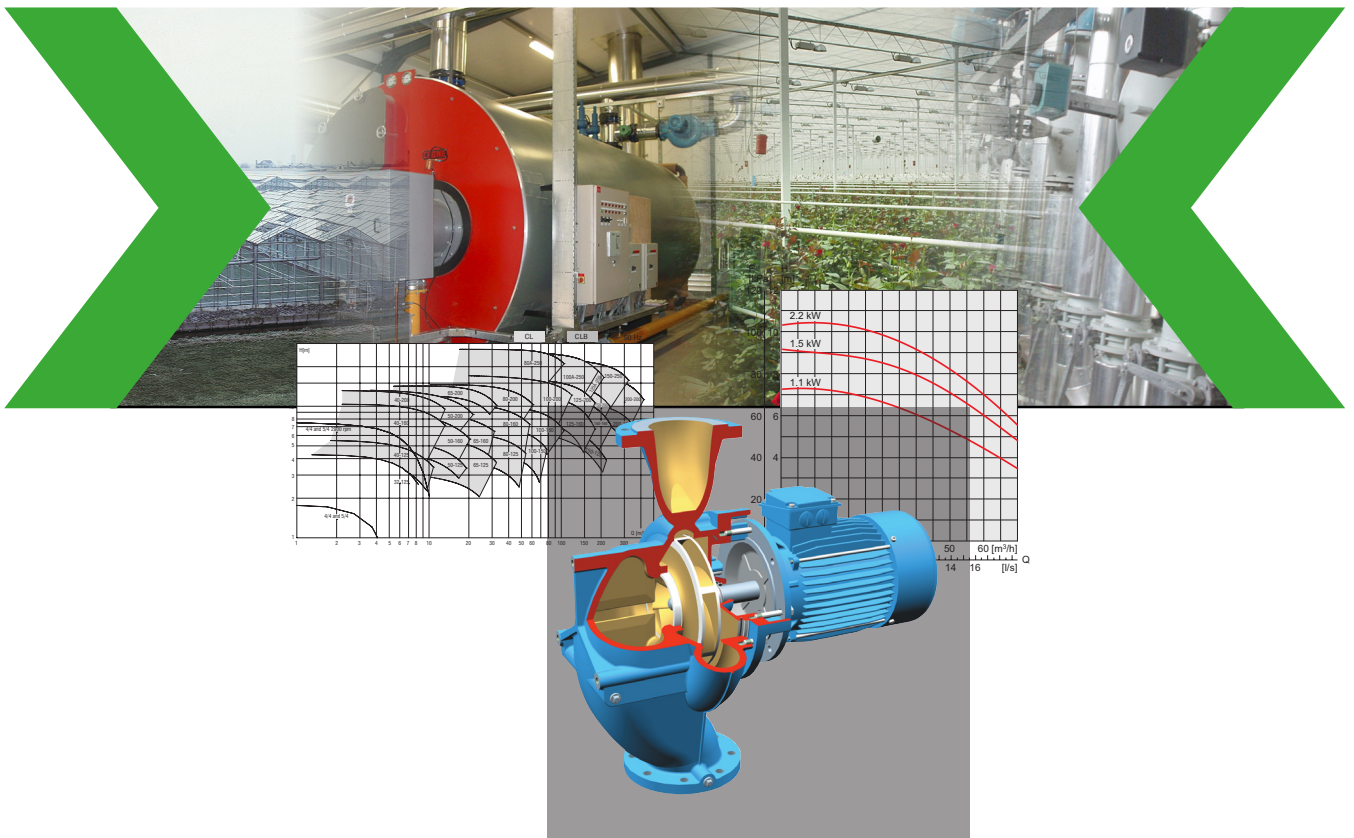




**JOHNSON PUMP**  
AN SPX BRAND

# Horticulture Circulation Pumps Performance Curves

## Circulatiepompen voor de Glastuinbouw Pompgrafieken



**motralec**

4 rue Lavoisier . ZA Lavoisier . 95223 HERBLAY CEDEX  
Tel. : 01.39.97.65.10 / Fax. : 01.39.97.68.48  
Demande de prix / e-mail : [service-commercial@motralec.com](mailto:service-commercial@motralec.com)  
[www.motralec.com](http://www.motralec.com)

**SPX**<sup>®</sup>

## Performance curves

[www.motralec.com](http://www.motralec.com)

## Pompgrafieken

This booklet with performance curves will help to select the proper pump, needed for your application. The curves printed in this booklet are typical for use in Horticulture Greenhouse applications. This means that in general the pumps are mostly driven by a 4 or 6 pole electric motor.

In many applications the pump drive is controlled by a frequency converter to obtain variable motor speed. In this case it is advised to use the pump selection guiding software program "Hydraulic Investigator". With this program it is possible to simulate variable drive speeds of the pump in order to get a detailed view of the energy consumption at different conditions during pump operation.

The impeller diameters have been established to make optimal use of the available motor power. For pump types CL80A-250 and CBH80-250 and larger it is also possible to select an impeller diameter in between, refer to "Hydraulic Investigator".

When a pump is required with variable speed by means of frequency control, the frequency at peak load will be maximally 60 Hz. In this case the pump must be selected with a speed at 60 Hz, impeller diameter and motor power are optimized for this situation. In case the frequency converter will be used at a maximum of 50 Hz, then a pump must be selected with a speed at 50 Hz. In "Hydraulic Investigator" the performance curves are shown for standard electric motor speeds, which will depend on the motor power.

Met behulp van de grafieken in dit boekje is het mogelijk een selectie te maken van het juiste pomptype. De hier getoonde grafieken zijn speciaal uitgelegd voor toepassing van de pompen in de glastuinbouw. Dit houdt in dat de pompen in het algemeen met 4- of 6 polige motoren worden uitgevoerd.

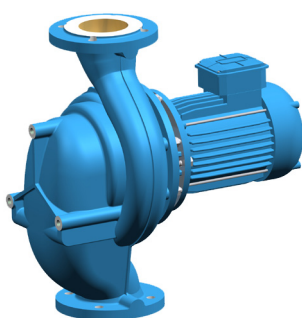
Aangezien de pompen ook veelal worden uitgevoerd met frequentiegestuurde toerentalregeling, wordt aanbevolen hierbij gebruik te maken van het pompsselectie programma "Hydraulic Investigator". Hierin kan gemakkelijk het toerental van de pomp gevarieerd worden om gedetailleerd inzicht te krijgen in het energieverbruik bij verschillende omstandigheden.

De waaierdiameters zijn zodanig bepaald dat optimaal gebruik wordt gemaakt van het beschikbare motorvermogen. Bij de pomptypes CL80A-250 en CBH80-250 en groter is het ook mogelijk tussenliggende waaierdiameters te kiezen, raadpleeg hiervoor "Hydraulic Investigator".

Wanneer een pomp geselecteerd wordt met frequentieregeling, moet worden uitgegaan van een maximum frequentie van 60 Hz voor piekbelasting. Er moet dan dus een pomp geselecteerd worden op het toerental van 60 Hz, waaierdiameter en motorvermogen zijn dan precies op elkaar afgestemd. Wordt frequentieregeling tot maximaal 50 Hz toegepast, dan volstaat pompsselectie op een toerental van 50 Hz. In "Hydraulic Investigator" wordt gewerkt met standaard elektromotor toerentalen, deze zijn afhankelijk van het opgenomen pompvermogen.

Net frequency Net frequentie	Power Vermogen	Standard speed [min <sup>-1</sup> ] Standaard toerental [min <sup>-1</sup> ]		
		2900	1450	950
50 Hz	≤ 15 kW	2900	1450	950
50 Hz	> 15 kW	2960	1480	970
60 Hz	≤ 15 kW	3500	1750	1150
60 Hz	> 15 kW	3550	1780	1170

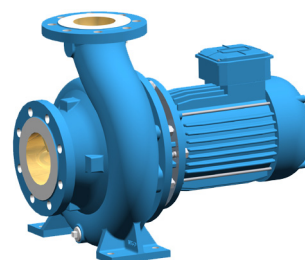
The special delivery program for horticulture applications comprises the following pump families:  
 Het speciale leveringsprogramma voor toepassing in de tuinbouw omvat de volgende pompfamilies:



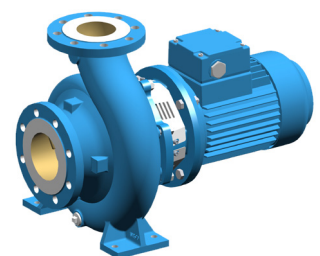
CombiLine (CL)



CombiLineBloc (CLB)



CombiBlocHorti (CBH)



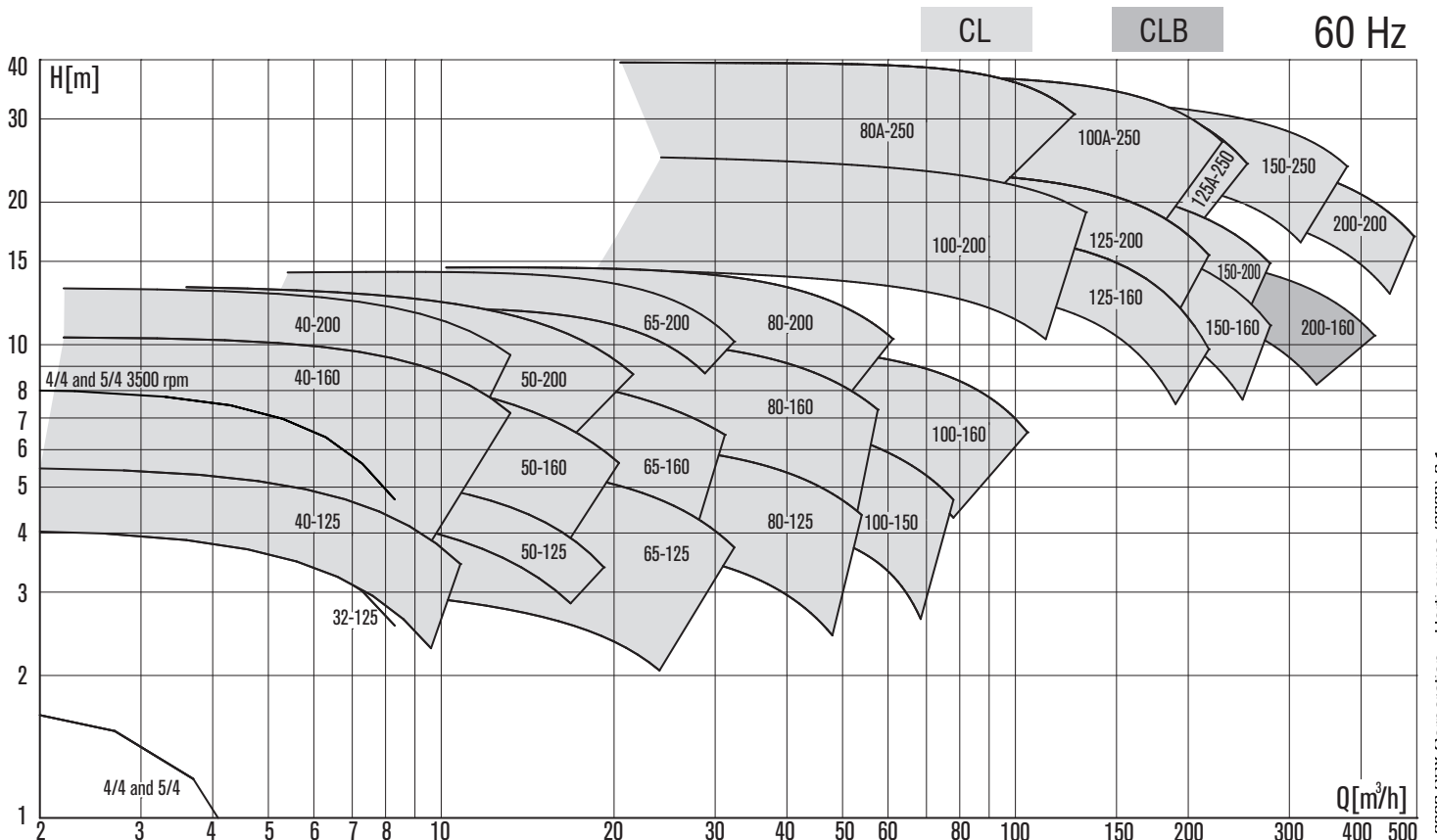
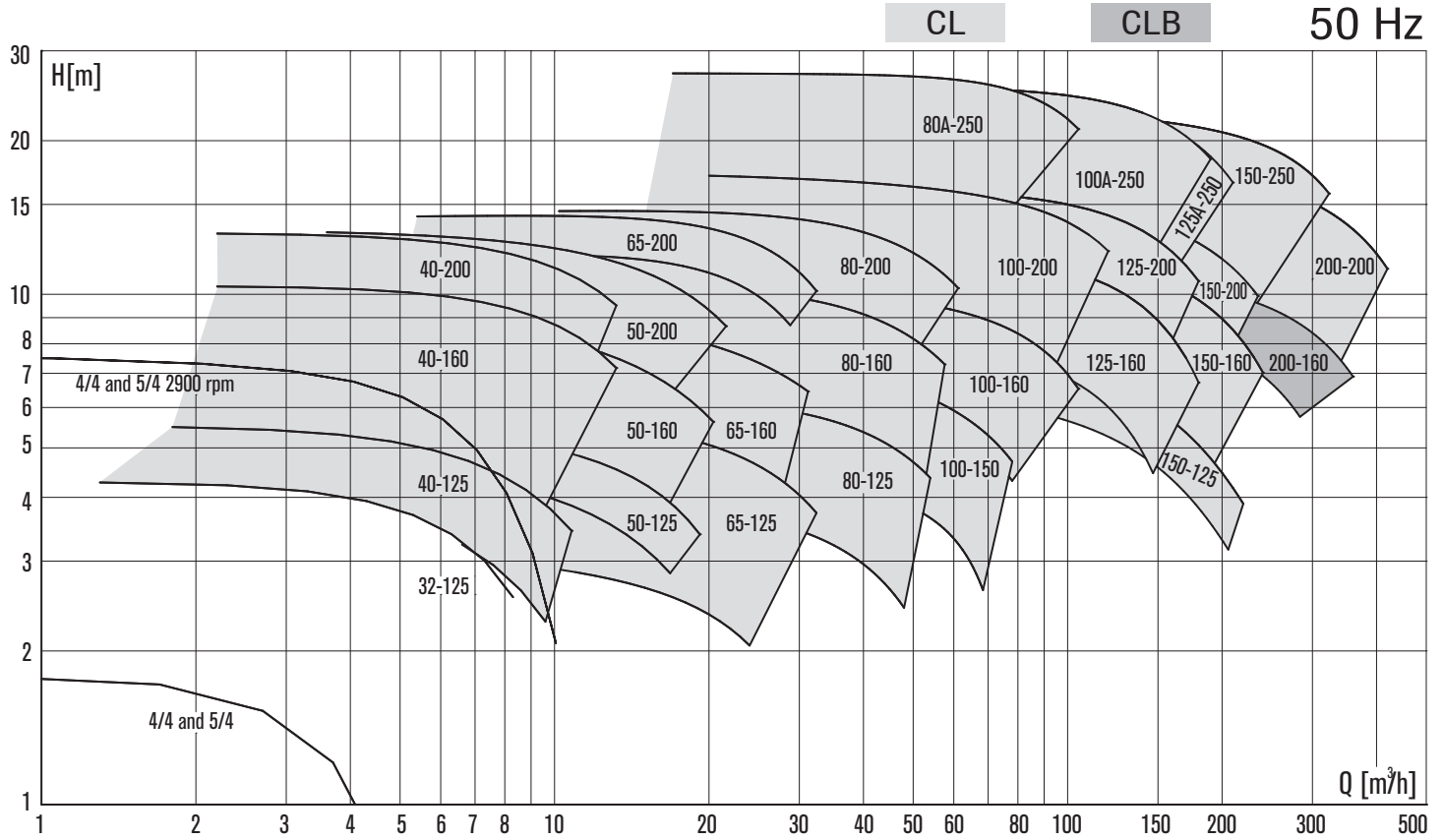
CombiBloc (CB)

# Hydraulic flow field In-line pumps with 4 pole motors

These performance curves are based on standard electric motor speeds and refer to water with a temperature of 20 °C.

# Overzichtsgrafiek In-line pompen met 4 polige motoren

Deze overzichtsgrafieken zijn gebaseerd op standaard toerentallen voor elektromotoren en water met een temperatuur van 20 °C.

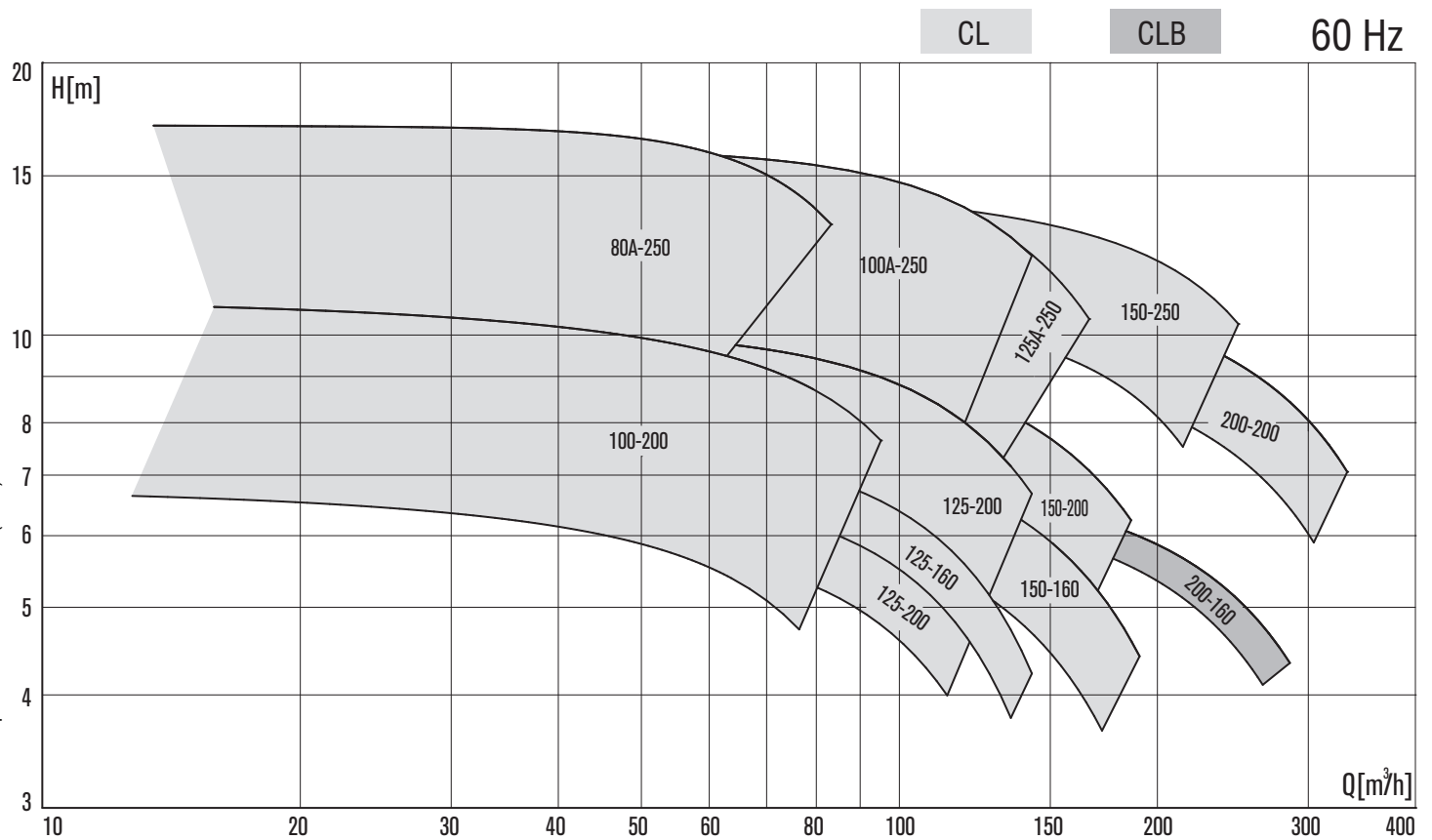
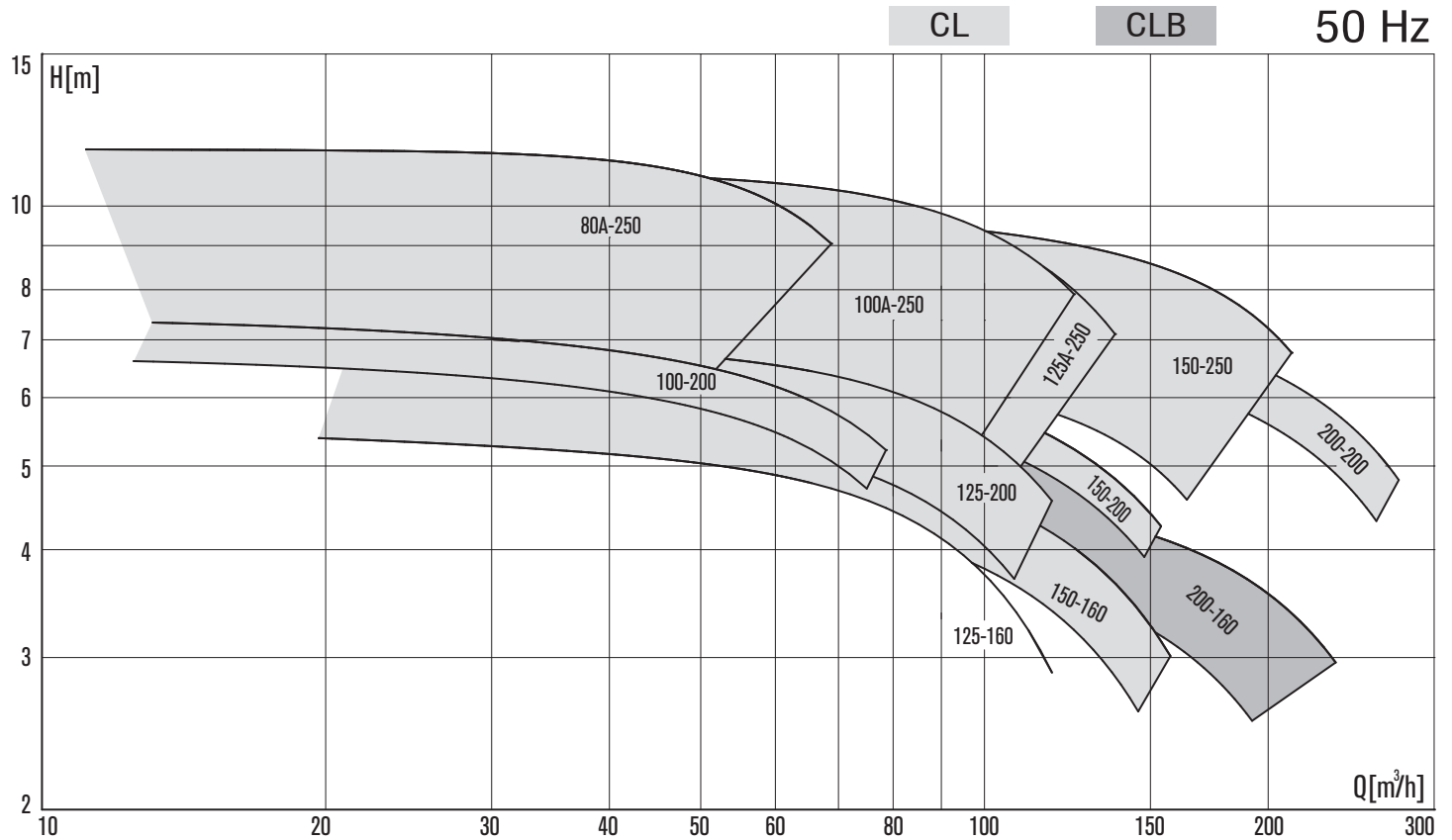


# Hydraulic flow field In-line pumps with 6 pole motors

These performance curves are based on standard electric motor speeds and refer to water with a temperature of 20 °C.

# Overzichtsgrafiek In-line pompen met 6 polige motoren

Deze overzichtsgrafieken zijn gebaseerd op standaard toerentallen voor elektromotoren en water met een temperatuur van 20 °C.

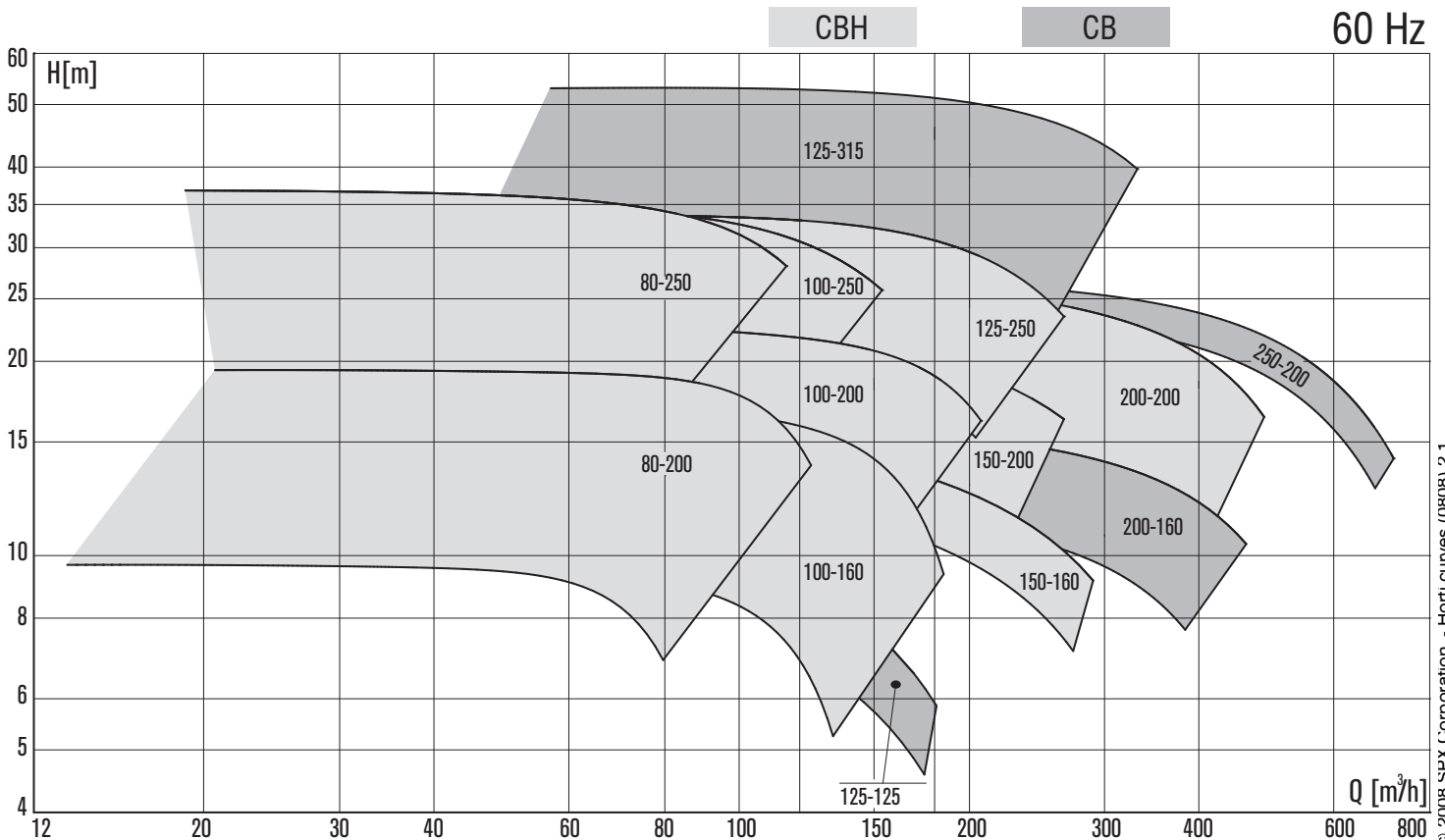
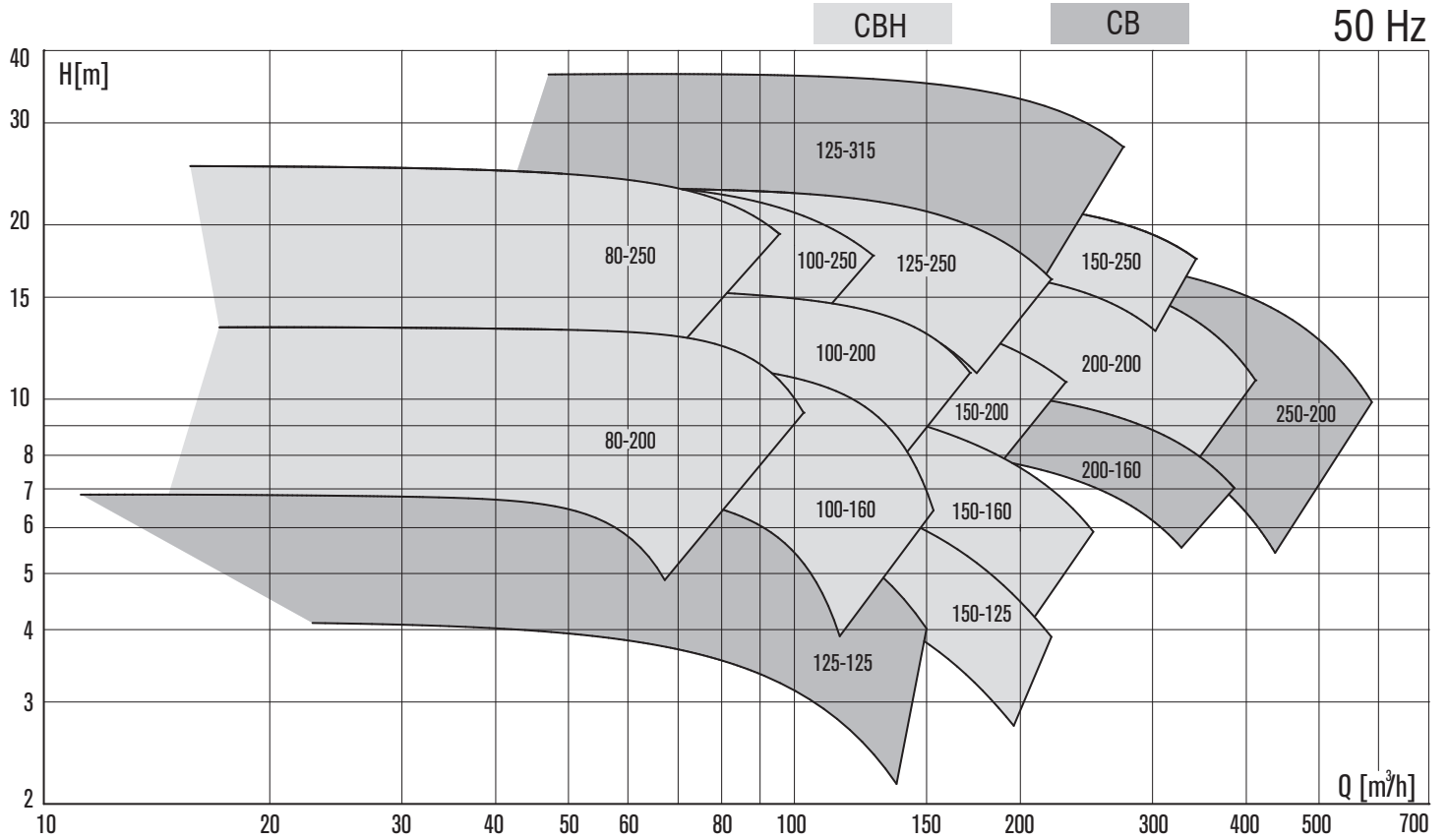


# Hydraulic flow field foot-mounted pumps with 4 pole motors

These performance curves are based on standard electric motor speeds and refer to water with a temperature of 20 °C.

# Overzichtsgrafiek voetondersteunde pompen met 4 polige motoren

Deze overzichtsgrafieken zijn gebaseerd op standaard toerentallen voor elektromotoren en water met een temperatuur van 20 °C.

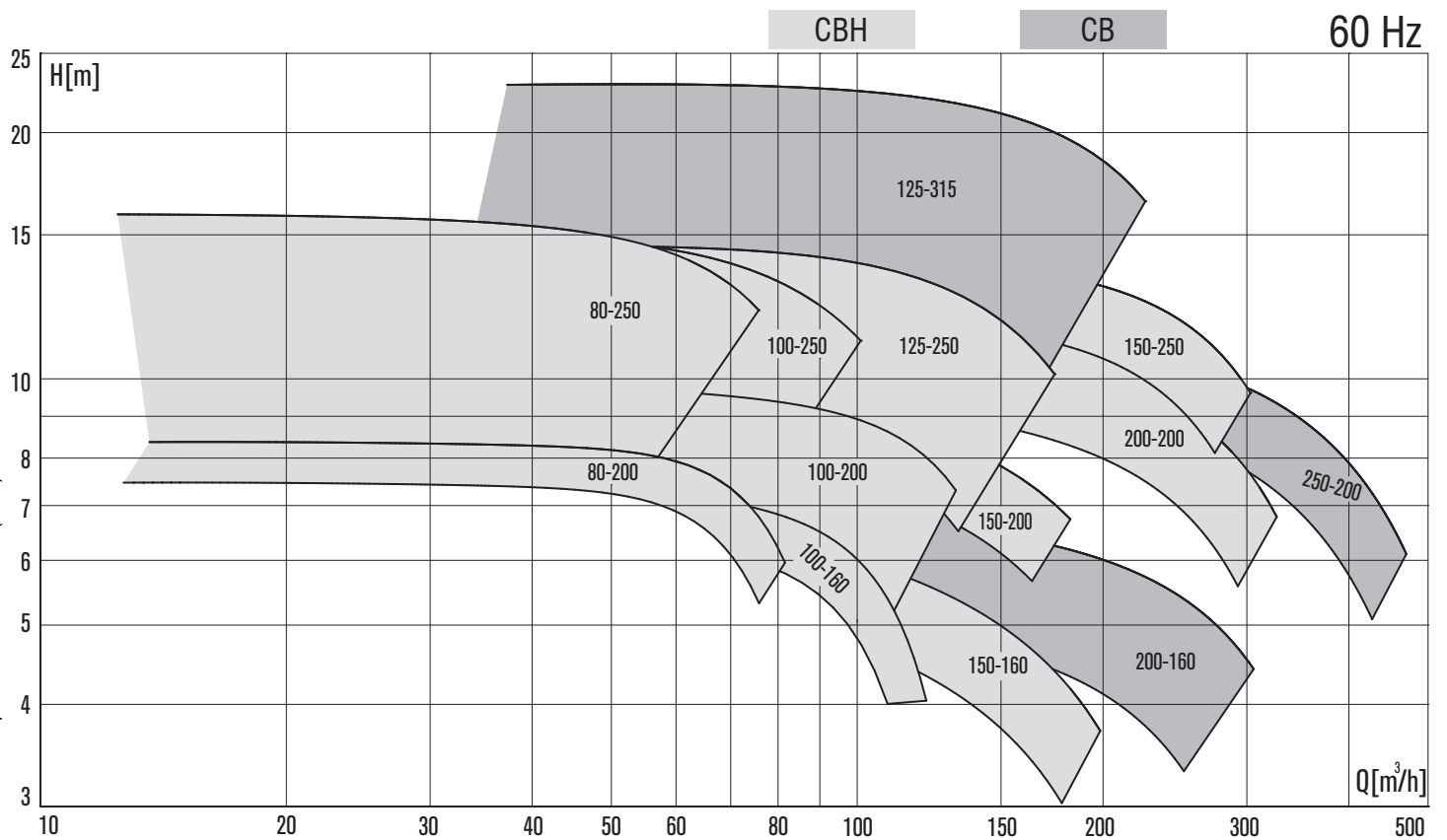
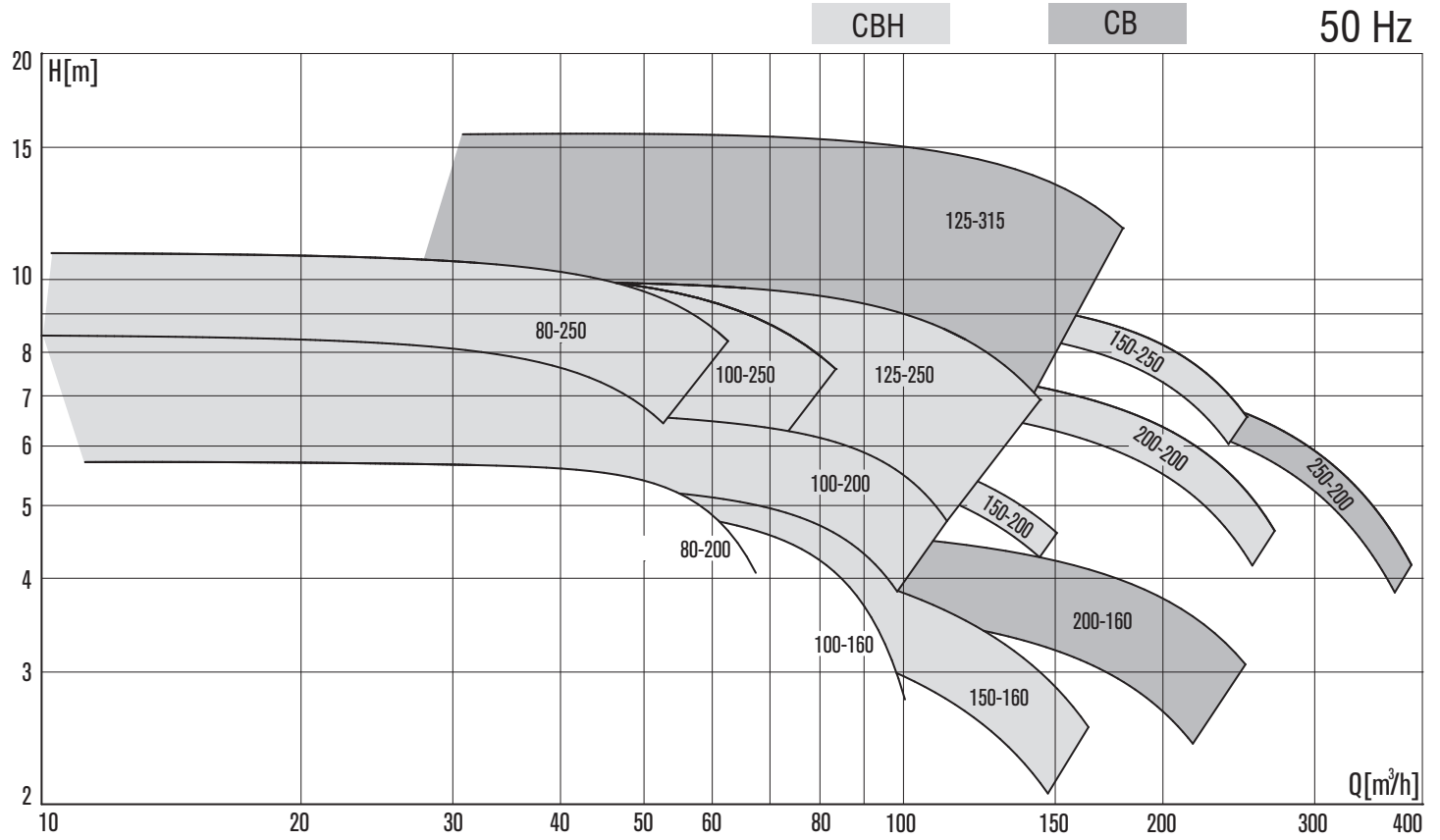


# Hydraulic flow field foot-mounted pumps with 6 pole motors

These performance curves are based on standard electric motor speeds and refer to water with a temperature of 20 °C.

# Overzichtsgrafiek voetondersteunde pompen met 6 polige motoren

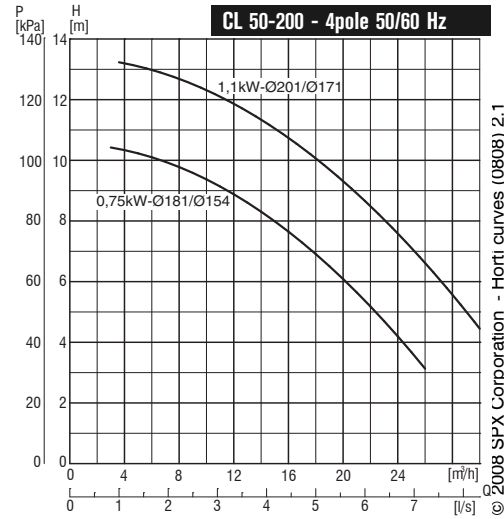
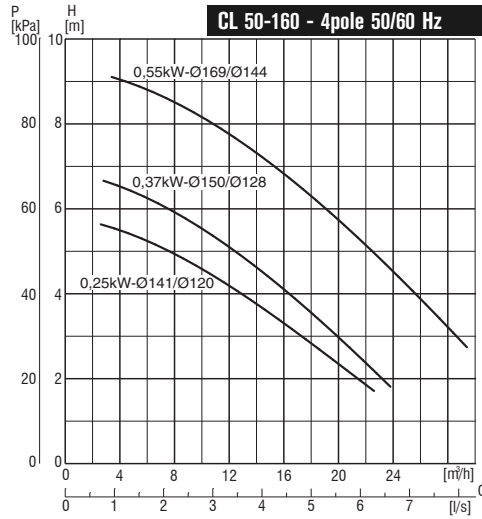
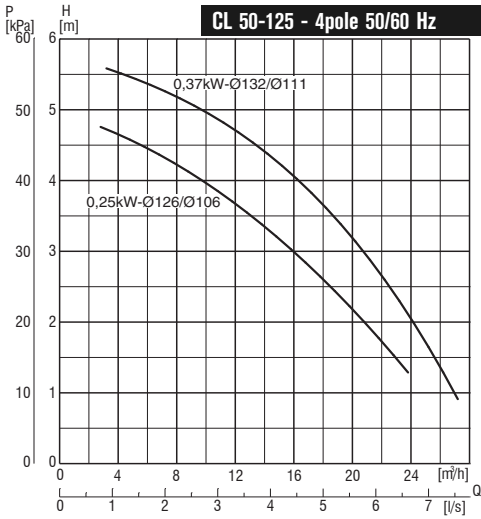
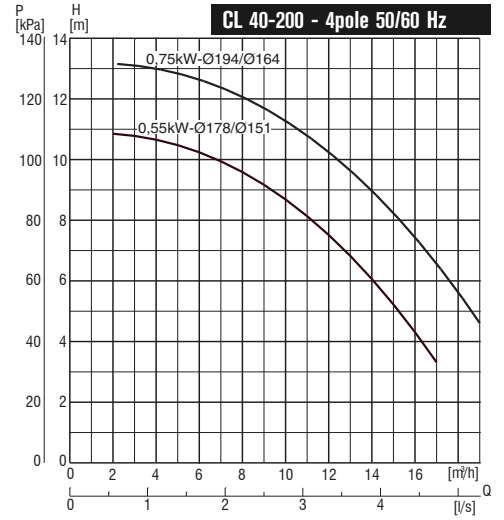
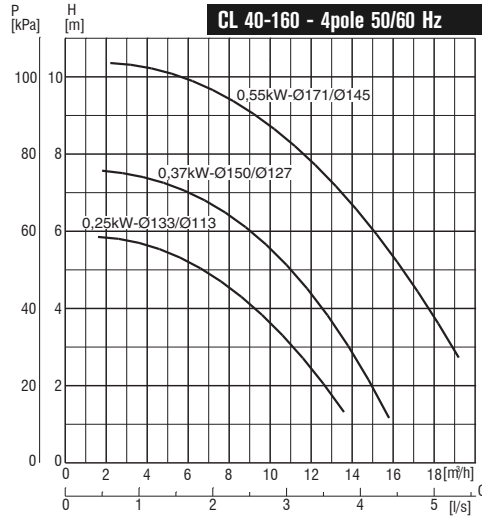
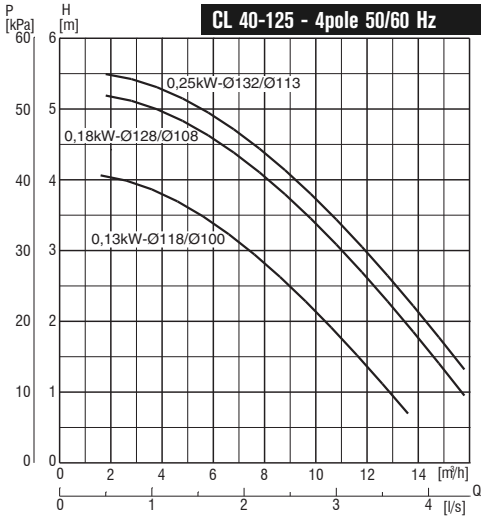
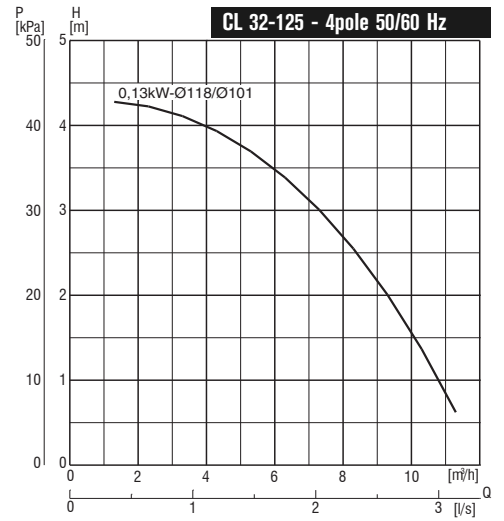
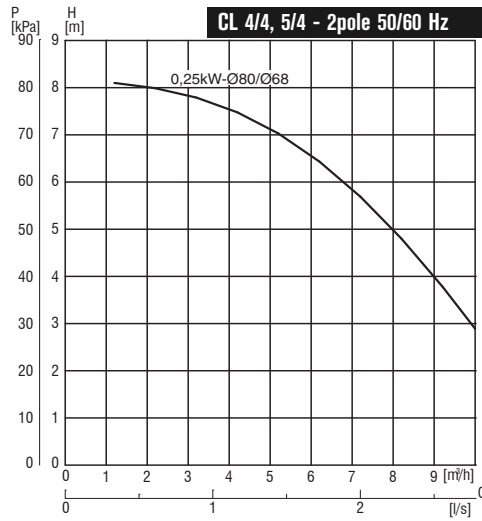
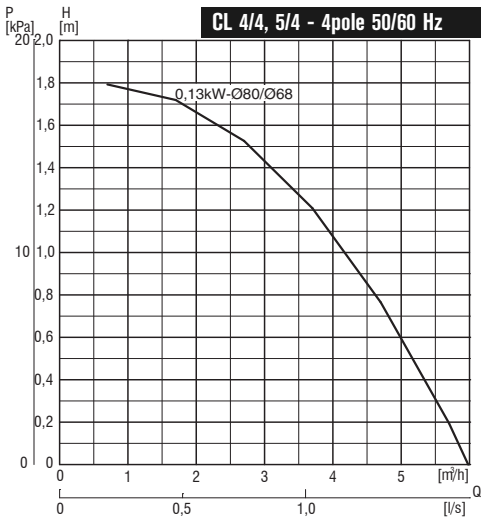
Deze overzichtsgrafieken zijn gebaseerd op standaard toerentallen voor elektromotoren en water met een temperatuur van 20 °C.

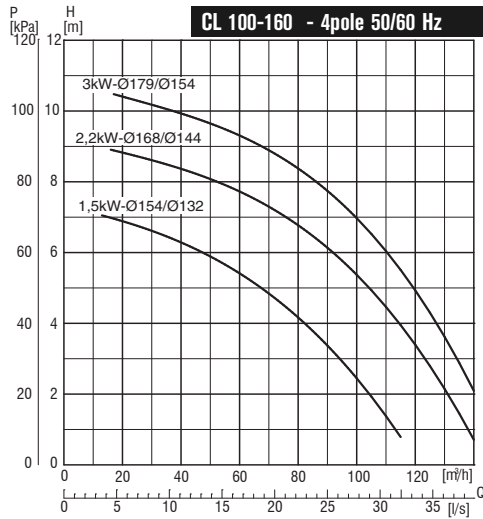
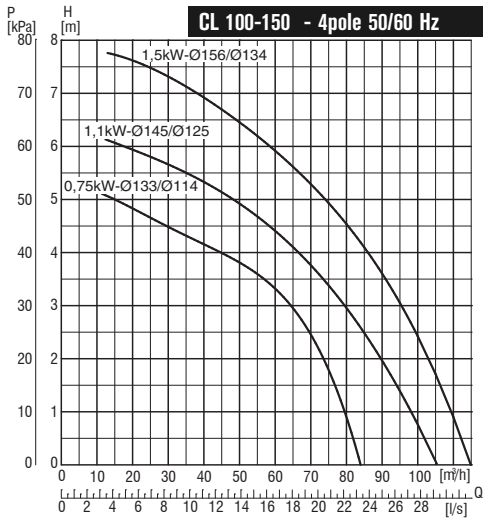
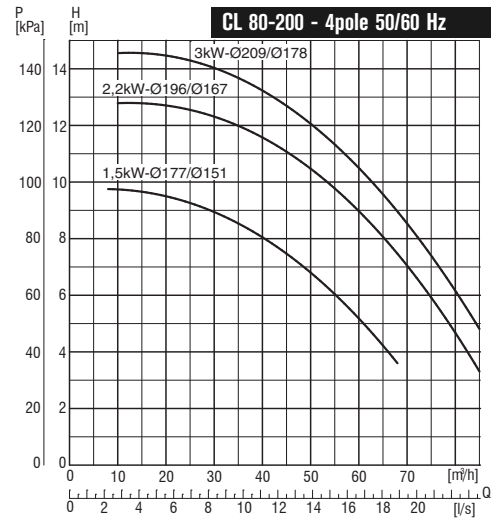
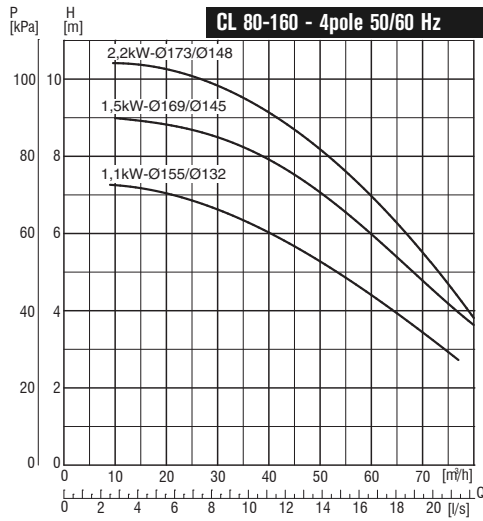
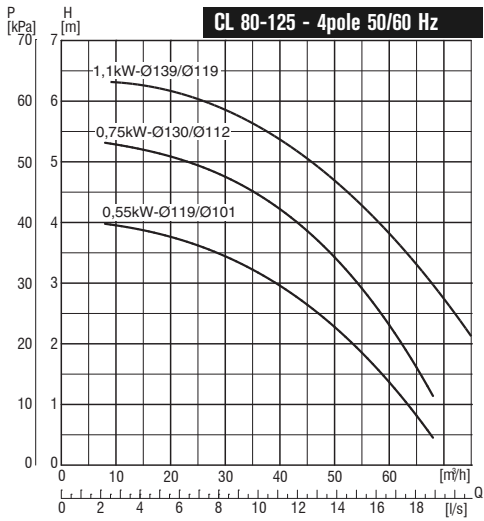
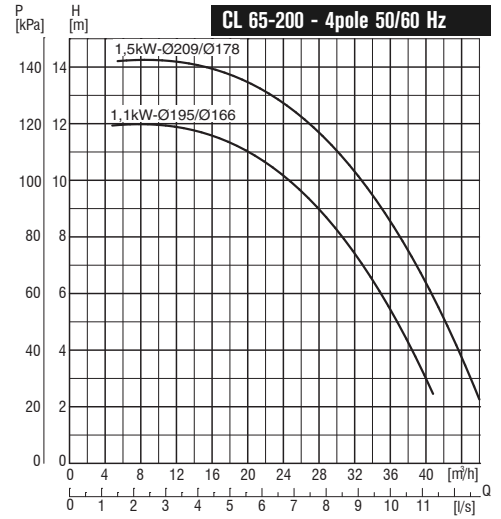
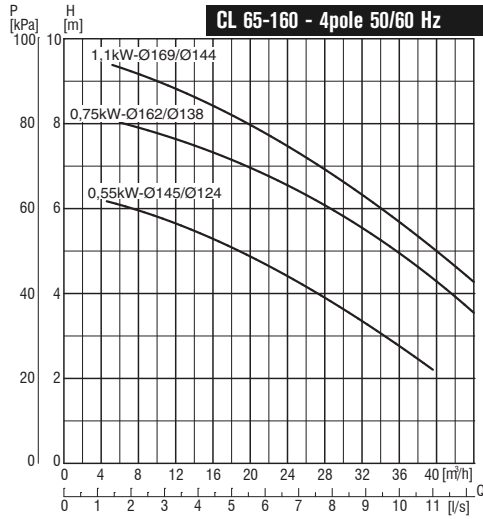
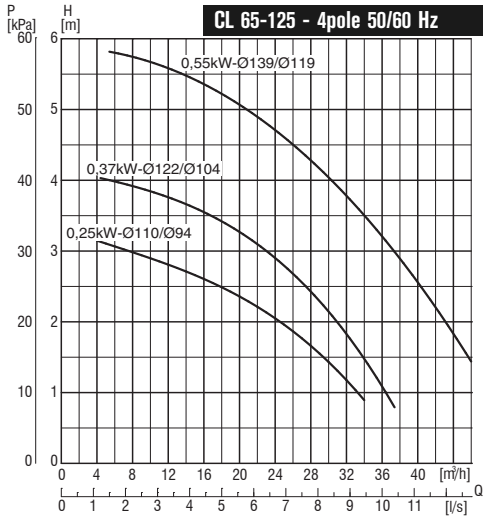


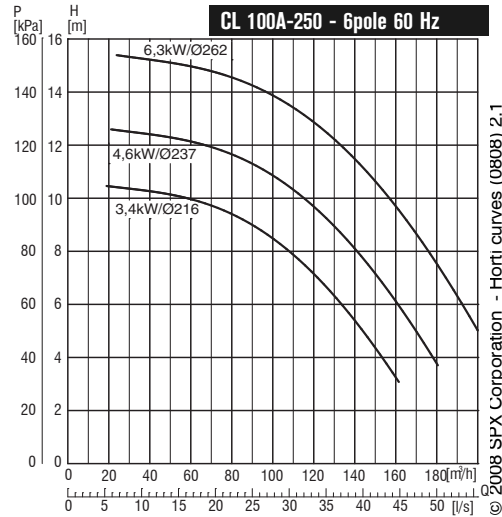
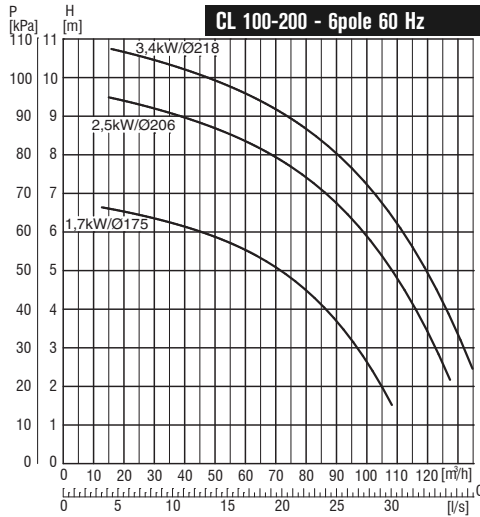
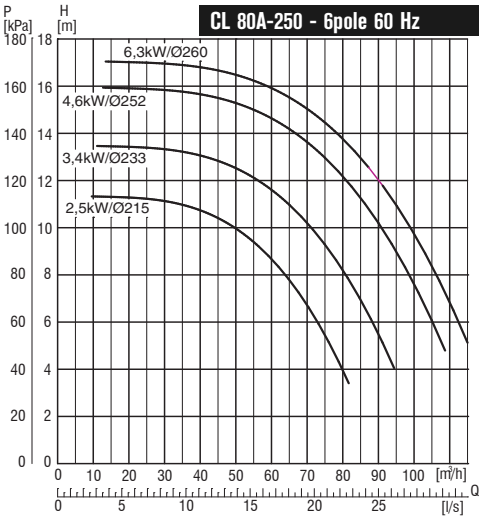
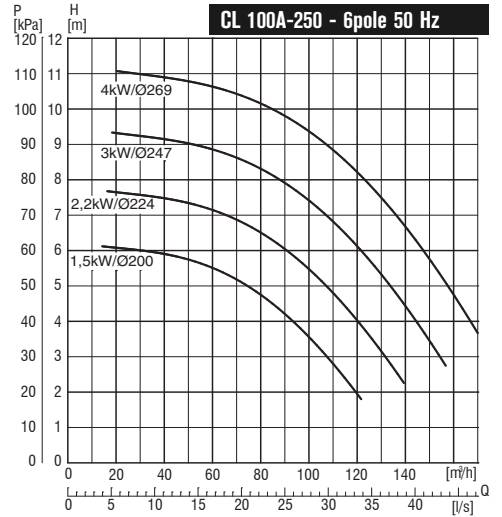
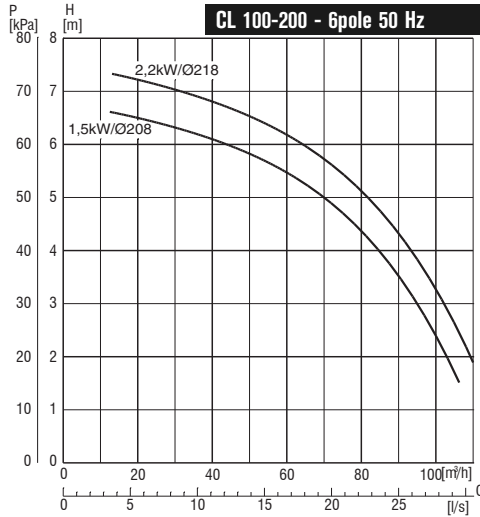
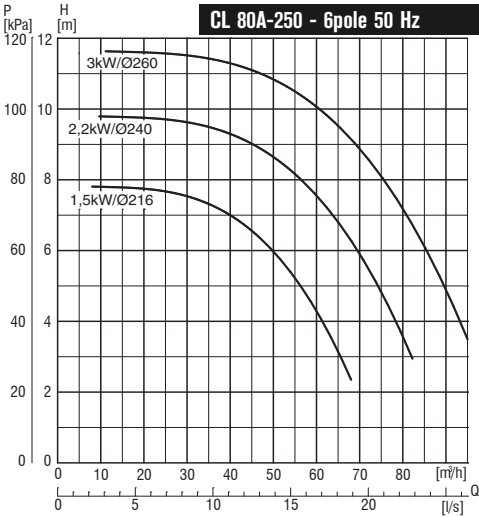
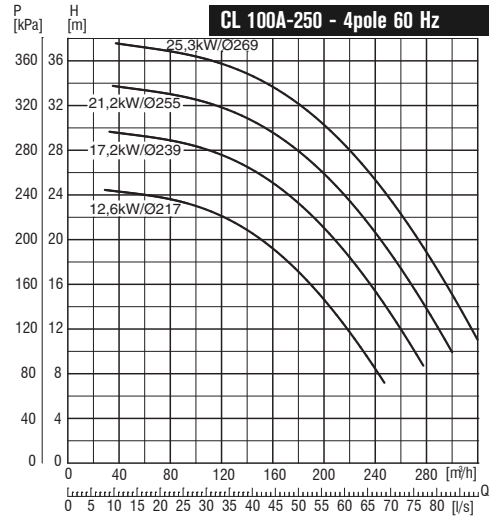
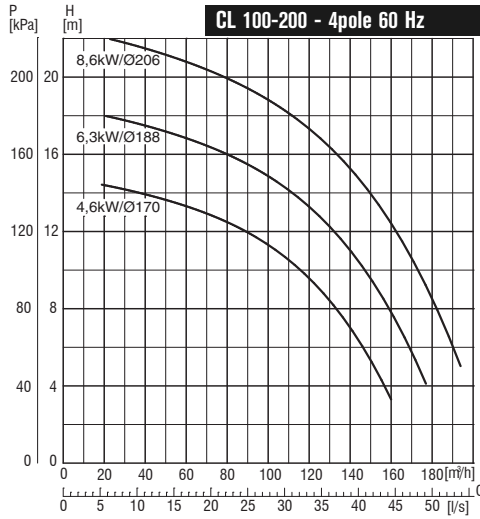
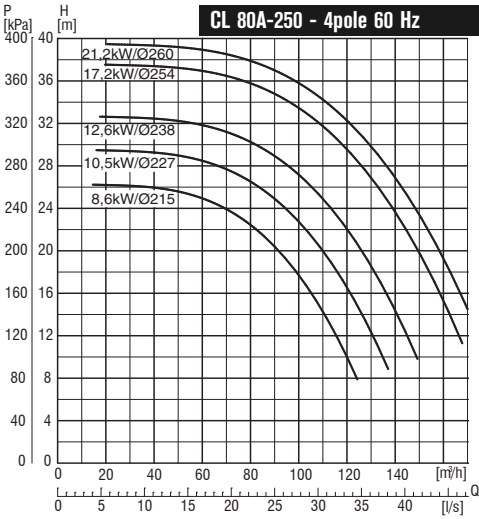
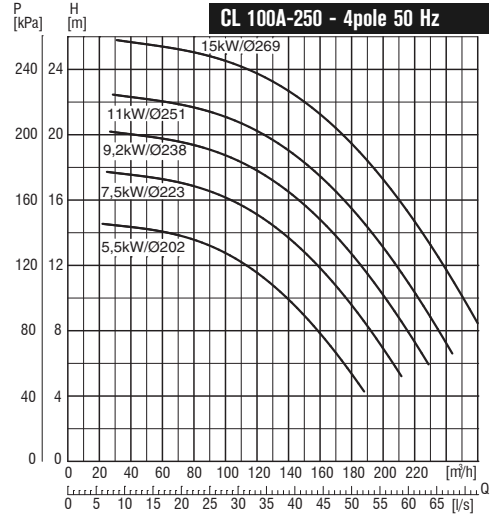
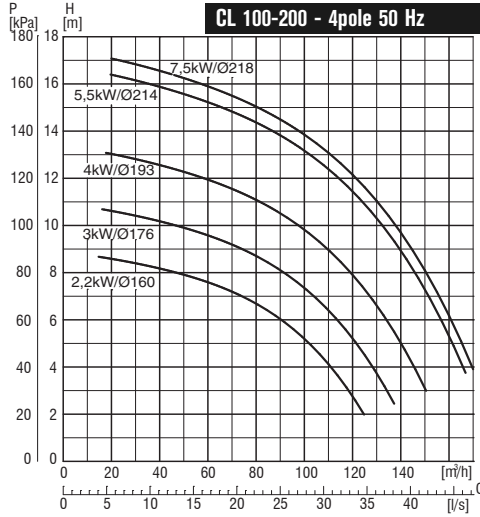
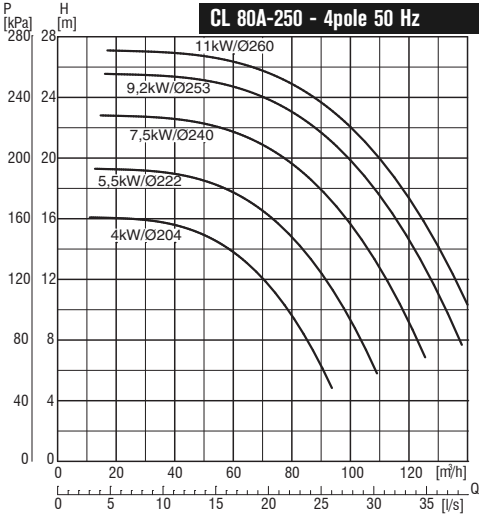
# Pump curves / Pompgrafieken

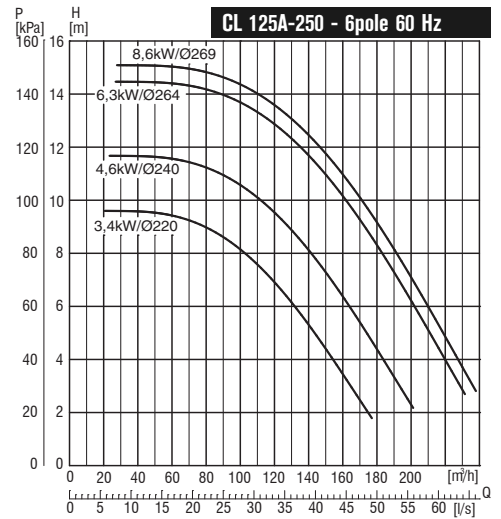
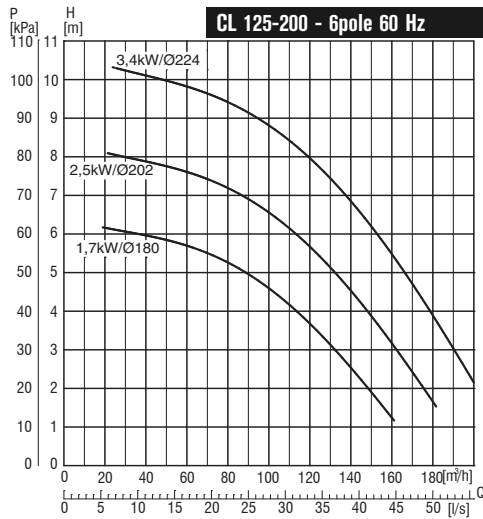
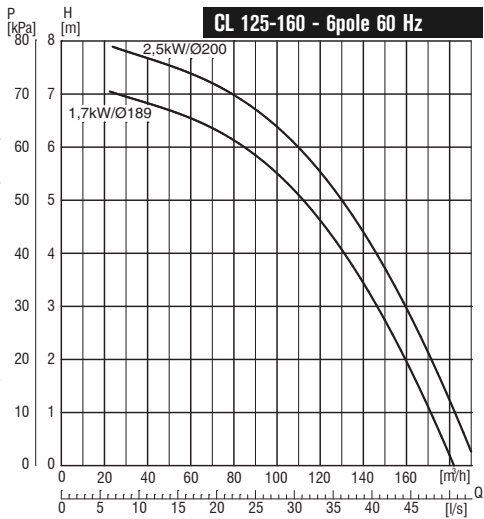
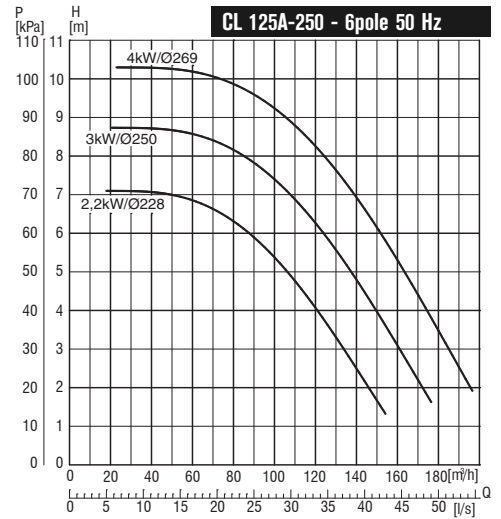
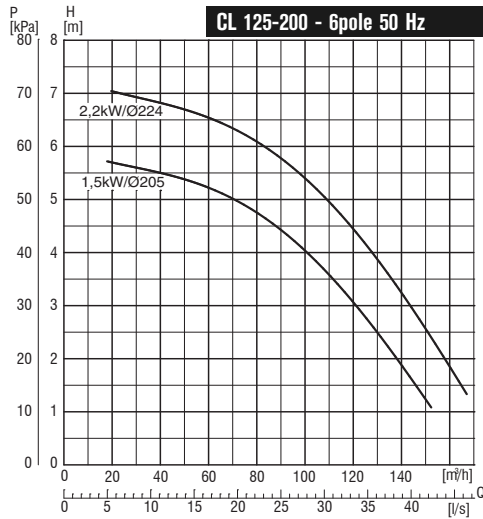
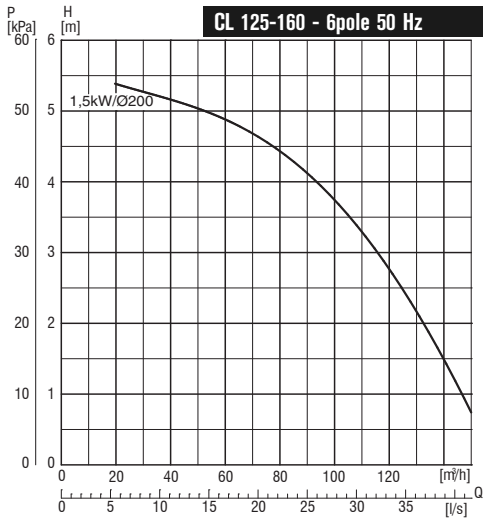
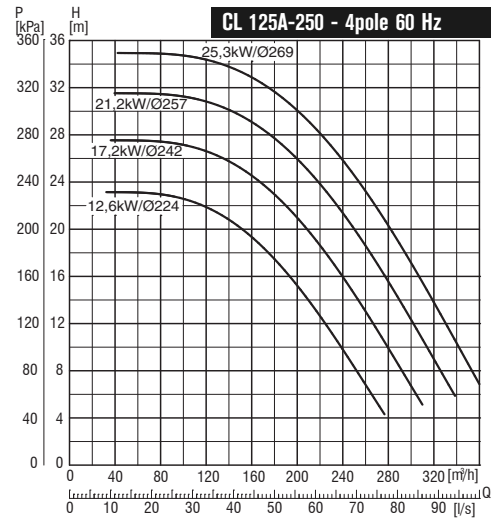
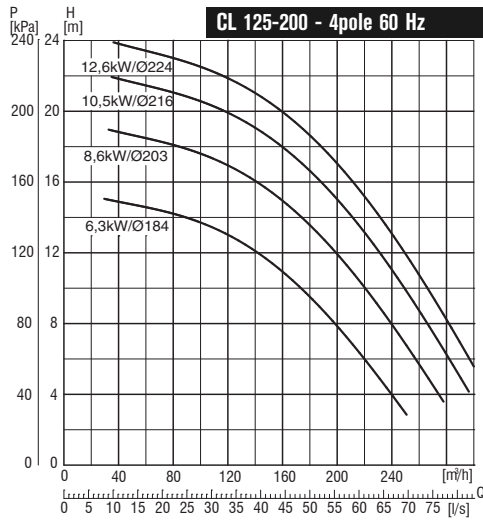
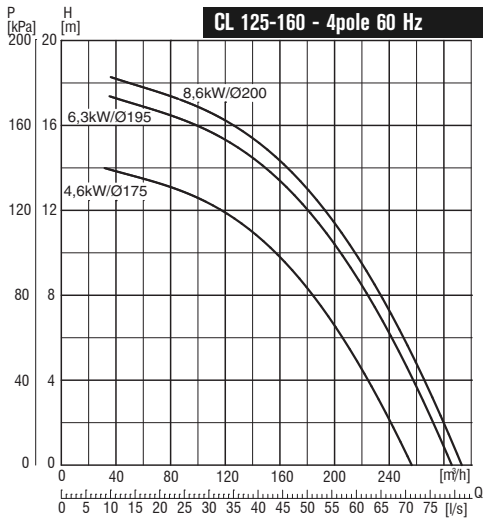
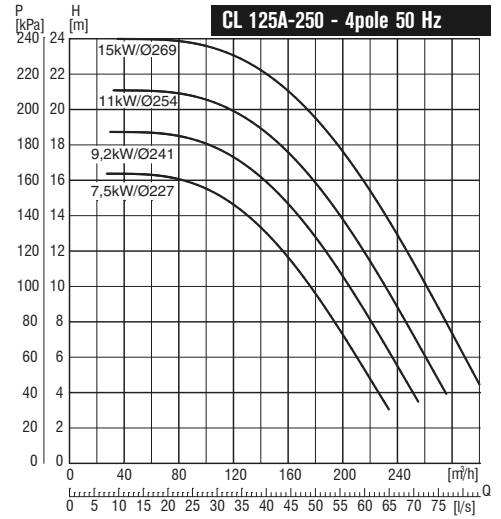
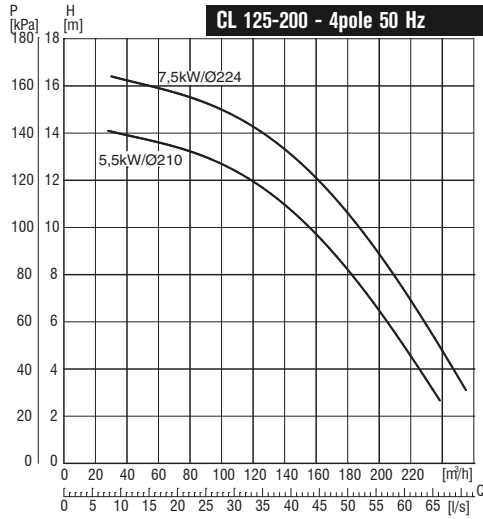
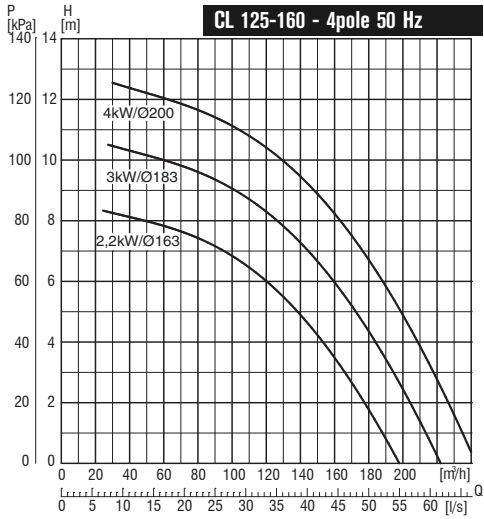
All performance curves are based on standard electric motor speeds and refer to water with a temperature of 20 °C.

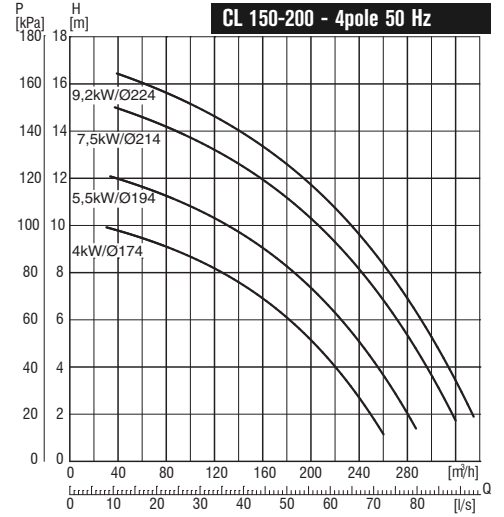
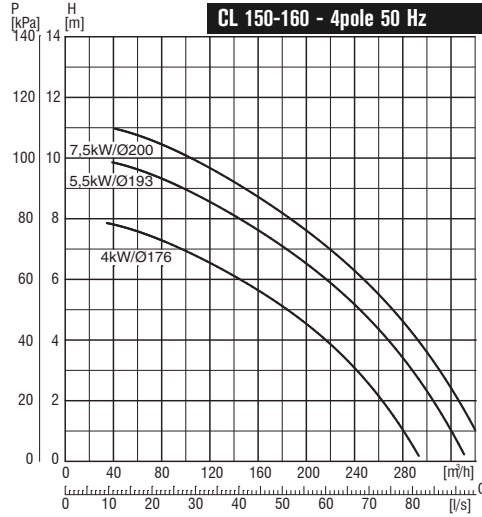
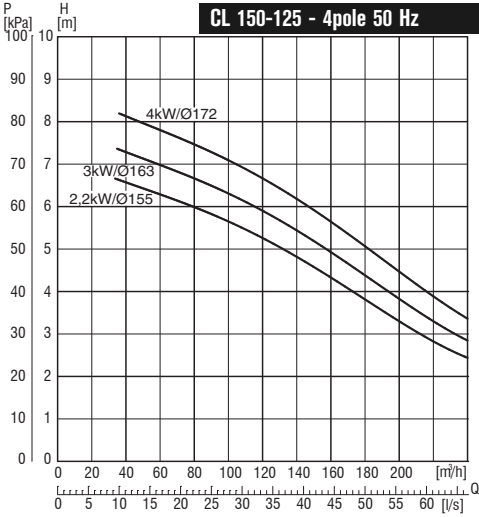
Alle pompgrafieken zijn gebaseerd op standaard elektromotortoerentallen en hebben betrekking op water van 20 °C.





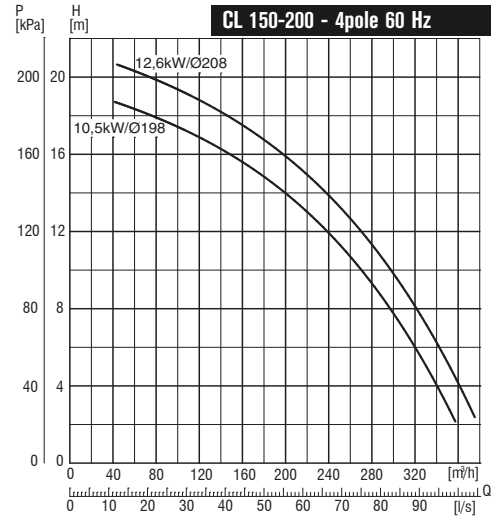
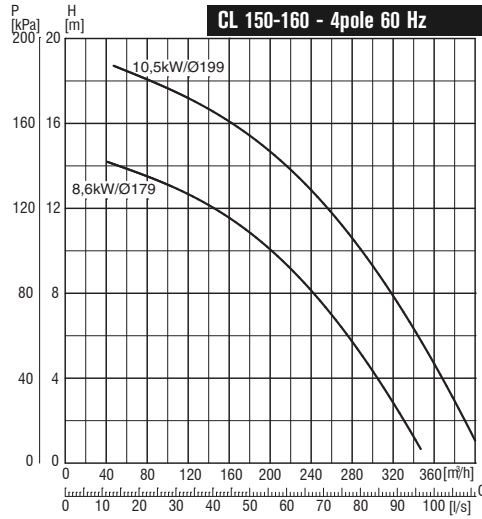






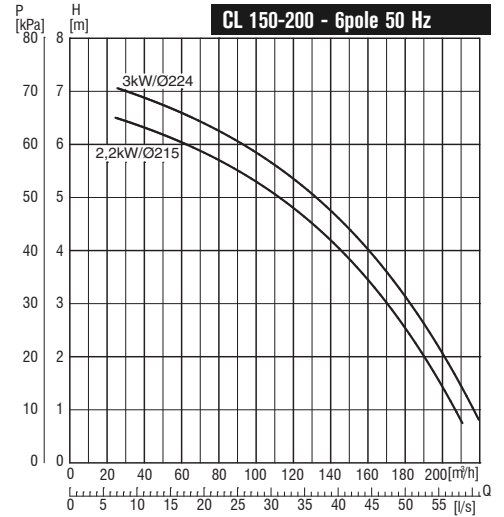
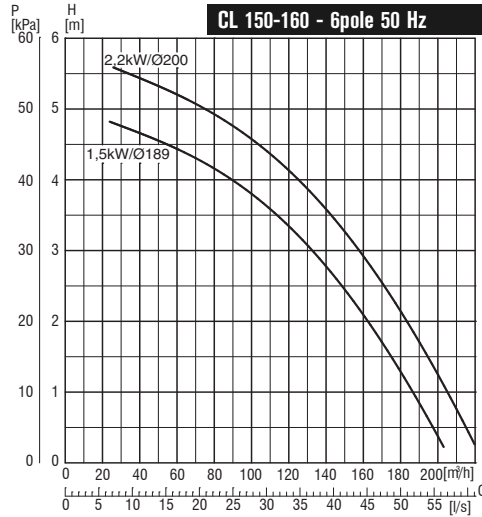
CL 150-125 not available for 4 pole at 60Hz.

CL 150-125 niet beschikbaar voor 4-polig bij 60Hz.



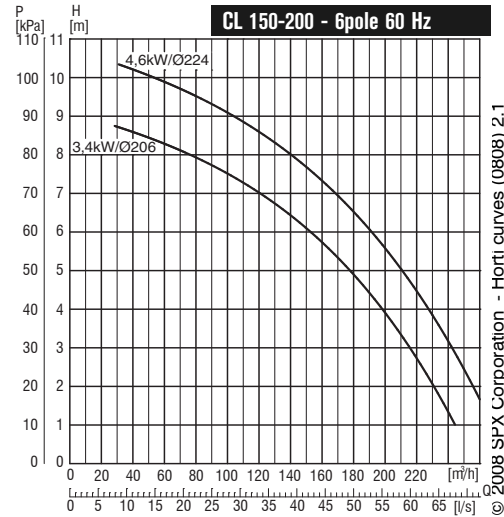
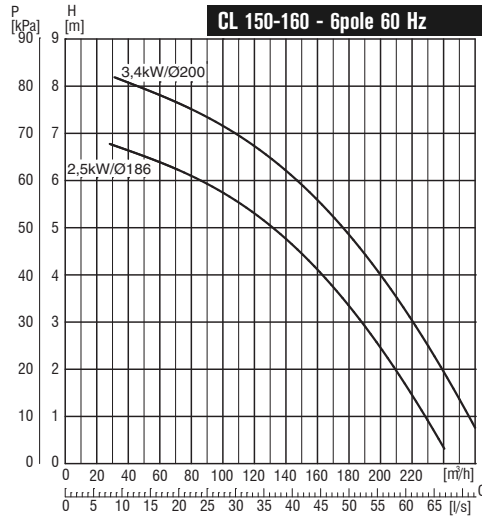
CL 150-125 not available for 6 pole at 50Hz.

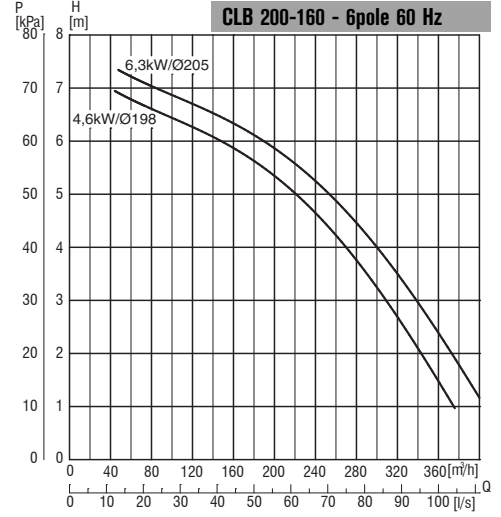
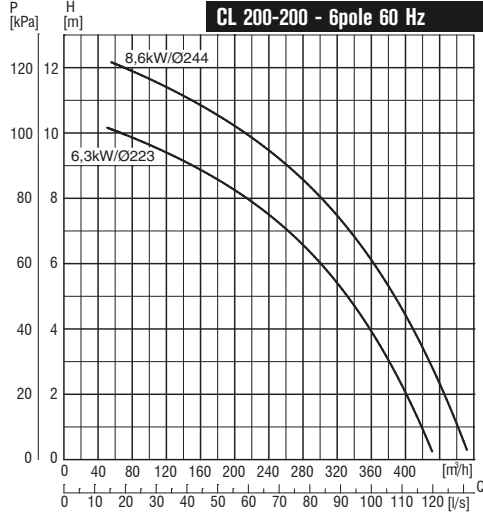
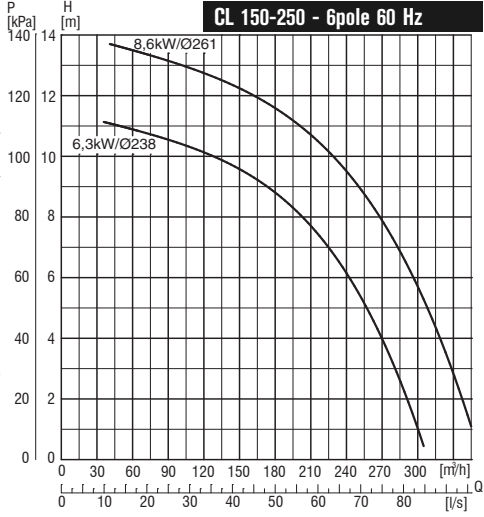
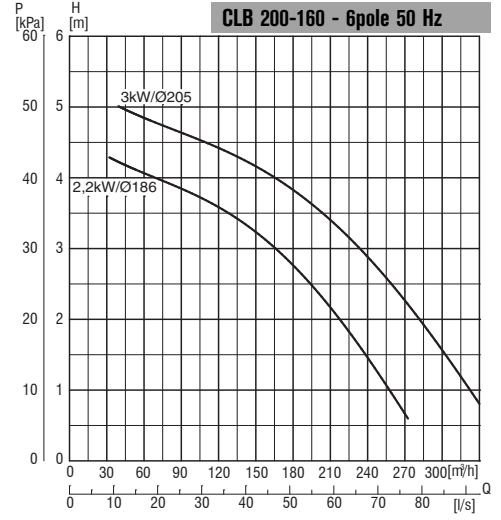
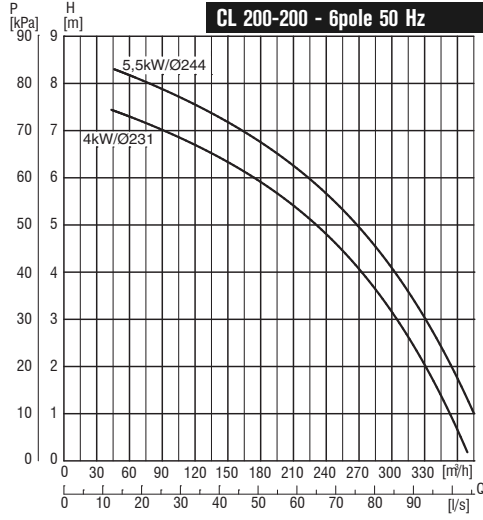
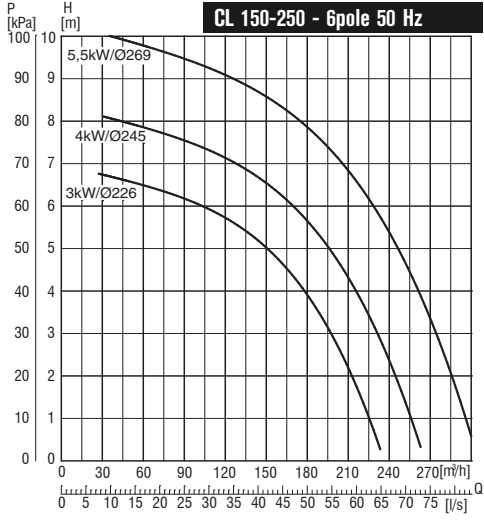
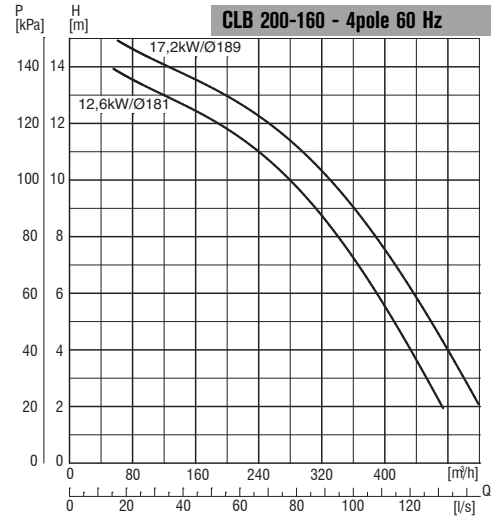
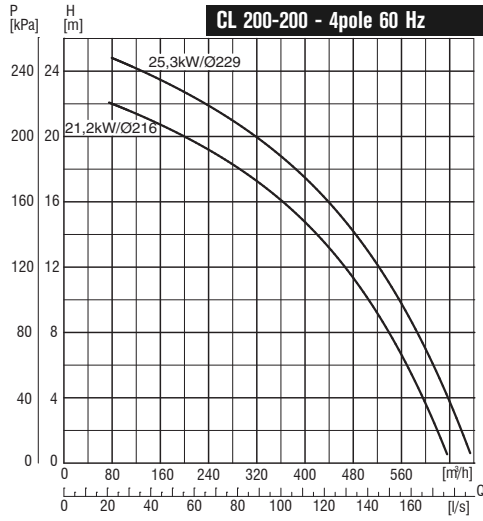
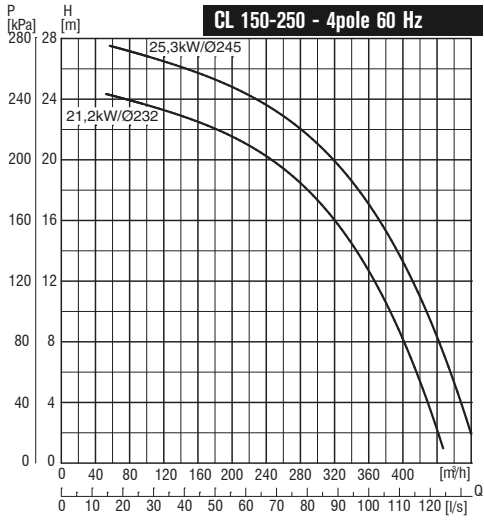
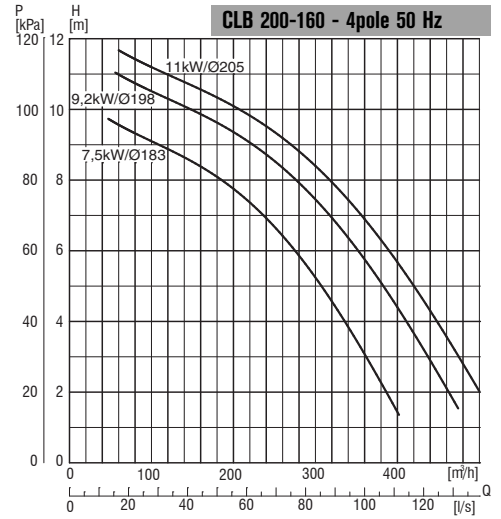
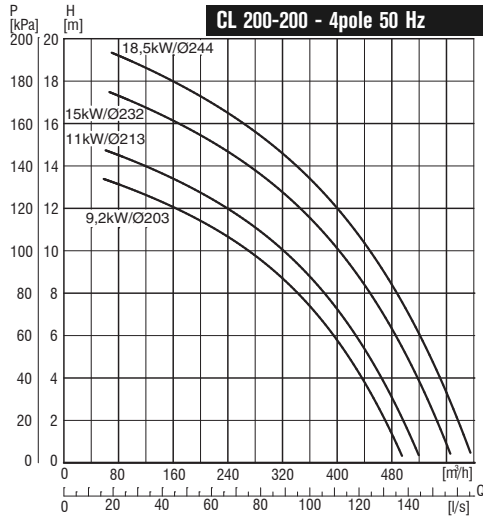
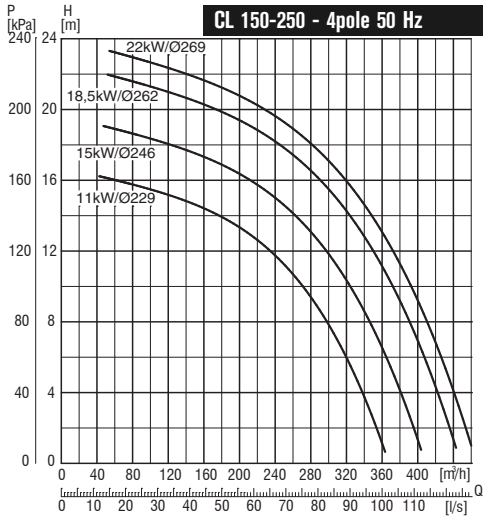
CL 150-125 niet beschikbaar voor 6-polig bij 50Hz.

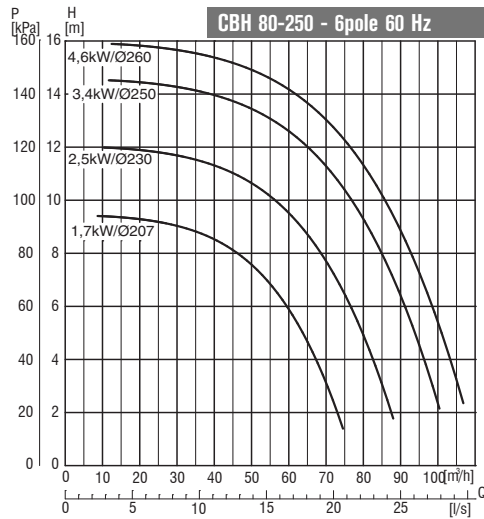
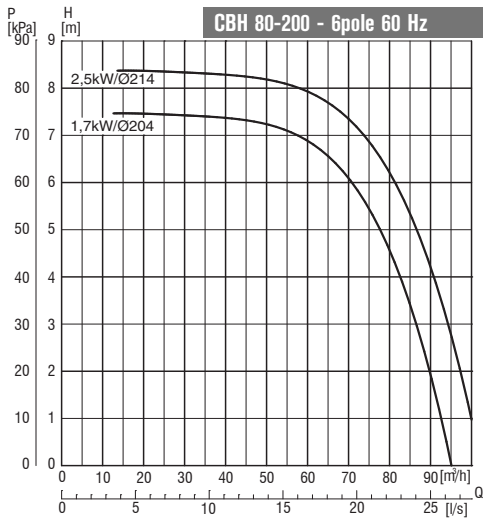
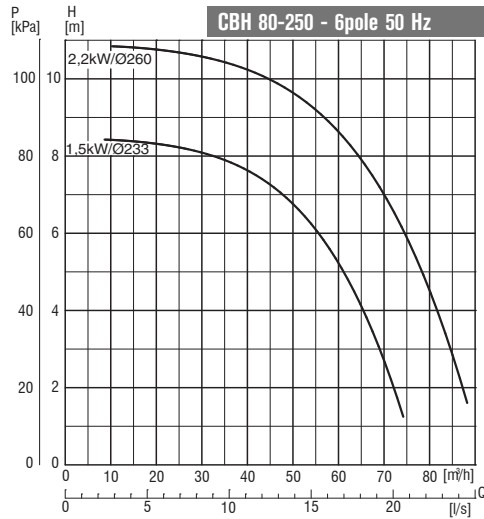
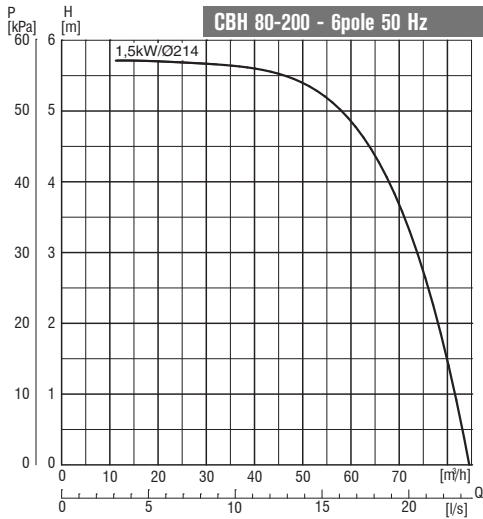
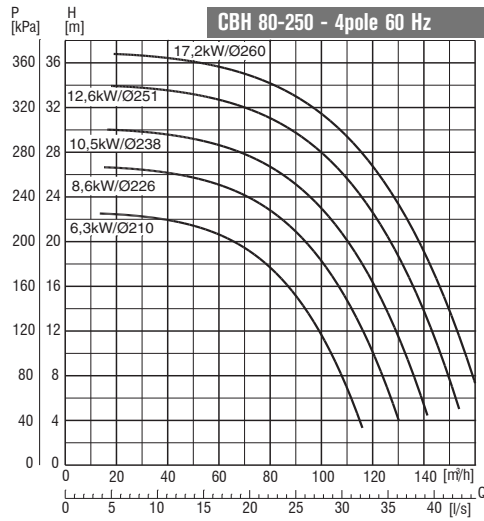
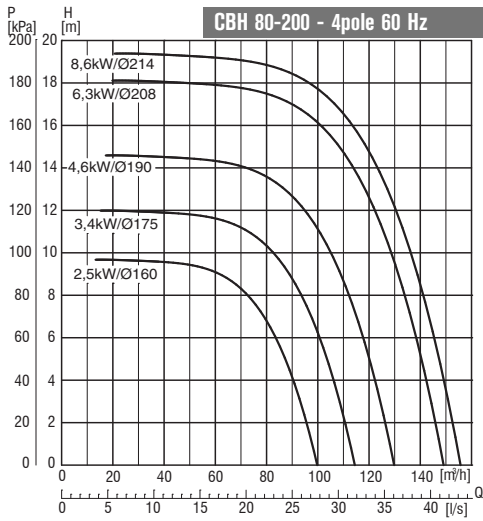
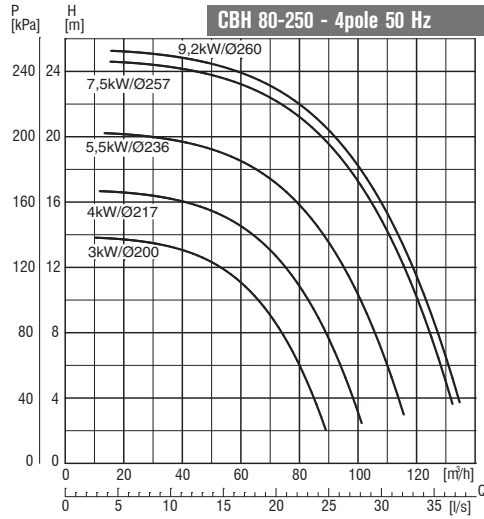
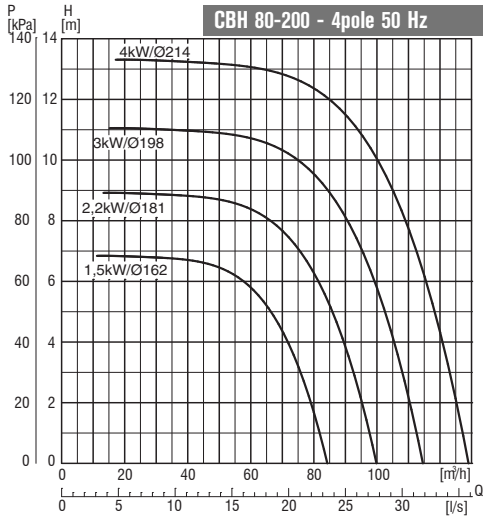


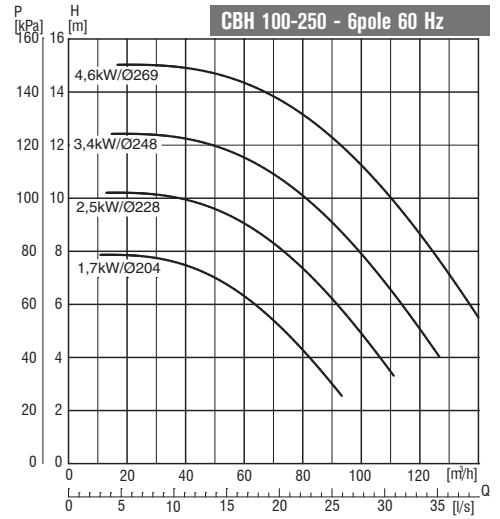
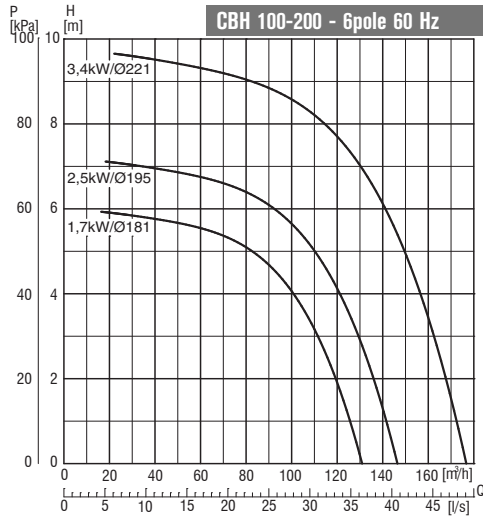
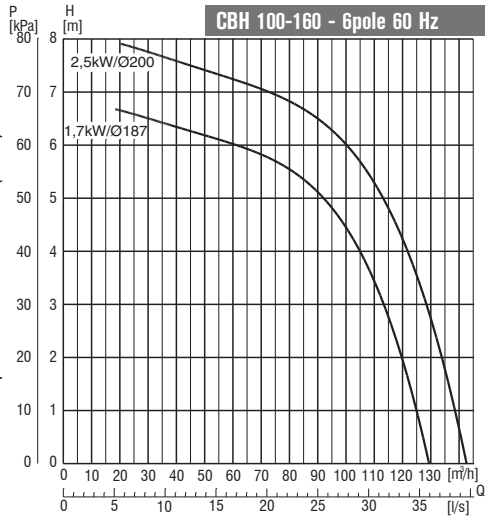
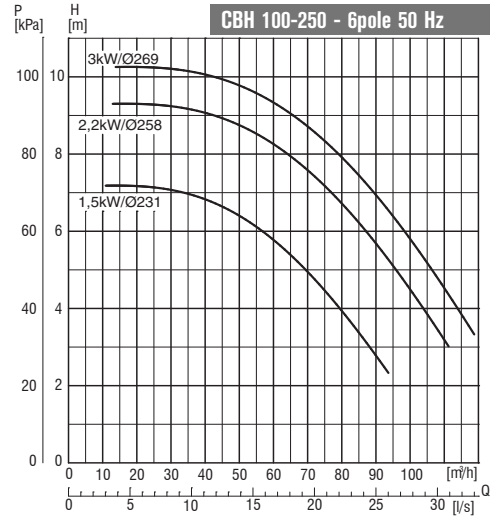
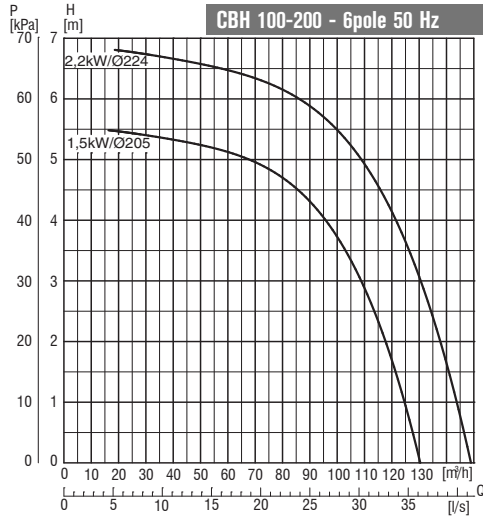
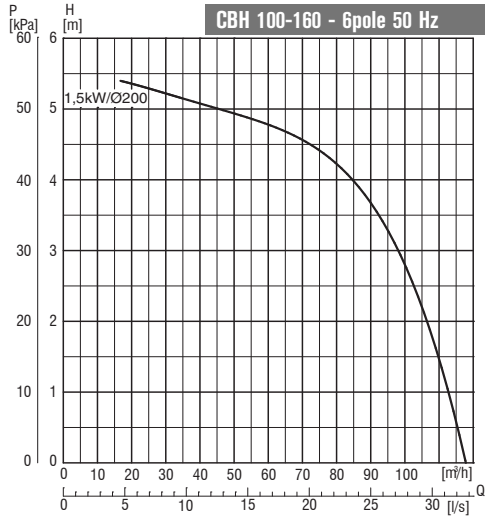
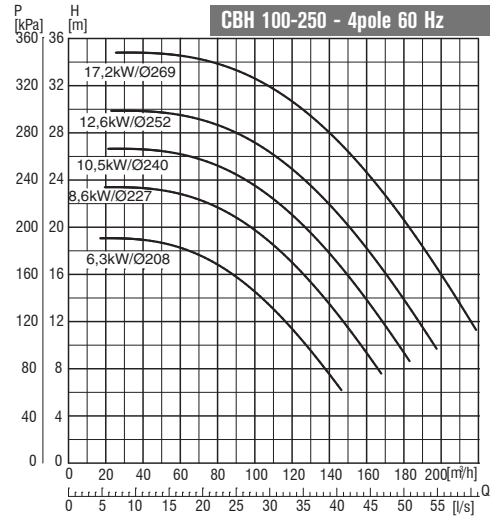
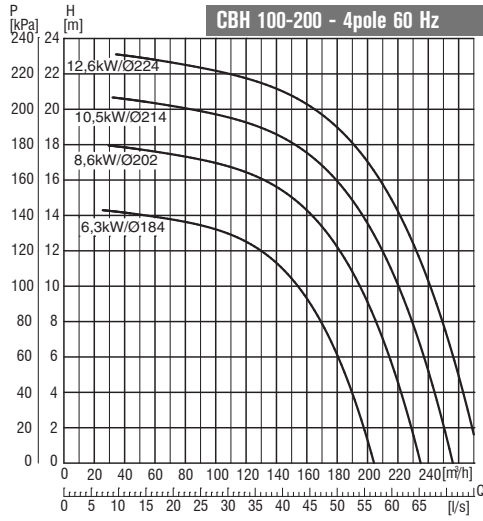
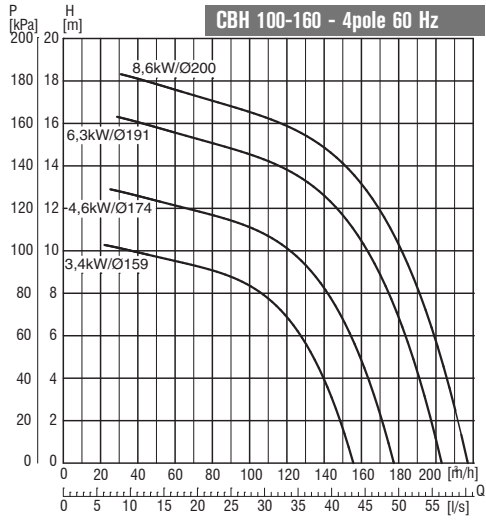
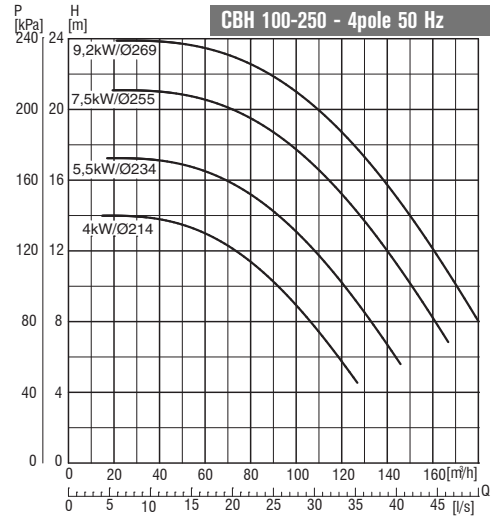
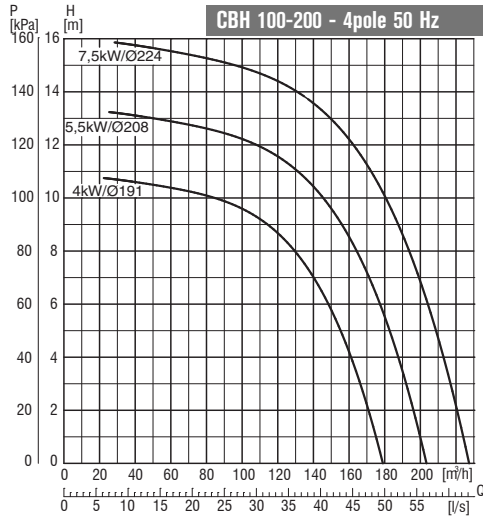
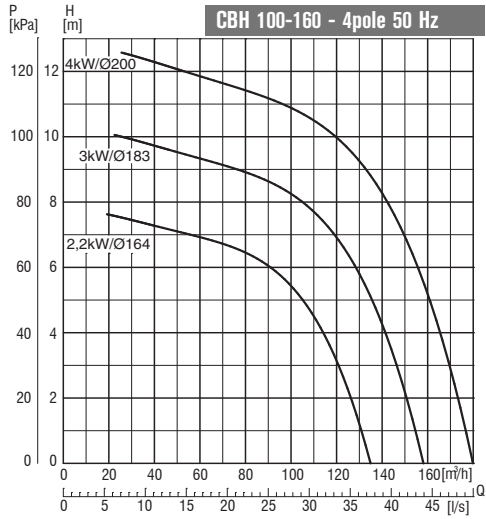
CL 150-125 not available for 6 pole at 60Hz.

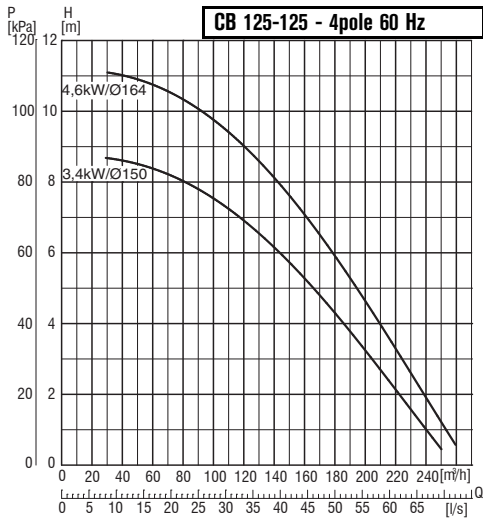
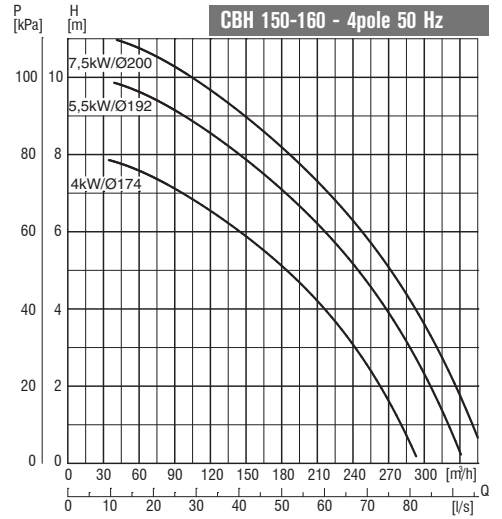
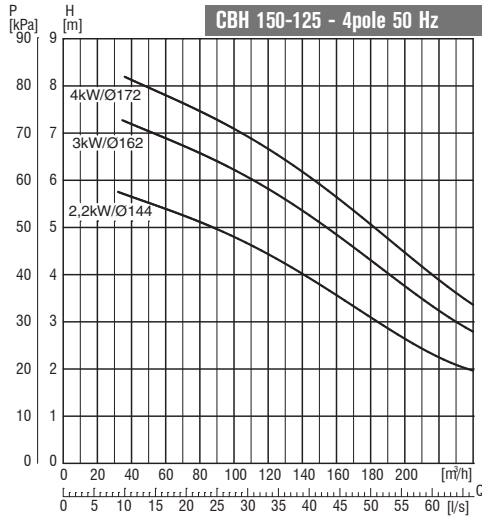
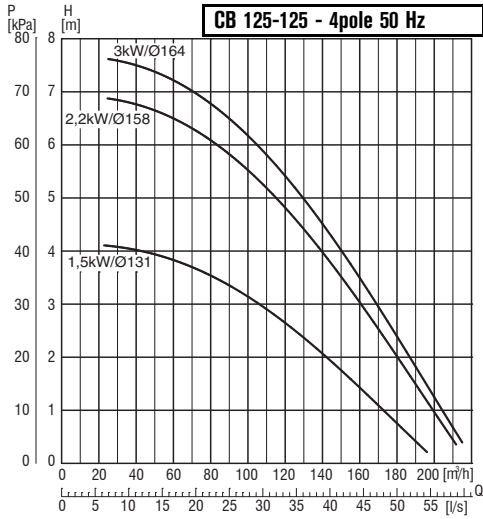
CL 150-125 niet beschikbaar voor 6-polig bij 60Hz.





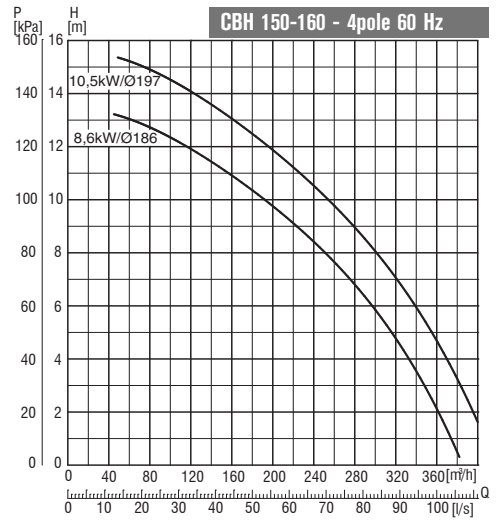






CBH 150-125 not available for 4 pole at 60Hz.

CBH 150-125 niet beschikbaar voor 4-polig bij 60Hz.

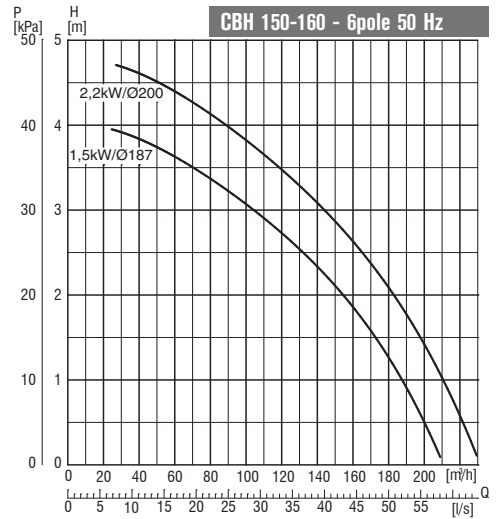


CB 125-125 not available for 6 pole at 50Hz.

CB 125-125 niet beschikbaar voor 6-polig bij 50Hz.

CBH 150-125 not available for 6 pole at 50Hz.

CBH 150-125 niet beschikbaar voor 6-polig bij 50Hz.

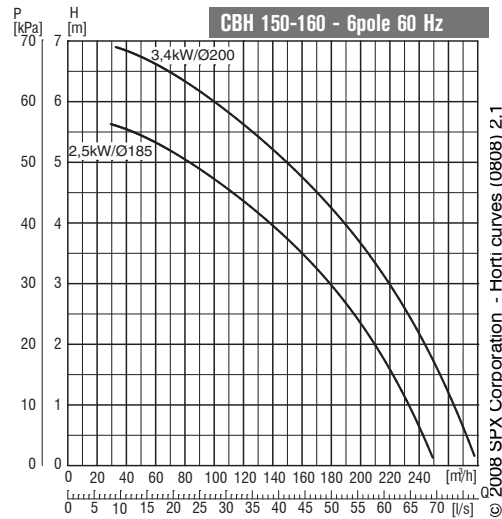


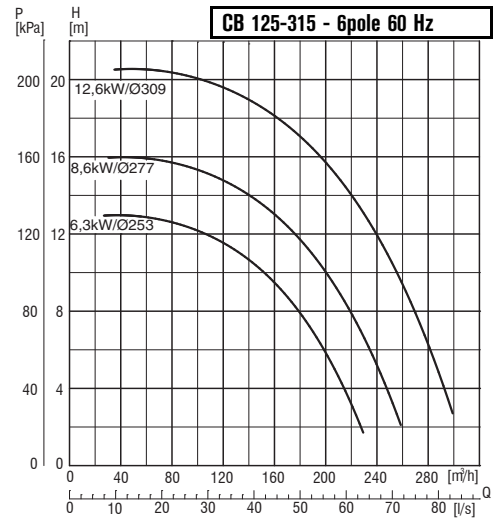
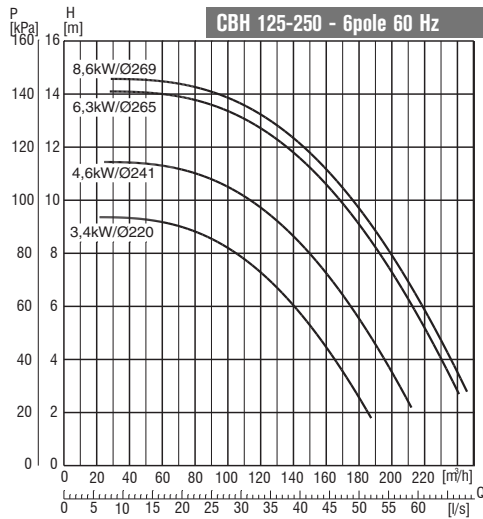
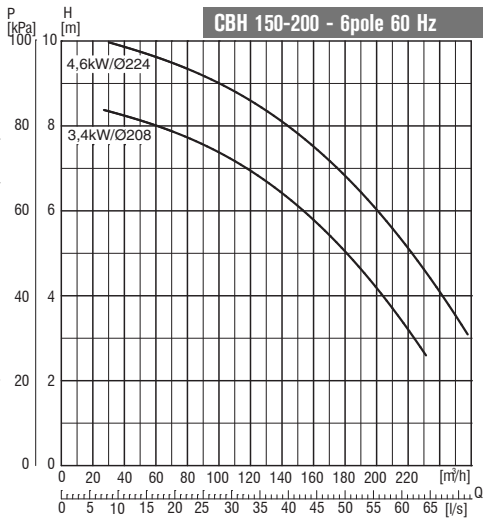
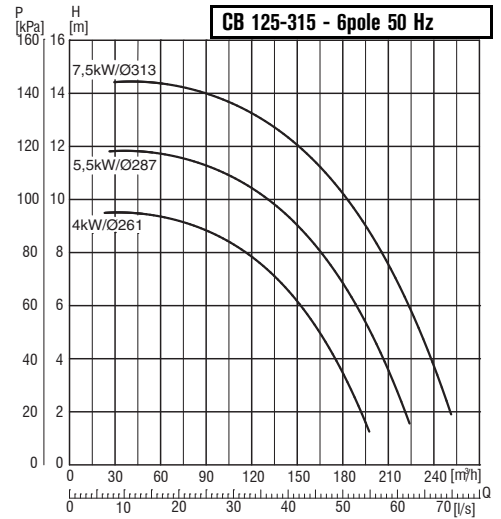
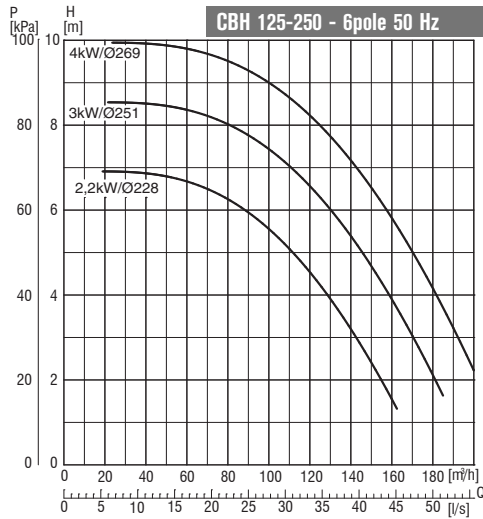
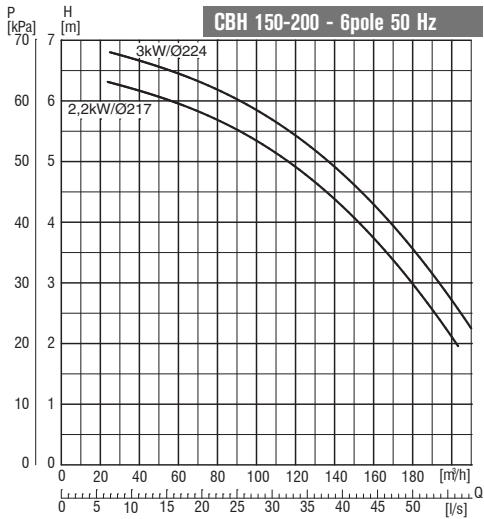
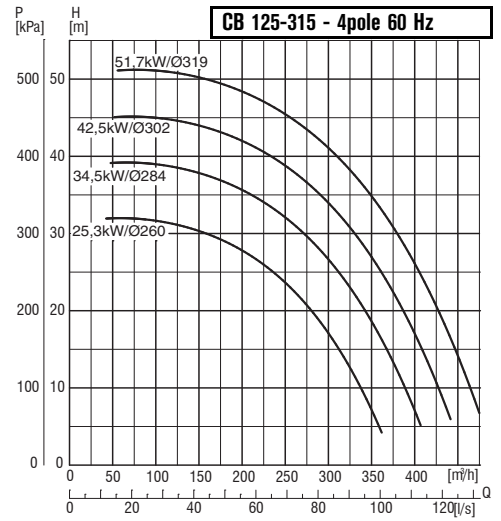
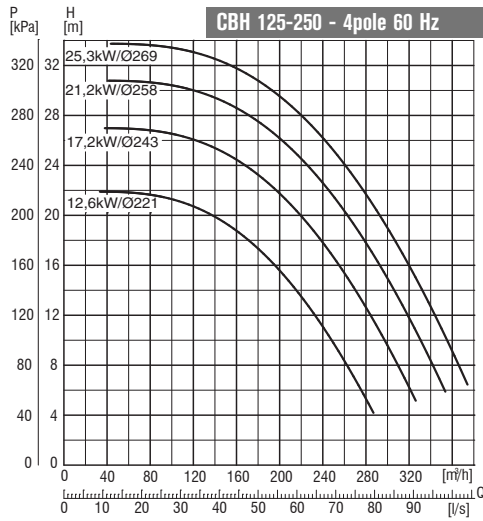
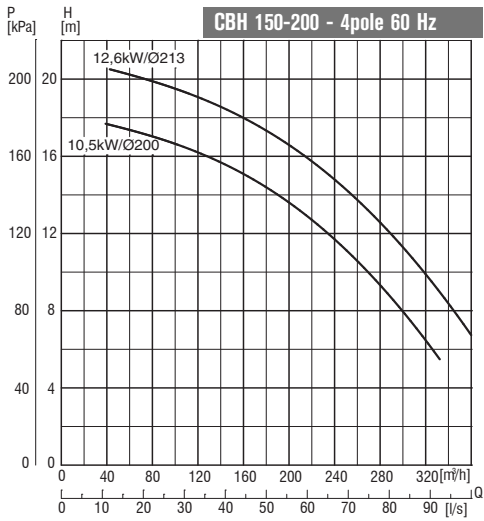
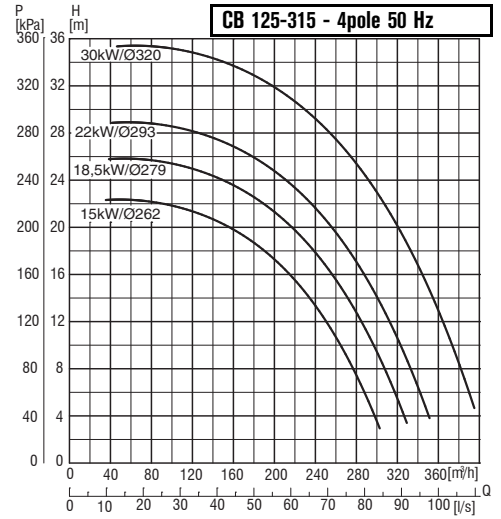
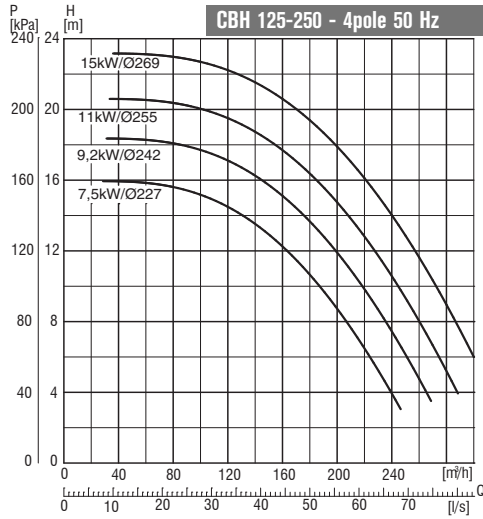
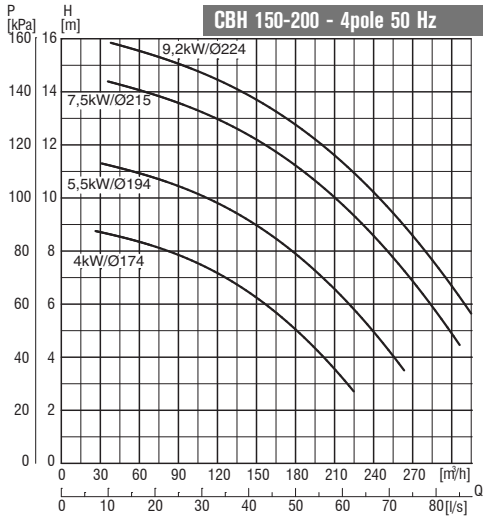
CB 125-125 not available for 6 pole at 60Hz.

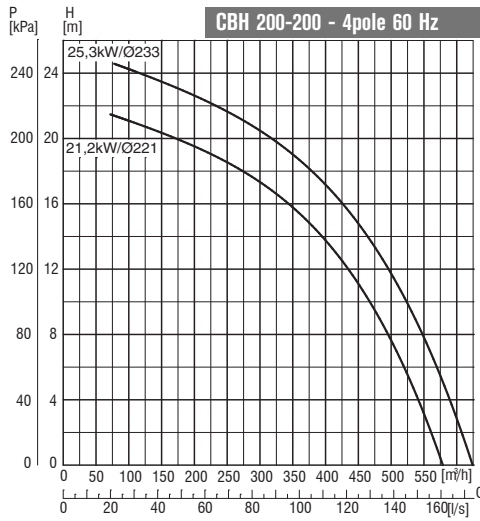
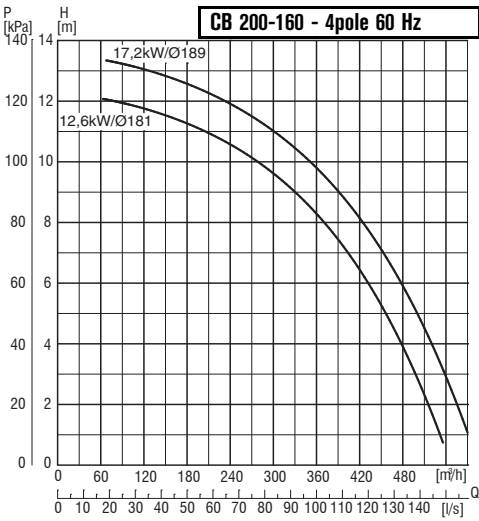
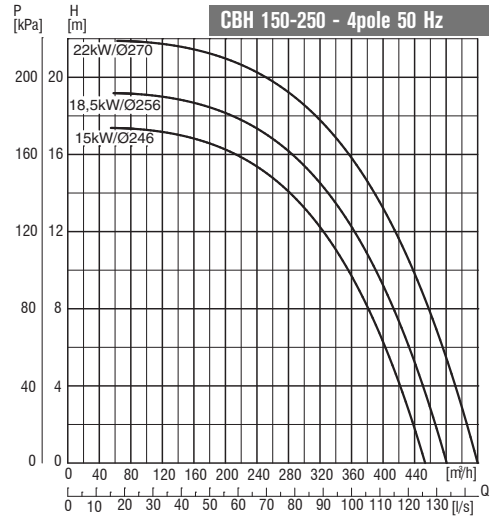
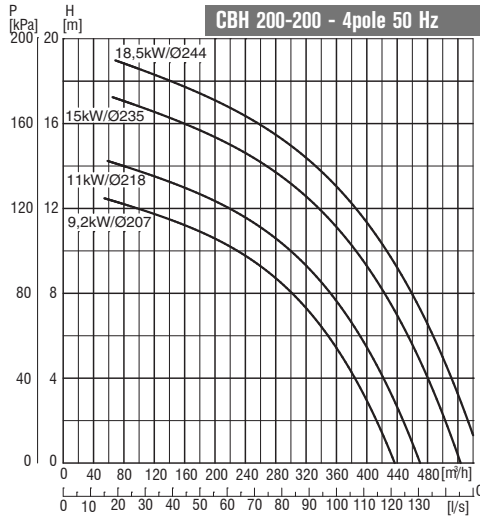
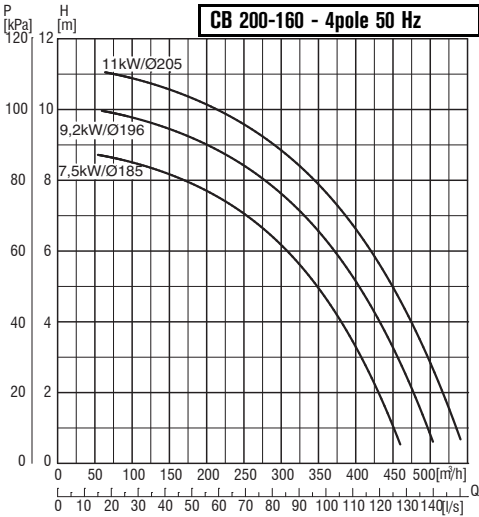
CB 125-125 niet beschikbaar voor 6-polig bij 60Hz.

CBH 150-125 not available for 6 pole at 60Hz.

CBH 150-125 niet beschikbaar voor 6-polig bij 60Hz.

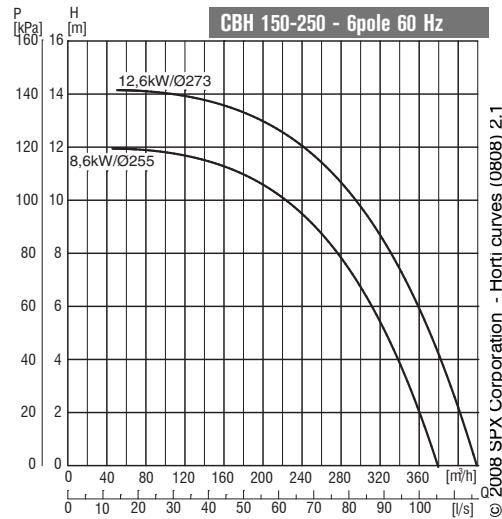
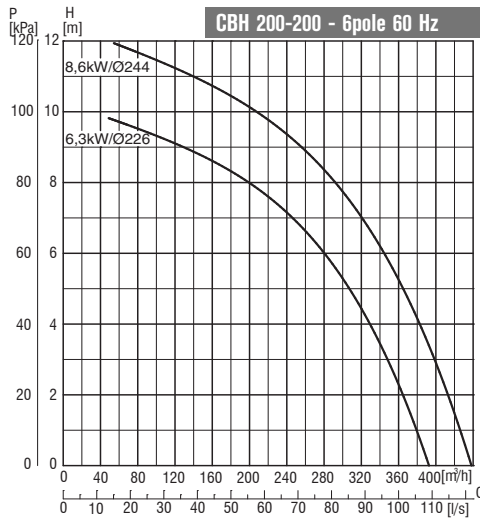
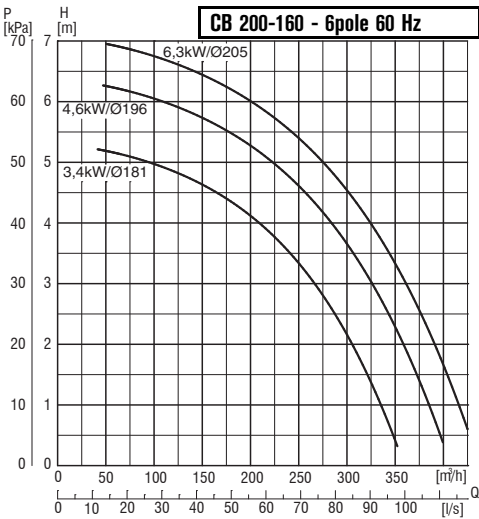
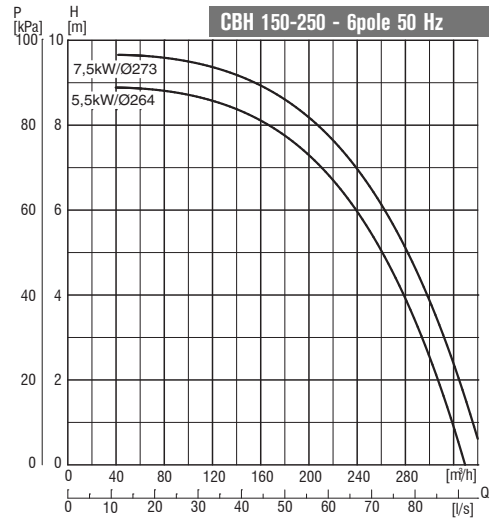
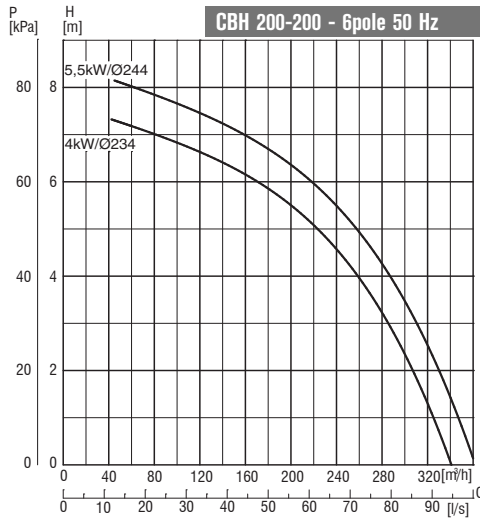
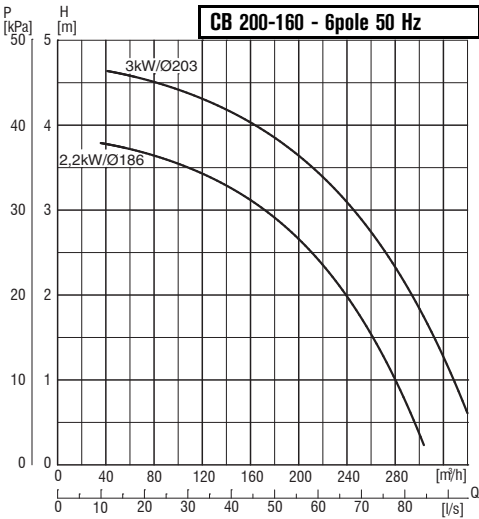


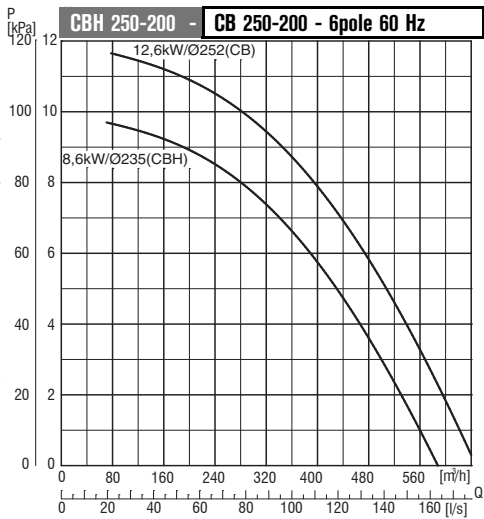
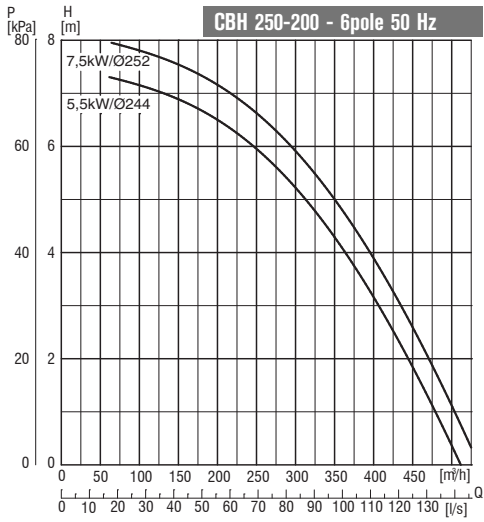
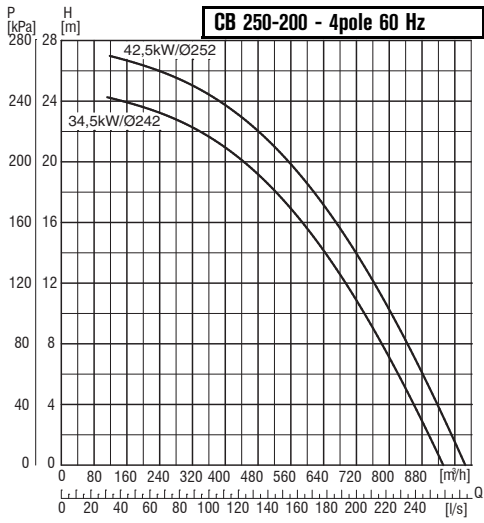
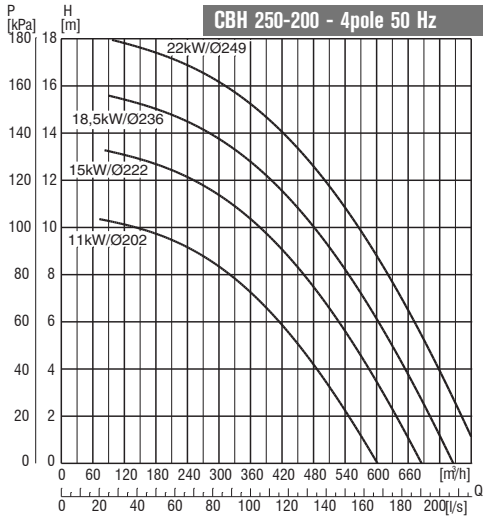




CBH 150-250 not available for 4 pole at 60Hz.

CBH 150-250 niet beschikbaar voor 4-polig bij 60Hz.





Notes

Aantekeningen

Notes

Aantekeningen



**SPX**<sup>®</sup>  
WHERE IDEAS MEET INDUSTRY

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