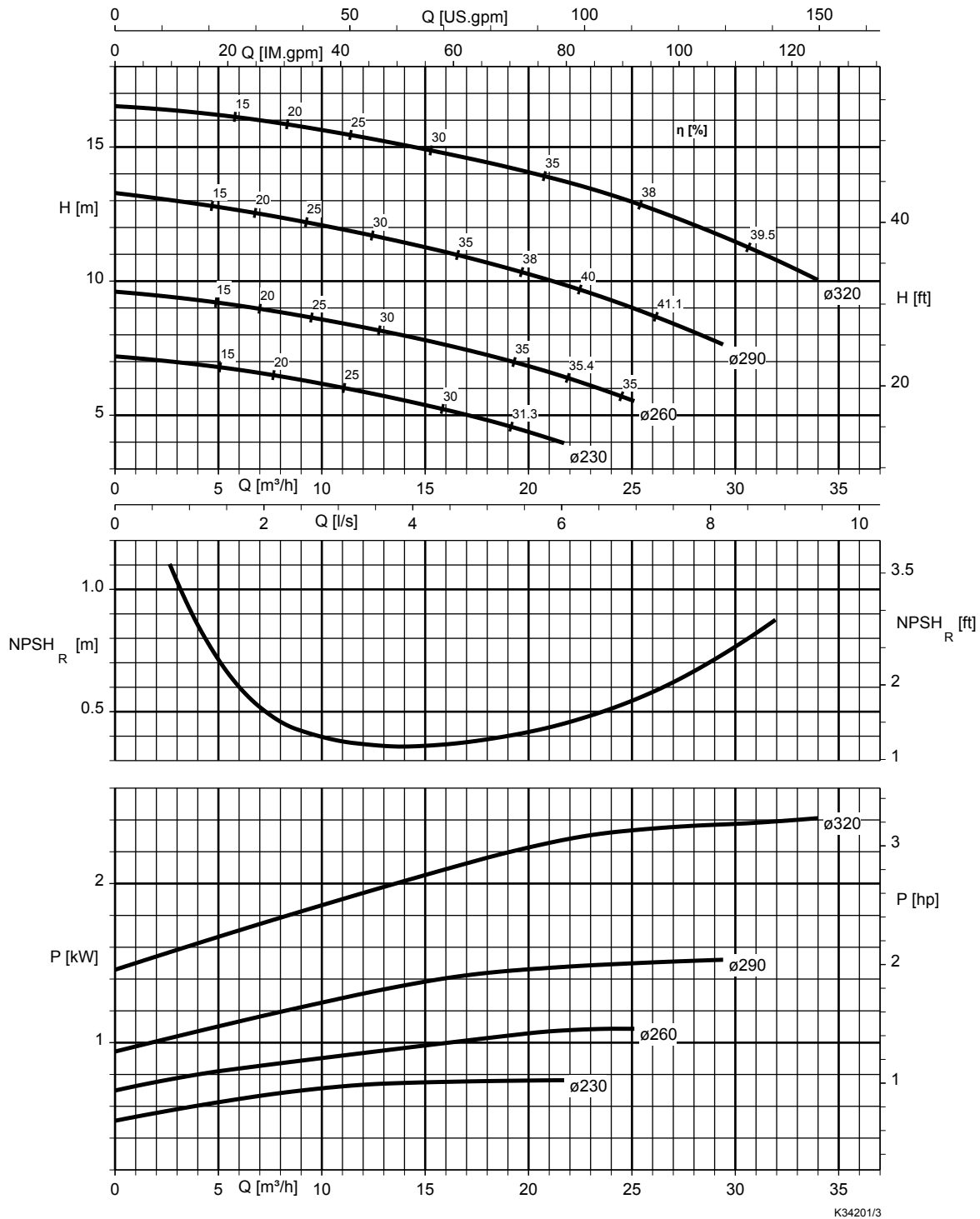


K33892/4

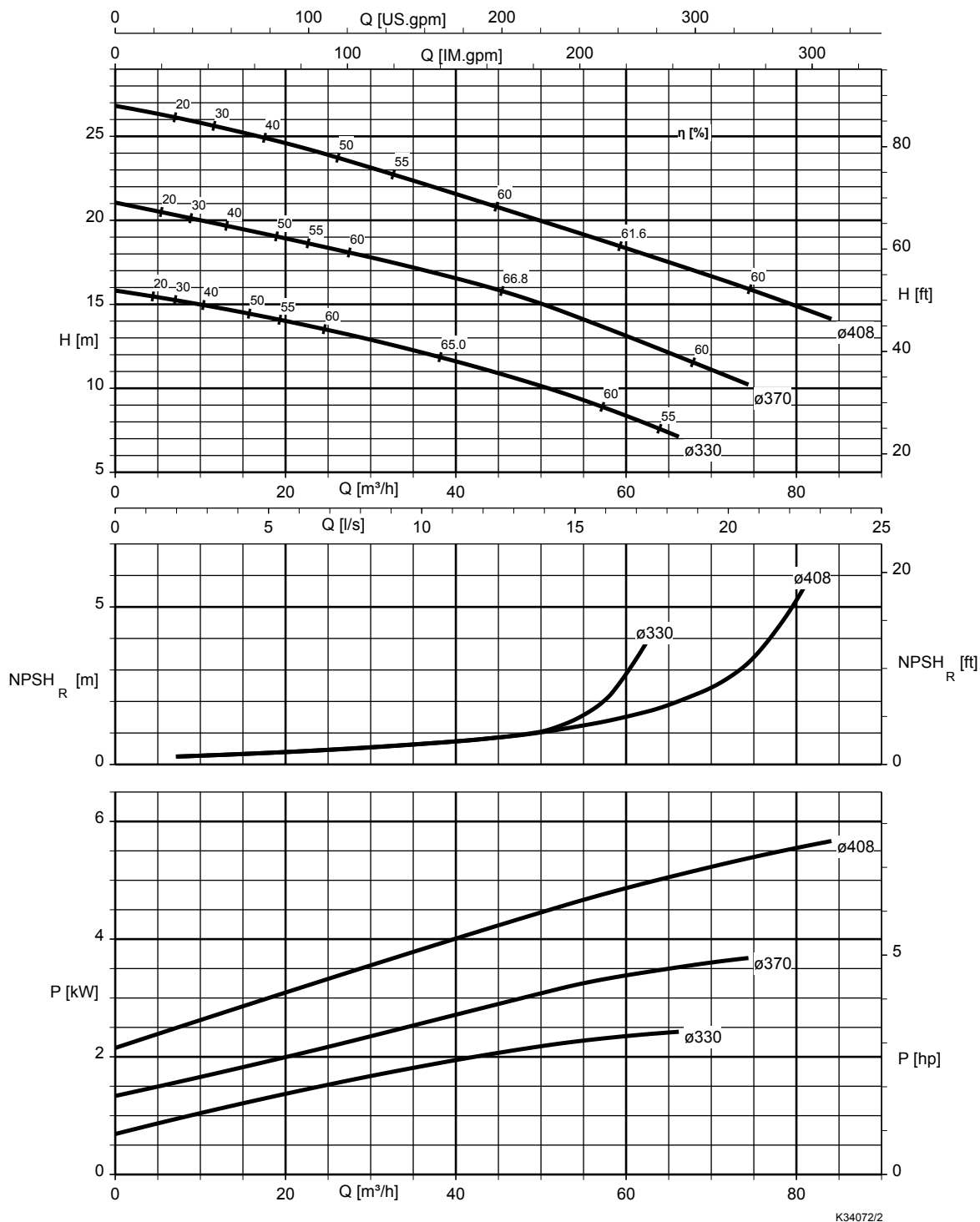
KWP K 065-050-200, n = 960 t/min



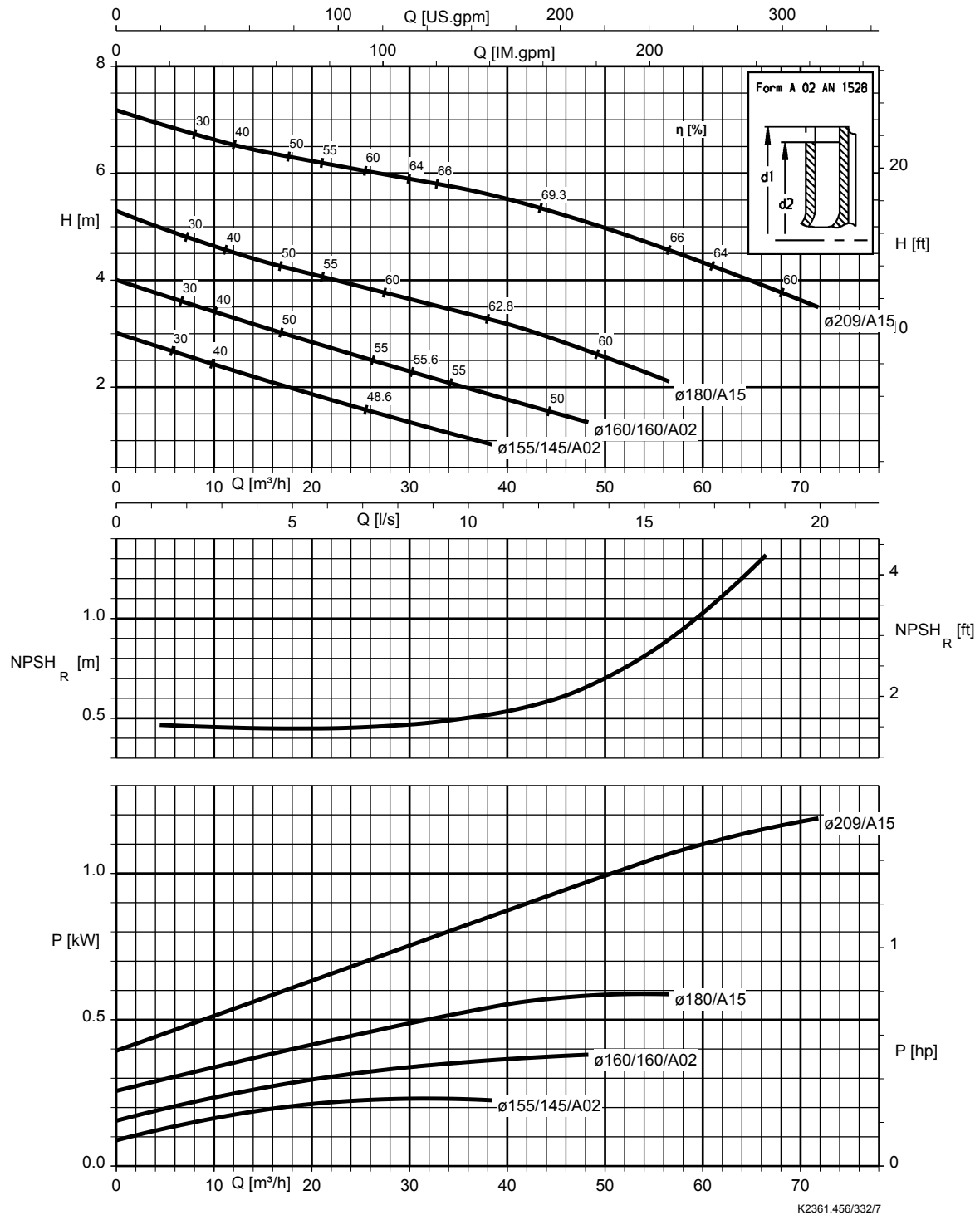
KWP K 080-040-315,  $n = 960 \text{ t/min}$



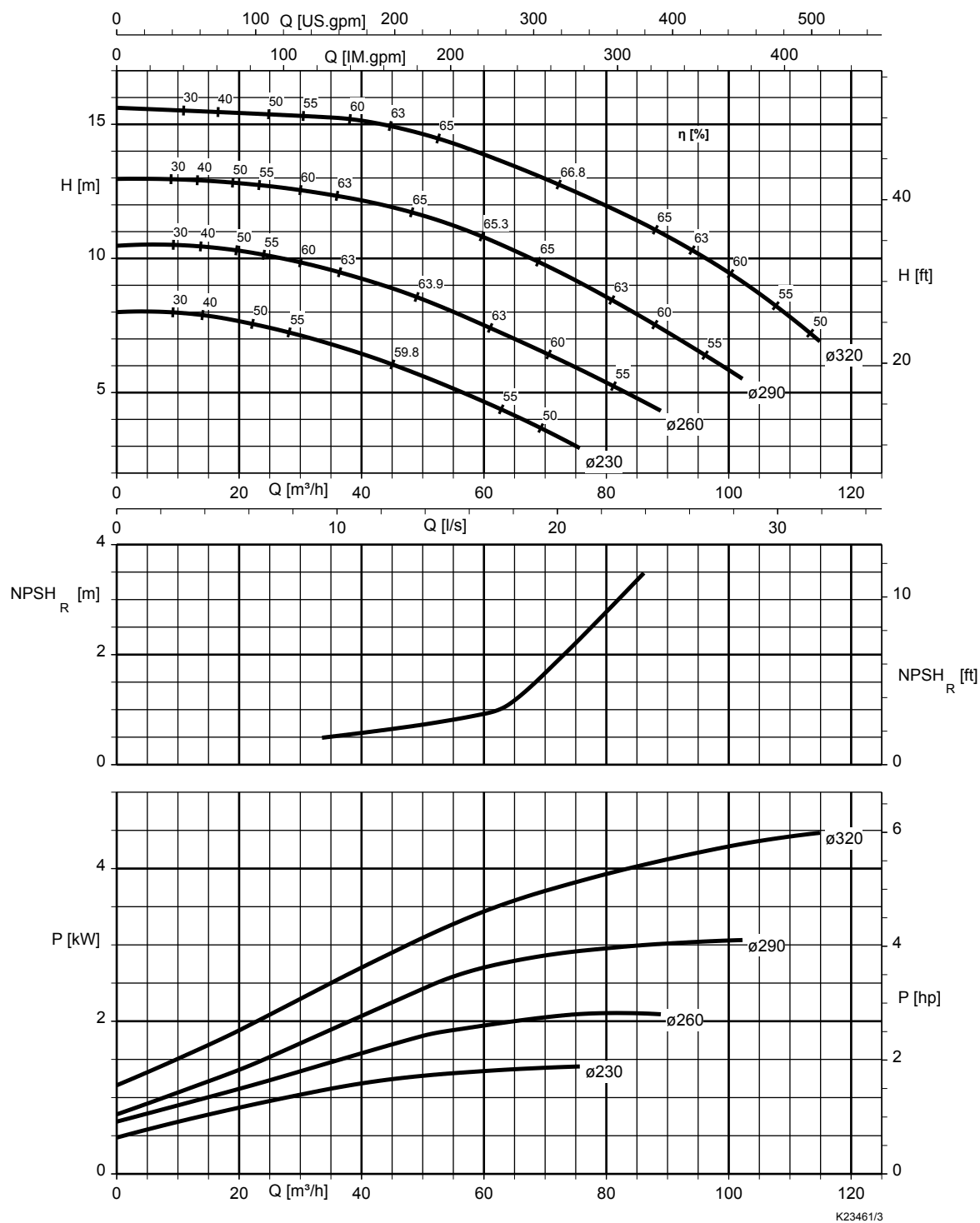
KWP K 080-050-400,  $n = 960 \text{ t/min}$



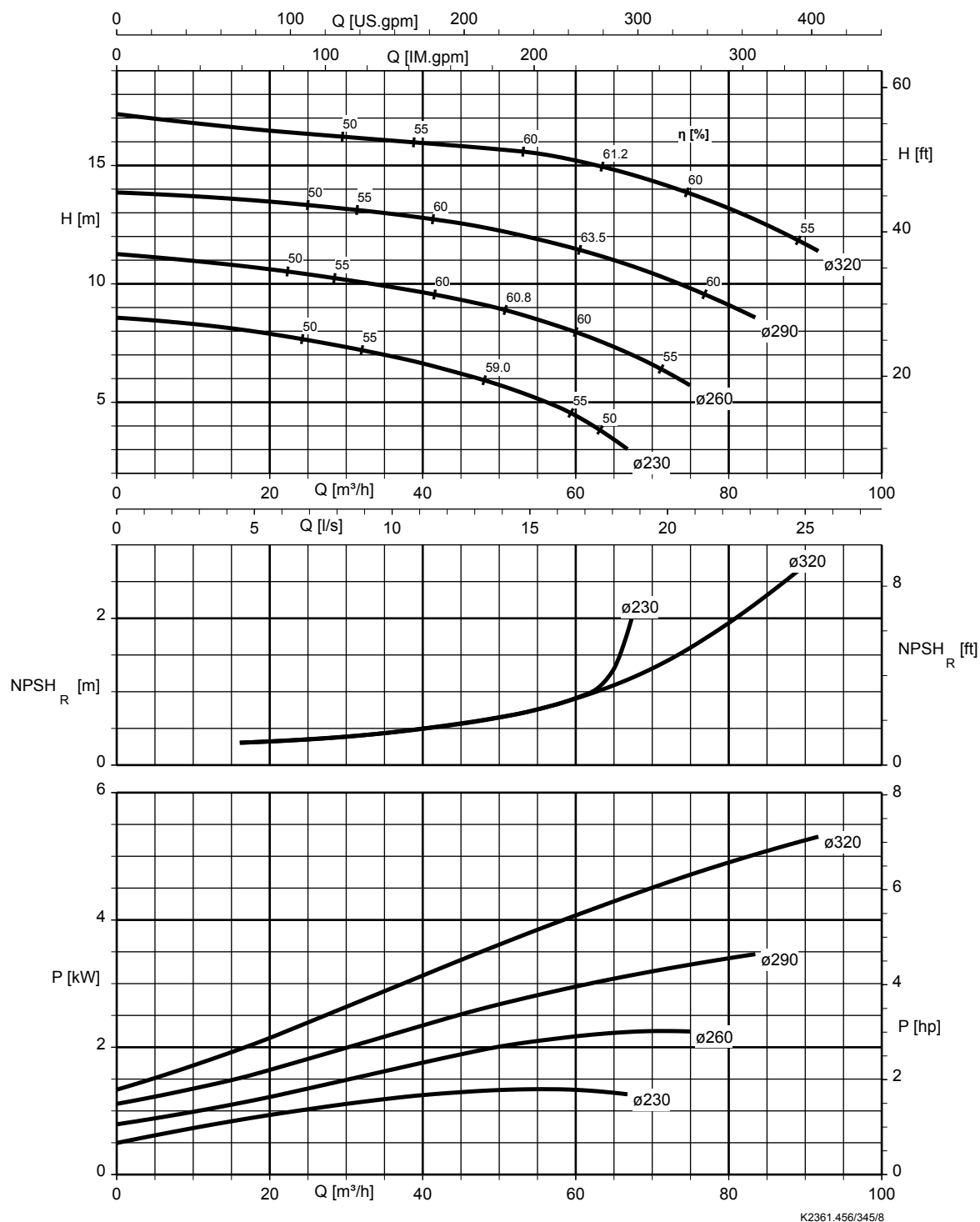
KWP K 080-065-200,  $n = 960 \text{ t/min}$



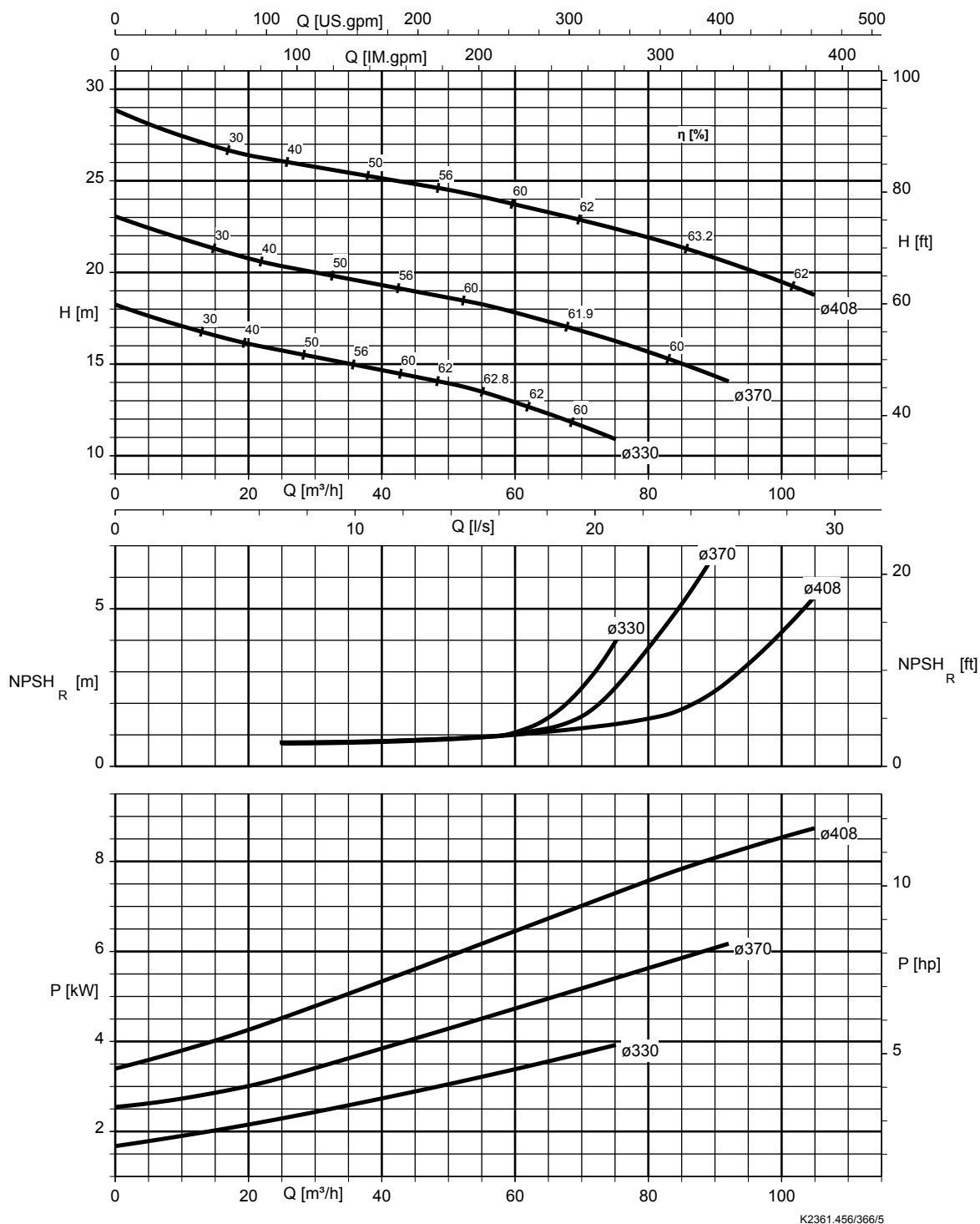
KWP K 080-065-313,  $n = 960 \text{ t/min}$



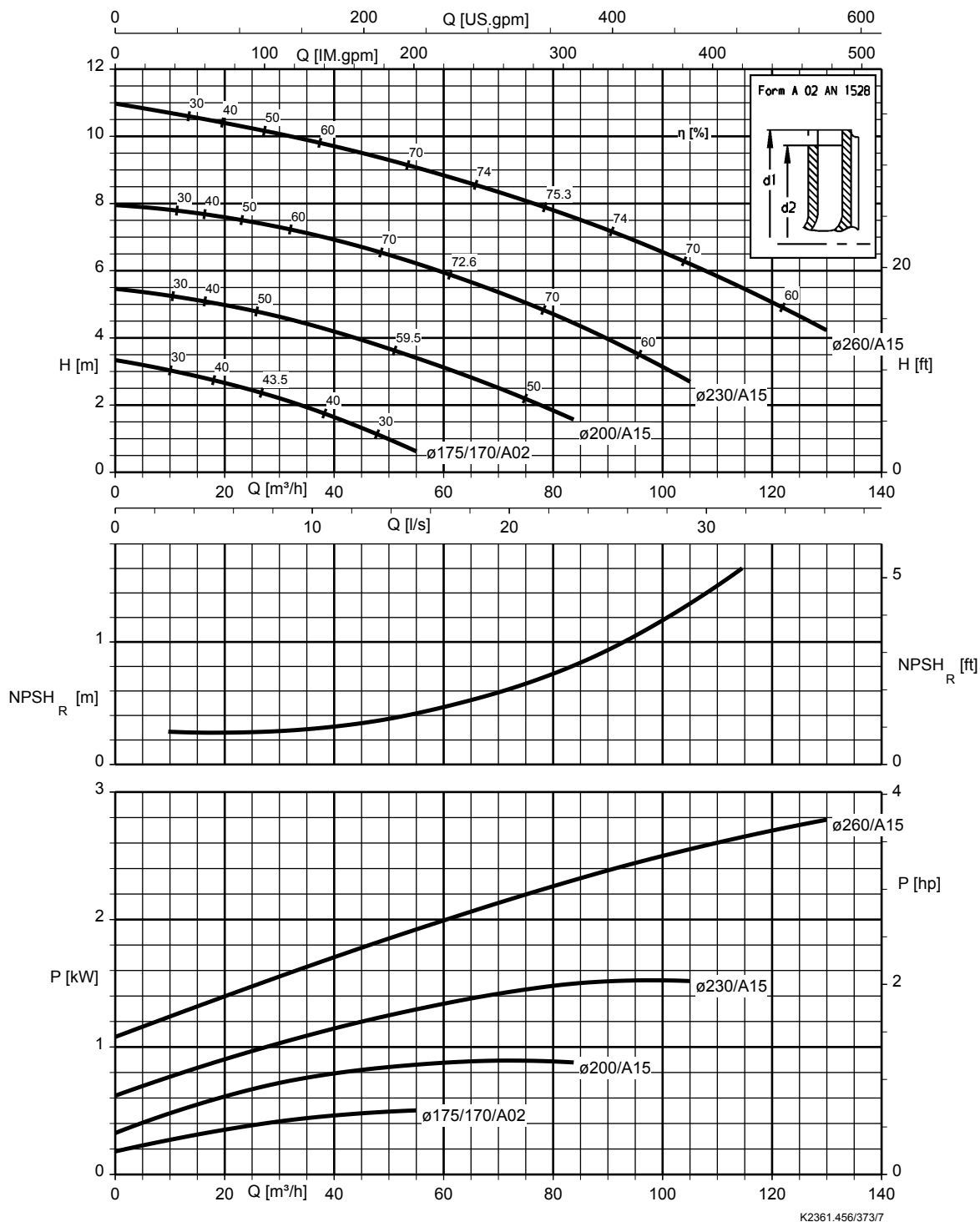
KWP K 080-065-315,  $n = 960 \text{ t/min}$



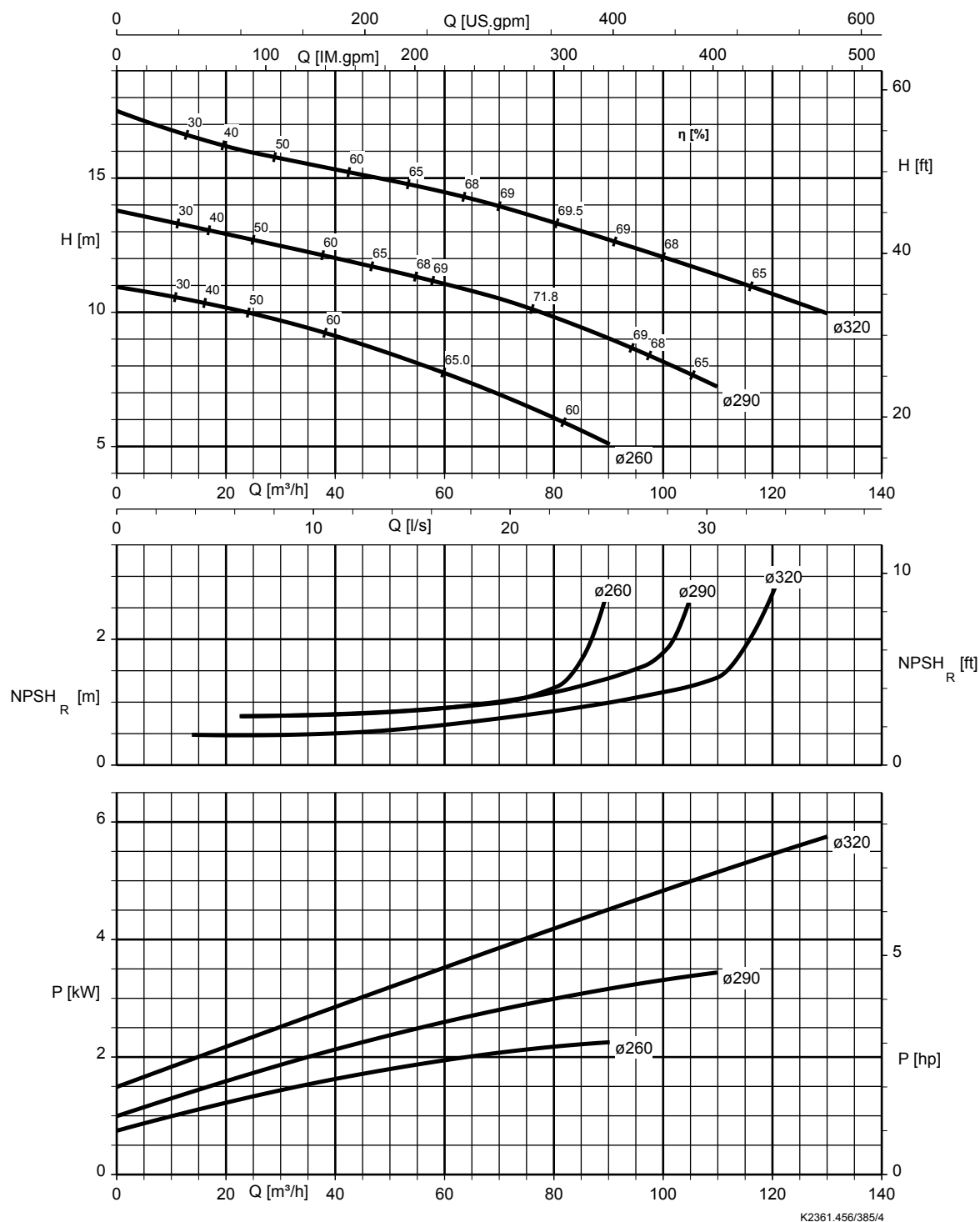
KWP K 080-065-400,  $n = 960 \text{ t/min}$



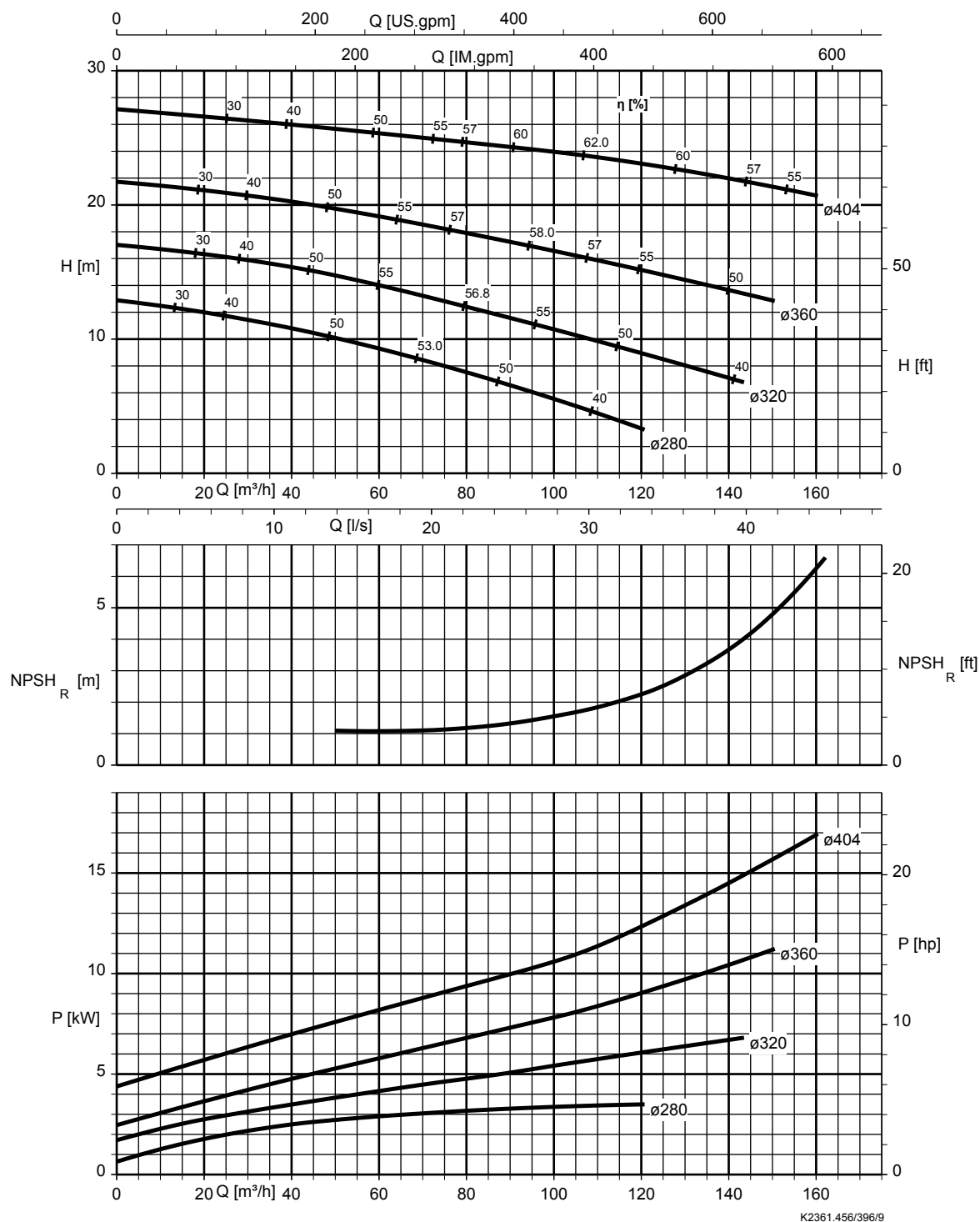
KWP K 100-080-250,  $n = 960 \text{ t/min}$



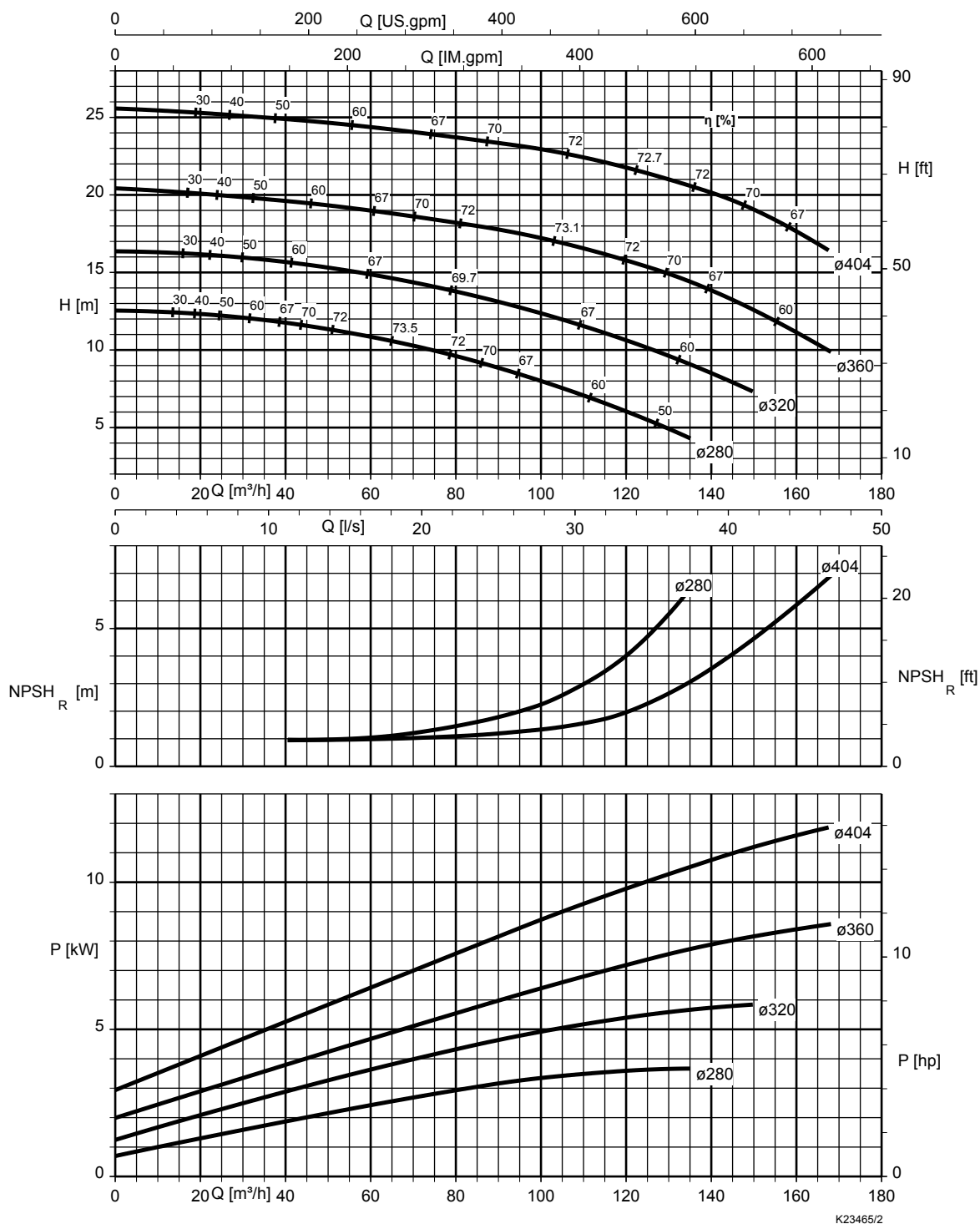
KWP K 100-080-315,  $n = 960 \text{ t/min}$



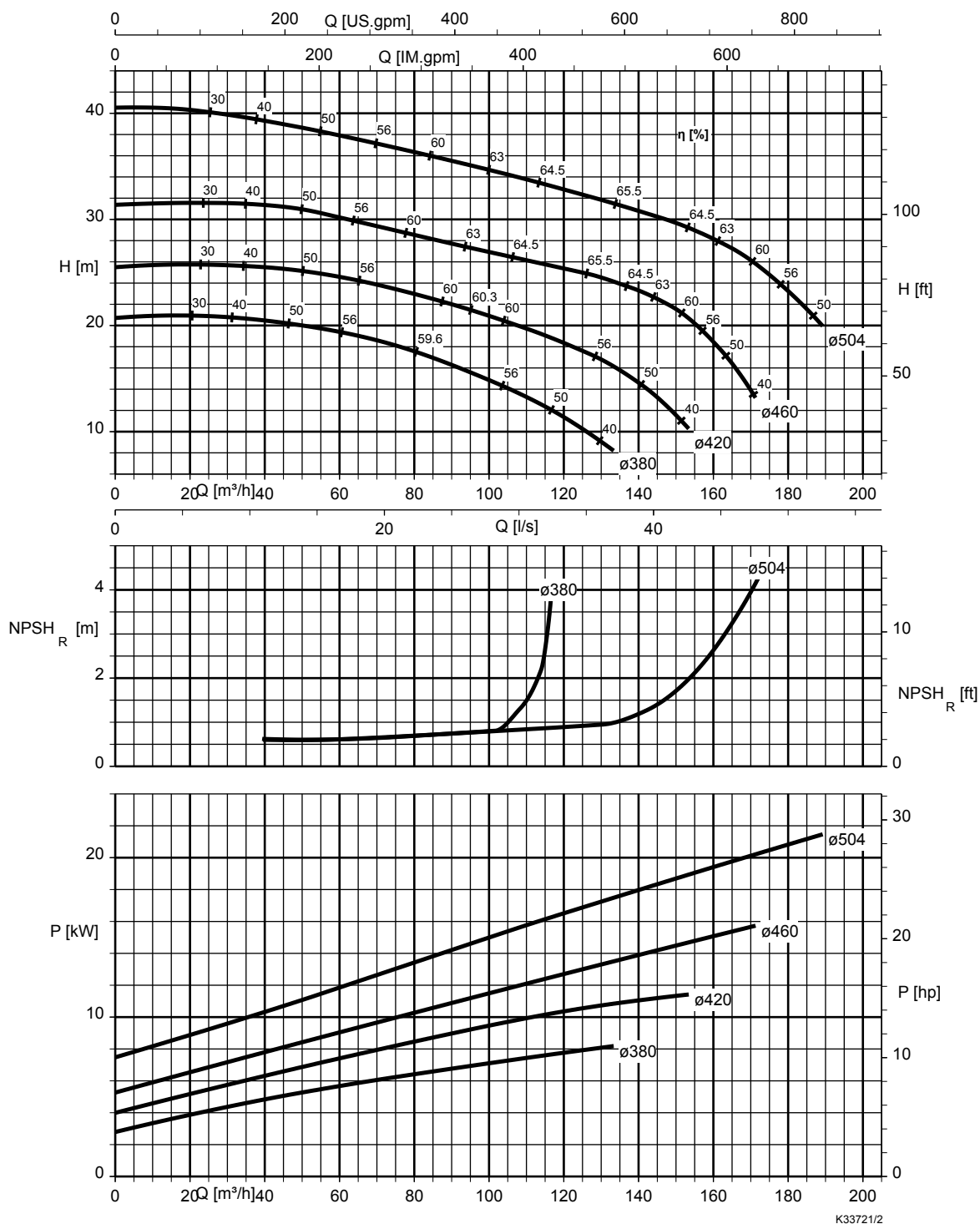
KWP K 100-080-400,  $n = 960 \text{ t/min}$



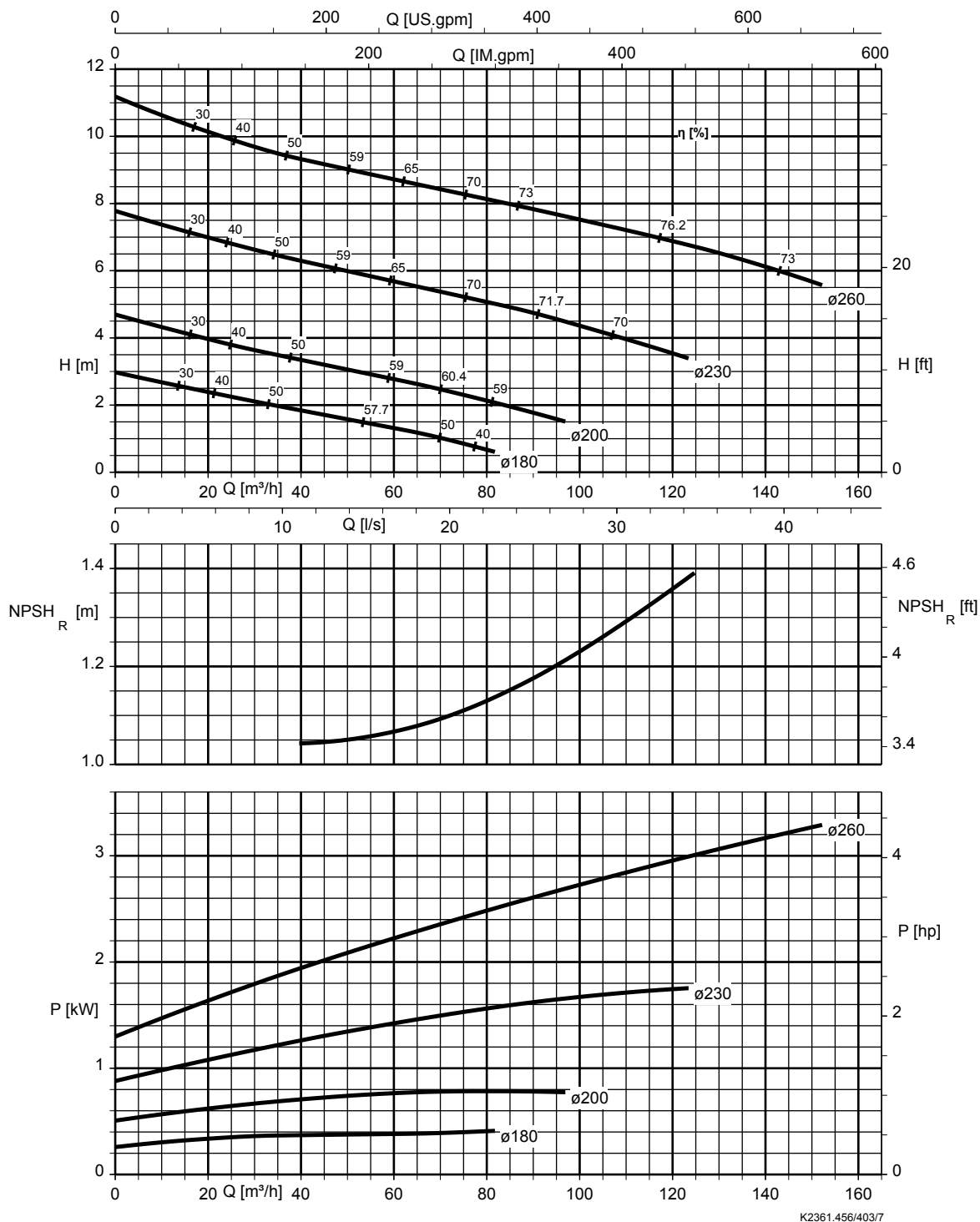
KWP K 100-080-403,  $n = 960 \text{ t/min}$



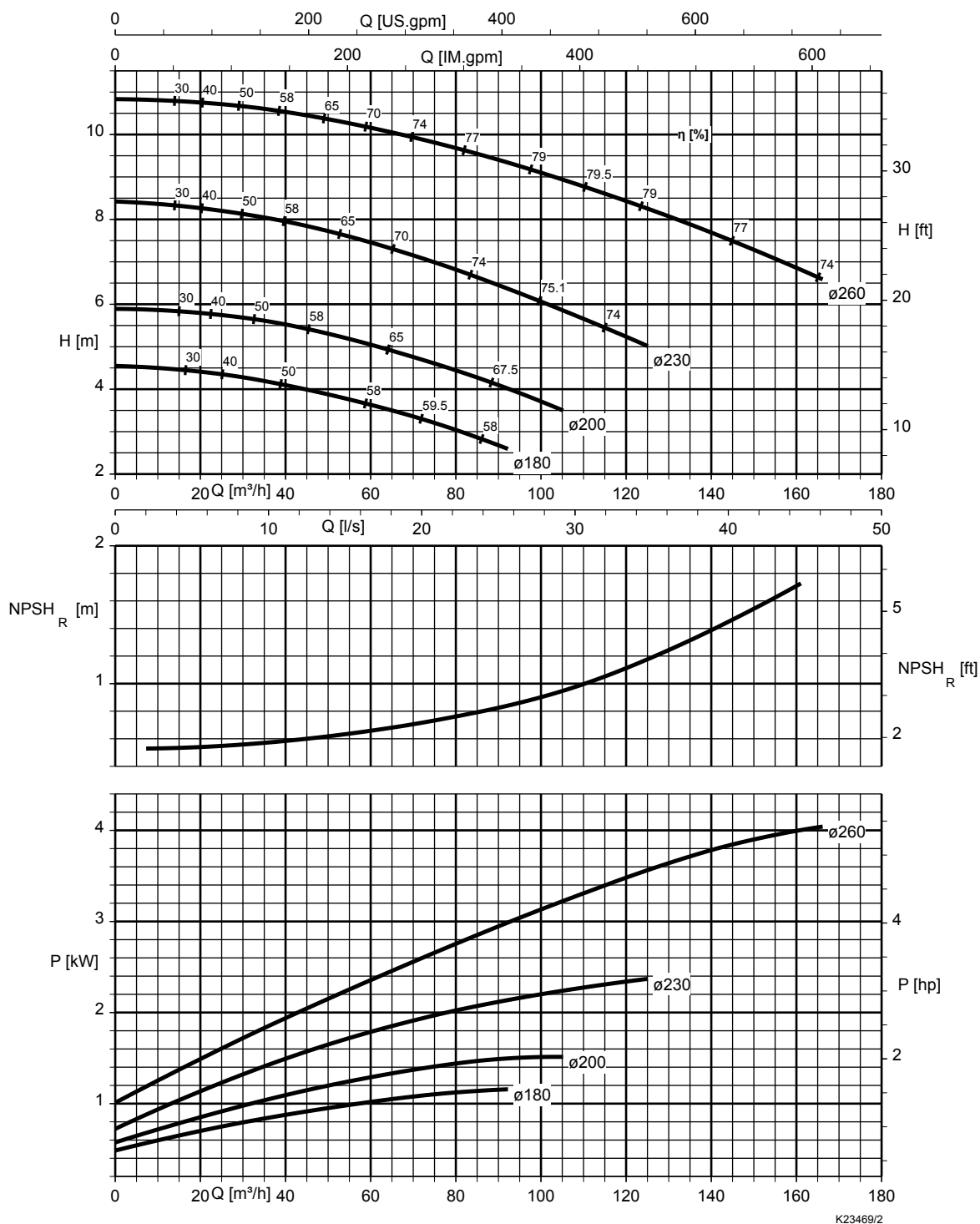
KWP K 125-080-500,  $n = 960 \text{ t/min}$



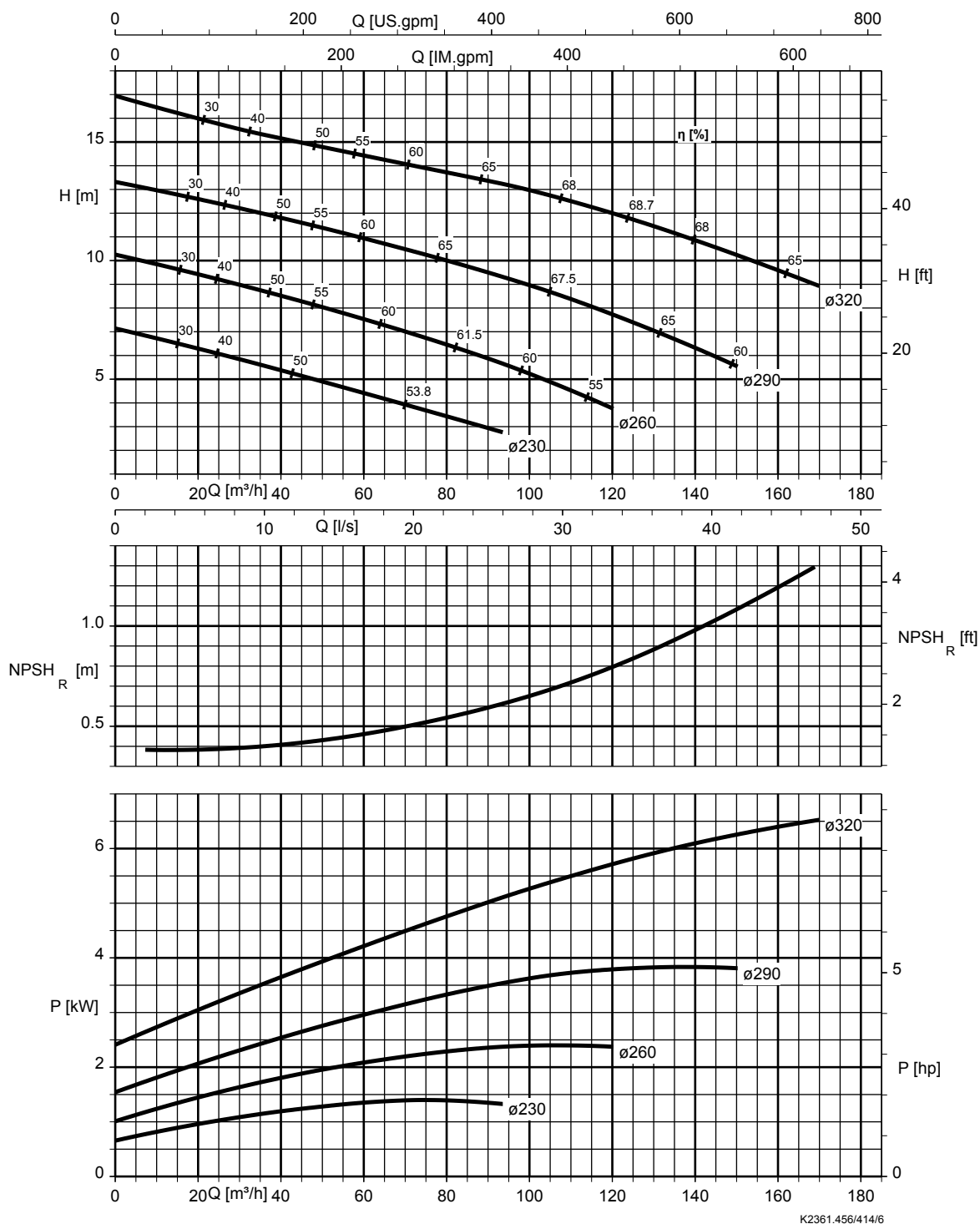
KWP K 125-100-250, n = 960 t/min



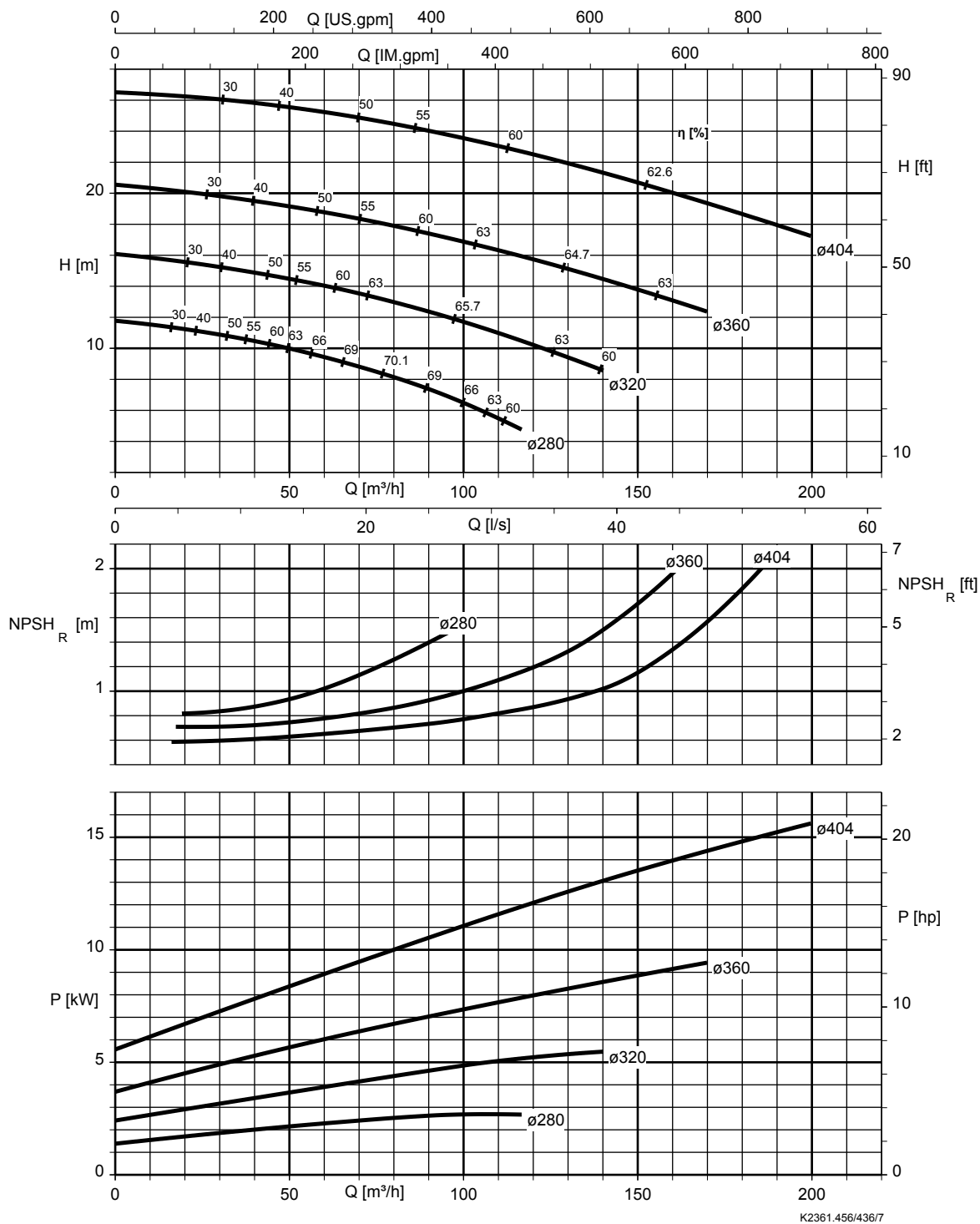
**KWP K 125-100-253, n = 960 t/min**



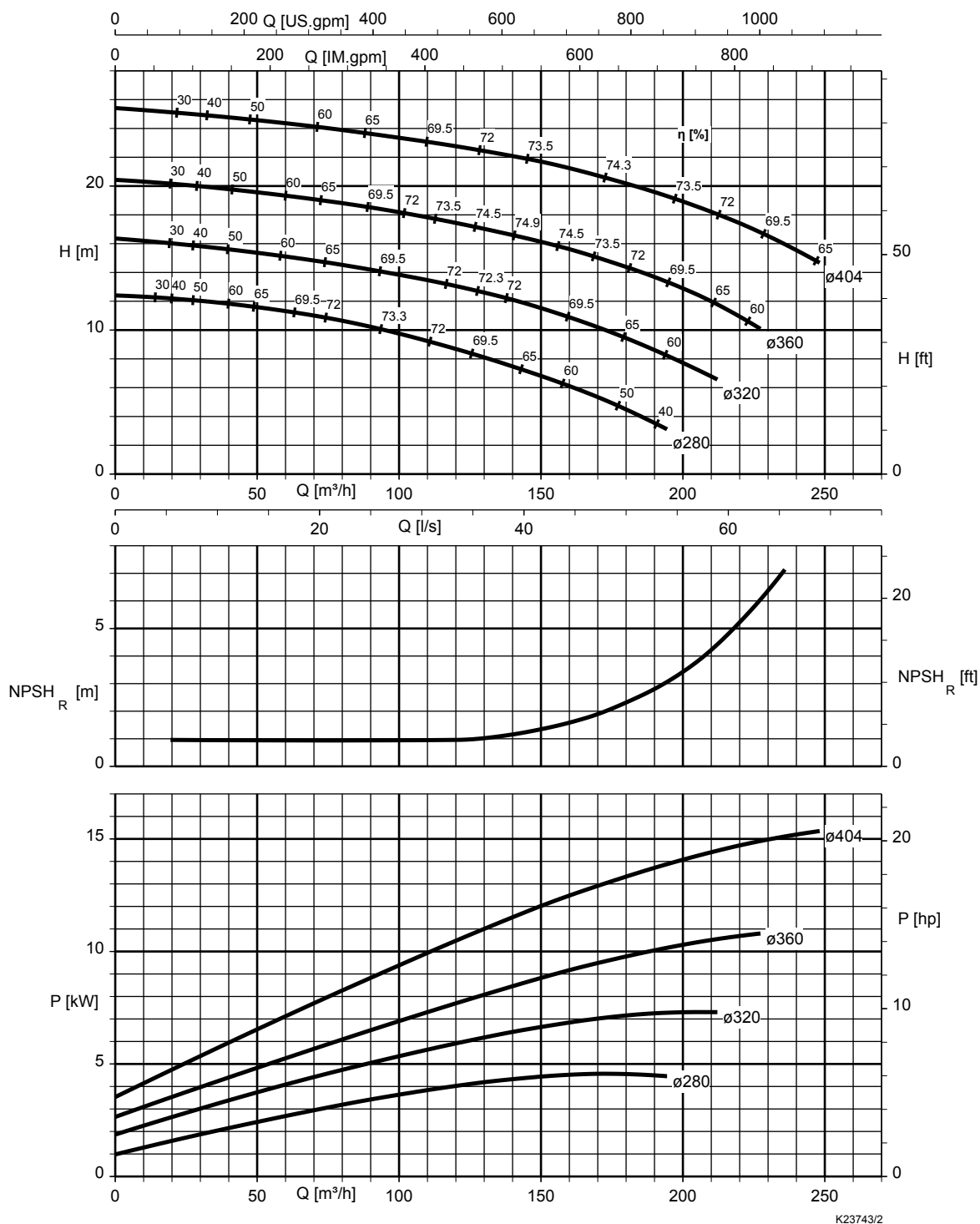
KWP K 125-100-315,  $n = 960 \text{ t/min}$



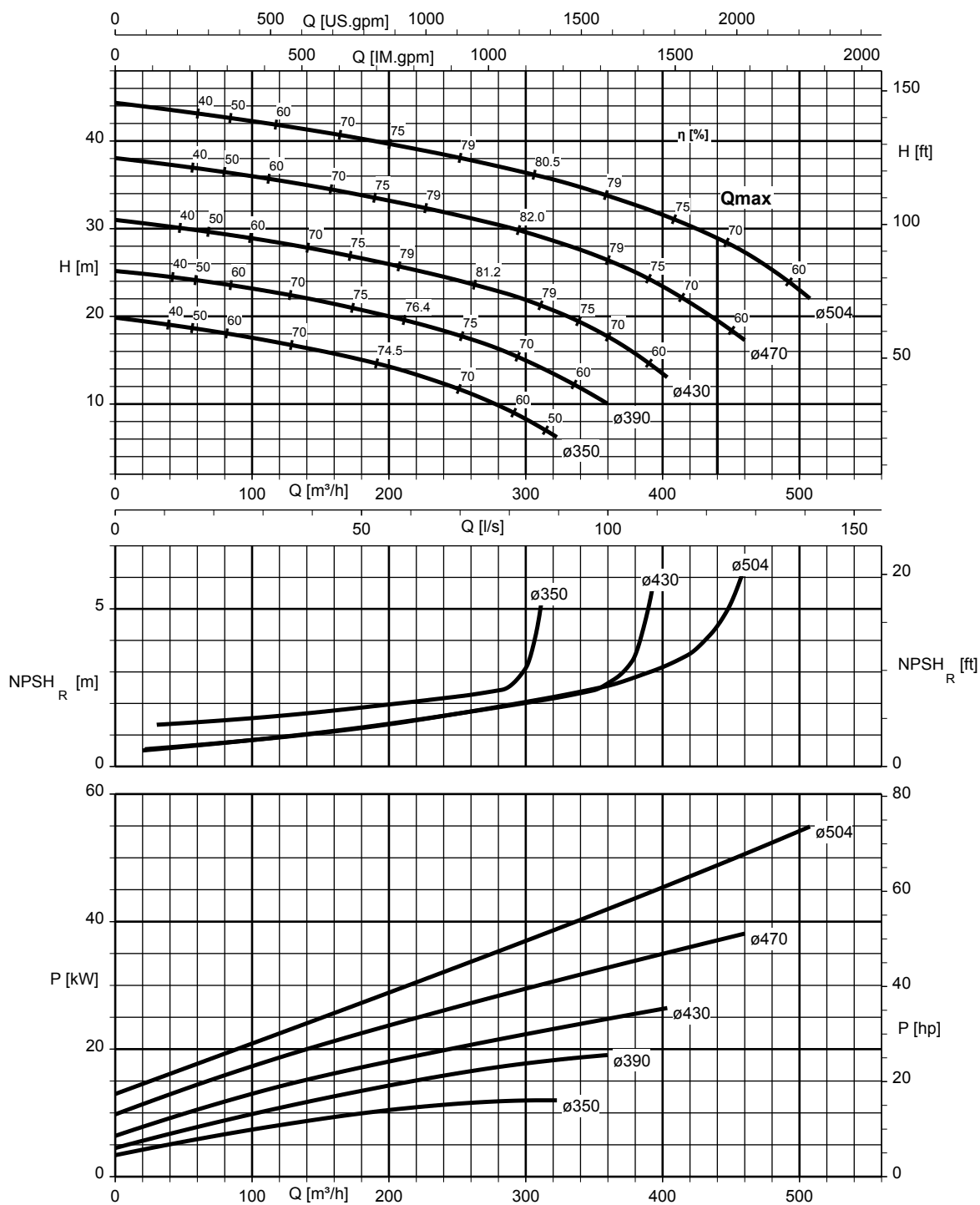
KWP K 125-100-400,  $n = 960 \text{ t/min}$



KWP K 125-100-403,  $n = 960 \text{ t/min}$

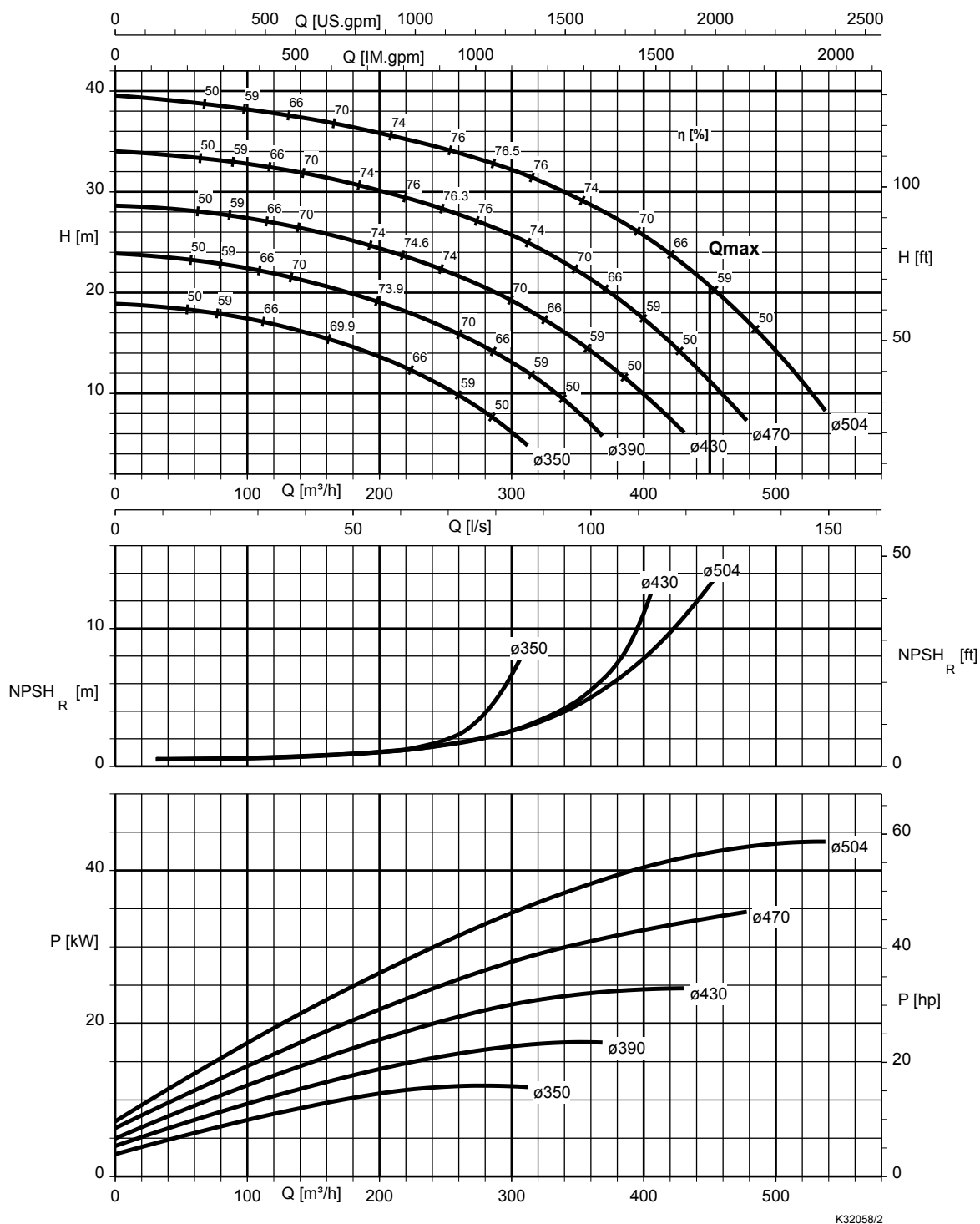


KWP K 150-125-500,  $n = 960 \text{ t/min}$

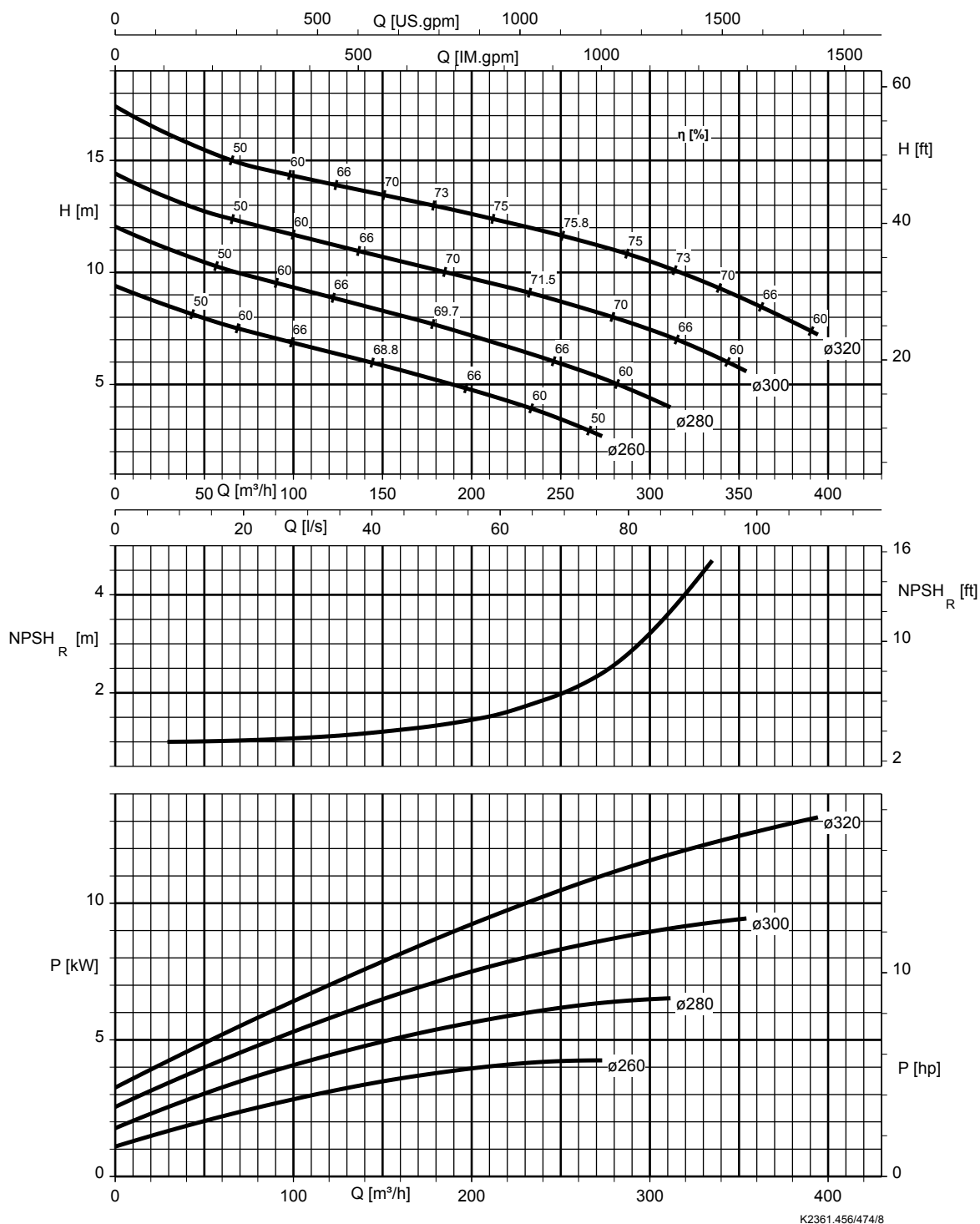


K33984/3

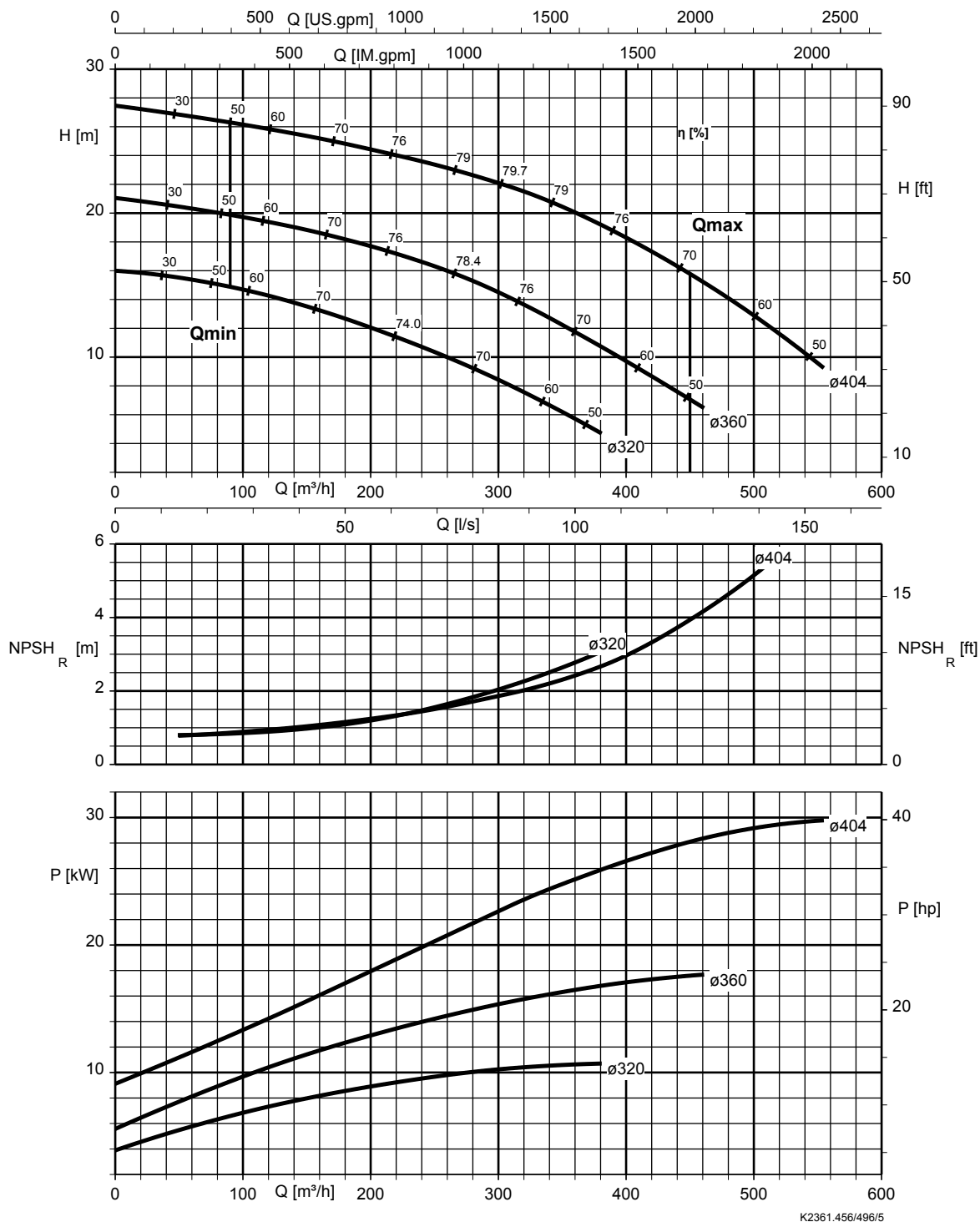
KWP K 150-125-503,  $n = 960 \text{ t/min}$



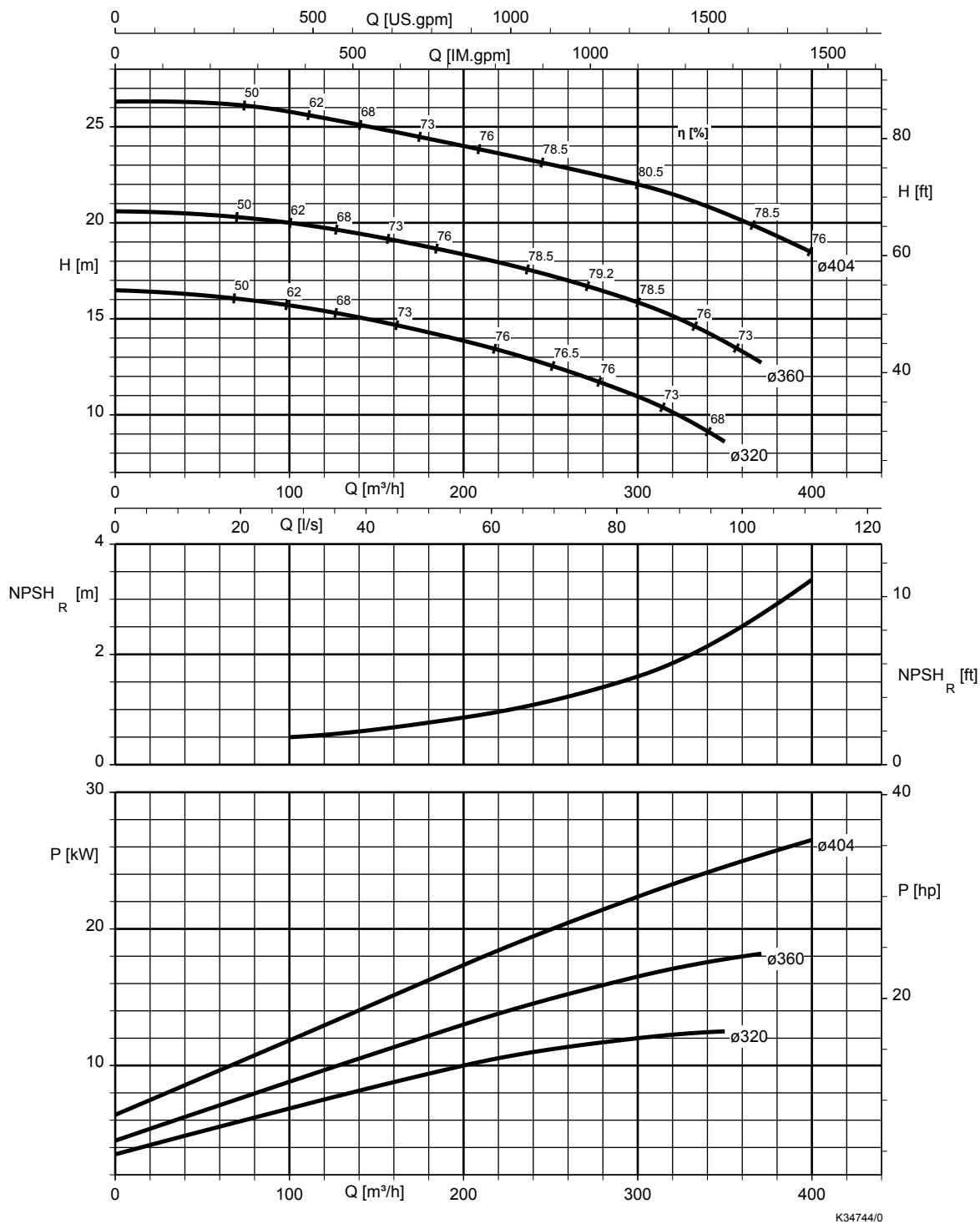
KWP K 150-150-315,  $n = 960 \text{ t/min}$



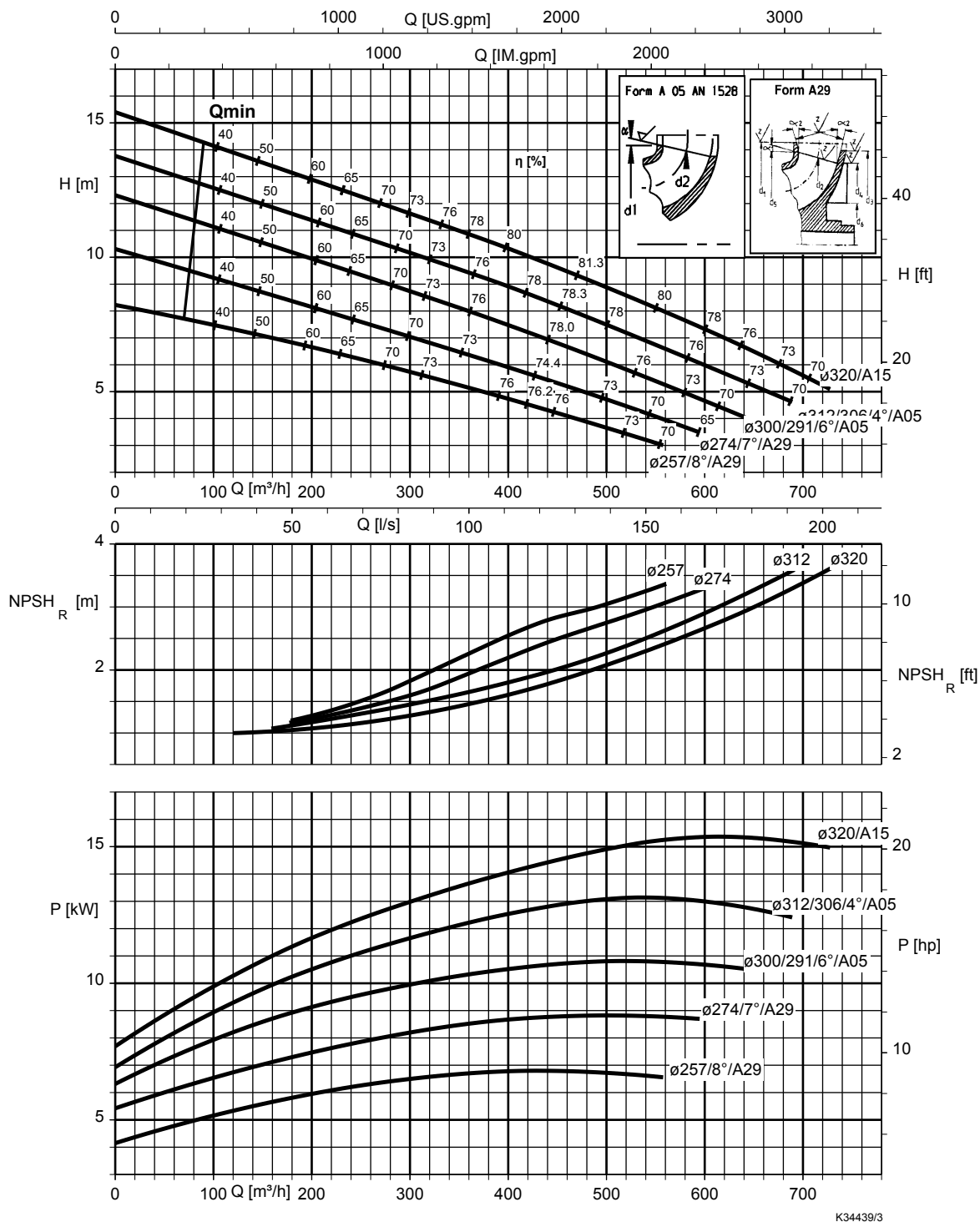
KWP K 150-150-400,  $n = 960 \text{ t/min}$



KWP K 150-150-403,  $n = 960 \text{ t/min}$

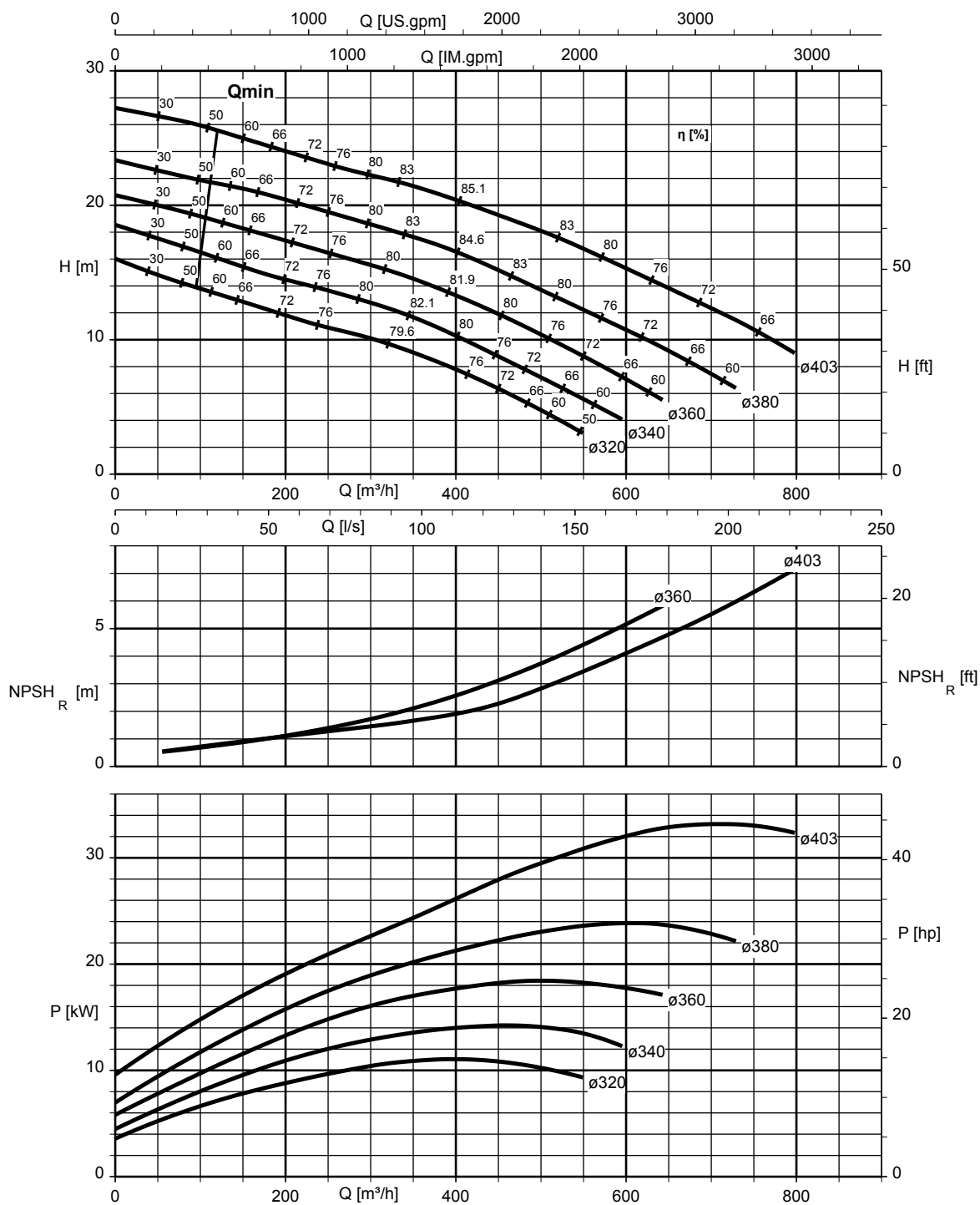


KWP K 200-200-320,  $n = 960 \text{ t/min}$



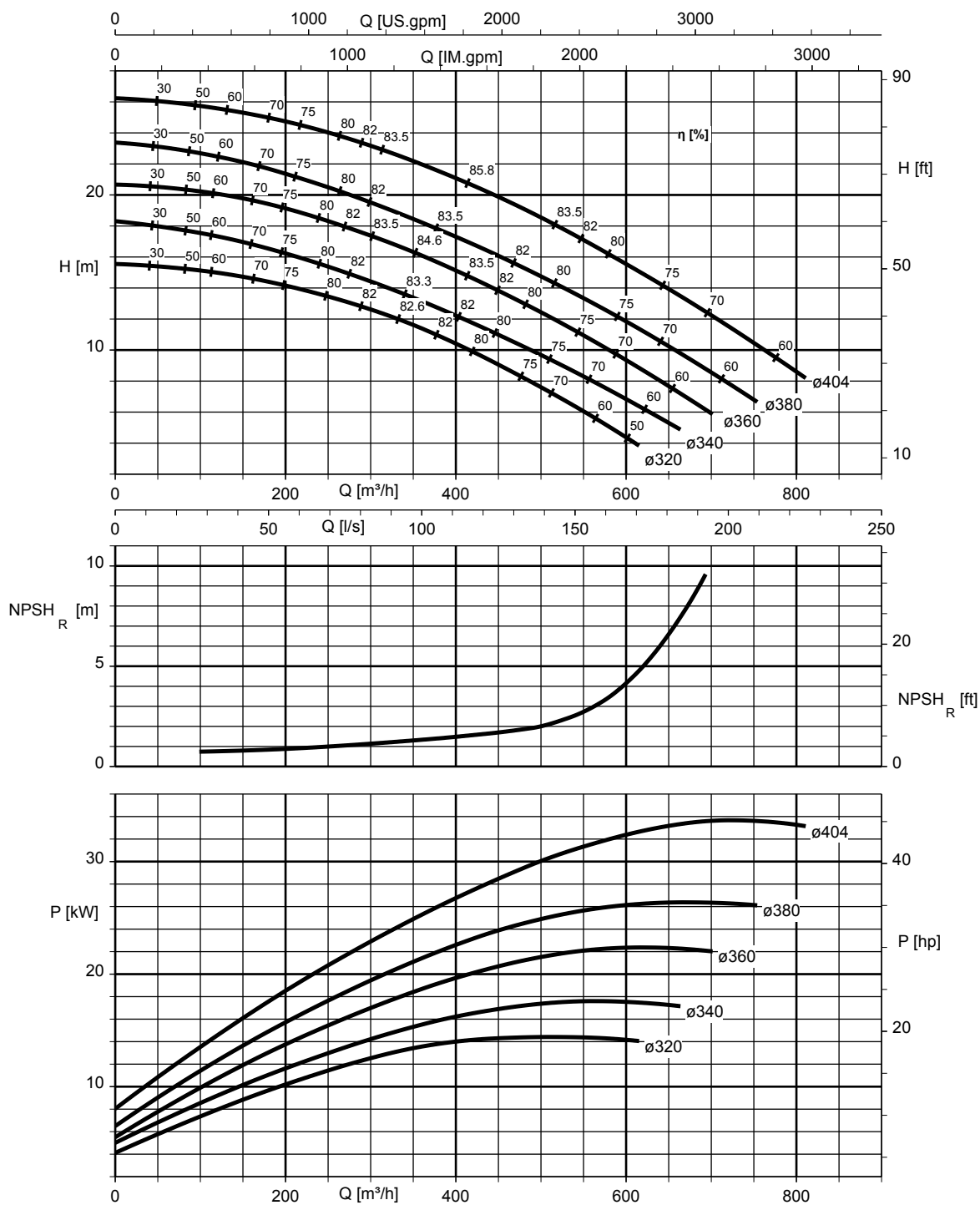
K34439/3

KWP K 200-200-400,  $n = 960 \text{ t/min}$



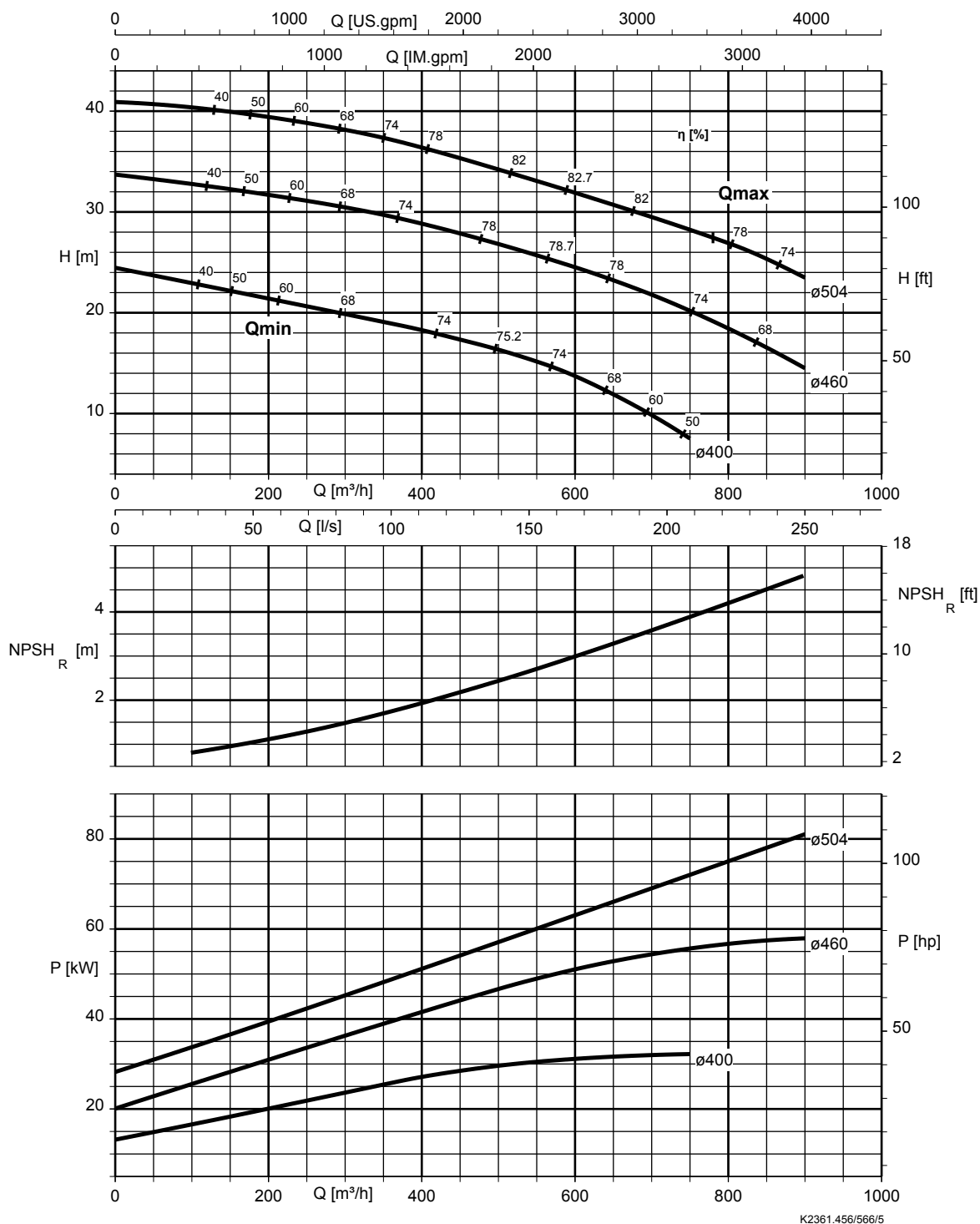
K33783/3

KWP K 200-200-403,  $n = 960 \text{ t/min}$

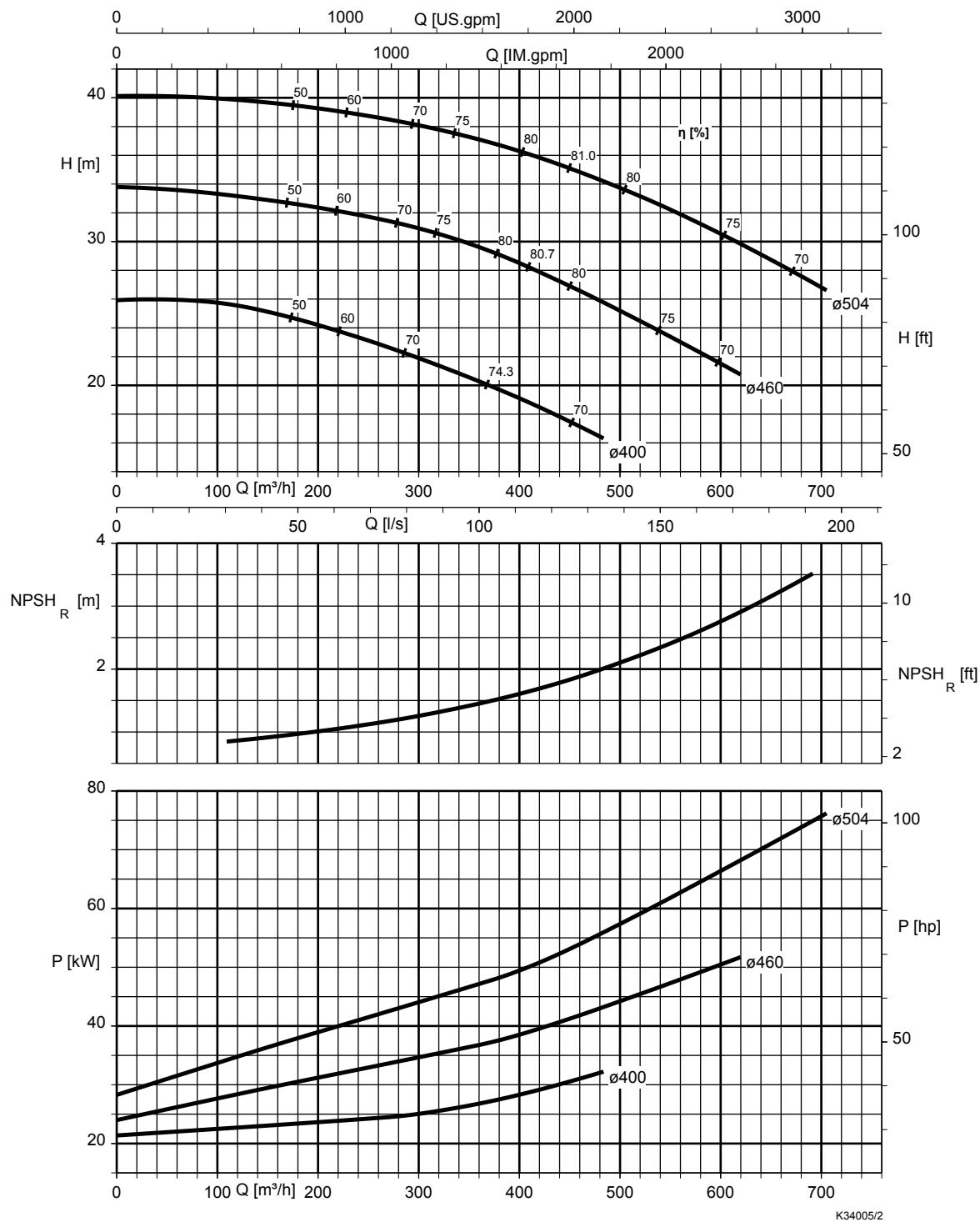


K31960/2

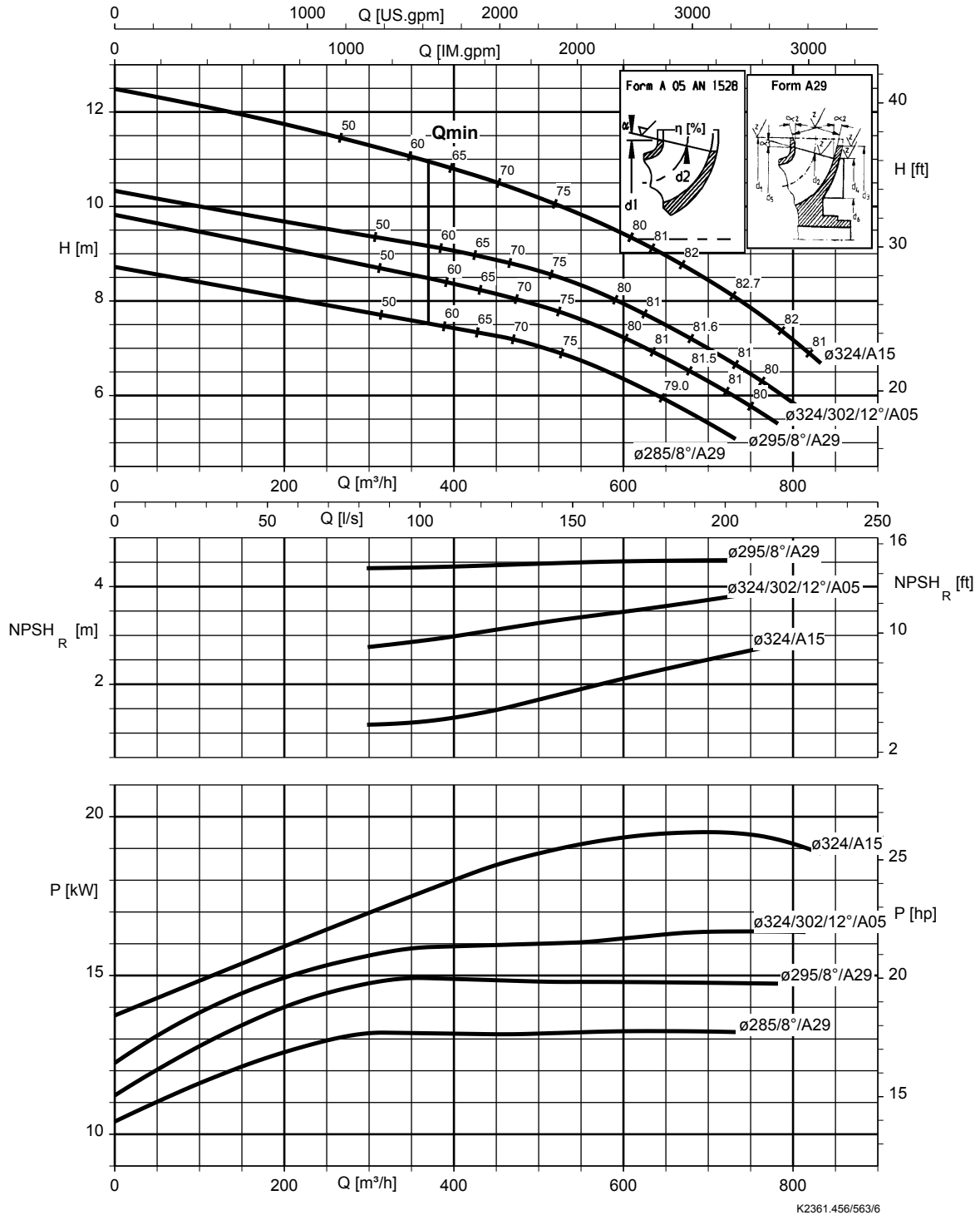
KWP K 200-200-501, n = 960 t/min



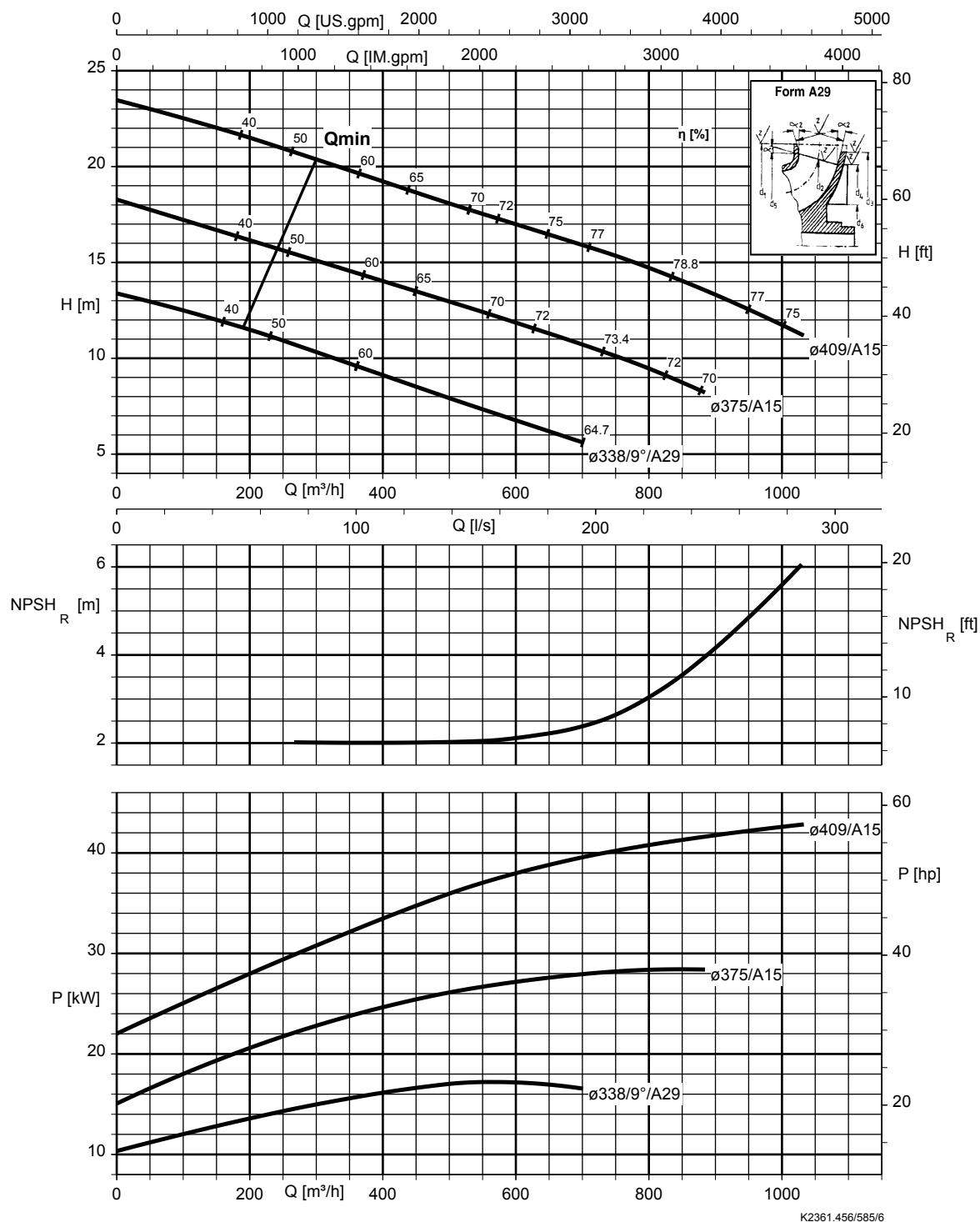
KWP K 200-200-503, n = 960 t/min



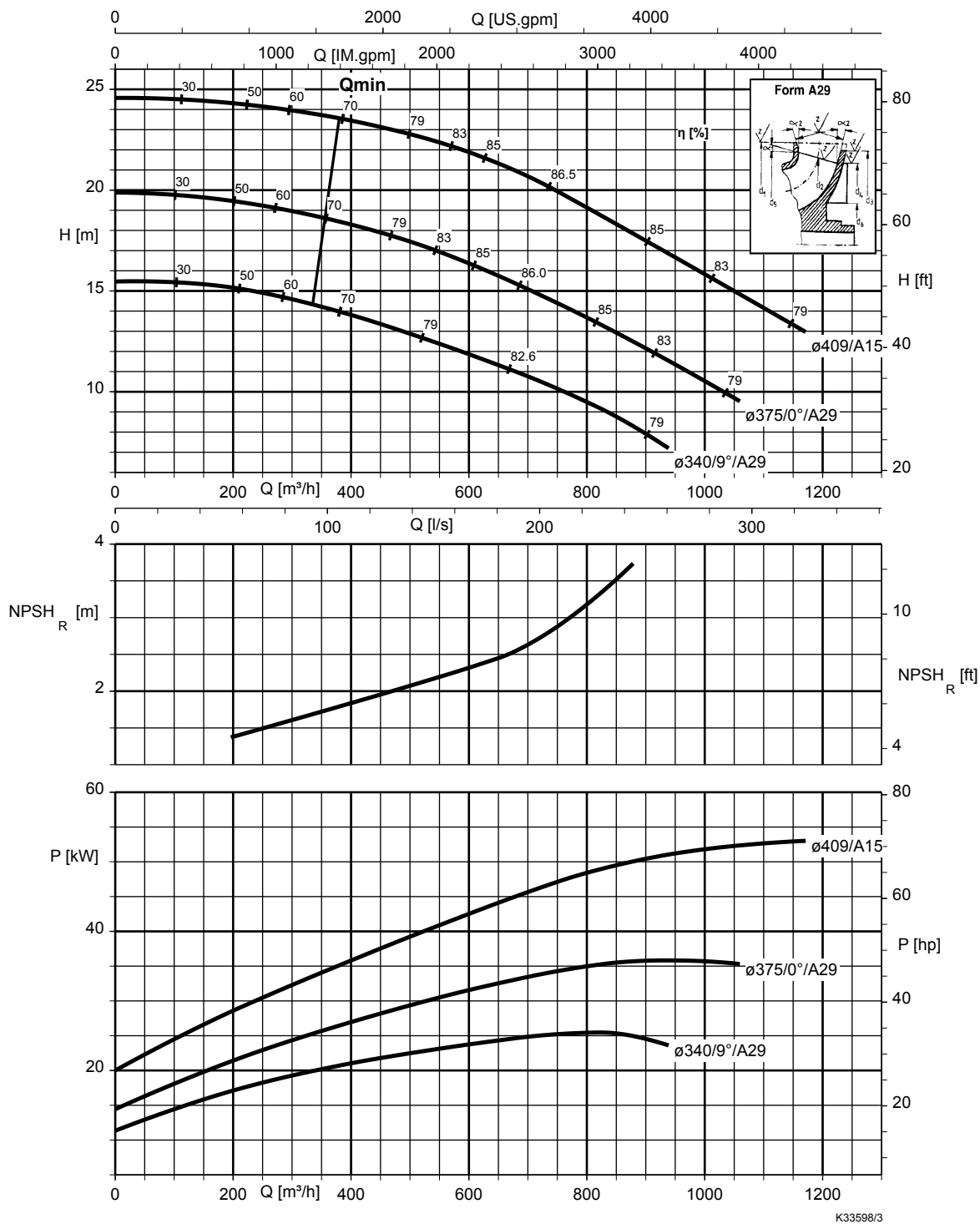
KWP K 250-250-315,  $n = 960 \text{ t/min}$



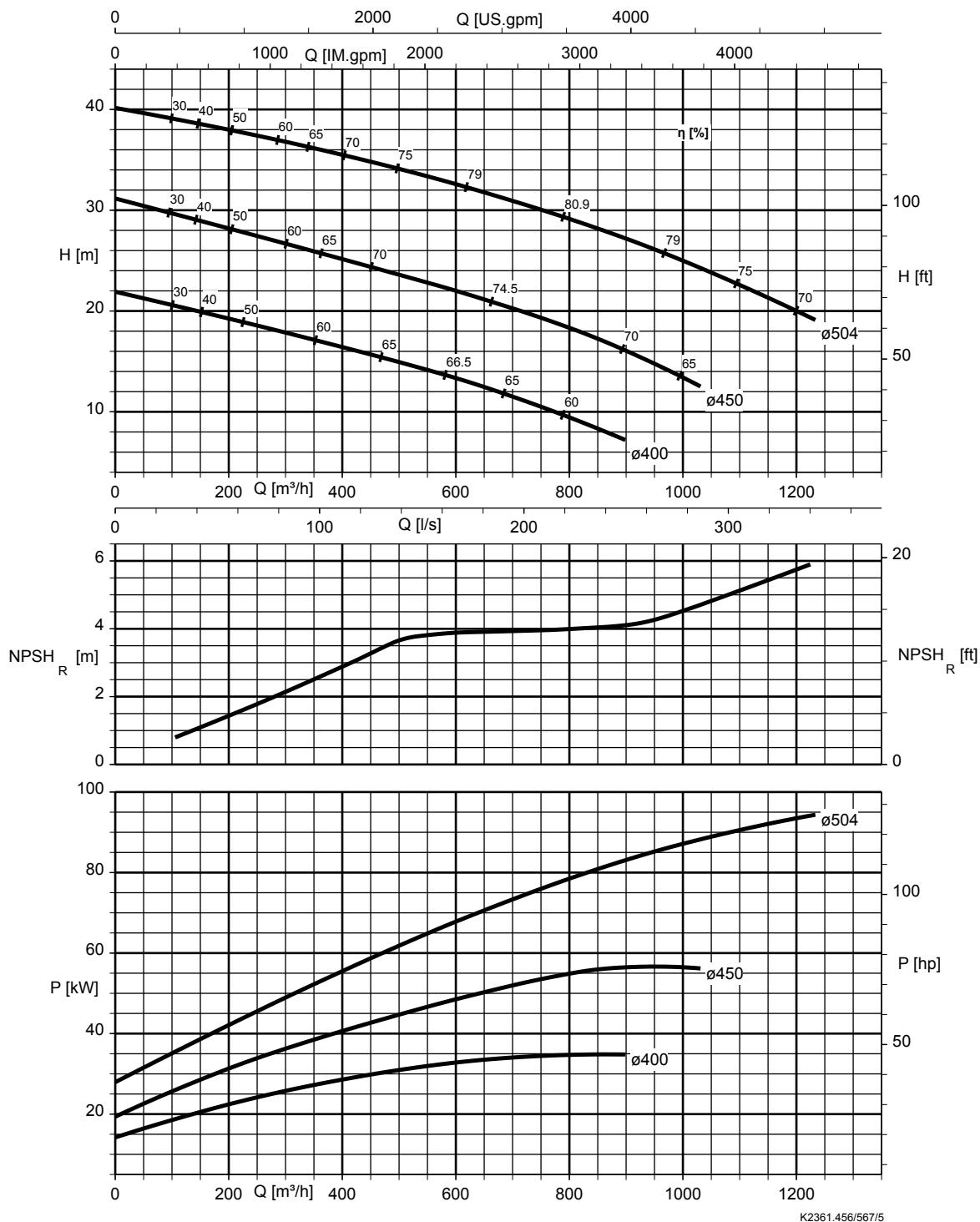
KWP K 250-250-400,  $n = 960 \text{ t/min}$



KWP K 250-250-403,  $n = 960 \text{ t/min}$

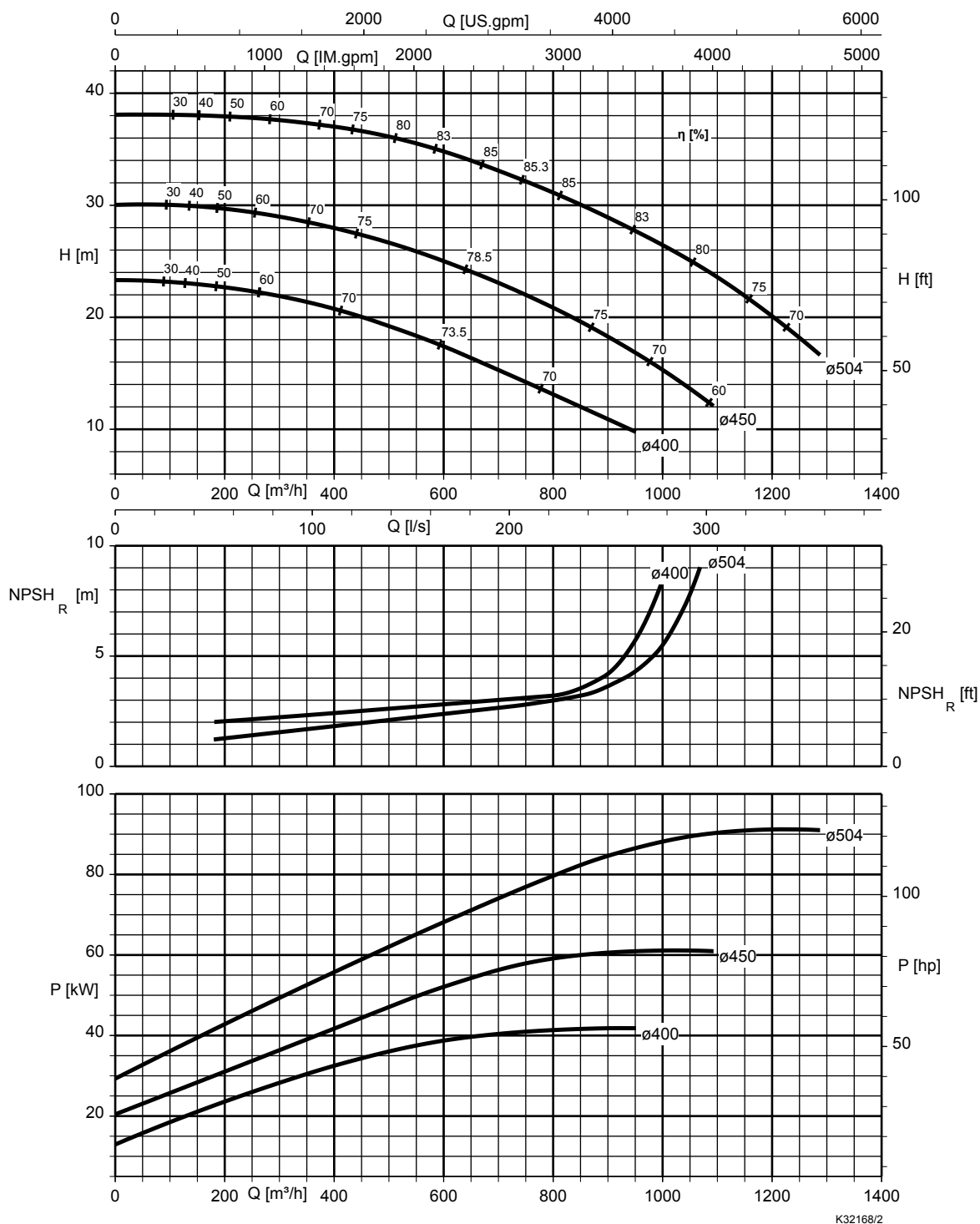


KWP K 250-250-500, n = 960 t/min

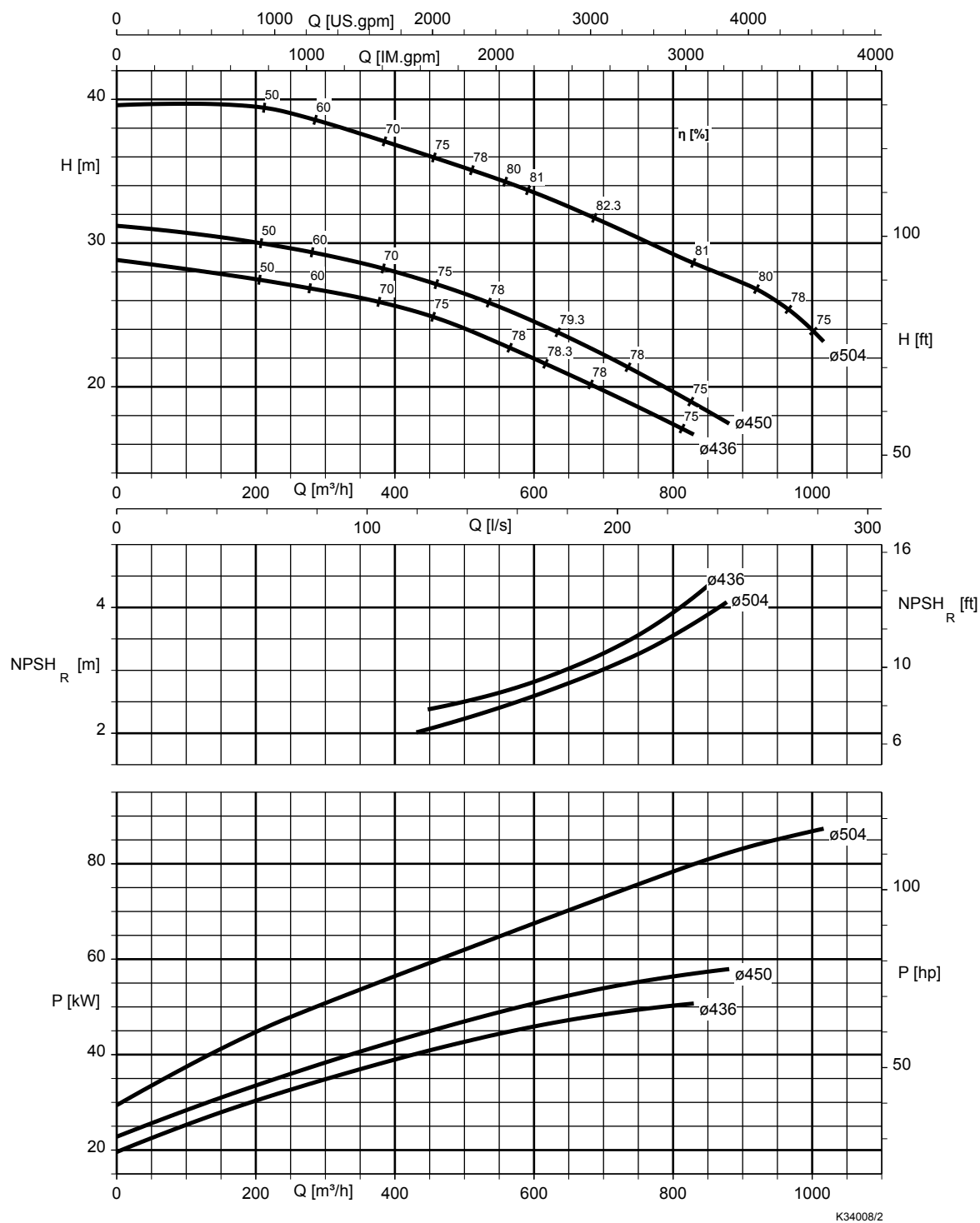


K2361.456/567/5

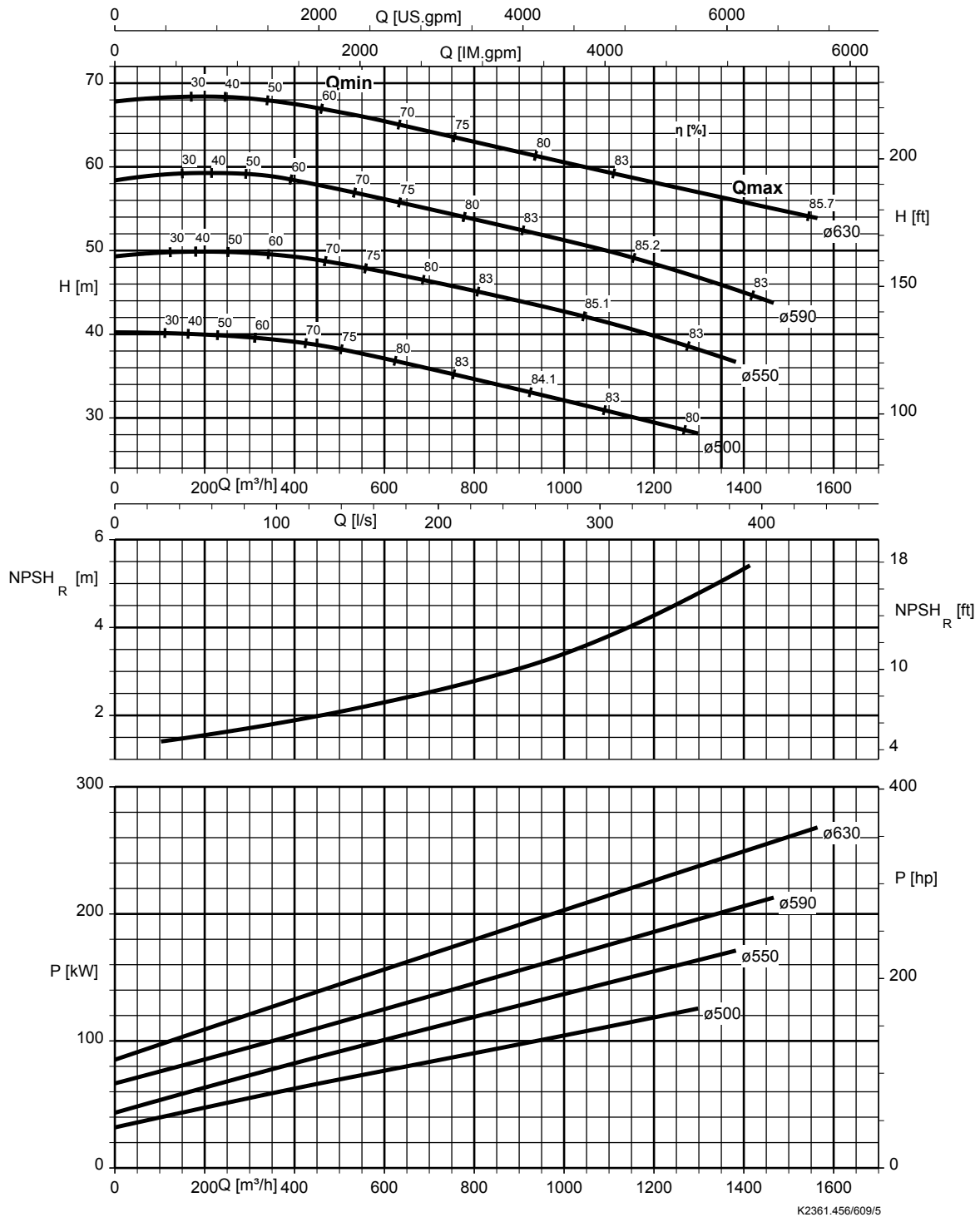
KWP K 250-250-503,  $n = 960 \text{ t/min}$



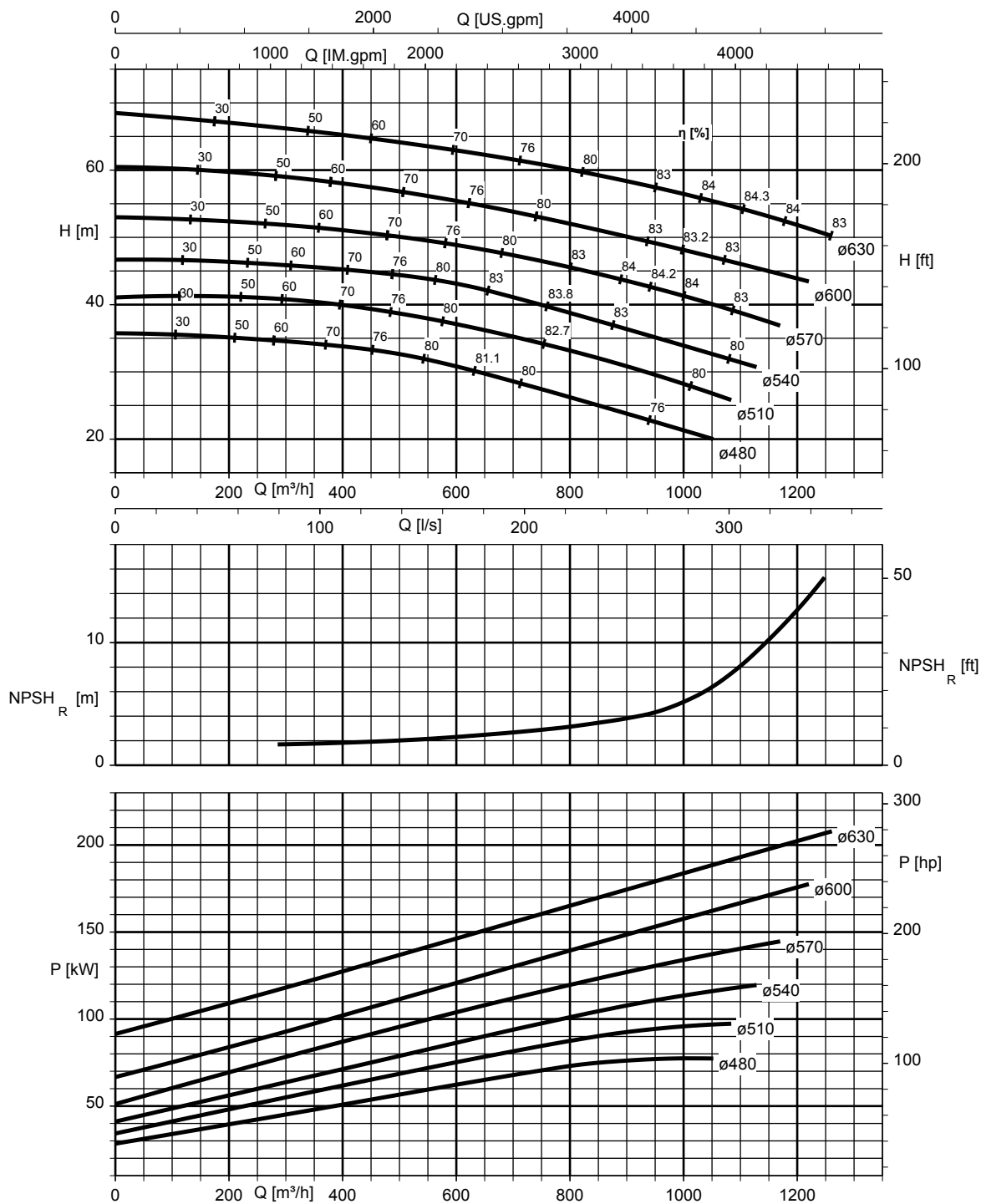
KWP K 250-250-505,  $n = 960 \text{ t/min}$



KWP K 250-250-630,  $n = 960 \text{ t/min}$

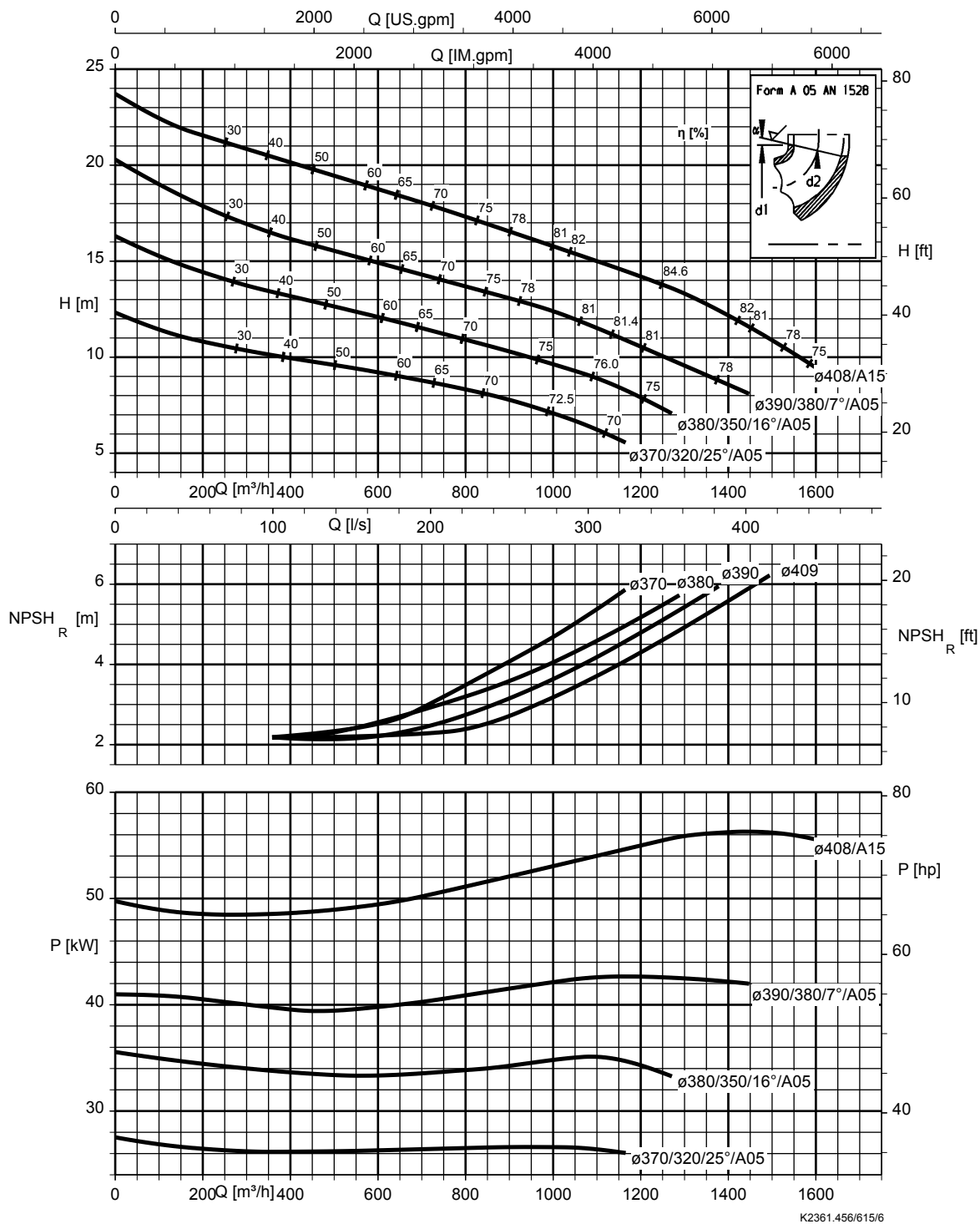


KWP K 250-250-634,  $n = 960 \text{ t/min}$

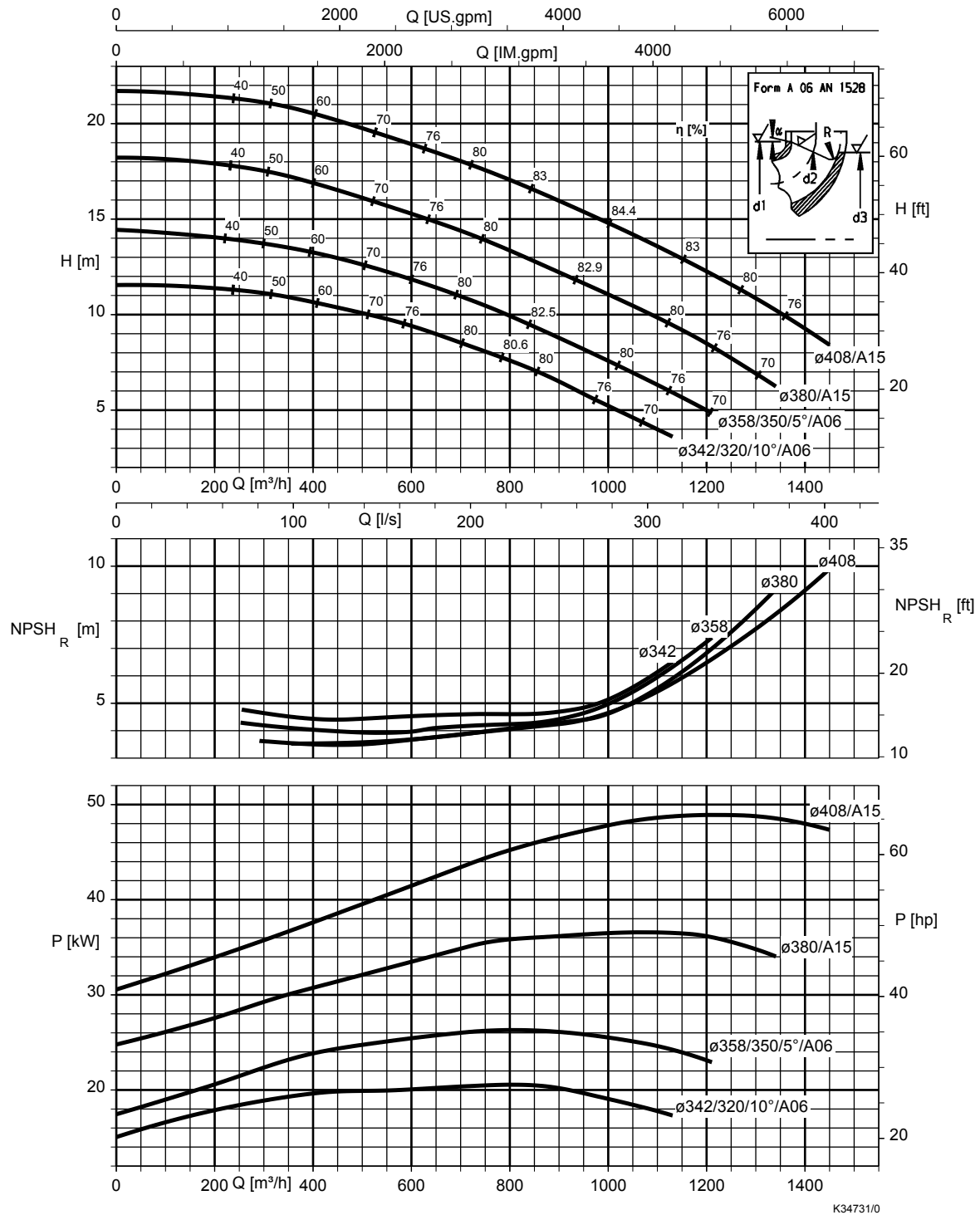


K34042/2

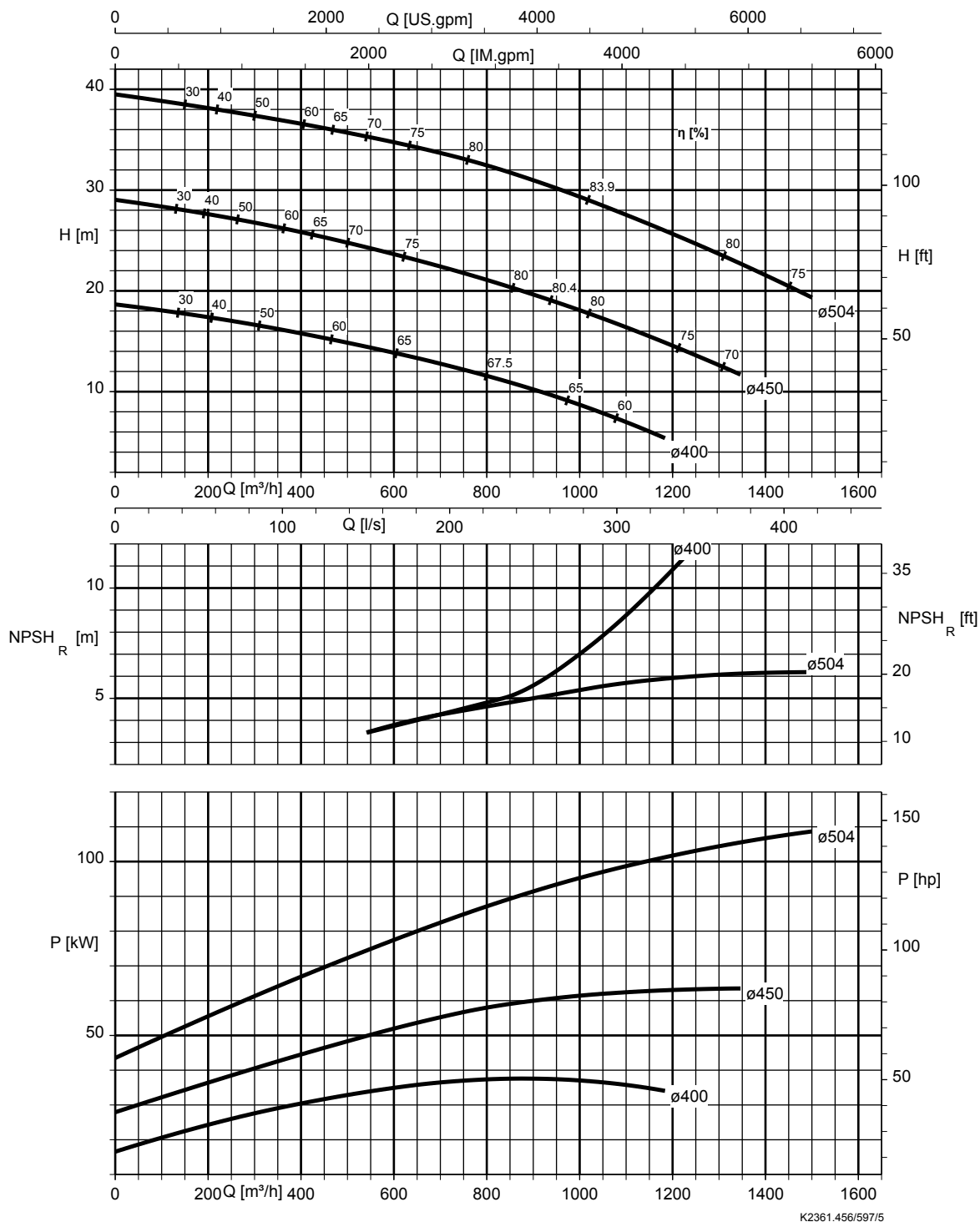
KWP K 300-300-400,  $n = 960 \text{ t/min}$



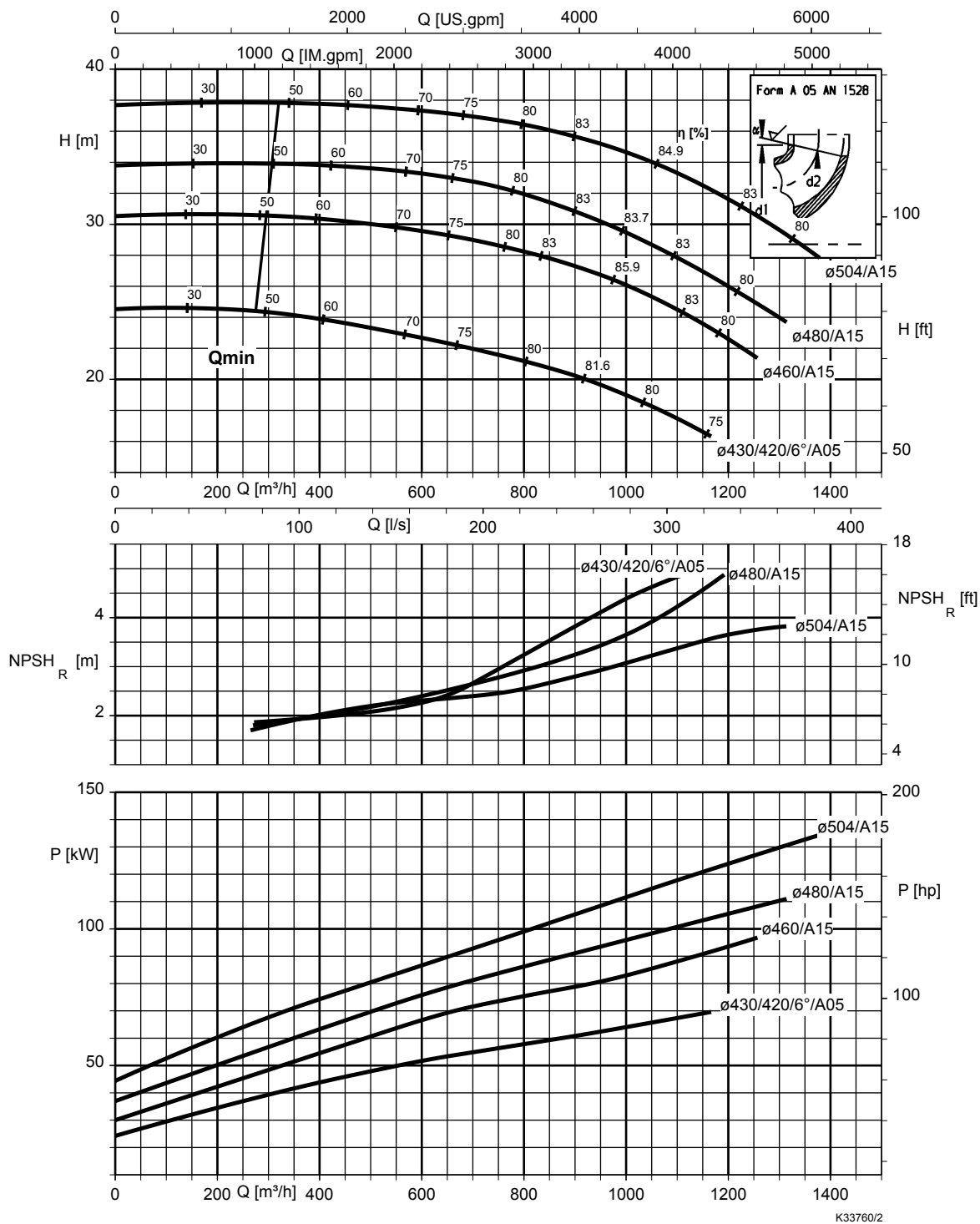
KWP K 300-300-401, n = 960 t/min



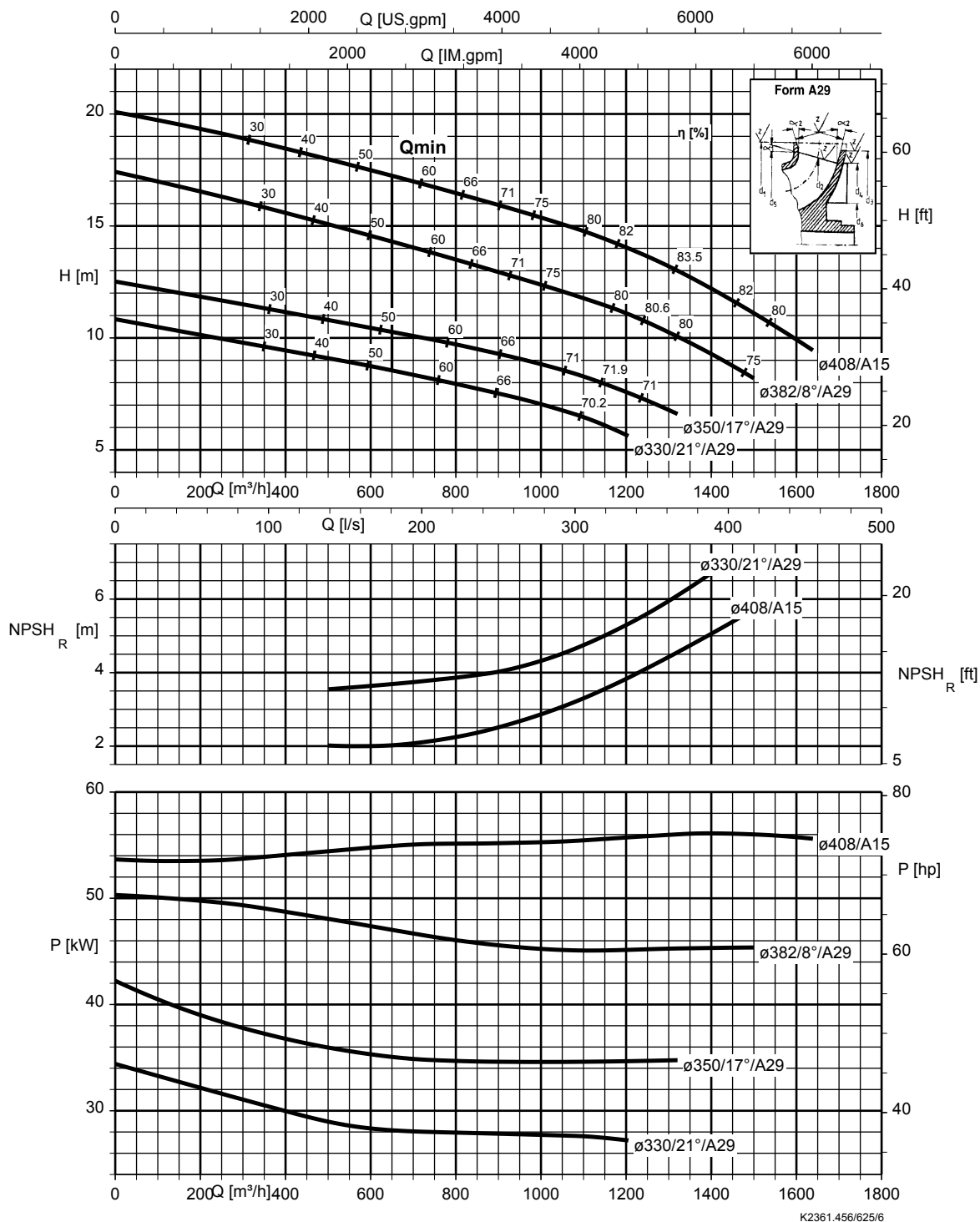
KWP K 300-300-500, n = 960 t/min



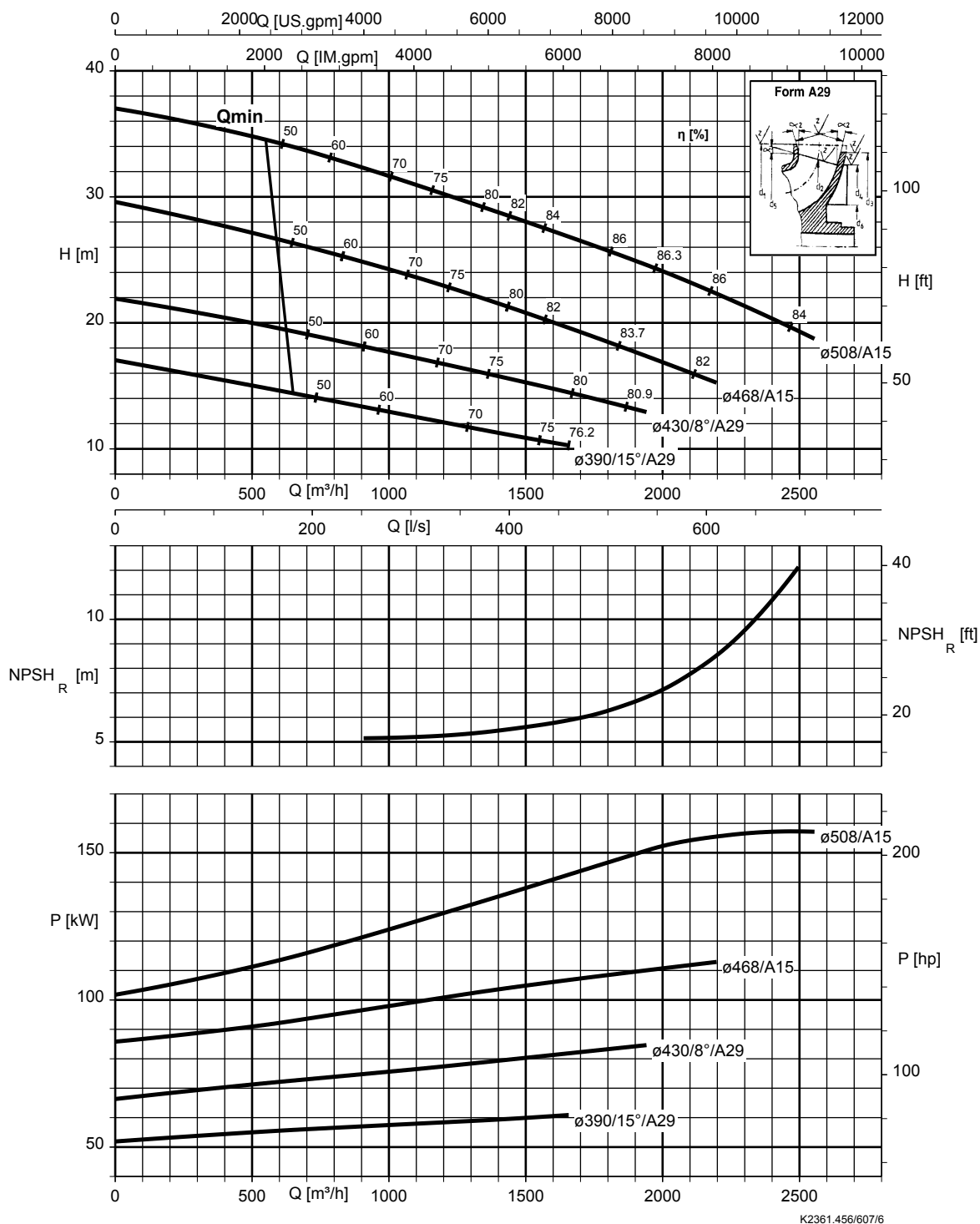
KWP K 300-300-503,  $n = 960 \text{ t/min}$



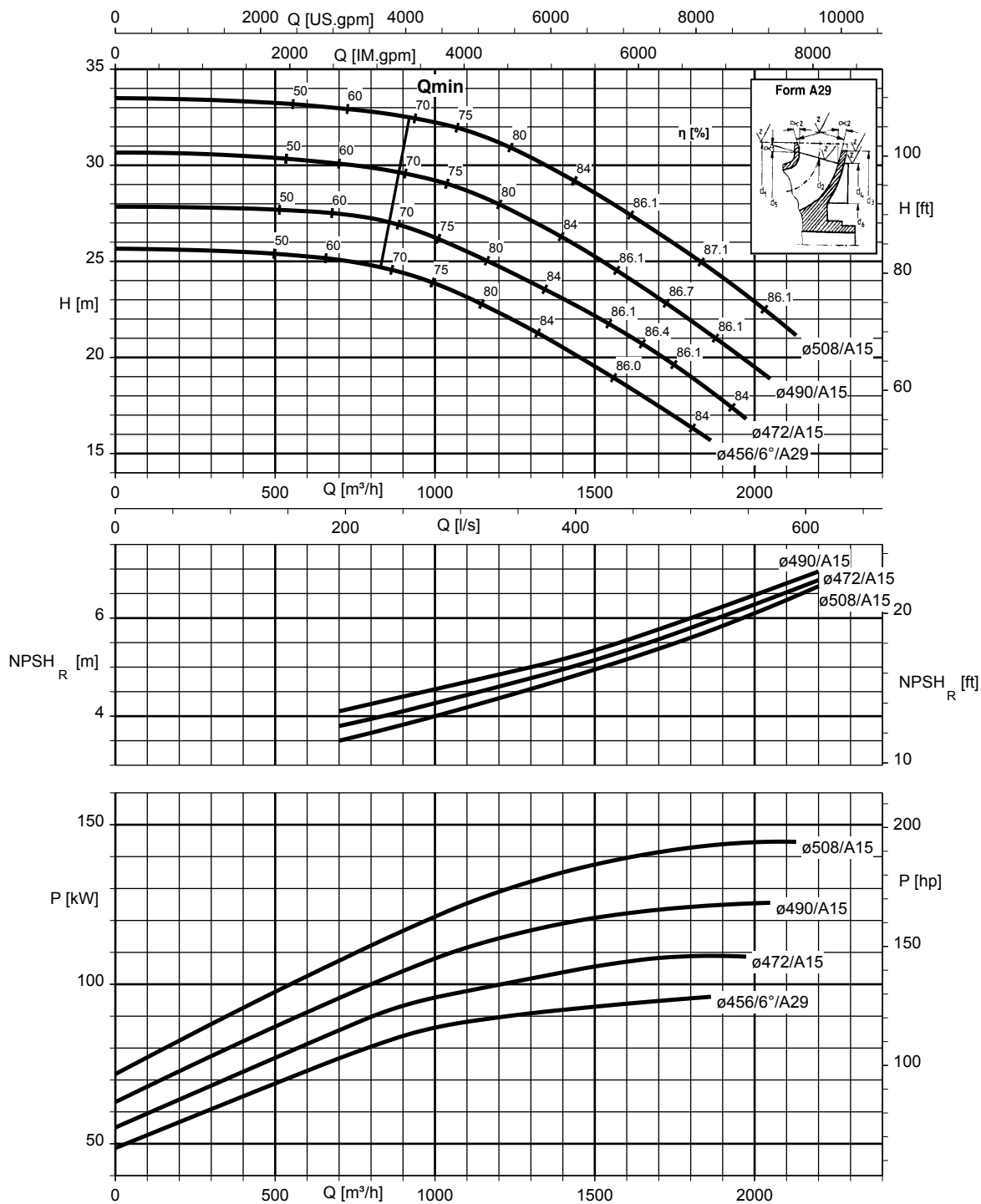
KWP K 350-350-400,  $n = 960 \text{ t/min}$



KWP K 350-350-500,  $n = 960 \text{ t/min}$

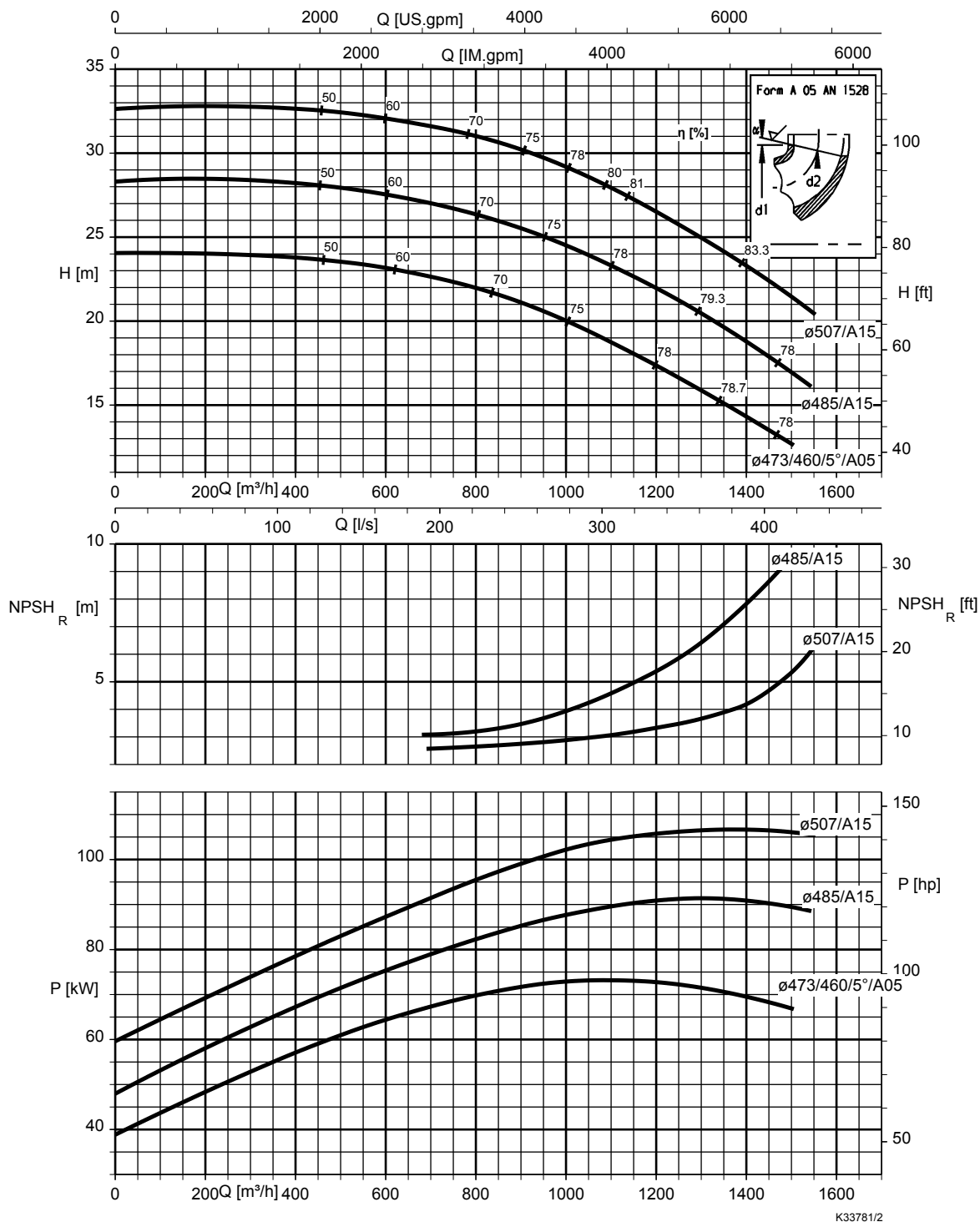


KWP K 350-350-503,  $n = 960 \text{ t/min}$

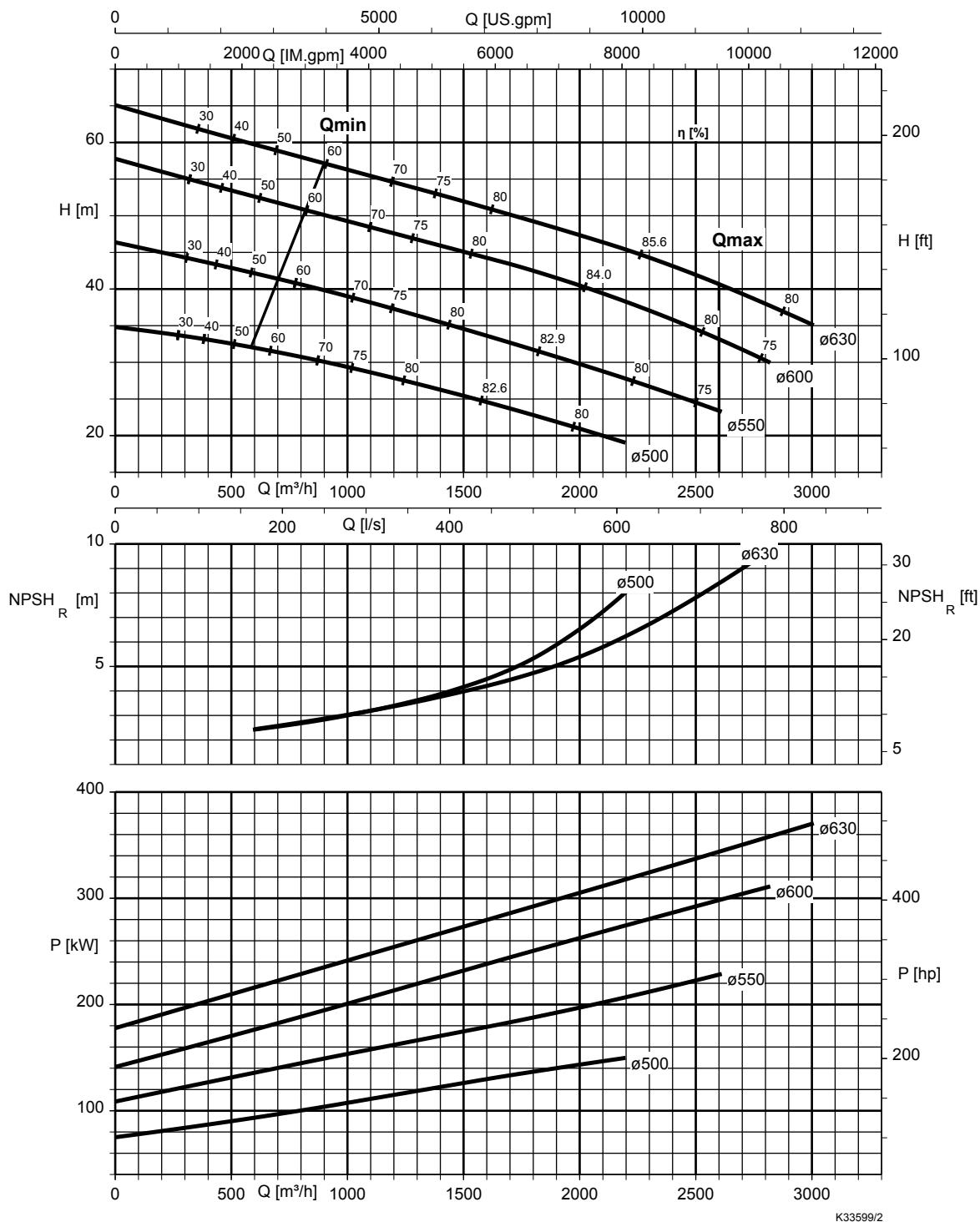


K33765/4

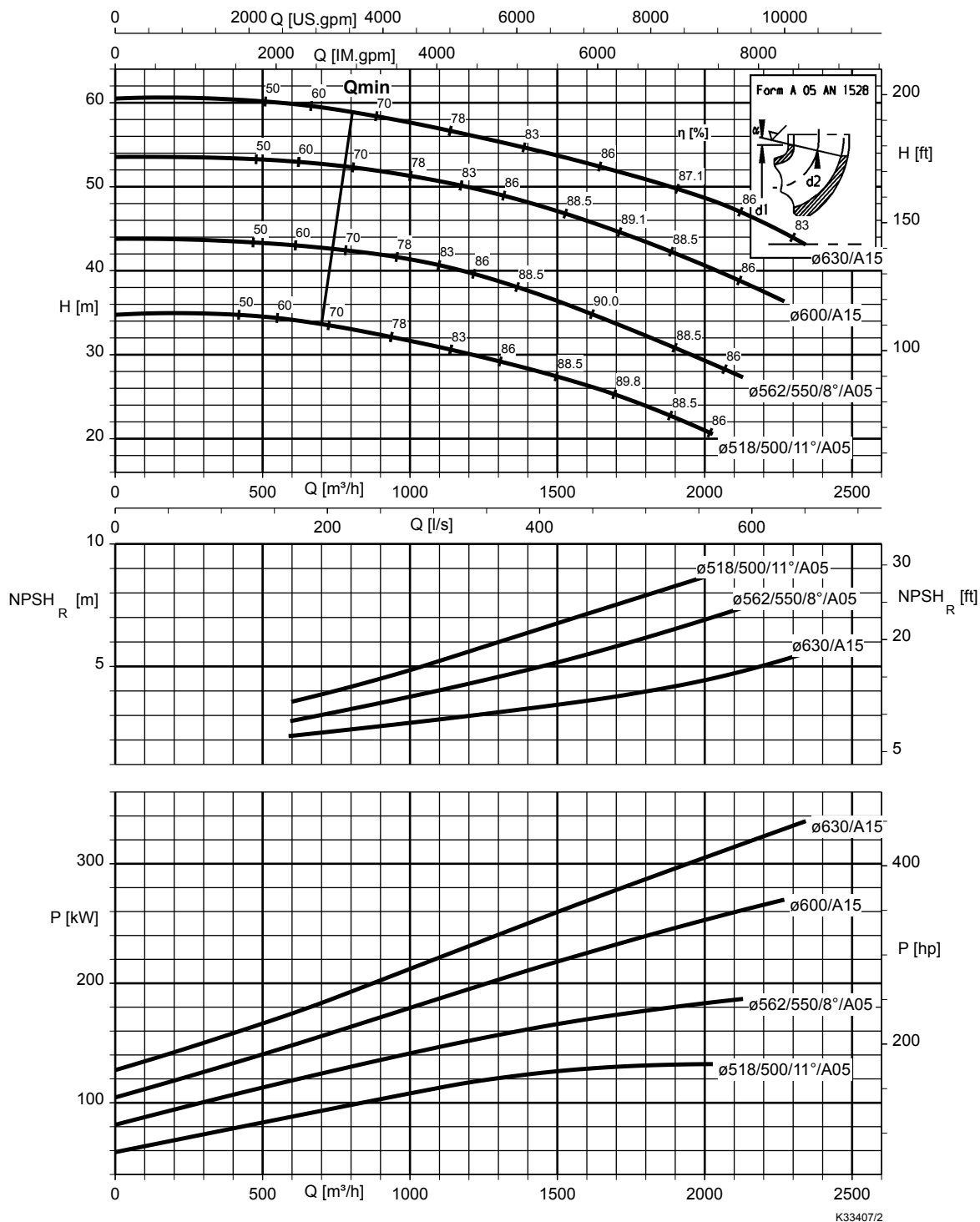
KWP K 350-350-504,  $n = 960 \text{ t/min}$



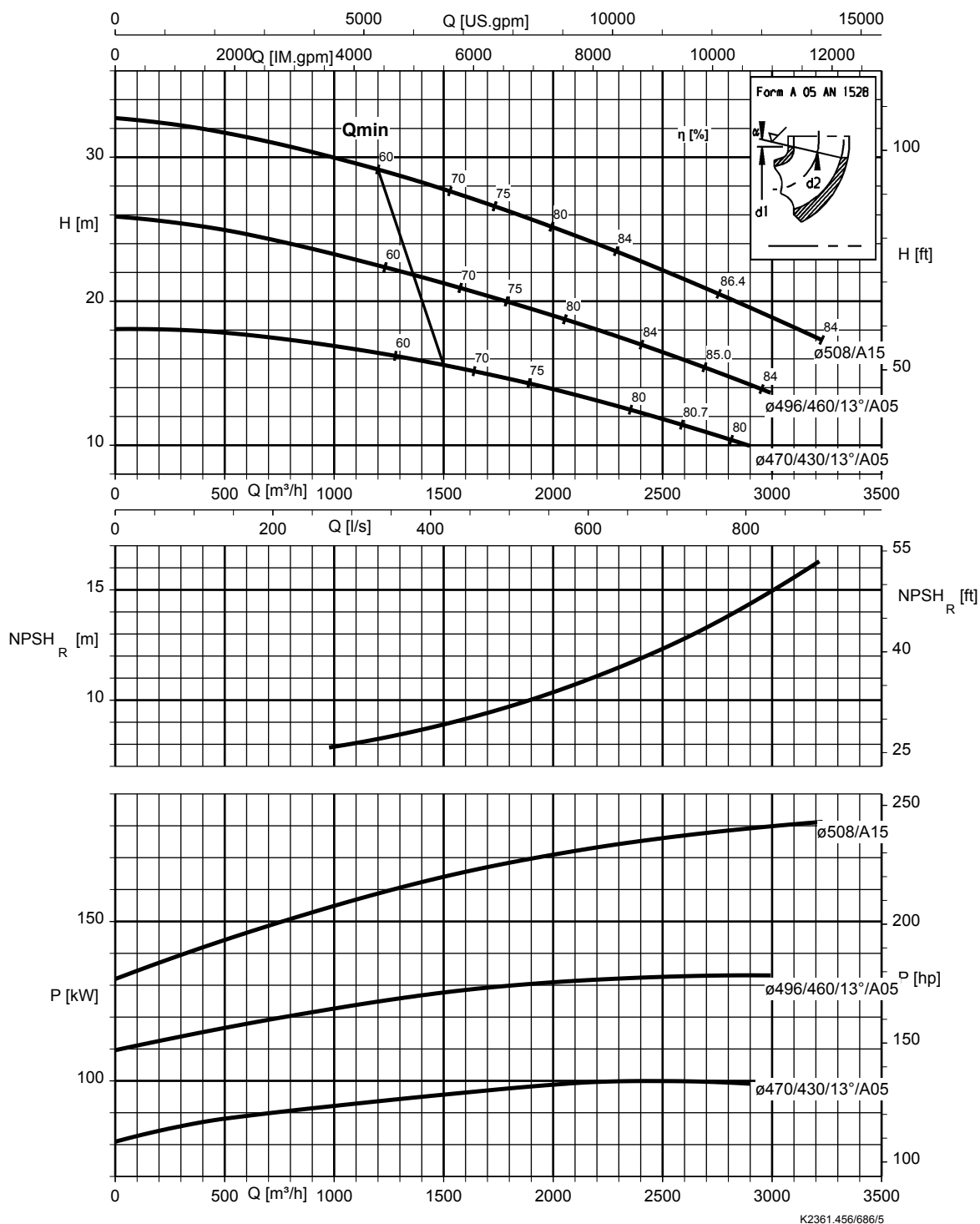
KWP K 350-350-630,  $n = 960 \text{ t/min}$



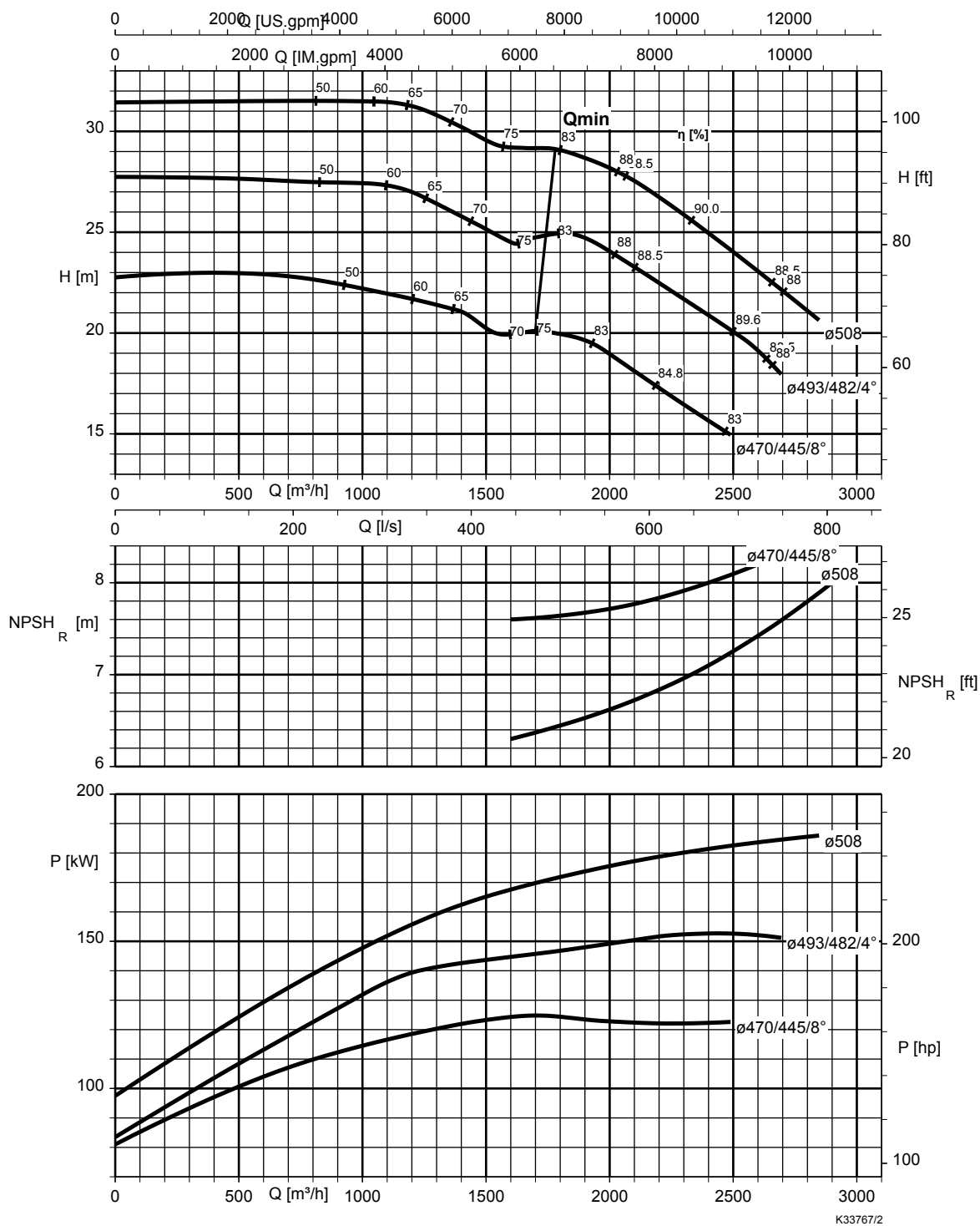
KWP K 350-350-633,  $n = 960 \text{ t/min}$



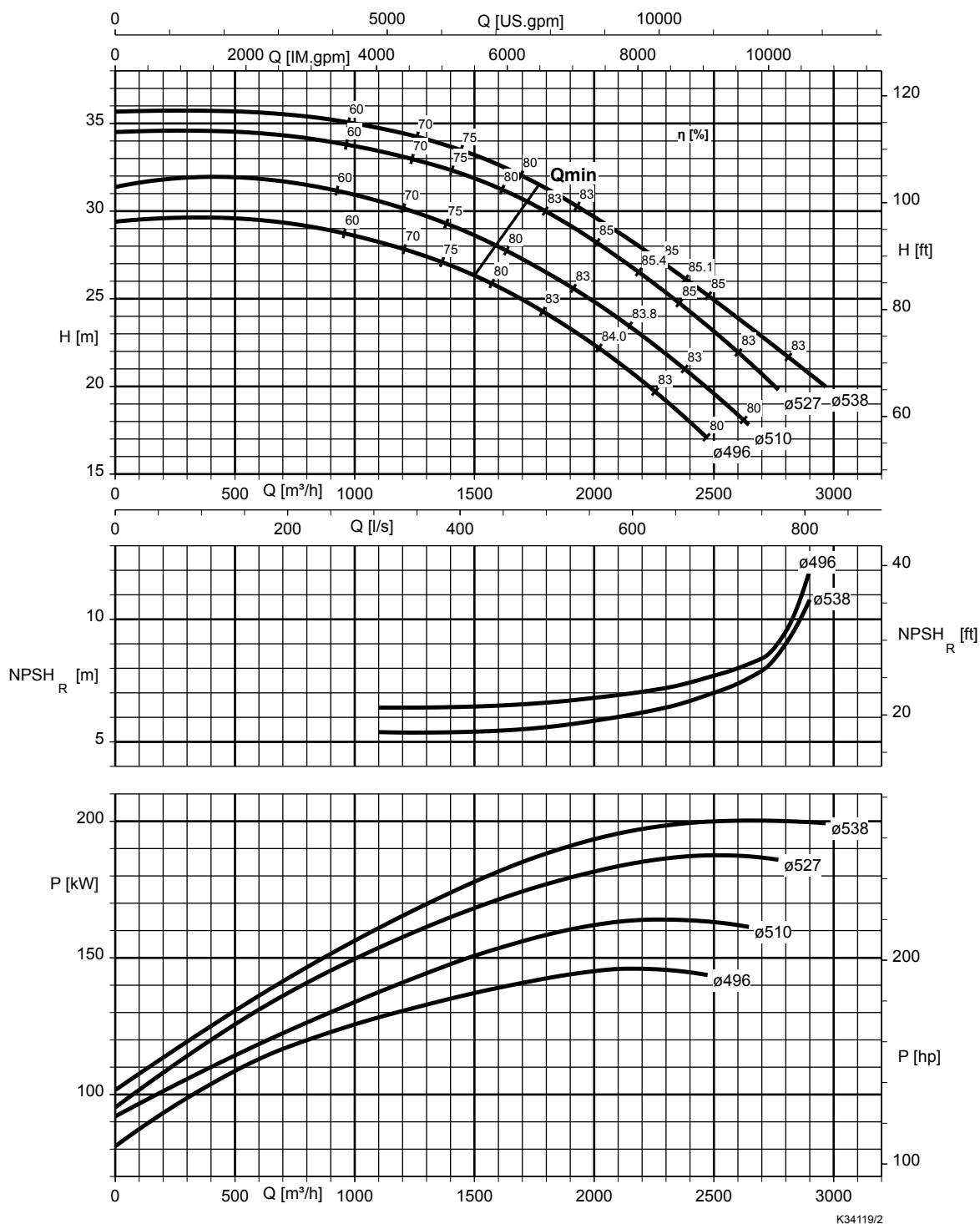
KWP K 400-400-500,  $n = 960 \text{ t/min}$



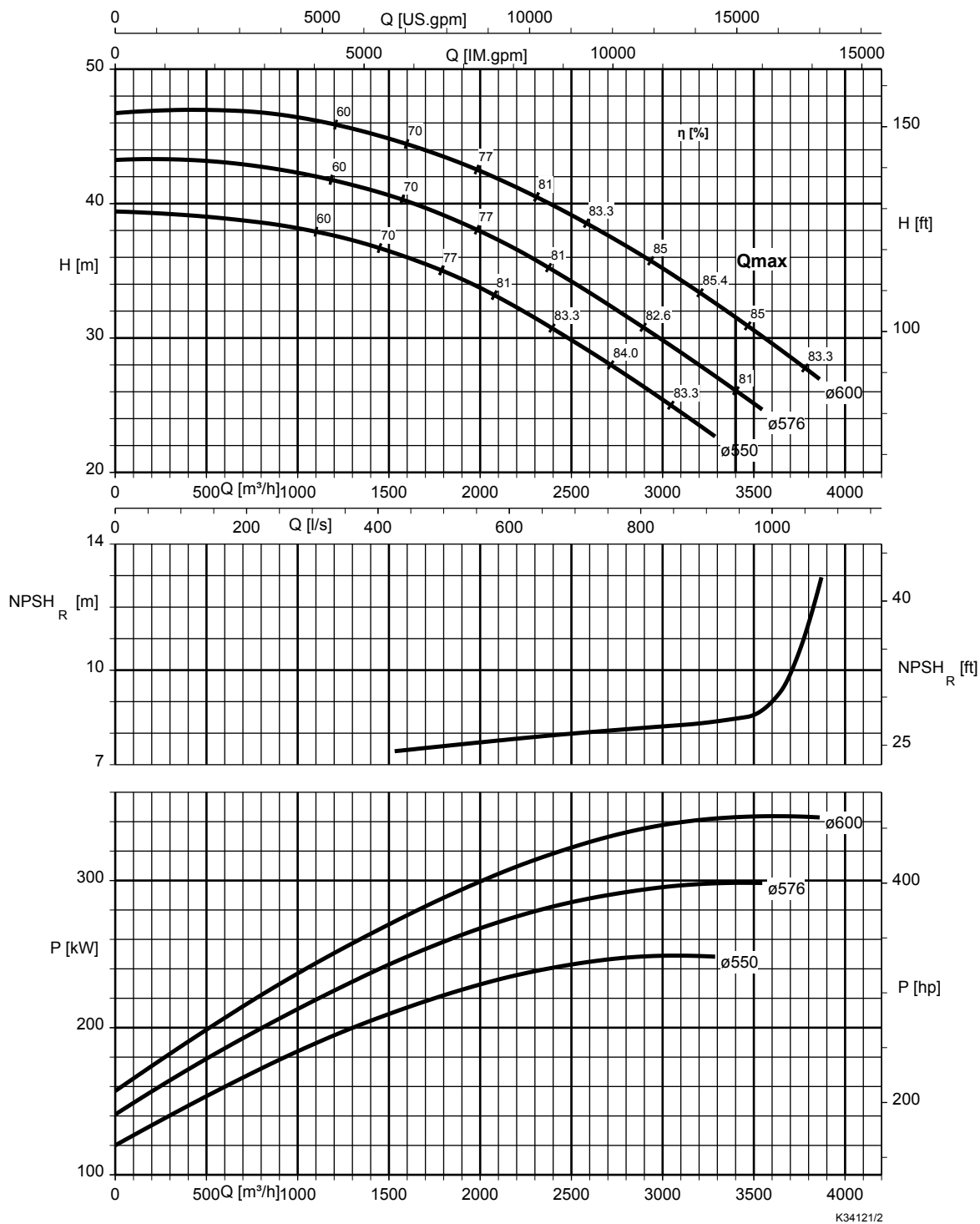
KWP K 400-400-503,  $n = 960 \text{ t/min}$



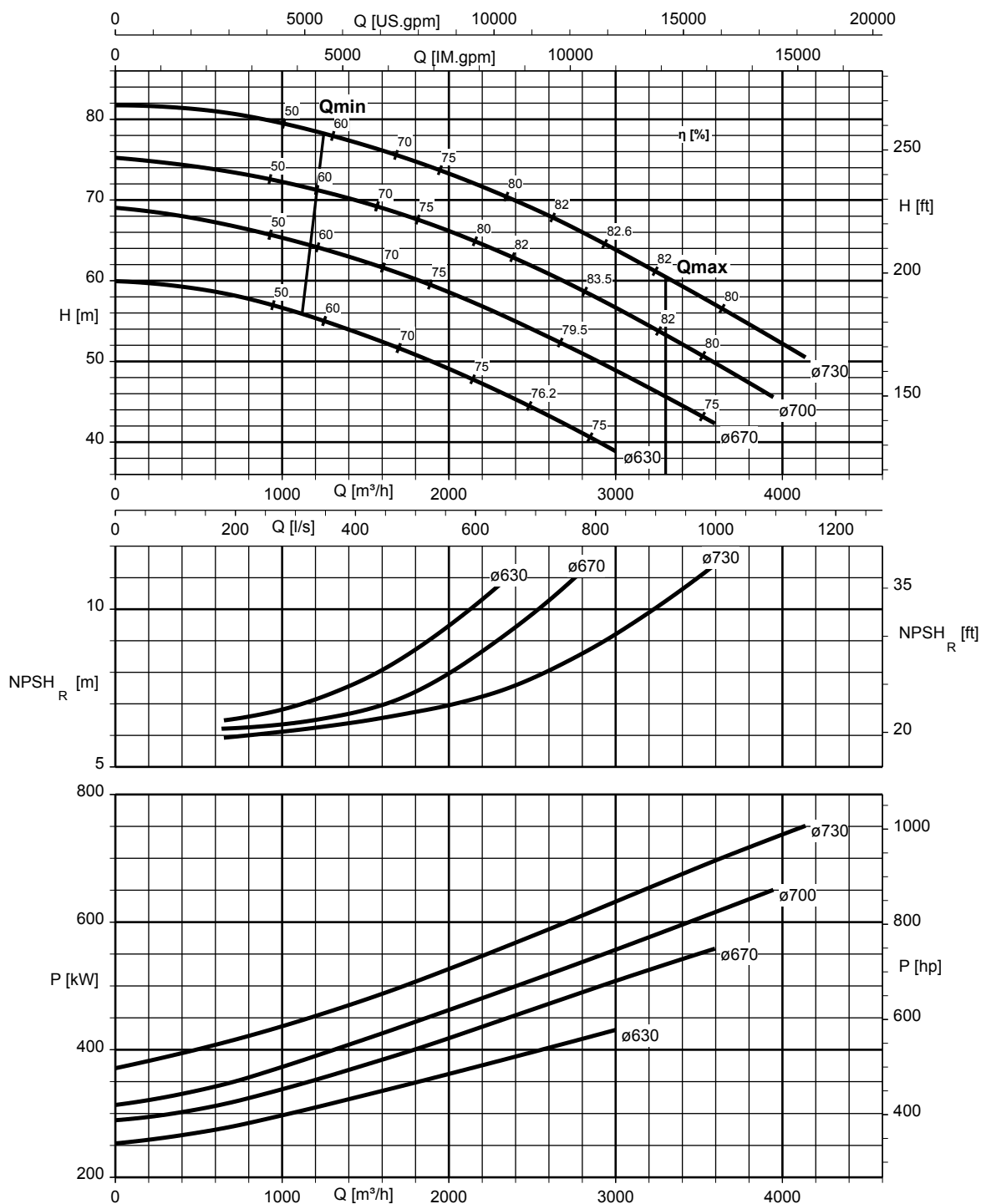
**KWP K 400-400-533, n = 960 t/min**



KWP K 400-400-583,  $n = 960 \text{ t/min}$

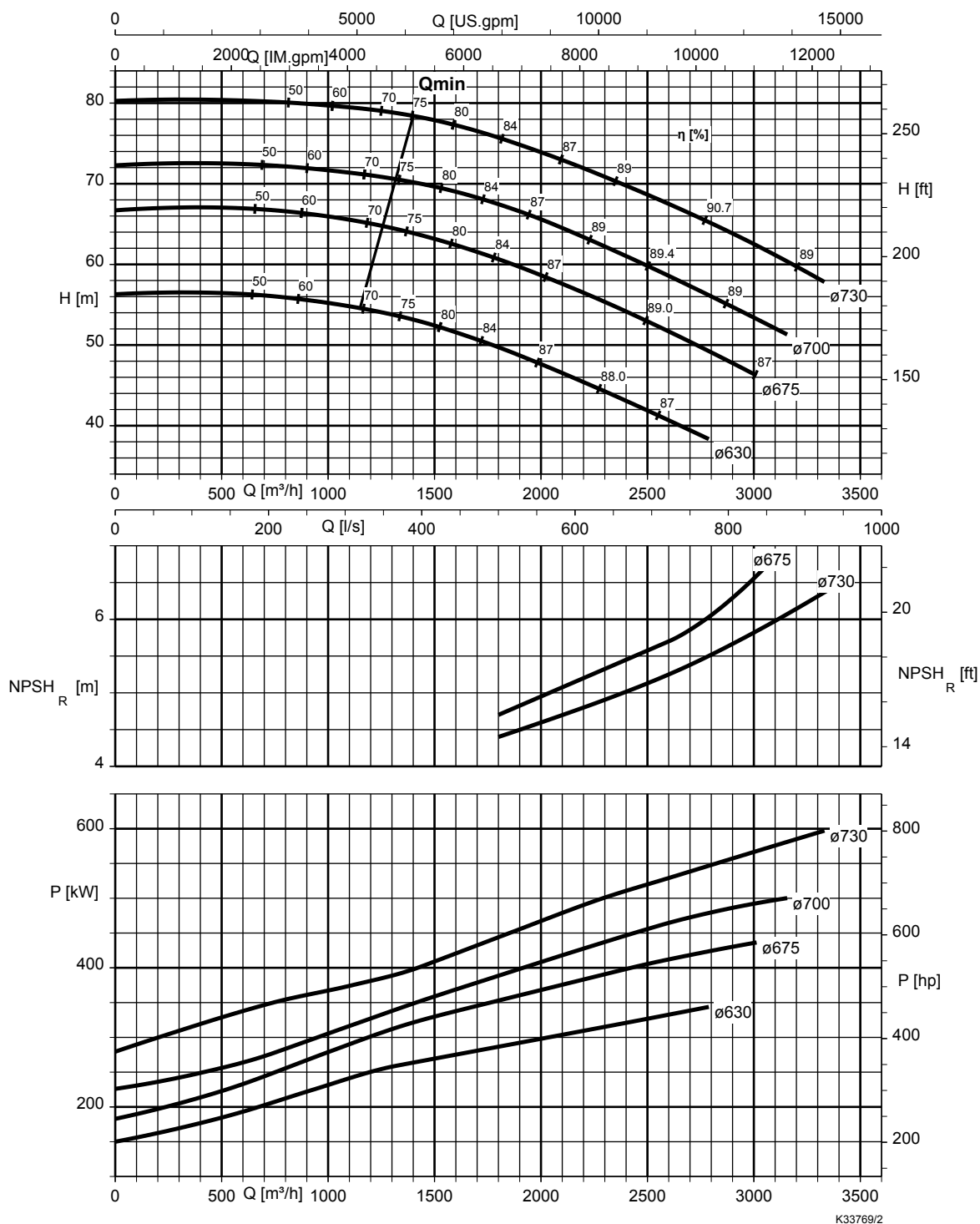


KWP K 500-400-710,  $n = 960 \text{ t/min}$

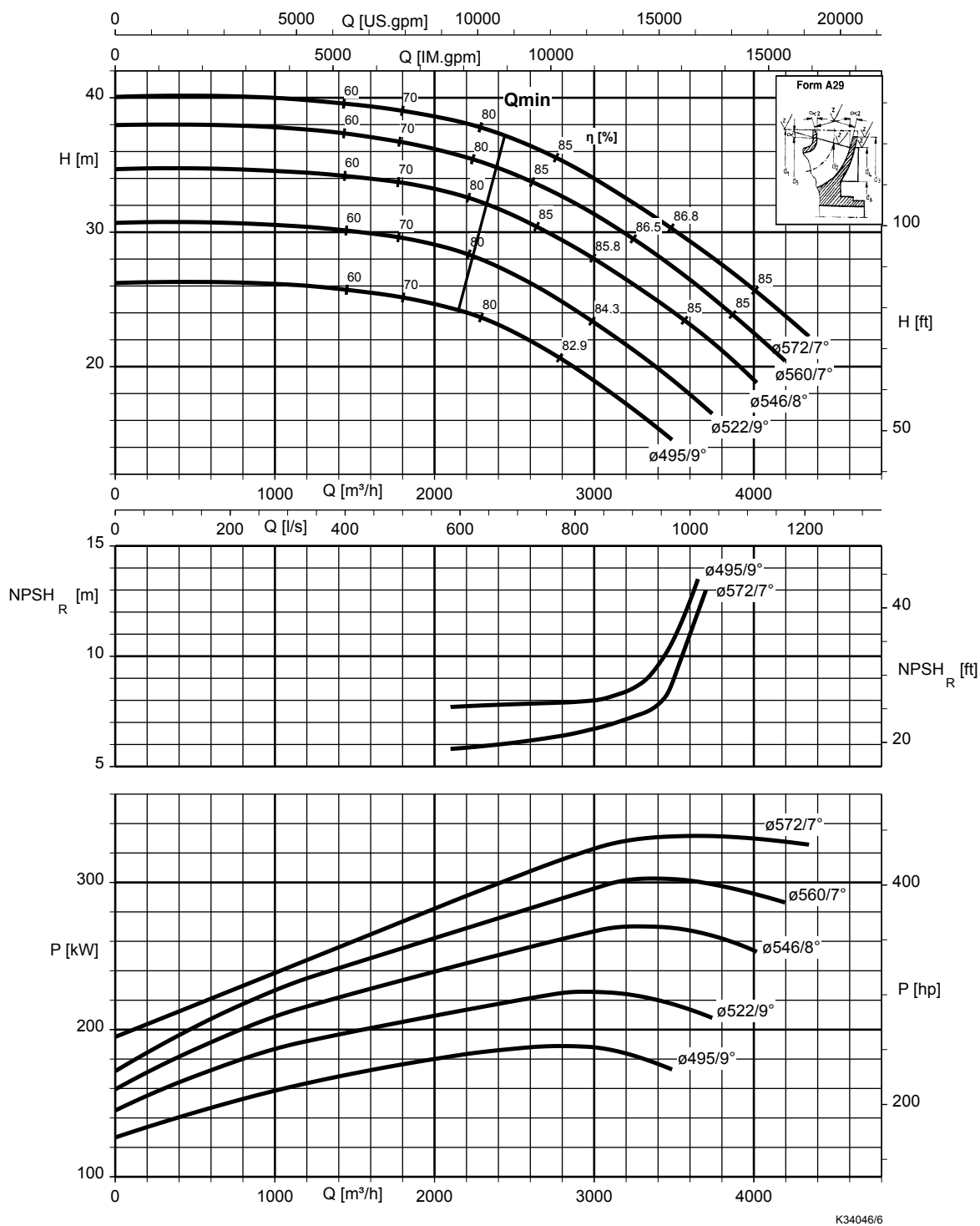


K2361.456/669/4

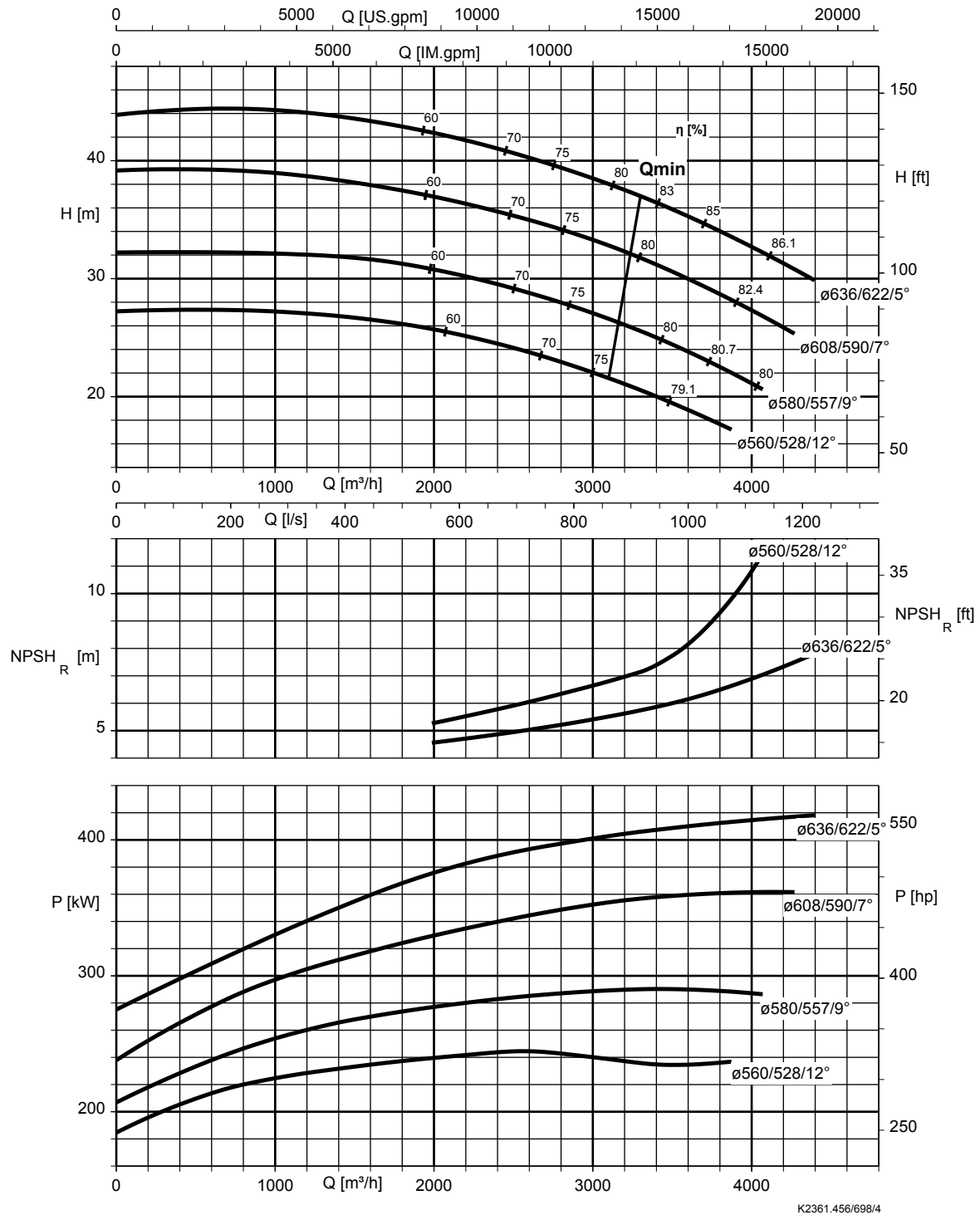
KWP K 500-400-713,  $n = 960 \text{ t/min}$



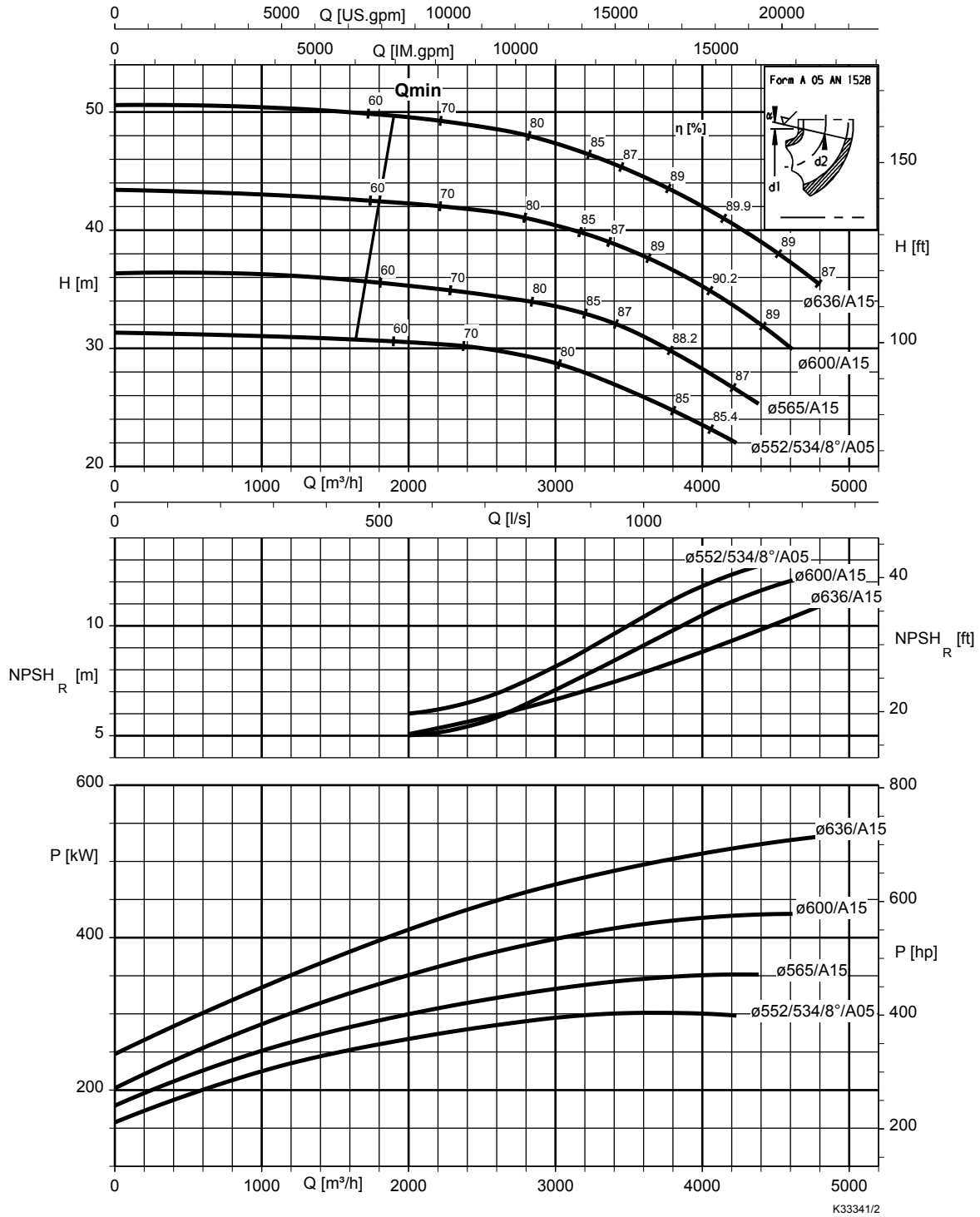
**KWP K 500-500-544, n = 960 t/min**



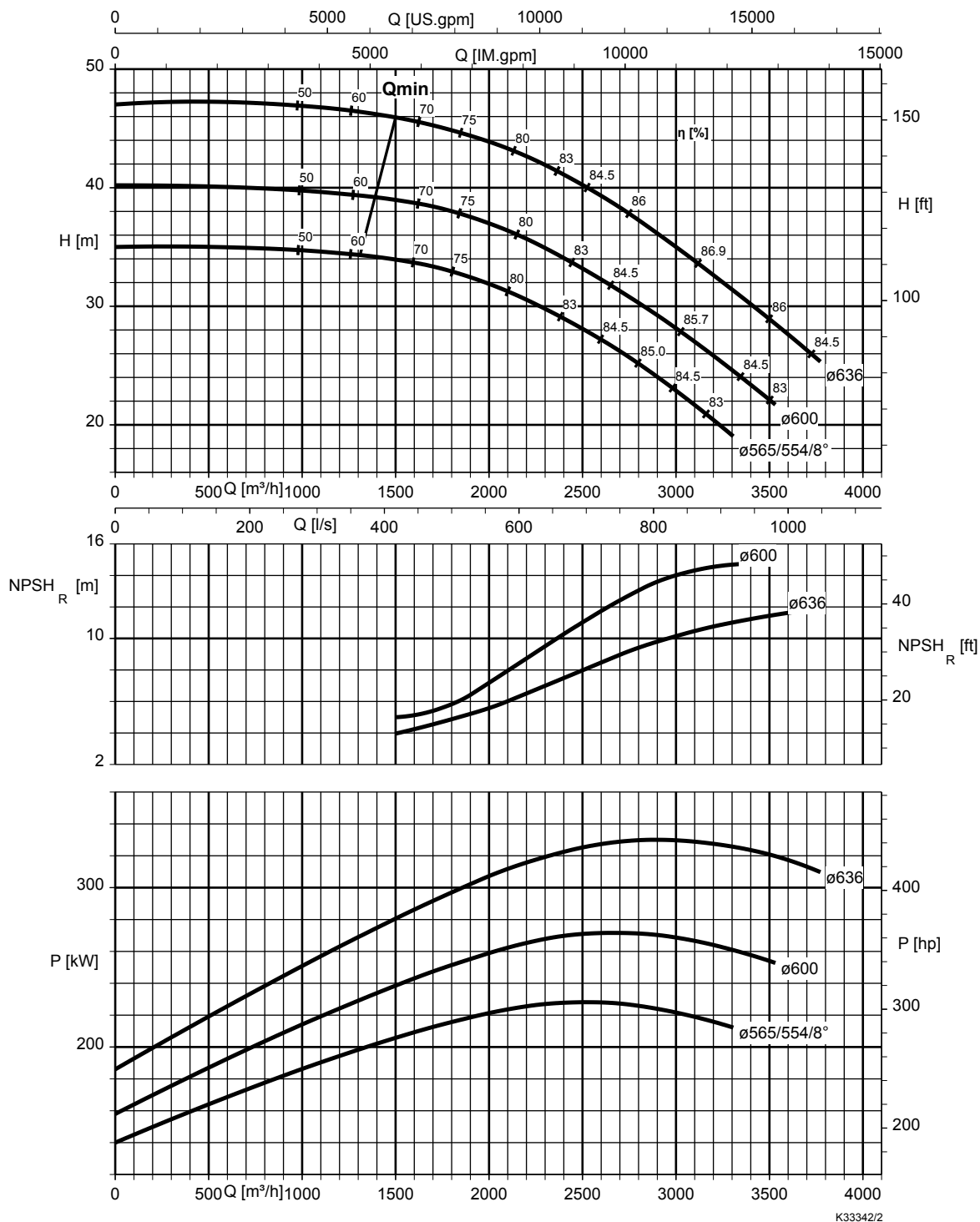
KWP K 500-500-630,  $n = 960 \text{ t/min}$



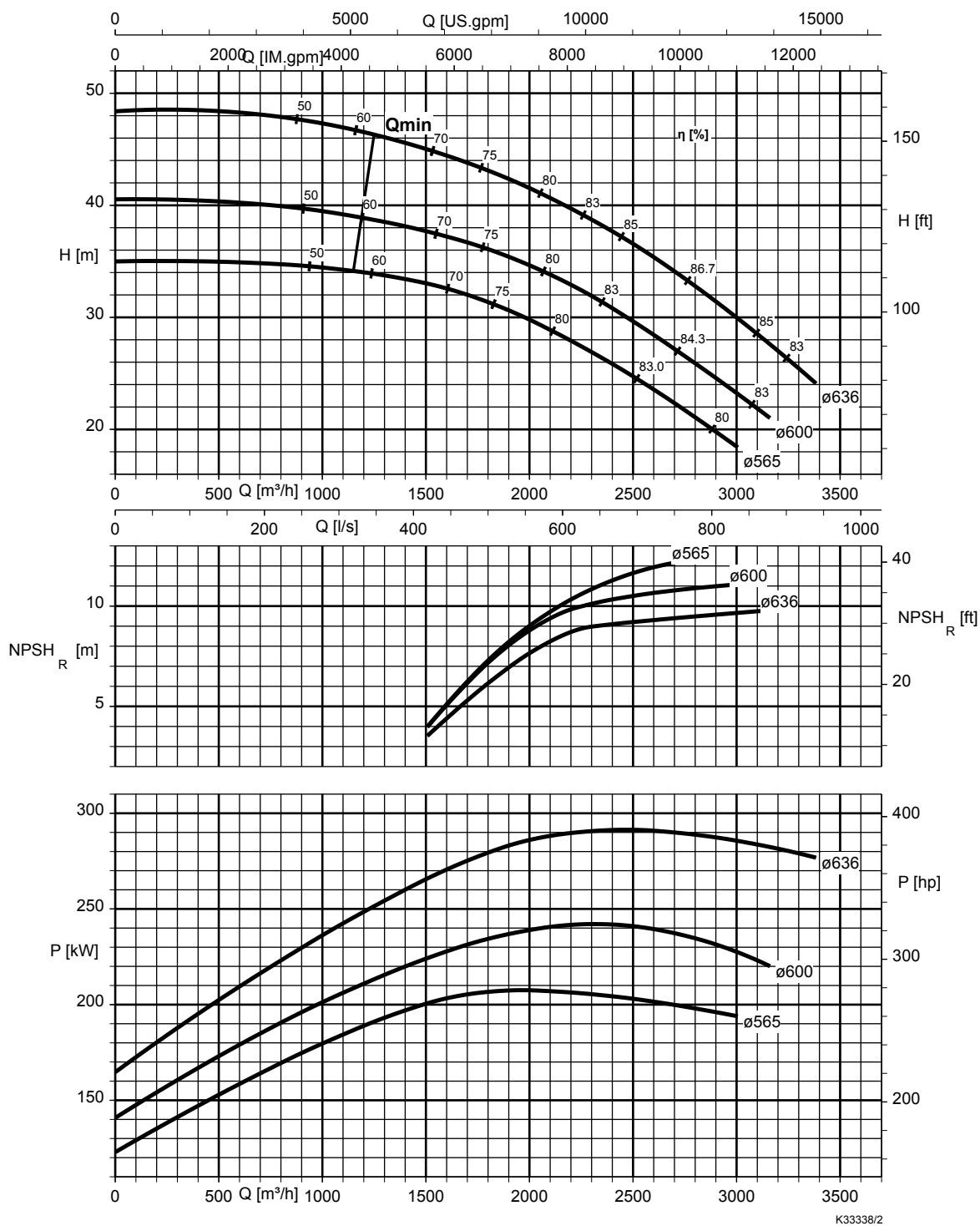
KWP K 500-500-633,  $n = 960 \text{ t/min}$



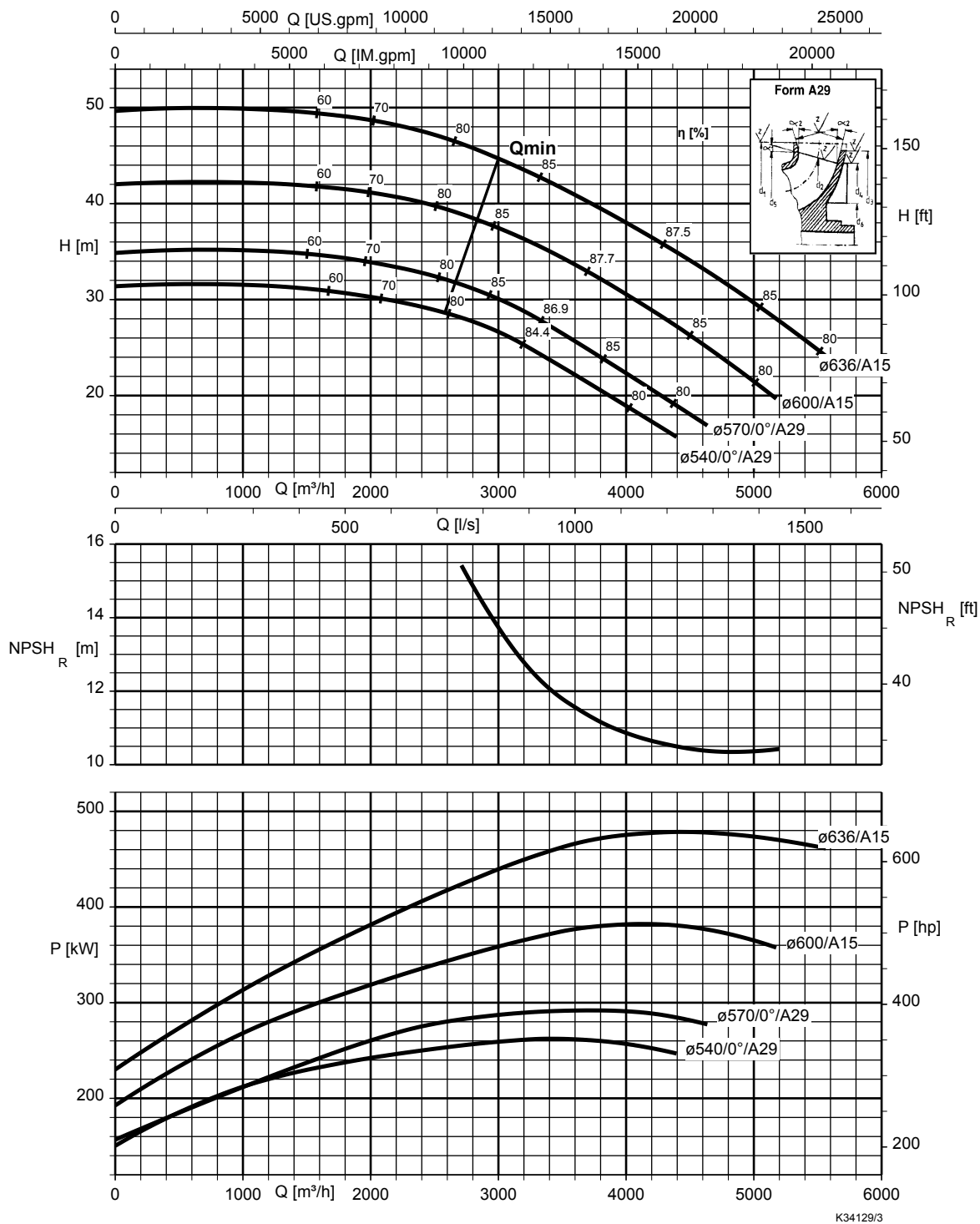
KWP K 500-500-634,  $n = 960 \text{ t/min}$



KWP K 500-500-635,  $n = 960 \text{ t/min}$

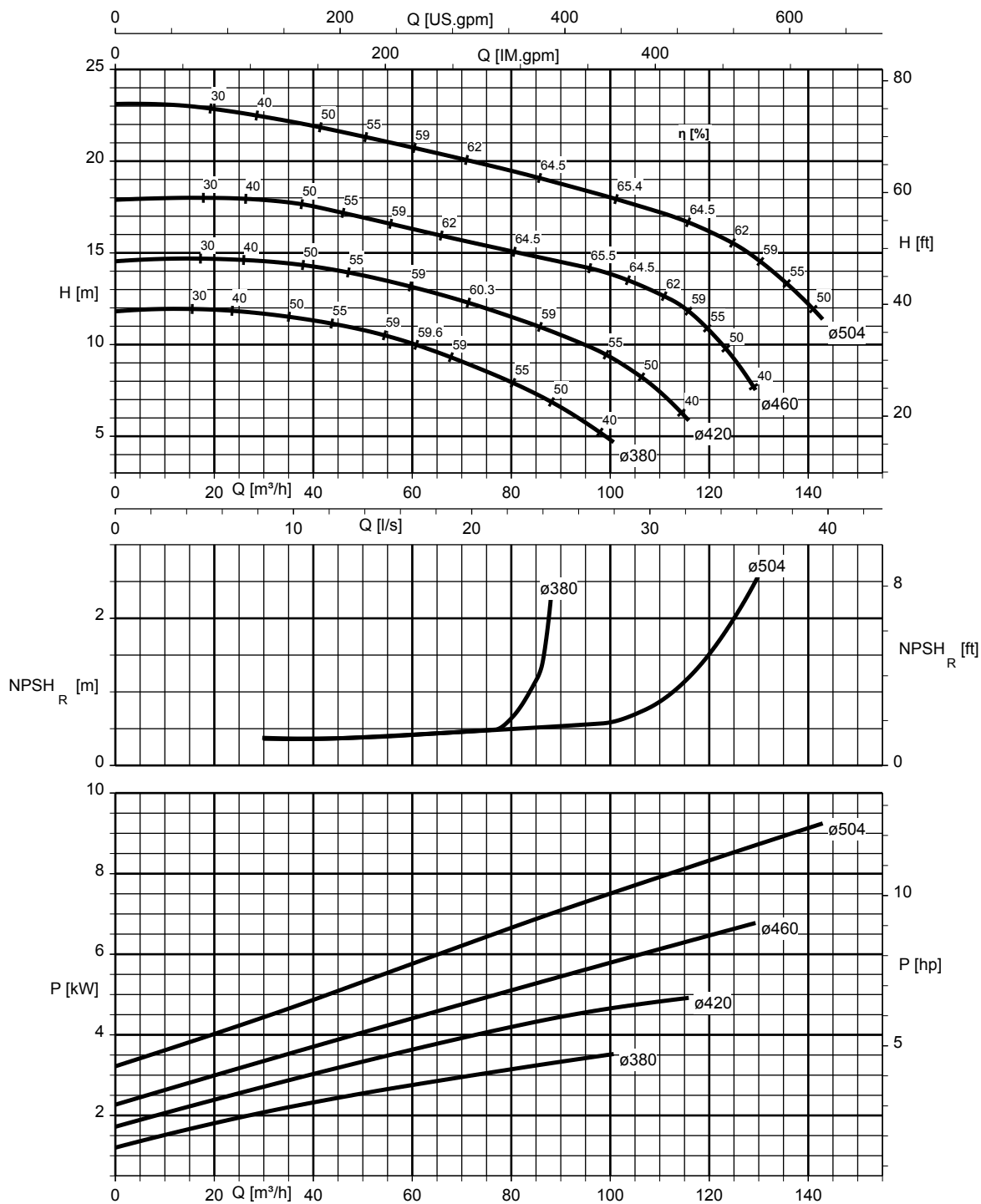


KWP K 500-500-637,  $n = 960 \text{ t/min}$



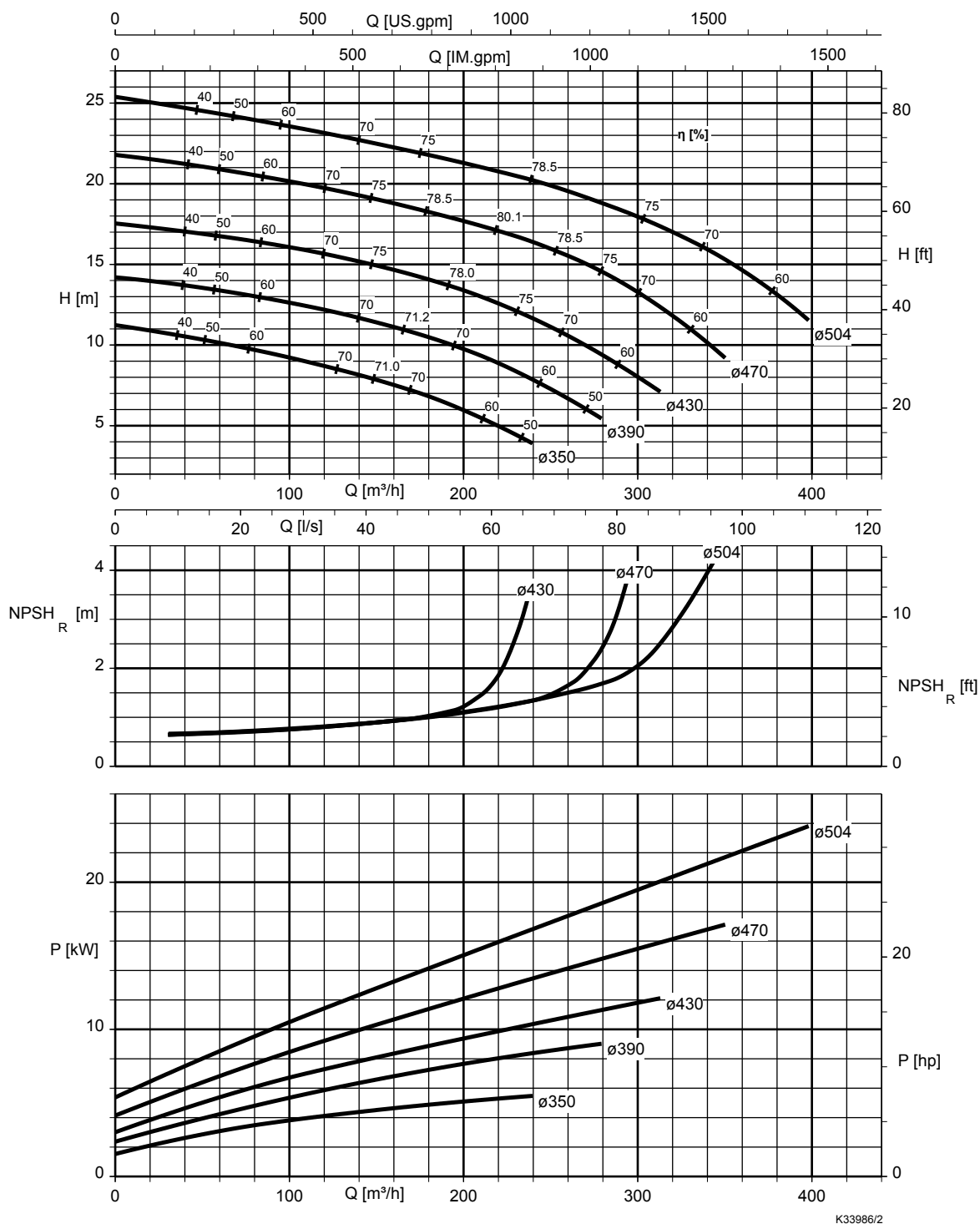
$n = 725 \text{ t/min}$

KWP K 125-080-500,  $n = 725 \text{ t/min}$

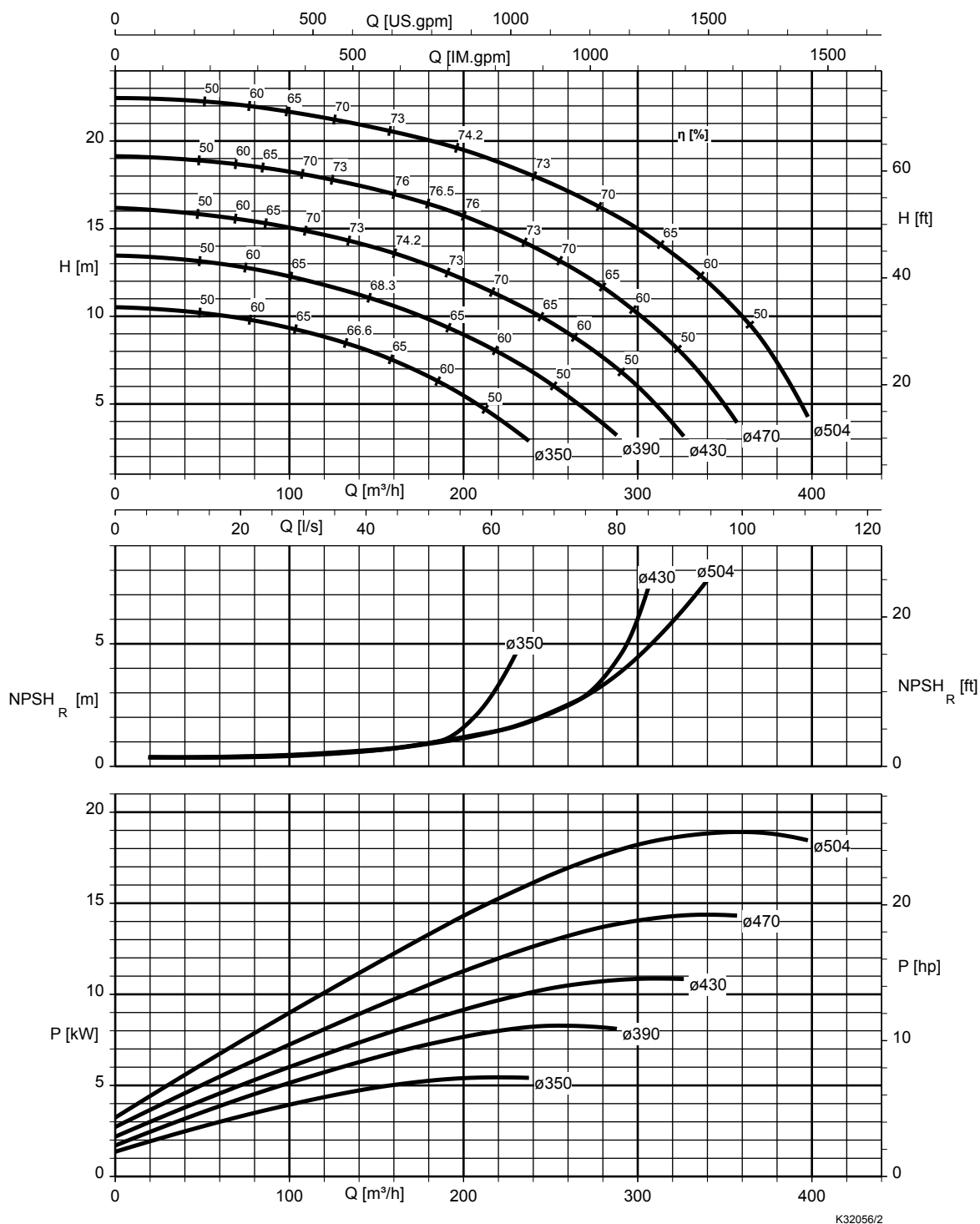


K33954/2

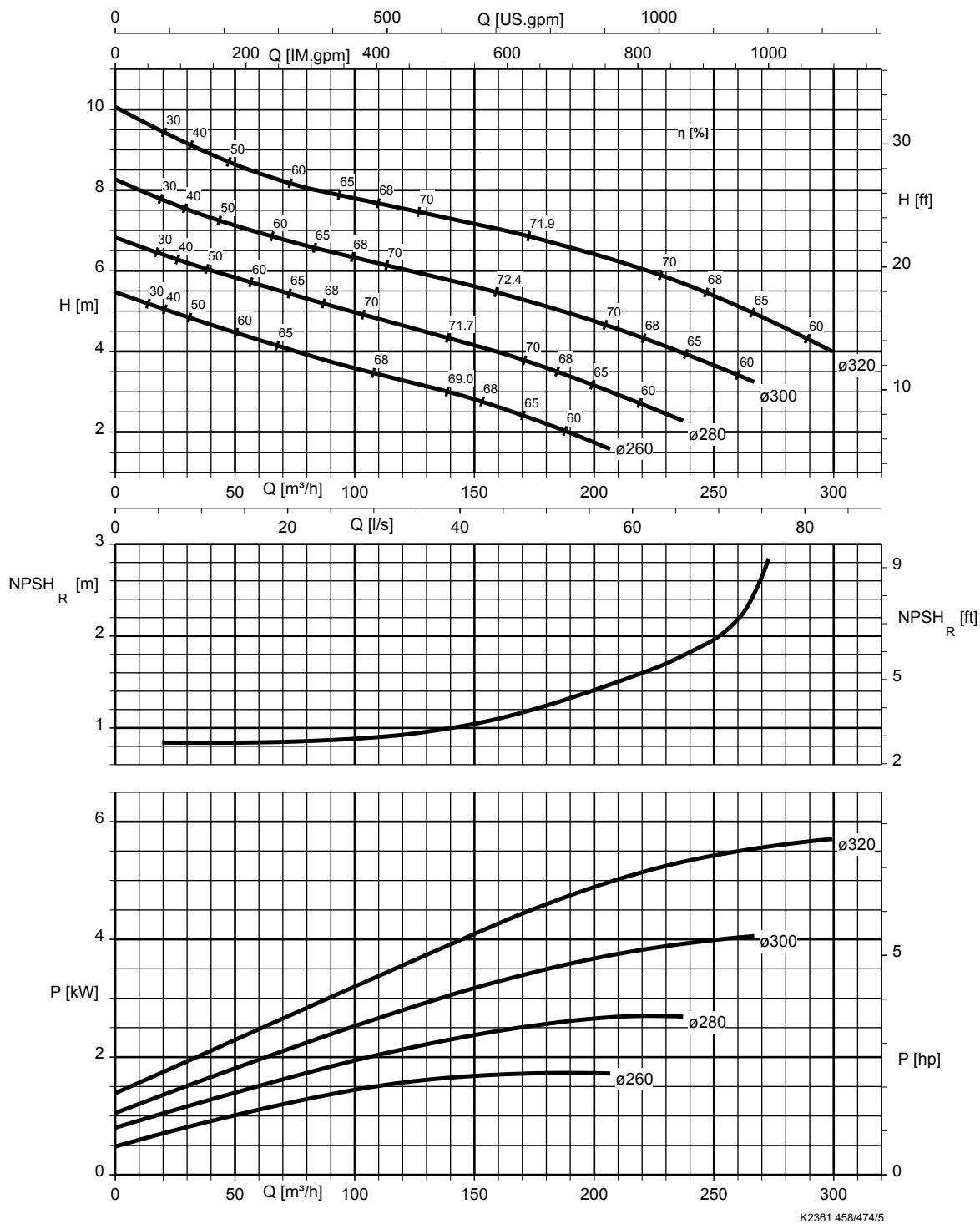
KWP K 150-125-500,  $n = 725 \text{ t/min}$



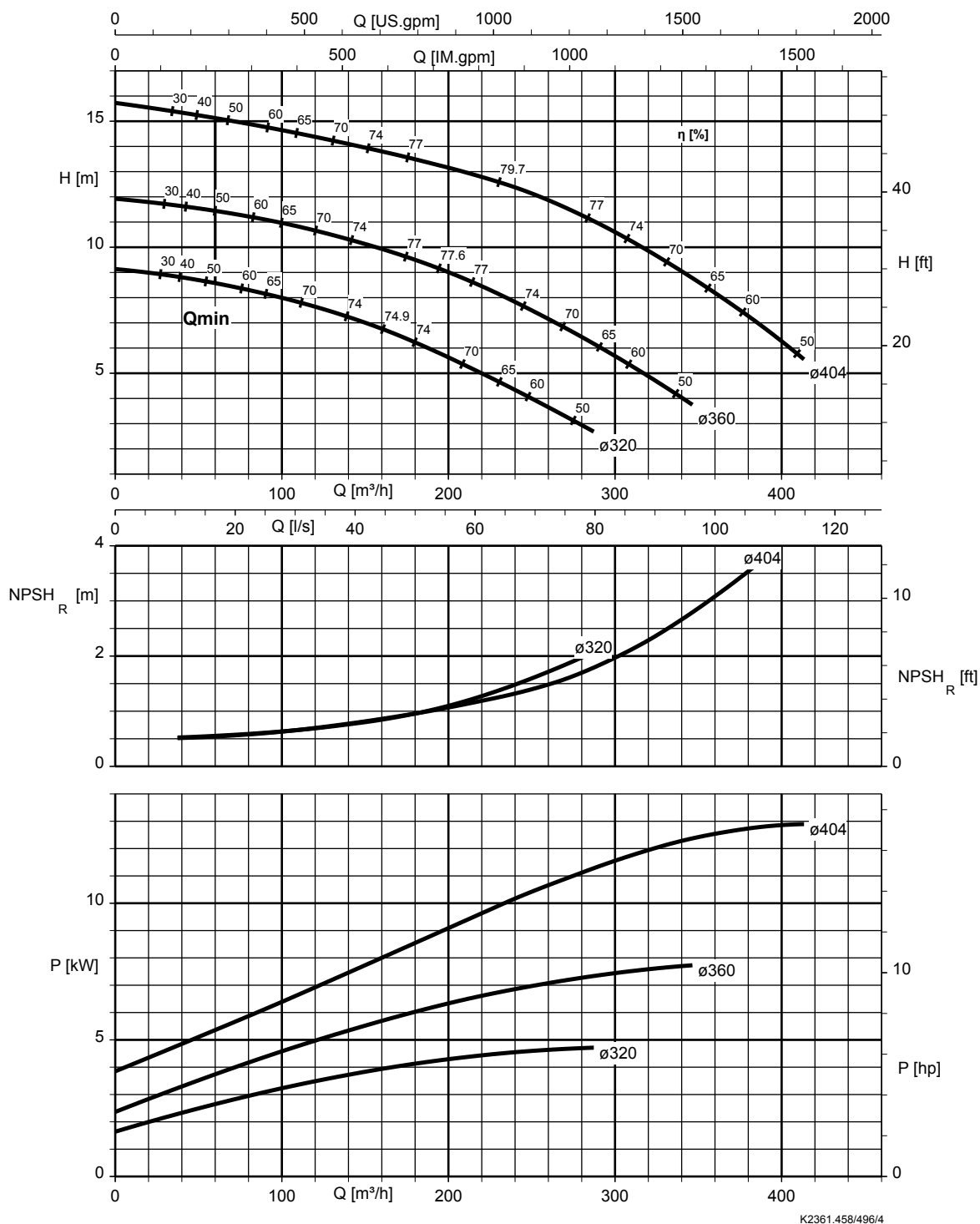
KWP K 150-125-503,  $n = 725 \text{ t/min}$



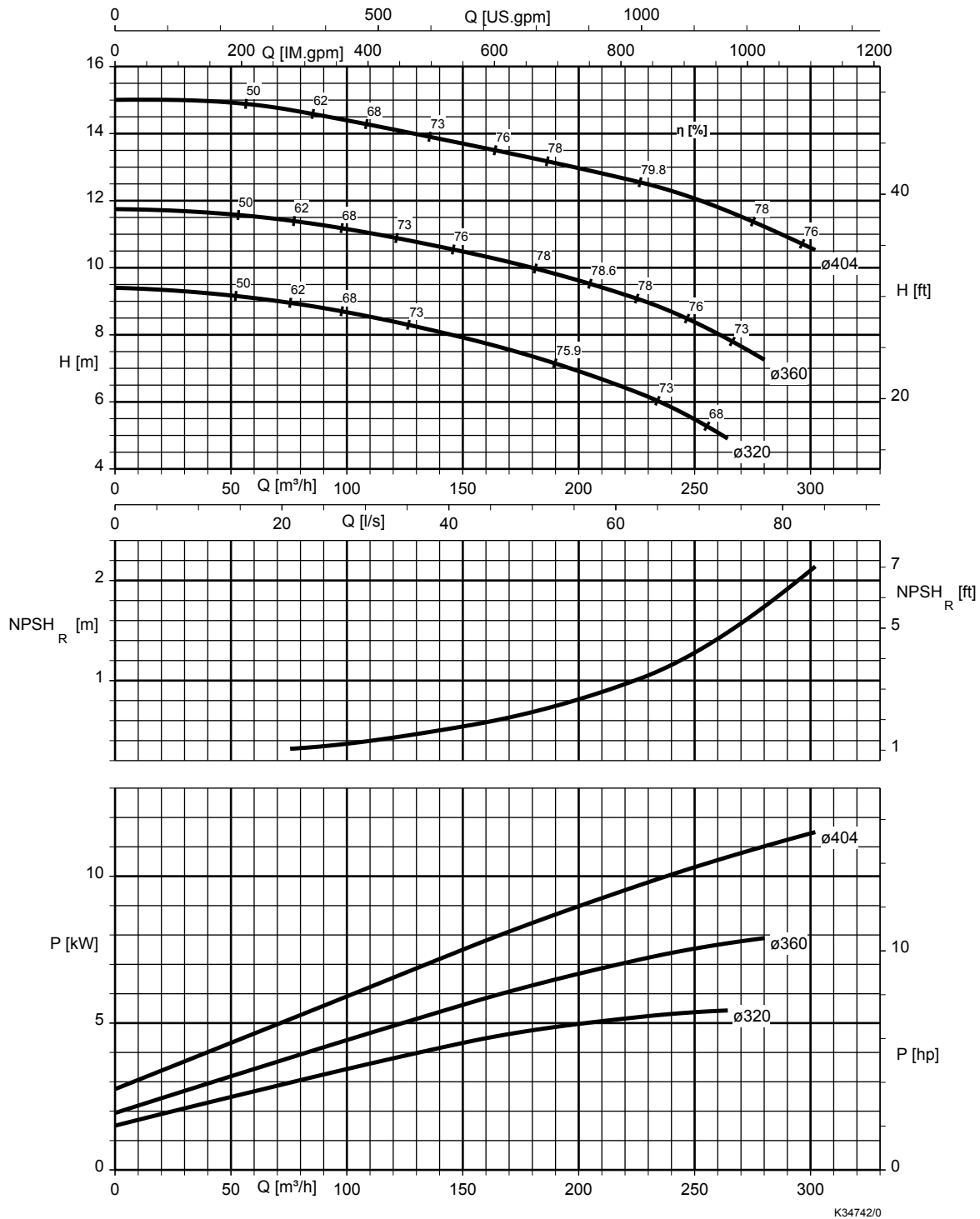
KWP K 150-150-315,  $n = 725 \text{ t/min}$



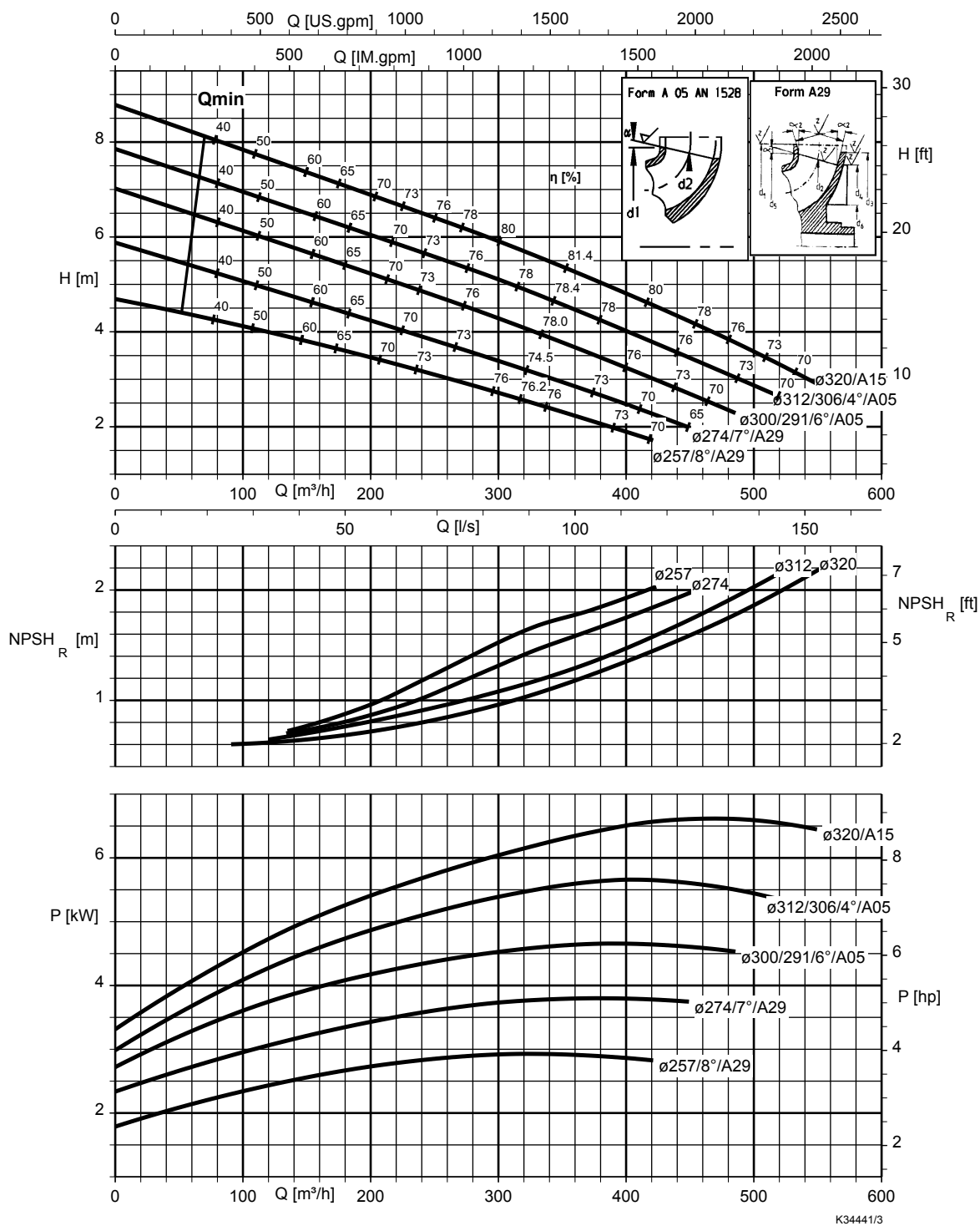
KWP K 150-150-400,  $n = 725 \text{ t/min}$



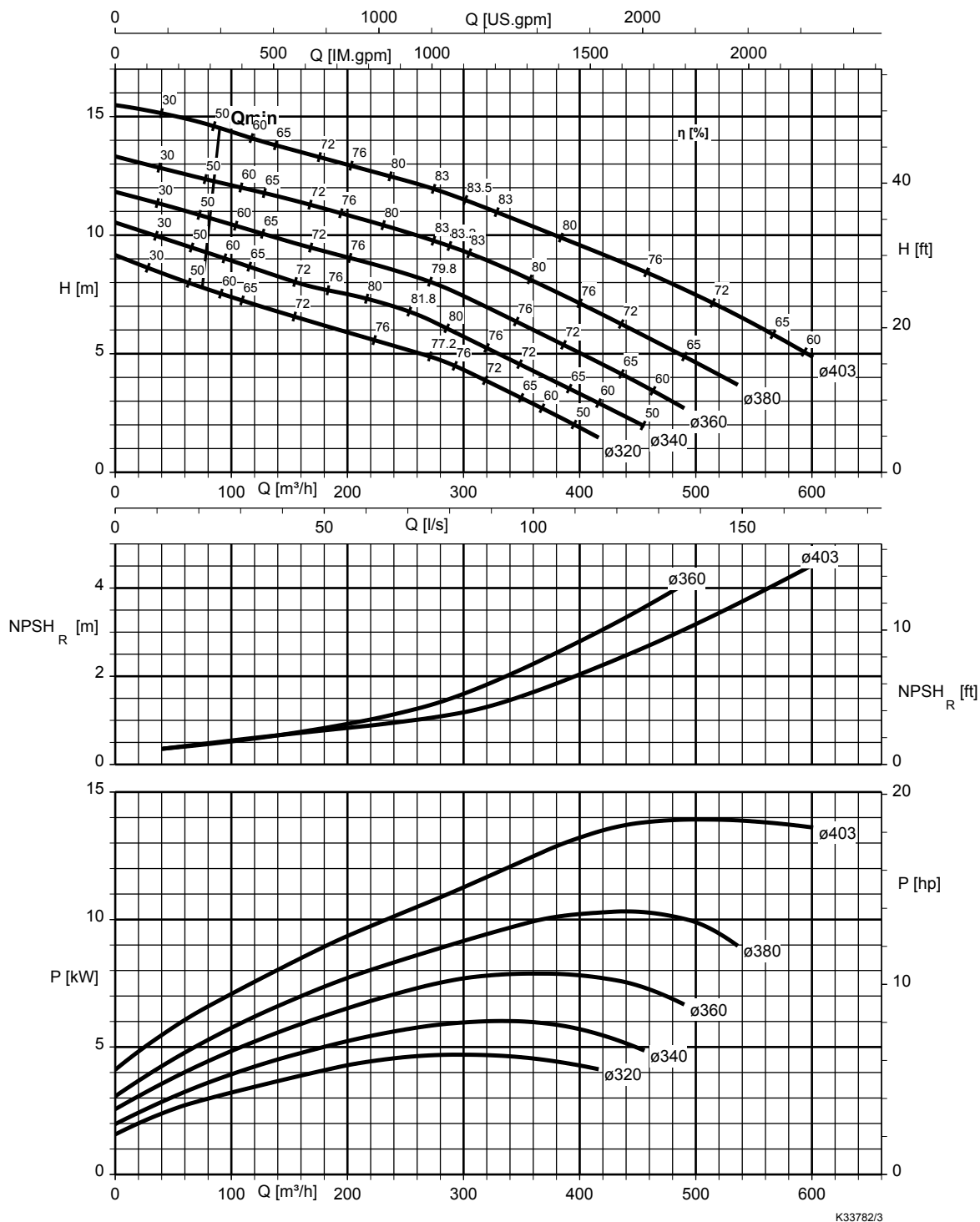
KWP K 150-150-403,  $n = 725 \text{ t/min}$



KWP K 200-200-320,  $n = 725 \text{ t/min}$

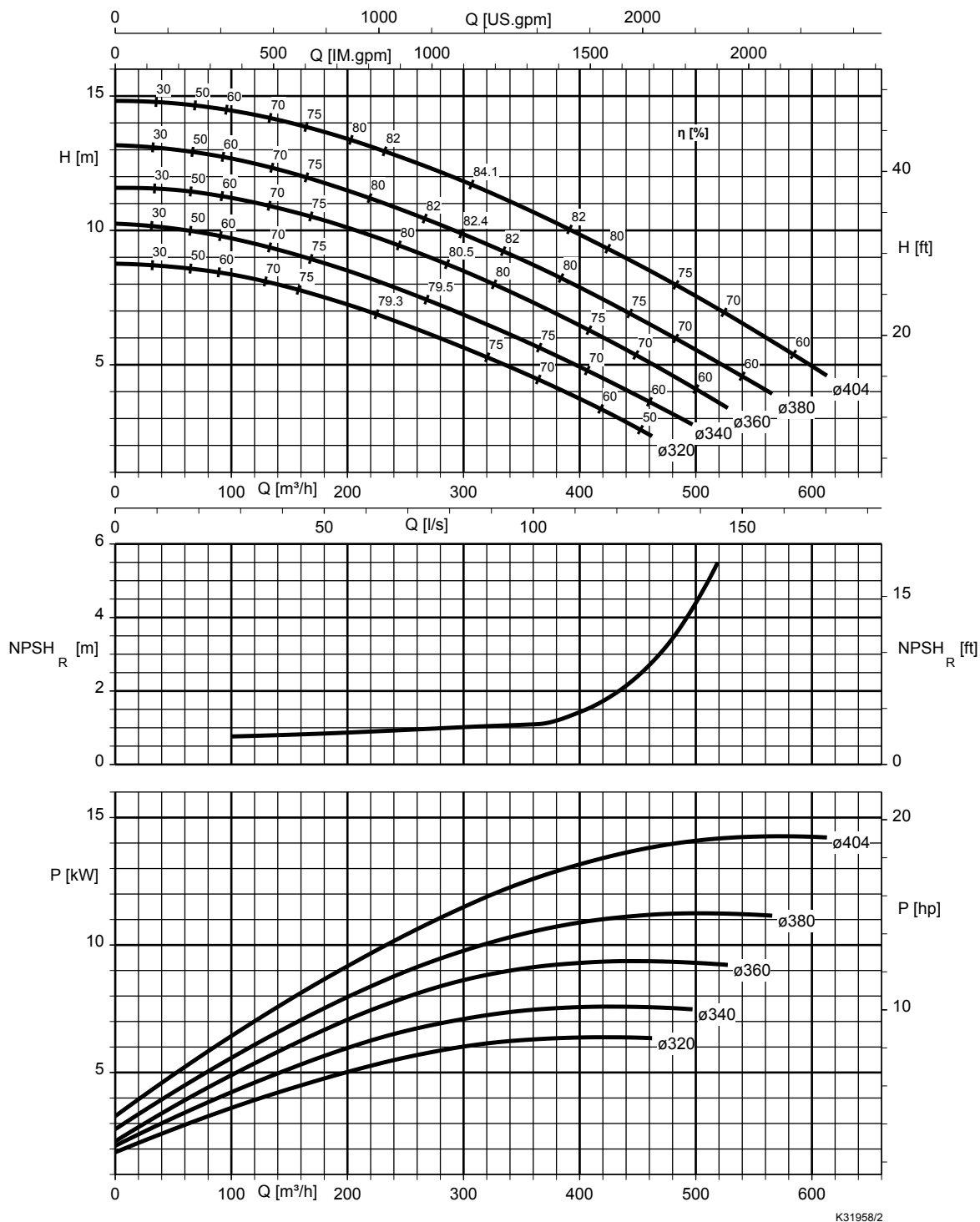


KWP K 200-200-400,  $n = 725 \text{ t/min}$

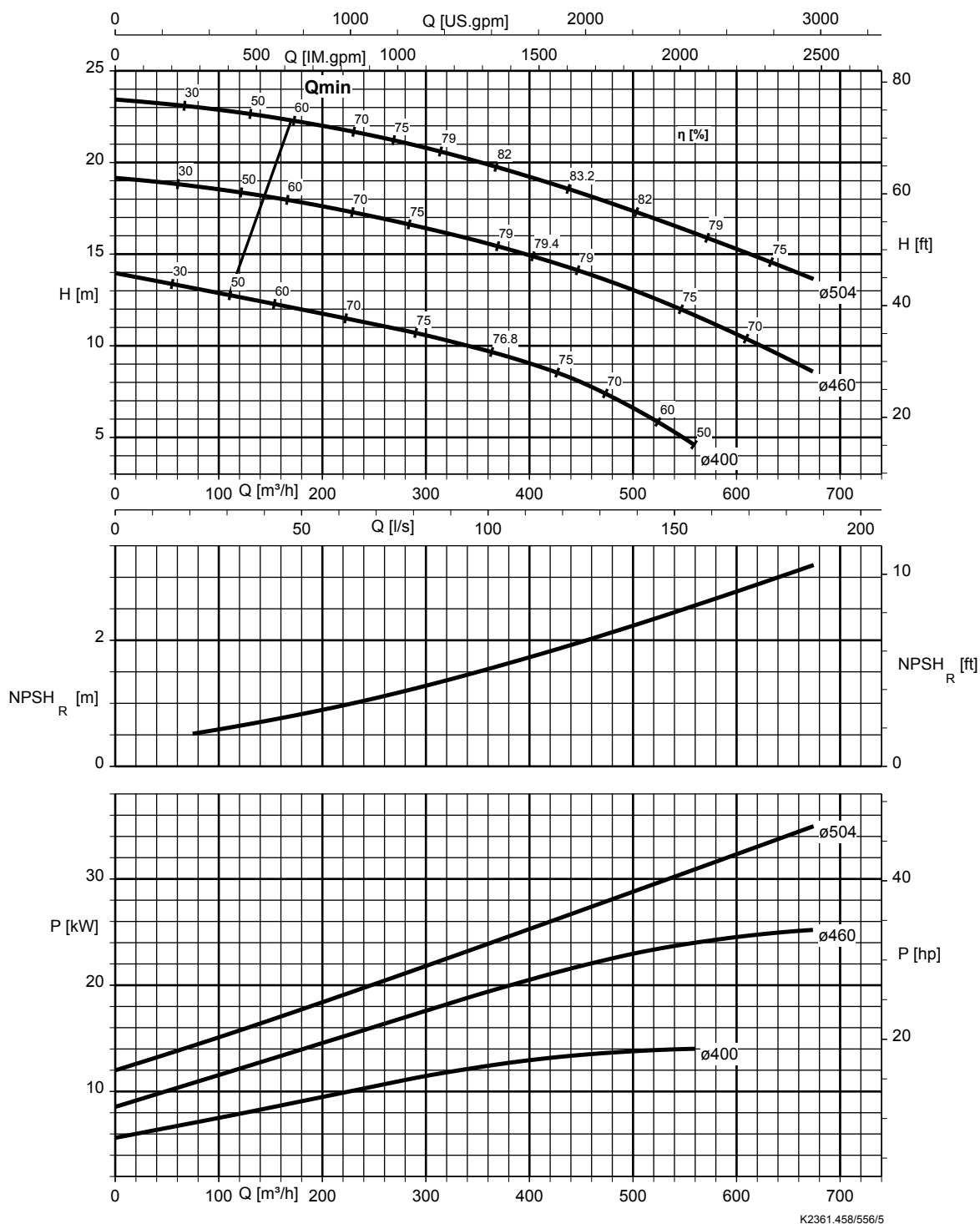


K33782/3

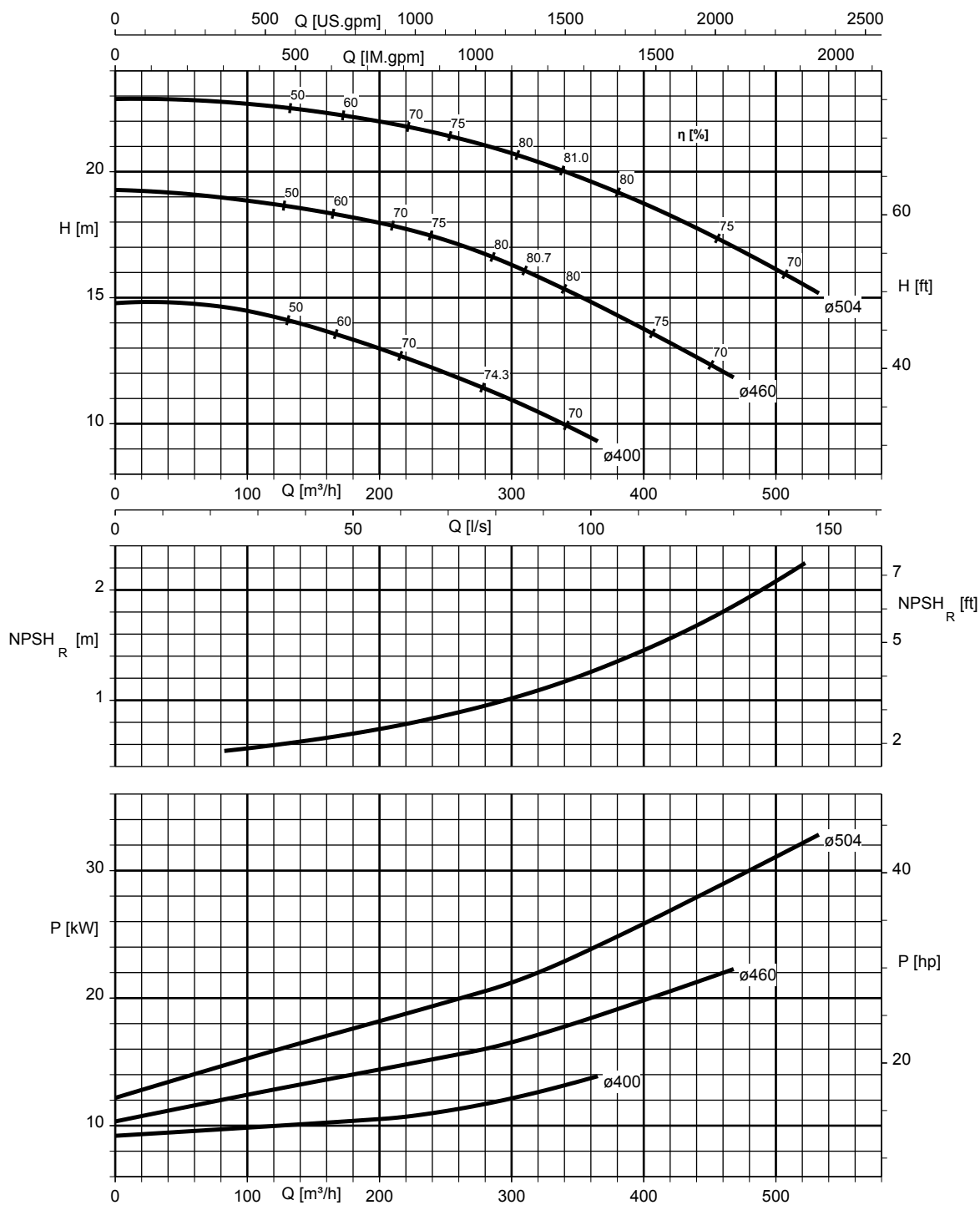
KWP K 200-200-403,  $n = 725 \text{ t/min}$



KWP K 200-200-501,  $n = 725 \text{ t/min}$

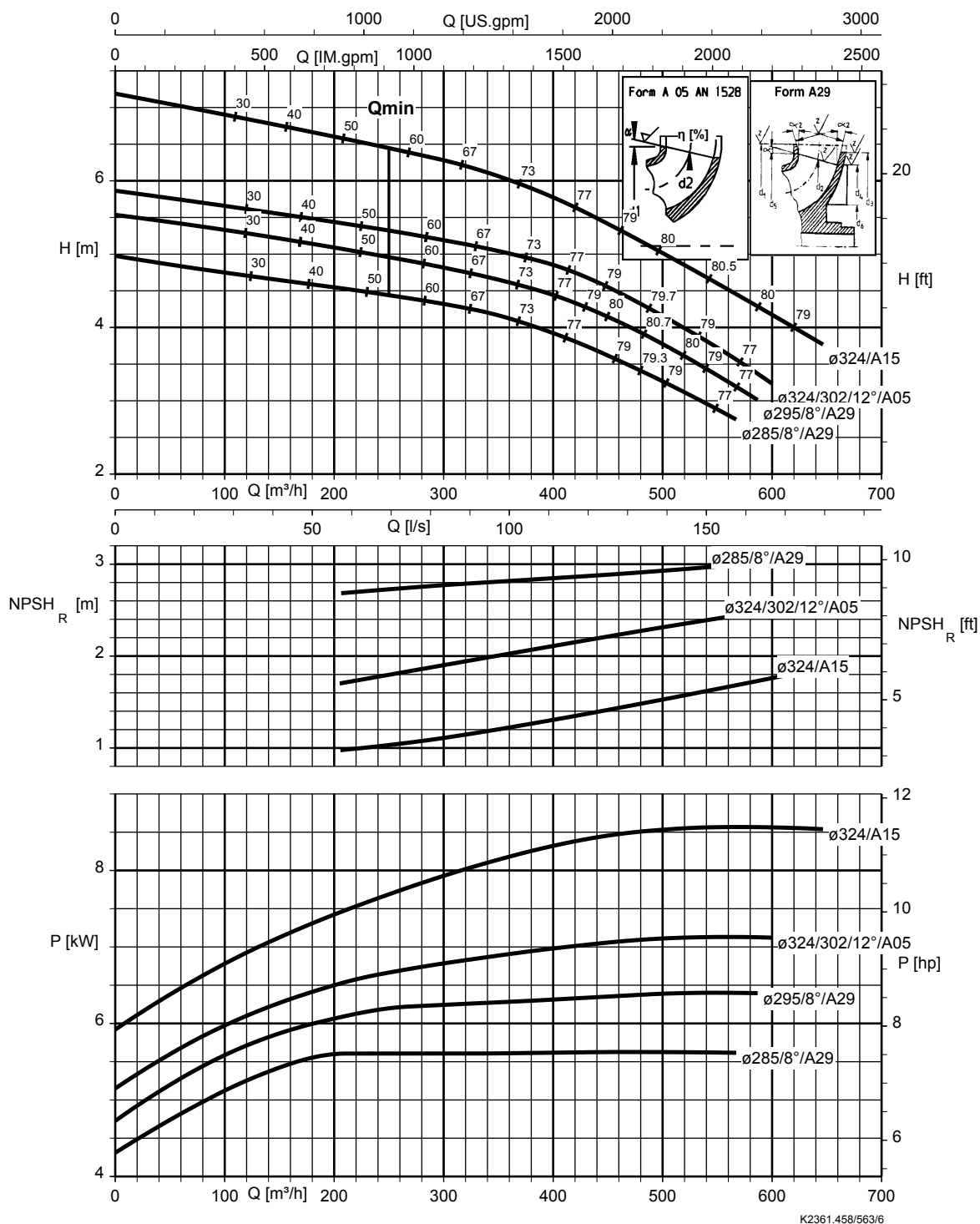


KWP K 200-200-503,  $n = 725 \text{ t/min}$

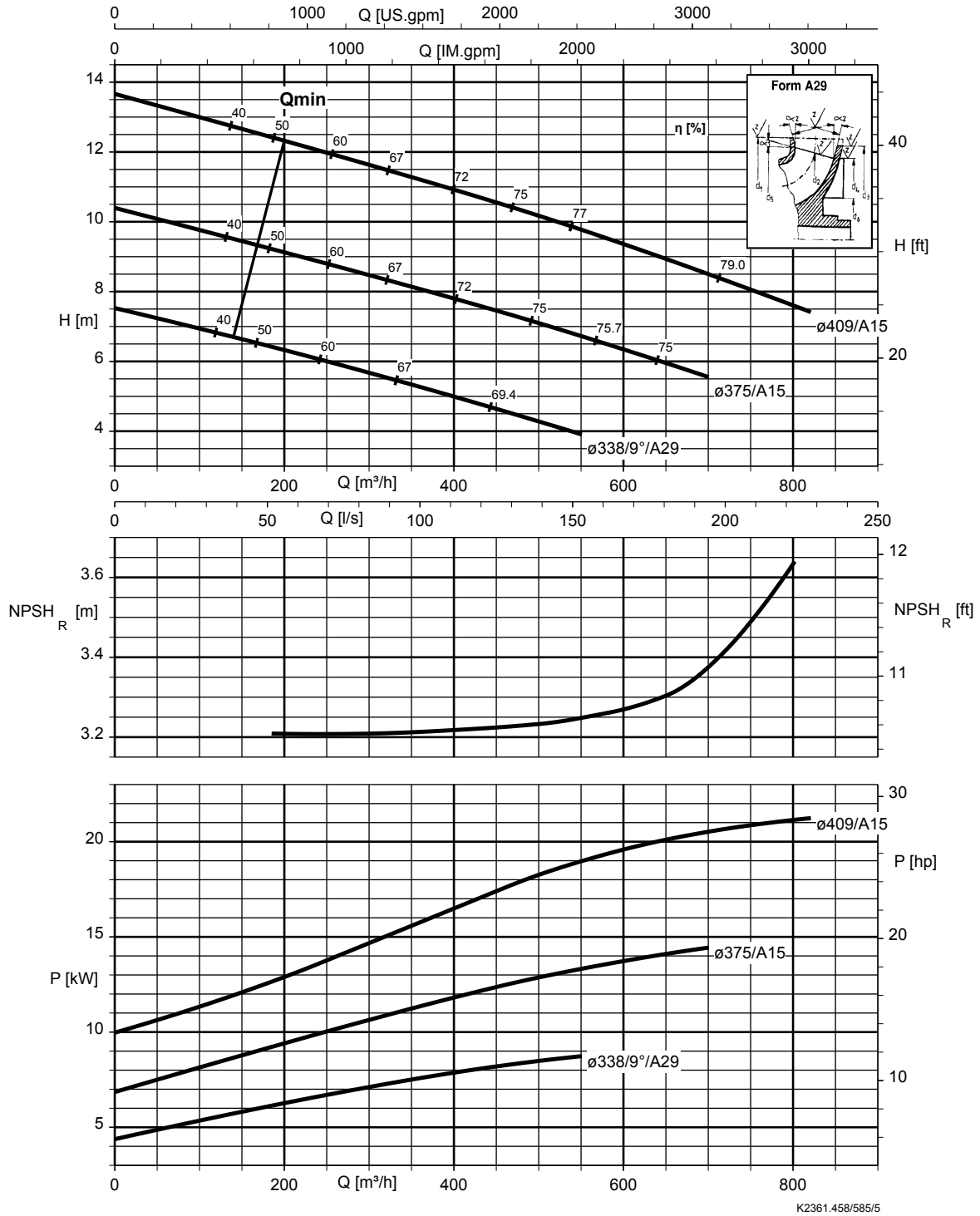


K34115/2

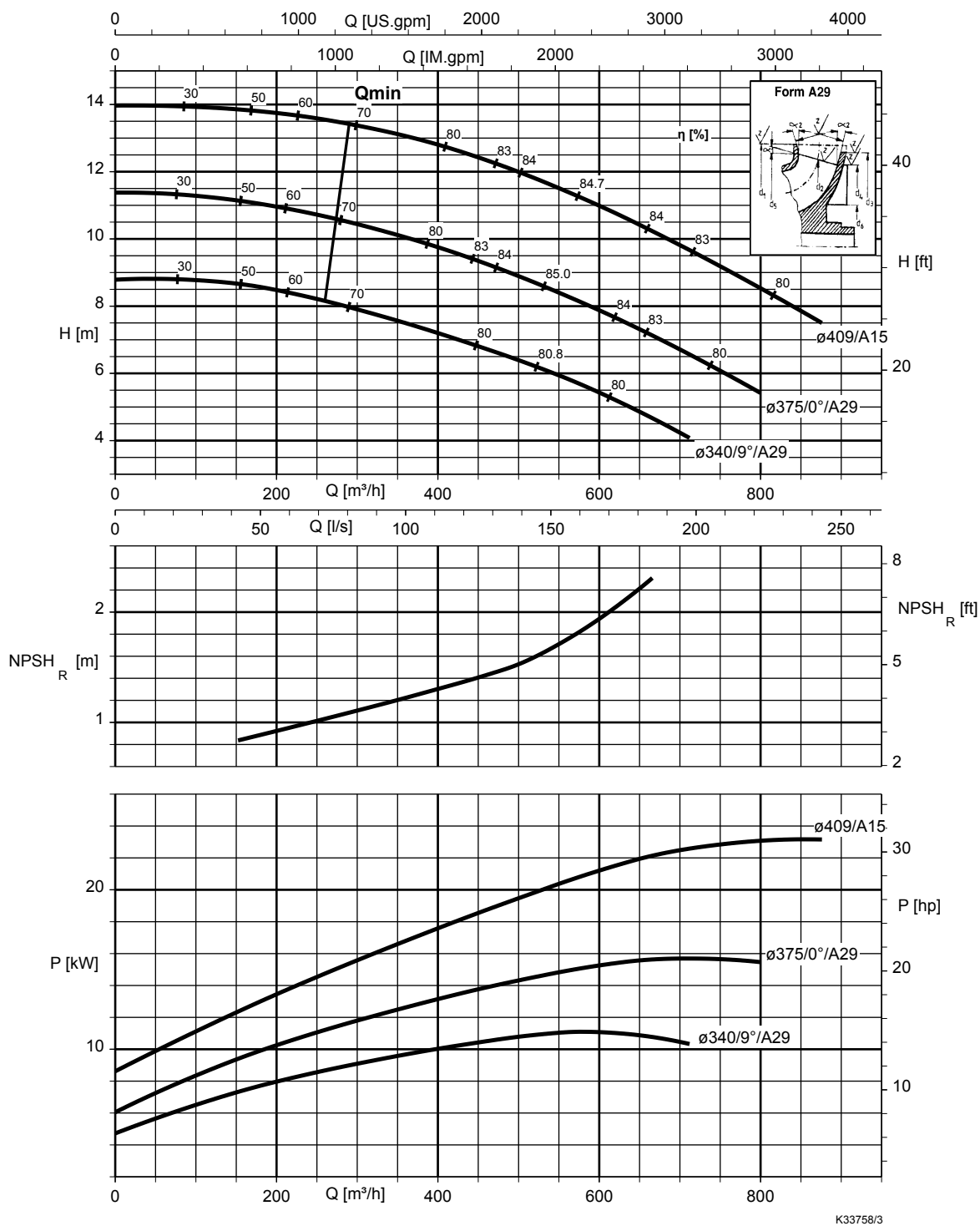
KWP K 250-250-315,  $n = 725 \text{ t/min}$



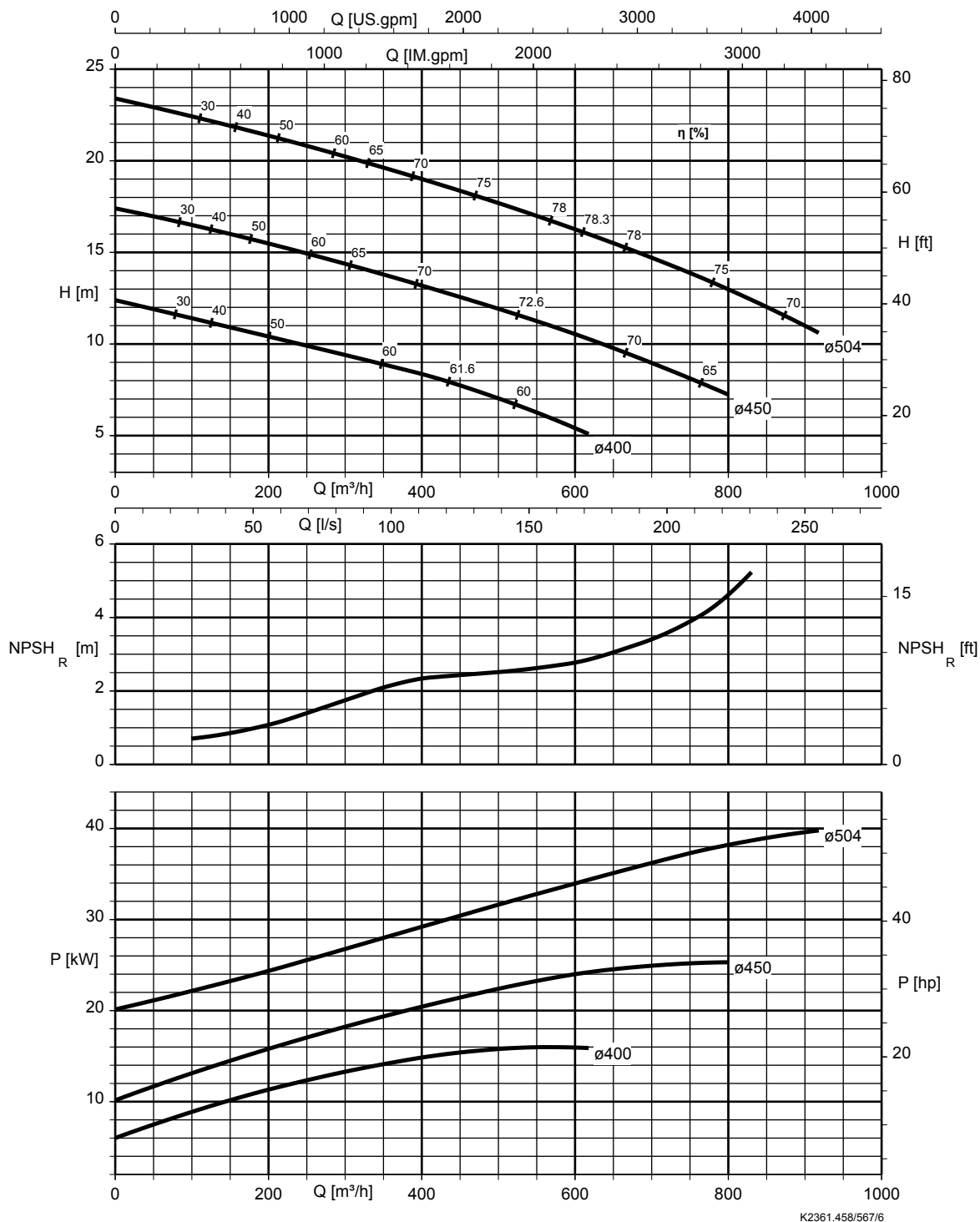
KWP K 250-250-400,  $n = 725 \text{ t/min}$



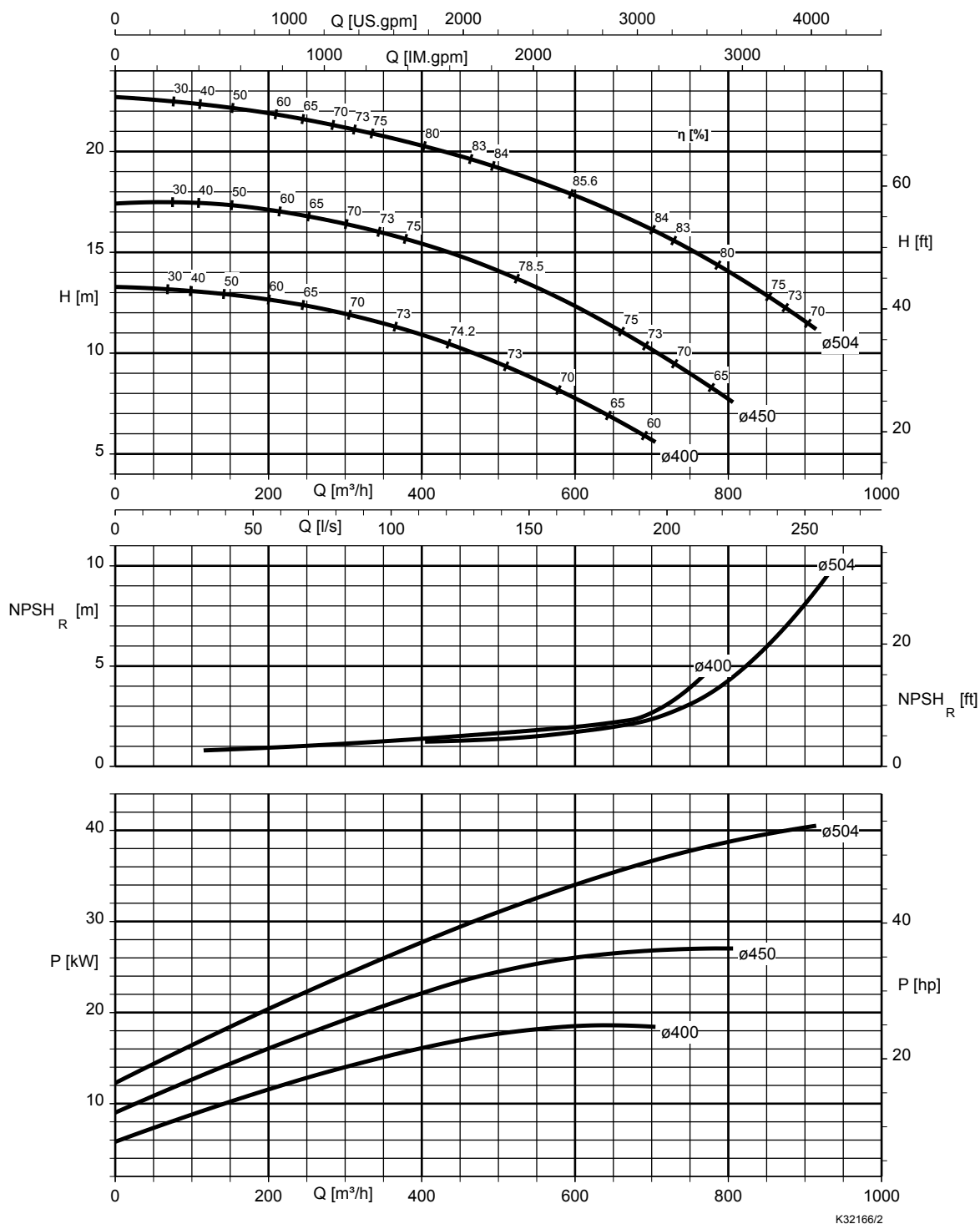
KWP K 250-250-403,  $n = 725 \text{ t/min}$



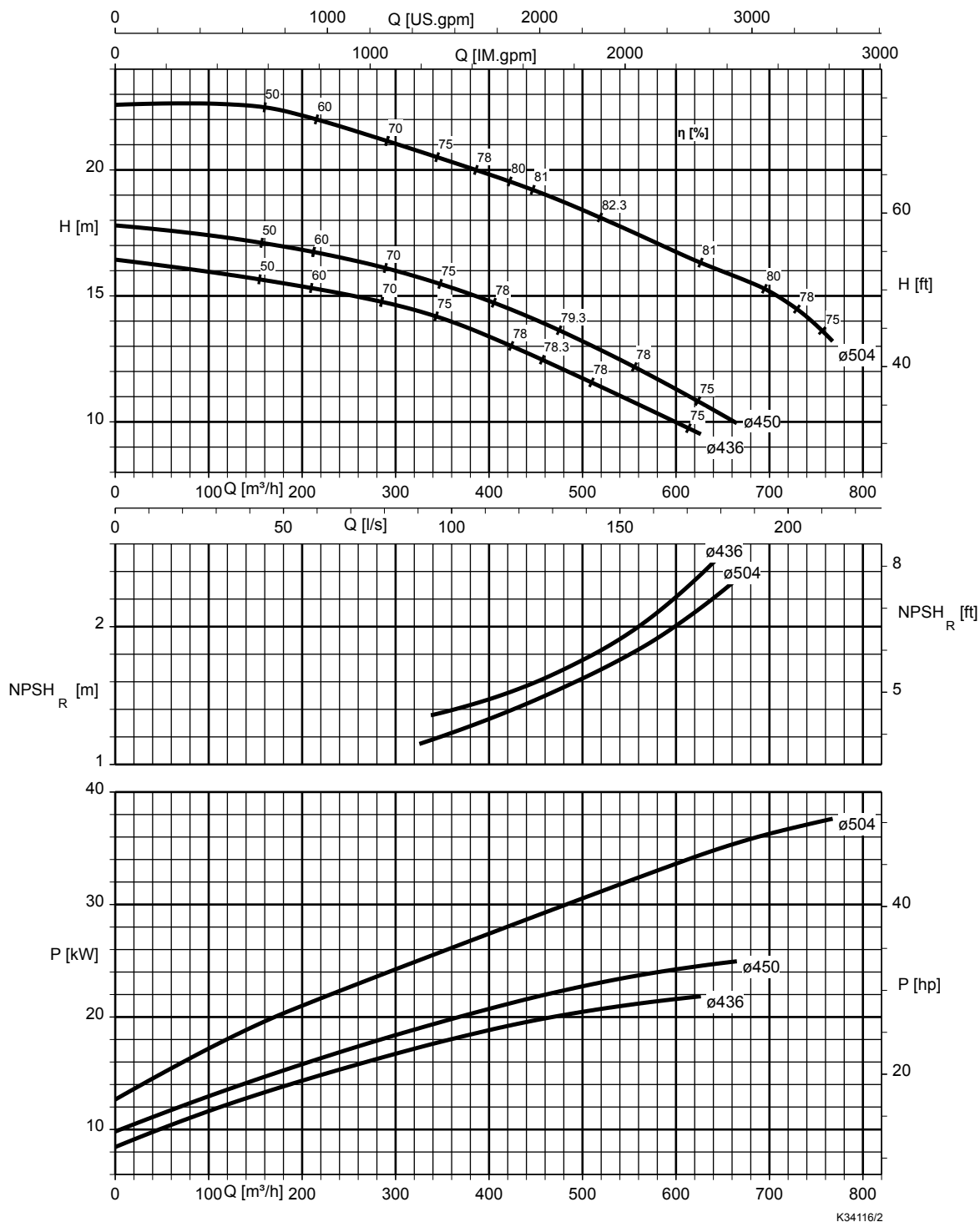
KWP K 250-250-500, n = 725 t/min



KWP K 250-250-503,  $n = 725 \text{ t/min}$

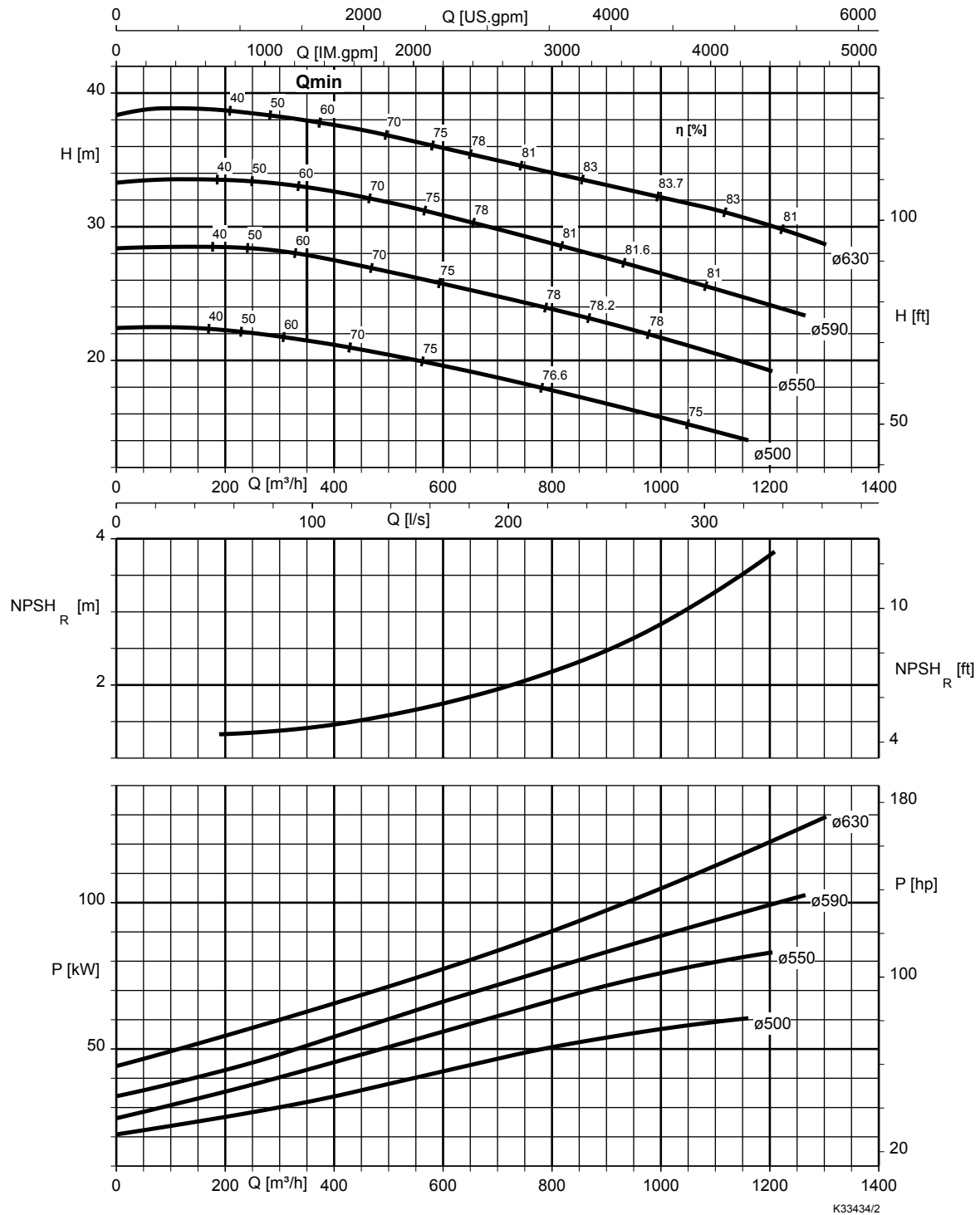


KWP K 250-250-505,  $n = 725 \text{ t/min}$

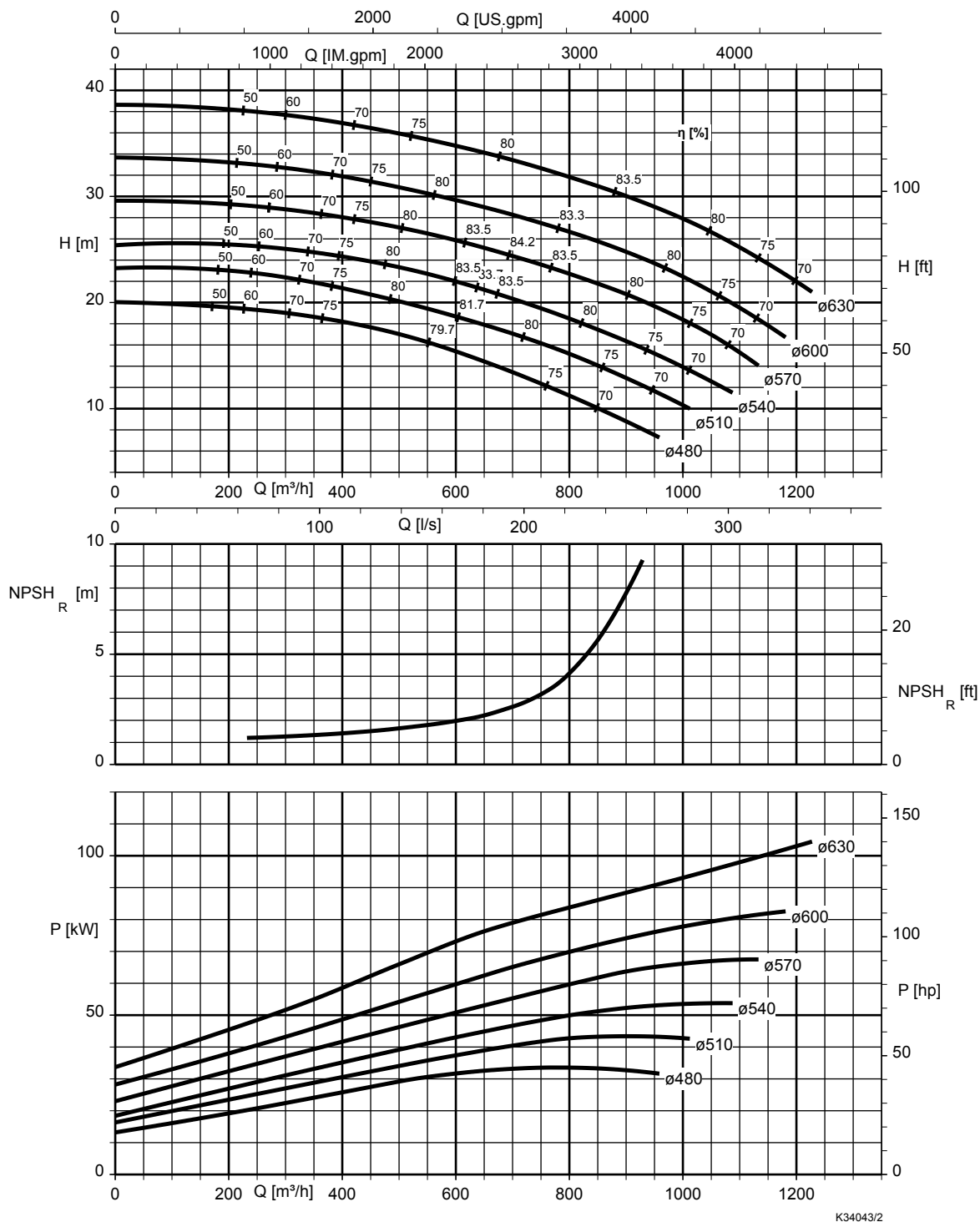


K34116/2

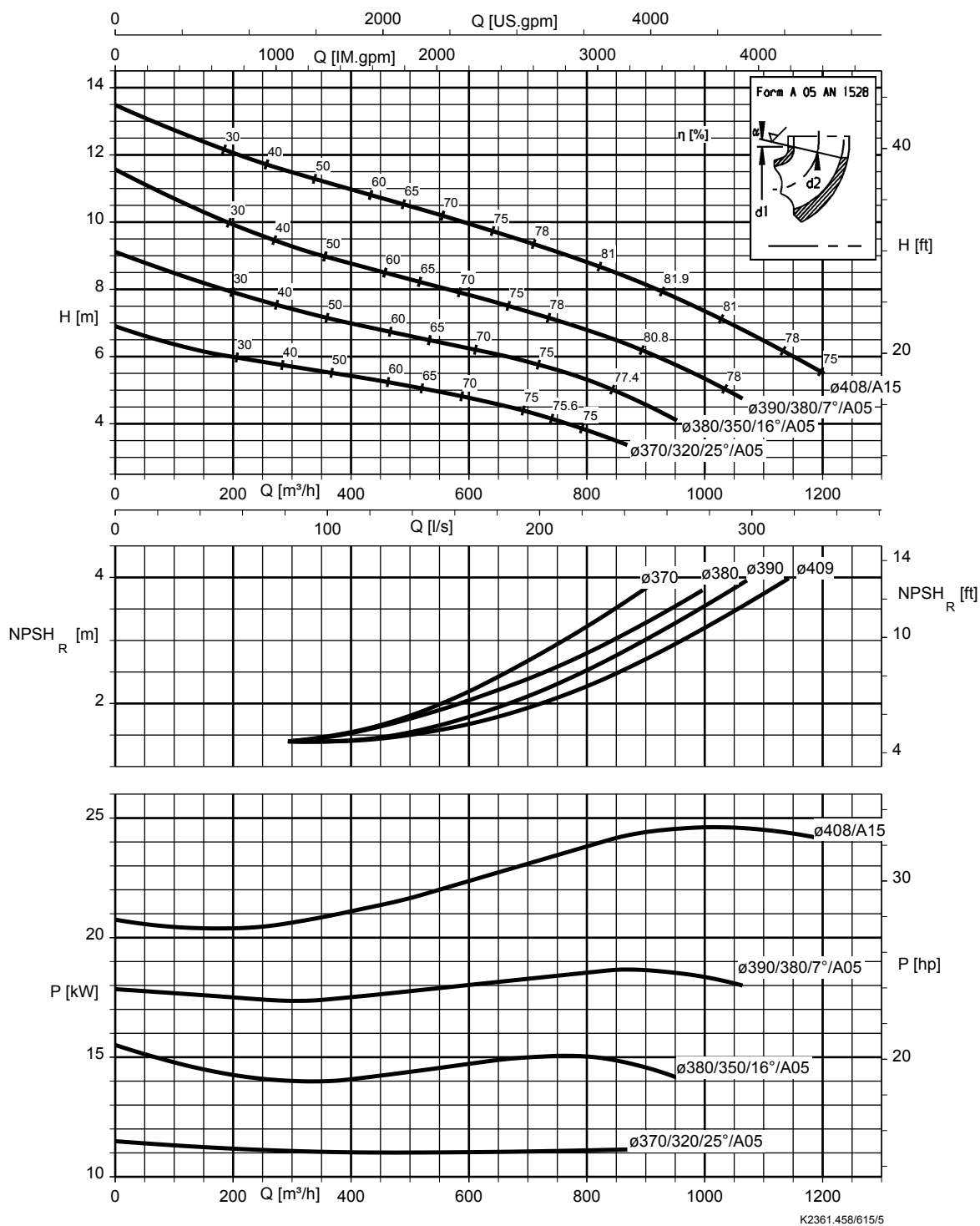
KWP K 250-250-630,  $n = 725 \text{ t/min}$



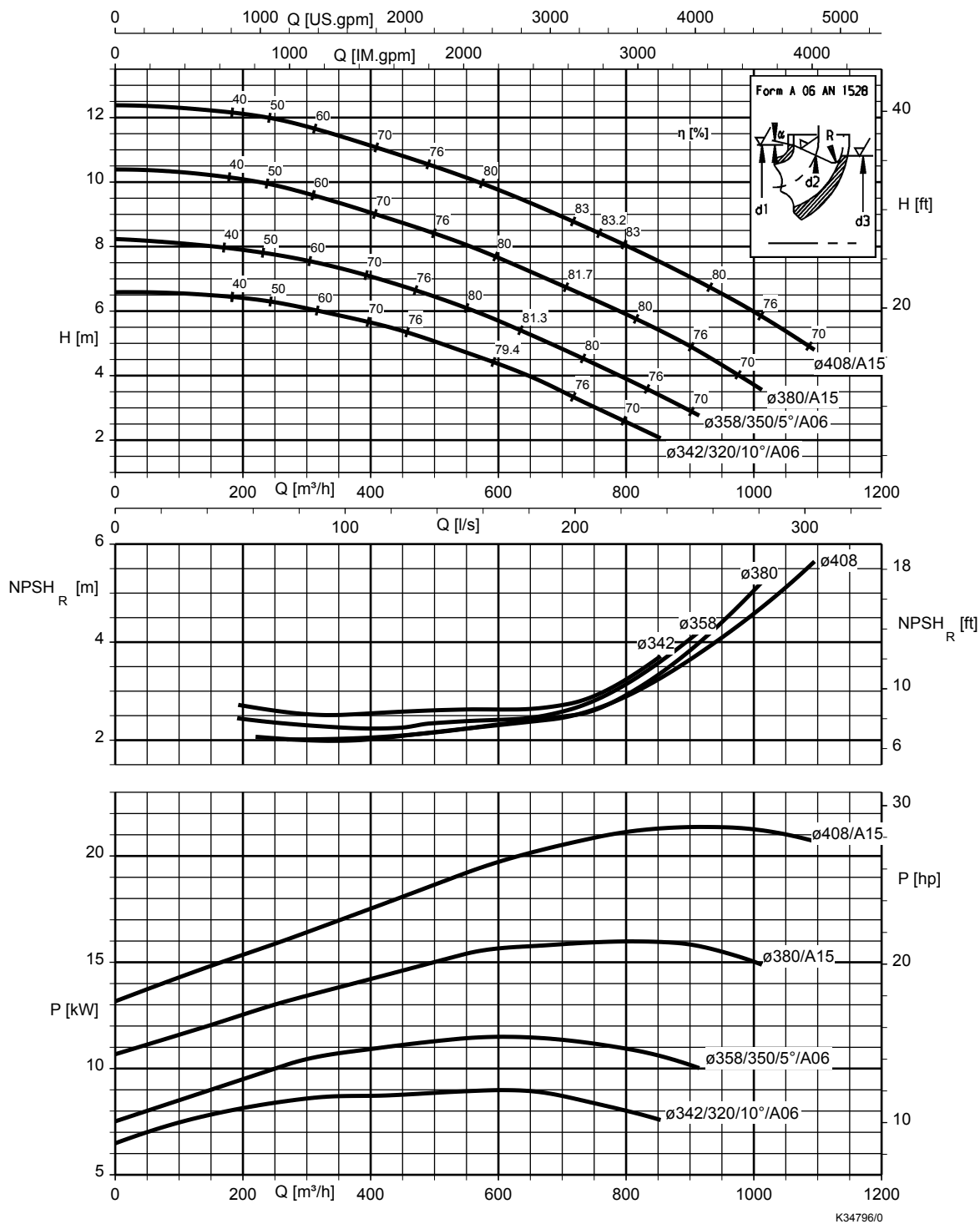
KWP K 250-250-634,  $n = 725 \text{ t/min}$



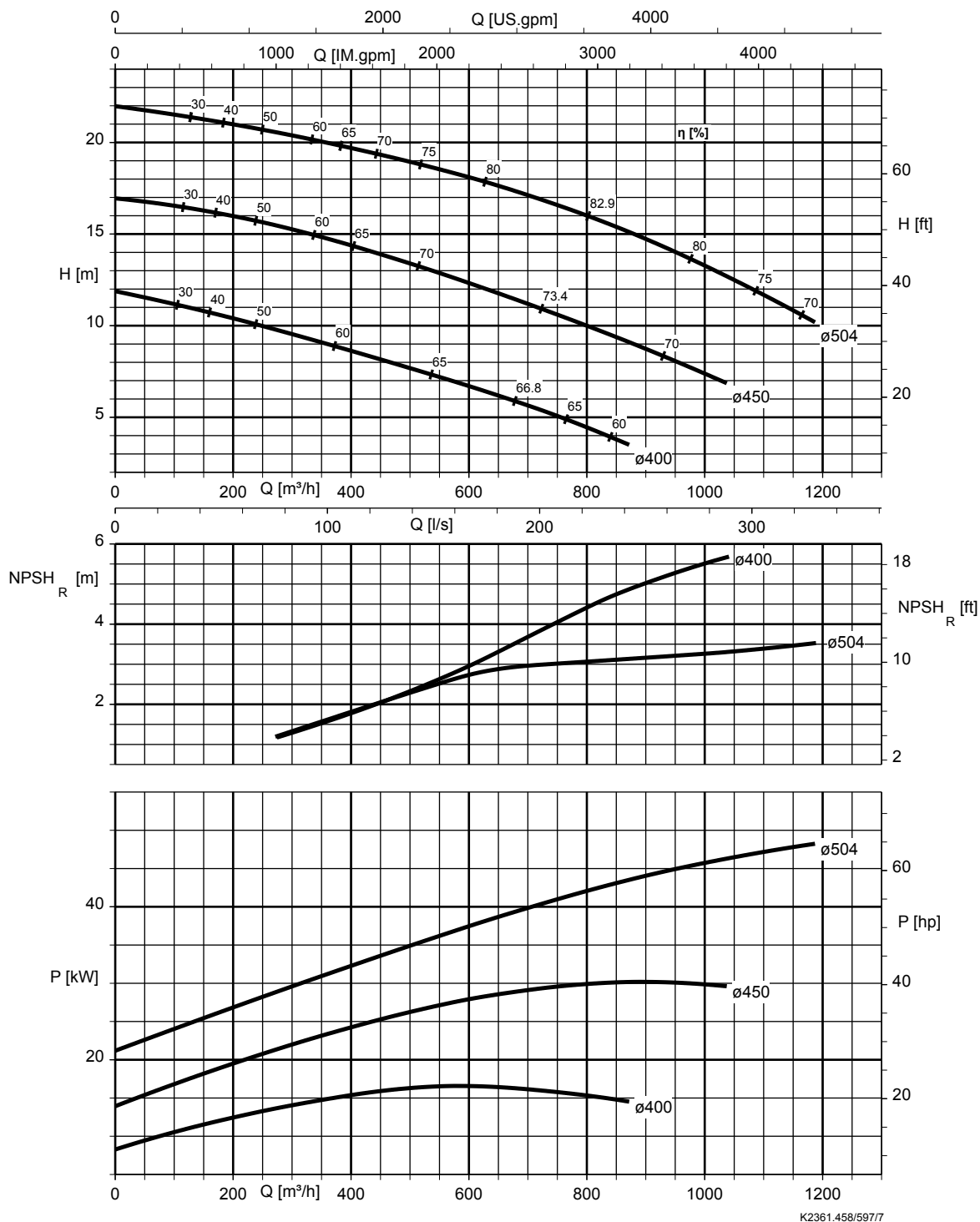
KWP K 300-300-400,  $n = 725 \text{ t/min}$



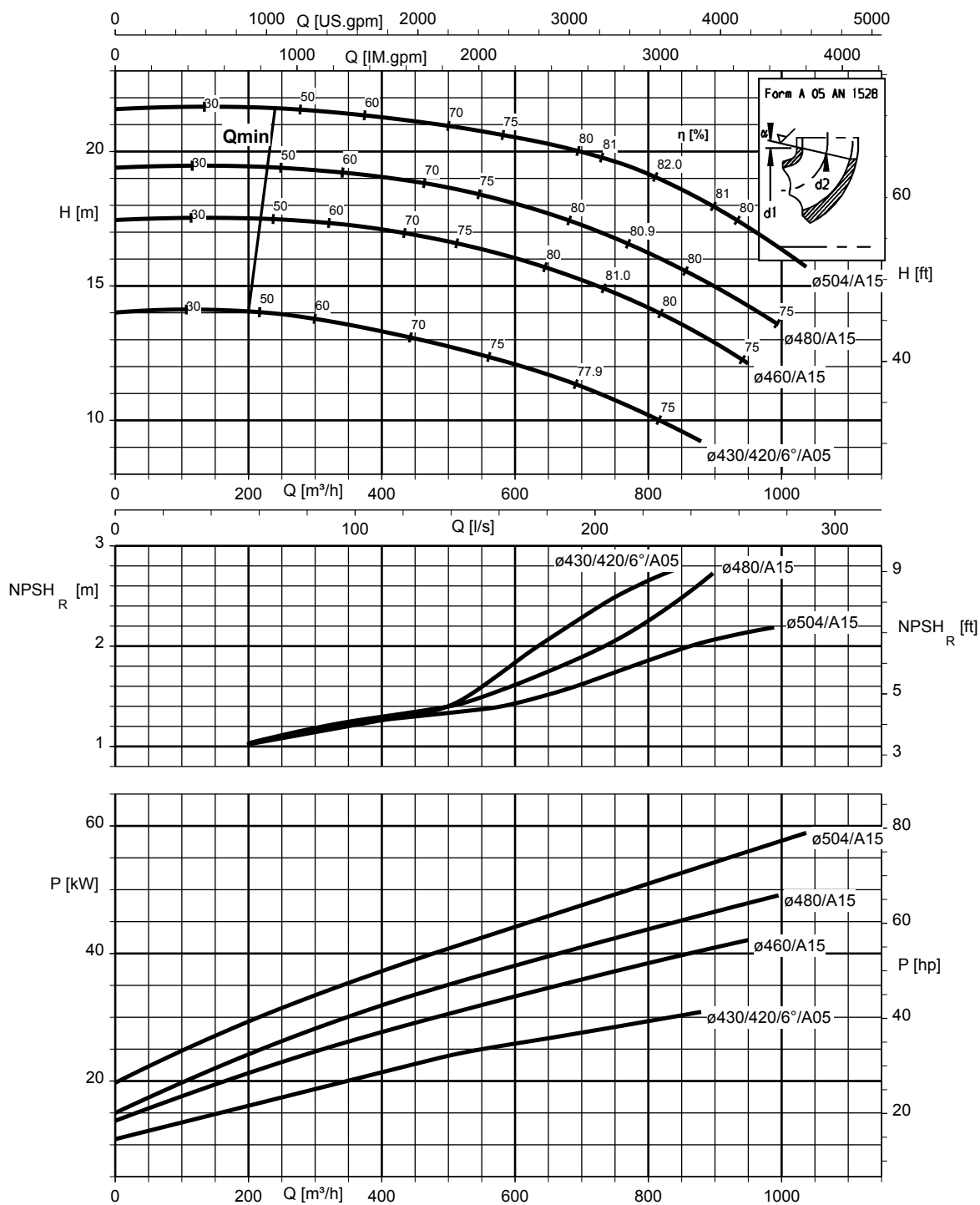
KWP K 300-300-401,  $n = 725 \text{ t/min}$



KWP K 300-300-500,  $n = 725 \text{ t/min}$

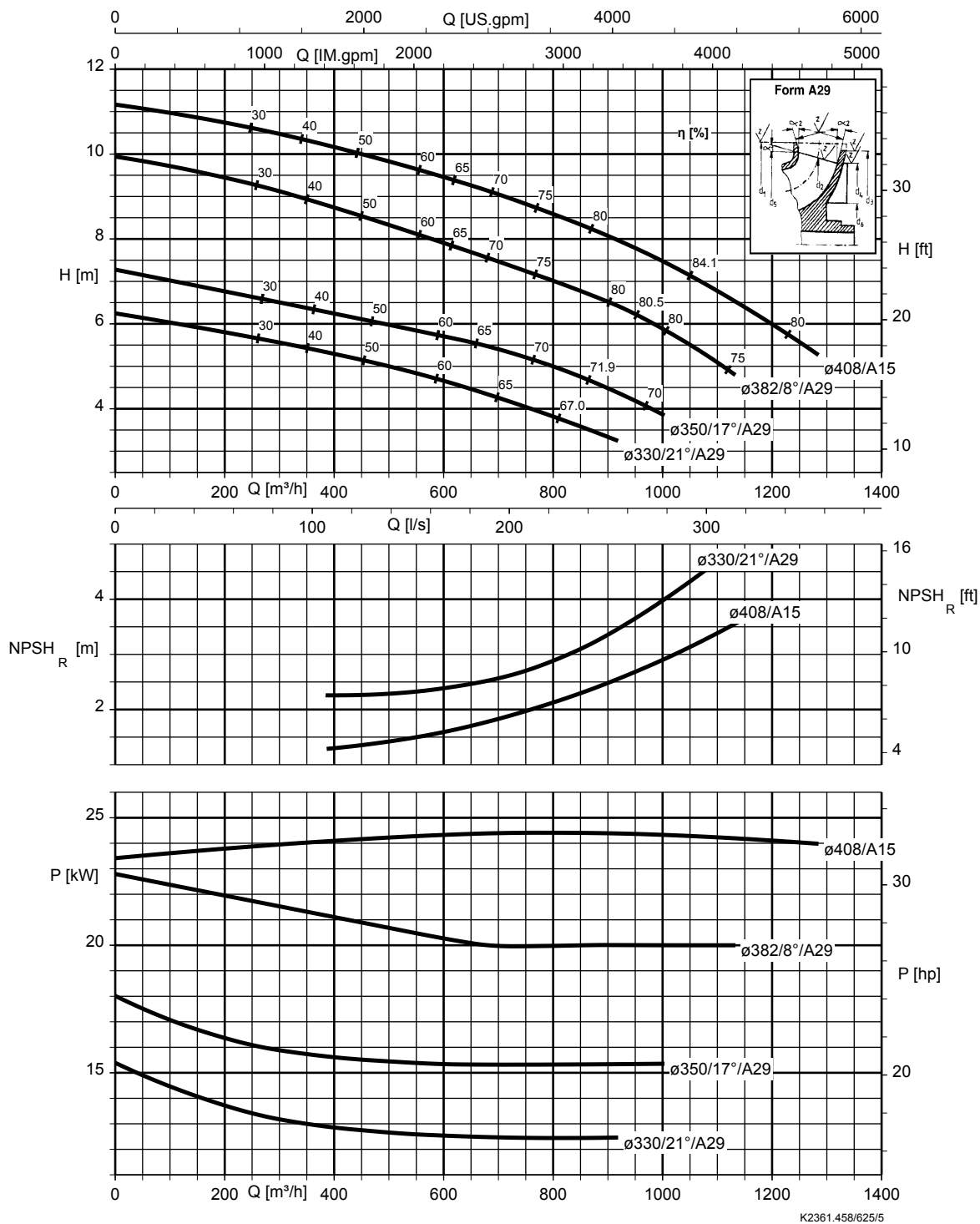


KWP K 300-300-503,  $n = 725 \text{ t/min}$

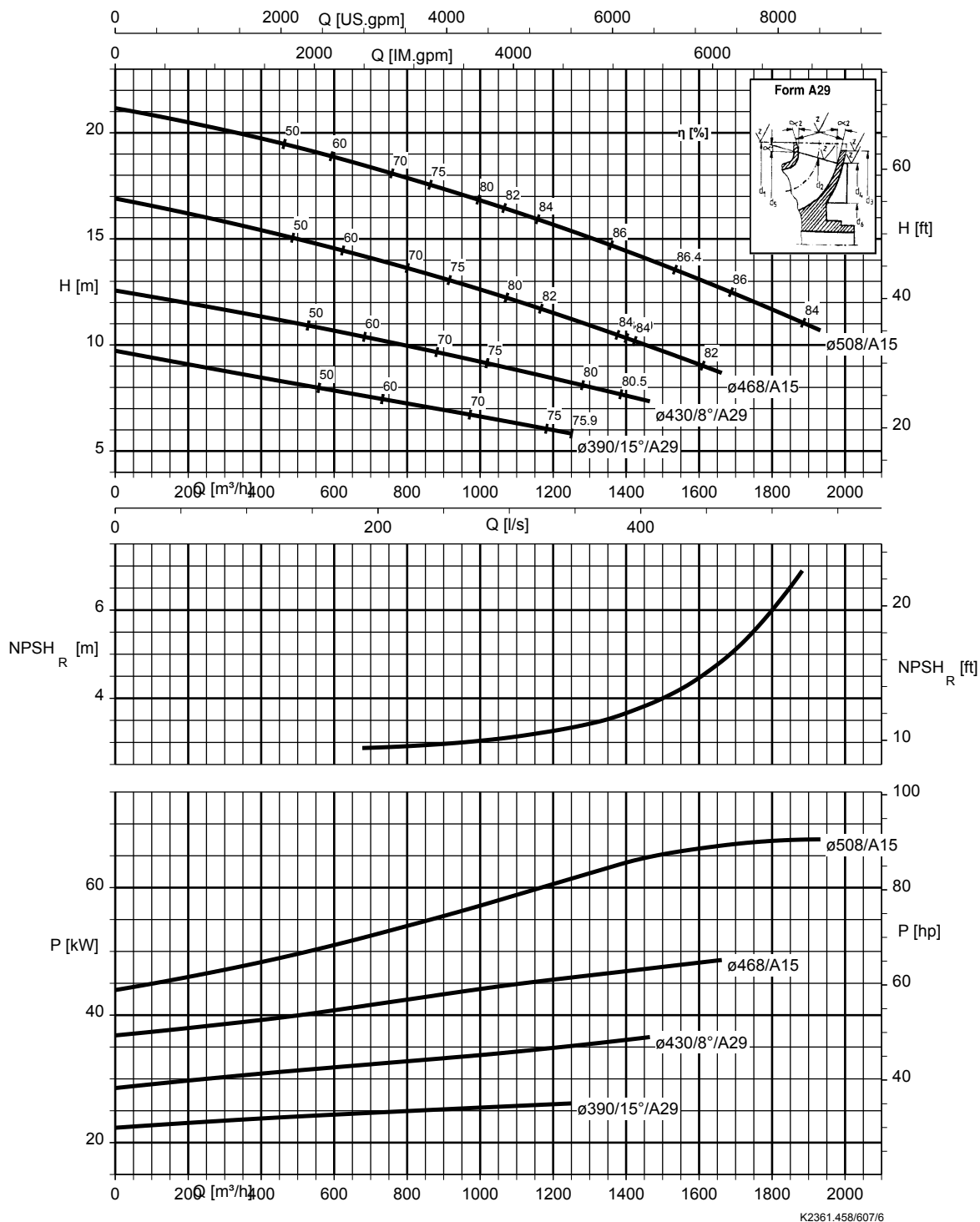


K33761/2

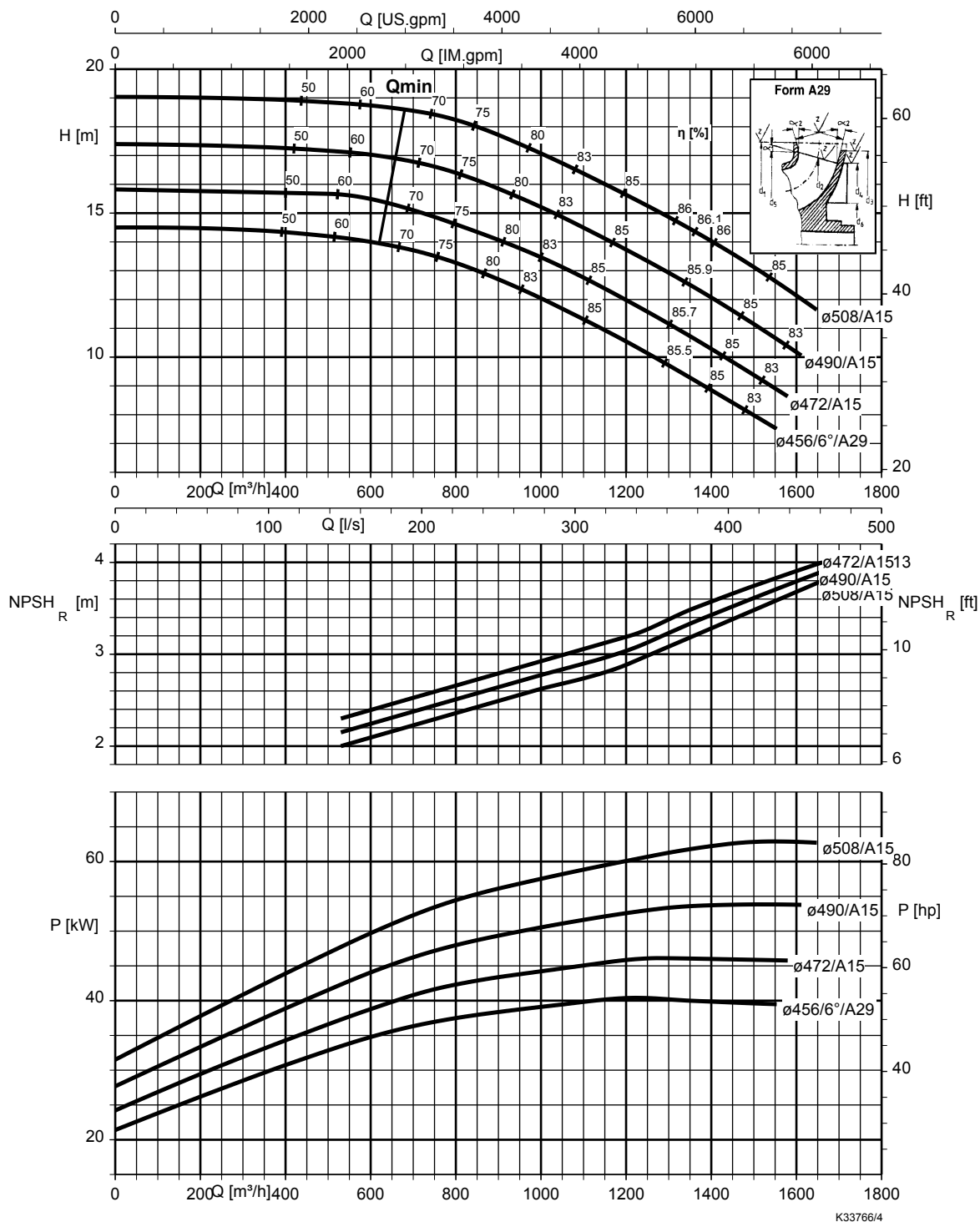
KWP K 350-350-400, n = 725 t/min



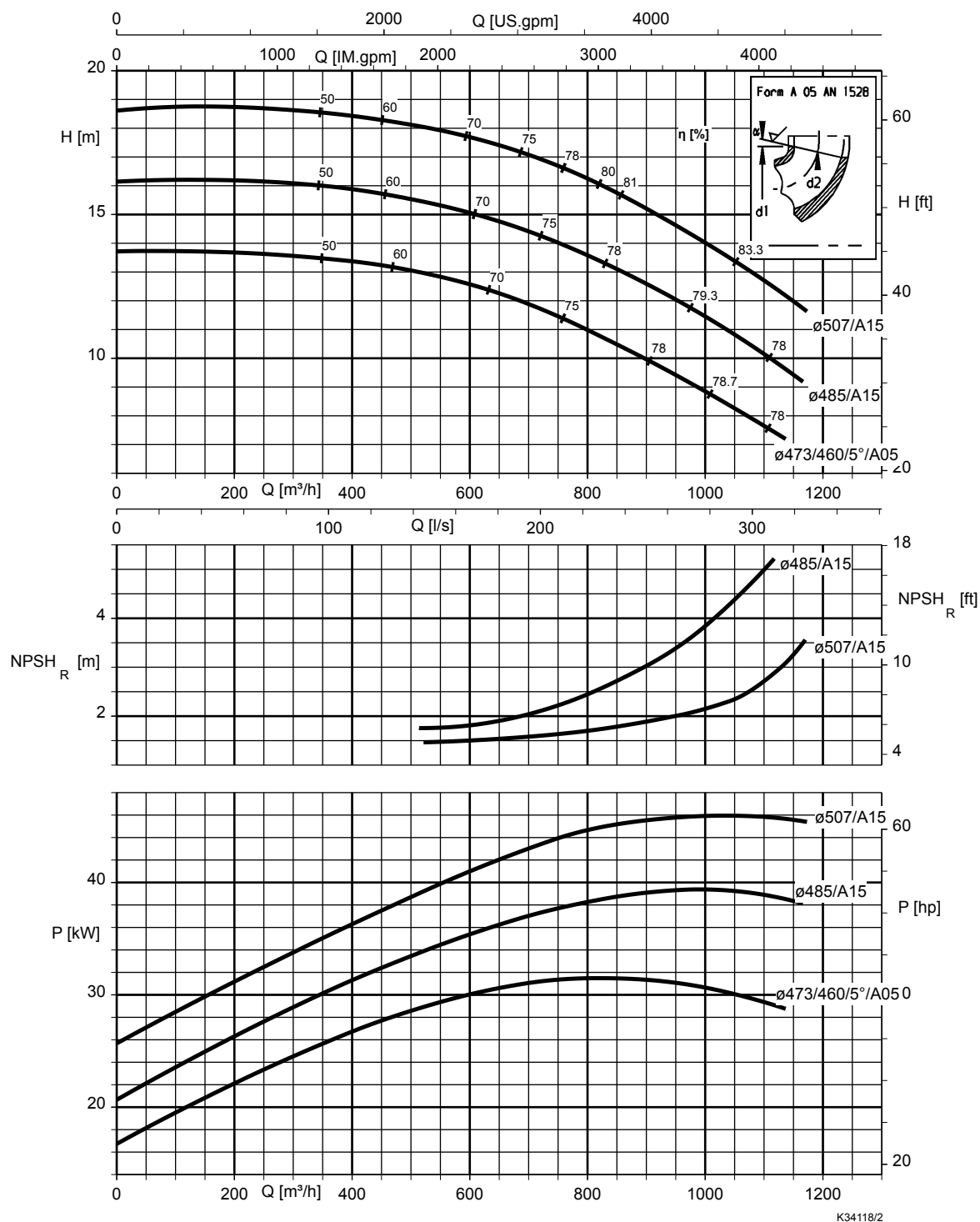
KWP K 350-350-500,  $n = 725 \text{ t/min}$



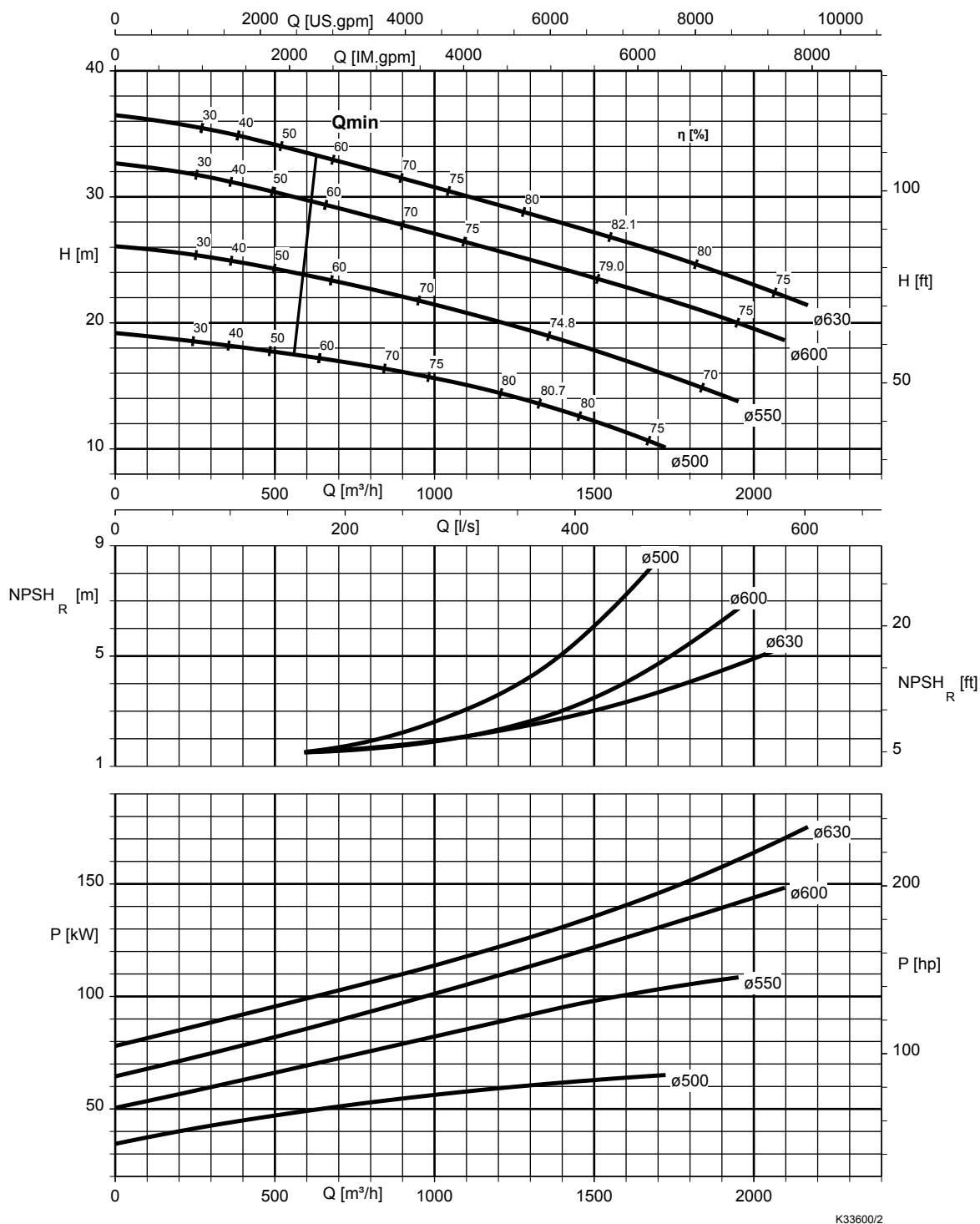
KWP K 350-350-503,  $n = 725 \text{ t/min}$



KWP K 350-350-504,  $n = 725 \text{ t/min}$

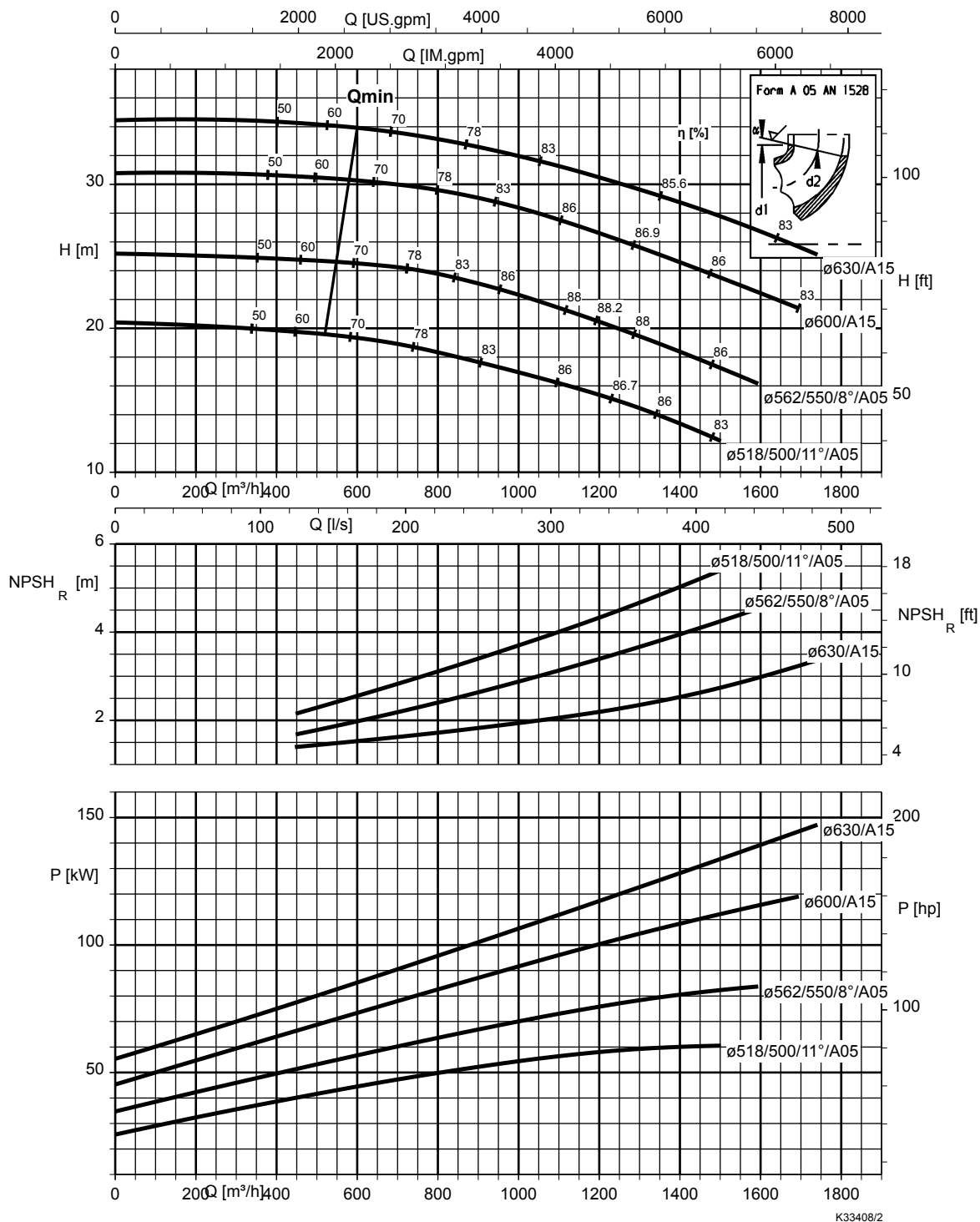


KWP K 350-350-630,  $n = 725 \text{ t/min}$

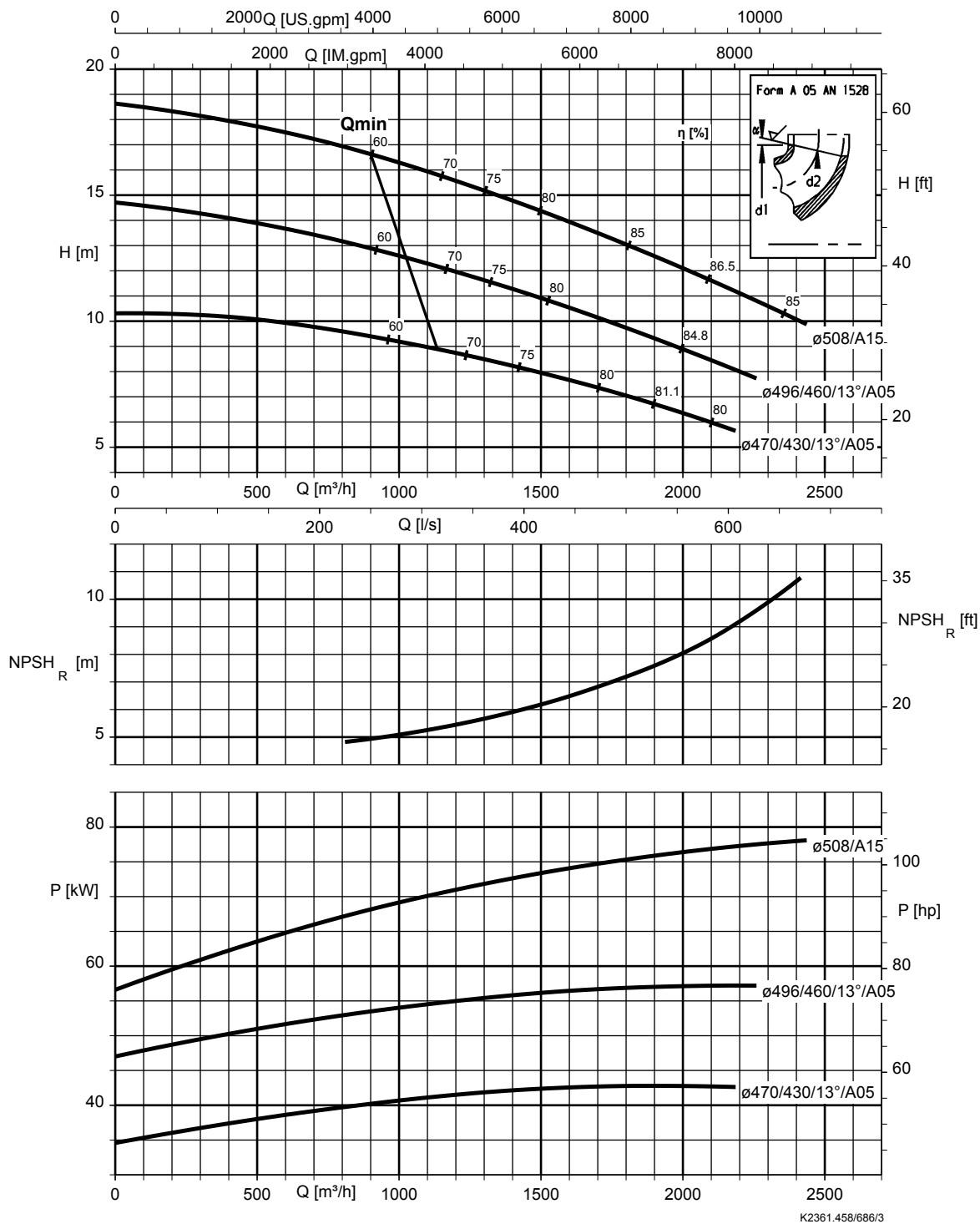


K33600/2

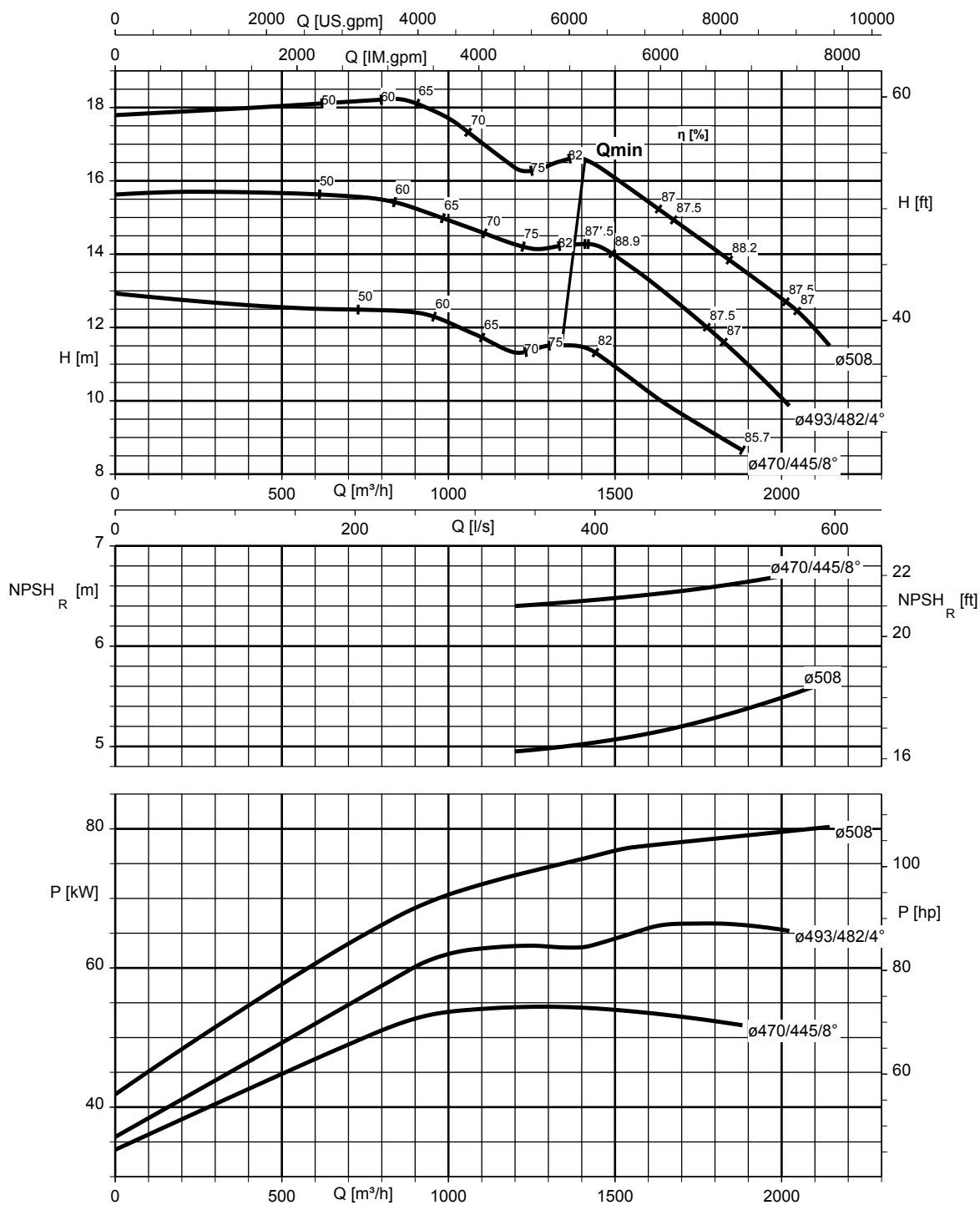
KWP K 350-350-633,  $n = 725 \text{ t/min}$



KWP K 400-400-500,  $n = 725 \text{ t/min}$

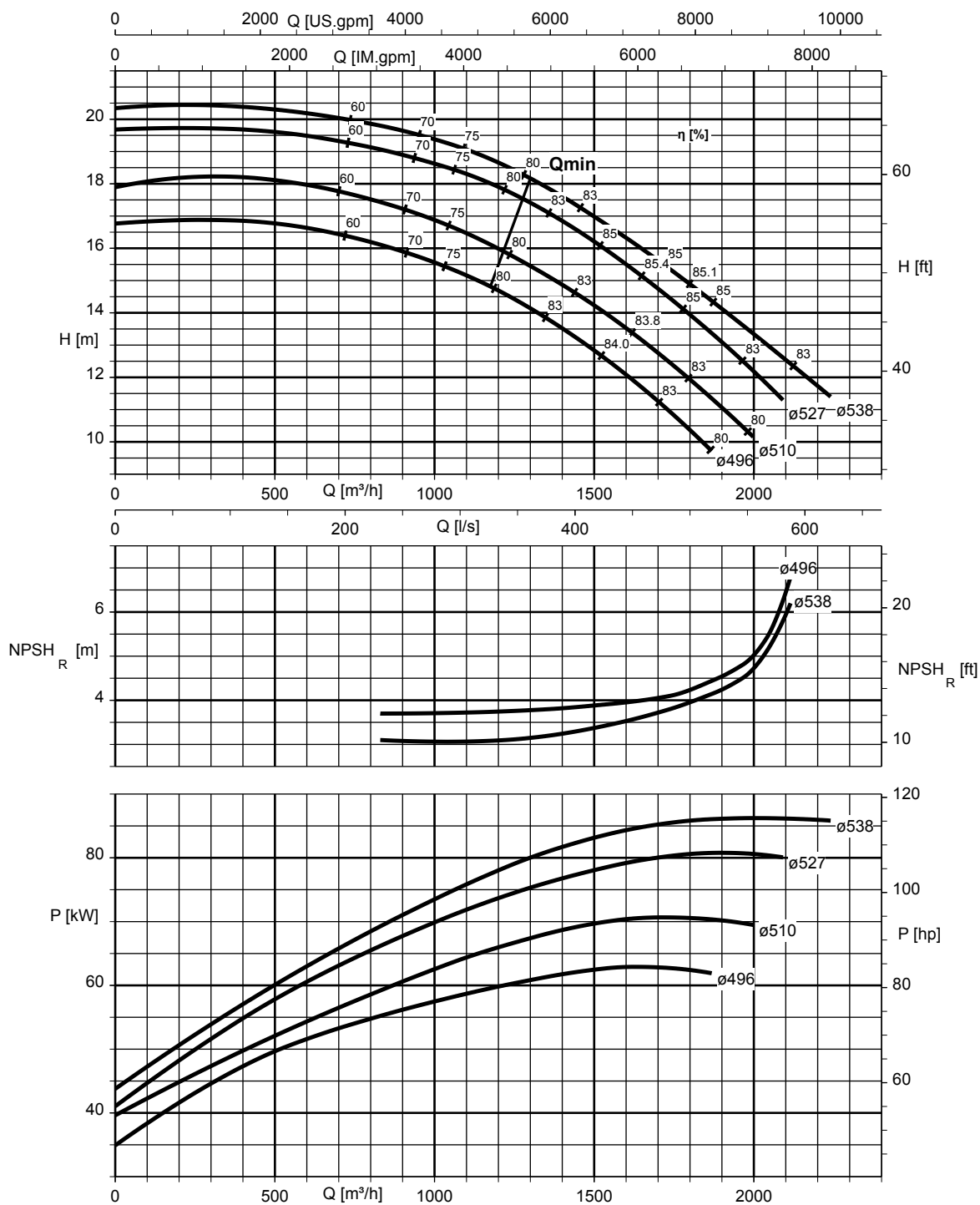


KWP K 400-400-503,  $n = 725 \text{ t/min}$



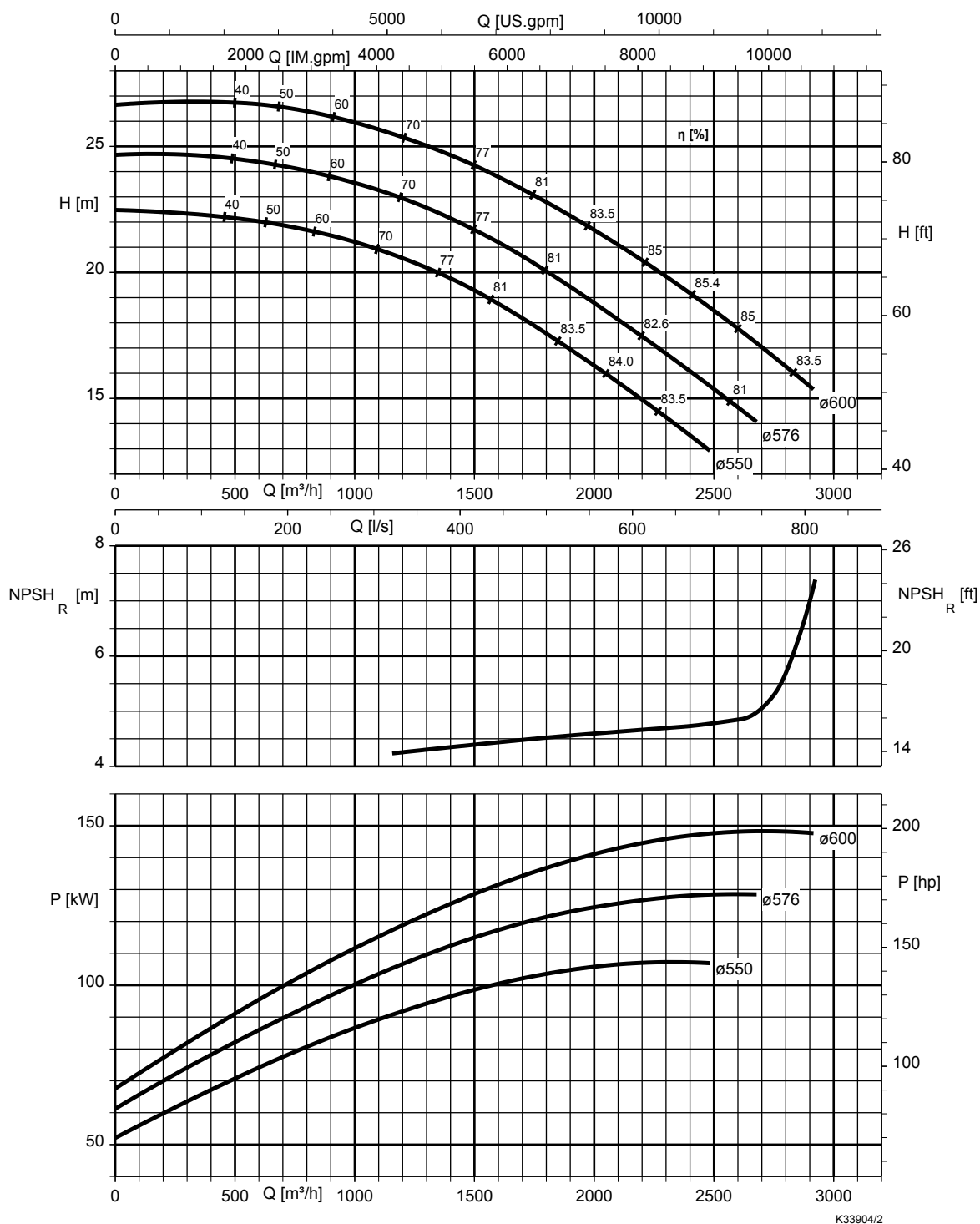
K33768/2

KWP K 400-400-533,  $n = 725 \text{ t/min}$

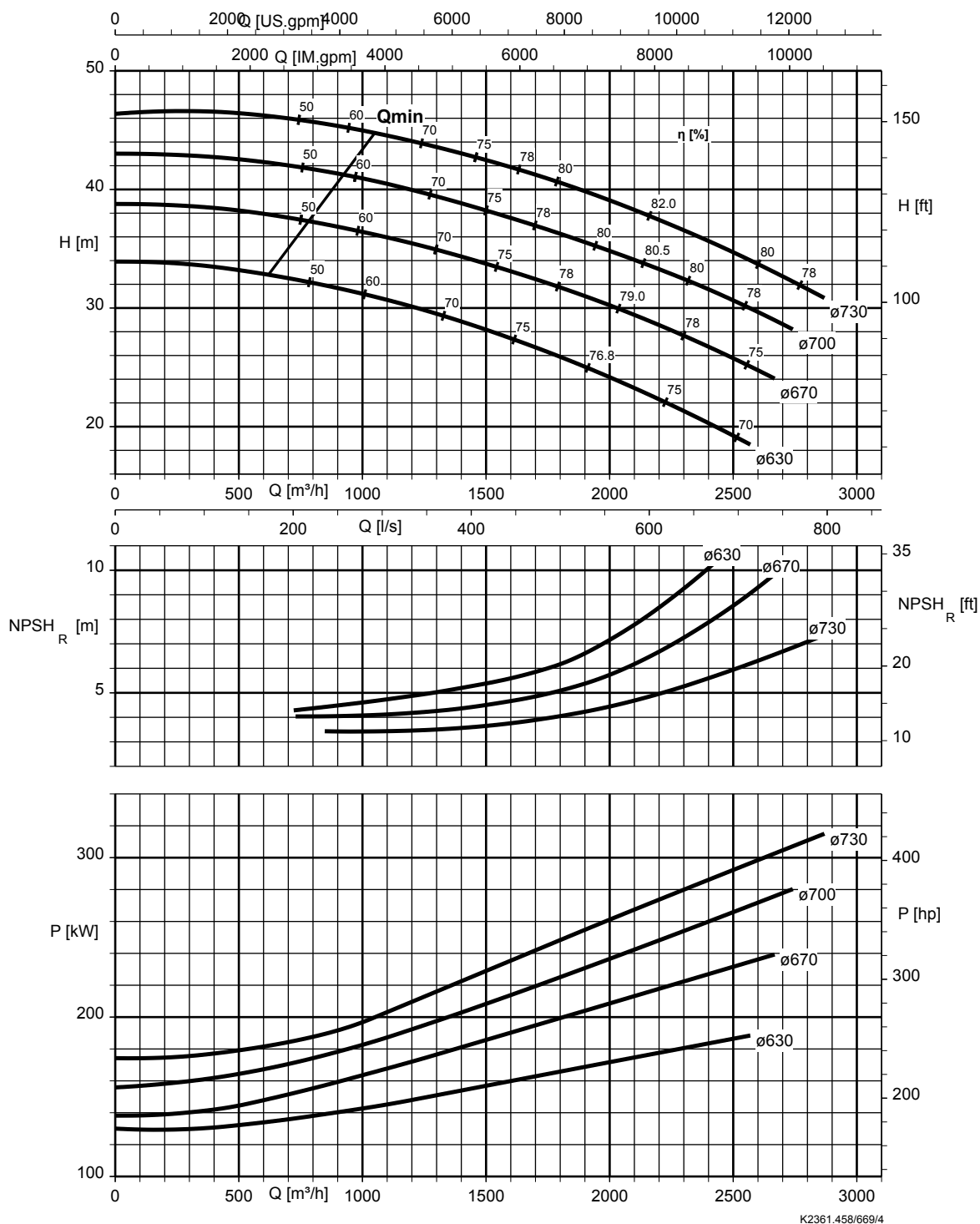


K63079/2

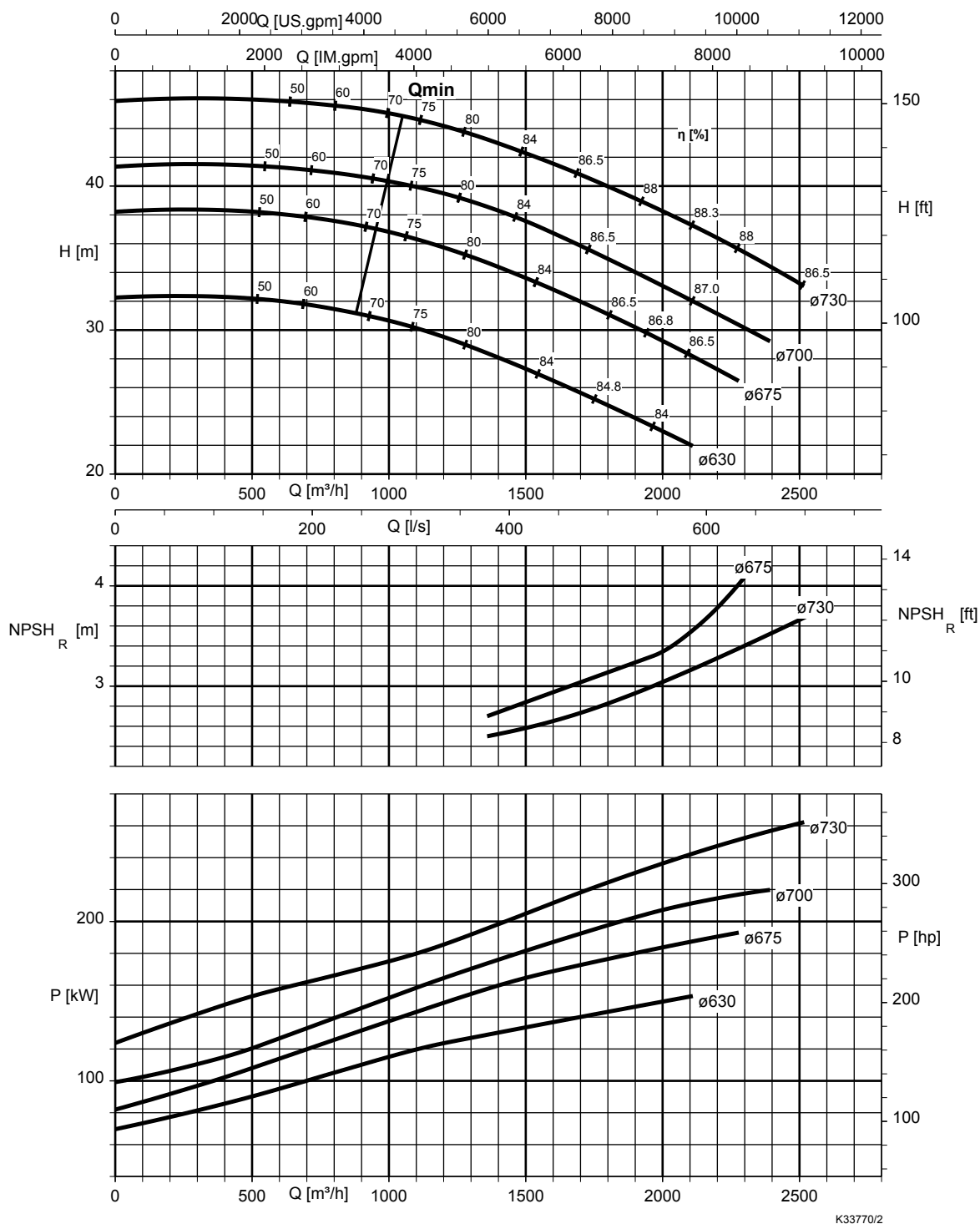
KWP K 400-400-583,  $n = 725 \text{ t/min}$



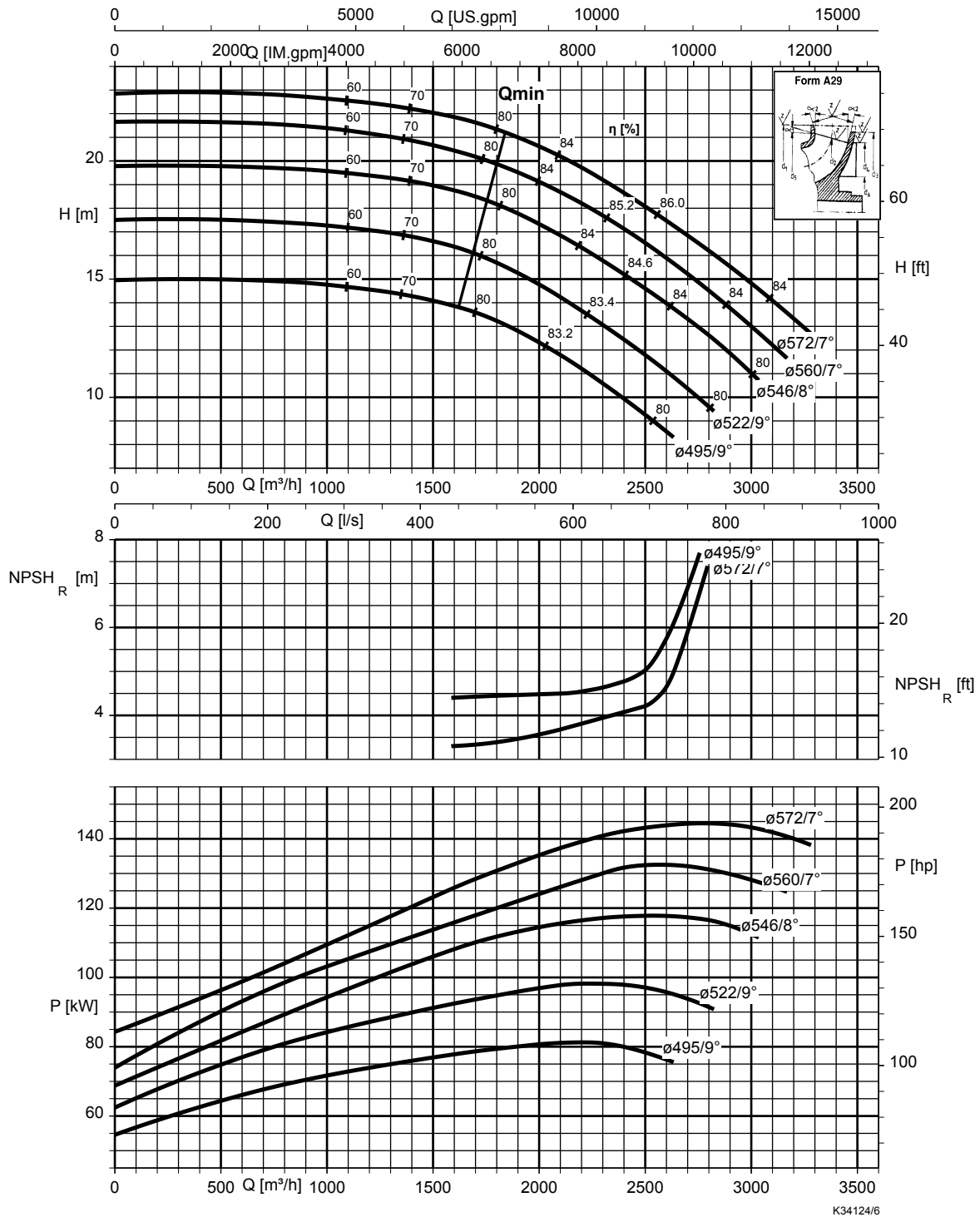
KWP K 500-400-710,  $n = 725 \text{ t/min}$



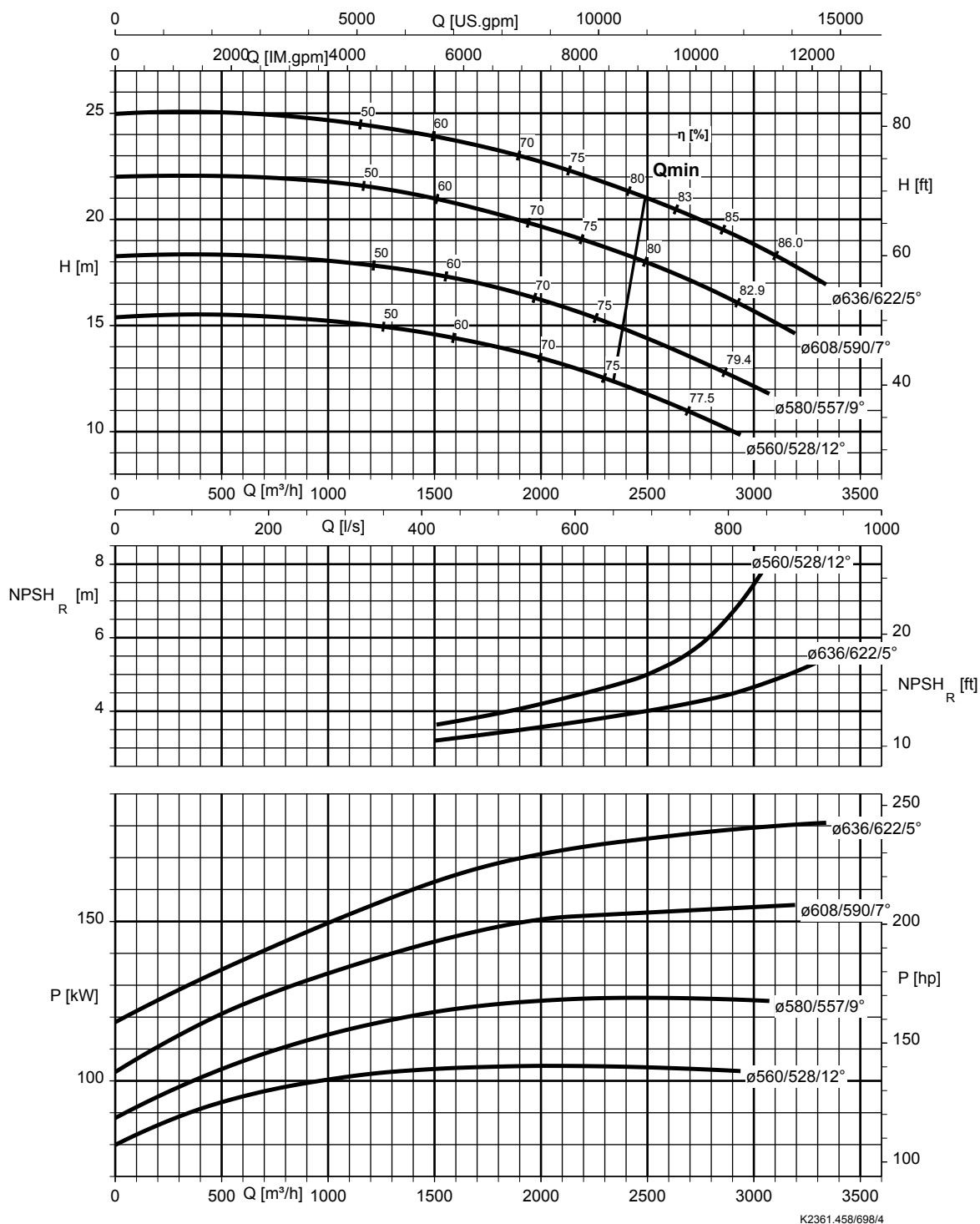
**KWP K 500-400-713, n = 725 t/min**



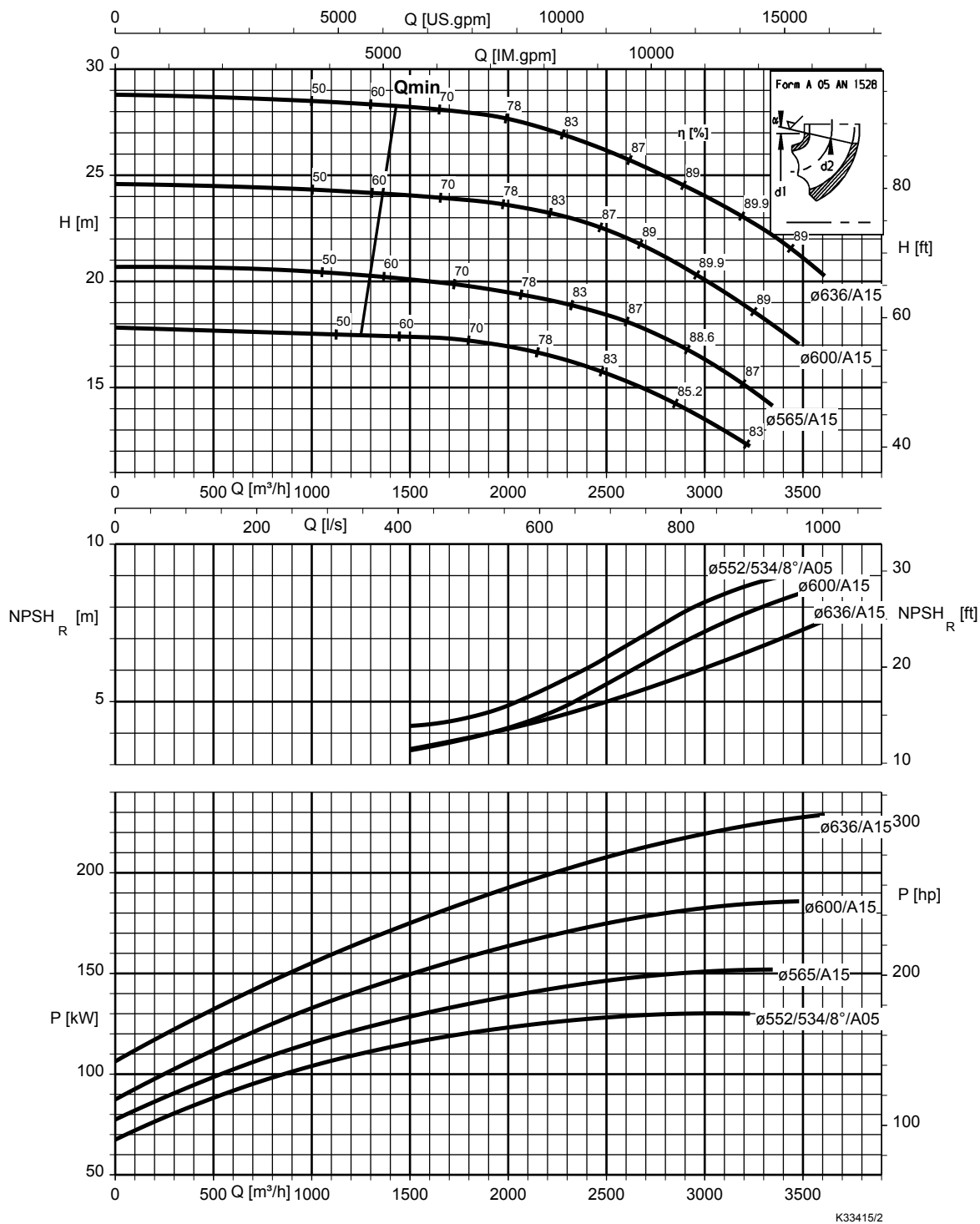
KWP K 500-500-544,  $n = 725 \text{ t/min}$



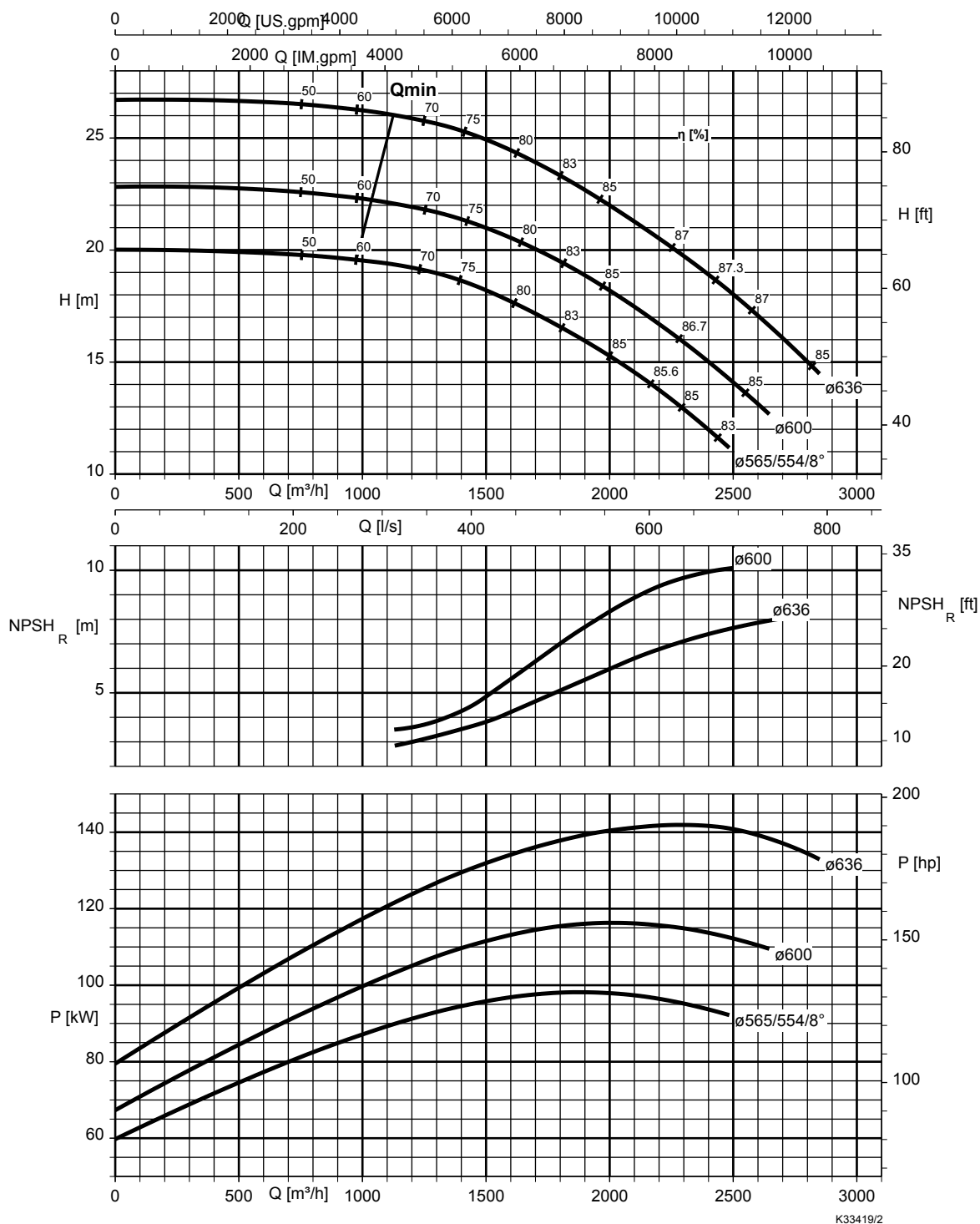
KWP K 500-500-630,  $n = 725 \text{ t/min}$



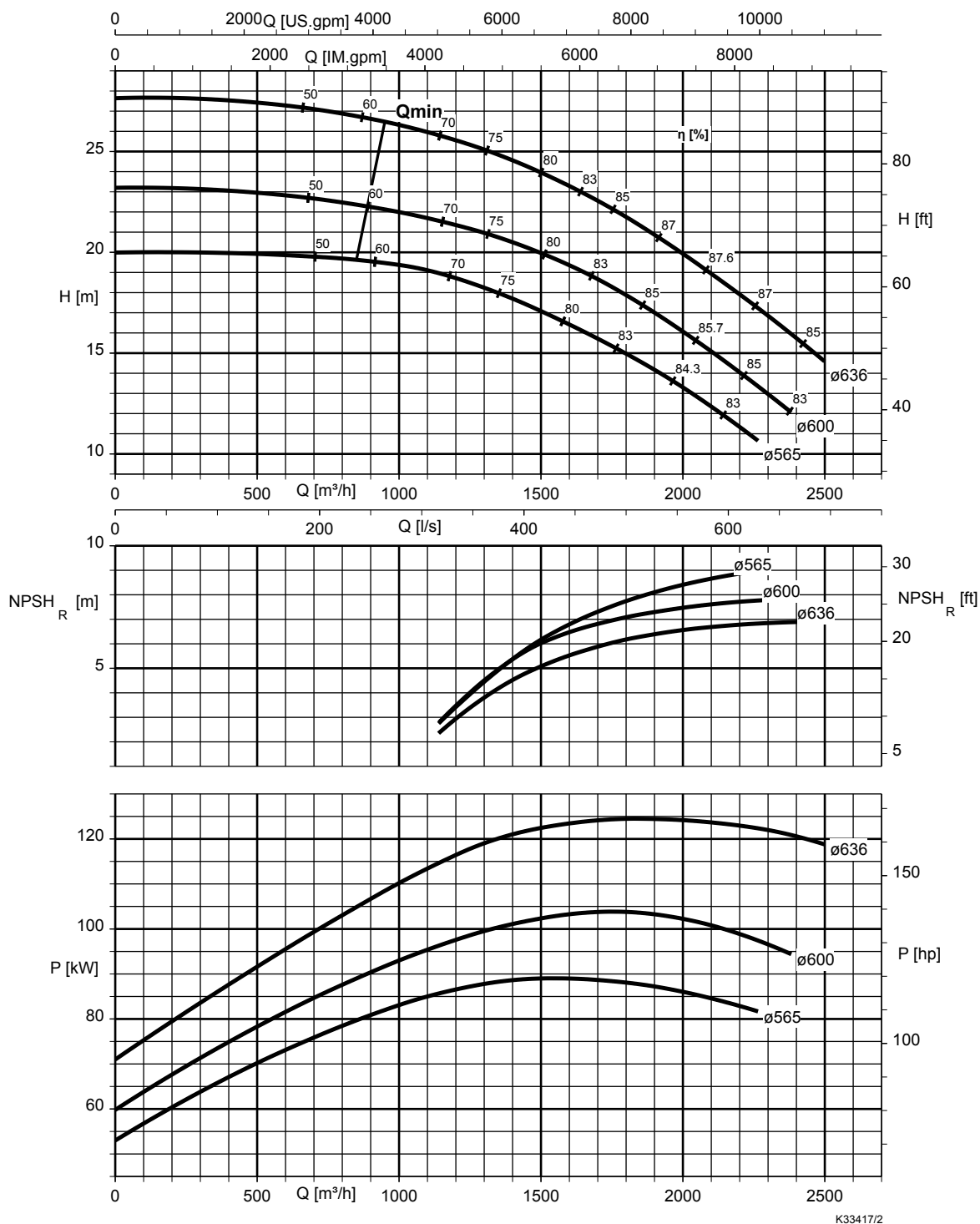
KWP K 500-500-633,  $n = 725 \text{ t/min}$



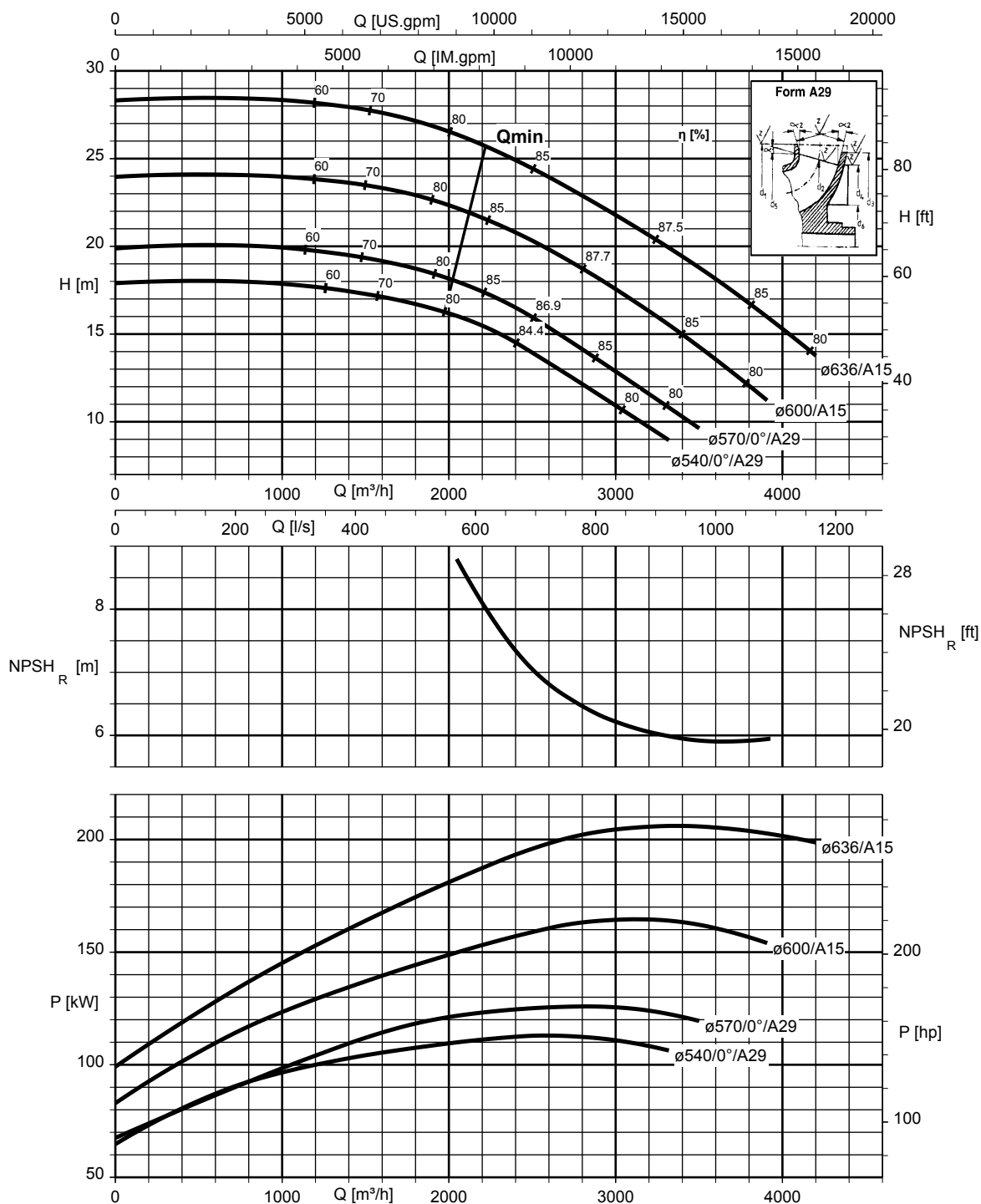
KWP K 500-500-634,  $n = 725 \text{ t/min}$



KWP K 500-500-635,  $n = 725 \text{ t/min}$

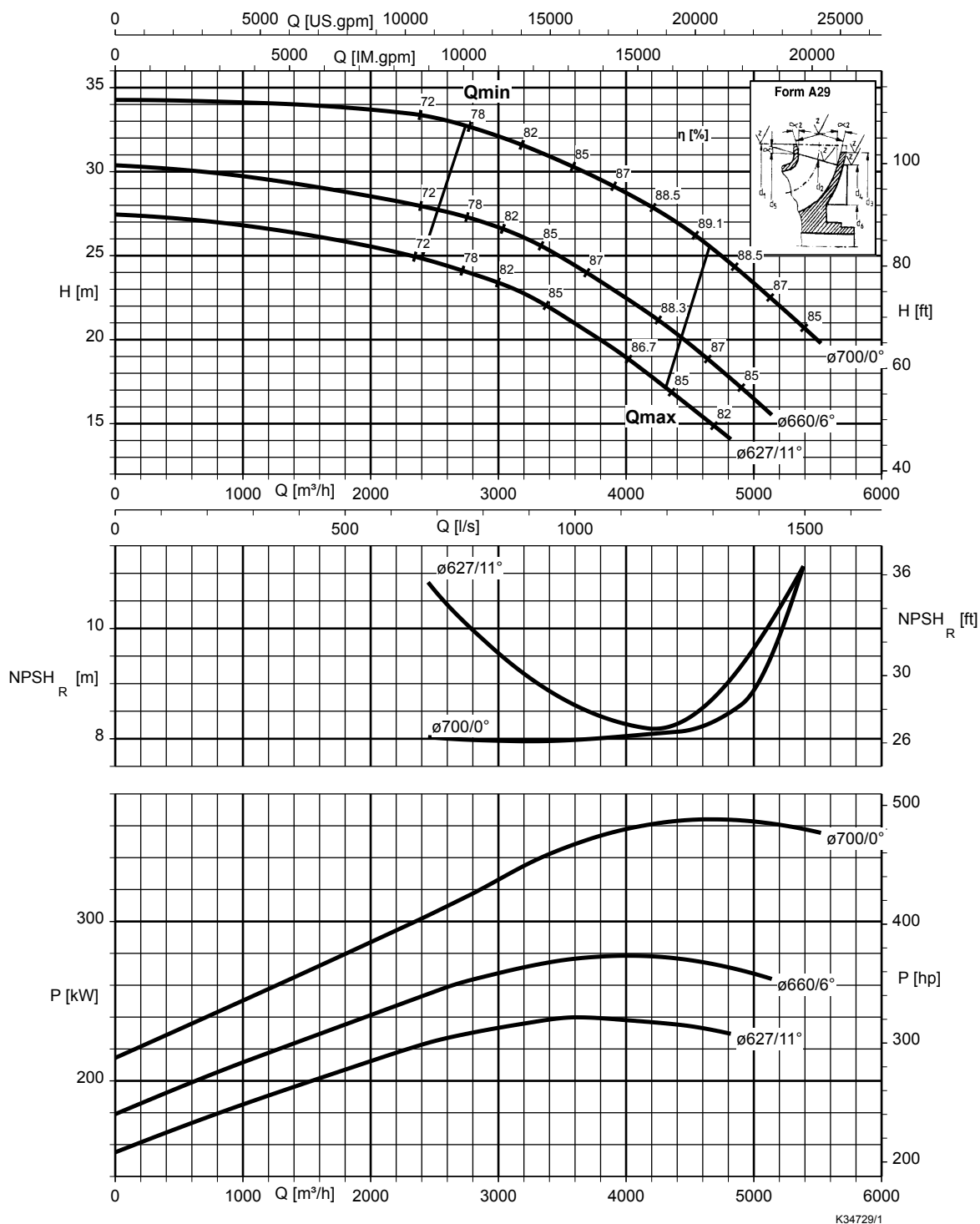


KWP K 500-500-637,  $n = 725 \text{ t/min}$

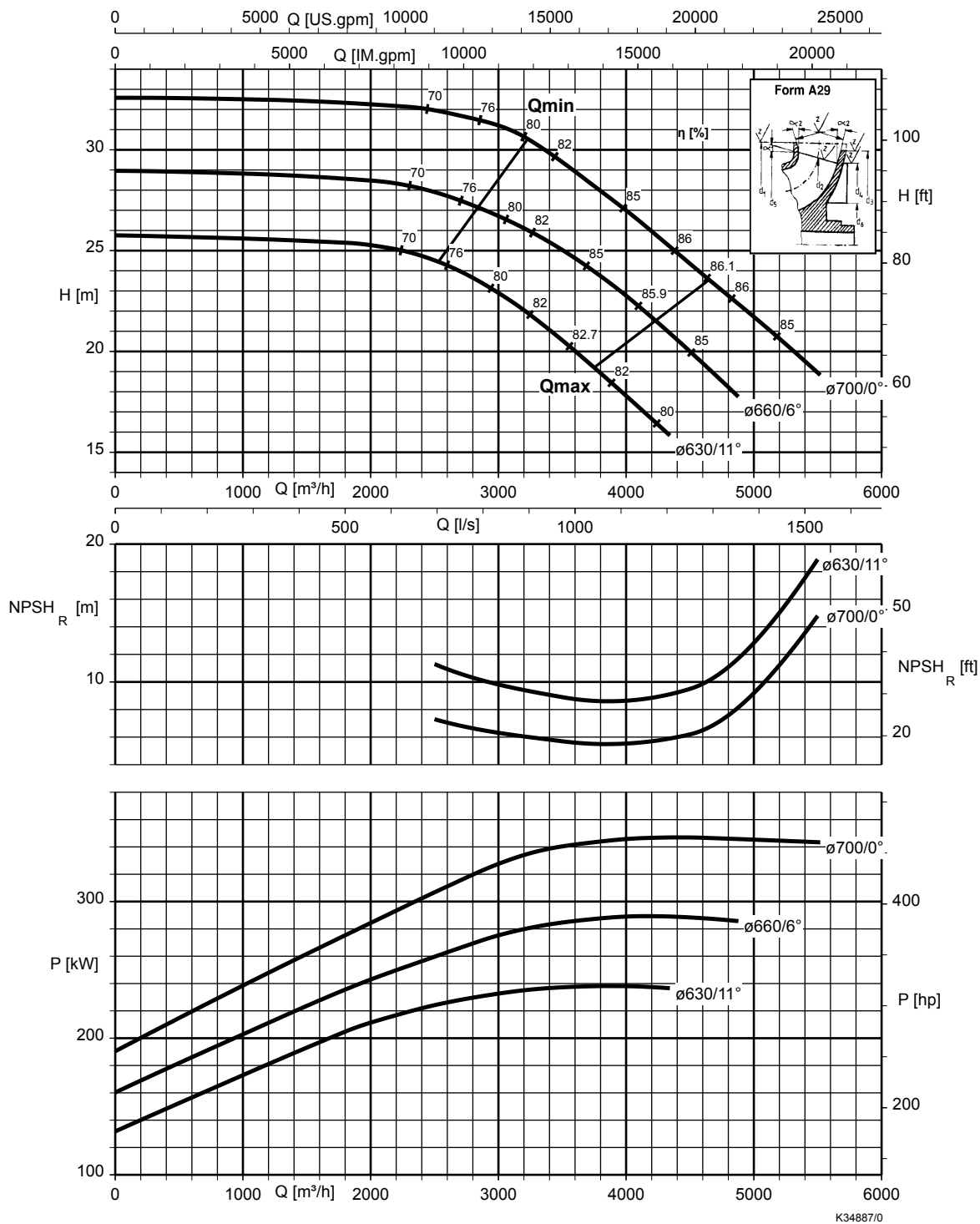


K34047/3

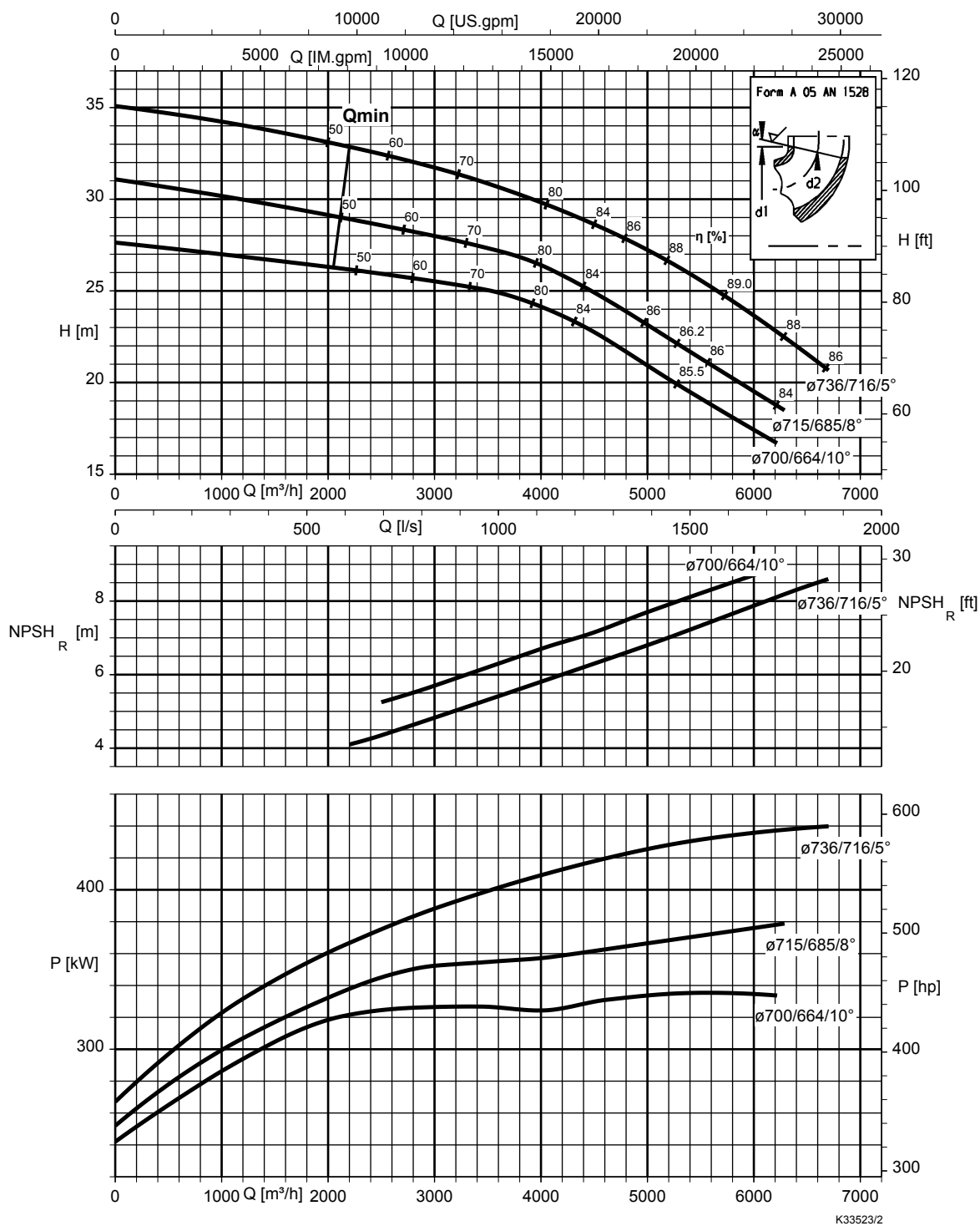
KWP K 600-600-663,  $n = 725 \text{ t/min}$



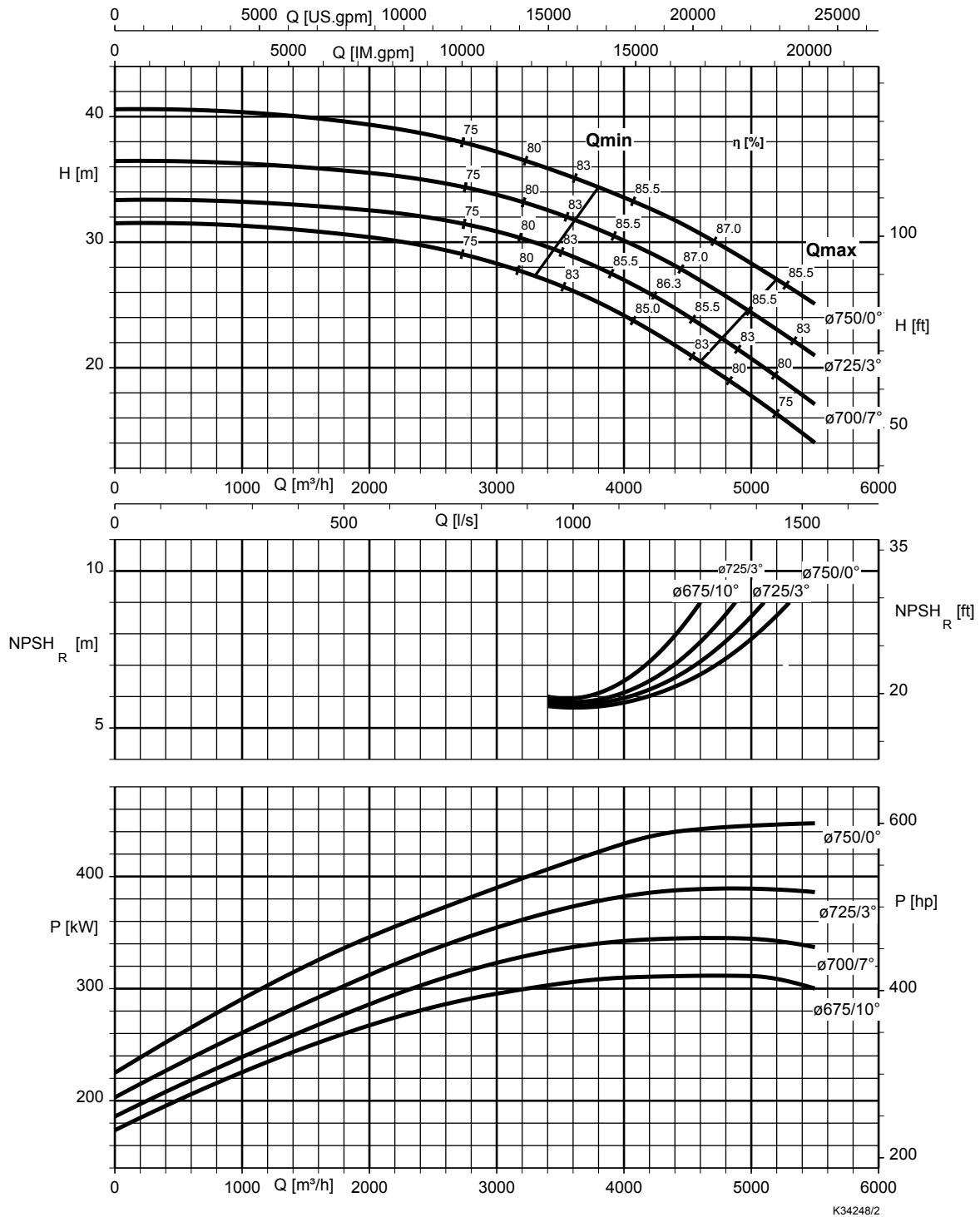
KWP K 600-600-669,  $n = 725 \text{ t/min}$



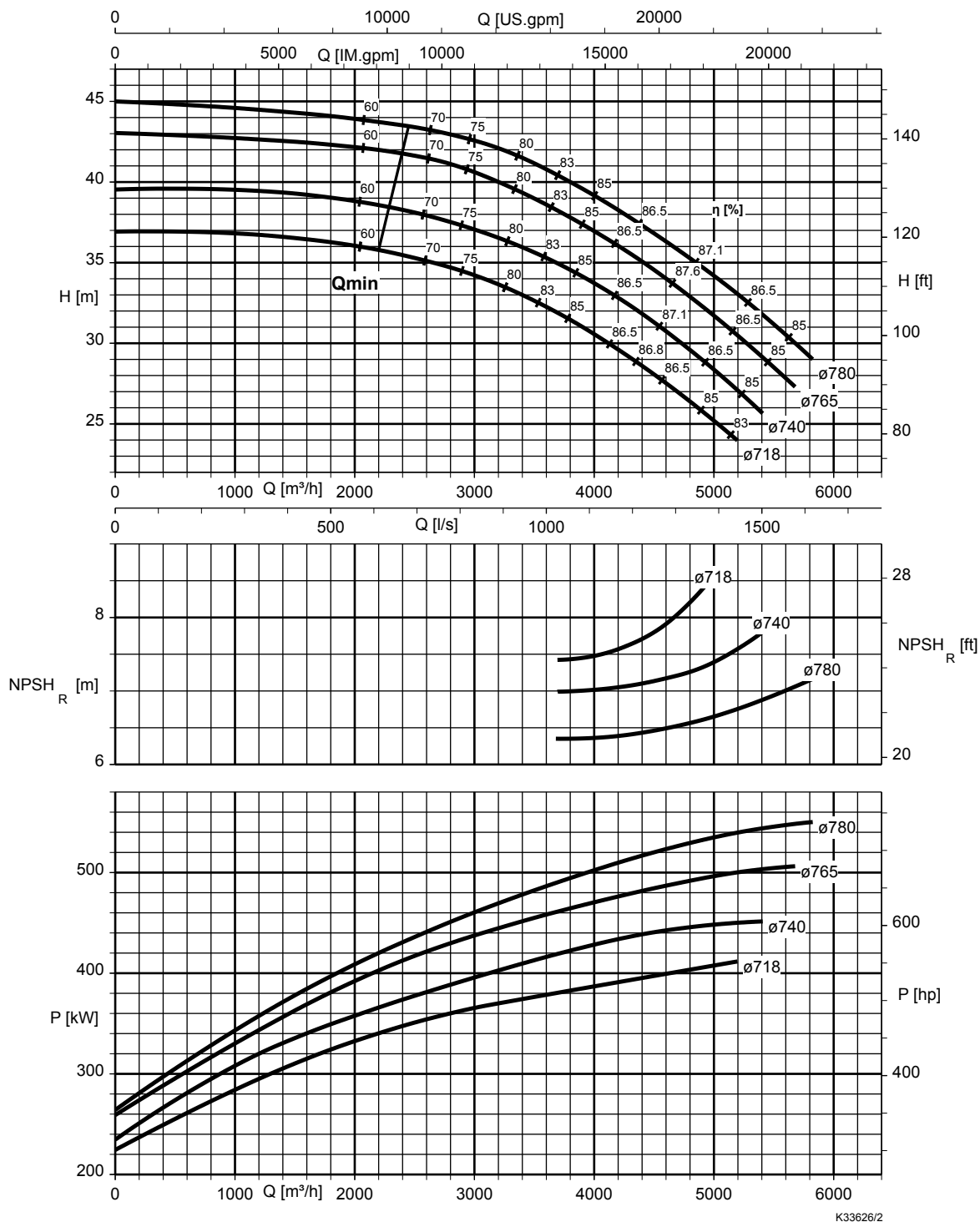
**KWP K 600-600-710, n = 725 t/min**



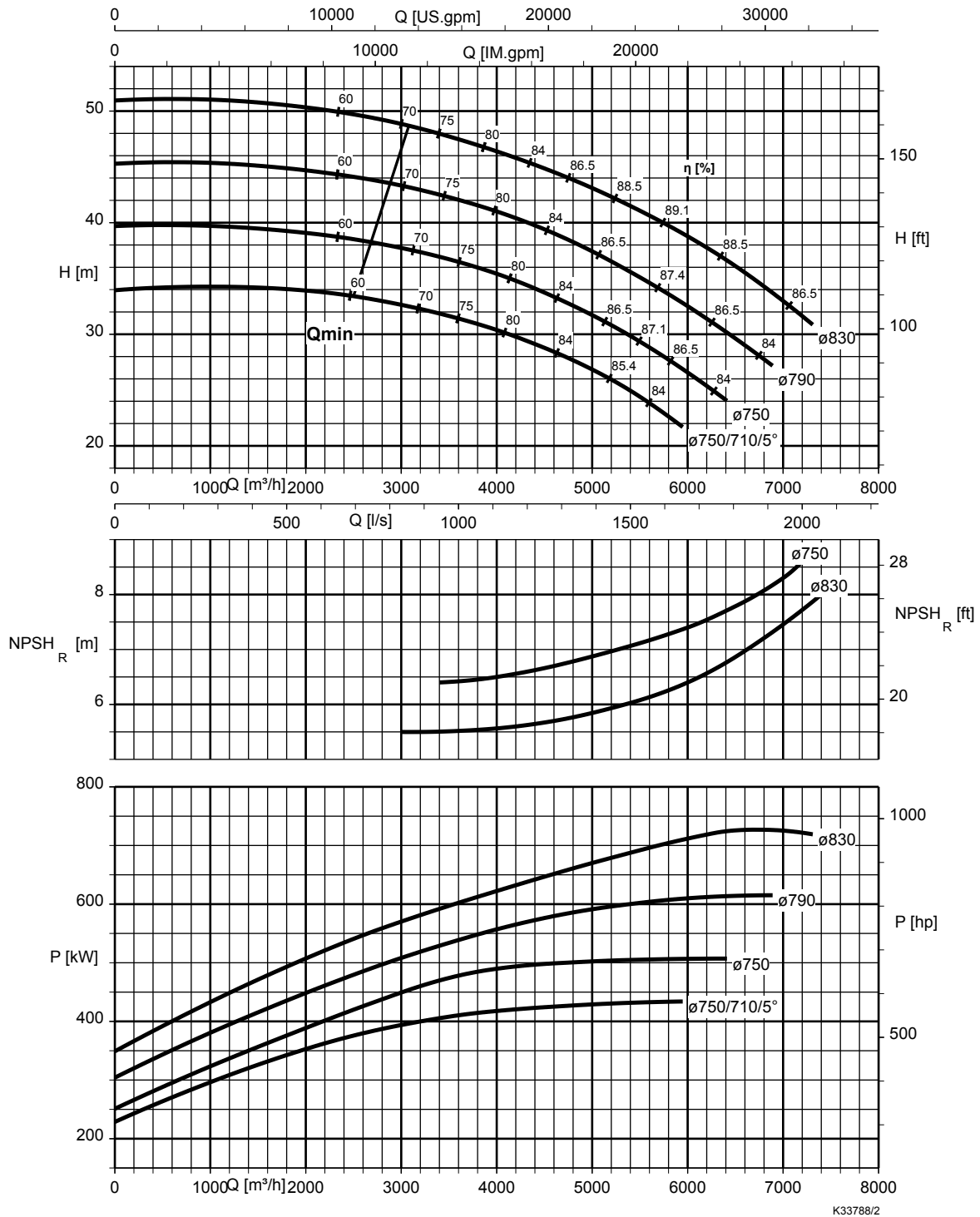
KWP K 600-600-753,  $n = 725 \text{ t/min}$



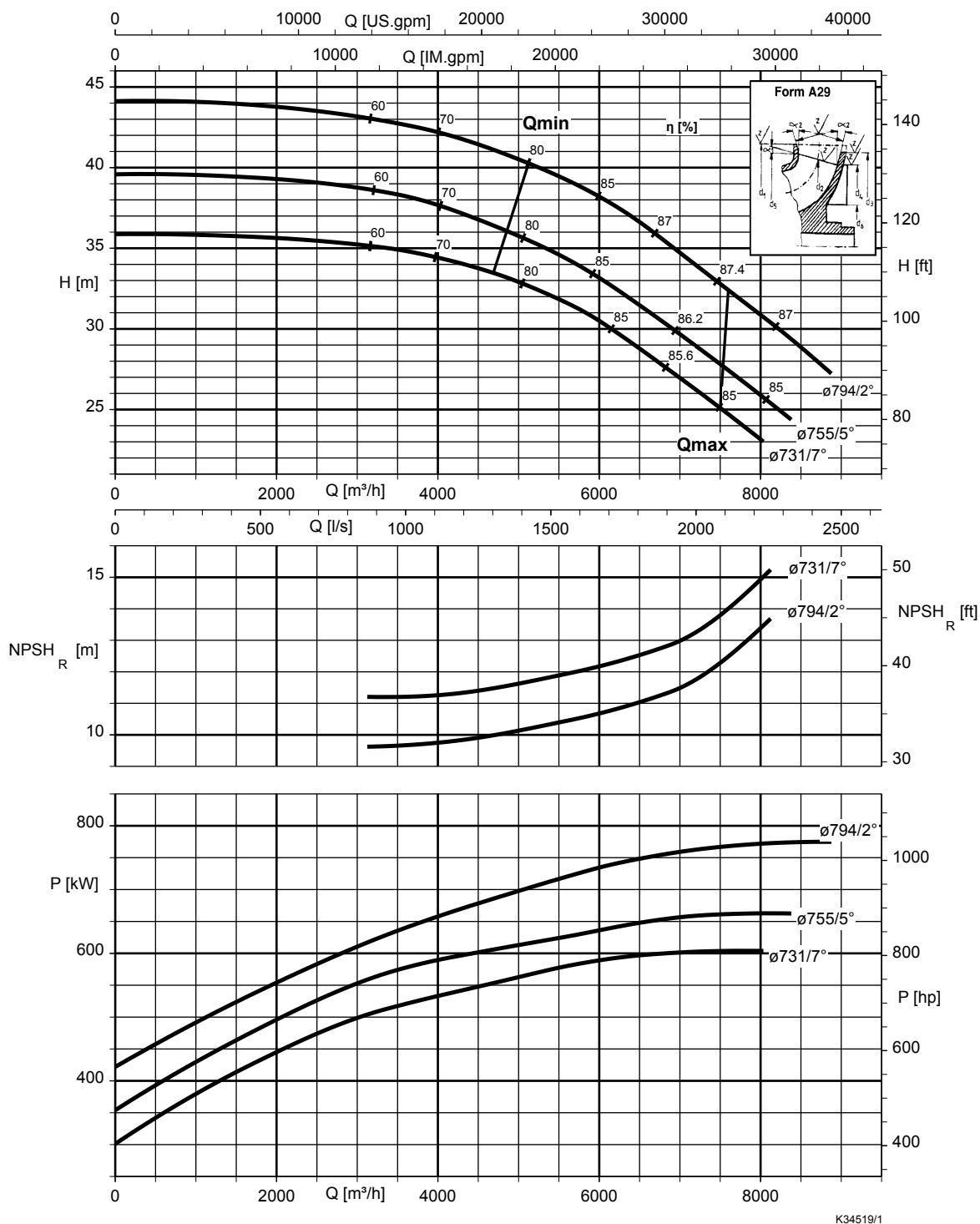
KWP K 600-600-803,  $n = 725 \text{ t/min}$



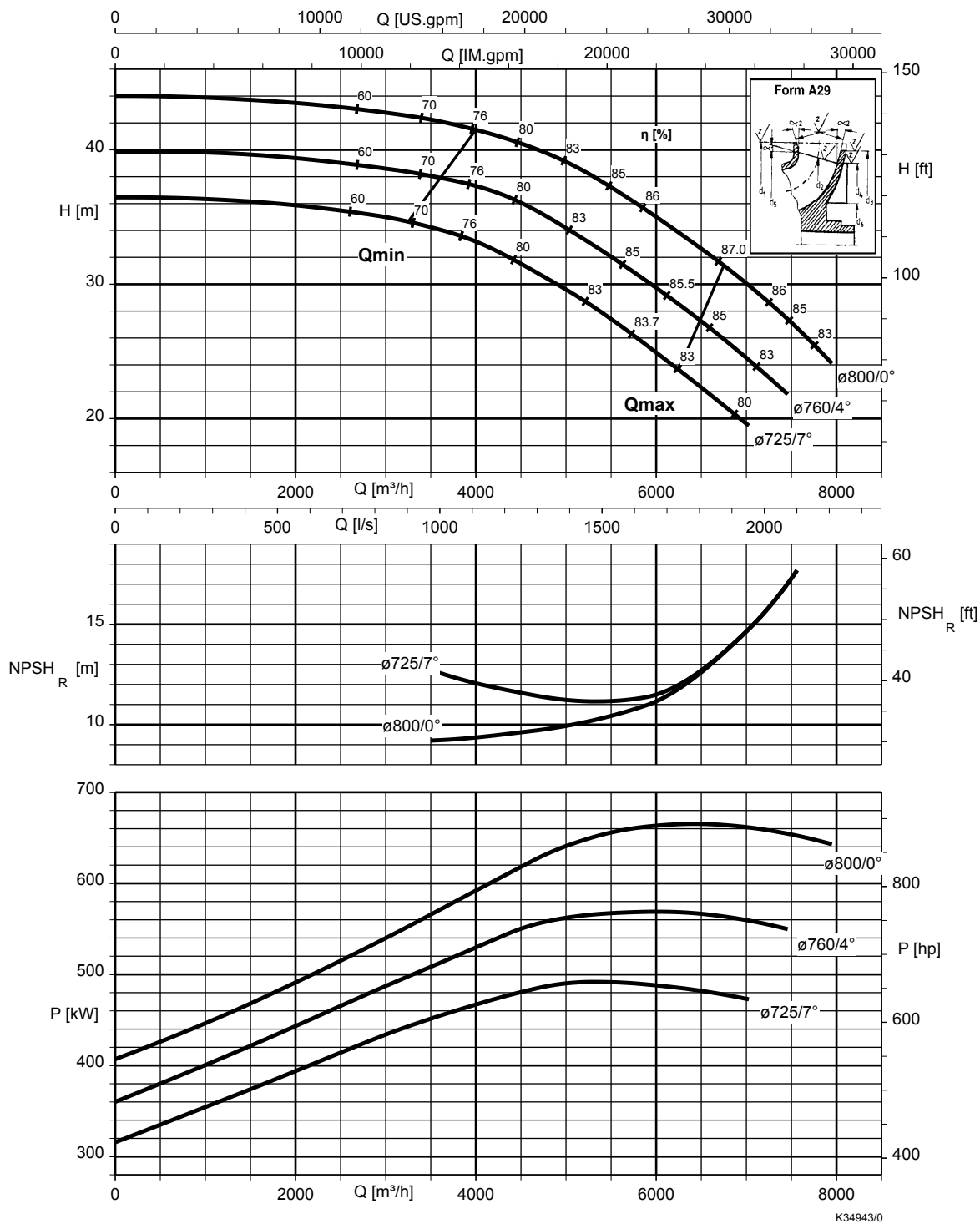
KWP K 600-600-813,  $n = 725 \text{ t/min}$



KWP K 600-600-824,  $n = 725 \text{ t/min}$

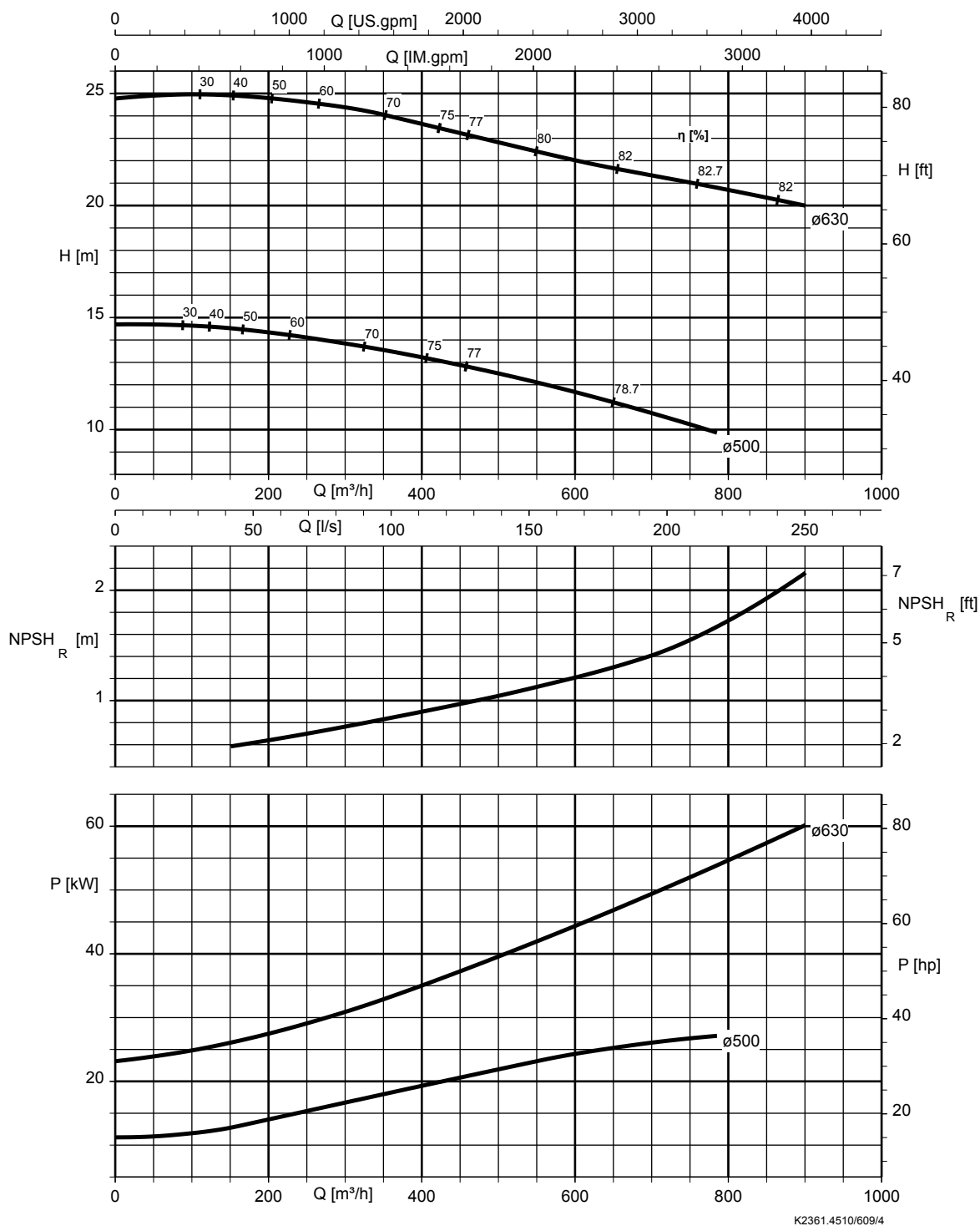


KWP K 600-600-825,  $n = 725 \text{ t/min}$

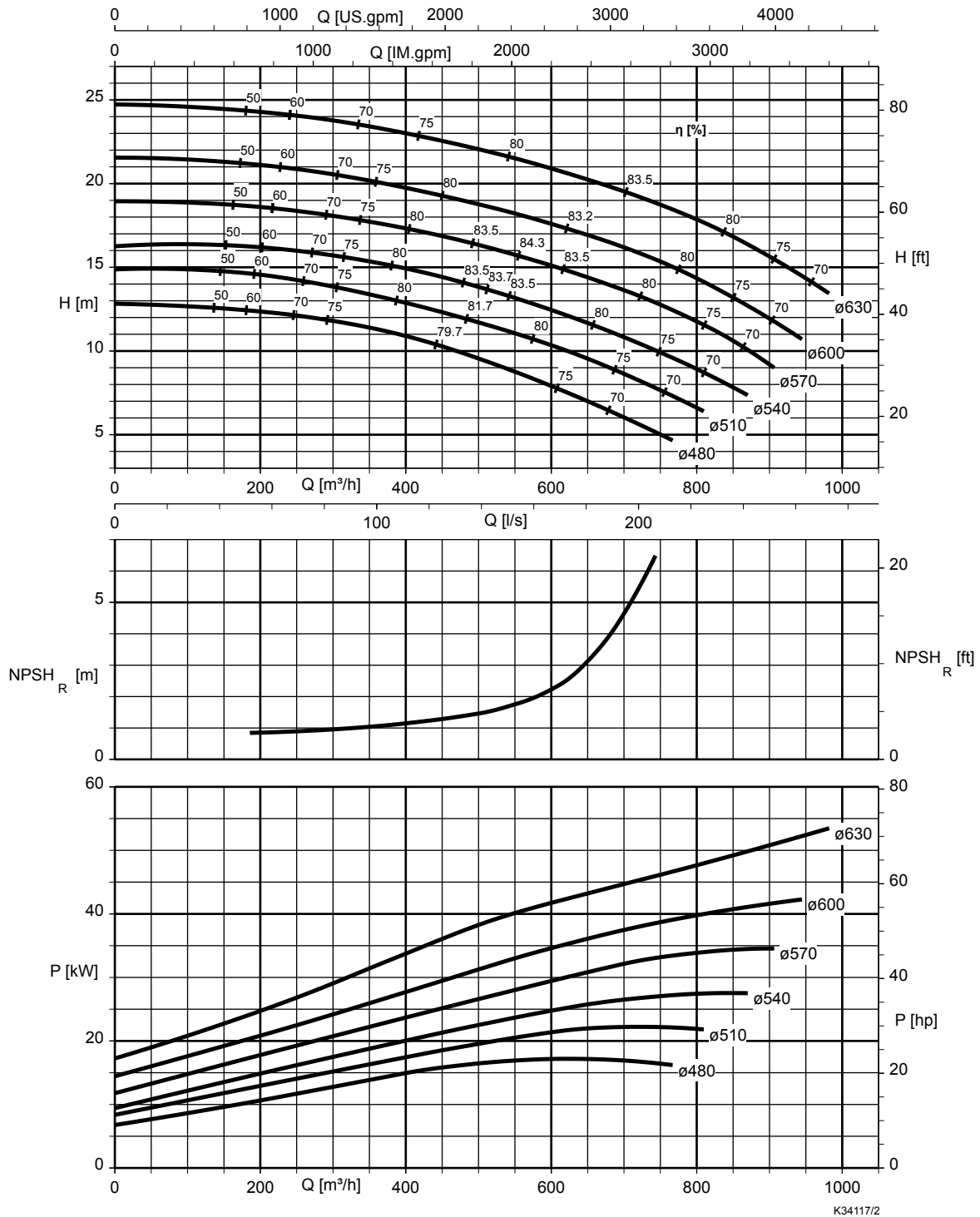


$n = 580 \text{ t/min}$

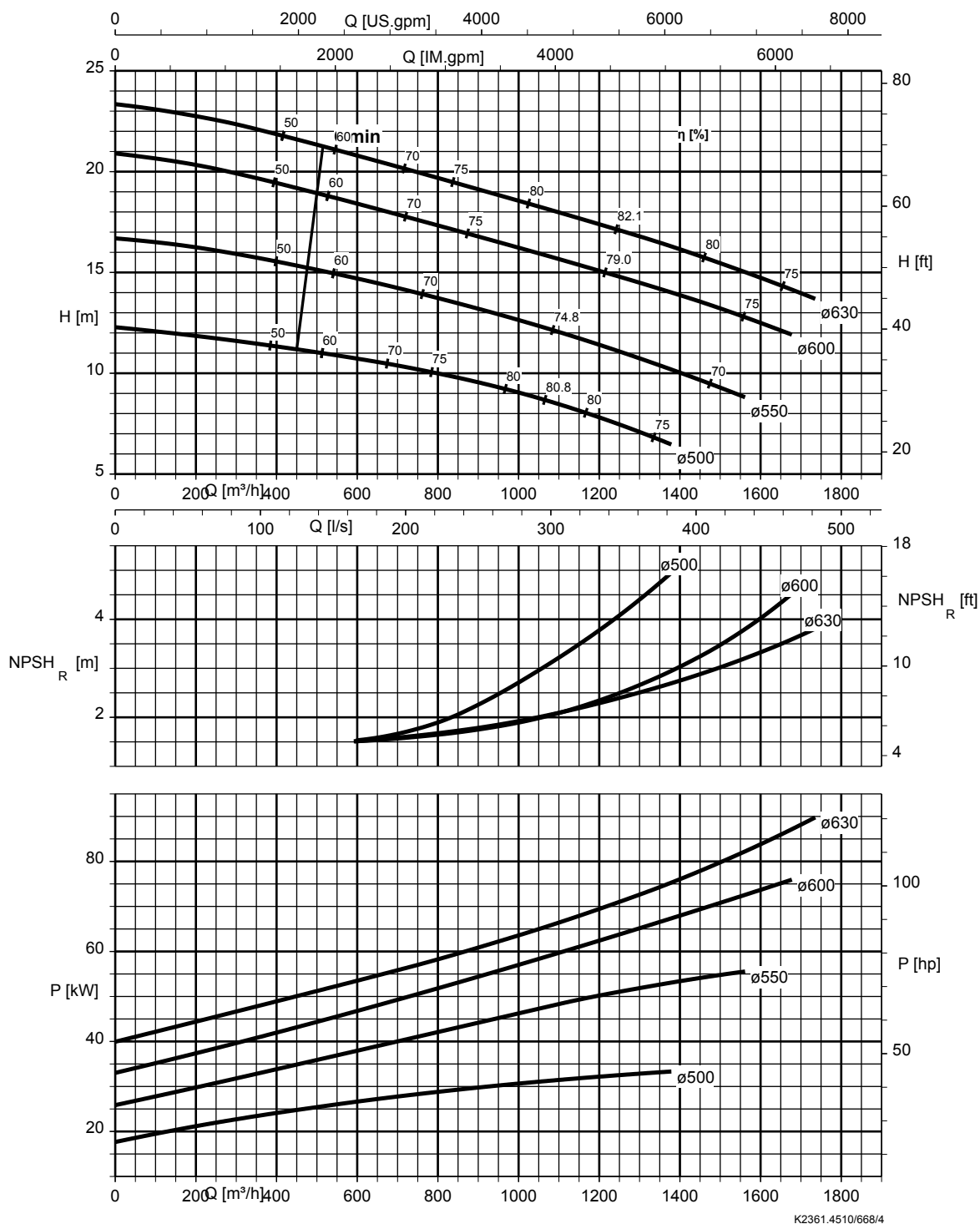
KWP K 250-250-630,  $n = 580 \text{ t/min}$



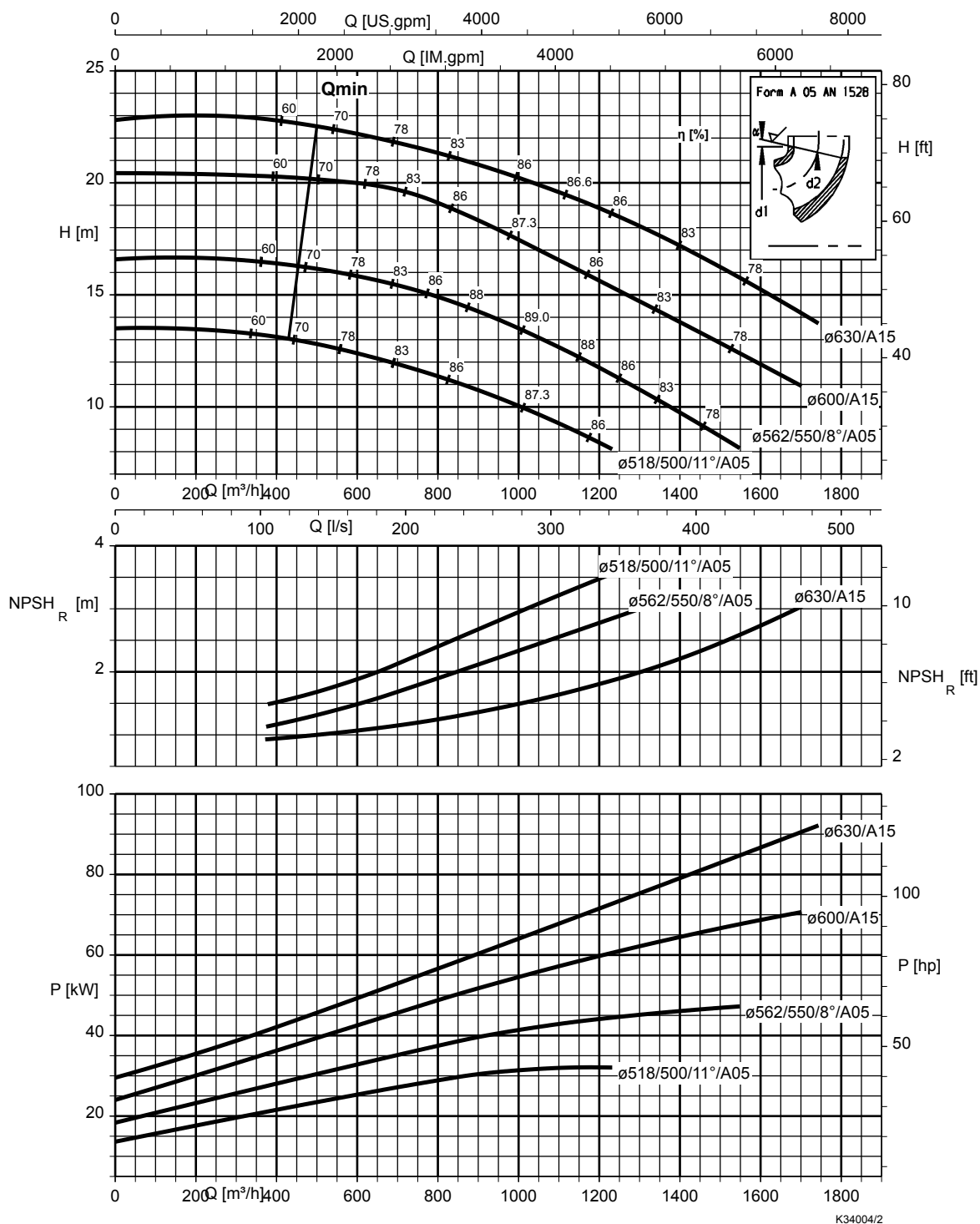
KWP K 250-250-634,  $n = 580 \text{ t/min}$



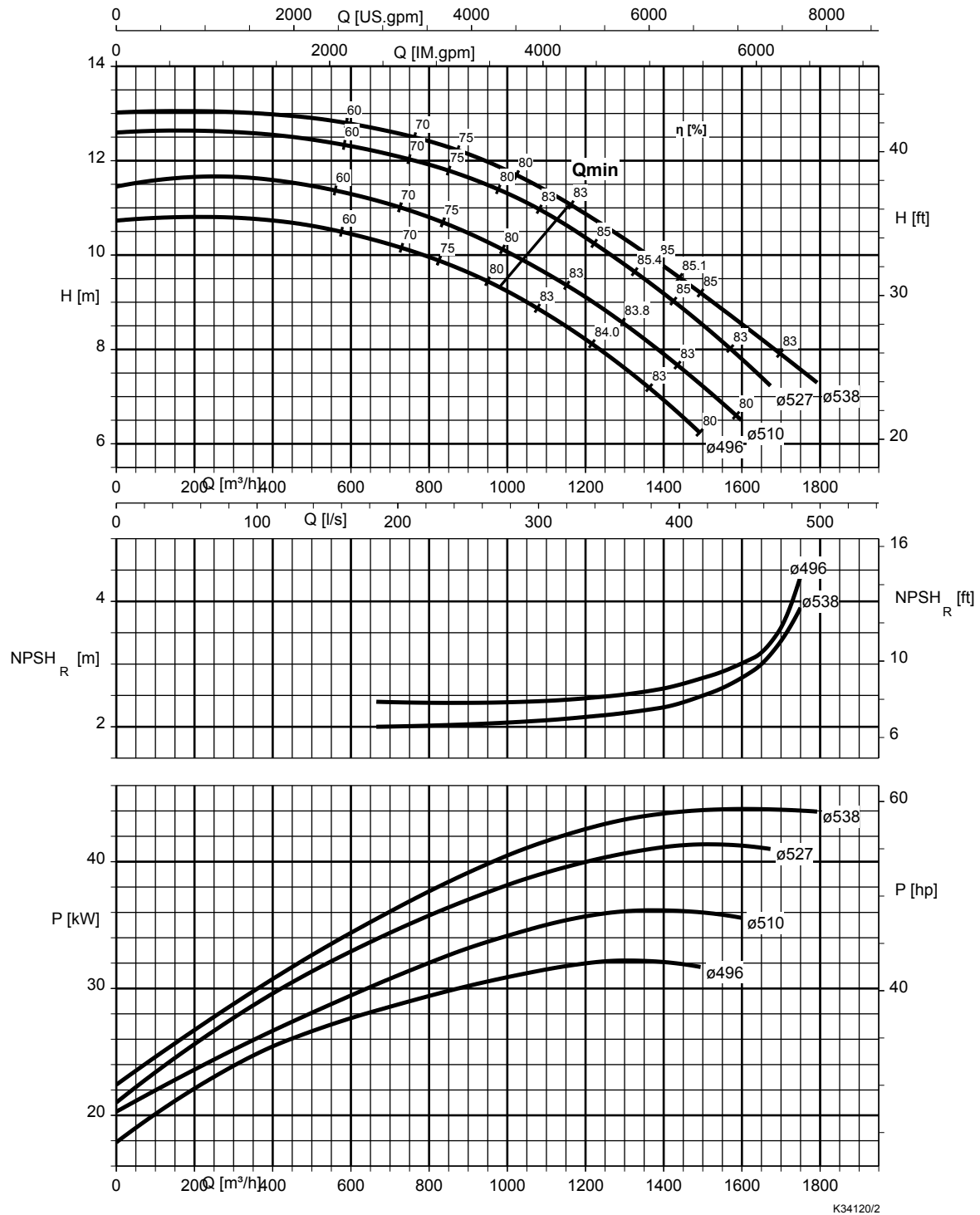
KWP K 350-350-630,  $n = 580 \text{ t/min}$



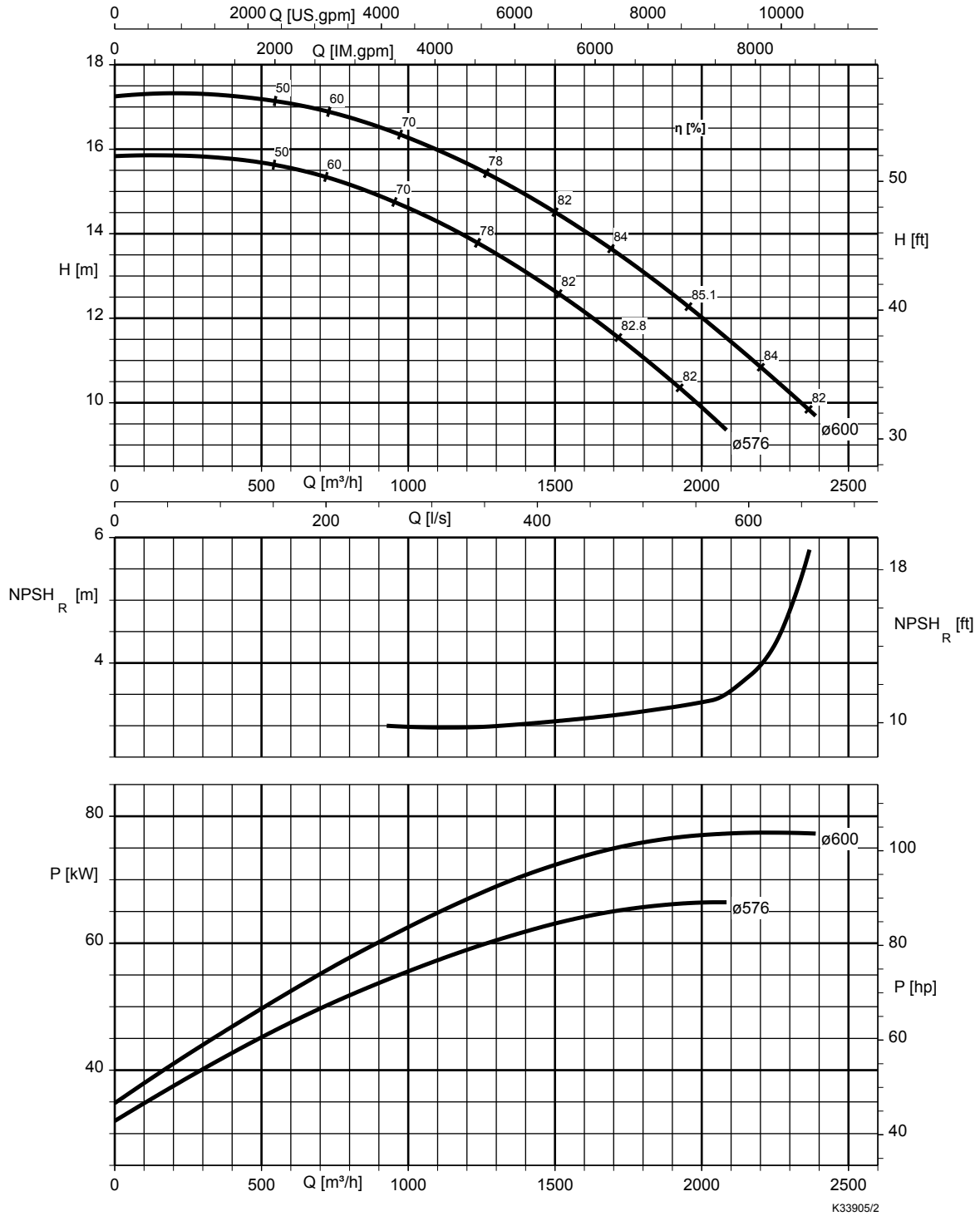
KWP K 350-350-633,  $n = 580 \text{ t/min}$



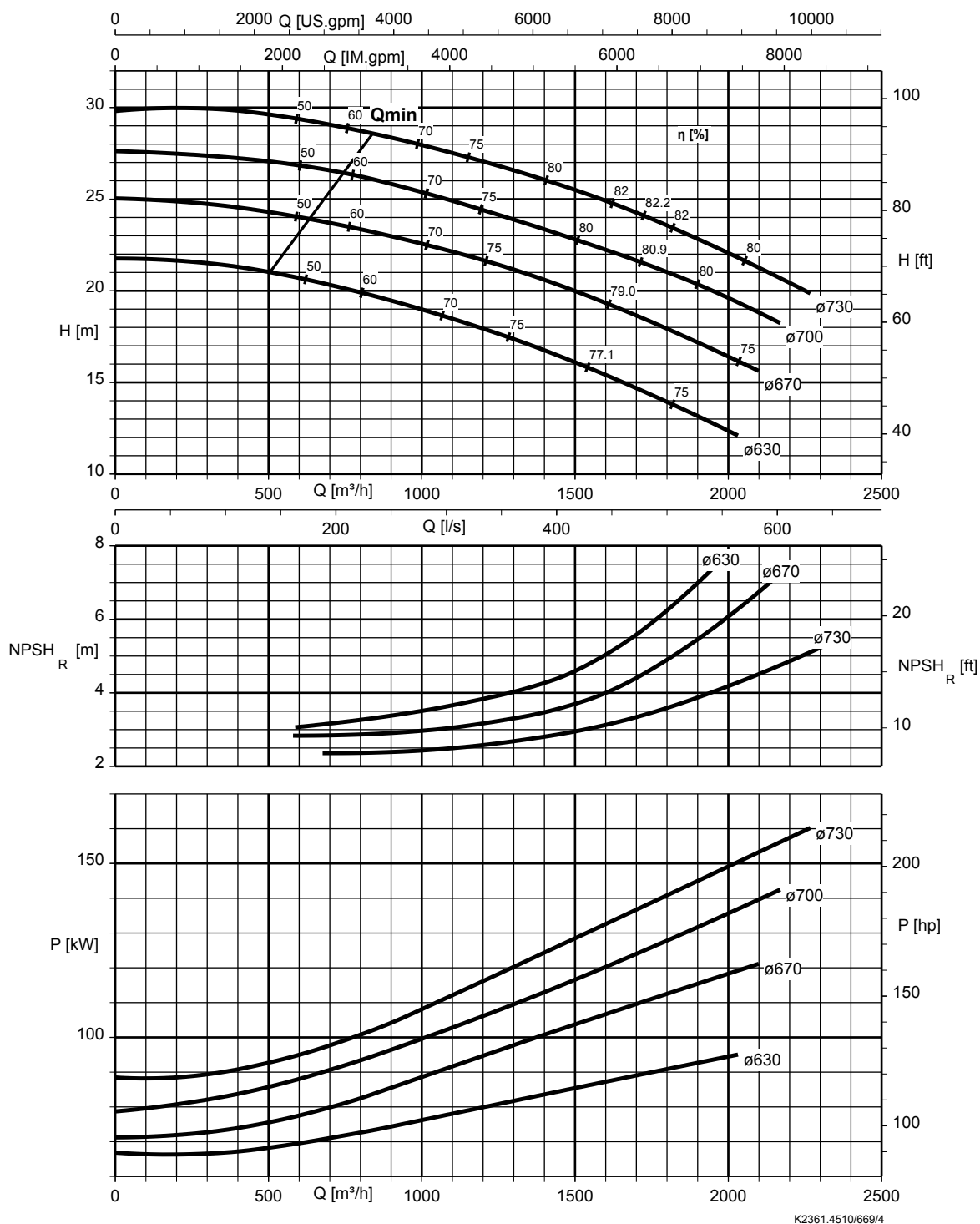
KWP K 400-400-533,  $n = 580 \text{ t/min}$



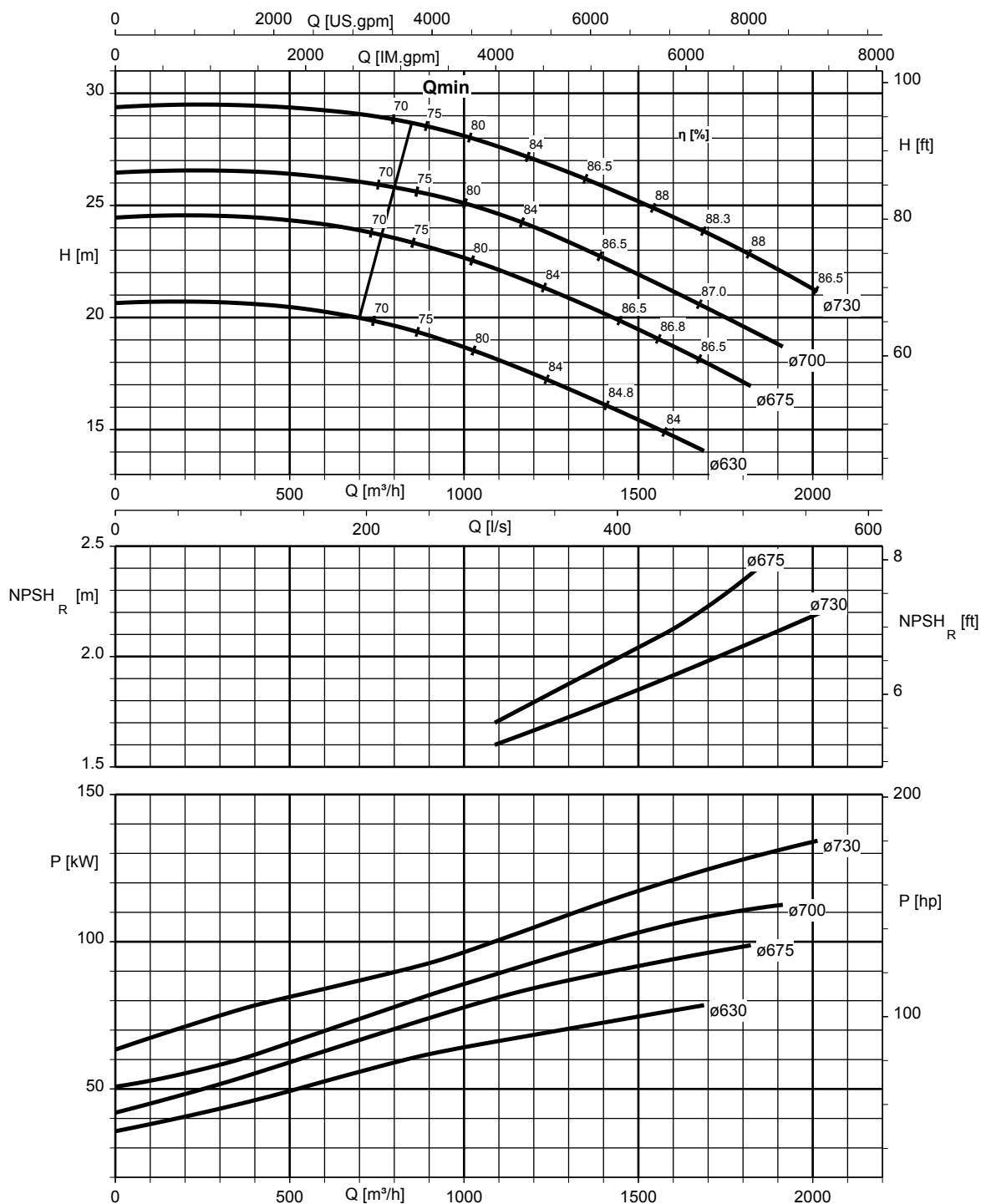
KWP K 400-400-583,  $n = 580 \text{ t/min}$



KWP K 500-400-710,  $n = 580 \text{ t/min}$

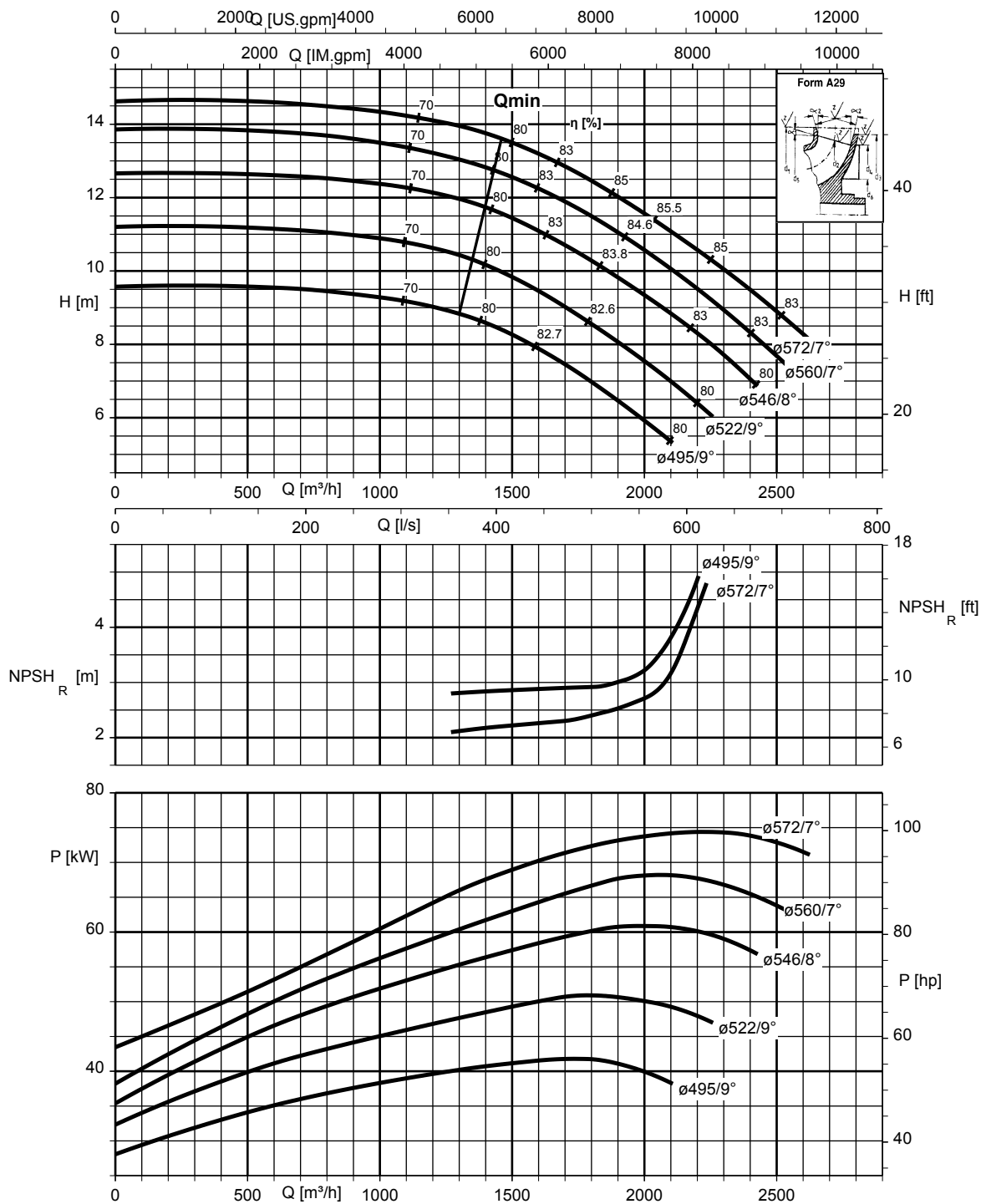


KWP K 500-400-713,  $n = 580 \text{ t/min}$

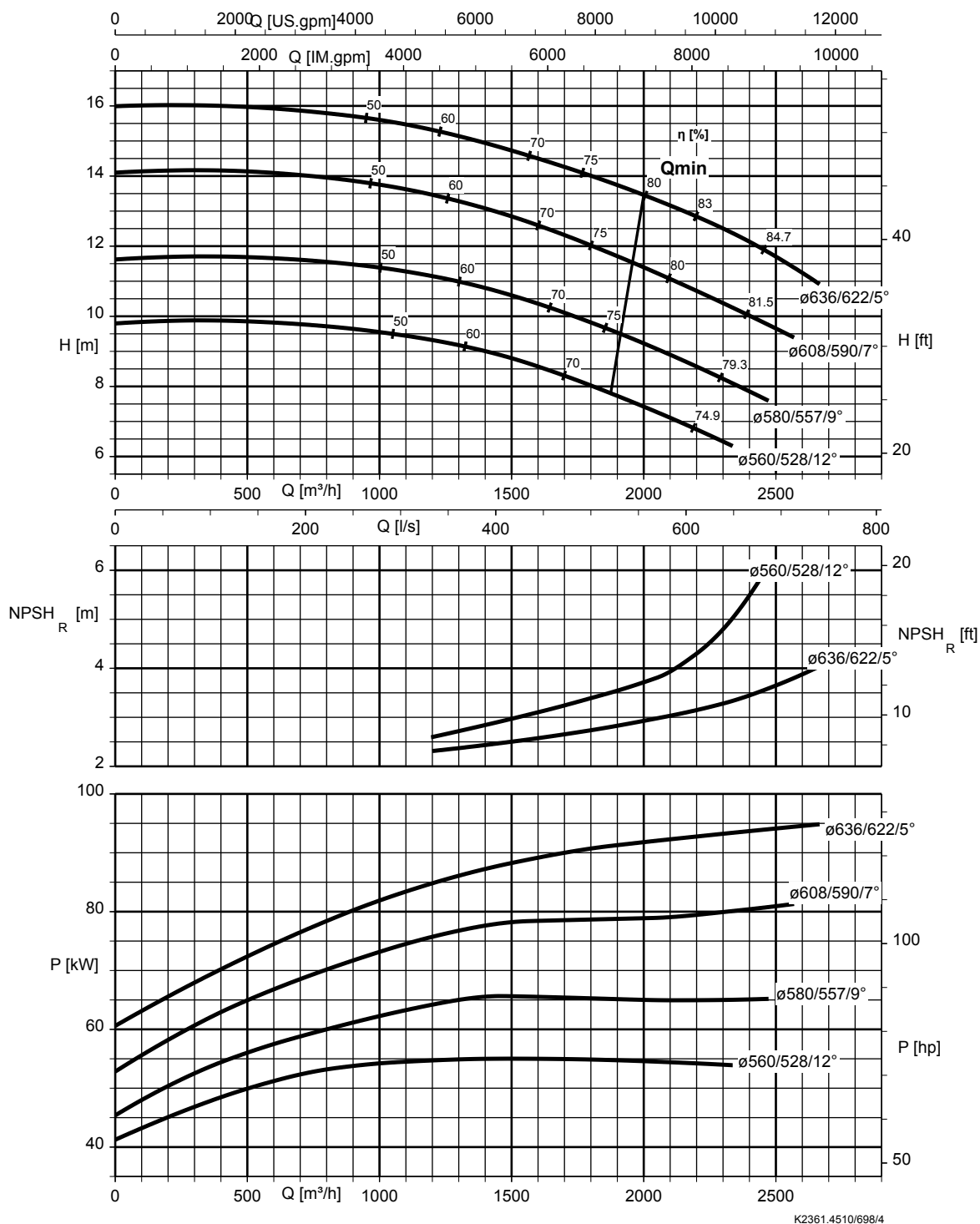


K34122/2

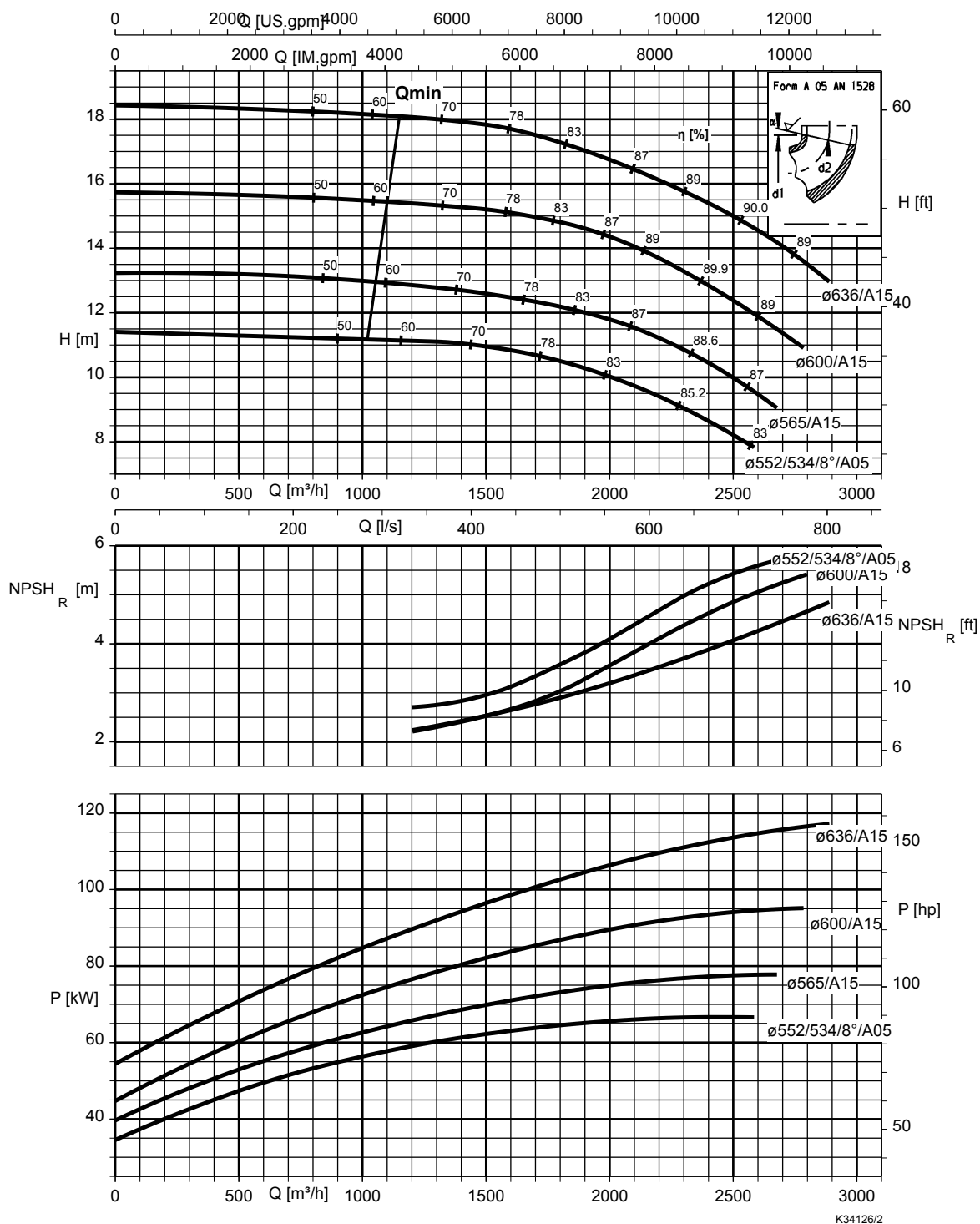
KWP K 500-500-544,  $n = 580 \text{ t/min}$



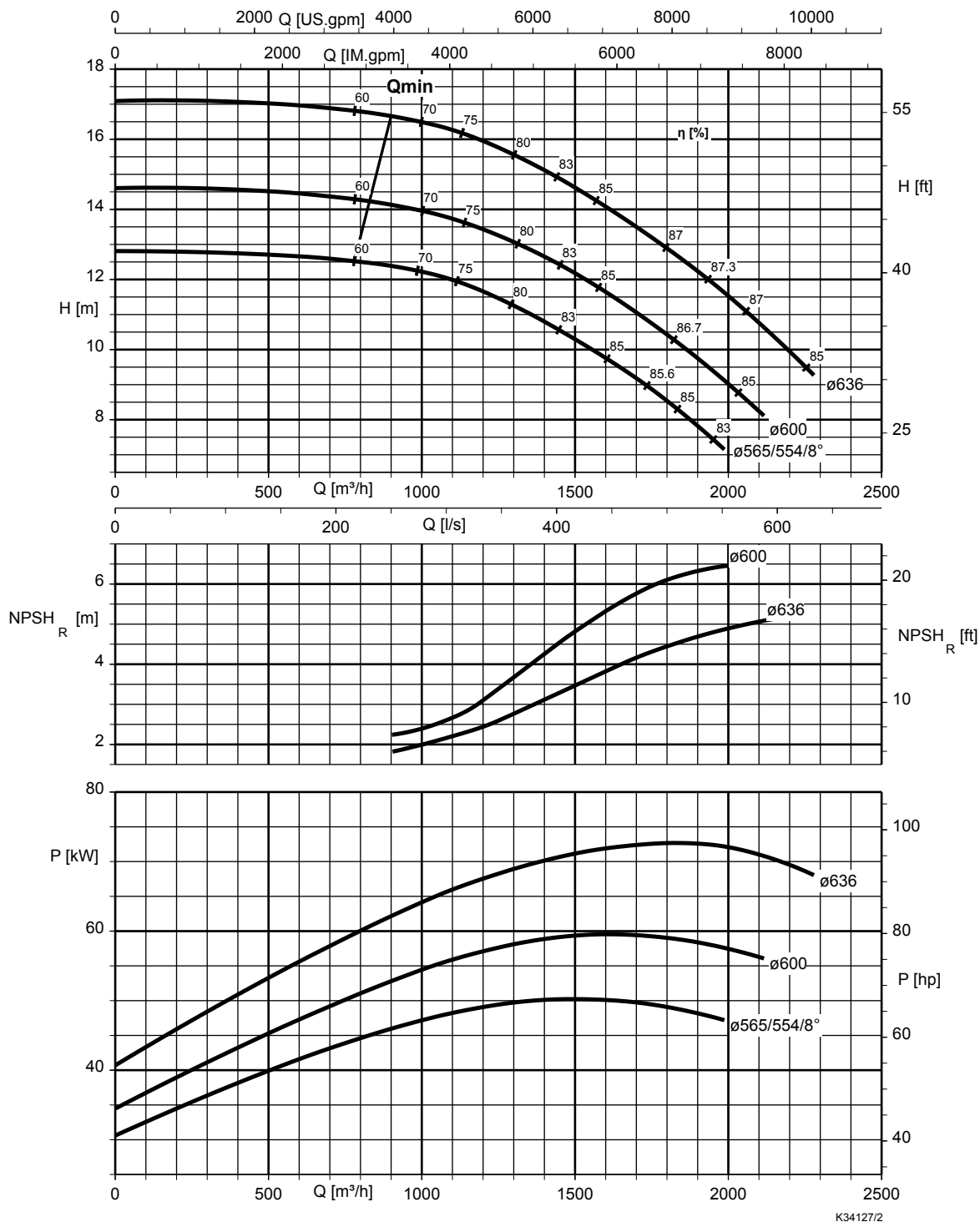
KWP K 500-500-630,  $n = 580 \text{ t/min}$



KWP K 500-500-633,  $n = 580 \text{ t/min}$

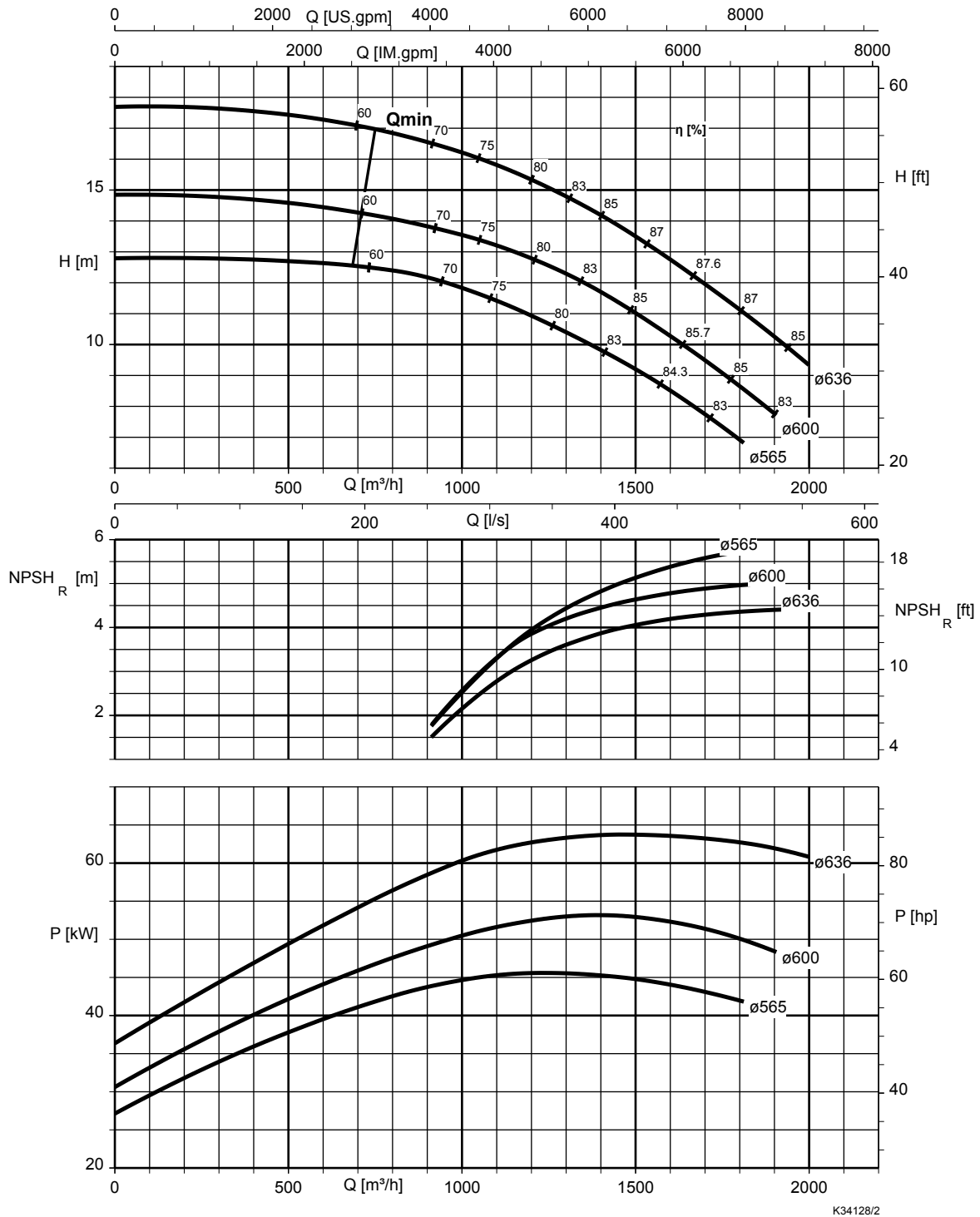


KWP K 500-500-634,  $n = 580 \text{ t/min}$

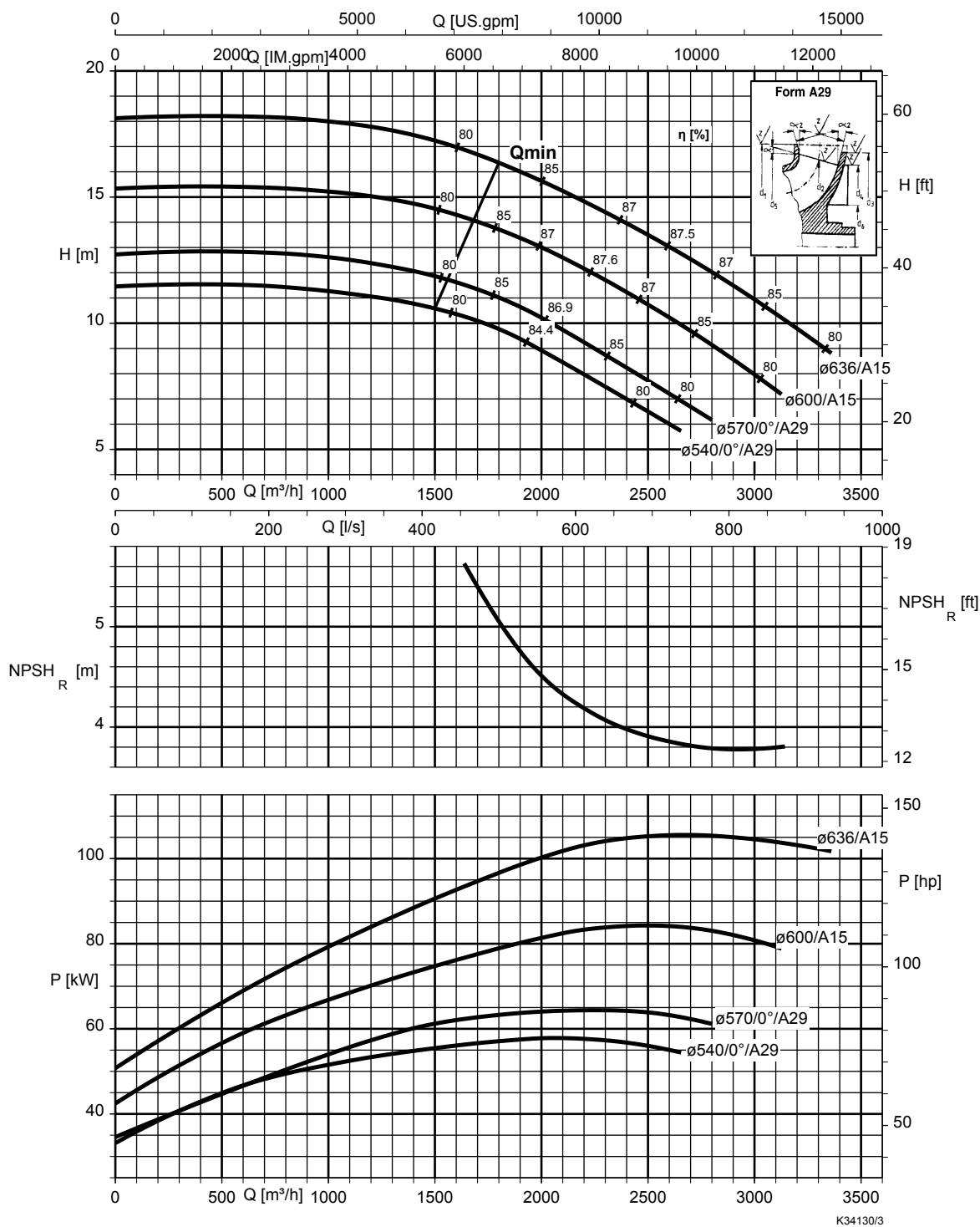


K34127/2

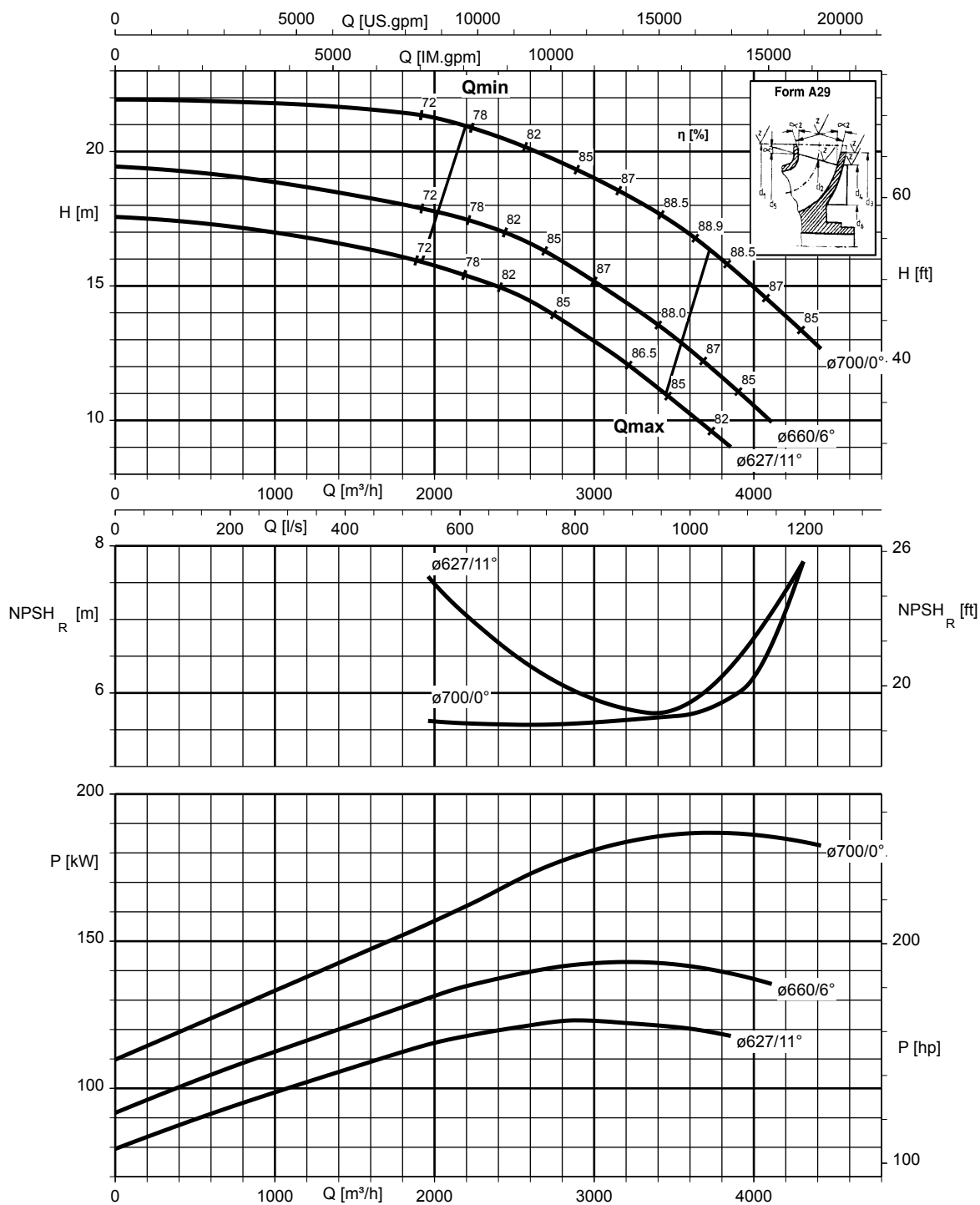
KWP K 500-500-635,  $n = 580 \text{ t/min}$



KWP K 500-500-637,  $n = 580 \text{ t/min}$

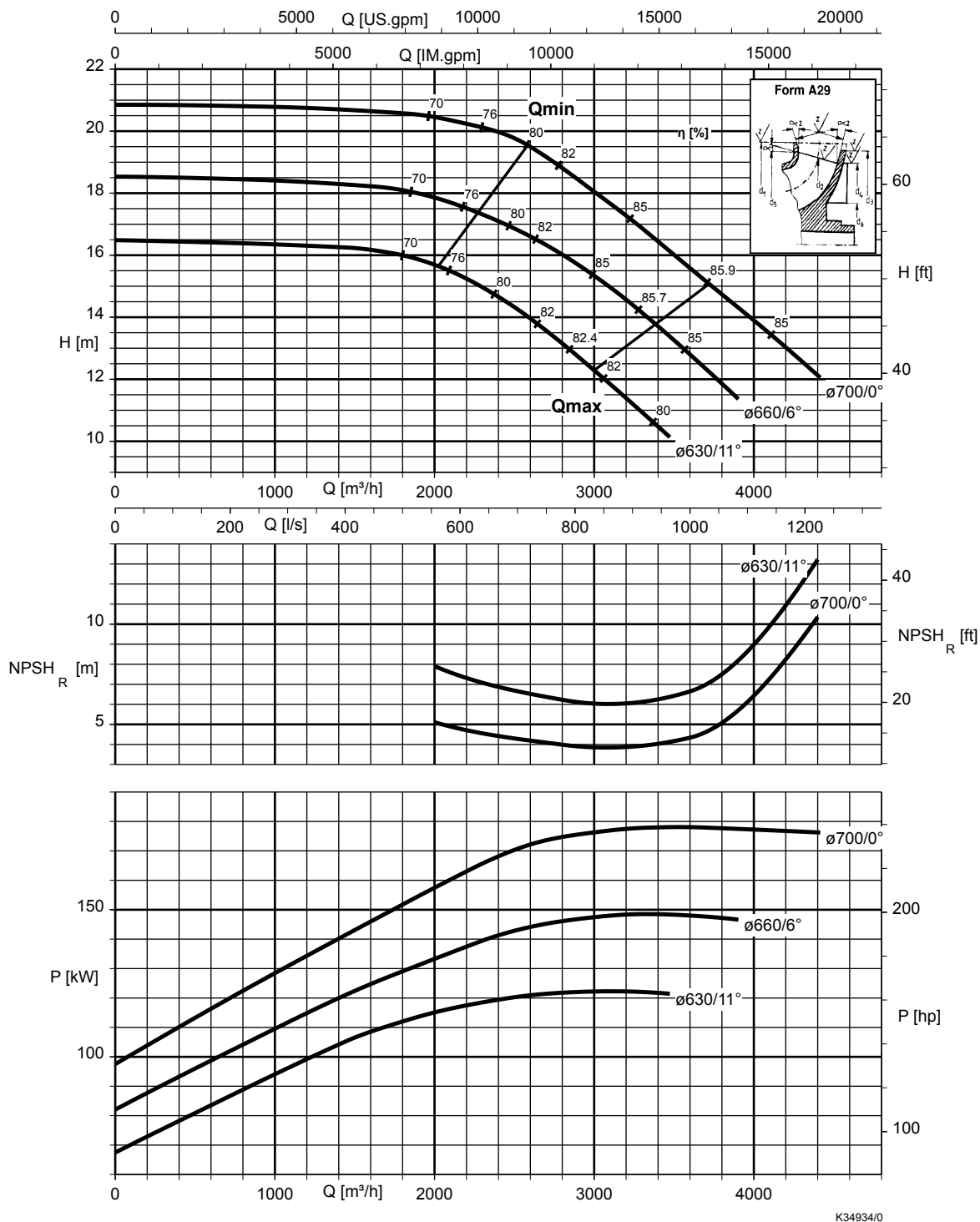


KWP K 600-600-663,  $n = 580 \text{ t/min}$

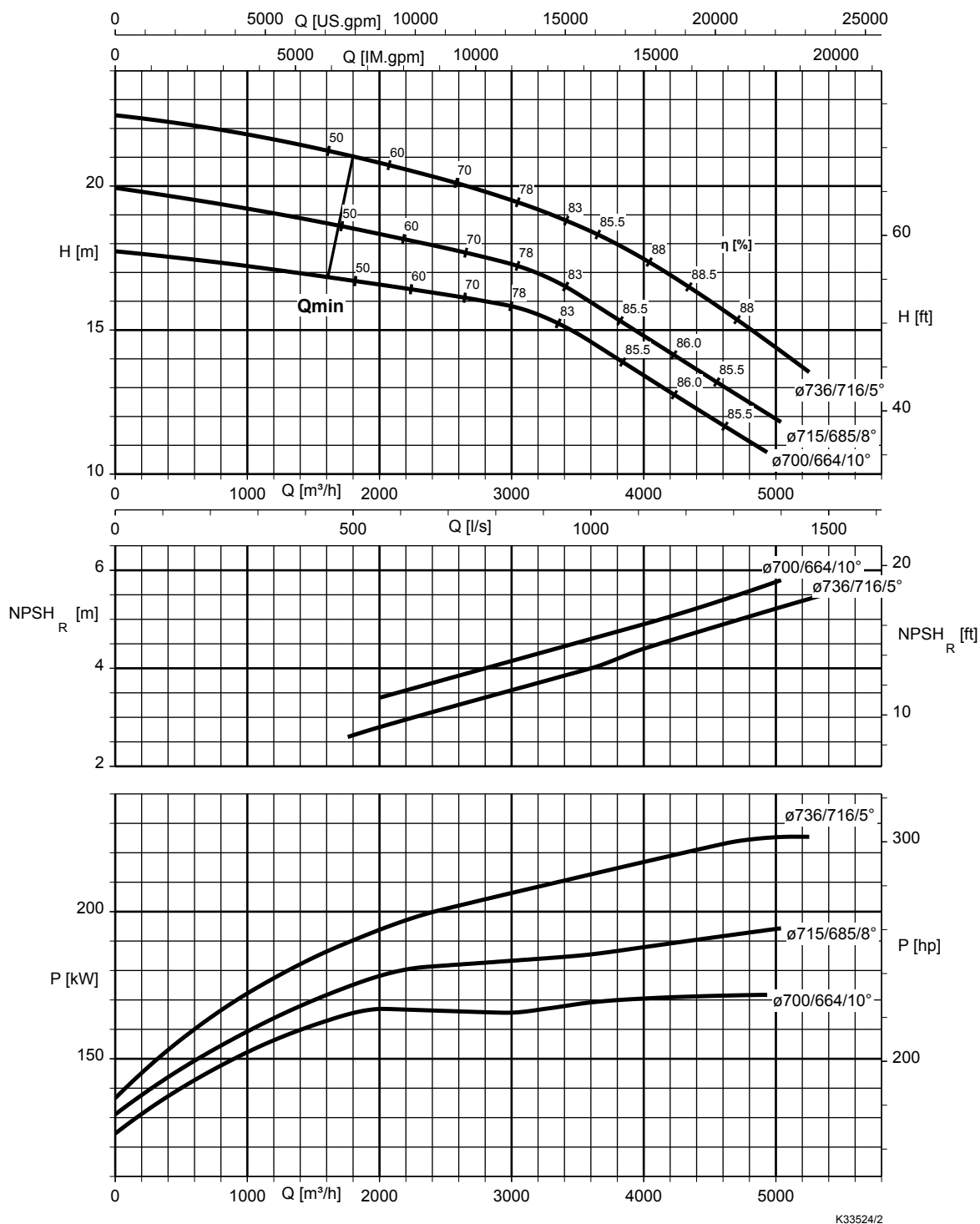


K34931/0

KWP K 600-600-669,  $n = 580 \text{ t/min}$

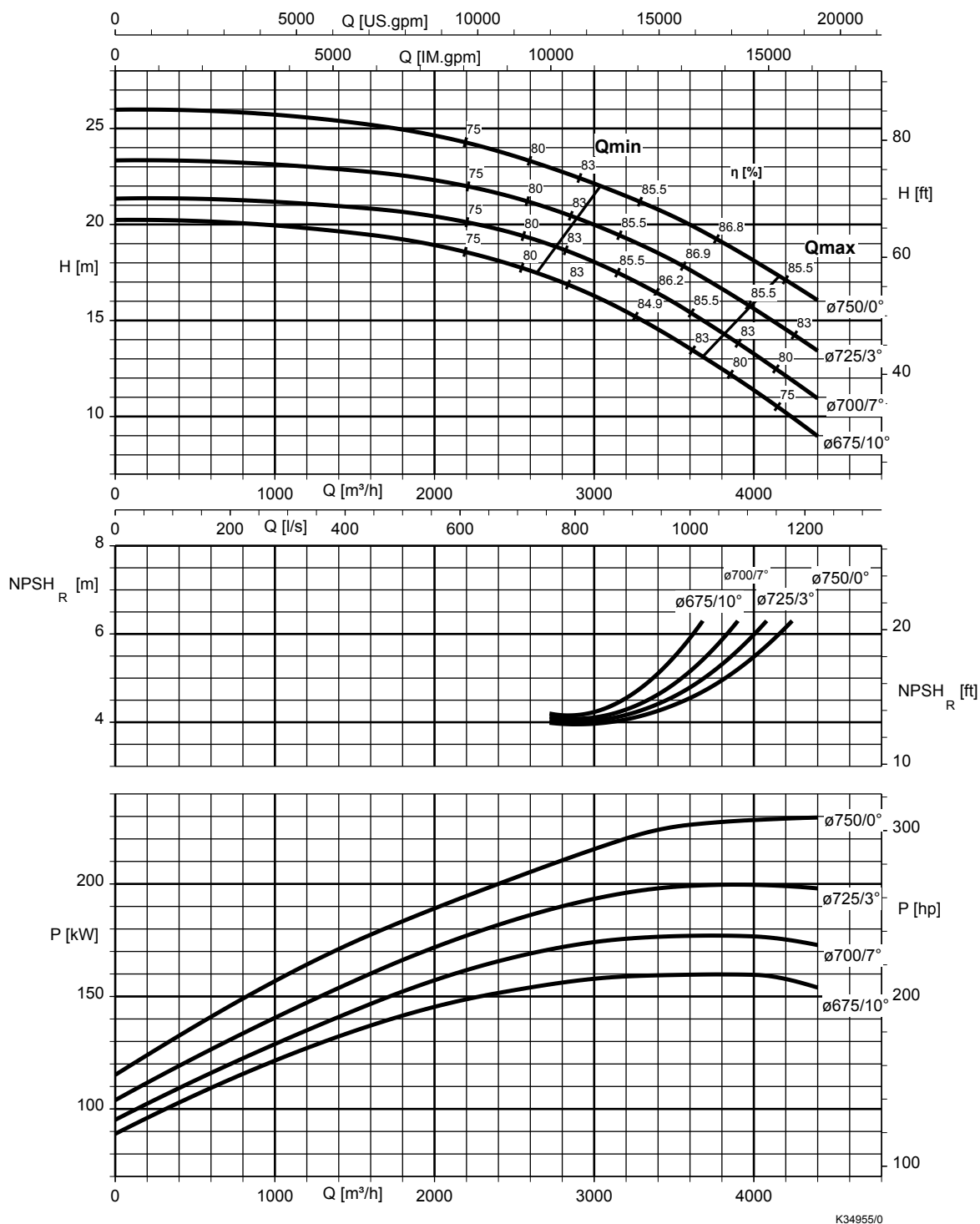


KWP K 600-600-710,  $n = 580 \text{ t/min}$

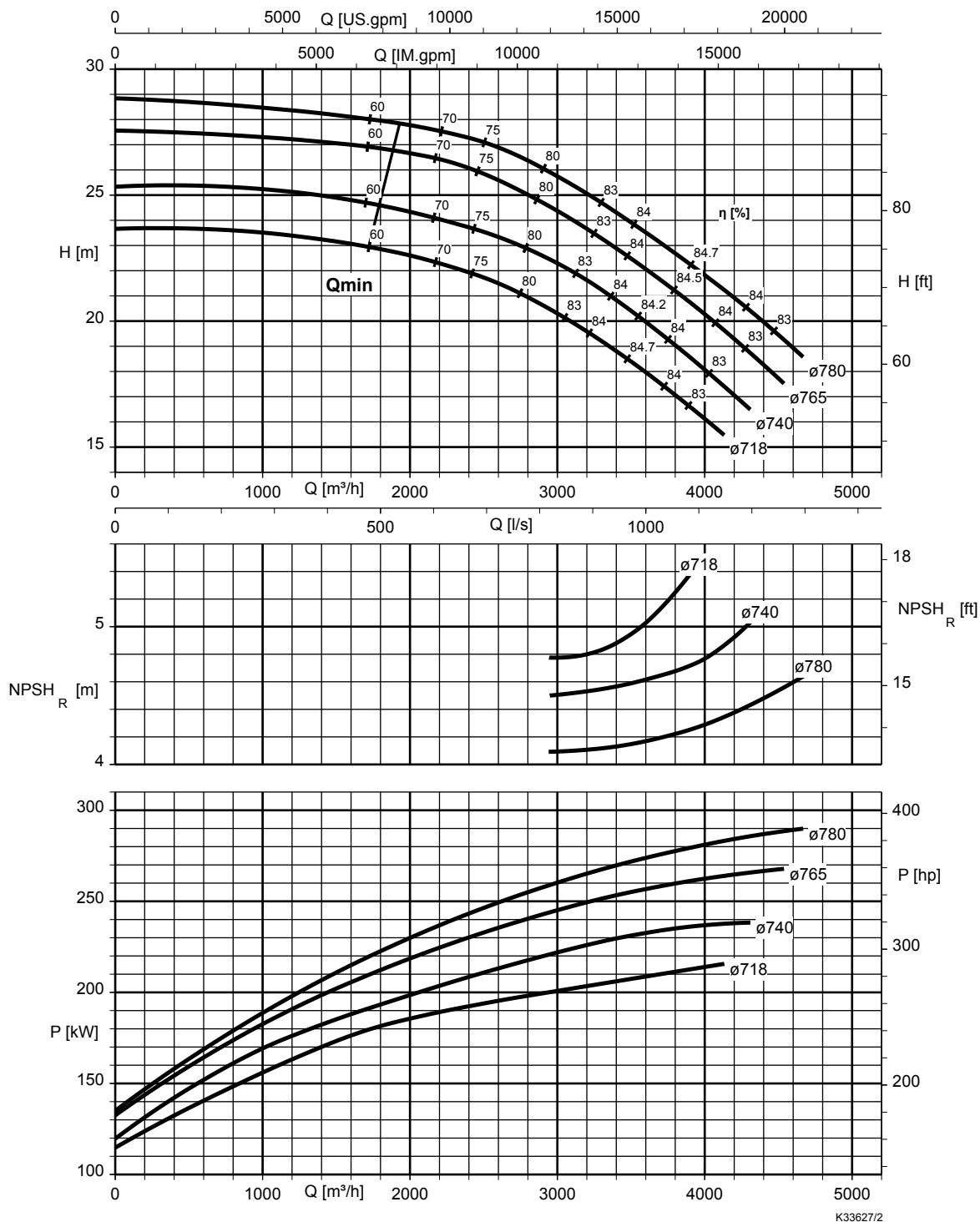


K33524/2

KWP K 600-600-753,  $n = 580 \text{ t/min}$

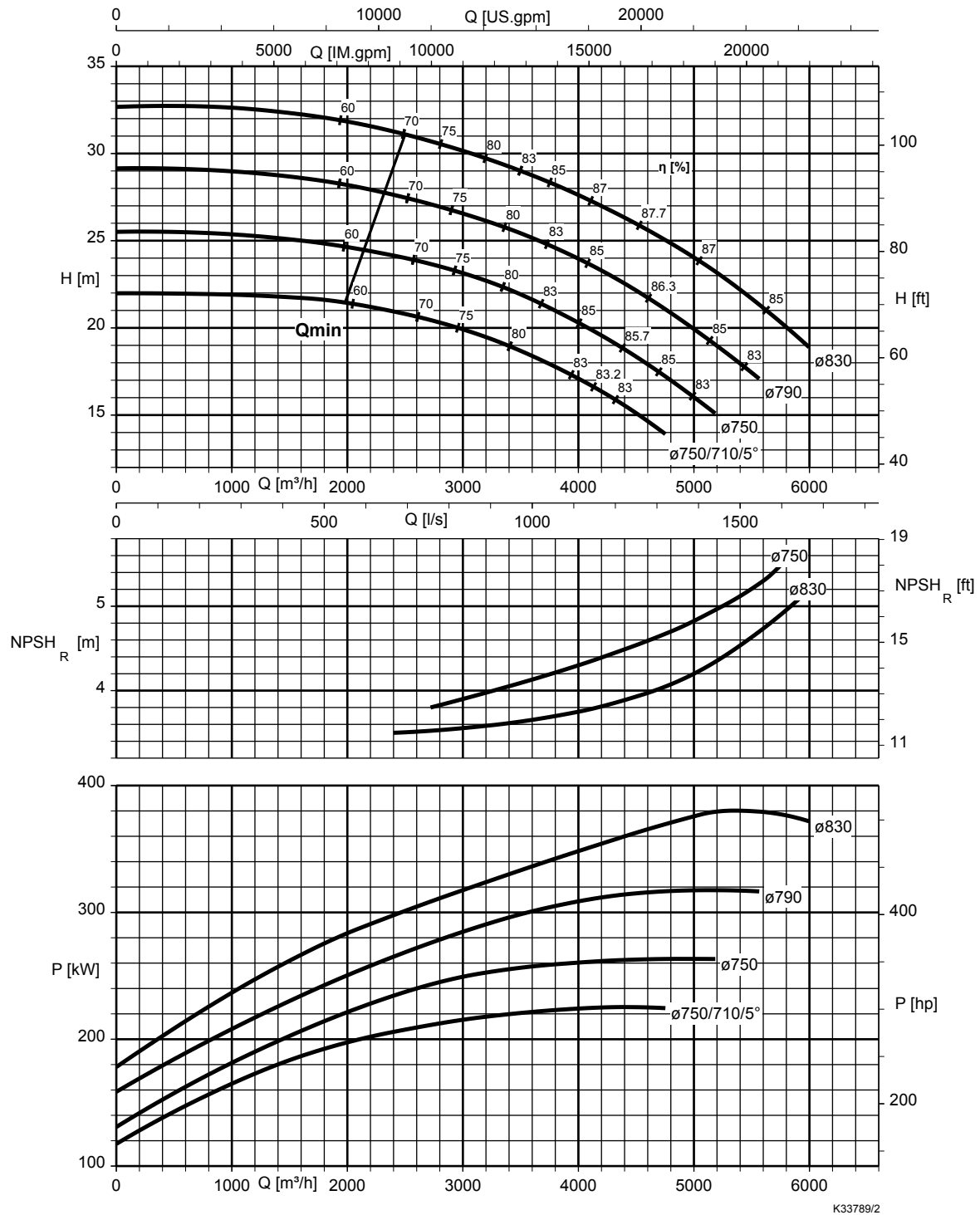


KWP K 600-600-803,  $n = 580 \text{ t/min}$

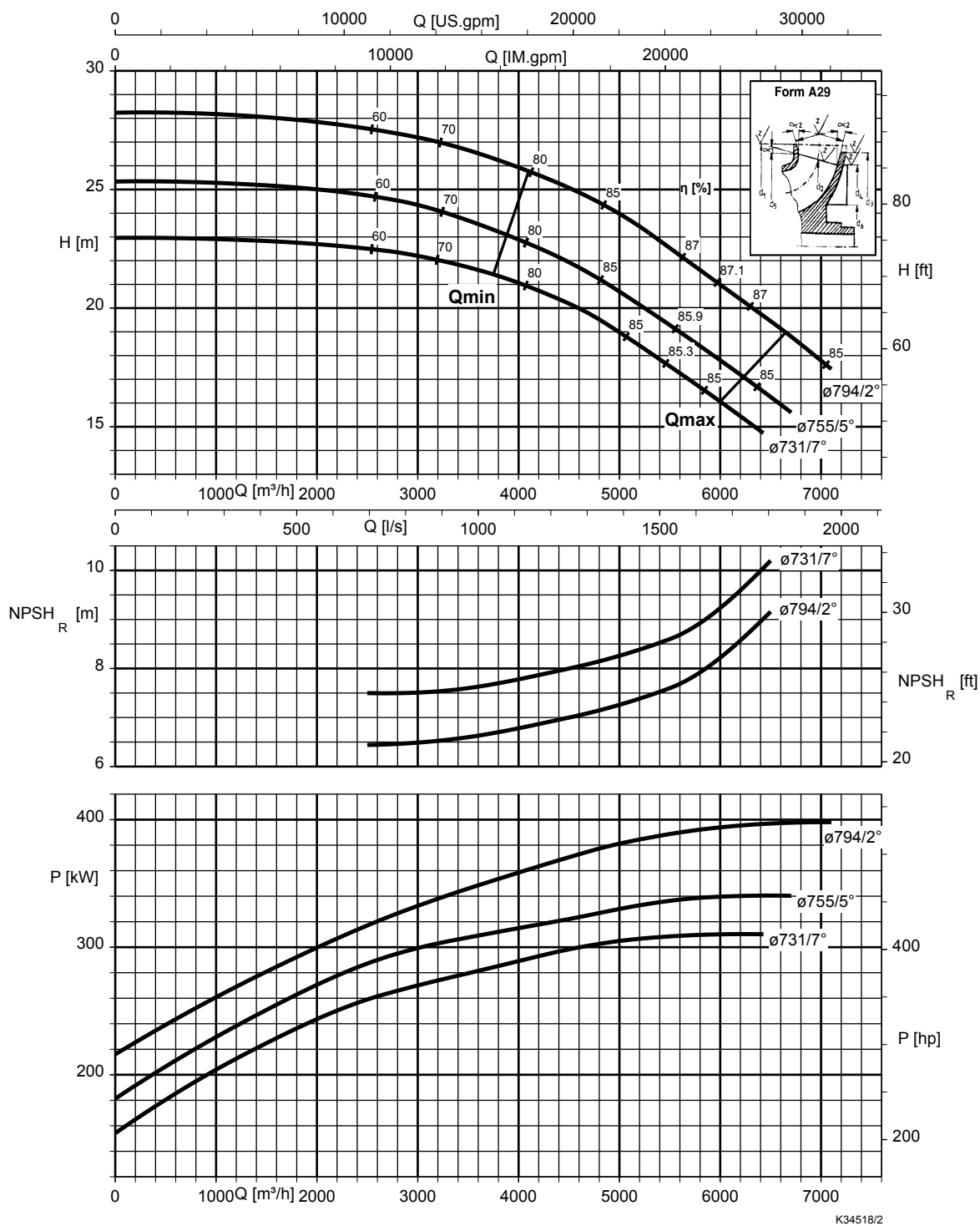


K33627/2

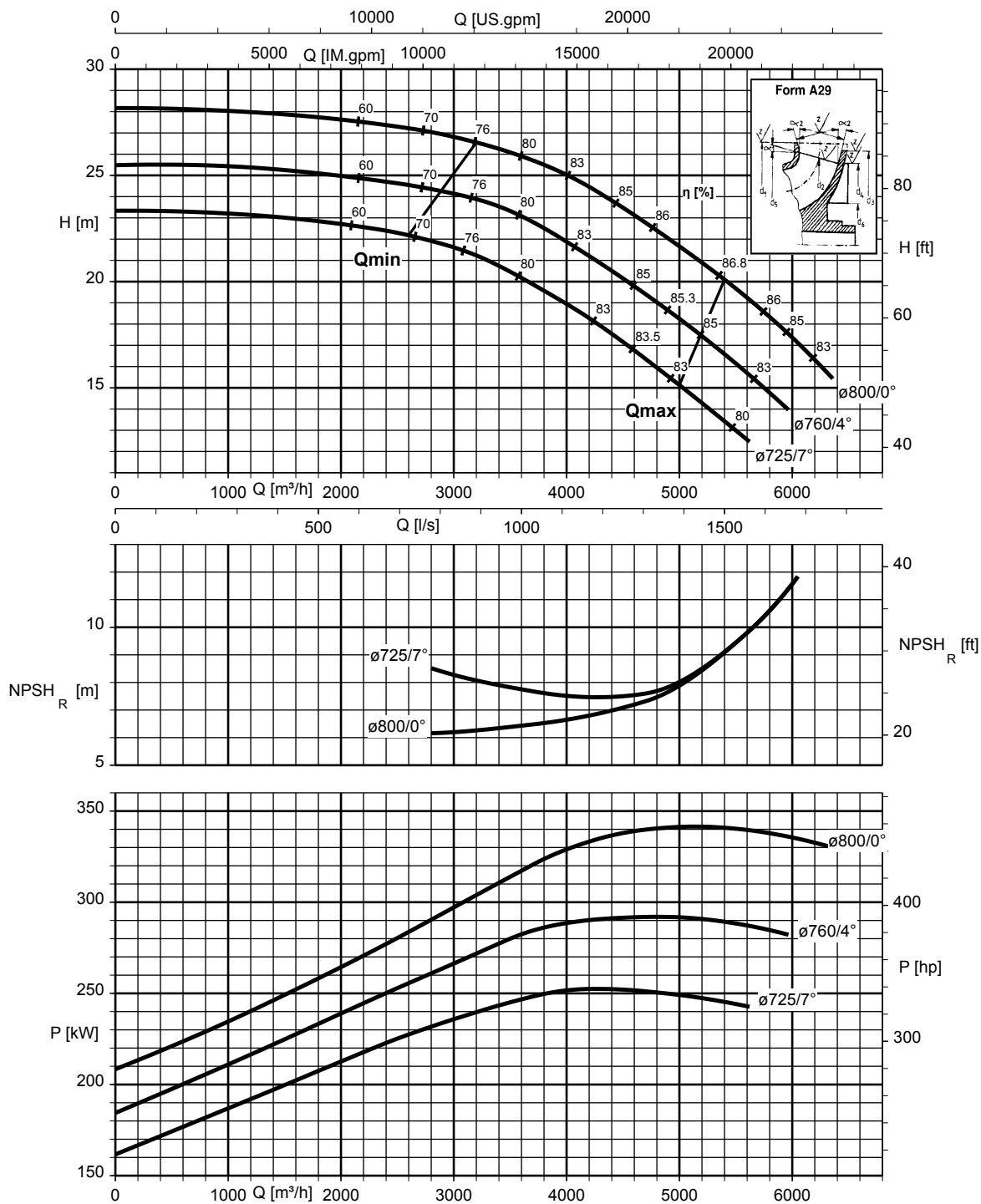
KWP K 600-600-813,  $n = 580 \text{ t/min}$



KWP K 600-600-824,  $n = 580 \text{ t/min}$

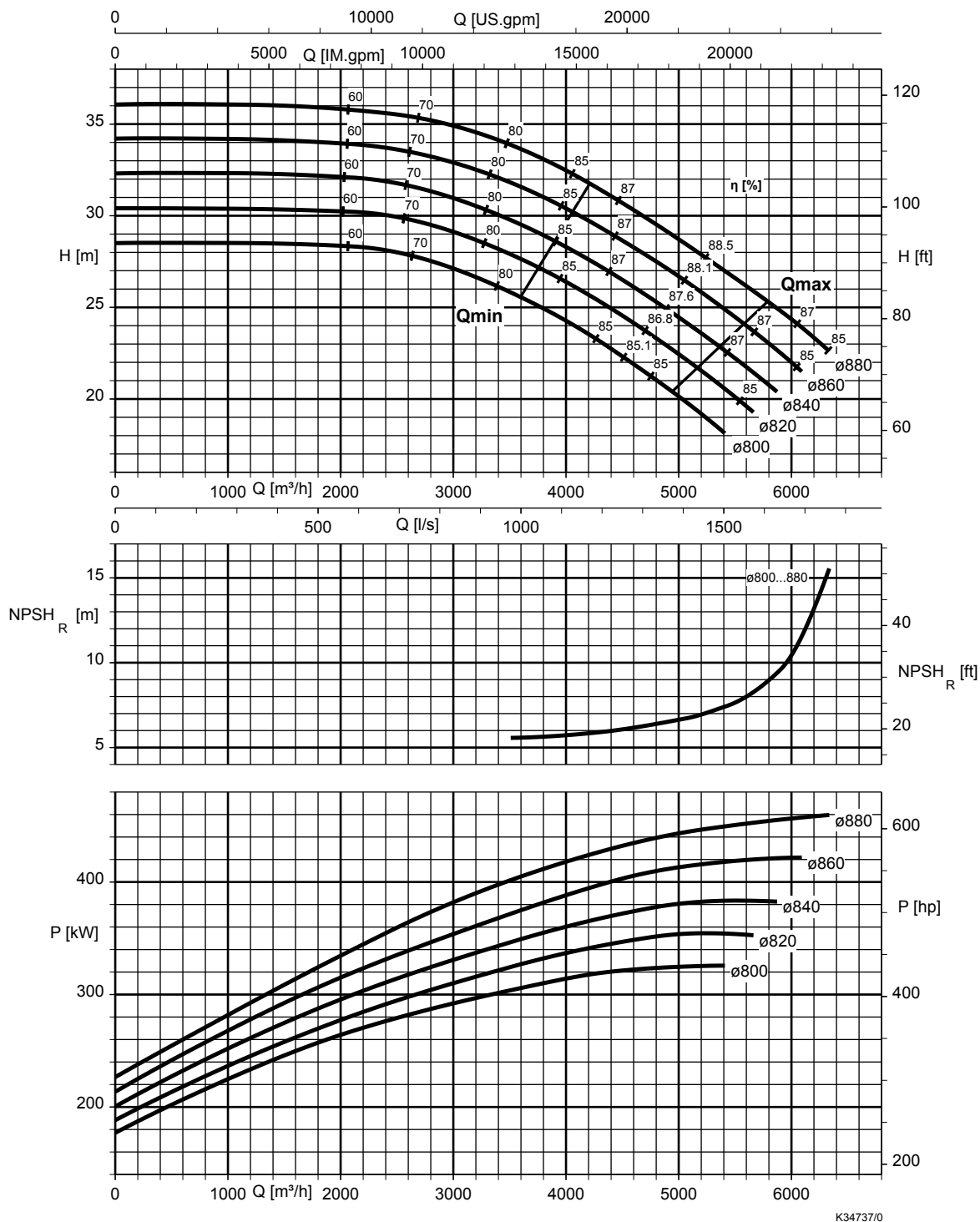


KWP K 600-600-825,  $n = 580 \text{ t/min}$



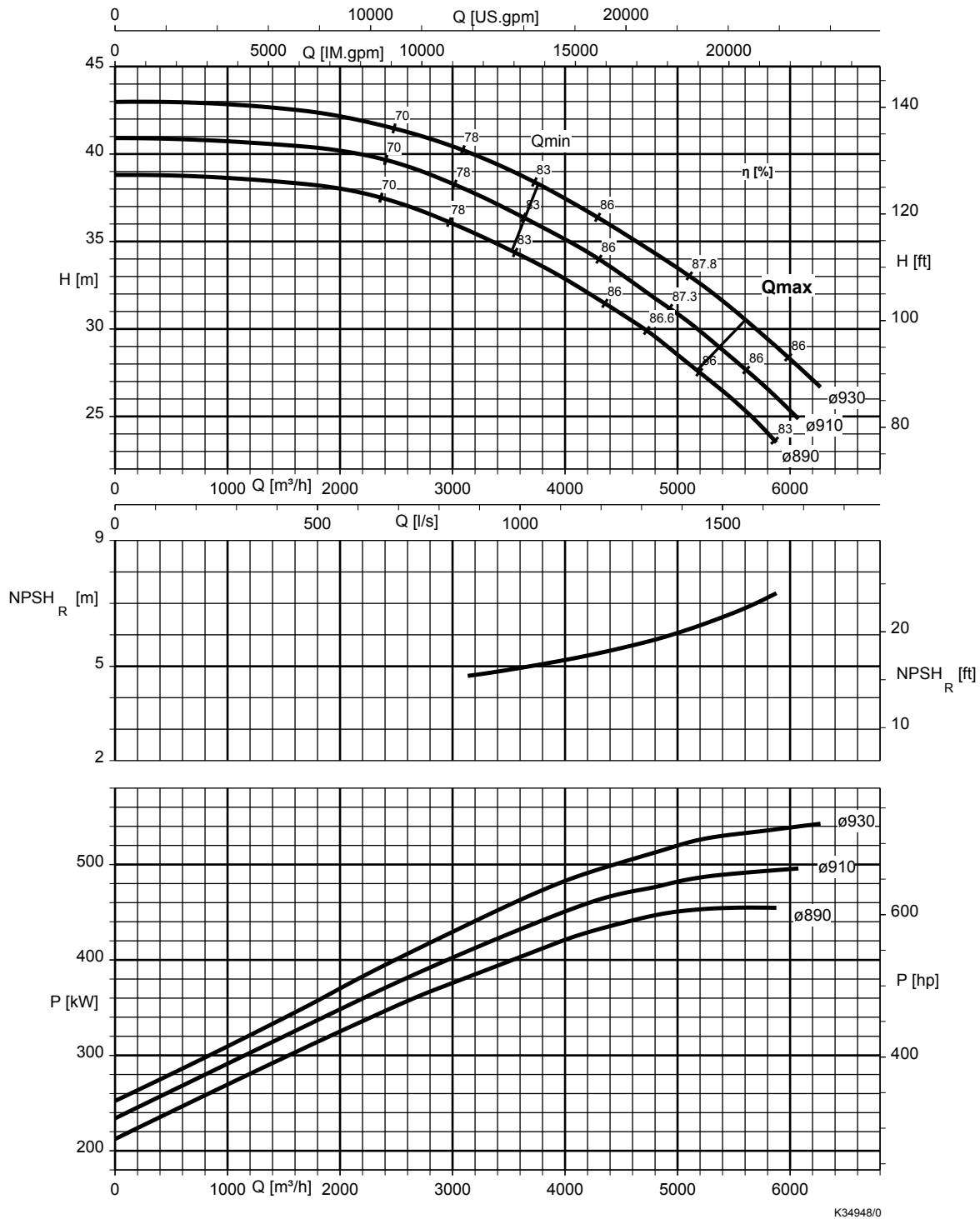
K34736/1

KWP K 600-600-873,  $n = 580 \text{ t/min}$

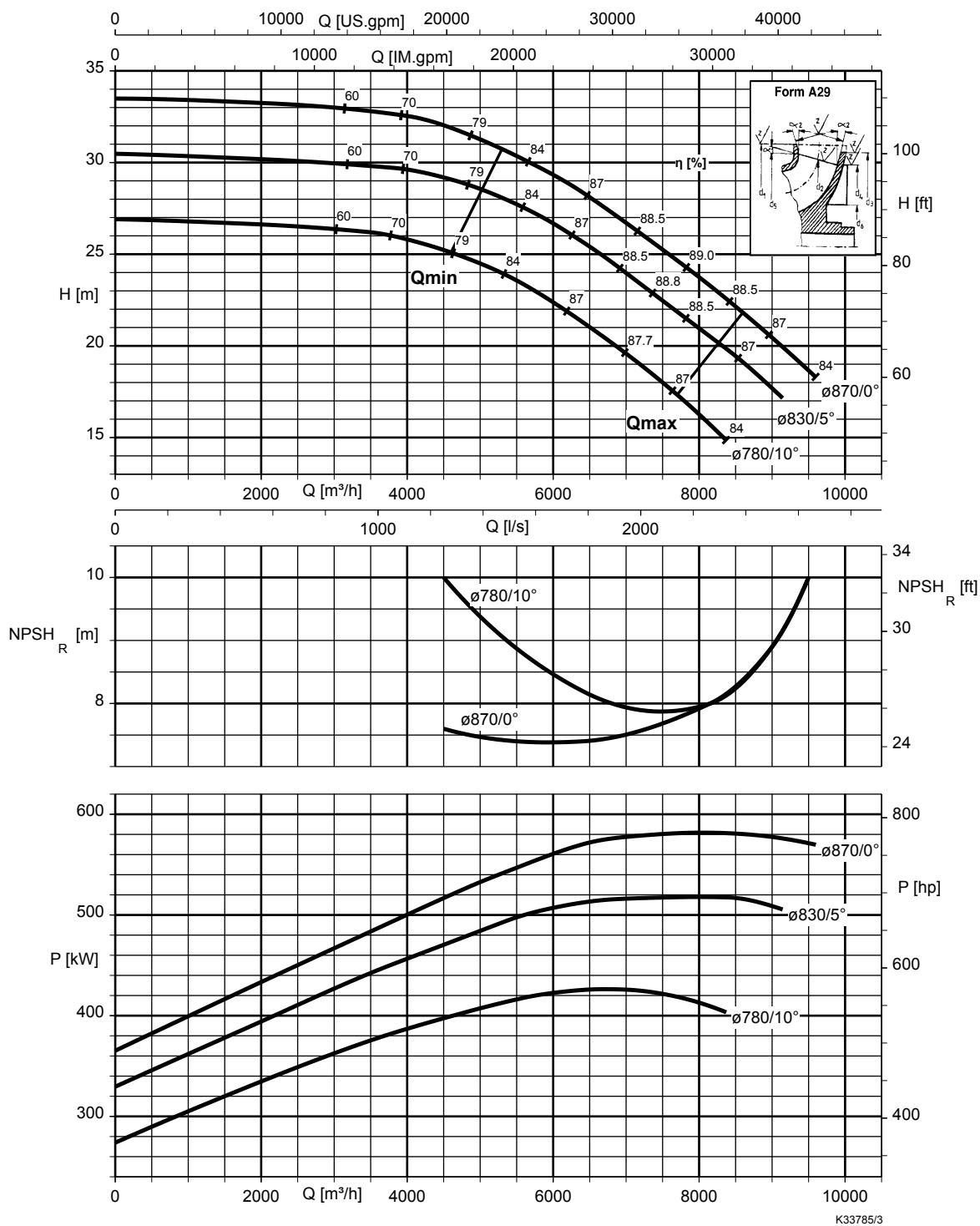


K34737/0

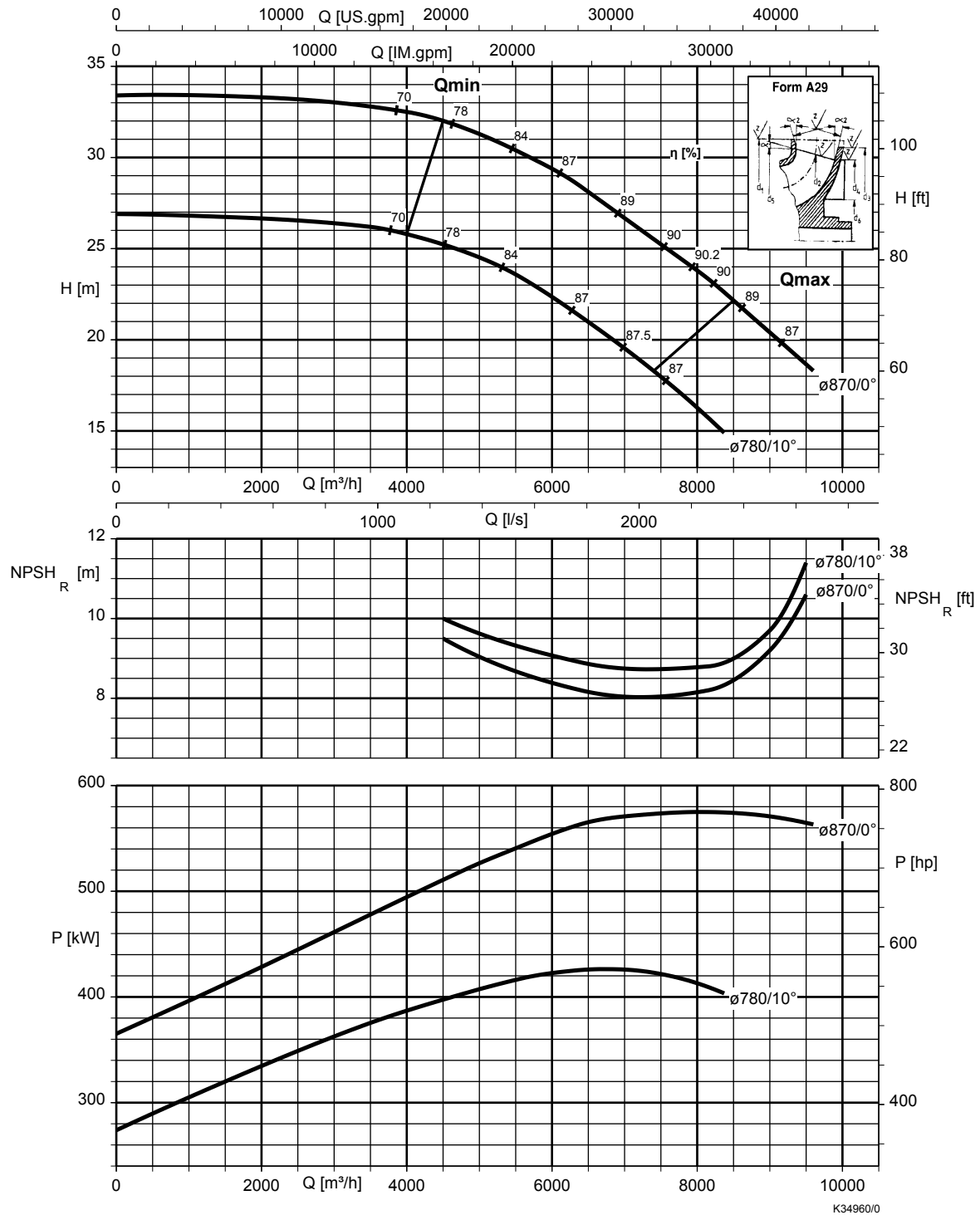
KWP K 600-600-923,  $n = 580 \text{ t/min}$



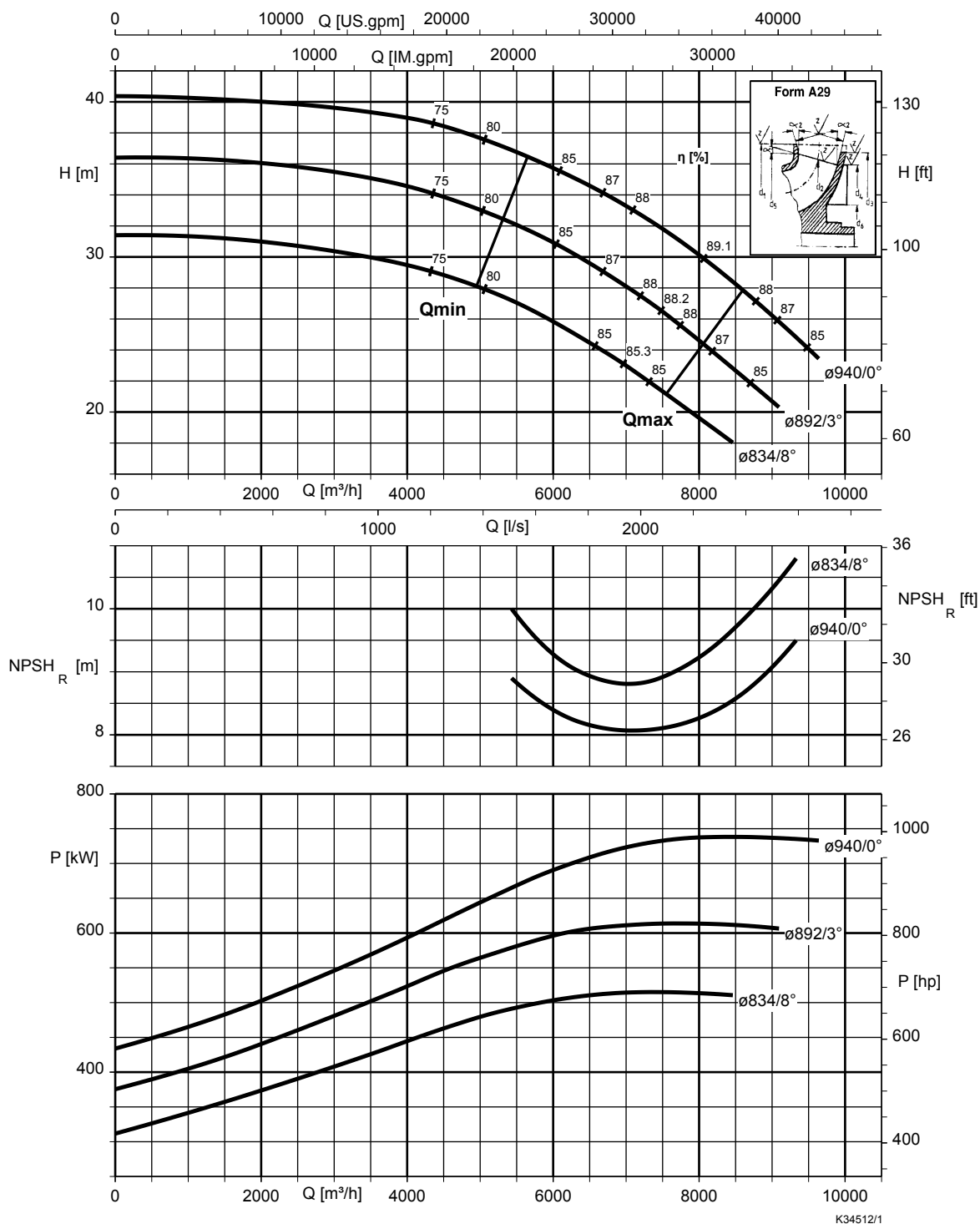
KWP K 700-700-923,  $n = 580 \text{ t/min}$



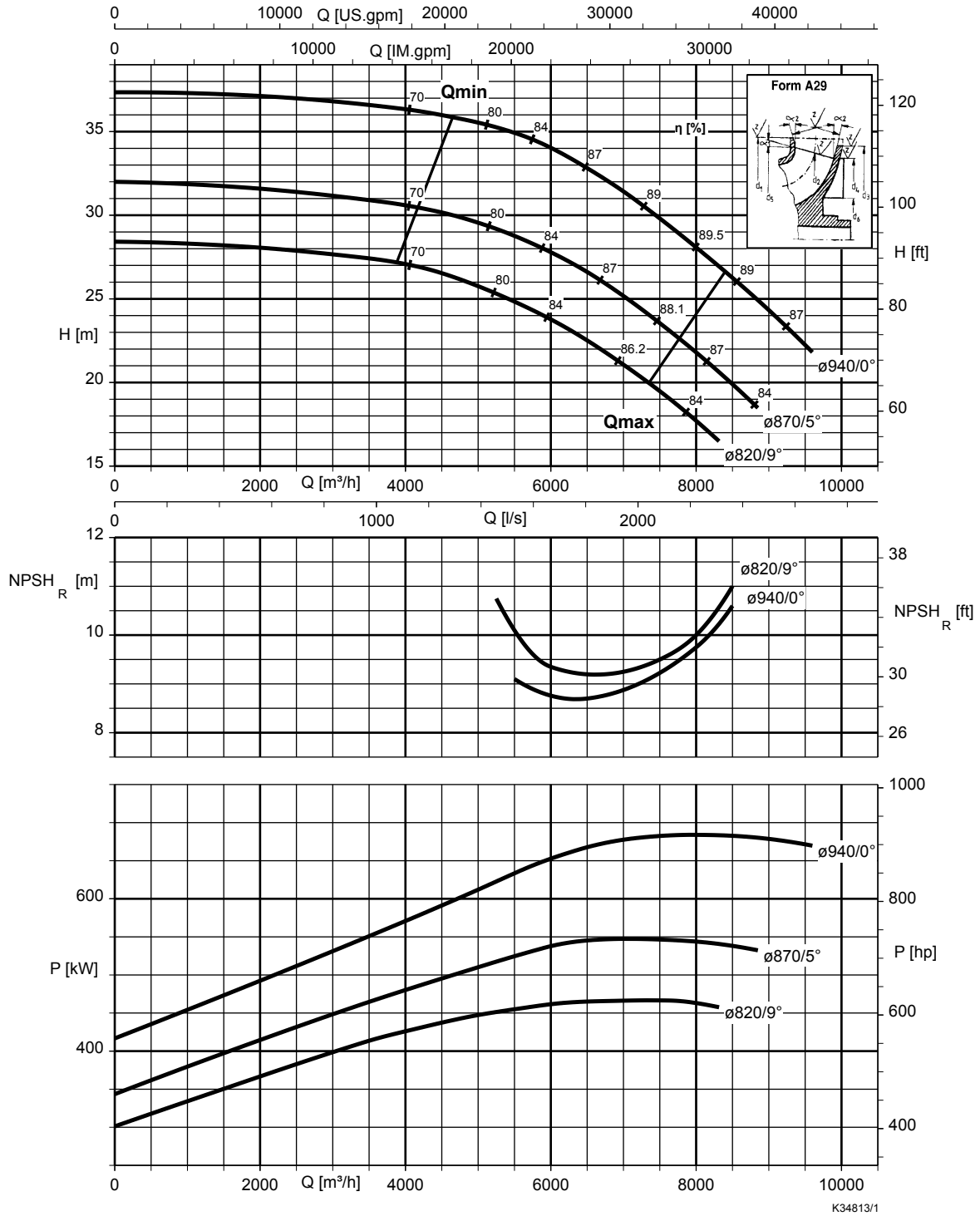
KWP K 700-700-929,  $n = 580 \text{ t/min}$



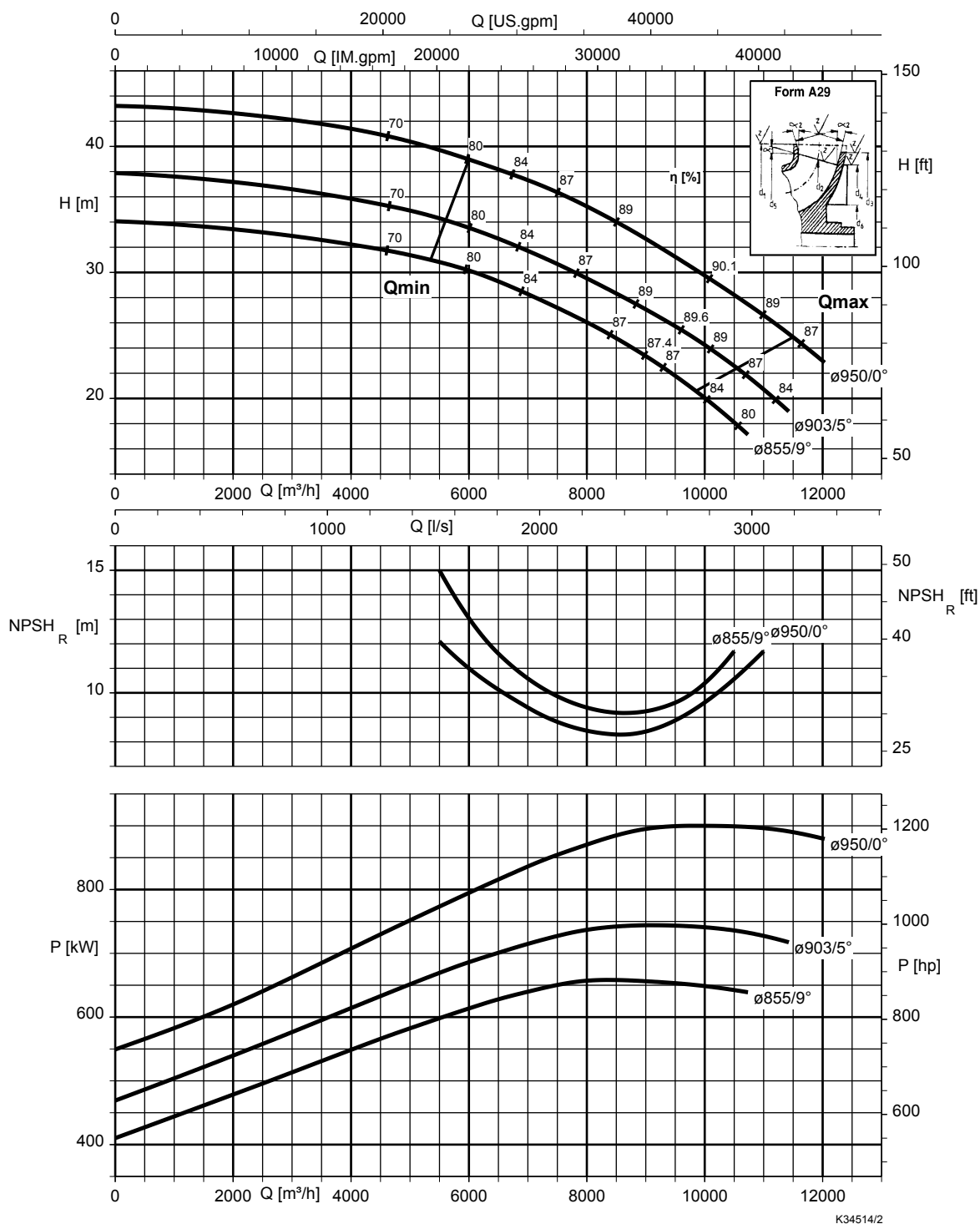
KWP K 800-700-953,  $n = 580 \text{ t/min}$



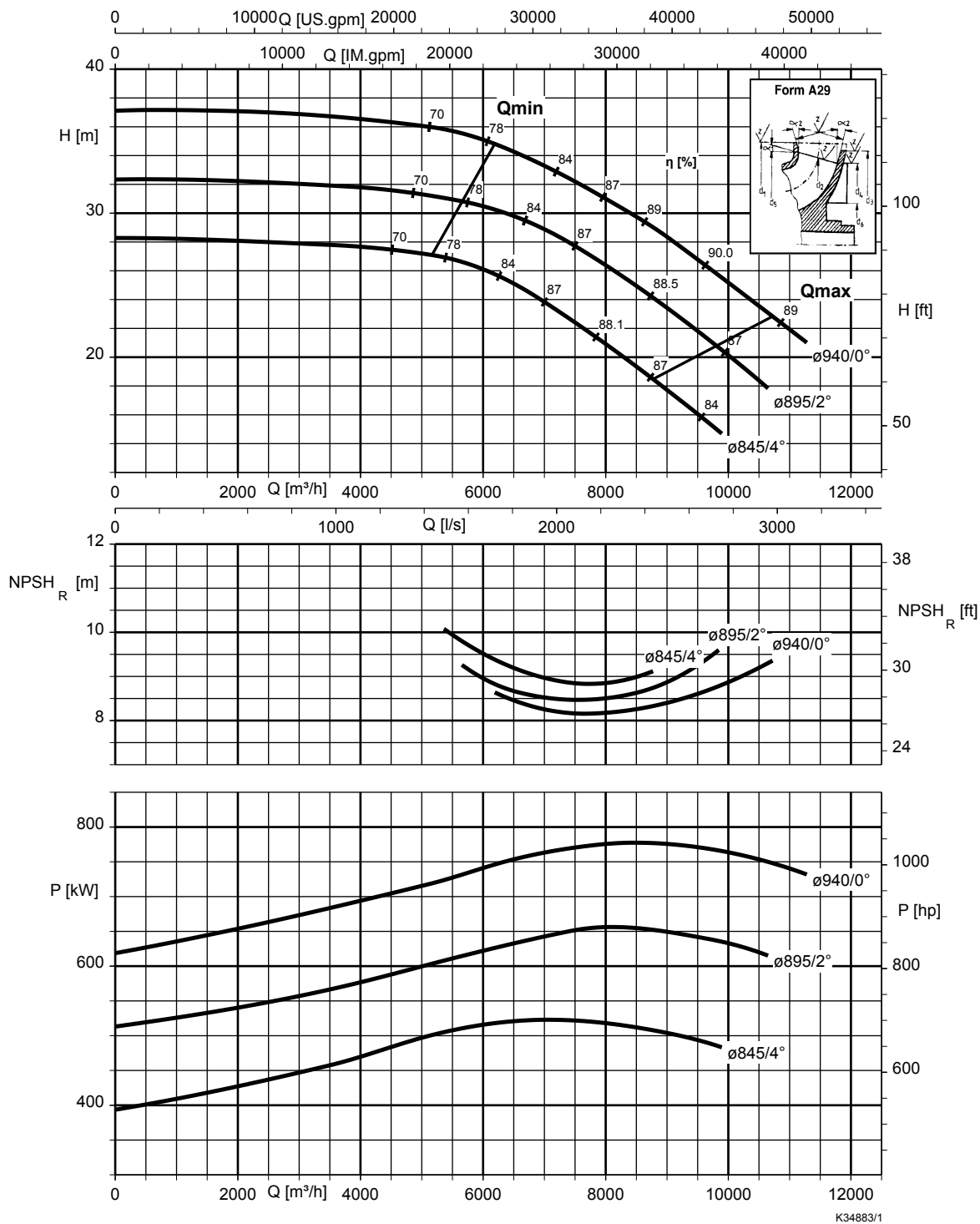
KWP K 800-700-959,  $n = 580 \text{ t/min}$



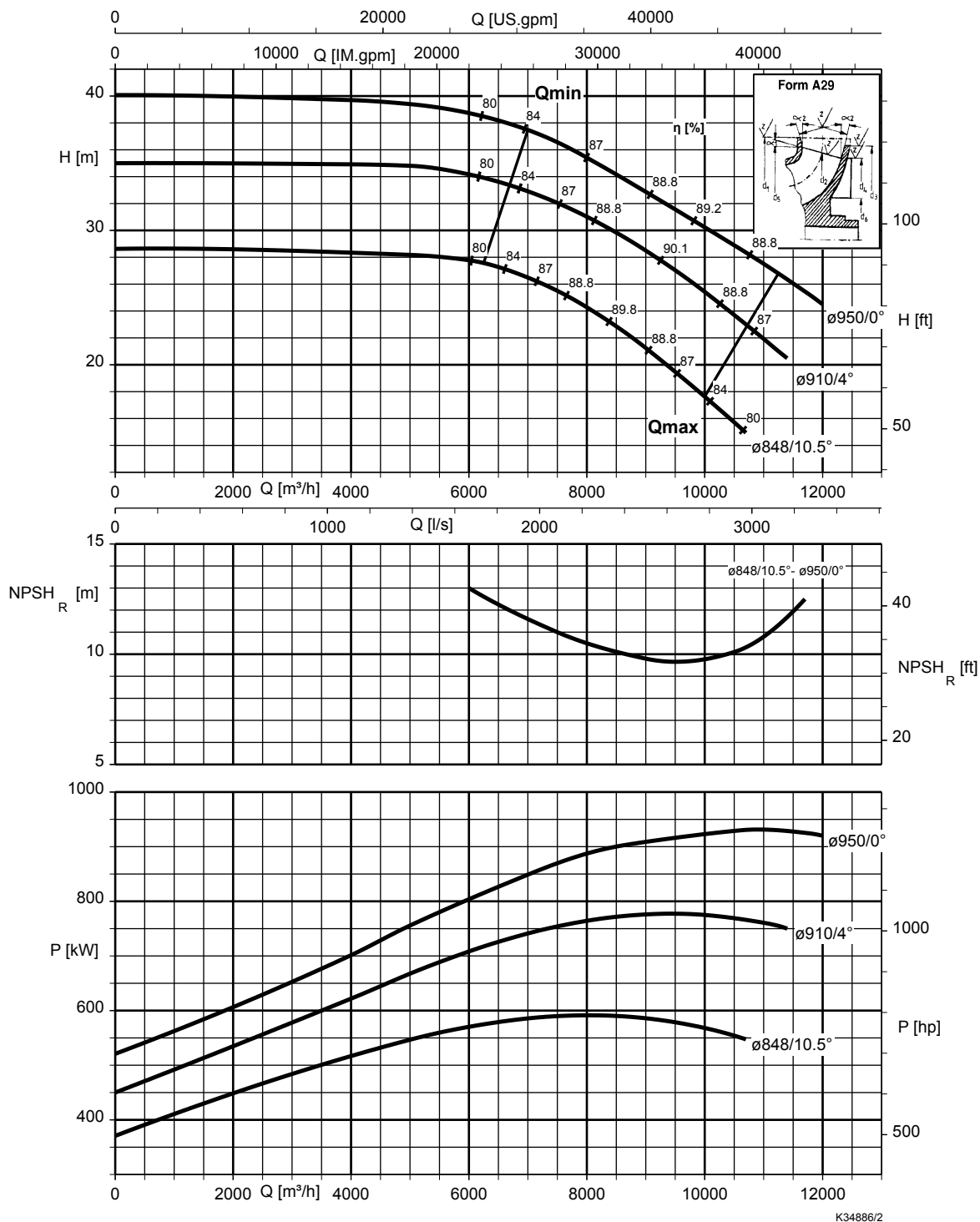
KWP K 800-800-934,  $n = 580 \text{ t/min}$



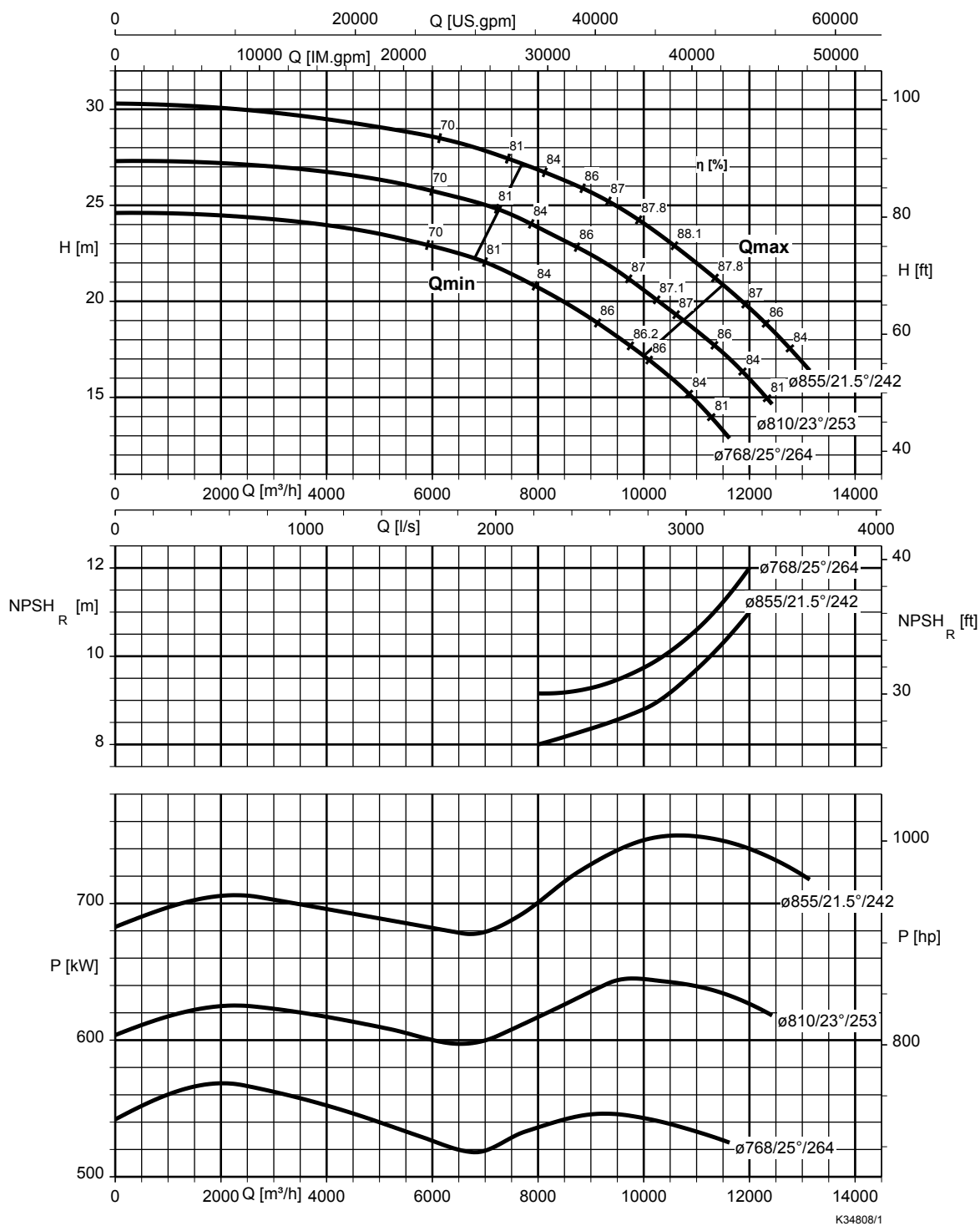
KWP K 800-800-935,  $n = 580 \text{ t/min}$



KWP K 800-800-939,  $n = 580 \text{ t/min}$

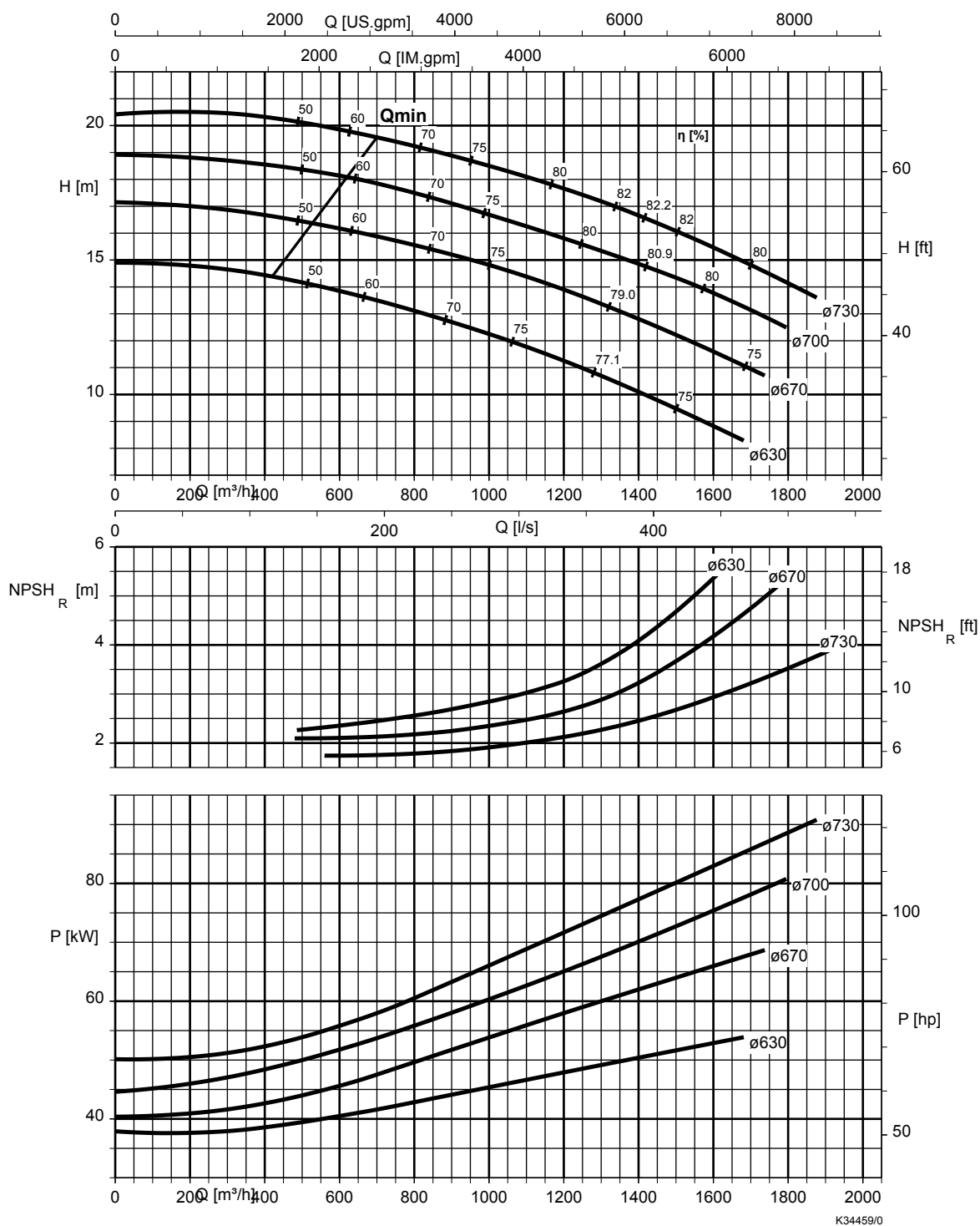


KWP K 800-900-883,  $n = 580 \text{ t/min}$

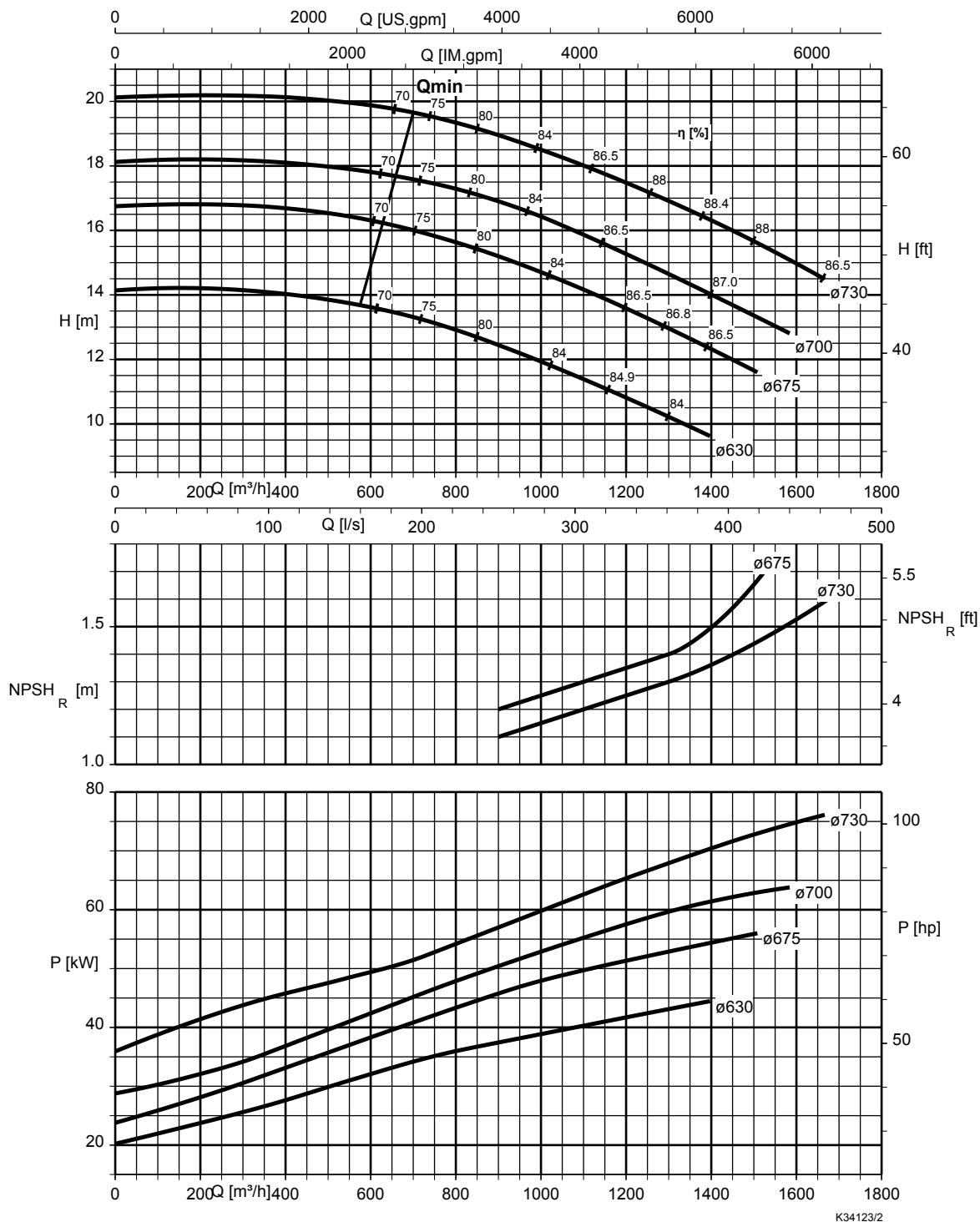


$n = 480 \text{ t/min}$

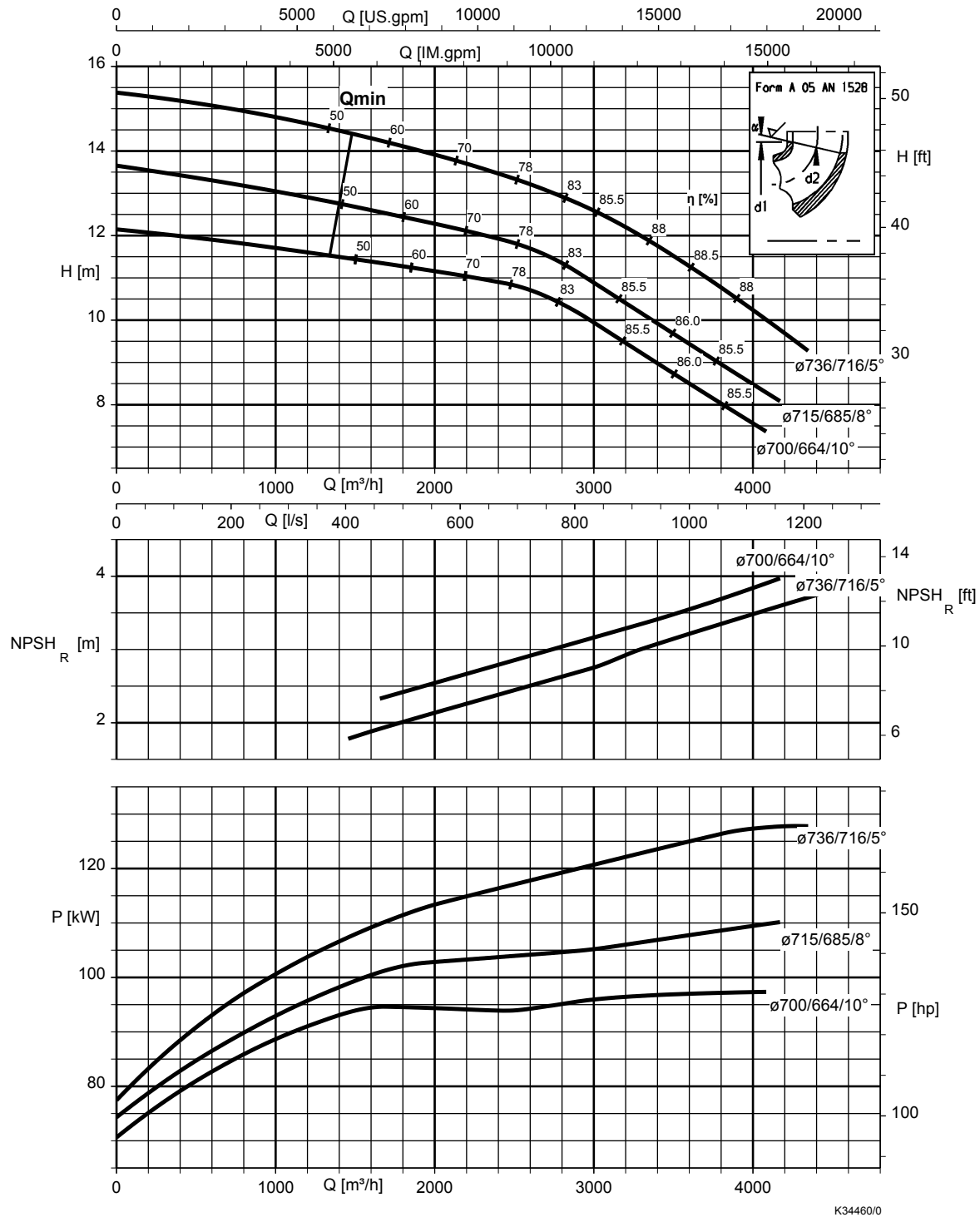
KWP K 500-400-710,  $n = 480 \text{ t/min}$



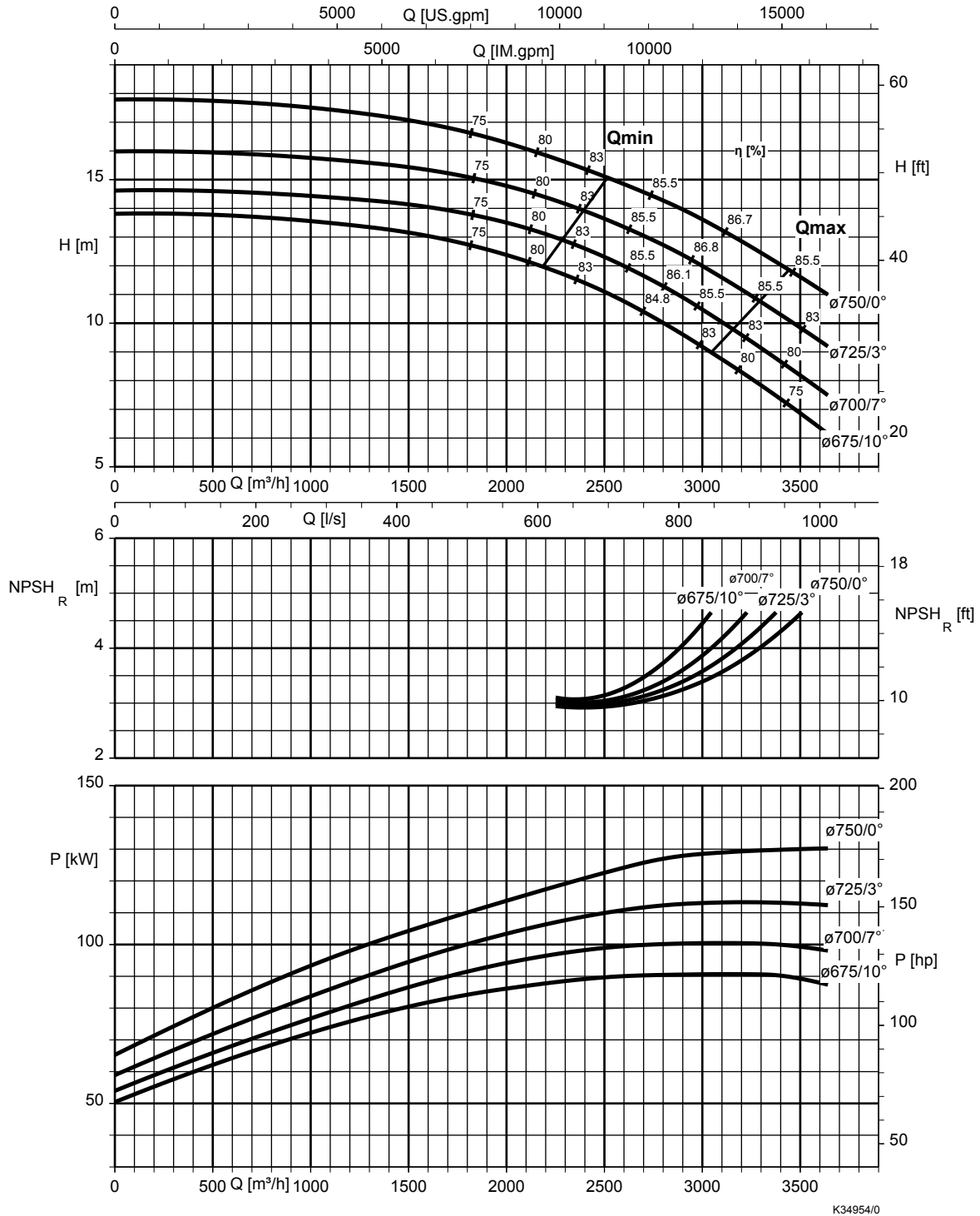
KWP K 500-400-713,  $n = 480 \text{ t/min}$



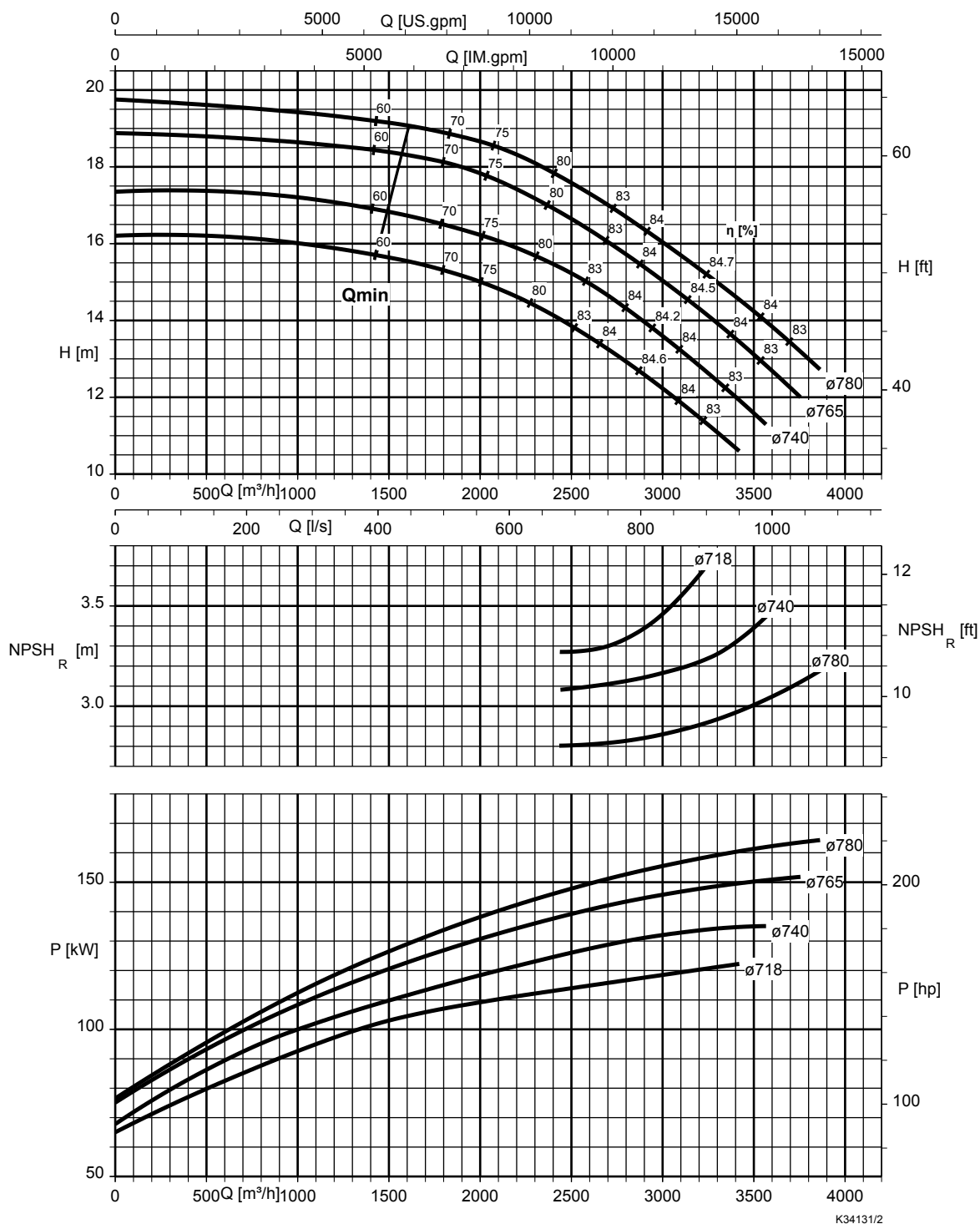
KWP K 600-600-710, n = 480 t/min



KWP K 600-600-753,  $n = 480 \text{ t/min}$

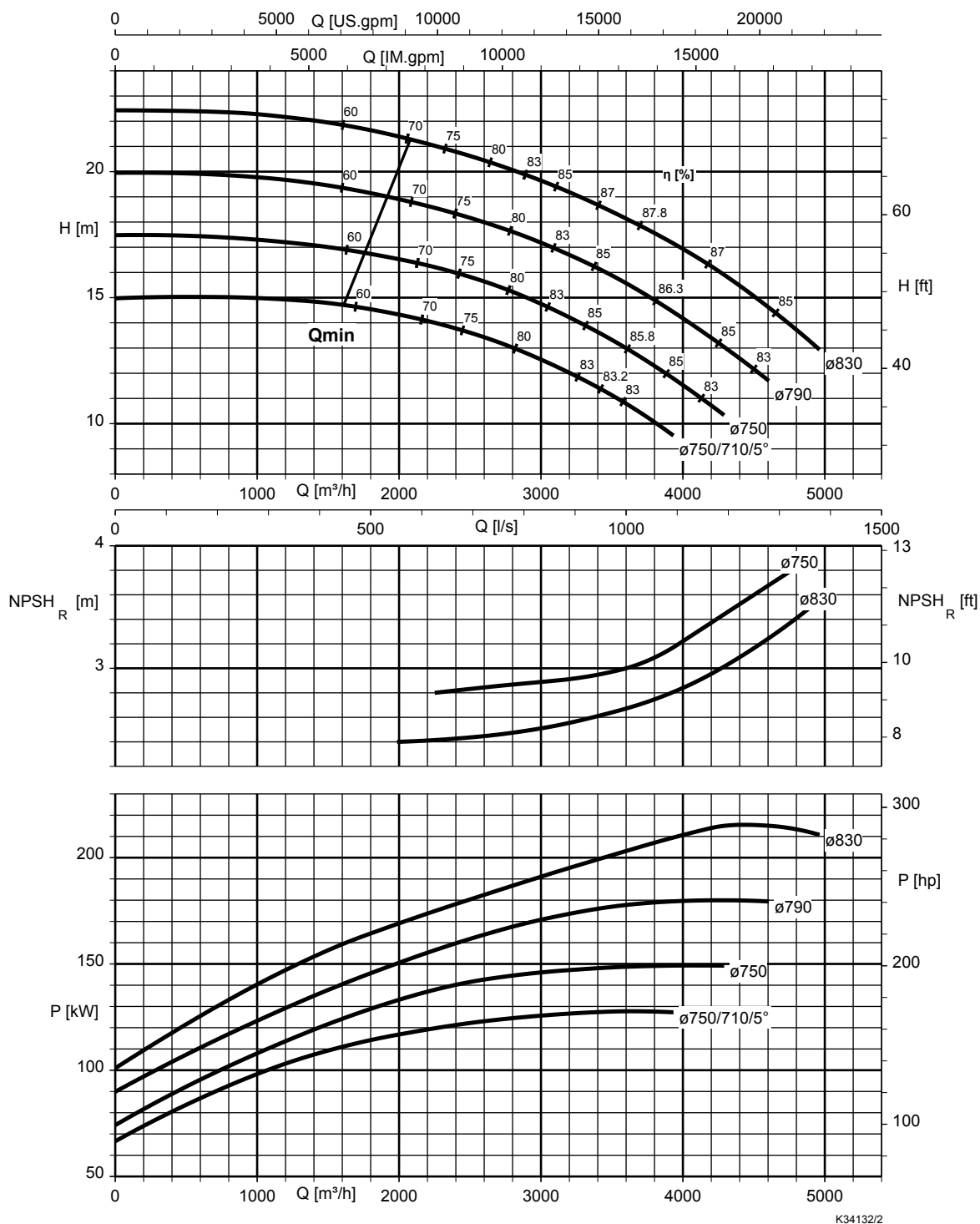


KWP K 600-600-803,  $n = 480 \text{ t/min}$

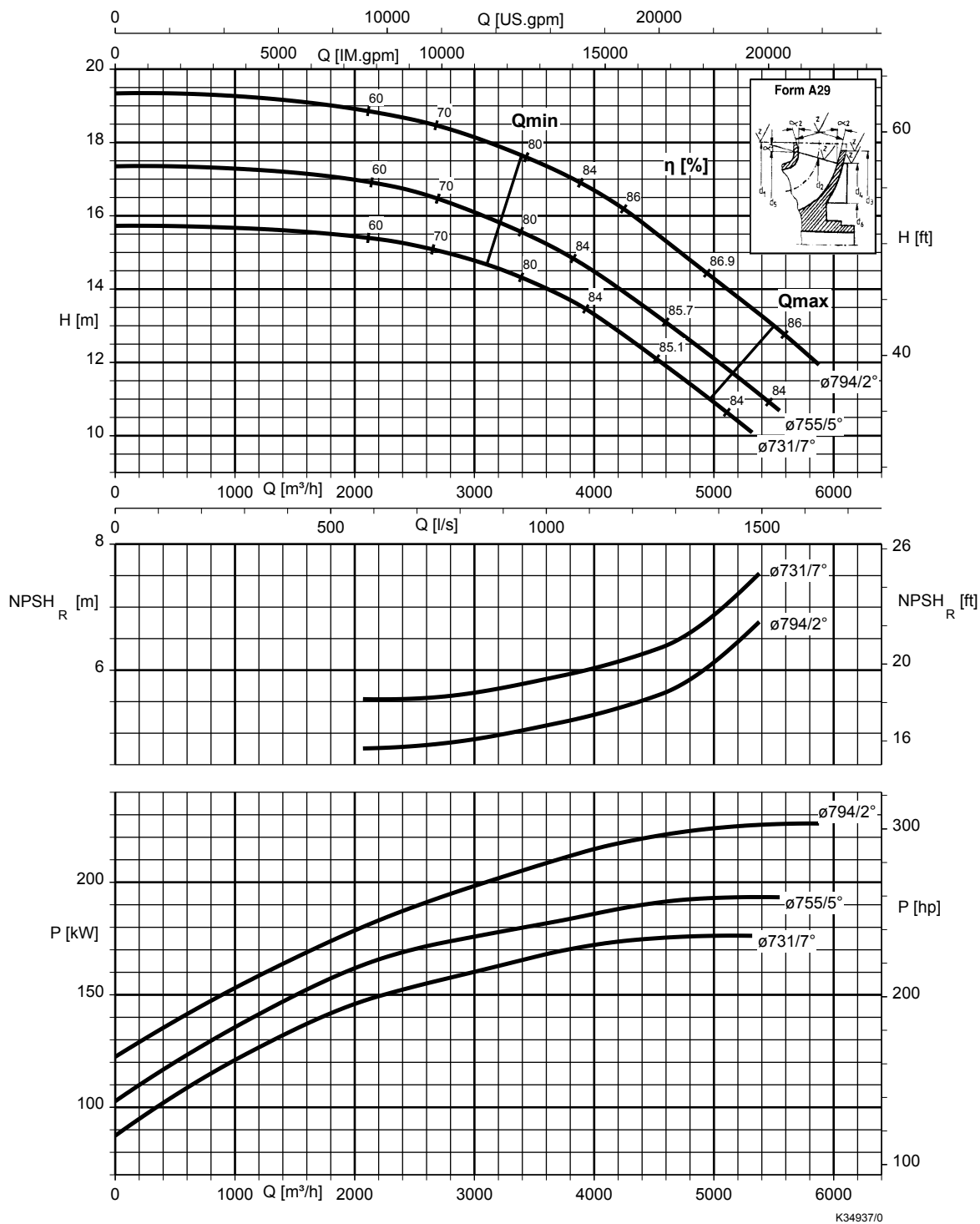


K34131/2

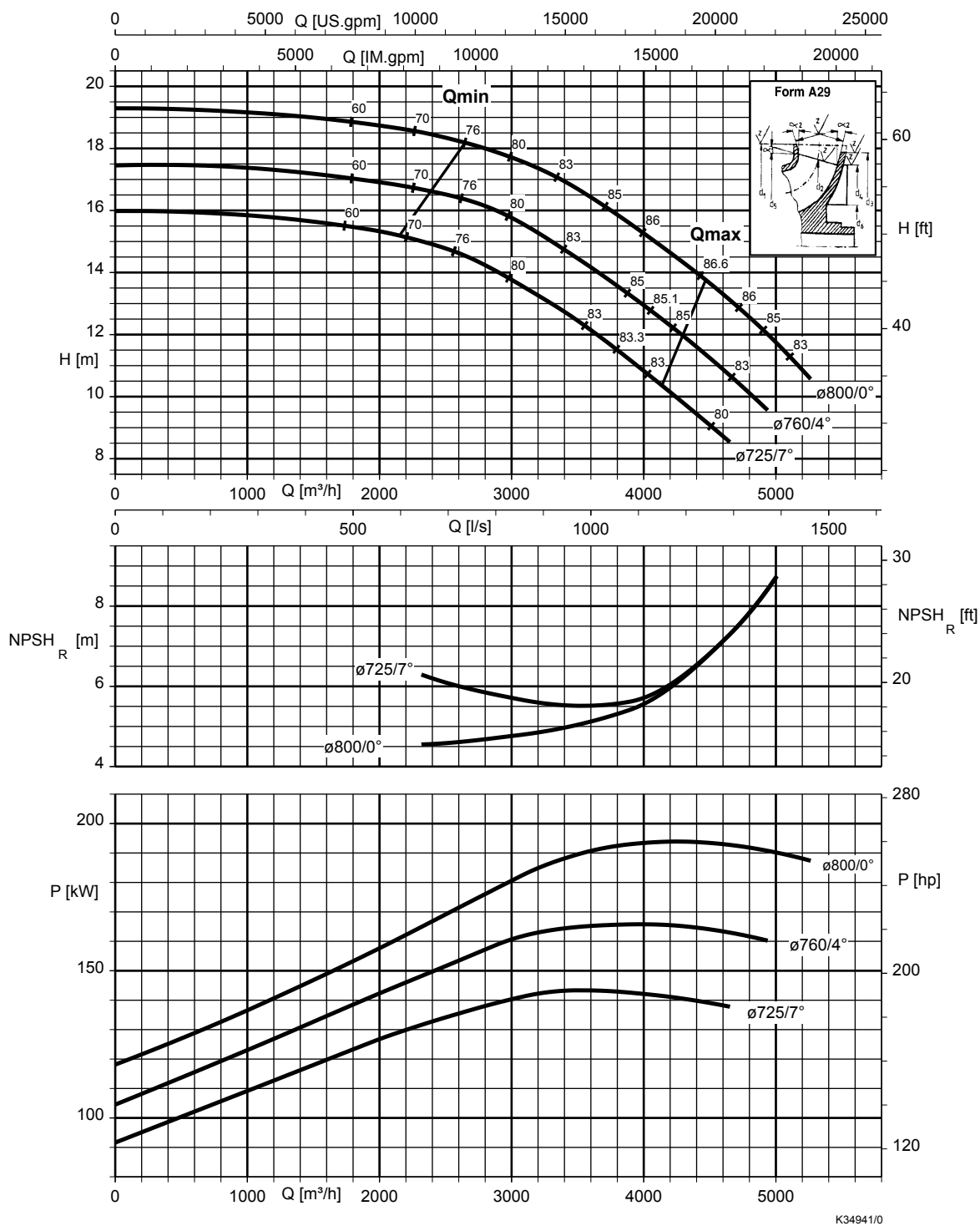
KWP K 600-600-813,  $n = 480 \text{ t/min}$



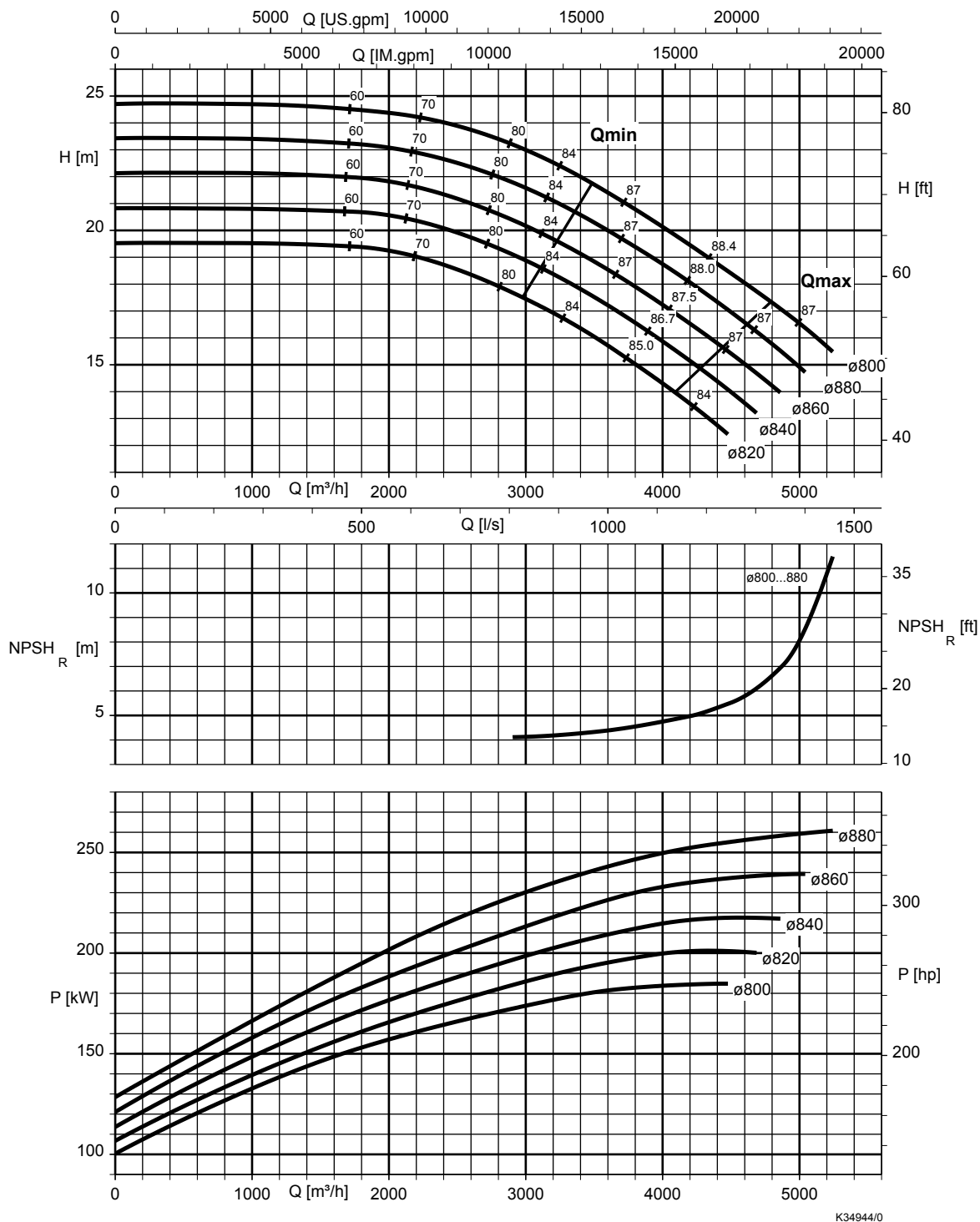
KWP K 600-600-824,  $n = 480 \text{ t/min}$



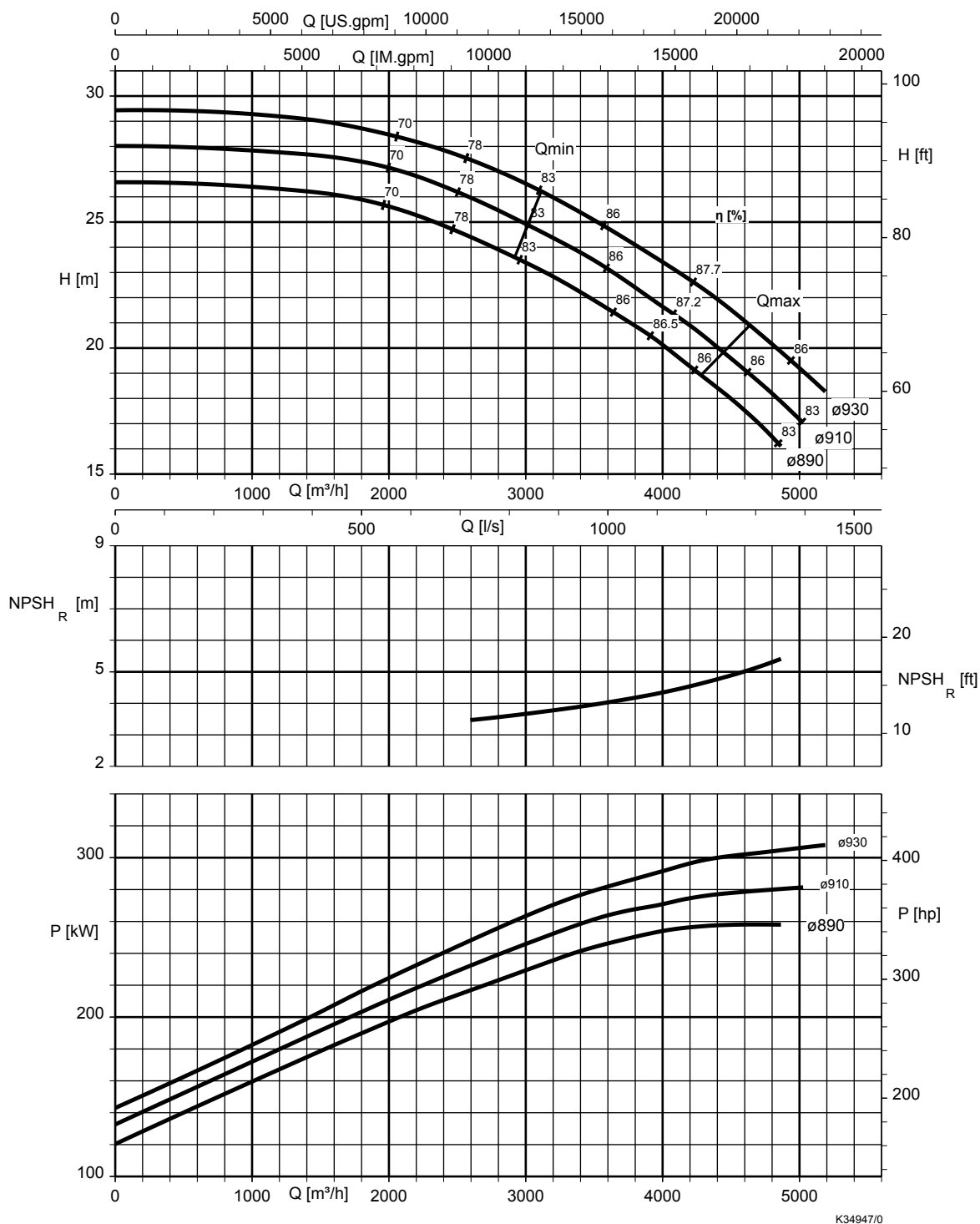
**KWP K 600-600-825, n = 480 t/min**



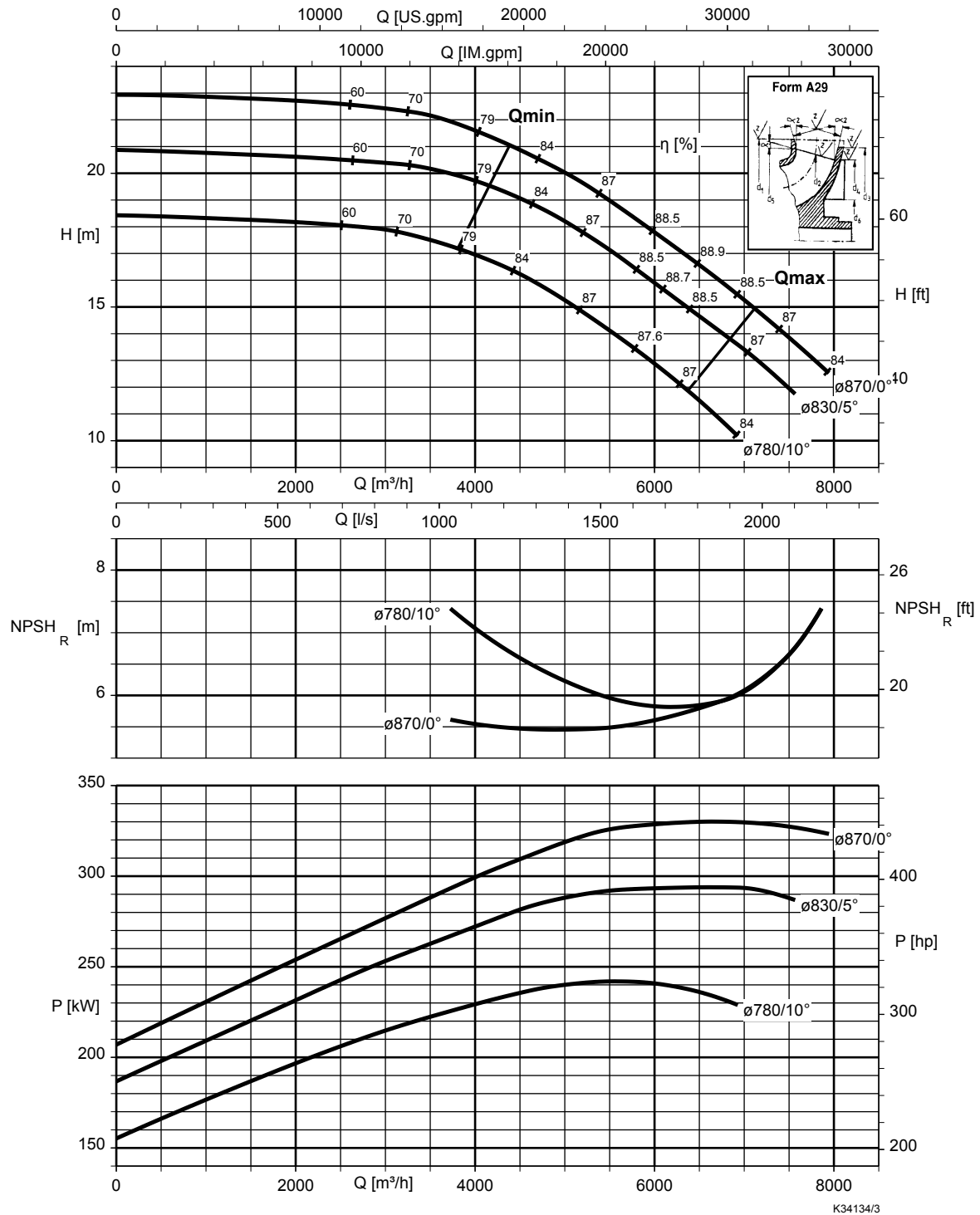
KWP K 600-600-873,  $n = 480 \text{ t/min}$



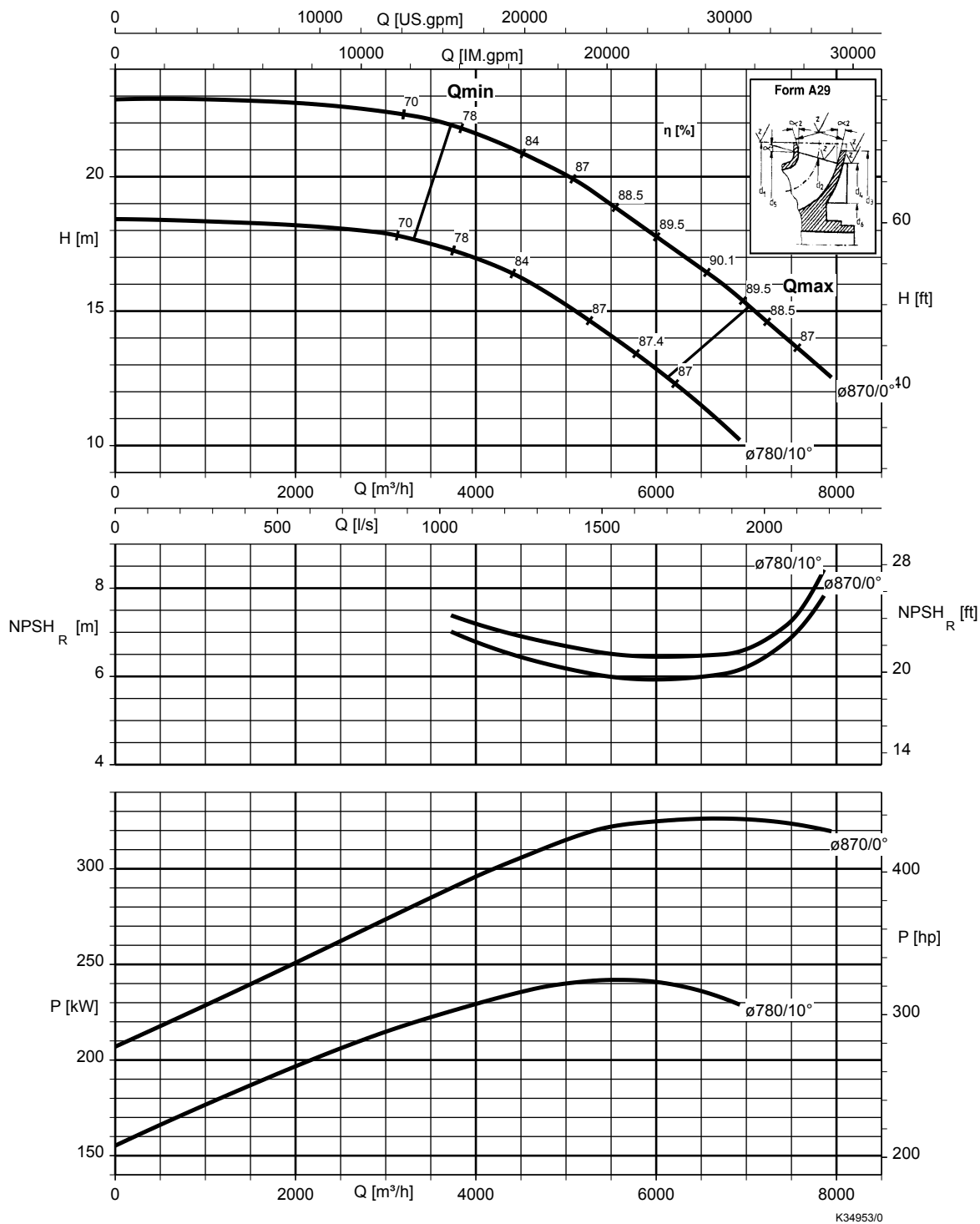
KWP K 600-600-923,  $n = 480 \text{ t/min}$



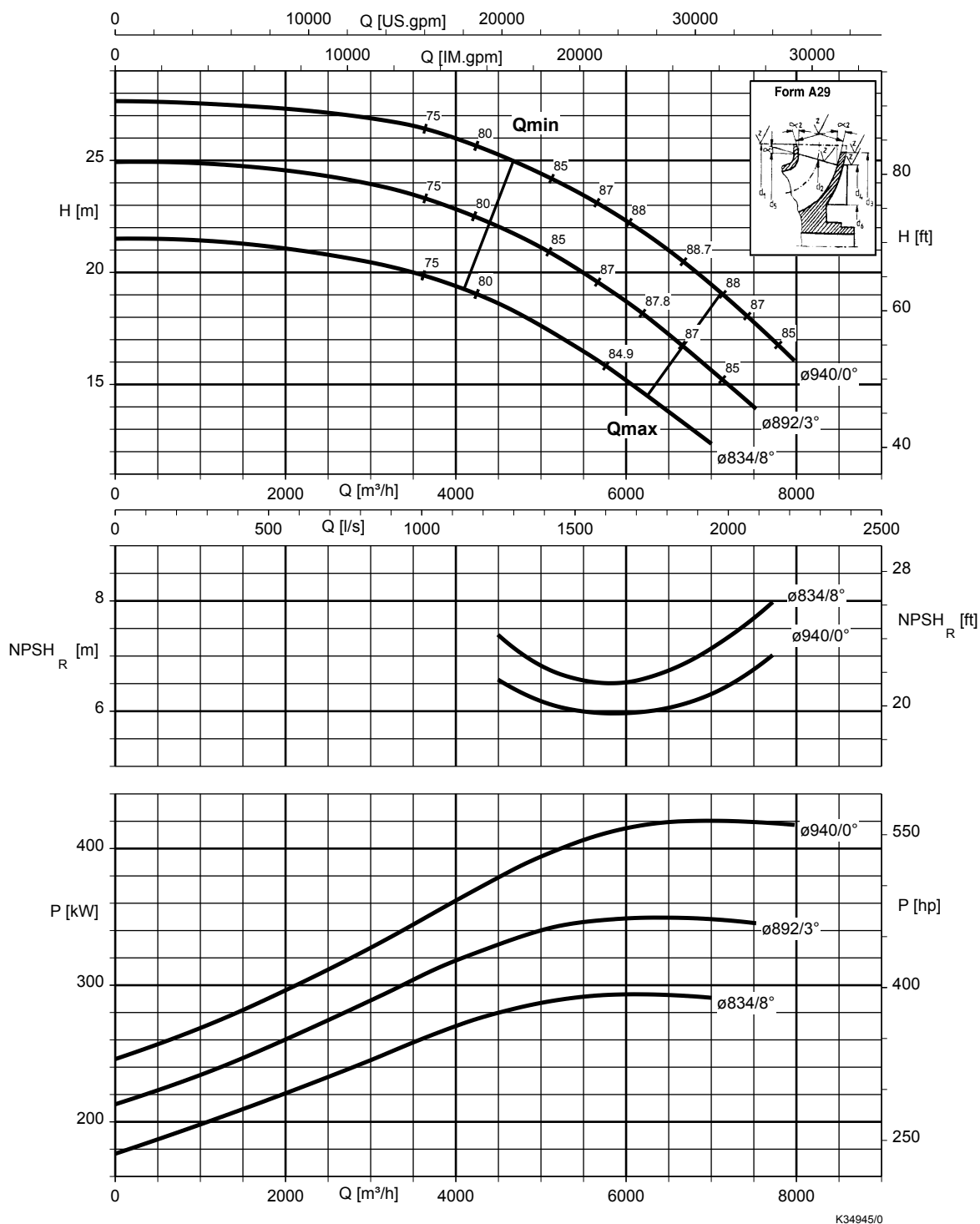
KWP K 700-700-923 ,  $n = 480 \text{ t/min}$



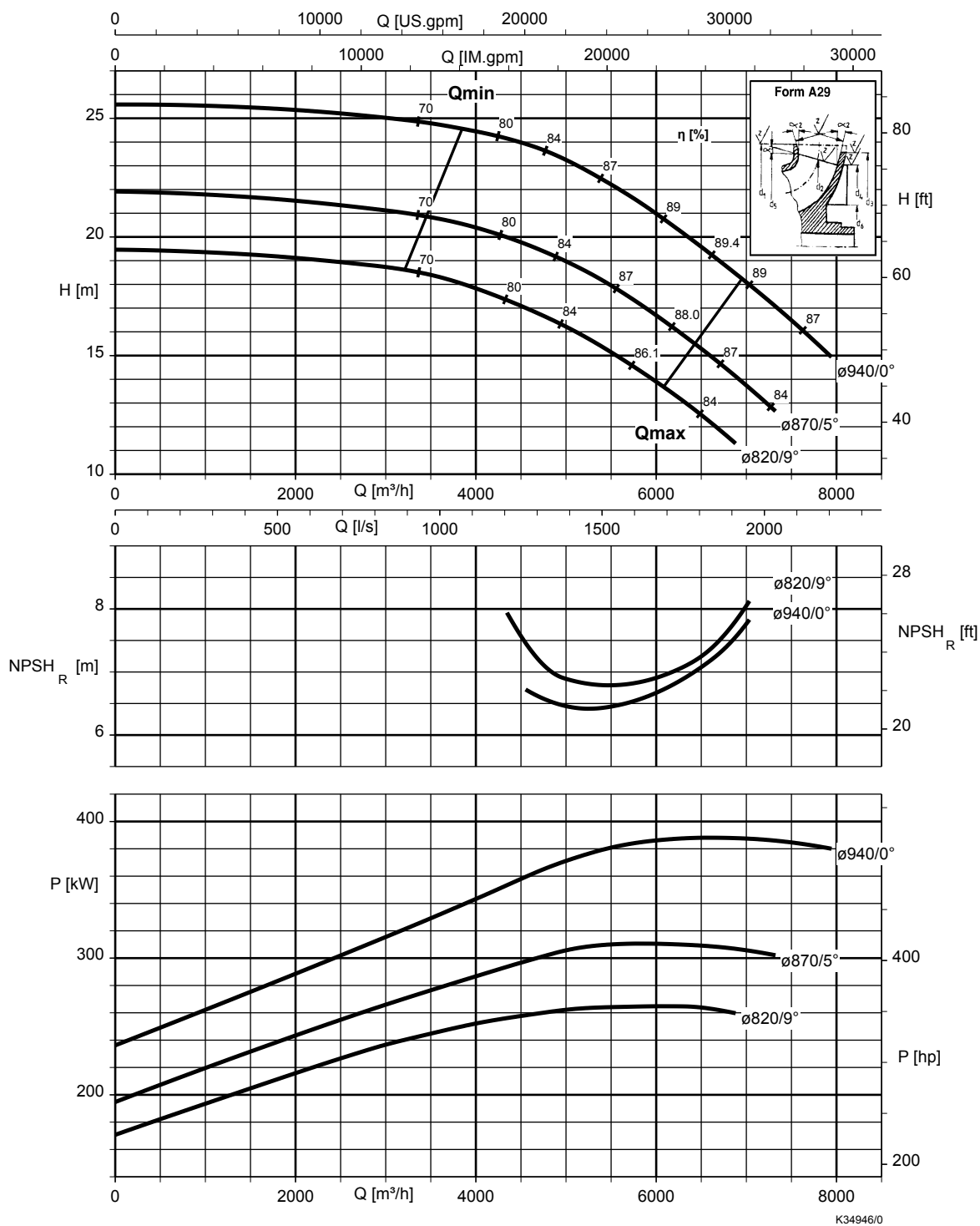
KWP K 700-700-929,  $n = 480 \text{ t/min}$



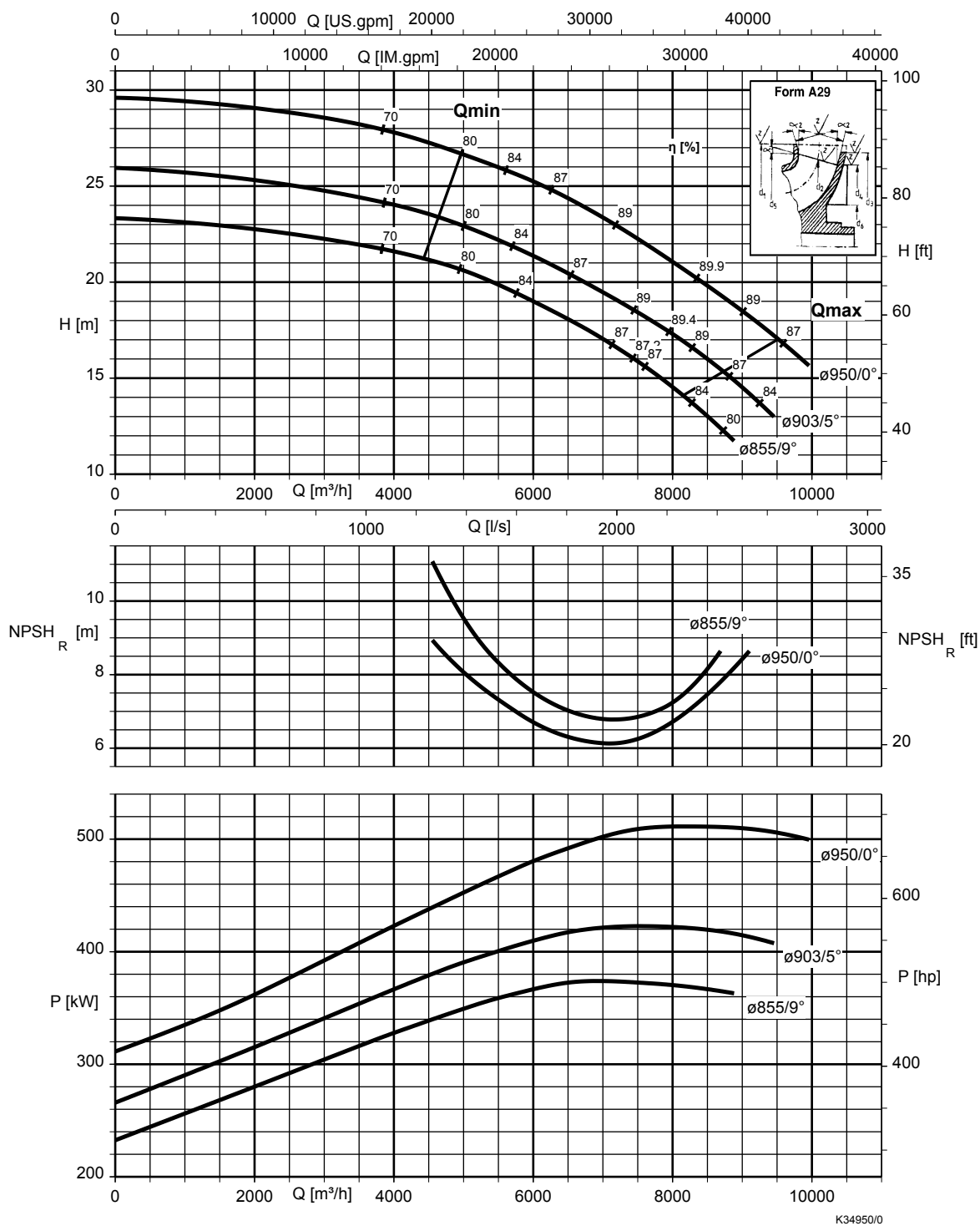
KWP K 800-700-953,  $n = 480 \text{ t/min}$



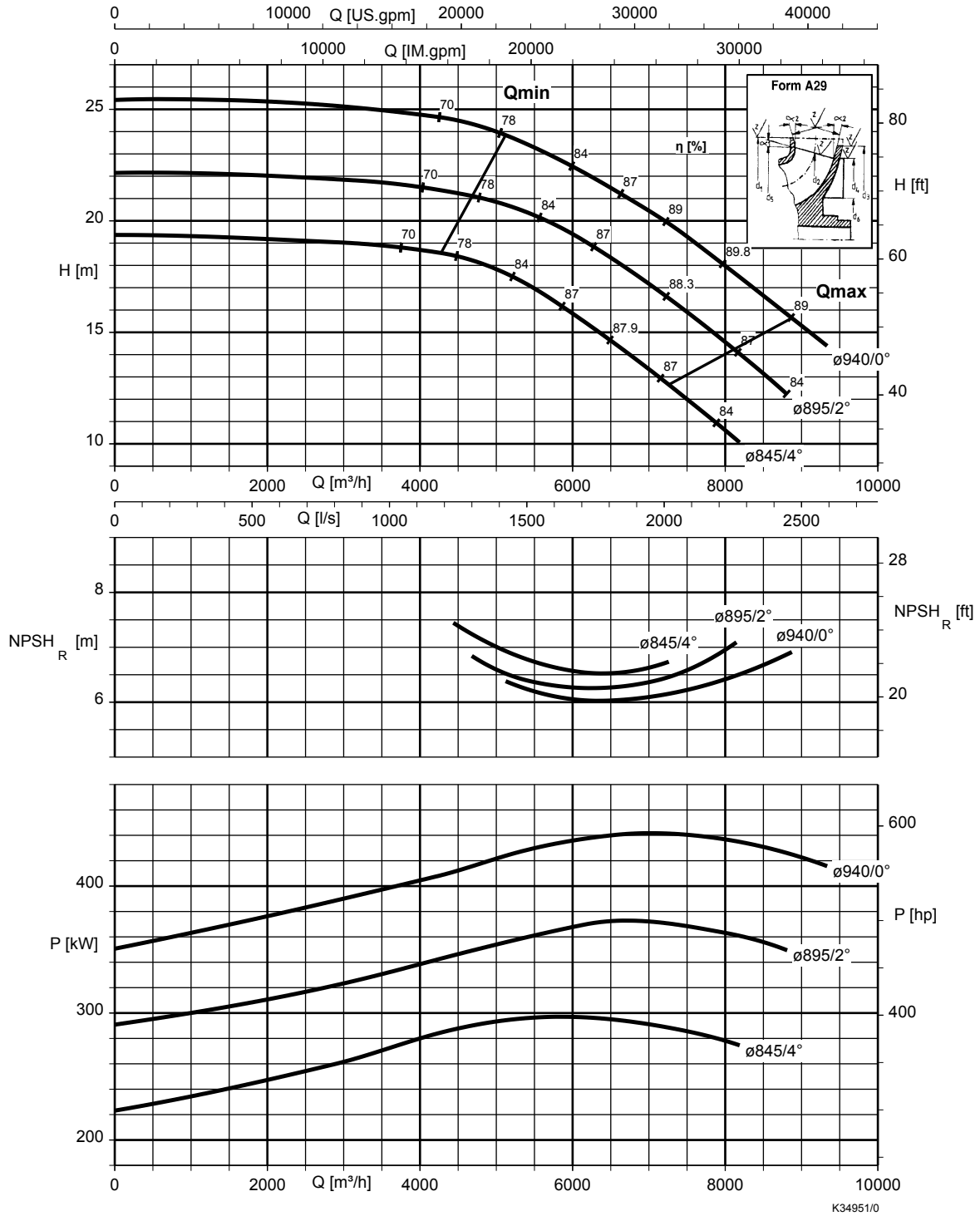
**KWP K 800-700-959, n = 480 t/min**



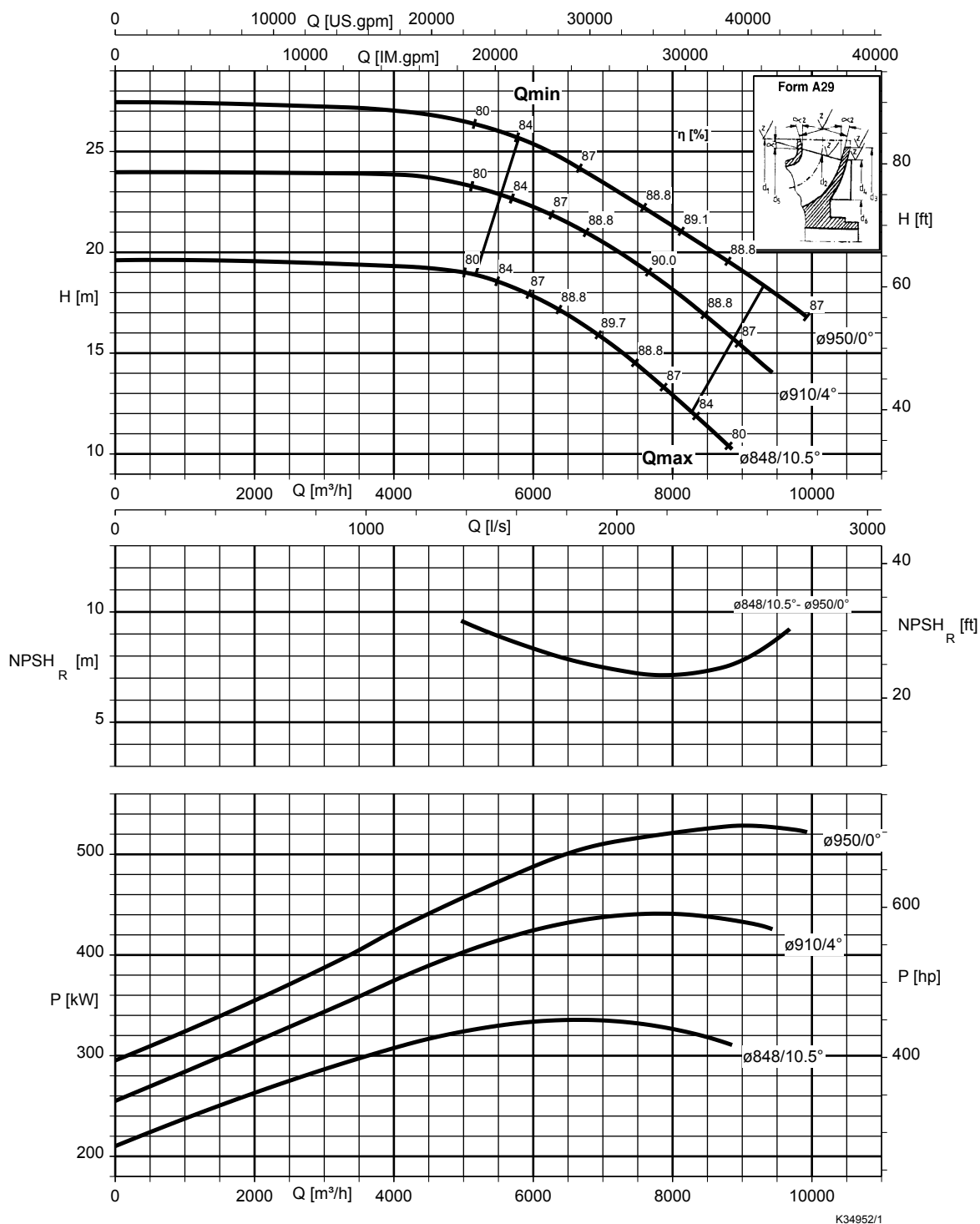
KWP K 800-800-934,  $n = 480 \text{ t/min}$



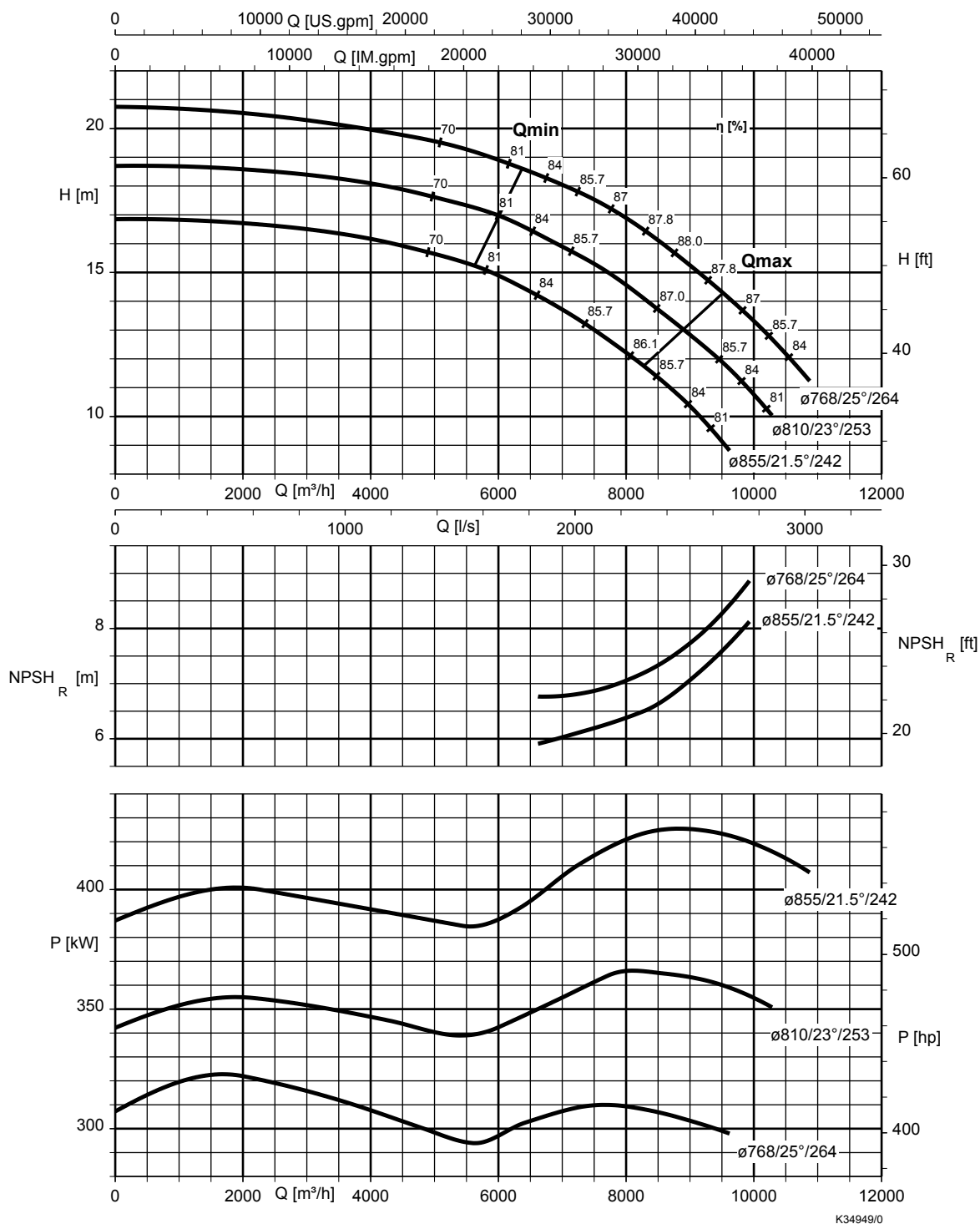
KWP K 800-800-935,  $n = 480 \text{ t/min}$



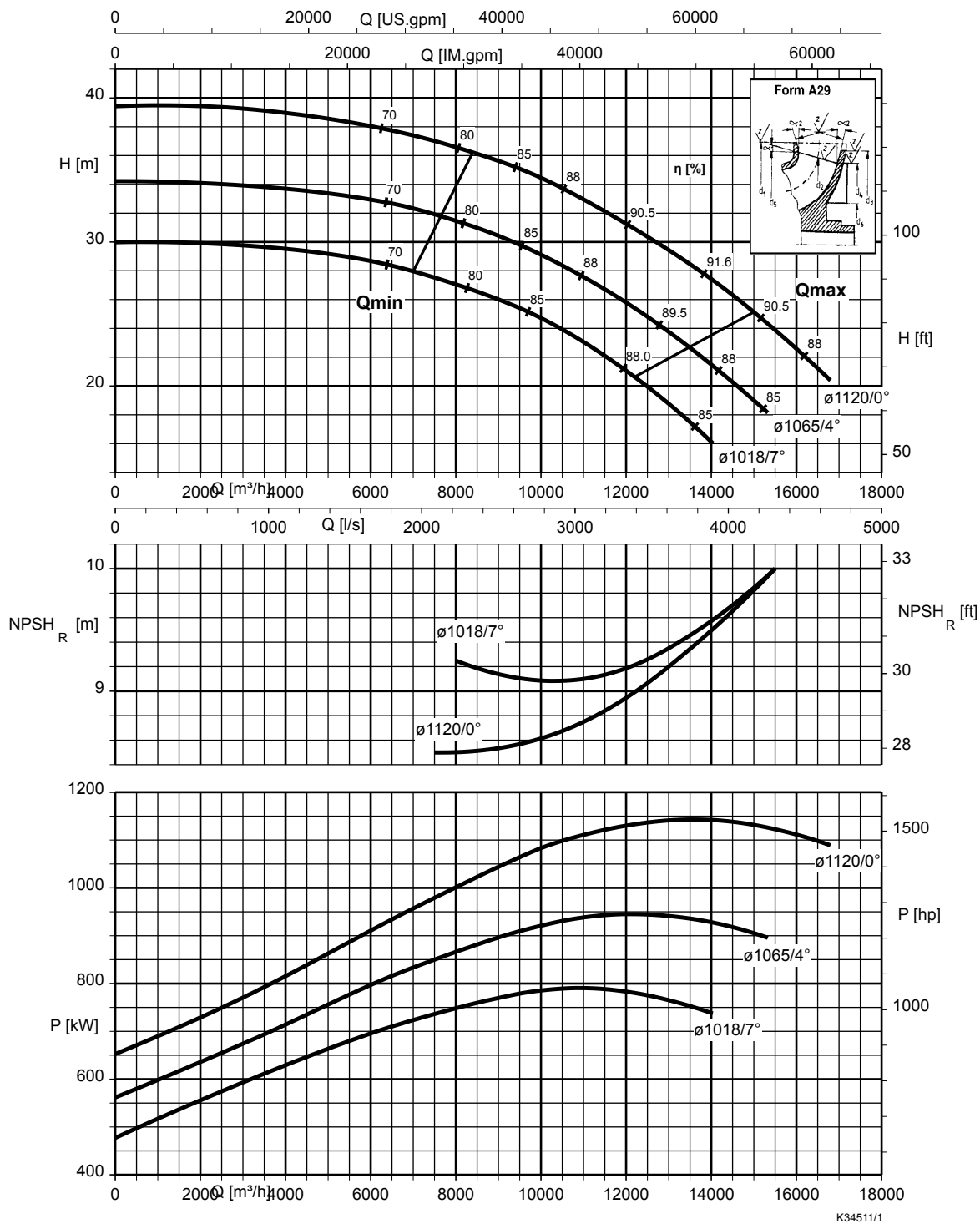
KWP K 800-800-939,  $n = 480 \text{ t/min}$



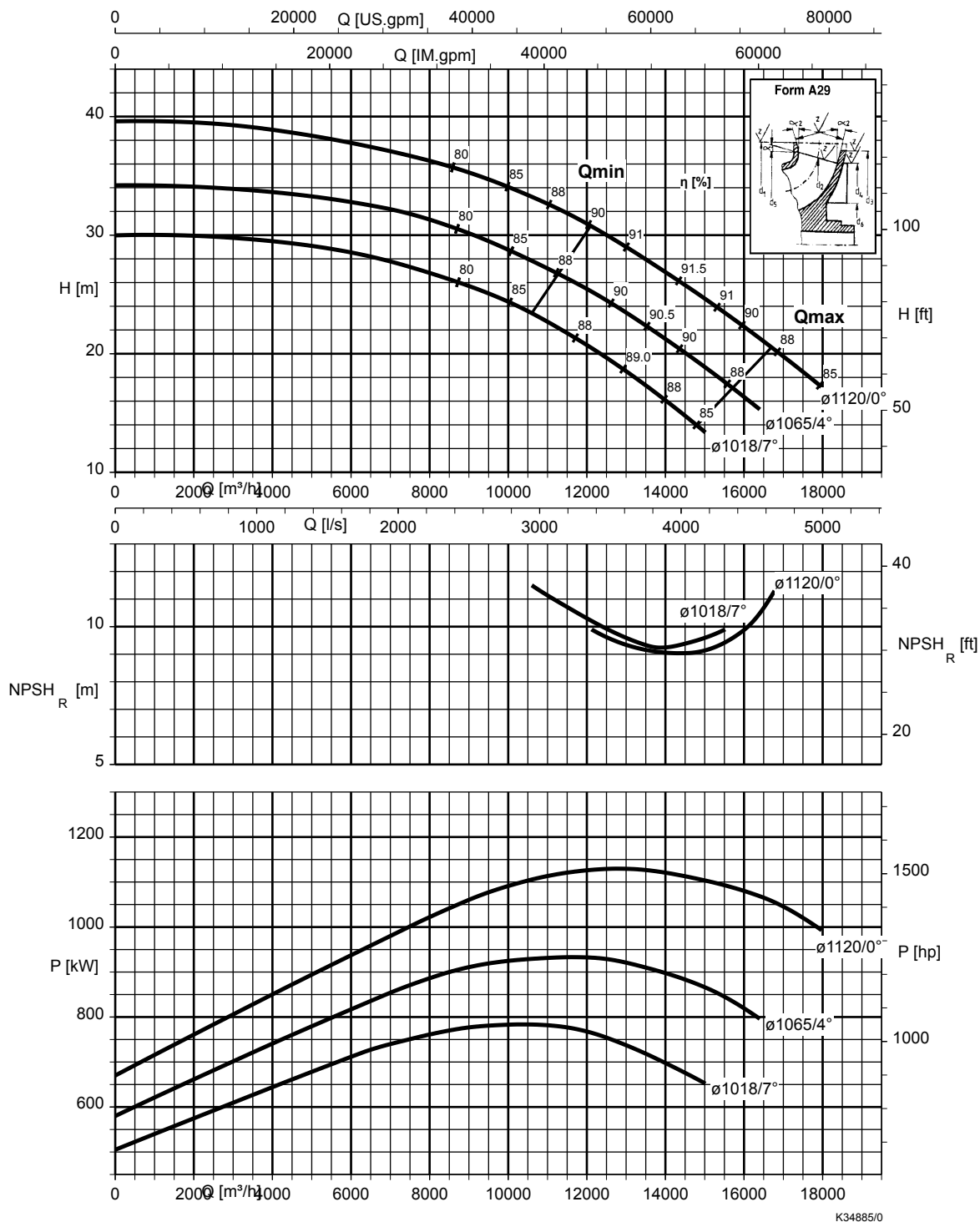
KWP K 800-900-883,  $n = 480 \text{ t/min}$



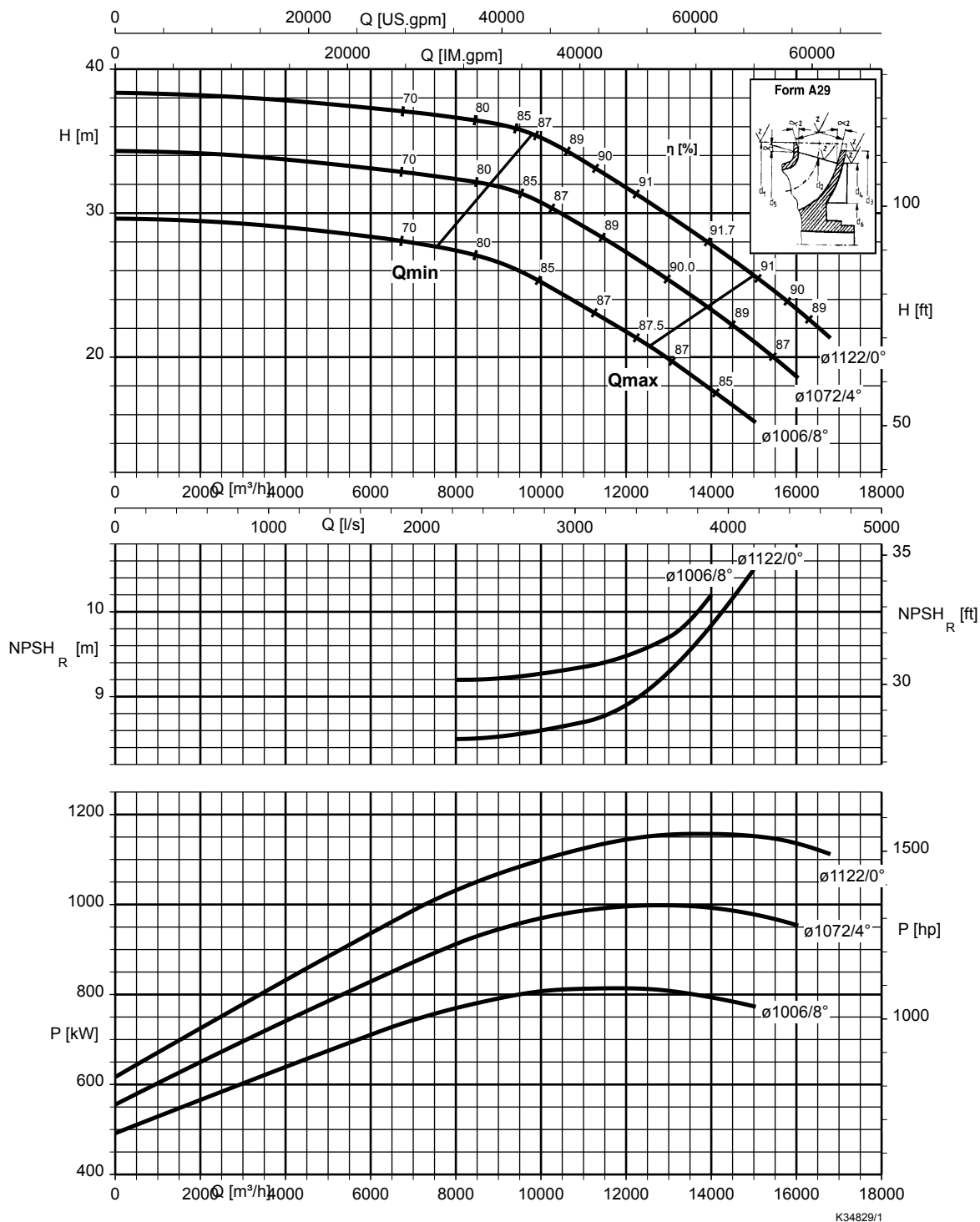
KWP K 900-900-1133,  $n = 480 \text{ t/min}$



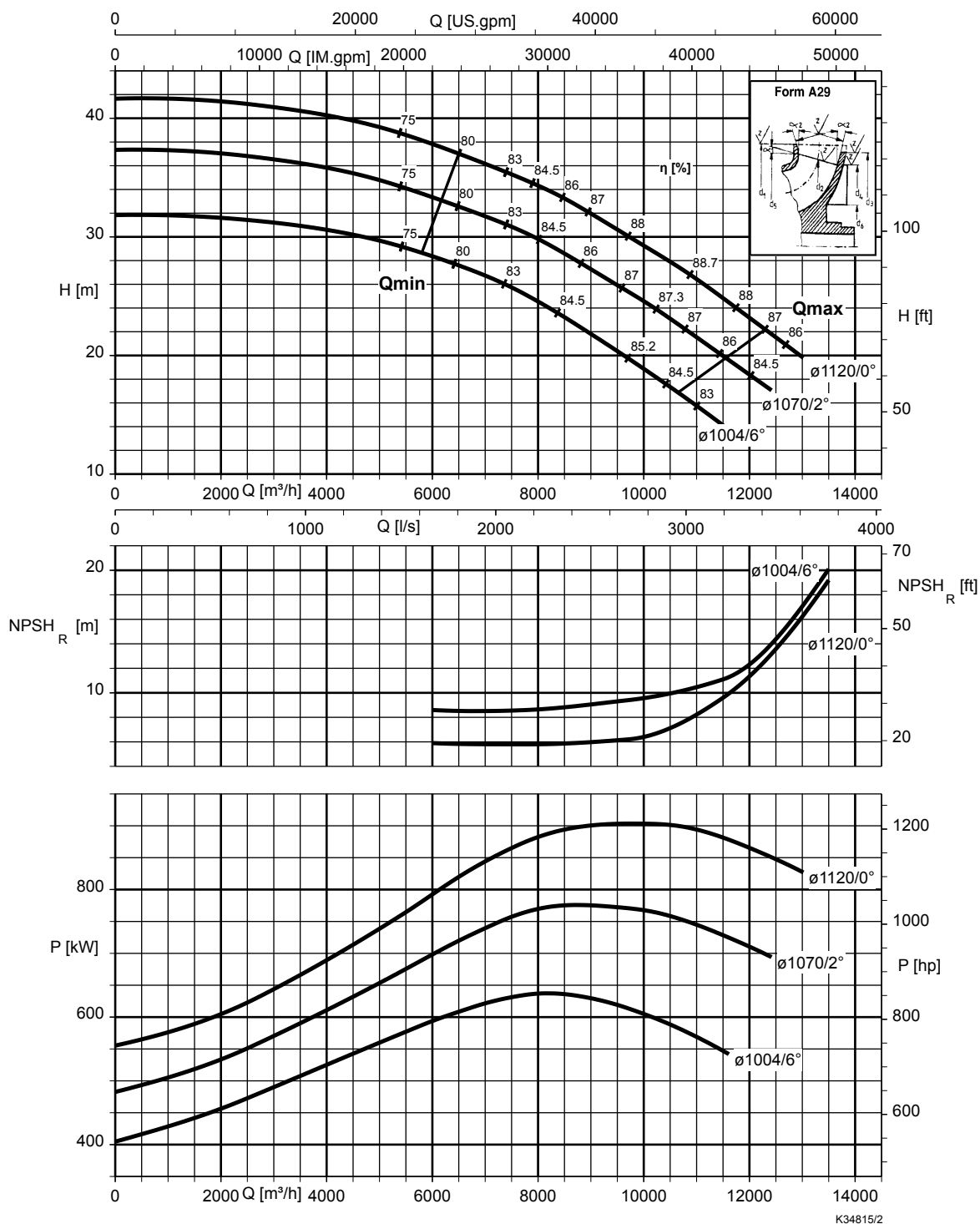
KWP K 900-900-1134,  $n = 480 \text{ t/min}$



KWP K 900-900-1138,  $n = 480 \text{ t/min}$



KWP K 900-900-1139,  $n = 480 \text{ t/min}$









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