

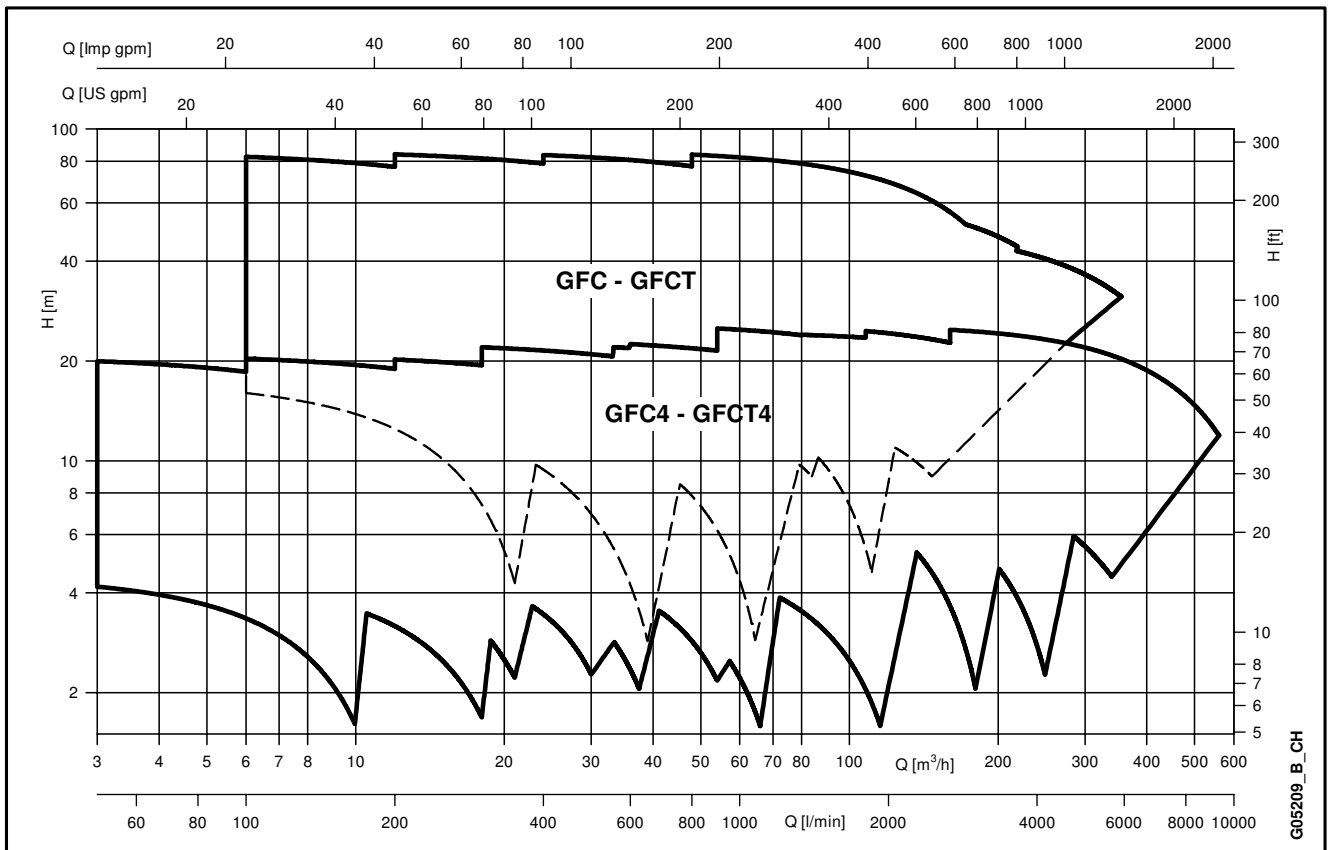
50 Hz



GFC-GFCT Series

IN-LINE ELECTRIC PUMPS SINGLE AND TWIN EQUIPPED WITH
IE2/IE3 MOTORS COMPLYING WITH REGULATION (EC) no. 640/2009

GFC-GFCT SERIES HYDRAULIC PERFORMANCE RANGE AT 50 Hz



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In-Line Electric Pumps

GFC Series



MARKET SECTORS

CIVIL, INDUSTRIAL.

APPLICATIONS

- Water circulation in heating and air conditioning systems.
- Handling of water and clean, chemically non-aggressive liquids.
- Water supply.
- Irrigation.

SPECIFICATIONS

PUMP

- **Delivery** up to 190 m³/h, 2-pole.
330 m³/h, 4-pole.
- **Head** up to 89 m, 2-pole.
35 m, 4-pole.
- **Temperature** of pumped liquid:
-10°C to +130°C for "E" version,
-20°C to +140°C for "S" version
(depending on working pressure).
- **Maximum working pressure:**
10 bar (PN 10) for the "E" version,
16 bar (PN 16) for the "S" version
up to 120°C, 13 bar from 120°C to
140°C.
- **Impeller** made of AISI 316L
stainless steel, **laser technology**
welded, up to size 80-160.
Cast iron impeller for bigger sizes.
Bronze impeller available on request
for GFCT 80-200 and bigger, in both
the "E" and "S" versions.
- **Wear rings** made of AISI 316L
stainless steel, up to GFC 100, on the
impeller's front and rear wear plates,
to ensure high performance and easy
replacement.
- **Mechanical seal** according to
EN12756 (ex DIN 24960), lubricated
by internal recirculation of pumped
liquid to seal housing (up to GFC 100).
Mechanical seal locking pin slot on
models up to GFC 100 (on request).
- Air valve on models up to GFC 100.
- Counterflange kits available on
request.

MOTOR

- Three-phase asynchronous, squirrel
cage rotor, enclosed construction,
external ventilation.
- IP55 **protection**.
- Class 155 (F) **insulation**.
- Performances according to
EN 60034-1.
- Maximum ambient temperature:
+40°C.
- Continuous duty.
- Condensate drain plugs on all
standard internal production motors.
- **Standard voltage:**
Single-phase version 220-240 V,
50 Hz, with built-in automatic reset
overload protection up to 1,5 kW.
For higher powers the protection is
be provided by the user.
Three-phase version:
220-240/380-415 V 50 Hz for powers
up to 3 kW;
380-415/660-690 V, 50 Hz for powers
above 3 kW.
Overload protection to be provided
by the user.
- **Standard supplied IE2/IE3
motors are compliant with
Regulation (EC) no. 640/2009
and IEC 60034-30.**

CONSTRUCTION FEATURES

Single-impeller centrifugal pump with in-line suction and delivery flanges.

Flanges in compliance with EN 1092-2 (ex UNI 2236) and DIN 2532.

"Back pull-out" design (impeller, adapter and motor can be extracted without disconnecting the pump body from the pipes).

GFCE SERIES CHARACTERISTICS

Pump coupling: close-coupled by means of an adapter, with impeller keyed directly to the motor shaft extension.

Maximum operating pressure: 10 bar (PN 10).

Temperature of pumped liquid: -10°C to 130°C.

GFCS SERIES CHARACTERISTICS

Pump coupling: by adapter, with bracket and rigid coupling keyed to the shaft extension of standard motors.

Maximum operating pressure: 16 bar (PN 16) up to 120°C, 13 bar from 120°C to 140°C.

Temperature of pumped liquid: -20°C to 140°C.

GFCS..H SERIES CHARACTERISTICS

Variable speed control, using the HIDROVAR® and HIDROVAR® Sensorless (on request), control system, is recommended for managing pump operation according to system conditions. This ensures energy savings, lower operating costs, greater comfort and environmental protection.

This option is available for both the GFCE and GFCS series, and includes the HIDROVAR® and HIDROVAR® Sensorless (on request) controller and sensors.

ACCESSORIES ON REQUEST

Threaded steel or galvanized iron counterflanges.

Blind flange.

Pump support.

OPTIONAL FEATURES

Different voltages and frequencies.

Different materials for the mechanical seal and pump body seal.

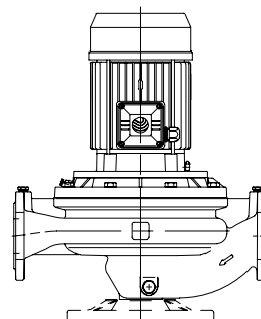
Support available for vertical mounting (where added).

INSTALLATION

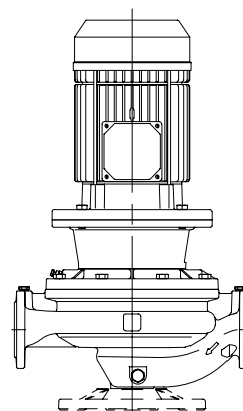
Installed in horizontal or vertical piping, in any position except with motor or terminal box facing downward.

Motor powers 5,5 kW and higher, for installations with motor shaft in the vertical position, the electric pump should be mounted on a base, the pump should rest on its feet or on the support foot (optional accessory). For installations with motor shaft in the horizontal position, use a support foot for the motor.

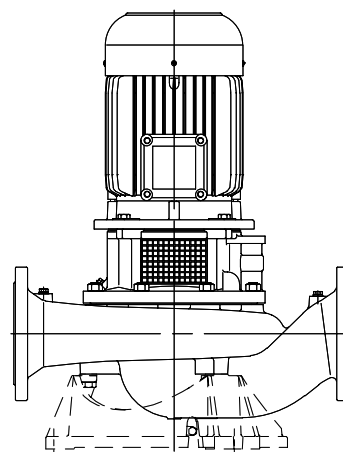
GFCE 40-100
GFCE4 40-100



GFCS 40-100
GFCS4 40-100



GFCS4 125-150



G04807_C_SC

In-Line Twin Electric Pumps

GFCT Series

MARKET SECTORS

CIVIL, INDUSTRIAL.

APPLICATIONS

- Water circulation in heating and air conditioning systems.
- Handling of water and clean, chemically non-aggressive liquids.
- Water supply.
- Irrigation.

SPECIFICATIONS

PUMP

- **Delivery** with one pump running: up to 190 m³/h with 2-pole motor, up to 330 m³/h with 4-pole motor; with two pumps running: up to 350 m³/h with 2-pole motor, up to 610 m³/h with 4-pole motor.
- **Head** up to 89 m with 2-pole motor, up to 35 m with 4-pole motor.
- **Temperature** of pumped liquid: -10 to 130°C for the "E" version, -20 to 140°C for the "S" version (depending on working pressure).

- **Maximum working pressure:** 10 bar (PN 10) for the "E" version, 16 bar (PN 16) for the "S" version up to 120°C, 13 bar from 120°C to 140°C.
- **Impeller** made of AISI 316L stainless steel, **laser technology** welded, up to size 80-160. Cast iron impeller for bigger sizes. Bronze impeller available on request for GFCT 80-200 and bigger, in both the "E" and "S" versions.
- **Wear rings** made of AISI 316L stainless steel, up to GFCT 100, on the impeller's front and rear wear plates, to ensure high performance and easy replacement.
- **Mechanical seal** according to EN12756 (ex DIN 24960), lubricated by internal recirculation of pumped liquid to seal housing (up to GFCT 100). Mechanical seal locking pin slot on models up to GFCT 100 (on request).

- Air valve on models up to GFCT 100.
- Counterflange kits available on request.

MOTOR

- Three-phase asynchronous, squirrel cage rotor, enclosed construction, external ventilation.
- IP55 **protection**.
- Class 155 (F) **insulation**.
- Performances according to EN 60034-1.
- Maximum ambient temperature: +40°C.
- Continuous duty.
- Condensate drain plugs on all standard internal production motors.
- **Standard voltage:**
Single-phase version 220-240 V, 50 Hz, with built-in automatic reset overload protection up to 1,5 kW. For higher powers the protection is provided by the user.
Three-phase version: 220-240/380-415 V 50 Hz for powers up to 3 kW; 380-415/660-690 V, 50 Hz for powers above 3 kW. Overload protection to be provided by the user.
- **Standard supplied IE2/IE3 motors are compliant with Regulation (EC) no. 640/2009 and IEC 60034-30.**



CONSTRUCTION FEATURES

Two single-impeller centrifugal pumps featuring in-line suction and delivery flanges, with automatic changeover valve. The two pumps can operate separately or in parallel.

Flanges in compliance with EN 1092-2 (ex UNI 2236) and DIN 2532.

"Back pull-out" design (impeller, adapter and motor can be extracted without disconnecting the pump body from the pipes).

GFCTE SERIES CHARACTERISTICS

Pump coupling: close-coupled by means of an adapter, with impeller keyed directly to the motor shaft extension.

Maximum operating pressure: 10 bar (PN 10).

Temperature of pumped liquid: -10°C to 130°C.

GFCTS SERIES CHARACTERISTICS

Pump coupling: by adapter, with bracket and rigid coupling keyed to the shaft extension of standard motors.

Maximum operating pressure: 16 bar (PN 16) up to 120°C, 13 bar from 120°C to 140°C.

Temperature of pumped liquid: -20°C to 140°C.

GFCT..H SERIES CHARACTERISTICS (ON REQUEST)

Variable speed control, using the HIDROVAR® and HIDROVAR® Sensorless (on request), control system, is recommended for managing pump operation according to system conditions. This ensures energy savings, lower operating costs, greater comfort and environmental protection.

This option is available for both the GFCTE and GFCTS series, and includes the HIDROVAR® and HIDROVAR® Sensorless controller and sensors.

ACCESSORIES ON REQUEST

Threaded steel or galvanized iron counterflanges.

Blind flange.

Pump support.

OPTIONAL FEATURES

Different voltages and frequencies.

Different materials for the mechanical seal and pump body seal.

Support available for vertical mounting.

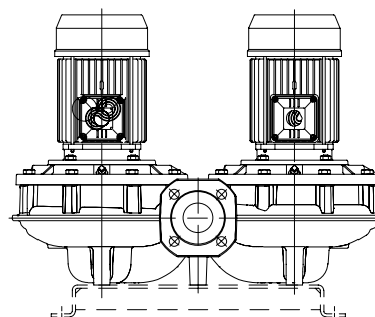
Version with frequency converter (variable speed).

INSTALLATION

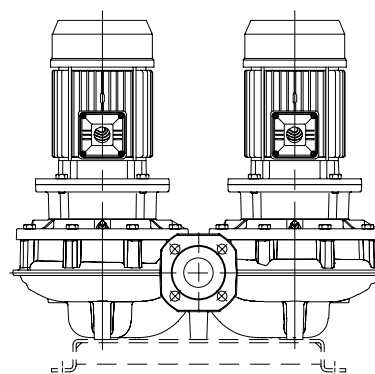
Can be installed on horizontal or vertical piping, in any position except with motor or terminal board facing downward.

With motor powers 5,5 kW and up, for installations with motor shaft in the vertical position, the electric pump should be mounted on a base, the pump should rest on its feet or on the support foot (optional accessory). For installations with motor shaft in the horizontal position, use a support for the motor.

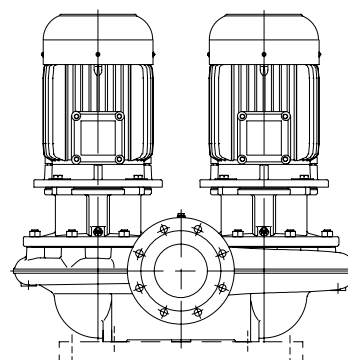
GFCTE 40-100
GFCTE4 40-100



GFCTS 40-100
GFCTS4 40-100

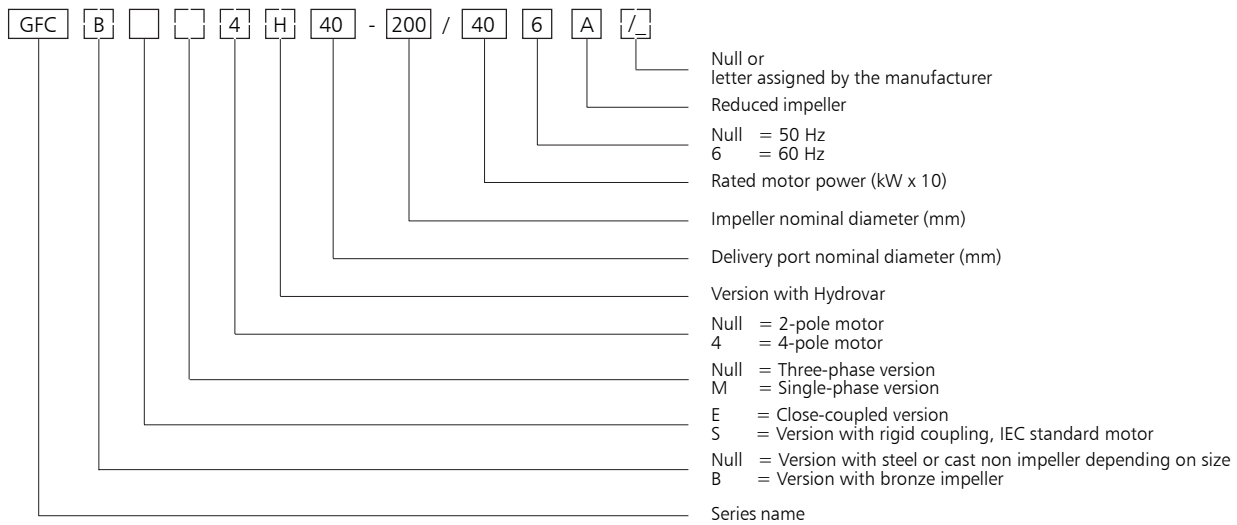


GFCTS4 125-150

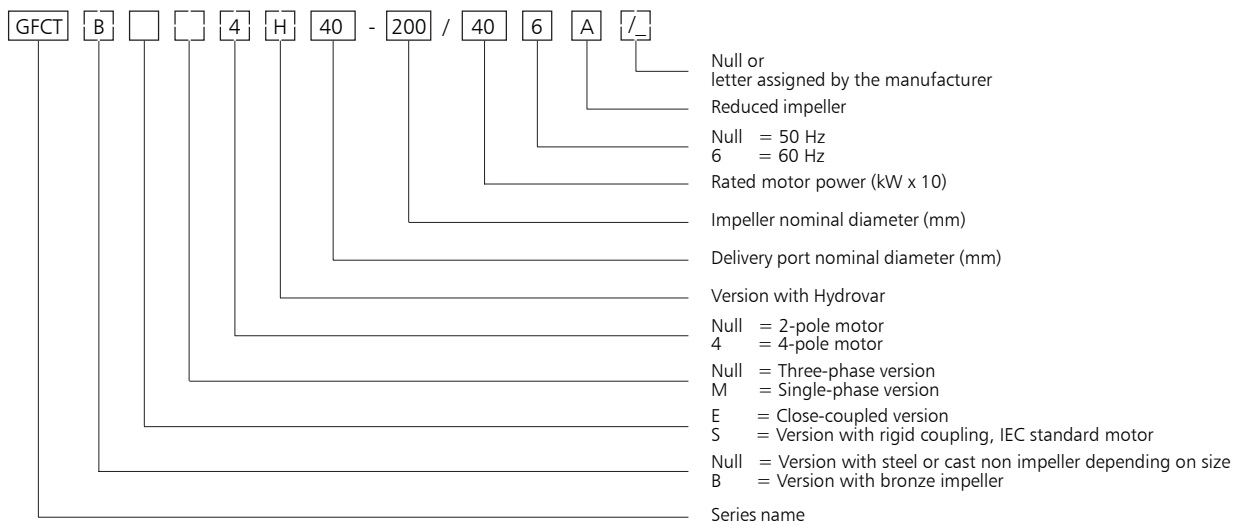


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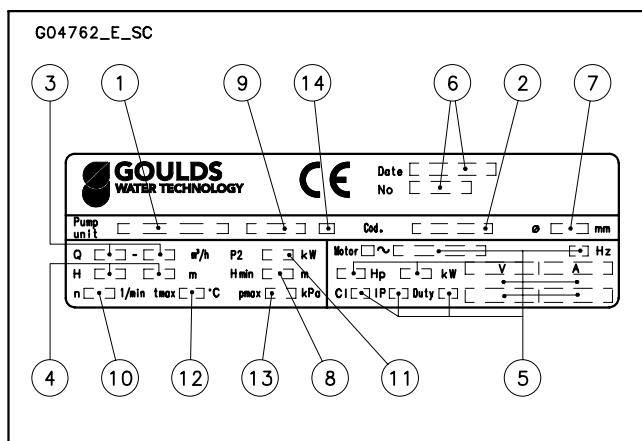
GFC SERIES IDENTIFICATION CODE



GFCT SERIES IDENTIFICATION CODE



GFC - GFCT RATING PLATE

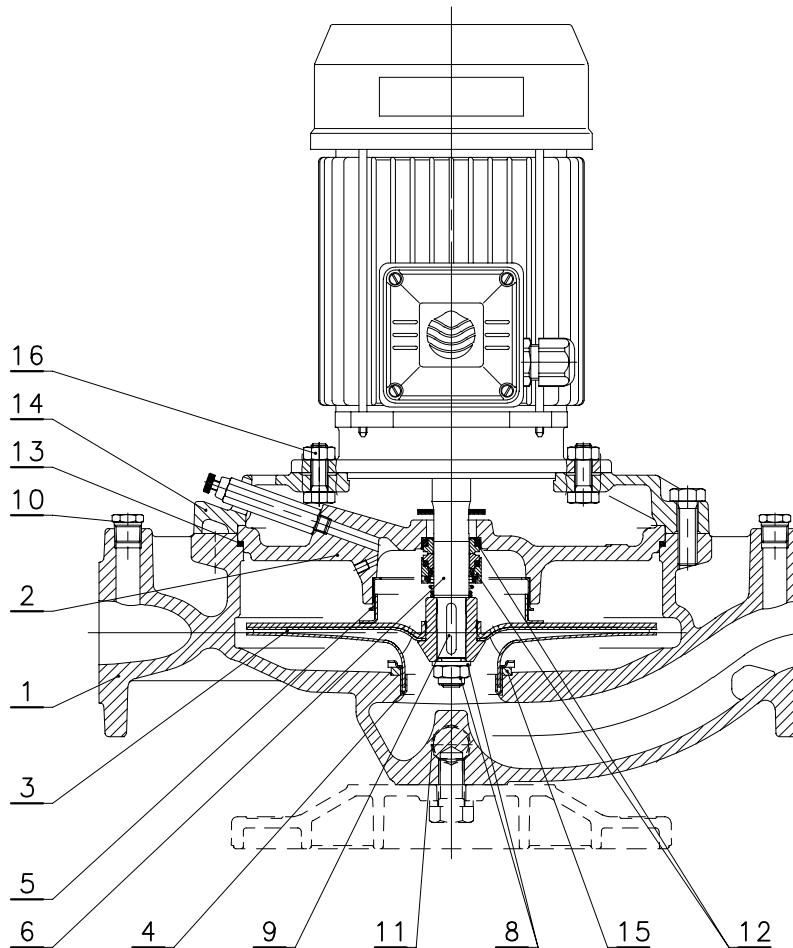


LEGEND

- 1 - Electric pump type
- 2 - Code
- 3 - Delivery range
- 4 - Head range
- 5 - Motor characteristics
- 6 - Date of manufacture and serial number
- 7 - Impeller diameter
- 8 - Minimum head
- 9 - Mechanical seal type
- 10 - Speed
- 11 - Rated output
- 12 - Maximum operating temperature
- 13 - Maximum operating pressure
- 14 - Type of gaskets

GFCE-GFCE4 SERIES LIST OF MODELS AND TABLE OF MATERIALS

04806_C_DS



VERSIONS

2 POLES	4 POLES
GFCE 40-125/07	GFCE4 40-200/05
GFCE 40-125/11	GFCE4 40-200/07
GFCE 40-160/15	GFCE4 40-250/11
GFCE 40-160/22	GFCE4 40-250/15
GFCE 40-200/40A	GFCE4 50-160/05
GFCE 40-200/40	GFCE4 50-200/07
GFCE 40-200/55	GFCE4 50-200/11
GFCE 40-250/75	GFCE4 50-250/15
GFCE 40-250/110	GFCE4 50-250/22
GFCE 50-125/11	GFCE4 65-125/05
GFCE 50-125/15	GFCE4 65-160/07
GFCE 50-160/22	GFCE4 65-160/11
GFCE 50-160/30	GFCE4 65-200/15
GFCE 50-160/40	GFCE4 65-250/22
GFCE 50-200/55	GFCE4 65-250/30
GFCE 50-200/75	GFCE4 80-125/07
GFCE 50-250/92	GFCE4 80-125/11
GFCE 50-250/110	GFCE4 80-200/15
GFCE 50-250/150	GFCE4 80-200/22
GFCE 65-125/22	GFCE4 80-200/30
GFCE 65-125/30	GFCE4 80-250/40
GFCE 65-125/40	GFCE4 80-250/55
GFCE 65-160/55	GFCE4 100-160/15
GFCE 65-160/75	GFCE4 100-200/22
GFCE 65-200/92	GFCE4 100-200/30
GFCE 65-200/110	GFCE4 100-250/40
GFCE 65-250/150	GFCE4 100-250/55
GFCE 65-250/185	GFCE4 100-250/75
GFCE 65-250/220	
GFCE 80-125/30	
GFCE 80-125/40	
GFCE 80-125/55	
GFCE 80-160/75	
GFCE 80-200/110	
GFCE 80-200/150	
GFCE 80-200/185	
GFCE 80-200/220	
GFCE 100-160/110	
GFCE 100-200/185	
GFCE 100-200/220	

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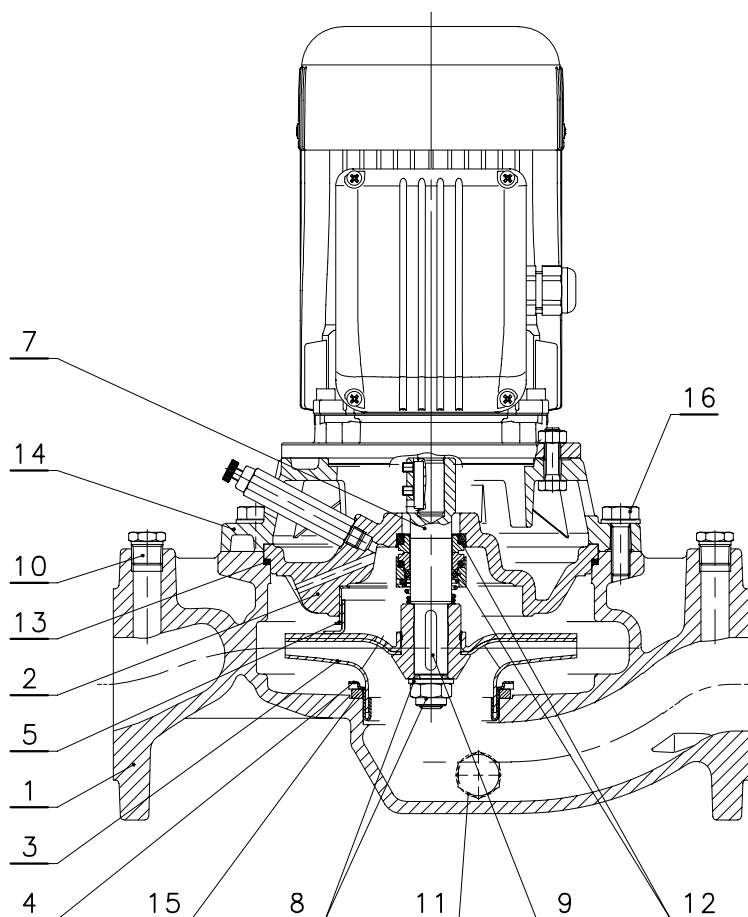
REF. N.	PART	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
2	Seal housing	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
3	Impeller	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
	Impeller	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
	Impeller	Bronze	EN 1982-CuSn10-C (CC480K)	UNS C90700
4	Wear ring	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Counterwear ring	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
6	Shaft extension	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
8	Impeller lock nut and washer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
9	Key	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
10	Plugs and air valve	Nickel-plated brass	EN 12164-CuZn39Pb3 (CW614N)	-
11	Gaskets for fill/drain plugs	Aluminium	EN 573-AW-AI99,5 (AW1050A)	-
12	Mechanical seal	Carbon/Ceramic/EPDM (standard version)		
13	Elastomers	EPDM (standard version)		
14	Adapter *	Aluminium	EN 1706-AC-AISI11Cu2 (Fe) (AC46100)	-
	Adapter	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
15	Spacer ring	Painted steel		
16	Pump body fastening bolts and screws	Galvanized steel		

* For 40/50-125 2/4 pole, 40/50-160 2/4 pole versions

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GFCE4 SERIES LIST OF MODELS AND TABLE OF MATERIALS

04806A_B_DS



VERSIONS 4 POLES

GFCE4 40-125/02A
GFCE4 40-125/02
GFCE4 40-160/02
GFCE4 40-160/03
GFCE4 50-125/02
GFCE4 50-125/03
GFCE4 65-125/03

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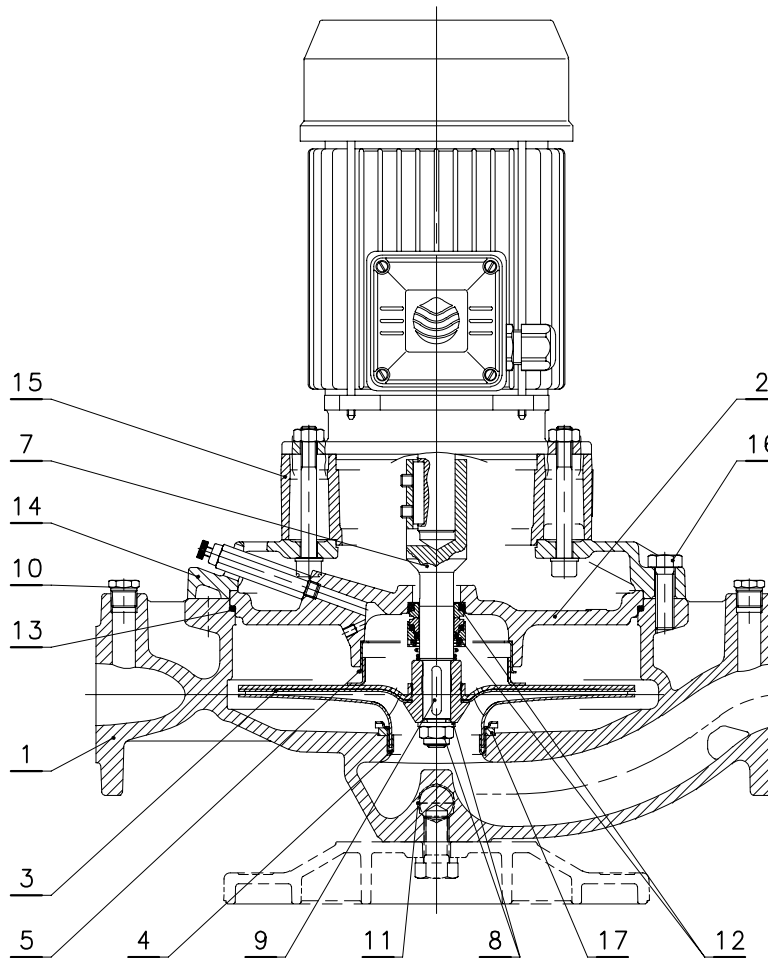
REF. N.	PART	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
2	Seal housing	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
3	Impeller	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
4	Wear ring	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Counterwear ring	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
7	Shaft rigid coupling	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
8	Impeller lock nut and washer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
9	Key	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
10	Plugs and air valve	Nickel-plated brass	EN 12164-CuZn39Pb3 (CW614N)	-
11	Gaskets for fill/drain plugs	Aluminium	EN 573-AW-AI99,5 (AW1050A)	-
12	Mechanical seal	Carbon/Ceramic/EPDM (standard version)		
13	Elastomers	EPDM (standard version)		
14	Adapter *	Aluminium	EN 1706-AC-AISI11Cu2 (Fe) (AC46100)	-
	Adapter	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
15	Spacer ring	Painted steel		
16	Pump body fastening bolts and screws	Galvanizen steel		

* Per le versioni 40/50-125 2/4 poli, 40/50-160 2/4 poli

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GFCS-GFCS4 SERIES LIST OF MODELS AND TABLE OF MATERIALS

04856_C_DS



VERSIONS

2 POLES	4 POLES
GFCS 40-125/07	GFCS4 40-200/05
GFCS 40-125/11	GFCS4 40-200/07
GFCS 40-160/15	GFCS4 40-250/11
GFCS 40-160/22	GFCS4 40-250/15
GFCS 40-200/30	GFCS4 50-200/07
GFCS 40-200/40	GFCS4 50-200/11
GFCS 40-200/55	GFCS4 50-250/15
GFCS 40-250/75	GFCS4 50-250/22
GFCS 40-250/110	GFCS4 65-160/07
GFCS 50-125/11	GFCS4 65-160/11
GFCS 50-125/15	GFCS4 65-200/15
GFCS 50-160/22	GFCS4 65-250/22
GFCS 50-160/30	GFCS4 65-250/30
GFCS 50-160/40	GFCS4 80-125/07
GFCS 50-200/55	GFCS4 80-125/11
GFCS 50-200/75	GFCS4 80-200/15
GFCS 50-250/110A	GFCS4 80-200/22
GFCS 50-250/110	GFCS4 80-200/30
GFCS 50-250/150	GFCS4 80-250/40
GFCS 65-125/22	GFCS4 80-250/55
GFCS 65-125/30	GFCS4 100-160/15
GFCS 65-125/40	GFCS4 100-200/22
GFCS 65-160/55	GFCS4 100-200/30
GFCS 65-160/75	GFCS4 100-250/40
GFCS 65-200/110A	GFCS4 100-250/55
GFCS 65-200/110	GFCS4 100-250/75
GFCS 65-250/150	
GFCS 65-250/185	
GFCS 65-250/220	
GFCS 80-125/30	
GFCS 80-125/40	
GFCS 80-125/55	
GFCS 80-160/75	
GFCS 80-200/110	
GFCS 80-200/150	
GFCS 80-200/185	
GFCS 80-200/220	
GFCS 100-160/110	
GFCS 100-200/185	
GFCS 100-200/220	

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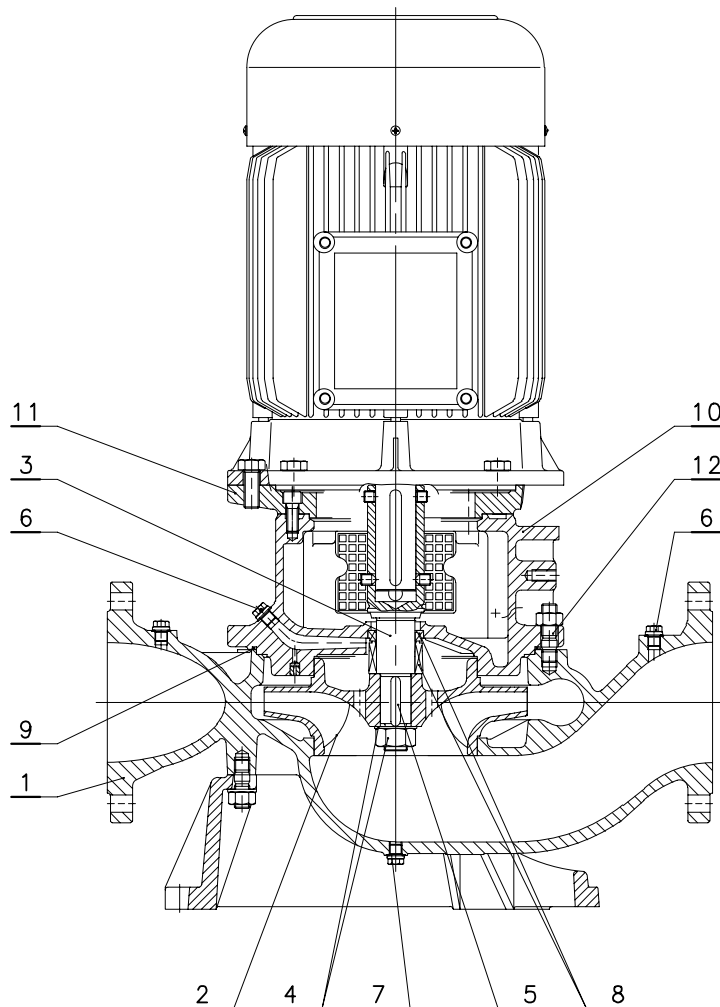
REF. N.	PART	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
2	Seal housing	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
3	Impeller	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
	Impeller	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
	Impeller	Bronze	EN 1982-CuSn10-C (CC480K)	UNS C90700
4	Wear ring	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Counterwear ring	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
7	Shaft rigid coupling	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
8	Impeller lock nut and washer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
9	Key	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
10	Plugs and air valve	Nickel-plated brass	EN 12164-CuZn39Pb3 (CW614N)	-
11	Gaskets for fill/drain plugs	Aluminium	EN 573-AW-Al99,5 (AW1050A)	-
12	Mechanical seal	Carbon/Silicon carbide/EPDM (standard version)		
13	Elastomers	EPDM (standard version)		
14	Adapter *	Aluminium	EN 1706-AC-AlSi11Cu2 (Fe) (AC46100)	-
	Adapter *	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
15	Motor adapter coupling	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
16	Pump body fastening bolts and screws	Galvanized steel		
16	Spacer ring	Painted steel		

* For 40/50-125 2/4 pole, 40/50-160 2/4 pole versions

fc_fcs-fcs4- 40-100-en_a_tm

GFCS4 SERIES LIST OF MODELS AND TABLE OF MATERIALS

04857_B_DS



VERSIONS 4 POLES

GFCS4 125-160/30
GFCS4 125-200/40
GFCS4 125-200/55
GFCS4 125-250/75
GFCS4 125-250/110
GFCS4 125-315/150
GFCS4 125-315/185
GFCS4 125-315/220
GFCS4 150-200/55
GFCS4 150-200/75
GFCS4 150-250/110
GFCS4 150-250/150
GFCS4 150-250/185

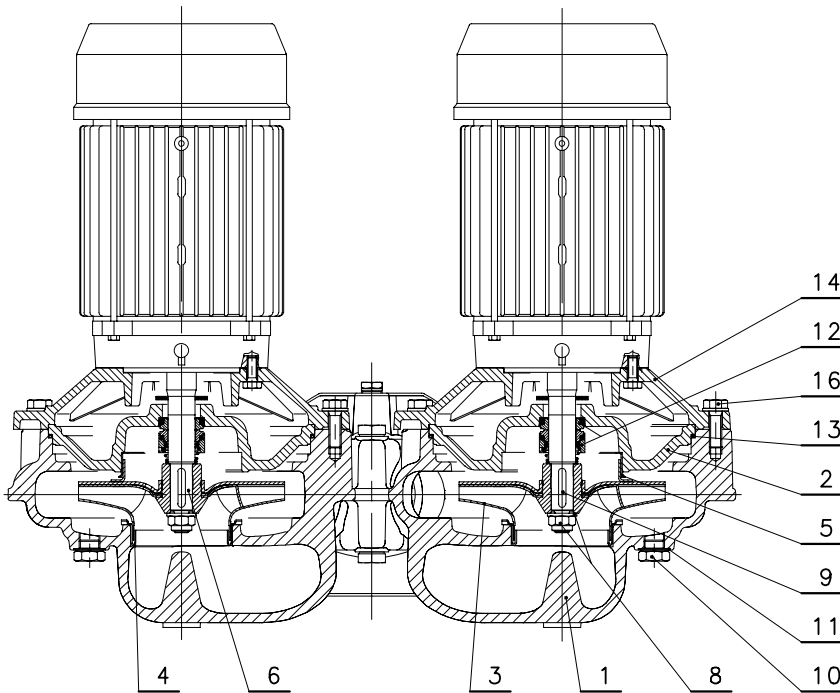
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REF. N.	PART	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
2	Impeller	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
		Bronze	EN 1982-CuSn10-C (CC480K)	UNS C90700
3	Rigid coupling	Stainless steel	EN 10088-1-X20Cr13 (1.4021)	AISI 420
4	Impeller lock nut and washer	Steel		
5	Key	Steel	EN 10083-1-C45E (1.1191)	-
6	Plugs and air valve	Steel		
7	Gaskets for plugs	Asbestos-free synthetic fibre AFM34 ®		
8	Mechanical seal	Silicon carbide / Carbon / EPDM (standard version)		
9	Elastomers	EPDM (standard version)		
10	Adapter	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
11	Motor adapter coupling	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
12	Pump body fastening bolts and screws	Steel		

lmr_fcs4 125-150-en_a_tm

GFCTE-GFCTE4 SERIES LIST OF MODELS AND TABLE OF MATERIALS

05202_A_DS



VERSIONS	
2 POLES	4 POLES
GFCTE 40-125/07	GFCTE4 40-200/05
GFCTE 40-125/11	GFCTE4 40-200/07
GFCTE 40-160/15	GFCTE4 40-250/11
GFCTE 40-160/22	GFCTE4 40-250/15
GFCTE 40-200/40A	GFCTE4 50-160/05
GFCTE 40-200/40	GFCTE4 50-200/07
GFCTE 40-200/55	GFCTE4 50-200/11
GFCTE 40-250/75	GFCTE4 50-250/15
GFCTE 40-250/110	GFCTE4 50-250/22
GFCTE 50-125/11	GFCTE4 65-125/05
GFCTE 50-125/15	GFCTE4 65-160/07
GFCTE 50-160/22	GFCTE4 65-160/11
GFCTE 50-160/30	GFCTE4 65-200/15
GFCTE 50-160/40	GFCTE4 65-250/22
GFCTE 50-200/55	GFCTE4 65-250/30
GFCTE 50-200/75	GFCTE4 80-125/07
GFCTE 50-250/92	GFCTE4 80-125/11
GFCTE 50-250/110	GFCTE4 80-200/15
GFCTE 50-250/150	GFCTE4 80-200/22
GFCTE 65-125/22	GFCTE4 80-200/30
GFCTE 65-125/30	GFCTE4 80-250/40
GFCTE 65-125/40	GFCTE4 80-250/55
GFCTE 65-160/55	GFCTE4 100-160/15
GFCTE 65-160/75	GFCTE4 100-200/22
GFCTE 65-200/92	GFCTE4 100-200/30
GFCTE 65-200/110	GFCTE4 100-250/40
GFCTE 65-250/150	GFCTE4 100-250/55
GFCTE 65-250/185	GFCTE4 100-250/75
GFCTE 65-250/220	
GFCTE 80-125/30	
GFCTE 80-125/40	
GFCTE 80-125/55	
GFCTE 80-160/75	
GFCTE 80-200/110	
GFCTE 80-200/150	
GFCTE 80-200/185	
GFCTE 80-200/220	
GFCTE 100-160/110	
GFCTE 100-200/185	
GFCTE 100-200/220	

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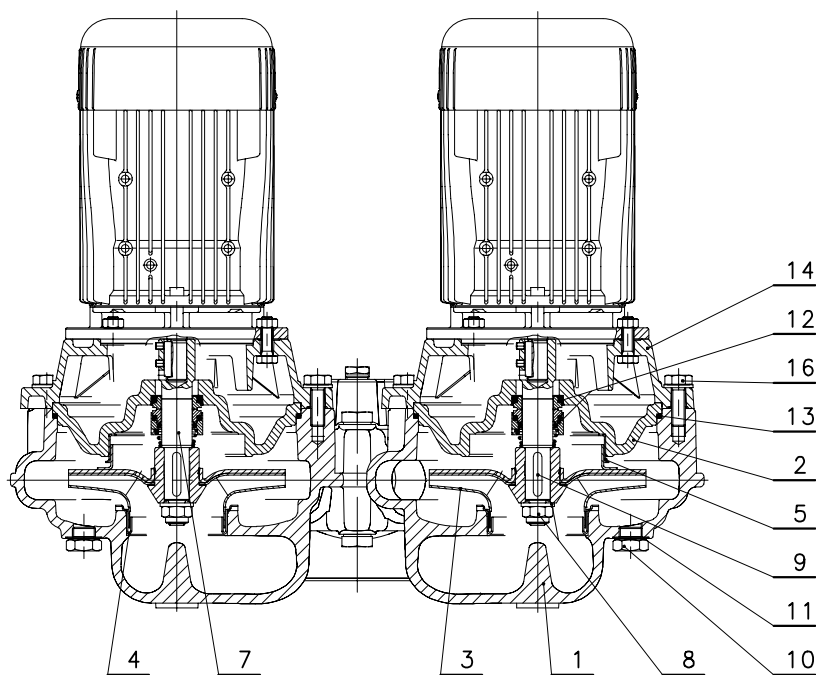
REF. N.	PART	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
2	Seal housing	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
3	Impeller	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
	Impeller	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
	Impeller	Bronze	EN 1982-CuSn10-C (CC480K)	UNS C90700
4	Wear ring	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Counterwear ring	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
6	Shaft extension	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
8	Impeller lock nut and washer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
9	Key	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
10	Plugs and air valve	Ottone nichelato	EN 12164-CuZn39Pb3 (CW614N)	-
11	Gaskets for fill/drain plugs	Aluminium	EN 573-AW-AI99,5 (AW1050A)	-
12	Mechanical seal	Carbon/Ceramic/EPDM (standard version)		
13	Elastomers	EPDM (standard version)		
14	Adapter *	Aluminum	EN 1706-AC-AISI11Cu2 (Fe) (AC46100)	-
	Adapter *	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
16	Pump body fastening bolts and screws	Galvanized steel		
	Changeover valve	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L

* For 40/50-125 2/4 pole, 40/50-160 2/4 pole versions

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GFCTE4 SERIES LIST OF MODELS AND TABLE OF MATERIALS

05203_A_DS



VERSIONS 4 POLES

GFCTE4 40-125/02A
GFCTE4 40-125/02
GFCTE4 40-160/02
GFCTE4 40-160/03
GFCTE4 50-125/02
GFCTE4 50-125/03
GFCTE4 65-125/03

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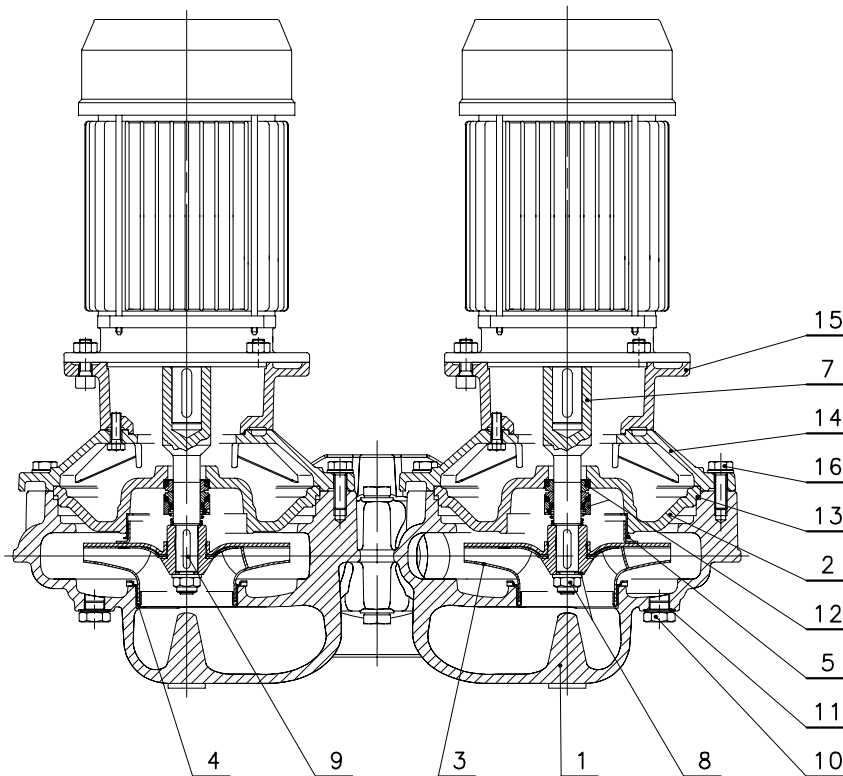
REF. N.	PART	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
2	Seal housing	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
3	Impeller	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
4	Wear ring	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Counterwear ring	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
7	Shaft rigid coupling	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
8	Impeller lock nut and washer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
9	Key	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
10	Plugs and air valve	Nickel-plated brass	EN 12164-CuZn39Pb3 (CW614N)	-
11	Gaskets for fill/drain plugs	Aluminium	EN 573-AW-AI99,5 (AW1050A)	-
12	Mechanical seal	Carbon/Ceramic/EPDM (standard version)		
13	Elastomers	EPDM (standard version)		
14	Adapter *	Aluminium	EN 1706-AC-AISI11Cu2 (Fe) (AC46100)	-
	Adapter *	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
16	Pump body fastening bolts and screws	Galvanized steel		
	Changeover valve	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L

* For 40/50-125 2/4 pole, 40/50-160 2/4 pole versions

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GFCTS-GFCTS4 SERIES LIST OF MODELS AND TABLE OF MATERIALS

05252_A_DS



VERSIONS	
2 POLES	4 POLES
GFCTS 40-125/07	GFCTS4 40-200/05
GFCTS 40-125/11	GFCTS4 40-200/07
GFCTS 40-160/15	GFCTS4 40-250/11
GFCTS 40-160/22	GFCTS4 40-250/15
GFCTS 40-200/30	GFCTS4 50-200/07
GFCTS 40-200/40	GFCTS4 50-200/11
GFCTS 40-200/55	GFCTS4 50-250/15
GFCTS 40-250/75	GFCTS4 50-250/22
GFCTS 40-250/110	GFCTS4 65-160/07
GFCTS 50-125/11	GFCTS4 65-160/11
GFCTS 50-125/15	GFCTS4 65-200/15
GFCTS 50-160/22	GFCTS4 65-250/22
GFCTS 50-160/30	GFCTS4 65-250/30
GFCTS 50-160/40	GFCTS4 80-125/07
GFCTS 50-200/55	GFCTS4 80-125/11
GFCTS 50-200/75	GFCTS4 80-200/15
GFCTS 50-250/110A	GFCTS4 80-200/22
GFCTS 50-250/110	GFCTS4 80-200/30
GFCTS 50-250/150	GFCTS4 80-250/40
GFCTS 65-125/22	GFCTS4 80-250/55
GFCTS 65-125/30	GFCTS4 100-160/15
GFCTS 65-125/40	GFCTS4 100-200/22
GFCTS 65-160/55	GFCTS4 100-200/30
GFCTS 65-160/75	GFCTS4 100-250/40
GFCTS 65-200/110A	GFCTS4 100-250/55
GFCTS 65-200/110	GFCTS4 100-250/75
GFCTS 65-250/150	
GFCTS 65-250/185	
GFCTS 65-250/220	
GFCTS 80-125/30	
GFCTS 80-125/40	
GFCTS 80-125/55	
GFCTS 80-160/75	
GFCTS 80-200/110	
GFCTS 80-200/150	
GFCTS 80-200/185	
GFCTS 80-200/220	
GFCTS 100-160/110	
GFCTS 100-200/185	
GFCTS 100-200/220	

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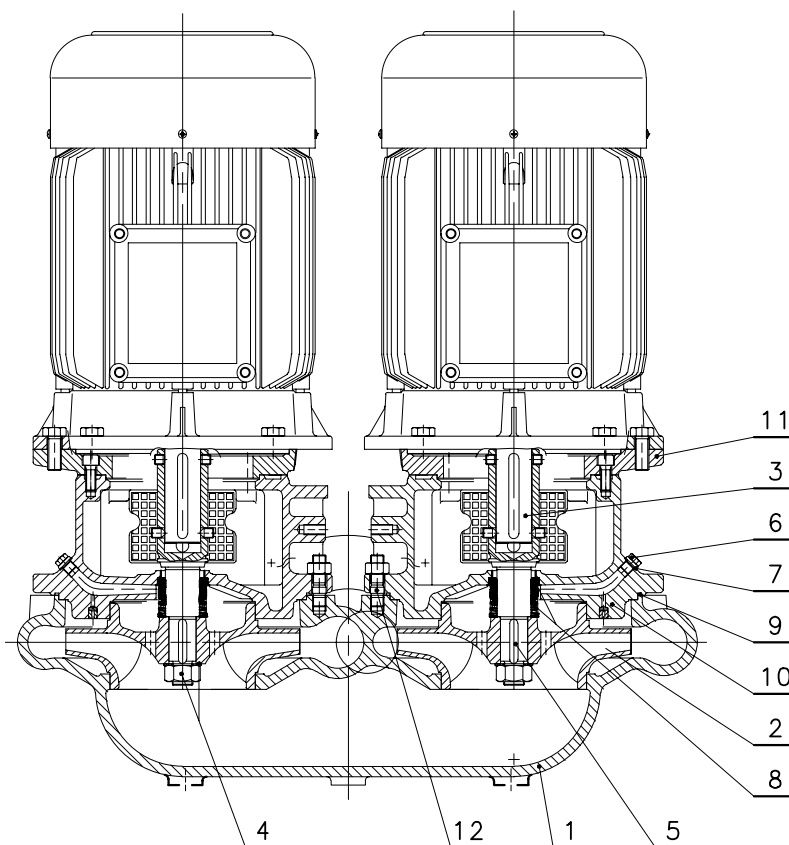
REF. N.	PART	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
2	Seal housing	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
3	Impeller	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
	Impeller	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
	Impeller	Bronze	EN 1982-CuSn10-C (CC480K)	UNS C90700
4	Wear ring	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Counterwear ring	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
7	Shaft rigid coupling	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
8	Impeller lock nut and washer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
9	Key	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
10	Plugs and air valve	Nickel-plated brass	EN 12164-CuZn39Pb3 (CW614N)	-
11	Gaskets for fill/drain plugs	Aluminium	EN 573-AW-AI99,5 (AW1050A)	-
12	Mechanical seal	Carbon/Silicon carbide/EPDM (standard version)		
13	Elastomers	EPDM (standard version)		
14	Adapter *	Aluminium	EN 1706-AC-AISI11Cu2 (Fe) (AC46100)	-
	Adapter	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
15	Motor adapter coupling	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
16	Pump body fastening bolts and screws	Galvanized steel		
	Changeover valve	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L

* For 40/50-125 2/4 pole, 40/50-160 2/4 pole versions

fct_fcts-fcts4- 40-100-en_b_tm

GFCTS4 SERIES LIST OF MODELS AND TABLE OF MATERIALS

05251_A_DS



VERSIONS 4 POLES

GFCTS4 125-160/30
GFCTS4 125-200/40
GFCTS4 125-200/55
GFCTS4 125-250/75
GFCTS4 125-250/110
GFCTS4 150-200/55
GFCTS4 150-200/75
GFCTS4 150-250/110
GFCTS4 150-250/150
GFCTS4 150-250/185

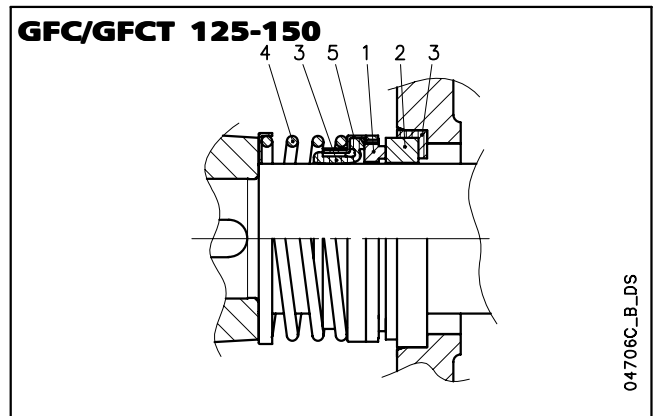
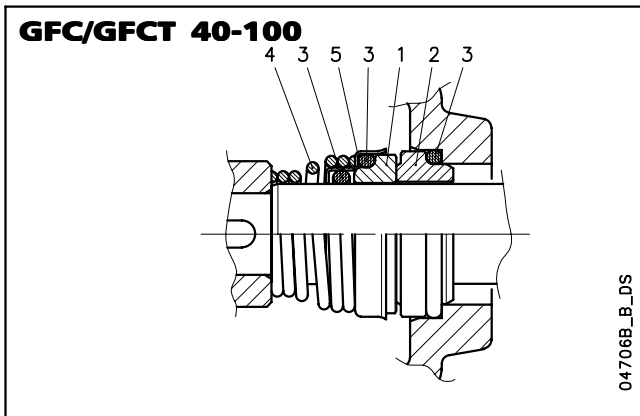
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REF. N.	PART	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
2	Impeller	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
		Bronze	EN 1982-CuSn10-C (CC480K)	UNS C90700
3	Rigid coupling	Stainless steel	EN 10088-1-X20Cr13 (1.4021)	AISI 420
4	Impeller lock nut and washer	Steel		
5	Key	Steel	EN 10083-1-C45E (1.1191)	-
6	Plugs and air valve	Steel		
7	Gaskets for plugs	Asbestos-free synthetic fibre AFM34 ®		
8	Mechanical seal	Silicon carbide / Carbon / EPDM (standard version)		
9	Elastomers	EPDM (standard version)		
10	Adapter	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
11	Motor adapter coupling	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
12	Pump body fastening bolts and washer	Steel		
	Changeover valve	Steel		

lmz_fcts4 125-150-en_b_tm

GFC-GFCT MECHANICAL SEAL, ACCORDING TO EN 12756

Mechanical seal mounting dimensions according to EN12756 (ex DIN 24960) and ISO 3069.
(A version with anti-rotation lockpin is available on request.)



LIST OF MATERIALS

POSITION 1 - 2	POSITION 3	POSITION 4 - 5
Q ₁ : Silicon carbide	E : EPDM	G : AISI 316
B : Resin impregnated carbon	V : FPM	
V : Ceramic		

GFCE - GFCTE SEAL TYPE

fc-fct_ten-mec-en_a_tm

TYPE	POSITION					TEMPERATURE (°C)
	1 ROTATING ASSEMBLY	2 FIXED ASSEMBLY	3 ELASTOMERS	4 SPRINGS	5 OTHER COMPONENTS	
STANDARD MECHANICAL SEAL						
VBEGG	V	B	E	G	G	-10 +130
OTHER TYPES OF MECHANICAL SEAL						
Q ₁ BEGG	Q ₁	B	E	G	G	-10 +130
Q ₁ Q ₁ EGG	Q ₁	Q ₁	E	G	G	-10 +130
Q ₁ BVGG	Q ₁	B	V	G	G	-10 +120
Q ₁ Q ₁ VGG	Q ₁	Q ₁	V	G	G	-10 +120

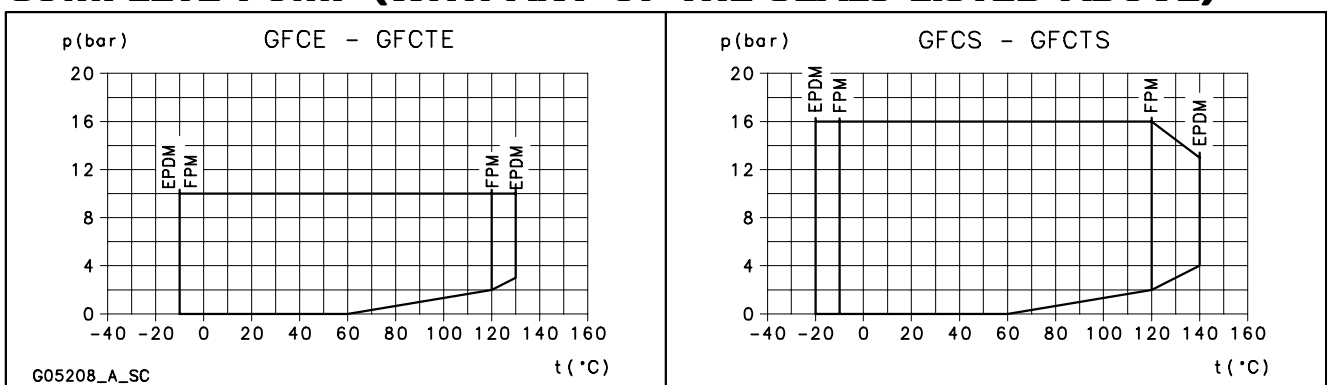
GFCS - GFCTS SEAL TYPE

fcs-fcte_tipi-ten-mec-en_a_tc

TYPE	POSITION					TEMPERATURE (°C)
	1 ROTATING ASSEMBLY	2 FIXED ASSEMBLY	3 ELASTOMERS	4 SPRINGS	5 OTHER COMPONENTS	
STANDARD MECHANICAL SEAL						
Q ₁ B E G G	Q ₁	B	E	G	G	-20 +140
OTHER TYPES OF MECHANICAL SEAL						
Q ₁ Q ₁ E G G	Q ₁	Q ₁	E	G	G	-20 +140
Q ₁ B V G G	Q ₁	B	V	G	G	-10 +120
Q ₁ Q ₁ V G G	Q ₁	Q ₁	V	G	G	-10 +120

PRESSURE / TEMPERATURE APPLICATION LIMITS FOR COMPLETE PUMP (WITH ANY OF THE SEALS LISTED ABOVE)

fcs-fcts_tipi-ten-mec-en_a_tc



LIST OF GFC SERIES MODELS 50 Hz

GFC - GFCT (2 POLES)

SIZE	kW	VERSION		
		GFCEM GFCTEM	GFCE GFCTE	GFCS GFCTS
40-125/07	0,75	•	•	•
40-125/11	1,1	•	•	•
40-160/15	1,5	•	•	•
40-160/22	2,2	•	•	•
40-200/30	3	-	-	•
40-200/40A	4	-	•	-
40-200/40	4	-	•	•
40-200/55	5,5	-	•	•
40-250/75	7,5	-	•	•
40-250/110	11	-	•	•
50-125/11	1,1	•	•	•
50-125/15	1,5	•	•	•
50-160/22	2,2	•	•	•
50-160/30	3	-	•	•
50-160/40	4	-	•	•
50-200/55	5,5	-	•	•
50-200/75	7,5	-	•	•
50-250/92	9,2	-	•	-
50-250/110A	11	-	-	•
50-250/110	11	-	•	•
50-250/150	15	-	•	•
65-125/22	2,2	•	•	•
65-125/30	3	-	•	•
65-125/40	4	-	•	•
65-160/55	5,5	-	•	•
65-160/75	7,5	-	•	•
65-200/92	9,2	-	•	-
65-200/110A	11	-	-	•
65-200/110	11	-	•	•
65-250/150	15	-	•	•
65-250/185	18,5	-	•	•
65-250/220	22	-	•	•
80-125/30	3	-	•	•
80-125/40	4	-	•	•
80-125/55	5,5	-	•	•
80-160/75	7,5	-	•	•
80-200/110	11	-	•	•
80-200/150	15	-	•	•
80-200/185	18,5	-	•	•
80-200/220	22	-	•	•
100-160/110	11	-	•	•
100-200/185	18,5	-	•	•
100-200/220	22	-	•	•

• = Available

gfc_gfce-gfcs_2p50-en_b_tem

GFC.4 - GFCT.4 (4 POLES)

SIZE	kW	VERSION		
		GFCE4 GFCTE4	GFCS4	GFCTS4
40-125/02A	0,25	•	-	-
40-125/02	0,25	•	-	-
40-160/02	0,25	•	-	-
40-160/03	0,37	•	-	-
40-200/05	0,55	•	•	•
40-200/07	0,75	•	•	•
40-250/11	1,1	•	•	•
40-250/15	1,5	•	•	•
50-125/02	0,25	•	-	-
50-125/03	0,37	•	-	-
50-160/05	0,55	•	-	-
50-200/07	0,75	•	•	•
50-200/11	1,1	•	•	•
50-250/15	1,5	•	•	•
50-250/22	2,2	•	•	•
65-125/03	0,37	•	-	-
65-125/05	0,55	•	-	-
65-160/07	0,75	•	•	•
65-160/11	1,1	•	•	•
65-200/15	1,5	•	•	•
65-250/22	2,2	•	•	•
65-250/30	3	•	•	•
80-125/07	0,75	•	•	•
80-125/11	1,1	•	•	•
80-200/15	1,5	•	•	•
80-200/22	2,2	•	•	•
80-200/30	3	•	•	•
80-250/40	4	•	•	•
80-250/55	5,5	•	•	•
100-160/15	1,5	•	•	•
100-200/22	2,2	•	•	•
100-200/30	3	•	•	•
100-250/40	4	•	•	•
100-250/55	5,5	•	•	•
100-250/75	7,5	•	•	•
125-160/30	3	-	•	•
125-200/40	4	-	•	•
125-200/55	5,5	-	•	•
125-250/75	7,5	-	•	•
125-250/110	11	-	•	•
125-315/150	15	-	•	-
125-315/185	18,5	-	•	-
125-315/220	22	-	•	-
150-200/55	5,5	-	•	•
150-200/75	7,5	-	•	•
150-250/110	11	-	•	•
150-250/150	15	-	•	•
150-250/185	18,5	-	•	•

• = Available

gfc_gfce4-gfcs4_4p50-en_b_tem

MOTORS FOR GFC-GFCT SERIES

Standard supplied IE2/IE3 three-phase surface motors $\geq 0,75$ kW are compliant with Regulation (EC) no. 640/2009 and IEC 60034-30.

Enclosed short circuit squirrel cage motor (TEFC), with external ventilation.

Electrical performances according to EN 60034-1.

Insulation class 155 (F).

IP55 protection.

Condensate drain plugs on standard version.

Cooling by fan according to EN 60034-6.

Cable gland metric size according to EN 50262.

Standard voltage:

- Single-phase version: 220-240 V 50 Hz, with incorporated automatic-reset overload protection up to 1,5 kW.
- Three-phase version: 220-240/380-415 V 50 Hz for powers up to 3 kW. 380-415/660-690 V 50 Hz for powers above 3 kW. Overload protection to be provided by the user.

SERIE GFCE-GFCTE MOTORI MONOFASE A 50 Hz, 2 POLI

P _N kW	MOTOR TYPE	IEC SIZE*	Construction Design	INPUT CURRENT I _n (A) 220-240 V	CAPACITOR		DATA FOR 230 V 50 Hz VOLTAGE						
					μF	V	min ⁻¹	I _s / I _n	η %	cosφ	T _n Nm	T _s /T _n	T _m /T _n
0,75	SM90RB14/107	90R	B14	4,83-5,23	30	450	2875	5,28	71,8	0,92	2,49	0,70	2,59
1,1	SM90RB14/111	90R	B14	6,88-6,65	30	450	2800	3,89	74,7	0,96	3,75	0,46	1,72
1,5	SM90RB14/115	90R	B14	9,21-8,58	40	450	2810	4,00	76,1	0,98	5,15	0,39	1,74
2,2	PLM90B14/122	90	B14	12,5-11,6	70	450	2825	4,47	82,4	0,97	7,43	0,53	1,87

* R = Reduced size of motor casing as compared to shaft extension and flange.

fhe-motm-2p50-en_d_te

GFCE-GFCTE SERIES

THREE-PHASE MOTORS AT 50 Hz, 2 POLES

P _N kW	Efficiency η_N %																		IE	Year of manufacture
	Δ 220 V Y 380 V			Δ 230 V Y 400 V			Δ 240 V Y 415 V			Δ 380 V Y 660 V			Δ 400 V Y 690 V			Δ 415 V				
	4/4	3/4	2/4	4/4	3/4	2/4	4/4	3/4	2/4	4/4	3/4	2/4	4/4	3/4	2/4	4/4	3/4	2/4		
0,75	82,5	83,1	81,3	82,8	82,7	80,1	82,6	82,0	78,9	82,5	82,0	78,9	82,5	82,0	78,9	82,5	82,0	78,9	3	By June 2011
1,1	84,0	84,7	83,4	84,4	84,5	82,5	84,3	84,0	81,4	84,0	84,0	81,4	84,0	84,0	81,4	84,0	84,0	81,4		
1,5	85,6	86,5	85,8	85,9	86,4	84,9	86,0	86,0	84,0	85,6	86,0	84,0	85,6	86,0	84,0	85,6	86,0	84,0		
2,2	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	2	
3	85,5	86,8	85,6	86,1	86,8	85,6	86,3	86,8	85,6	85,5	86,8	85,6	85,5	86,8	85,6	85,5	86,8	85,6		
4	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3		
5,5	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6		
7,5	88,6	88,1	88,1	88,6	88,1	88,1	88,6	88,1	88,1	88,6	88,1	88,1	88,6	88,1	88,1	88,6	88,1	88,1		
9,2	89,3	88,8	88,8	89,3	88,8	88,8	89,3	88,8	88,8	89,3	88,8	88,8	89,3	88,8	88,8	89,3	88,8	88,8		
11	90,3	91,1	90,3	90,3	91,1	90,3	90,3	91,1	90,3	90,3	91,1	90,3	90,8	91,1	90,3	91,0	91,1	90,3		
15	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3		
18,5	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2		
22	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3		

P _N kW	Manufacturer	IEC SIZE*	Construction Design	N. of Poles	f _N Hz	Data for 400 V / 50 Hz Voltage				
	XYLEM WATER SYSTEMS USA LLC 1 Goulds Drive - Auburn NY 13021 – U.S.A.									
	Model					cosφ	Is / I _N	T _N Nm	Ts/T _N	Tm/T _N
0,75	SM90RB14/307PE	90R	SPECIAL	2	50	0,78	7,38	2,48	3,57	3,75
1,1	SM90RB14/311PE	90R				0,79	8,31	3,63	3,95	3,95
1,5	SM90RB14/315PE	90R				0,80	8,80	4,96	4,31	4,10
2,2	PLM90B14/322	90				0,80	8,63	7,25	3,74	3,71
3	PLM90B14/330	90				0,82	8,39	9,96	3,50	3,32
4	PLM112RB14/340	112R				0,85	9,52	13,1	3,04	4,40
5,5	PLM112B14/355	112				0,87	10,3	18,1	4,43	5,80
7,5	PLM132B14/375	132				0,87	9,21	24,5	3,26	4,55
9,2	PLM132B14/392	132				0,88	9,66	30,3	3,17	4,54
11	PLM132B14/3110	132				0,87	9,72	36,0	3,46	4,56
15	PLM160B14/3150	160				0,91	8,45	48,6	2,26	3,81
18,5	PLM160B14/3185	160				0,88	9,75	59,8	2,82	4,53
22	PLM160B14/3220	160				0,89	9,50	71,1	2,74	4,26

P _N kW	Voltage U _N V											n _N min ⁻¹	Observe the regulations and codes locally in force regarding sorted waste disposal.	Operating conditions **		
	Δ			Y			Δ			Y				Altitude Above Sea Level (m)	T. amb min/max °C	ATEX
	220 V	230 V	240 V	380 V	400 V	415 V	380 V	400 V	415 V	660 V	690 V					
	I _N (A)															
0,75	2,96	2,94	2,96	1,71	1,70	1,71	1,70	1,69	1,70	0,98	0,98	2875 ÷ 2895		≤ 1000	-15 / 40	No
1,1	4,19	4,14	4,16	2,42	2,39	2,40	2,41	2,38	2,38	1,39	1,37	2870 ÷ 2900				
1,5	5,56	5,49	5,51	3,21	3,17	3,18	3,21	3,18	3,19	1,85	1,84	2870 ÷ 2895				
2,2	8,05	8,04	8,09	4,65	4,64	4,67	4,62	4,61	4,63	2,67	2,66	2885 ÷ 2900				
3	10,8	10,6	10,6	6,23	6,14	6,12	6,18	6,10	6,06	3,57	3,52	2850 ÷ 2885				
4	13,6	13,5	13,5	7,88	7,77	7,79	7,80	7,63	7,65	4,51	4,41	2895 ÷ 2920				
5,5	18,3	18,0	17,9	10,6	10,4	10,3	10,6	10,4	10,5	6,14	6,02	2885 ÷ 2905				
7,5	25,4	24,8	24,4	14,7	14,3	14,1	14,5	14,0	13,9	8,35	8,11	2920 ÷ 2935				
9,2	29,7	28,9	28,3	17,2	16,7	16,4	17,3	16,8	16,6	10,0	9,70	2910 ÷ 2930				
11	36,0	35,1	34,7	20,8	20,3	20,0	20,8	20,3	20,1	12,0	11,7	2910 ÷ 2925				
15	47,2	45,3	44,0	27,2	26,2	25,4	27,2	26,0	25,3	15,7	15,0	2940 ÷ 2950				
18,5	58,3	56,9	55,9	33,7	32,9	32,3	34,1	33,2	32,8	19,7	19,1	2945 ÷ 2955				
22	68,3	66,2	64,3	39,4	38,2	37,1	40,0	38,6	37,8	23,1	22,3	2945 ÷ 2955				

* R = Reduced size of motor casing as compared to shaft extension and flange.

gfce-gfcte-ie2-mott-2p50-en_b_te

** Operating conditions to be referred to motor only. About electric pump, refer to limits in user's manual.

GFCS-GFCTS SERIES

THREE-PHASE MOTORS AT 50 Hz, 2 POLES

P _N kW	Efficiency η_N																		IE	Year of manufacture
	%																			
	Δ 220 V Y 380 V			Δ 230 V Y 400 V			Δ 240 V Y 415 V			Δ 380 V Y 660 V			Δ 400 V Y 690 V			Δ 415 V				
	4/4	3/4	2/4	4/4	3/4	2/4	4/4	3/4	2/4	4/4	3/4	2/4	4/4	3/4	2/4	4/4	3/4	2/4		
0,75	82,5	83,1	81,3	82,8	82,7	80,1	82,6	82,0	78,9	82,5	82,0	78,9	82,5	82,0	78,9	82,5	82,0	78,9	3	By June 2011
1,1	84,0	84,7	83,4	84,4	84,5	82,5	84,3	84,0	81,4	84,0	84,0	81,4	84,0	84,0	81,4	84,0	84,0	81,4		
1,5	85,6	86,5	85,8	85,9	86,4	84,9	86,0	86,0	84,0	85,6	86,0	84,0	85,6	86,0	84,0	85,6	86,0	84,0		
2,2	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	2	
3	85,5	86,8	85,6	86,1	86,8	85,6	86,3	86,8	85,6	85,5	86,8	85,6	85,5	86,8	85,6	85,5	86,8	85,6		
4	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3	86,3		
5,5	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6	87,6		
7,5	88,6	88,1	88,1	88,6	88,1	88,1	88,6	88,1	88,1	88,6	88,1	88,1	88,6	88,1	88,1	88,6	88,1	88,1		
11	90,3	91,1	90,3	90,3	91,1	90,3	90,3	91,1	90,3	90,3	91,1	90,3	90,3	91,1	90,3	90,3	91,1	90,3		
15	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3	90,3		
18,5	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2	91,2		
22	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3	91,3		

P _N kW	Manufacturer	IEC SIZE*	Construction Design	N. of Poles	f _N Hz	Data for 400 V / 50 Hz Voltage				
	XYLEM WATER SYSTEMS USA LLC 1 Goulds Drive - Auburn NY 13021 – U.S.A.									
	Manufacturer					cosφ	Is / I _N	T _N Nm	Ts/T _N	Tm/T _N
0,75	SM80B5/307PE	80	B5	2	50	0,78	7,38	2,48	3,57	3,75
1,1	SM80B5/311PE	80				0,79	8,31	3,63	3,95	3,95
1,5	SM90RB5/315PE	90R				0,80	8,80	4,96	4,31	4,10
2,2	PLM90B5/322	90				0,80	8,63	7,25	3,74	3,71
3	PLM100RB5/330	100R				0,82	8,39	9,96	3,50	3,32
4	PLM112RB5/340	112R				0,85	9,52	13,1	3,04	4,40
5,5	PLM132RB5/355	132R				0,87	10,3	18,1	4,43	5,80
7,5	PLM132B5/375	132				0,87	9,21	24,5	3,26	4,55
11	PLM160RB5/3110	160R				0,87	9,72	36,0	3,46	4,56
15	PLM160B5/3150	160				0,91	8,45	48,6	2,26	3,81
18,5	PLM160B5/3185	160				0,88	9,75	59,8	2,82	4,53
22	PLM180RB5/3220	180R				0,89	9,50	71,1	2,74	4,26

P _N kW	Voltage U _N V											n _N min ⁻¹	Observe the regulations and codes locally in force regarding sorted waste disposal.	Operating conditions **		
	V													Altitude Above Sea Level (m)	T. amb min/max °C	ATEX
	Δ			Y			Δ			Y						
	220 V	230 V	240 V	380 V	400 V	415 V	380 V	400 V	415 V	660 V	690 V					
I _N (A)																
0,75	2,96	2,94	2,96	1,71	1,70	1,71	1,70	1,69	1,70	0,98	0,98	2875 ÷ 2895				
1,1	4,19	4,14	4,16	2,42	2,39	2,40	2,41	2,38	2,38	1,39	1,37	2870 ÷ 2900				
1,5	5,56	5,49	5,51	3,21	3,17	3,18	3,21	3,18	3,19	1,85	1,84	2870 ÷ 2895				
2,2	8,05	8,04	8,09	4,65	4,64	4,67	4,62	4,61	4,63	2,67	2,66	2885 ÷ 2900				
3	10,8	10,6	10,6	6,23	6,14	6,12	6,18	6,10	6,06	3,57	3,52	2850 ÷ 2885				
4	13,6	13,5	13,5	7,88	7,77	7,79	7,80	7,63	7,65	4,51	4,41	2895 ÷ 2920				
5,5	18,3	18,0	17,9	10,6	10,4	10,3	10,6	10,4	10,5	6,14	6,02	2885 ÷ 2905				
7,5	25,4	24,8	24,4	14,7	14,3	14,1	14,5	14,0	13,9	8,35	8,11	2920 ÷ 2935				
11	36,0	35,1	34,7	20,8	20,3	20,0	20,8	20,3	20,1	12,0	11,7	2910 ÷ 2925				
15	47,2	45,3	44,0	27,2	26,2	25,4	27,2	26,0	25,3	15,7	15,0	2940 ÷ 2950				
18,5	58,3	56,9	55,9	33,7	32,9	32,3	34,1	33,2	32,8	19,7	19,1	2945 ÷ 2955				
22	68,3	66,2	64,3	39,4	38,2	37,1	40,0	38,6	37,8	23,1	22,3	2945 ÷ 2955				

* R = Reduced size of motor casing as compared to shaft extension and flange.

gfcs-gfcts-ie2-mott-2p50-en_b_te

** Operating conditions to be referred to motor only. About electric pump, refer to limits in user's manual.

GFCE4-GFCTE4 SERIES

THREE-PHASE MOTORS AT 50 Hz, 4 POLES

P _N kW	Efficiency η_N %																		IE	Year of manufacture
	Δ 220 V Y 380 V			Δ 230 V Y 400 V			Δ 240 V Y 415 V			Δ 380 V Y 660 V			Δ 400 V Y 690 V			Δ 415 V				
	4/4	3/4	2/4	4/4	3/4	2/4	4/4	3/4	2/4	4/4	3/4	2/4	4/4	3/4	2/4	4/4	3/4	2/4		
0,25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	By June 2011
0,37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
0,55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
0,75	80,4	81,3	79,8	81,1	81,4	79,1	81,4	81,2	78,4	80,4	81,2	78,4	80,4	81,2	78,4	80,4	81,2	78,4	2	
1,1	81,4	81,4	81,1	81,4	81,4	81,1	81,4	81,4	81,1	81,4	81,4	81,1	81,4	81,4	81,1	81,4	81,4	81,1		
1,5	83,1	83,1	82,0	83,1	83,1	82,0	83,1	83,1	82,0	83,1	83,1	82,0	83,1	83,1	82,0	83,1	83,1	82,0		
2,2	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7		
3	85,5	85,5	84,1	85,5	85,5	84,1	85,5	85,5	84,1	85,5	85,5	84,1	85,5	85,5	84,1	85,5	85,5	84,1		
4	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6		
5,5	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0		
7,5	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7		

P _N kW	Manufacturer		IEC SIZE*	Construction Design	N. of Poles	f _N Hz	Data for 400 V / 50 Hz Voltage				
	XYLEM WATER SYSTEMS USA LLC 1 Goulds Drive - Auburn NY 13021 – U.S.A.						cosφ	Is / I _N	T _N Nm	Ts/T _N	Tm/Tn
	Model										
0,25	SM471B5S/302		71	B5	4	50	0,59	3,58	1,71	3,16	2,63
0,37	SM471B5S/304		71				0,60	3,39	2,57	3,40	2,47
0,55	SM490RB5(RB14)S/305		90R	0,67			3,95	3,77	2,45	2,38	
0,75	LLM490RB5S/307		90R	0,75			5,78	5,03	2,77	3,31	
1,1	PLM490B5S/311		90	0,72			6,34	7,27	2,80	3,43	
1,5	PLM490B5S/315		90	0,67			6,79	9,88	3,33	3,67	
2,2	PLM4100B5S/322		100	0,77			7,50	14,4	2,71	3,97	
3	PLM4100B5S/330		100	0,73			7,84	19,6	2,96	4,09	
4	PLM4112B5S/340		112	0,78			7,91	26,3	2,86	3,94	
5,5	PLM4132B14S/355		132	0,78			7,89	35,9	2,79	3,47	
7,5	PLM4132B14S/375		132	0,78			7,71	49,1	2,75	3,63	

P _N kW	Voltage U _N V											n _N min ⁻¹	Observe the regulations and codes locally in force regarding sorted waste disposal.	Operating conditions **		
	Δ			Y			Δ			Y				Altitude Above Sea Level (m)	T. amb min/max °C	ATEX
	220 V	230 V	240 V	380 V	400 V	415 V	380 V	400 V	415 V	660 V	690 V					
	I _N (A)															
0,25	1,68	1,71	1,77	0,97	0,99	1,02	-	-	-	-	-	1375 ÷ 1400		≤ 1000	-15 / 40	No
0,37	2,46	2,53	2,62	1,42	1,46	1,51	-	-	-	-	-	1355 ÷ 1380				
0,55	2,98	3,03	3,10	1,72	1,75	1,79	-	-	-	-	-	1380 ÷ 1400				
0,75	3,08	3,03	3,01	1,78	1,75	1,74	1,78	1,75	1,74	1,03	1,01	1410 ÷ 1430				
1,1	4,64	4,61	4,61	2,68	2,66	2,66	2,66	2,64	2,64	1,54	1,53	1435 ÷ 1445				
1,5	6,50	6,51	6,62	3,75	3,76	3,82	3,74	3,75	3,80	2,16	2,16	1440 ÷ 1450				
2,2	8,49	8,31	8,24	4,90	4,80	4,76	4,87	4,78	4,72	2,81	2,76	1445 ÷ 1455				
3	12,0	11,9	12,0	6,91	6,89	6,94	6,88	6,86	6,90	3,97	3,96	1455 ÷ 1465				
4	15,5	15,3	15,2	8,93	8,82	8,78	8,80	8,64	8,60	5,08	4,99	1445 ÷ 1455				
5,5	20,4	19,9	19,6	11,8	11,5	11,3	11,9	11,5	11,5	6,85	6,66	1455 ÷ 1465				
7,5	27,4	26,8	26,4	15,8	15,5	15,2	15,9	15,6	15,4	9,20	8,98	1450 ÷ 1460				

* R = Reduced size of motor casing as compared to shaft extension and flange.

gfce4-gfcte4-ie2-mott-4p50-en_a_te

** Operating conditions to be referred to motor only. About electric pump, refer to limits in user's manual.

GFCS4-GFCTS4 SERIES

THREE-PHASE MOTORS AT 50 Hz, 4 POLES (up to 15 kW)

P _N kW	Efficiency η_N %																		IE	Year of manufacture
	Δ 220 V Y 380 V			Δ 230 V Y 400 V			Δ 240 V Y 415 V			Δ 380 V Y 660 V			Δ 400 V Y 690 V			Δ 415 V				
	4/4	3/4	2/4	4/4	3/4	2/4	4/4	3/4	2/4	4/4	3/4	2/4	4/4	3/4	2/4	4/4	3/4	2/4		
	0,55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
0,75	80,4	81,3	79,8	81,1	81,4	79,1	81,4	81,2	78,4	80,4	81,2	78,4	80,4	81,2	78,4	80,4	81,2	78,4	2	By June 2011
1,1	81,4	81,4	81,1	81,4	81,4	81,1	81,4	81,4	81,1	81,4	81,4	81,1	81,4	81,4	81,1	81,4	81,4	81,1		
1,5	83,1	83,1	82,0	83,1	83,1	82,0	83,1	83,1	82,0	83,1	83,1	82,0	83,1	83,1	82,0	83,1	83,1	82,0		
2,2	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7	84,7		
3	85,5	85,5	84,1	85,5	85,5	84,1	85,5	85,5	84,1	85,5	85,5	84,1	85,5	85,5	84,1	85,5	85,5	84,1		
4	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6	86,6		
5,5	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0		
7,5	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7	88,7		
11	89,8	89,8	89,8	89,8	89,8	89,8	89,8	89,8	89,8	89,8	89,8	89,8	89,8	89,8	89,8	89,8	89,8	89,8		
15	90,6	90,6	89,9	90,6	90,6	89,9	90,6	90,6	89,9	90,6	90,6	89,9	90,6	90,6	89,9	90,6	90,6	89,9		

P _N kW	Manufacturer		IEC SIZE	Construction Design	N. of Poles	f _N Hz	Data for 400 V / 50 Hz Voltage				
	XYLEM WATER SYSTEMS USA LLC 1 Goulds Drive - Auburn NY 13021 – U.S.A.						cosφ	Is / I _N	T _N Nm	Ts/T _N	Tm/Tn
	Model										
0,55	SM480B5/305		80	B5	4	50	0,67	3,95	3,77	2,45	2,38
0,75	LLM480B5/307		80				0,75	5,78	5,03	2,77	3,31
1,1	PLM490B5/311		90				0,72	6,34	7,27	2,80	3,43
1,5	PLM490B5/315		90				0,67	6,79	9,88	3,33	3,67
2,2	PLM4100B5/322		100				0,77	7,50	14,4	2,71	3,97
3	PLM4100B5/330		100				0,73	7,84	19,6	2,96	4,09
4	PLM4112B5 /340		112				0,78	7,91	26,3	2,86	3,94
5,5	PLM4132B5/355		132				0,78	7,89	35,9	2,79	3,47
7,5	PLM4132B5 /375		132				0,78	7,71	49,1	2,75	3,63
11	PLM4160B5/3110		160				0,83	6,94	71,6	2,34	3,02
15	PLM4160B5/3150		160				0,78	7,63	97,2	2,61	3,63

P _N kW	Voltage U _N V											n _N min ⁻¹	Observe the regulations and codes locally in force regarding sorted waste disposal.	Operating conditions **		
	Δ			Y			Δ			Y				Altitude Above Sea Level (m)	T. amb min/max °C	ATEX
	220 V	230 V	240 V	380 V	400 V	415 V	380 V	400 V	415 V	660 V	690 V					
	I _N (A)															
0,55	2,98	3,03	3,1	1,72	1,75	1,79	-	-	-	-	-	1380 ÷ 1400		≤ 1000	-15 / 40	No
0,75	3,08	3,03	3,01	1,78	1,75	1,74	1,78	1,75	1,74	1,03	1,01	1410 ÷ 1430				
1,1	4,64	4,61	4,61	2,68	2,66	2,66	2,66	2,64	2,64	1,54	1,53	1435 ÷ 1445				
1,5	6,50	6,51	6,62	3,75	3,76	3,82	3,74	3,75	3,80	2,16	2,16	1440 ÷ 1450				
2,2	8,49	8,31	8,24	4,90	4,80	4,76	4,87	4,78	4,72	2,81	2,76	1445 ÷ 1455				
3	12,0	11,9	12,0	6,91	6,89	6,94	6,88	6,86	6,90	3,97	3,96	1455 ÷ 1465				
4	15,5	15,3	15,2	8,93	8,82	8,78	8,80	8,64	8,60	5,08	4,99	1445 ÷ 1455				
5,5	20,4	19,9	19,6	11,8	11,5	11,3	11,9	11,5	11,5	6,85	6,66	1455 ÷ 1465				
7,5	27,4	26,8	26,4	15,8	15,5	15,2	15,9	15,6	15,4	9,20	8,98	1450 ÷ 1460				
11	38,3	37,9	37,9	22,1	21,9	21,9	21,8	21,2	21,1	12,6	12,3	1465 ÷ 1470				
15	52,2	52,1	52,8	30,1	30,1	30,5	30,4	30,4	31,0	17,6	17,6	1470 ÷ 1475				

** Operating conditions to be referred to motor only. About electric pump, refer to limits in user's manual.

gfcs4-gfcts4-ie2-mott15-4p50-en_a_te

GFCS4-GFCTS4 SERIES
THREE-PHASE MOTORS AT 50 Hz, 4 POLI (from 18,5 to 22 kW)

P _N kW	Efficiency η_N %									IE	Year of manufacture
	Δ 380 V Y 660 V			Δ 400 V Y 690 V			Δ 415 V				
	4/4	3/4	2/4	4/4	3/4	2/4	4/4	3/4	2/4		
18,5	91,2	91,7	91,8	91,5	91,8	91,6	91,7	91,7	91,1	2	By June 2011
22	91,9	92,4	92,5	92,2	92,5	92,3	92,4	92,4	91,8		

P _N kW	Manufacturer	IEC SIZE	Construction Design	N. of Poles	f _N Hz	Data for 400 V / 50 Hz Voltage				
	WEG Equipamentos Eletricos S.A. Reg. No. 07.175.725/0010-50 Jaragua do Sul - SC (Brazil)					cosφ	Is / I _N	T _N Nm	Ts/T _N	Tm/Tn
	Model									
18,5	W22 180M4-B5 18.5kW	180	B5	4	50	0,83	6,60	121,0	2,40	2,80
22	W22 180L4-B5 22kW	180				0,85	6,80	143,0	2,60	2,90

P _N kW	Voltage U _N V					n _N min ⁻¹	See note.	Operating conditions **		
	Δ			Y				Altitude Above Sea Level (m)	T. amb min/max °C	ATEX
	380 V	400 V	415 V	660 V	690 V					
	I _N (A)									
18,5	36,30	35,10	34,70	20,90	20,35	1460 ÷ 1470	≤ 1000	-15 / 40	No	
22	41,80	40,50	39,90	24,70	23,48	1460 ÷ 1465				

** Operating conditions to be referred to motor only. About electric pump, refer to limits in user's manual.

fcs4-fcts4-ie2-mott22-4p50-en_a_te

Note: Observe the regulations and codes locally in force regarding sorted waste disposal.

MOTOR NOISE

The tables below show the mean sound pressure levels (Lp) measured at 1 meter's distance in a free field according to the A curve (ISO 1680 standard).

The noise values are measured with idling 50 Hz motor with a tolerance of 3 dB (A).

GFCE-GFCS-GFCTE-GFCTS MOTORS 50 Hz 2-POLE

POWER	MOTOR TYPE	NOISE
kW	IEC SIZE *	LpA dB
0,75	80 - 90R	<70
1,1	80 - 90R	<70
1,5	90 - 90R	<70
2,2	90	<70
3	90 - 100R	<70
4	112R	<70
5,5	112 - 132R	<70
7,5	132	71
9,2	132	73
11	132 - 160R	73
15	160	71
18,5	160	73
22	160	70

*R=Reduced size of motor casing as compared to shaft extension and flange.

GFCE4-GFCS4-GFCTE4-GFCTS4 MOTORS 50 Hz 4-POLE

POWER	MOTOR TYPE	NOISE
kW	IEC SIZE *	LpA dB
0,25	71	<70
0,37	71	<70
0,55	80 - 90R	<70
0,75	80 - 90R	<70
1,1	90	<70
1,5	90	<70
2,2	100	<70
3	100	<70
4	112	<70
5,5	132	<70
7,5	132	<70
11	160	<70
15	160	<70
18,5	180	<70
22	180	<70

fce-fcs-fcte-fcts_mott-en_b_tr

AVAILABLE VOLTAGES

MOTORS FOR GFC-GFCT SERIES (up to 22 kW)

GFCH-GFCTH SERIES ELECTRIC PUMPS WITH HYDROVAR® AND HYDROVAR® SENSORLESS CONTROL SYSTEM

We recommend the use of the GFC-GFCT series electric pumps combined with the HYDROVAR® and HYDROVAR® Sensorless devices.

HYDROVAR® and HYDROVAR® Sensorless are micro-processor controlled devices for pumping systems, designed to control pump operation according to system conditions and requirements.

This way the simple electric pump is transformed into a complete pumping system principally designed for air-conditioning and heating applications, adapting the differential pressure of the closed circuit to the requested load.

- **No special pumps or motors:**

HYDROVAR® is mounted directly onto a standard three-phase TEFC motor with class F insulation up to 22 kW power. (HYDROVAR® Sensorless up to 4 kW).

- HYDROVAR® Sensorless enables the control of an electric circulator pump by monitoring the power control, without requiring a differential pressure transmitter.

- **No separate control panels or converters:**

HYDROVAR® and HYDROVAR® Sensorless, perform all the functions of a pump control panel, incorporating protections against overload, short circuit, high temperature, etc. The only external device required is a fuse on the power supply line. Will depend upon any local electrical installation regulations.

- **No by-pass lines or safety systems:**

With HYDROVAR® the pump switches off immediately when demand is zero or exceeds the maximum capacity of the pump. This way there is no need to install additional safety devices.

- **The pump's operation at the correct speed based on system requirements enables energy consumption to be substantially reduced.**



GENERAL OPERATING PRINCIPLES OF THE HYDROVAR® SYSTEM

The basic function of the HYDROVAR® device is to control the pump to meet the system demands.

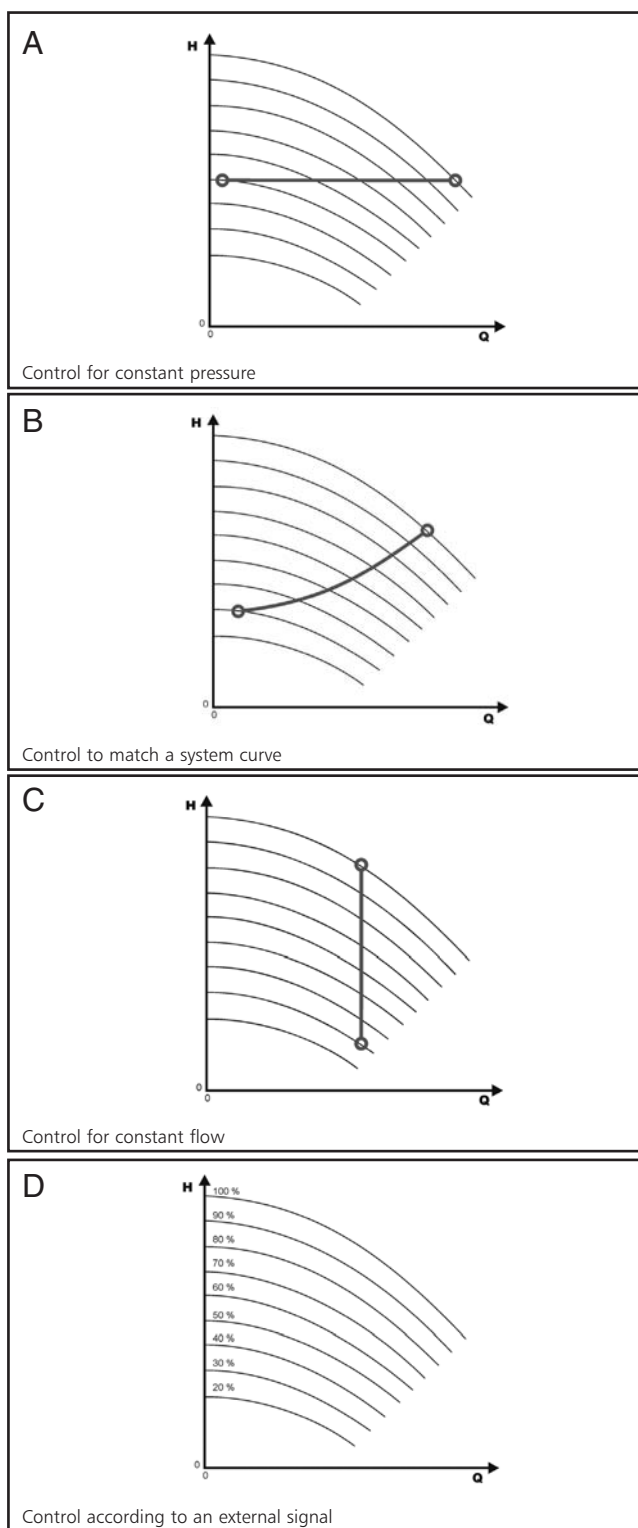
For the FC and FCT series electric pumps, typical operation consists in system regulation based on the characteristic curve (B).

HYDROVAR® performs these functions by:

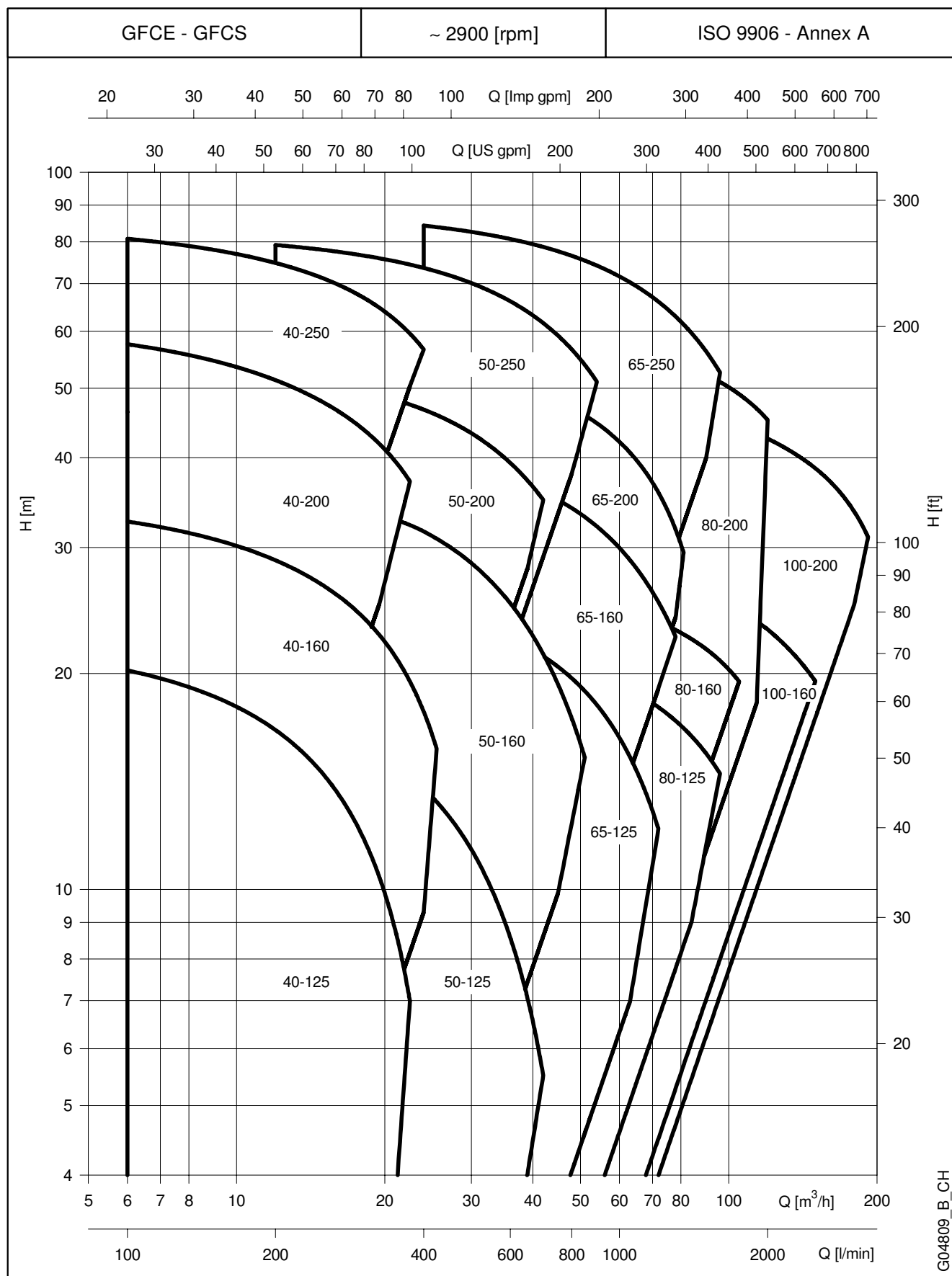
- 1) Measuring the system pressure or flow via a transmitter mounted on the pump's delivery side.
- 2) Calculating the motor speed to maintain the correct flow or pressure.
- 3) Sending out a signal to the pump to start the motor, increase speed, decrease speed or stop.
- 4) In the case of multiple pump installations, HYDROVAR® will automatically provide for the cyclic changeover of the pumps' starting sequence

In addition to these basic functions, HYDROVAR® can do things only by the most advanced computerised control systems, such as:

- Stop the pump(s) at zero demand.
- Stop the pump(s) in case of water failure on the suction side (protection against dry running).
- Stop the pump if the required delivery exceeds the pump's capacity (protection against cavitation caused by excessive demand), or automatically switch on the next pump in a multiple series.
- Protect the pump and motor from overvoltage, undervoltage, overload and earth fault.
- Vary the pump speed acceleration and deceleration time.
- Compensate for increased flow resistance at high flow rates.
- Conduct automatic test starts at set intervals.
- Monitor the converter and motor operating hours.
- Display all functions on an LCD in different languages (Italian, English, French, German, Spanish, Portuguese, Dutch).
- Send a signal to a remote control system which is proportional to the pressure and frequency.
- Communicate with another HYDROVAR or control system via an RS 485 interface.



GFCE-GFCS SERIES
HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 2 POLES



These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE-GFCS SERIES

HYDRAULIC PERFORMANCE TABLE AT 50 Hz, 2 POLES

PUMP TYPE	RATED POWER		Q = DELIVERY																			
	kW	HP	l/min 0	100	200	350	375	400	600	700	800	850	1000	1200	1300	1500	1600	1750	1950	2500	3000	
			m³/h 0	6	12	21	22,5	24	36	42	48	51	60	72	78	90	96	105	117	150	180	
			H = TOTAL HEAD METRES COLUMN OF WATER																			
40-125/07	0,75	1	17,1	15,1	11,8	3,6																
40-125/11	1,1	1,5	22,6	20,2	16,7	8,8	7,0															
40-160/15	1,5	2	27,3	24,7	20,9	13,1	11,3	9,3														
40-160/22	2,2	3	35,3	32,6	28,8	21,1	19,5	17,7														
40-200/*	*	*	42,5	38,9	34,0																	
40-200/40	4	5,5	51,0	46,9	41,7	30,6																
40-200/55	5,5	7,5	62,0	57,6	51,3	39,6	37,1															
40-250/75	7,5	10	75,4	71,1	65,0	52,9	50,3															
40-250/110	11	15	85,2	80,8	74,8	62,3	59,6	56,6														
50-125/11/A	1,1	1,5	15,3		13,5	11,1	10,6	10,1	5,4													
50-125/15/A	1,5	2	19,1		17,5	14,9	14,4	13,8	8,6	5,5												
50-160/22	2,2	3	26,1		23,9	21,1	20,5	20,0	14,7	11,6												
50-160/30	3	4	32,8		30,6	27,2	26,5	25,9	19,9	16,6	13,1											
50-160/40	4	5,5	38,1		36,1	32,9	32,3	31,6	25,1	21,3	17,3	15,3										
50-200/55	5,5	7,5	47,0		43,5	39,6	38,8	38,0	30,3													
50-200/75	7,5	10	56,0		52,0	48,2	47,5	46,7	39,4	34,9												
50-250/**	**	**	63,2		59,4	55,3	54,5	53,8	46,7	42,6	38,0											
50-250/110	11	15	69,4		65,3	61,3	60,6	59,8	53,2	49,4	45,0	42,5										
50-250/150	15	20	83,0		79,2	75,1	74,4	73,6	66,1	61,6	56,6	53,9										
65-125/22	2,2	3	18,8					16,4	14,3	13,0	11,4	10,6	7,9									
65-125/30	3	4	22,9					20,3	18,1	16,7	15,2	14,3	11,6									
65-125/40	4	5,5	26,6					24,4	22,4	21,1	19,7	18,9	16,3	12,1								
65-160/55	5,5	7,5	35,1					32,5	30,1	28,7	27,1	26,3	23,5	19,1								
65-160/75	7,5	10	42,4					40,0	37,4	35,8	34,0	33,1	29,9	25,2	22,5							
65-200/**	**	**	53,0					47,6	44,1	42,2	40,1	39,0	35,2	28,4	24,0							
65-200/110	11	15	61,0					55,2	51,3	49,3	47,1	45,9	42,1	35,8	31,8							
65-250/150	15	20	70,0					66,3	63,0	61,1	58,9	57,8	54,2	48,9	46,1	40,0						
65-250/185	18,5	25	80,0					75,2	71,8	69,9	67,7	66,6	63,0	57,6	54,6	47,9						
65-250/220	22	30	89,0					84,3	80,7	78,7	76,5	75,3	71,6	66,0	63,0	56,3	52,6					
80-125/30	3	4	15,5						14,5	14,1	13,6	13,3	12,3	10,7	9,9							
80-125/40	4	5,5	19,0						18,0	17,6	17,0	16,8	15,8	14,2	13,3	11,5						
80-125/55	5,5	7,5	23,0						21,5	21,0	20,5	20,2	19,3	18,0	17,2	15,5	14,5					
80-160/75	7,5	10	28,0						26,5	26,1	25,6	25,4	24,7	23,6	23,0	21,6	20,8	19,5				
80-200/110	11	15	41,0						37,0	36,2	35,2	34,7	33,2	30,7	29,3	26,2	24,5	21,5				
80-200/150	15	20	49,4						46,3	45,6	44,8	44,3	43,0	41,0	39,9	37,5	36,2	33,9	30,5			
80-200/185	18,5	25	56,9						53,4	52,6	51,7	51,2	49,8	47,9	46,9	44,7	43,5	41,4	38,1			
80-200/220	22	30	65,2						61,3	60,4	59,5	59,0	57,6	55,5	54,5	52,2	51,0	49,1	46,0			
100-160/110	11	15	29,0										28,0	27,3	26,9	25,9	25,4	24,6	23,4	19,5		
100-200/185	18,5	25	45,0											39,5	38,8	37,5	36,8	35,9	34,5	30,4	25,0	
100-200/220	22	30	53,0											48,0	47,3	46,0	45,3	44,3	42,9	38,7	33,6	

* GFCE40-200/40A : 4 (kW) - 5.5 (HP)

GFCS40-200/30 : 3 (kW) - 4 (HP)

gfce-gfcs-2p50-en_d_th

** GFCE50-250/92 : 9.2 (kW) - 12.5 (HP)

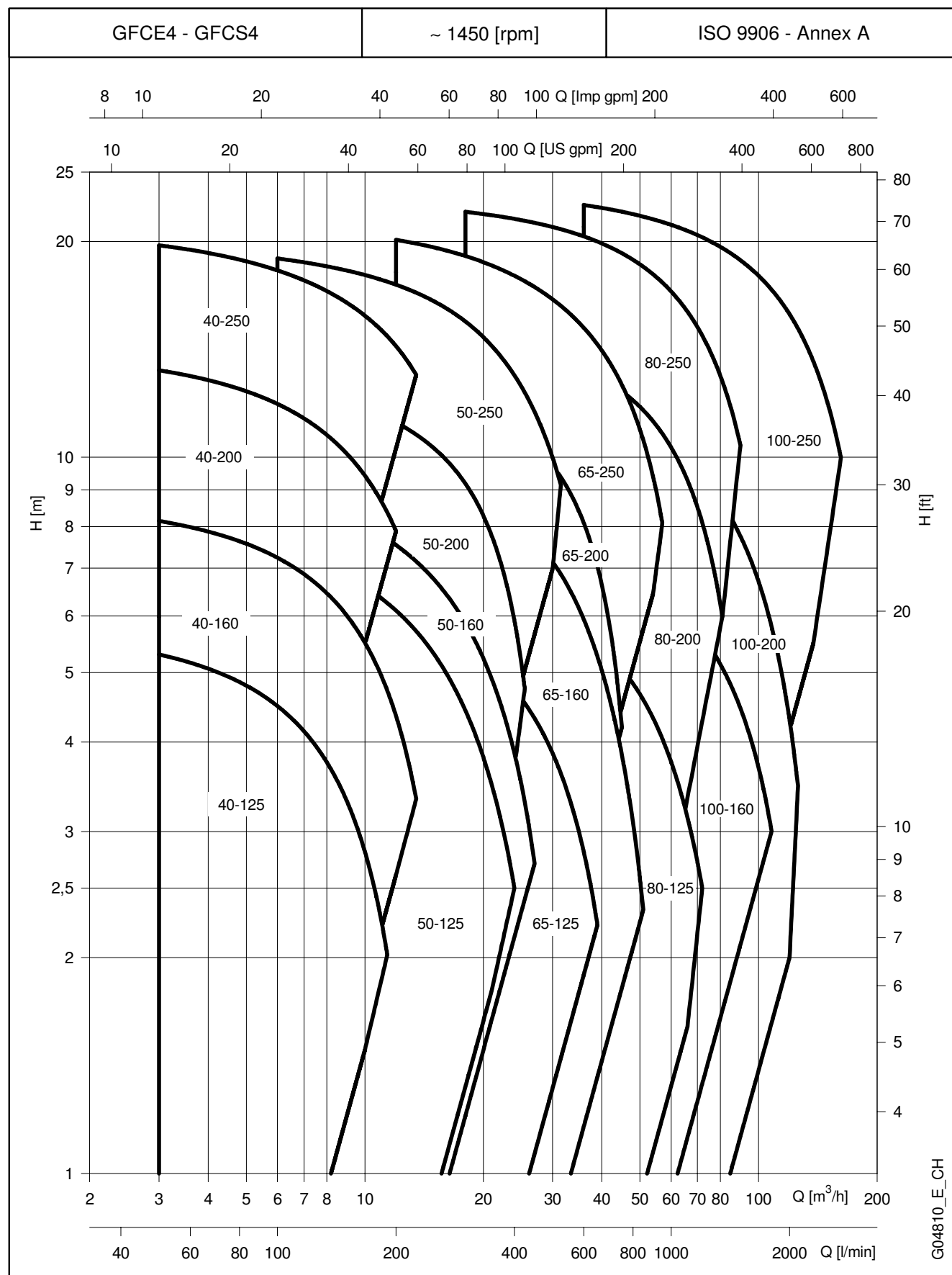
GFCS50-250/110A : 11 (kW) - 15 (HP)

GFCE65-200/92 : 9.2 (kW) - 12.5 (HP)

GFCS65-200/110A : 11 (kW) - 15 (HP)

Performances according to ISO 9906 - Annex A

GFCE4-GFCS4 SERIES **HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 4 POLES**



These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE4-GFCS4 SERIES

HYDRAULIC PERFORMANCE TABLE AT 50 Hz, 4 POLES

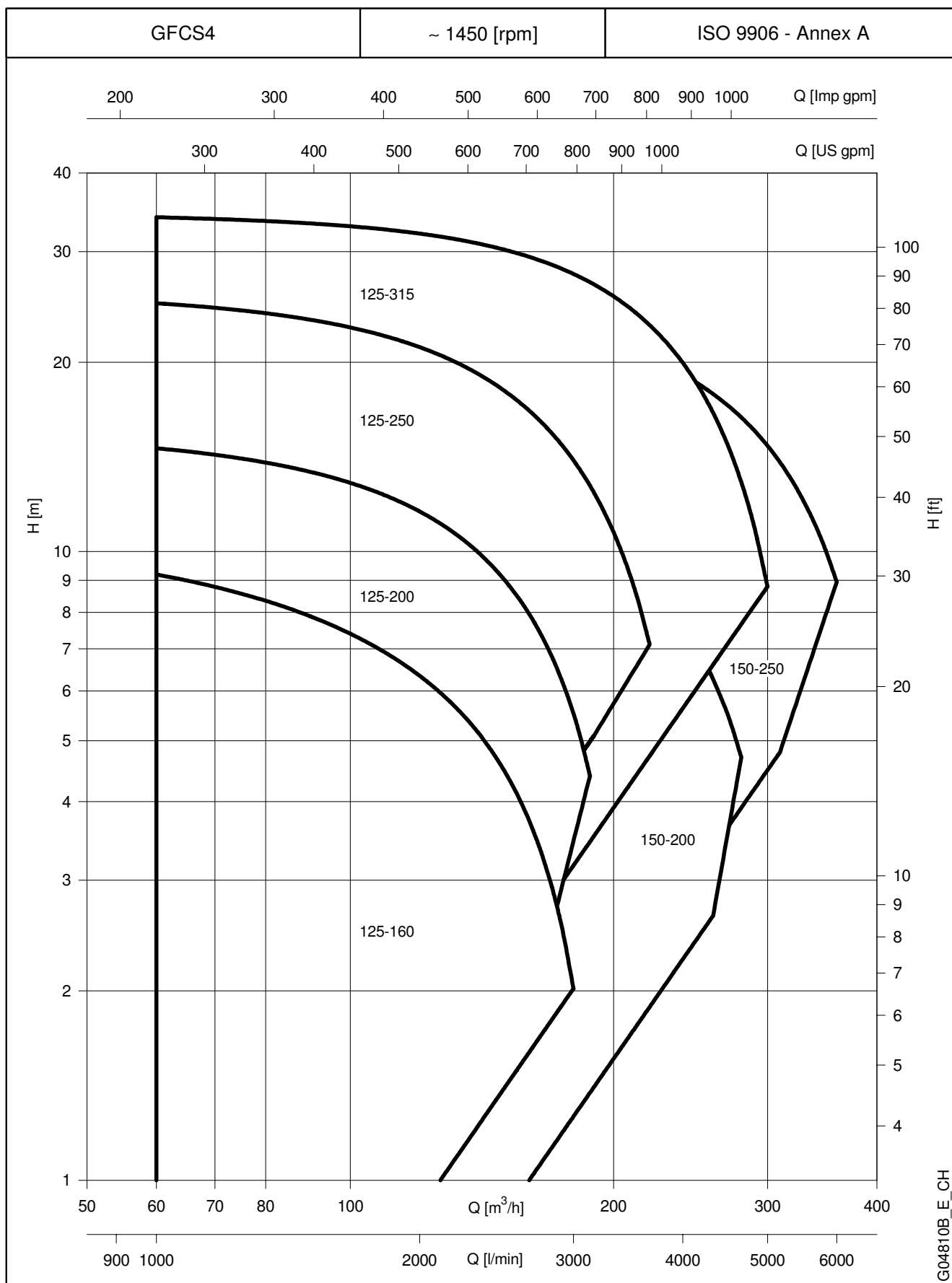
PUMP TYPE	RATED POWER		Q = DELIVERY																						
	kW	HP	l/min 0	50	100	150	175	200	300	350	400	500	600	650	750	900	1100	1200	1500	1800	2000	2500			
			m³/h 0	3	6	9	10,5	12	18	21	24	30	36	39	45	54	66	72	90	108	120	150			
			H =TOTAL HEAD METRES COLUMN OF WATER																						
40-125/02A *	0,25	0,33	4,7	4,1	3,3	2,0																			
40-125/02 *	0,25	0,33	5,9	5,3	4,5	3,3	2,5																		
40-160/02 *	0,25	0,33	7,1	6,4	5,5	4,3	3,6	2,6																	
40-160/03 *	0,37	0,5	8,9	8,1	7,2	6,0	5,2	4,4																	
40-200/05	0,55	0,75	12,4	11,4	10,1	8,2	7,1																		
40-200/07	0,75	1	14,2	13,2	11,9	10,1	9,1	7,9																	
40-250/11	1,1	1,5	18,6	17,3	15,7	13,9	12,8	11,6																	
40-250/15	1,5	2	21,0	19,8	18,2	16,4	15,4	14,3																	
50-125/02 *	0,25	0,33	6,2		5,5	5,0	4,6	4,3	2,7	1,8															
50-125/03 *	0,37	0,5	8,0		7,4	6,8	6,5	6,1	4,4	3,5	2,5														
50-160/05 *	0,55	0,75	9,4		8,8	8,2	7,9	7,5	5,9	4,9	3,9														
50-200/07	0,75	1	11,4		10,5	9,9	9,5	9,1	7,1	5,6	3,7														
50-200/11	1,1	1,5	13,6		12,6	12,0	11,6	11,2	9,2	7,8	5,9														
50-250/15	1,5	2	17,0		15,9	15,2	14,8	14,4	12,5	11,4	10,1	7,0													
50-250/22	2,2	3	20,2		18,9	18,2	17,8	17,4	15,5	14,3	13,0	10,0													
65-125/03 *	0,37	0,5	5,6					4,9	4,3	3,9	3,5	2,6													
65-125/05 *	0,55	0,75	6,7					5,9	5,4	5,1	4,7	3,9	2,8	2,2											
65-160/07	0,75	1	8,6					7,8	7,2	6,8	6,4	5,4	4,3	3,7	2,4										
65-160/11	1,1	1,5	10,4					9,7	9,0	8,6	8,2	7,2	5,9	5,3	3,8										
65-200/15	1,5	2	14,7					13,2	12,1	11,6	11,0	9,7	8,1	7,0	4,2										
65-250/22	2,2	3	19,0					17,6	16,6	16,0	15,4	14,1	12,7	11,9	10,1	6,5									
65-250/30	3	4	21,4					20,1	19,1	18,5	17,9	16,6	15,2	14,4	12,6	9,4									
80-125/07	0,75	1	5,6						5,2	5,1	5,0	4,6	4,3	4,1	3,6	2,8	1,6								
80-125/11	1,1	1,5	6,8						6,4	6,3	6,2	6,0	5,7	5,5	5,1	4,3	3,1	2,5							
80-200/15	1,5	2	10,5						9,6	9,4	9,2	8,7	8,1	7,8	7,1	5,8	3,3								
80-200/22	2,2	3	13,7						12,7	12,5	12,3	11,9	11,3	11,0	10,3	9,0	6,8	5,4							
80-200/30	3	4	15,8						14,7	14,5	14,3	13,8	13,3	13,0	12,4	11,2	9,3	8,1							
80-250/40	4	5,5	19,9						18,7	18,5	18,2	17,7	17,0	16,7	15,9	14,6	12,5	11,2							
80-250/55	5,5	7,5	23,2						22,0	21,8	21,5	21,0	20,3	20,0	19,3	18,0	16,0	14,8	10,4						
100-160/15	1,5	2	7,8									7,4	7,2	7,1	6,9	6,5	6,0	5,6	4,5	3,0					
100-200/22	2,2	3	10,5										9,3	9,2	8,9	8,3	7,5	7,1	5,4	3,5	2,0				
100-200/30	3	4	12,8										11,5	11,4	11,1	10,6	9,8	9,3	7,8	5,8	4,3				
100-250/40	4	5,5	17,0										15,5	15,3	14,9	14,3	13,4	12,9	11,2	9,2	7,8				
100-250/55	5,5	7,5	20,5										19,0	18,8	18,4	17,8	17,0	16,5	14,9	13,1	11,8	8,0			
100-250/75	7,5	10	24,0										22,5	22,3	22,0	21,5	20,7	20,3	18,8	17,1	15,8	11,9			

* GFCE4 VERSION ONLY

gfce4-gfcs4-4p50-en_f_th

Performances according to ISO 9906 - Annex A

GFCS4 SERIES
HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 4 POLES



These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCS4 SERIES

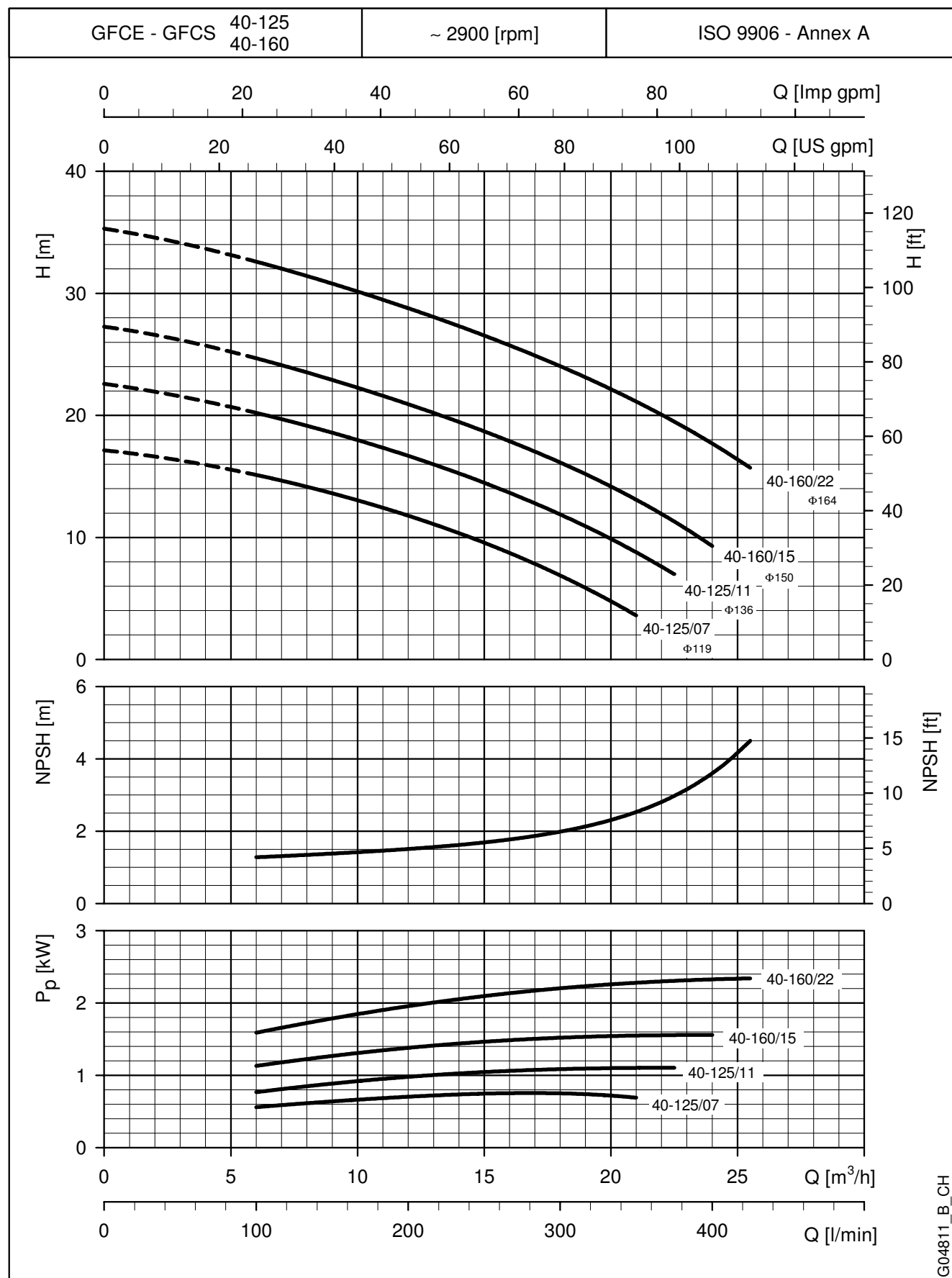
HYDRAULIC PERFORMANCE TABLE AT 50 Hz, 4 POLES

PUMP TYPE	RATED POWER		Q = DELIVERY																	
	kW	HP	l/min 0	1000	1083	1167	1333	1500	1667	2000	2333	2667	3000	3333	3667	4167	4667	5000	5333	5500
			m³/h 0	60	65	70	80	90	100	120	140	160	180	200	220	250	280	300	320	330
			H = TOTAL HEAD METRES COLUMN OF WATER																	
125-160/30	3	4	10,5	9,2	9,0	8,8	8,3	7,9	7,4	6,3	5,2	3,7	2,0							
125-200/40	4	5,5	12,7	11,5	11,3	11,0	10,5	9,9	9,3	7,7	5,7	3,4								
125-200/55	5,5	7,5	15,6	14,6	14,4	14,3	13,9	13,4	12,9	11,6	10,0	8,0	5,5							
125-250/75	7,5	10	20,5	19,1	18,9	18,6	18,1	17,4	16,6	14,7	12,4	9,6	6,7							
125-250/110	11	15	26,1	24,8	24,6	24,4	23,9	23,4	22,7	21,1	19,2	16,8	14,0	10,7	7,1					
125-315/150	15	20	27,0	26,0	25,9	25,7	25,4	25,0	24,6	23,5	22,1	20,4	18,3	15,9	12,9	7,8				
125-315/185	18,5	25	31,0	30,0	29,9	29,8	29,5	29,2	28,9	28,0	26,7	25,1	23,1	20,7	18,0	13,3	8,0			
125-315/220	22	30	35,0	34,0	33,9	33,8	33,6	33,3	32,9	32,1	30,9	29,5	27,6	25,5	22,9	18,4	12,9	8,8		
150-200/55	5,5	7,5	12,0	10,5	10,4	10,2	9,9	9,6	9,3	8,6	7,9	7,2	6,4	5,7	4,8	3,2				
150-200/75	7,5	10	16,0	14,8	14,6	14,4	14,1	13,7	13,4	12,6	11,9	11,1	10,3	9,5	8,6	6,9	4,7			
150-250/110	11	15	18,4					17,8	17,6	17,0	16,3	15,5	14,6	13,5	12,3	10,2	7,7	5,8		
150-250/150	15	20	22,4					22,0	21,8	21,3	20,7	20,0	19,3	18,4	17,4	15,6	13,3	11,5	9,5	
150-250/185	18,5	25	25,1					24,7	24,6	24,1	23,6	23,0	22,2	21,3	20,3	18,5	16,4	14,7	13,0	

Performances according to ISO 9906 - Annex A

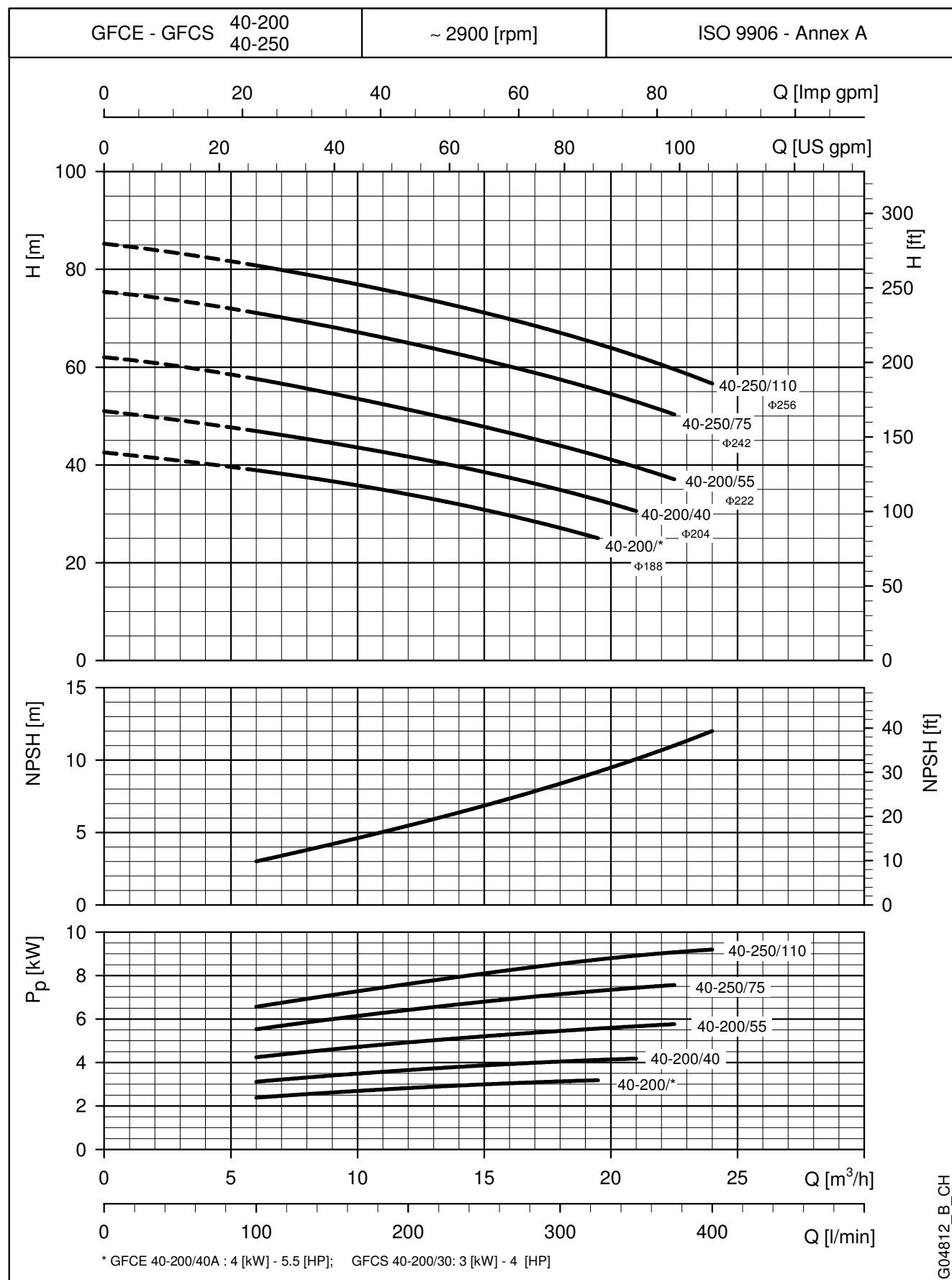
fcs4-4p50-en_d_th

GFCE-GFCS SERIES **OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



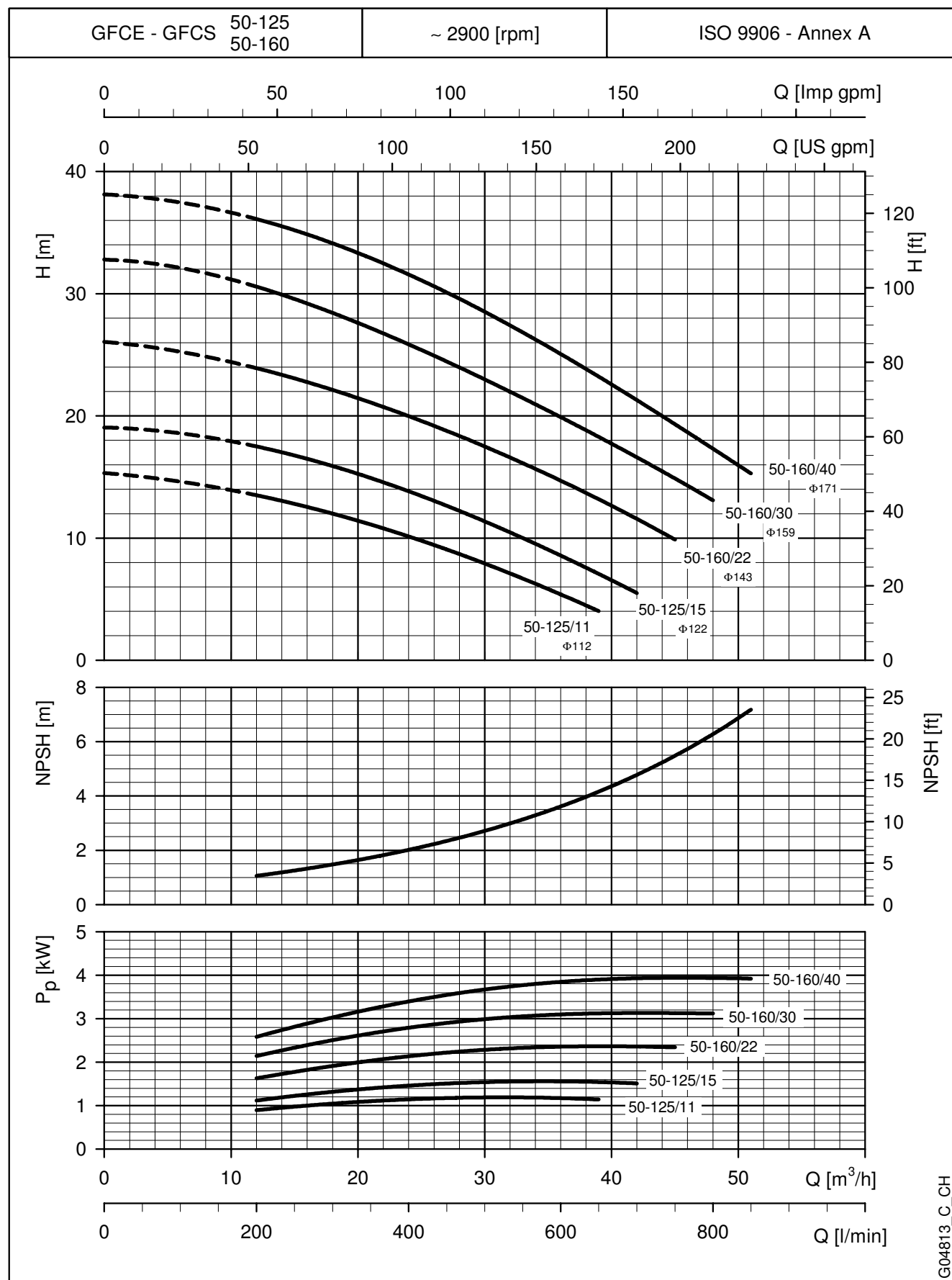
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE-GFCS SERIES OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



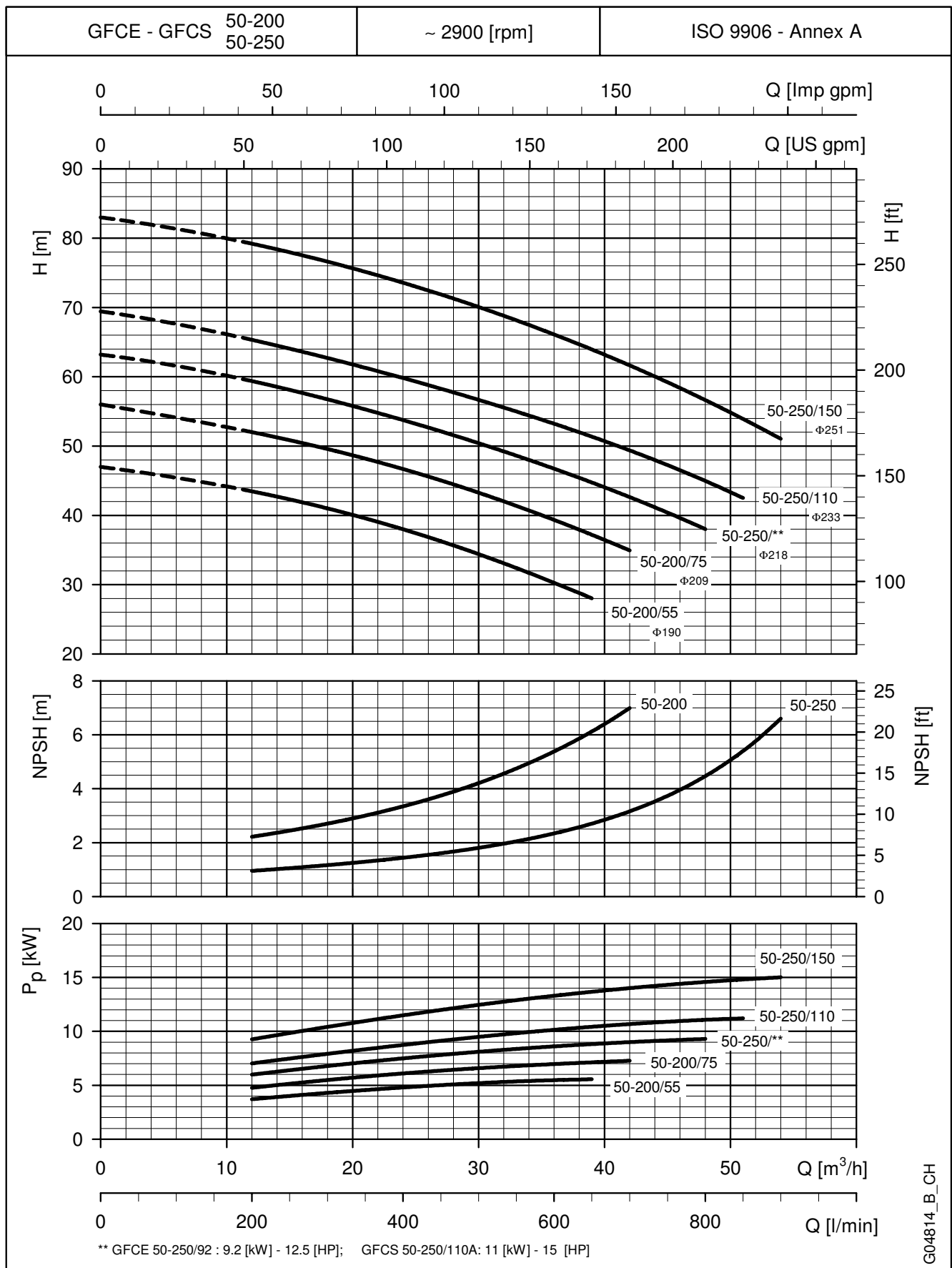
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE-GFCS SERIES OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



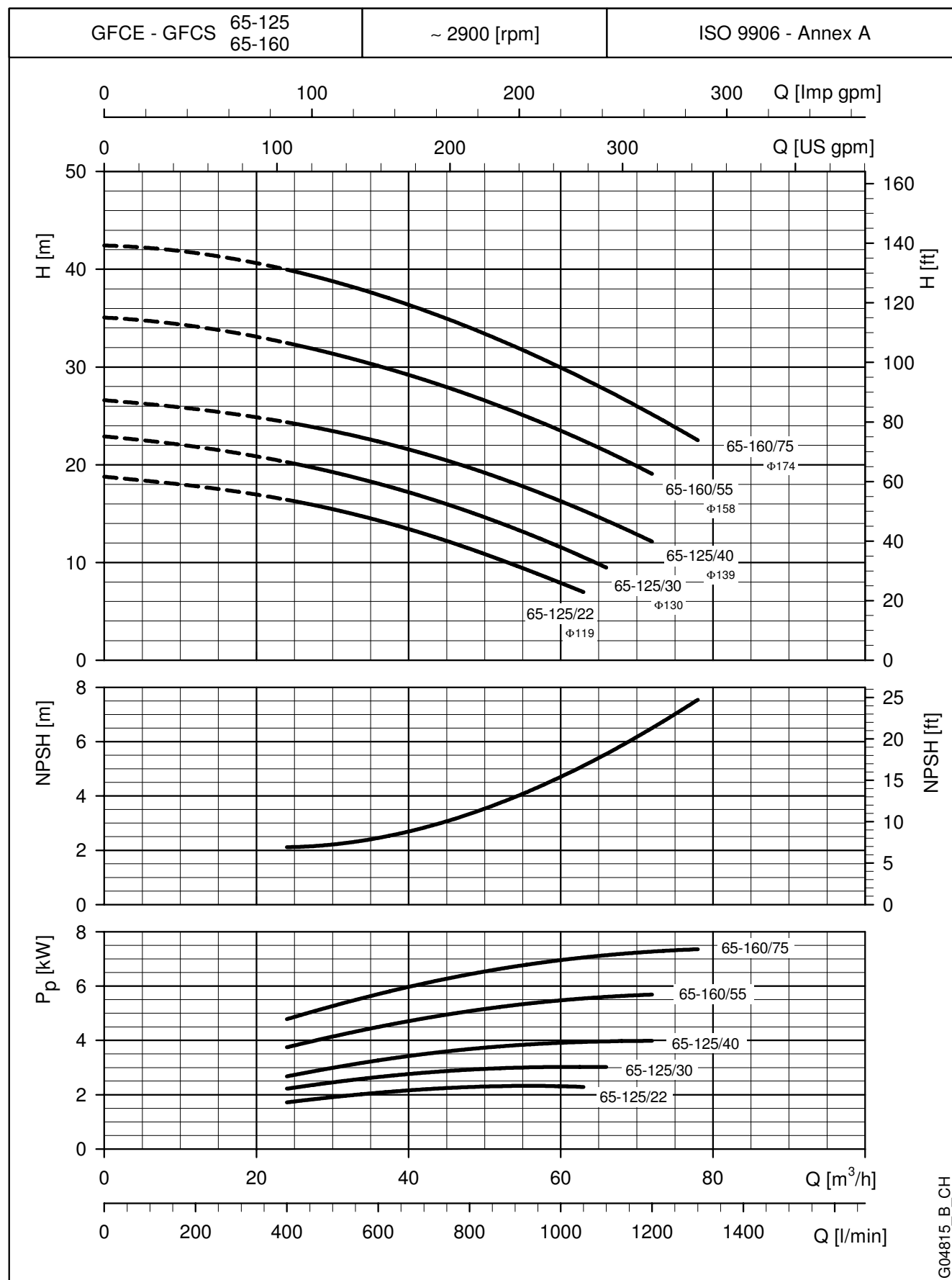
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE-GFCS SERIES OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



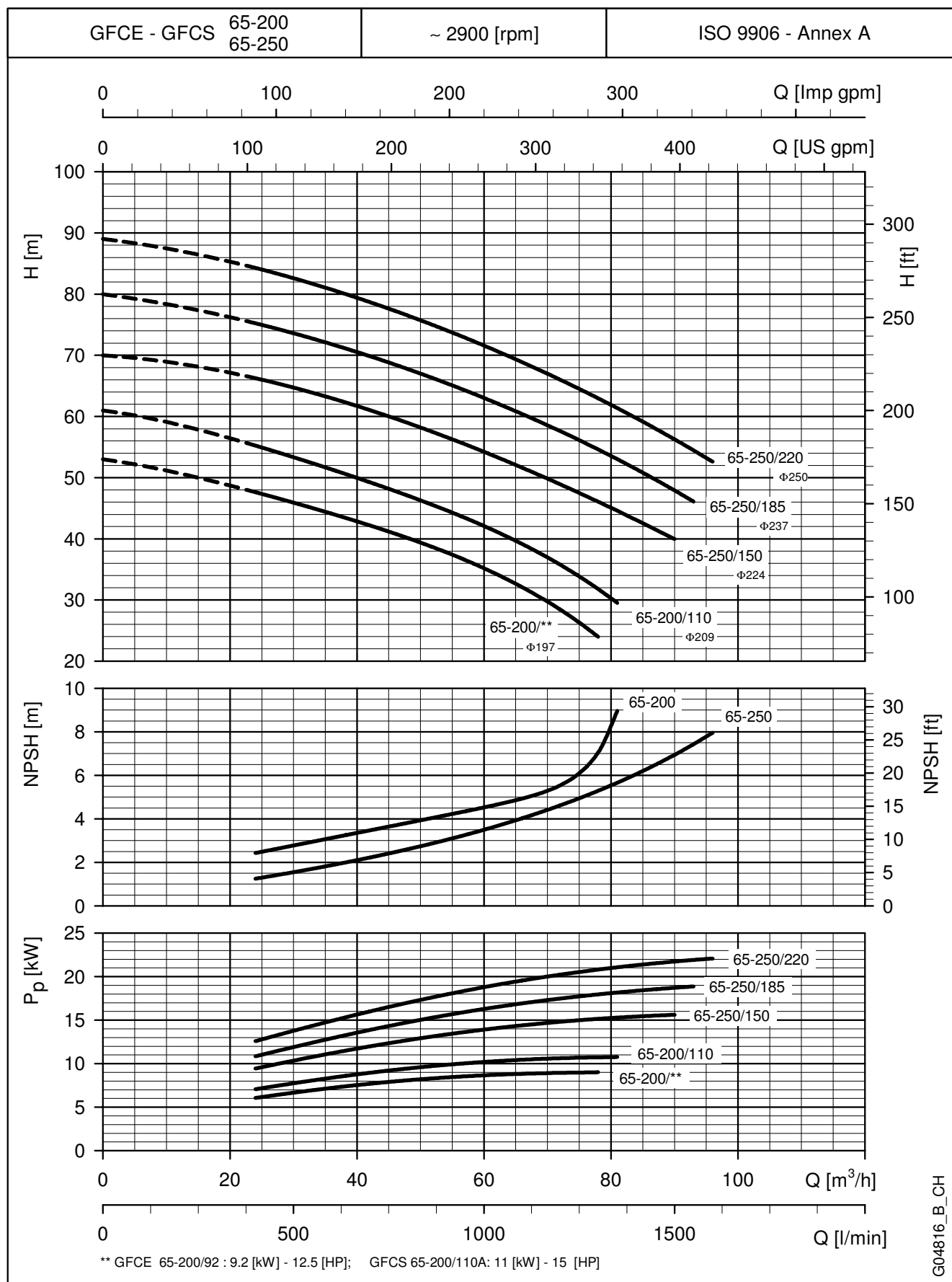
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE-GFCS SERIES **OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



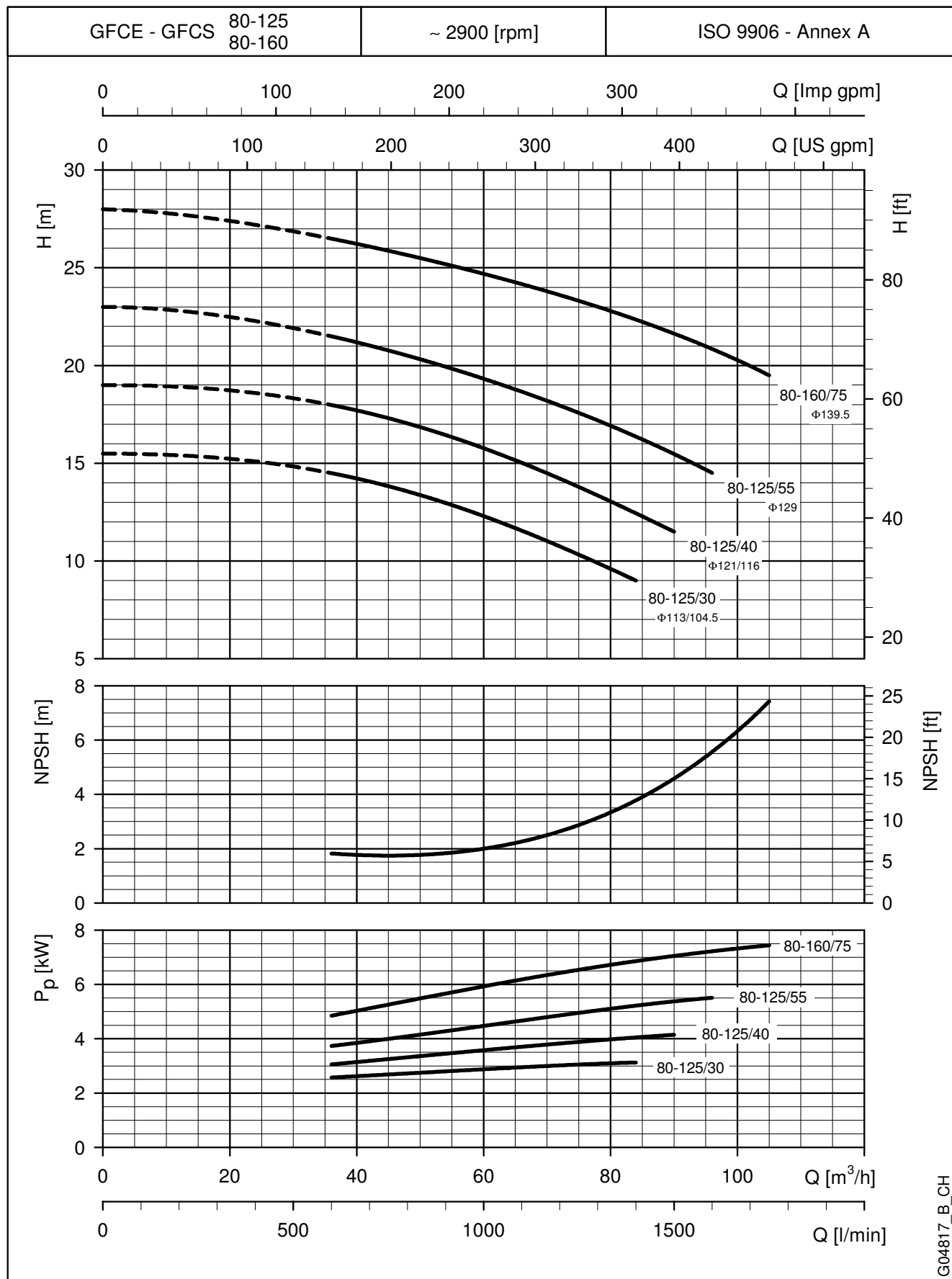
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE-GFCS SERIES OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



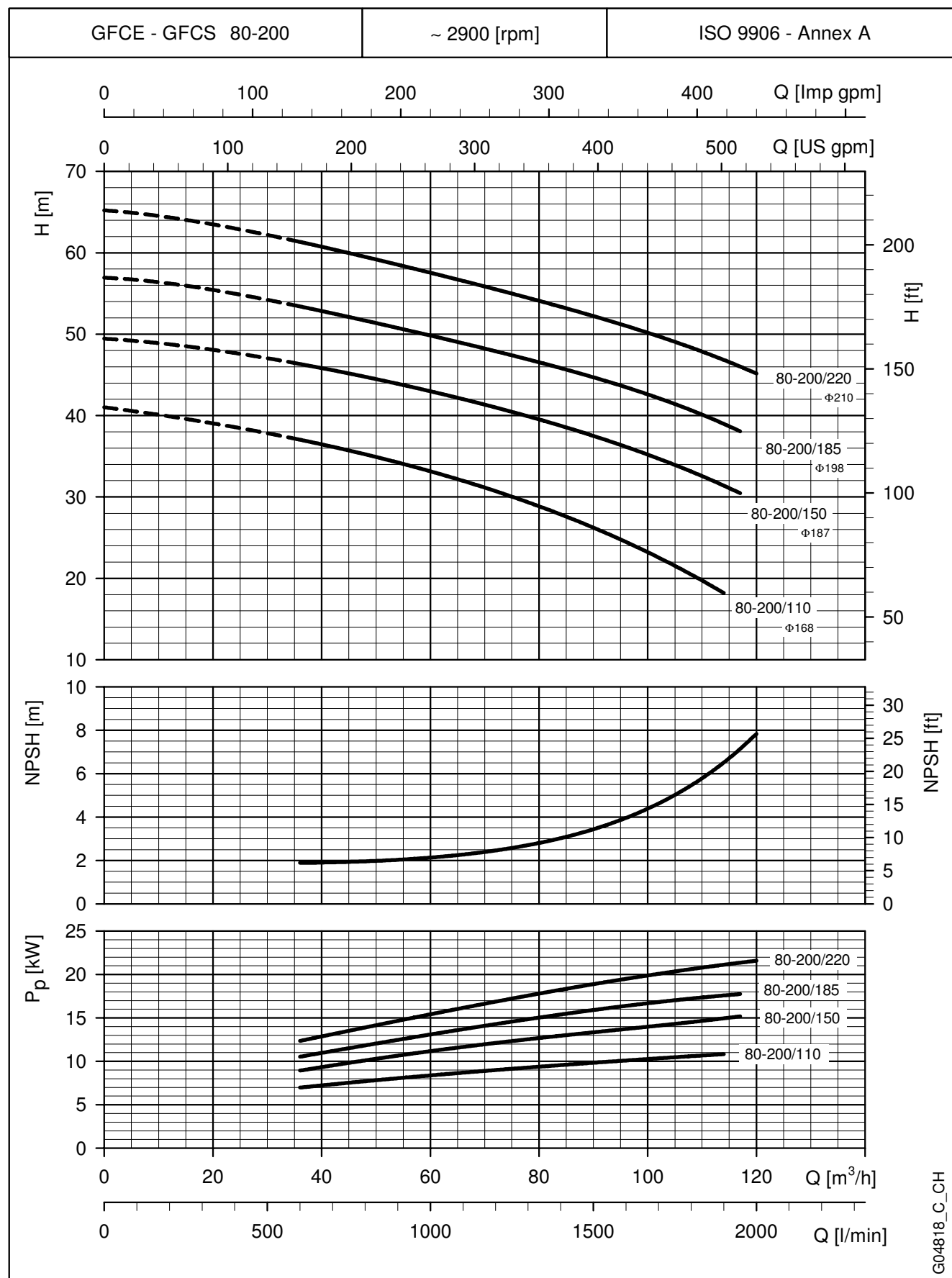
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE-GFCS SERIES OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



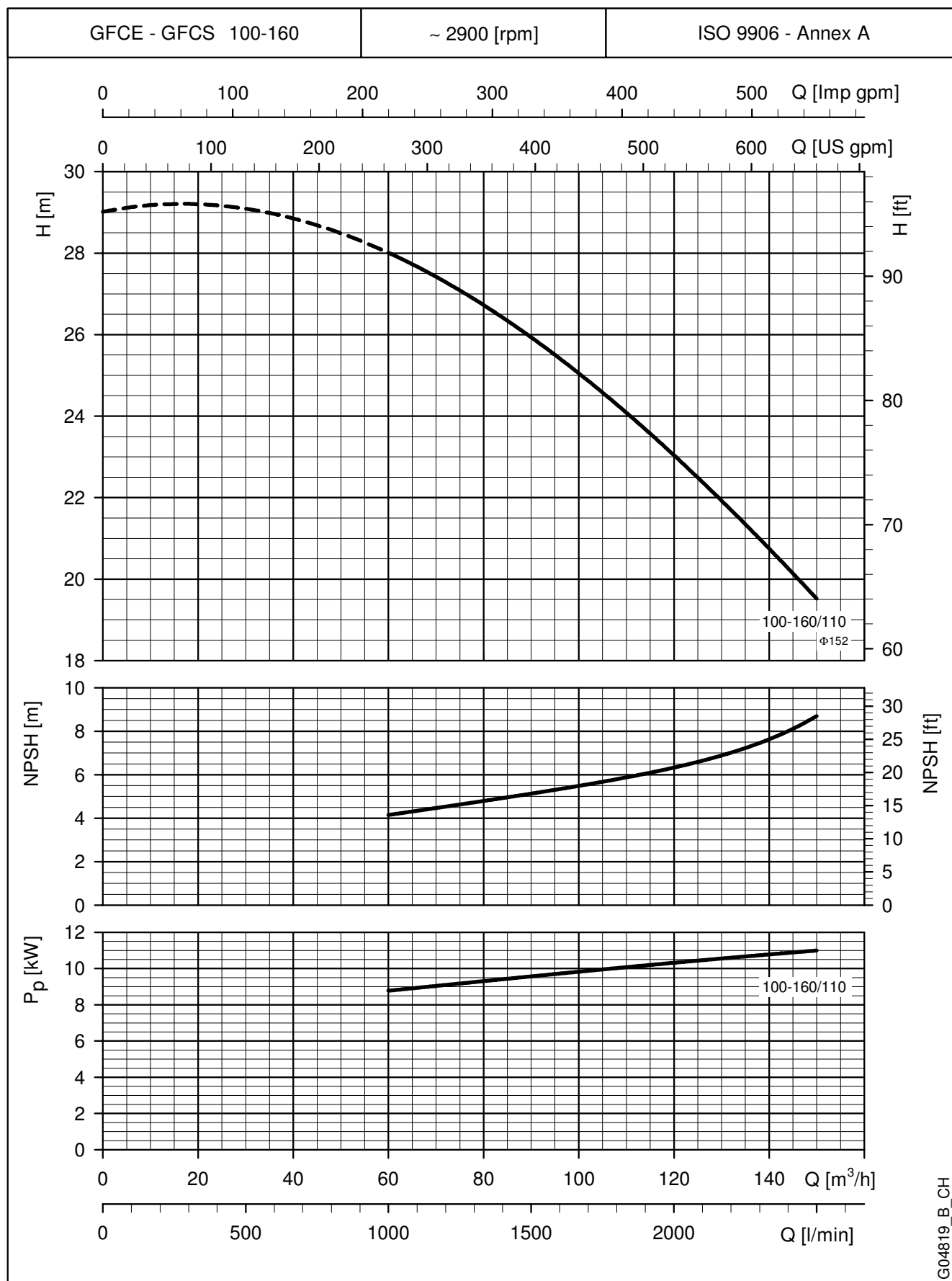
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE-GFCS SERIES OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



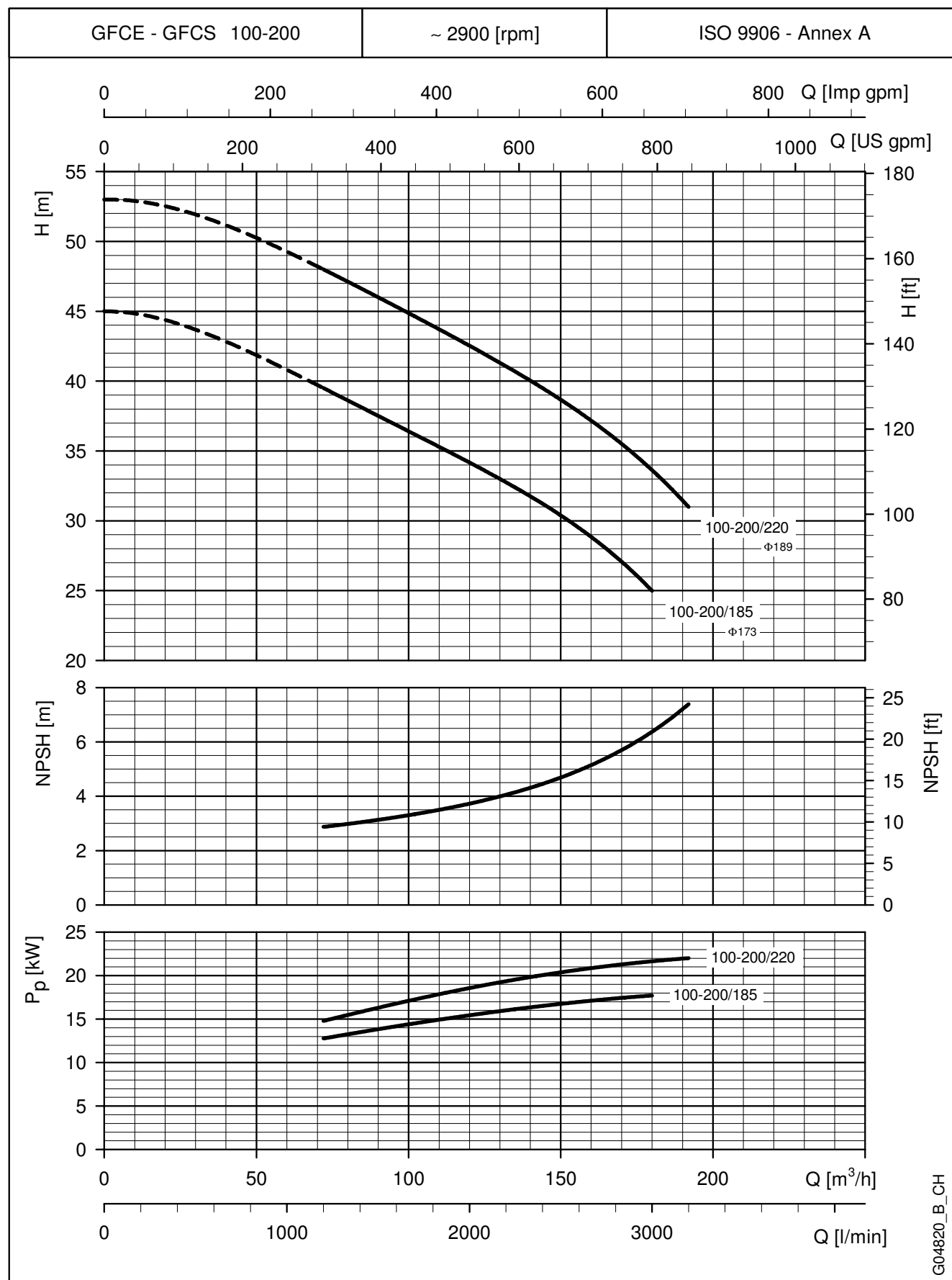
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE-GFCS SERIES **OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



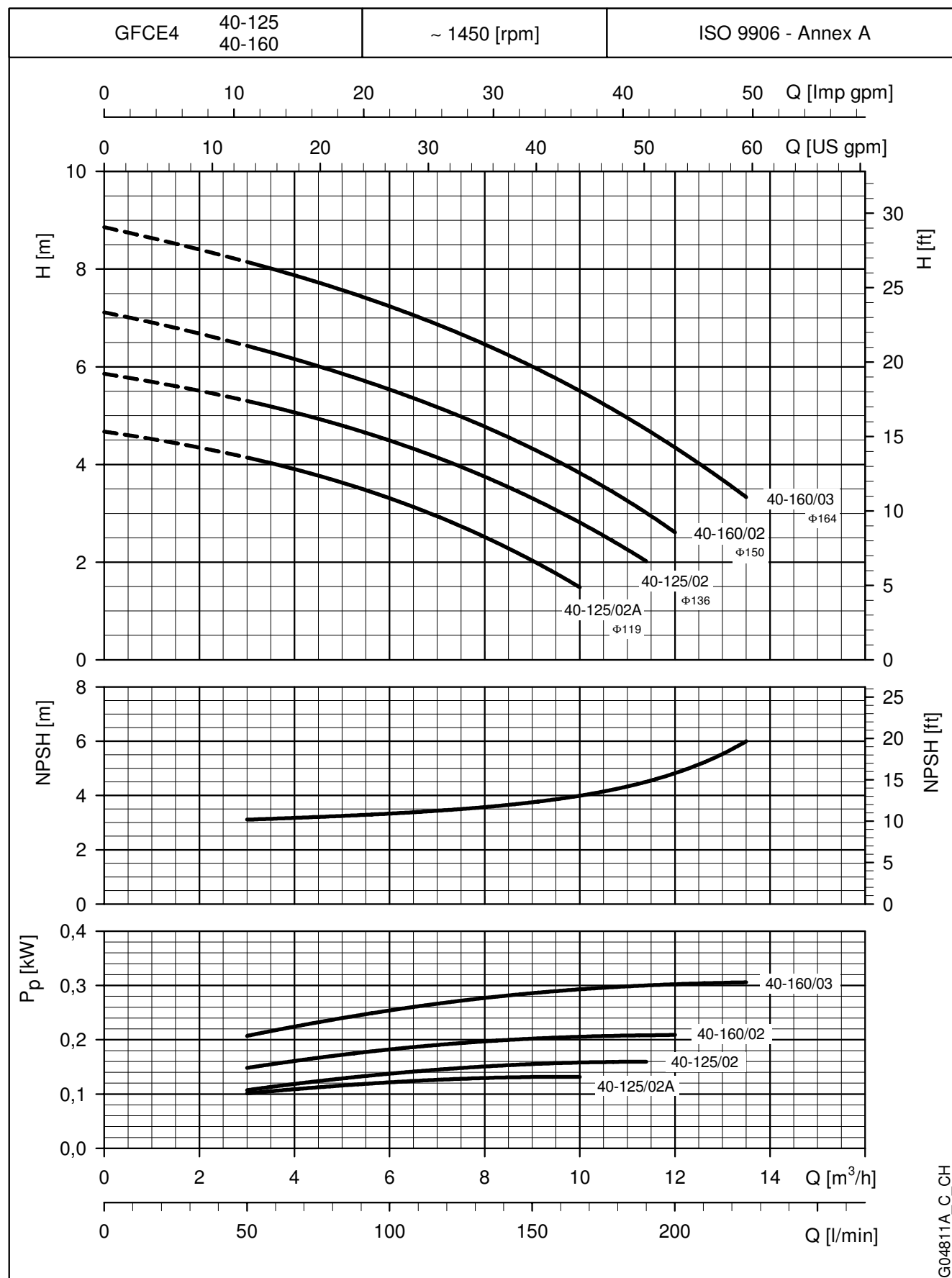
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE-GFCS SERIES **OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



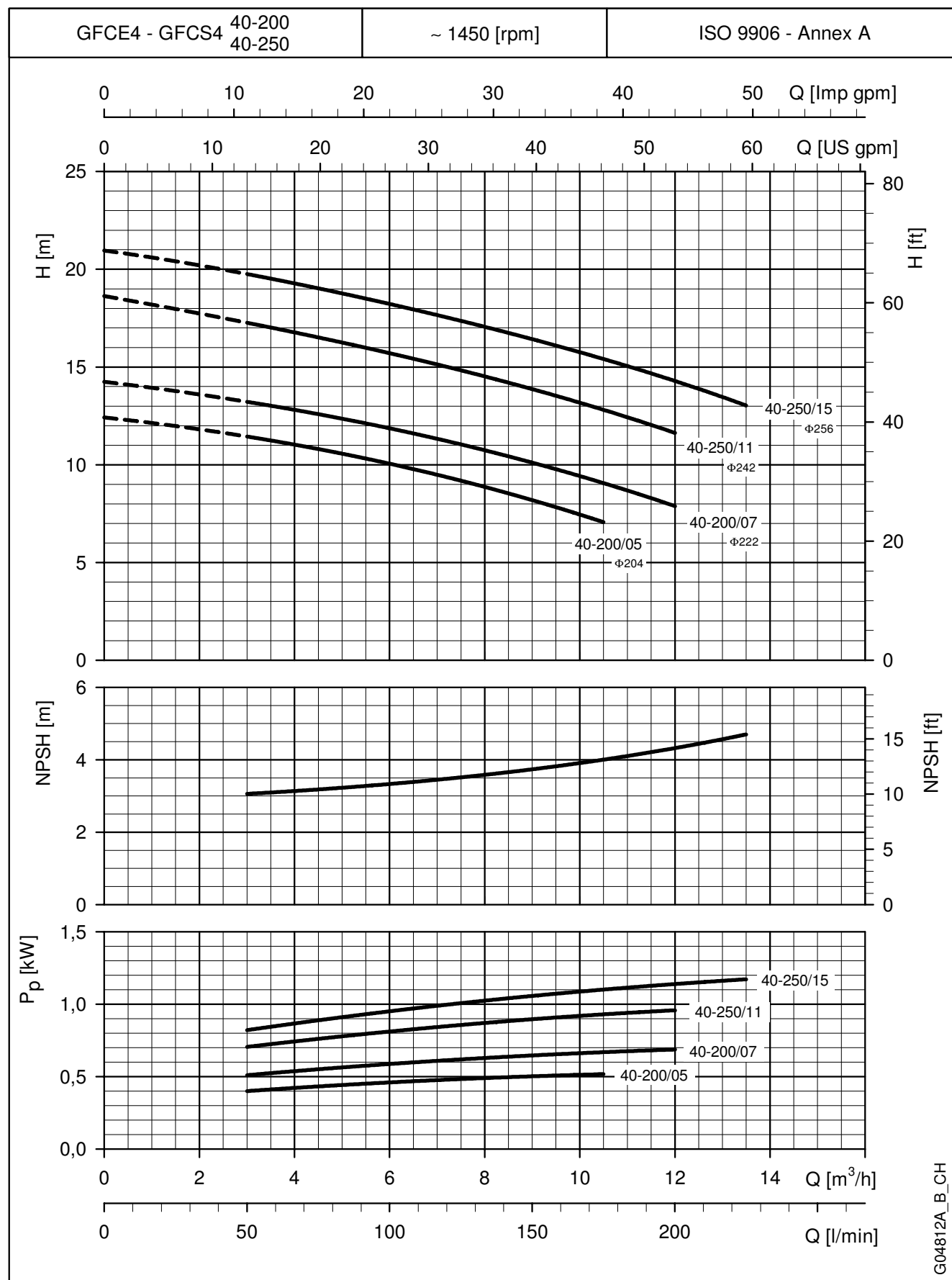
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



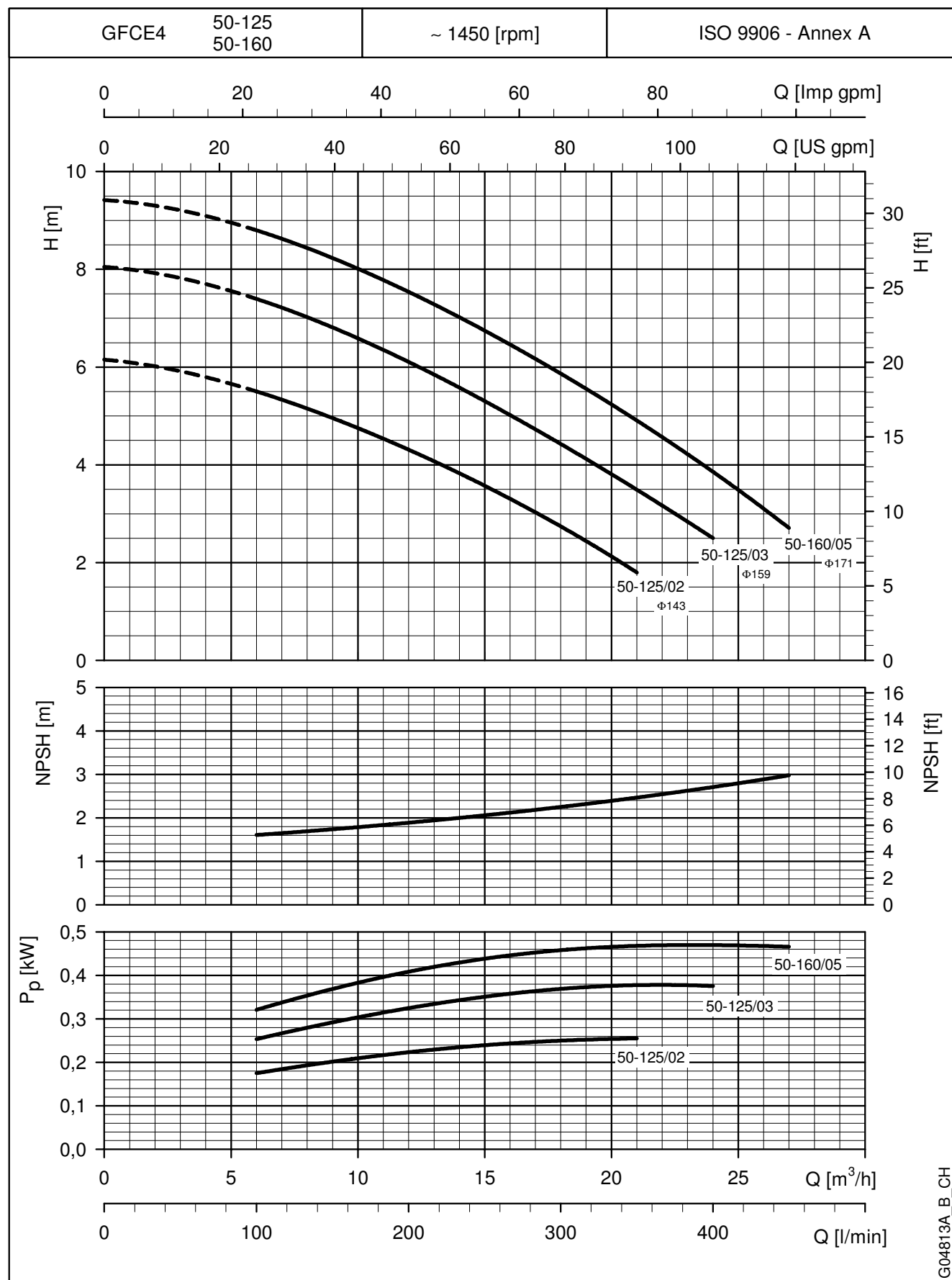
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE4-GFCS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



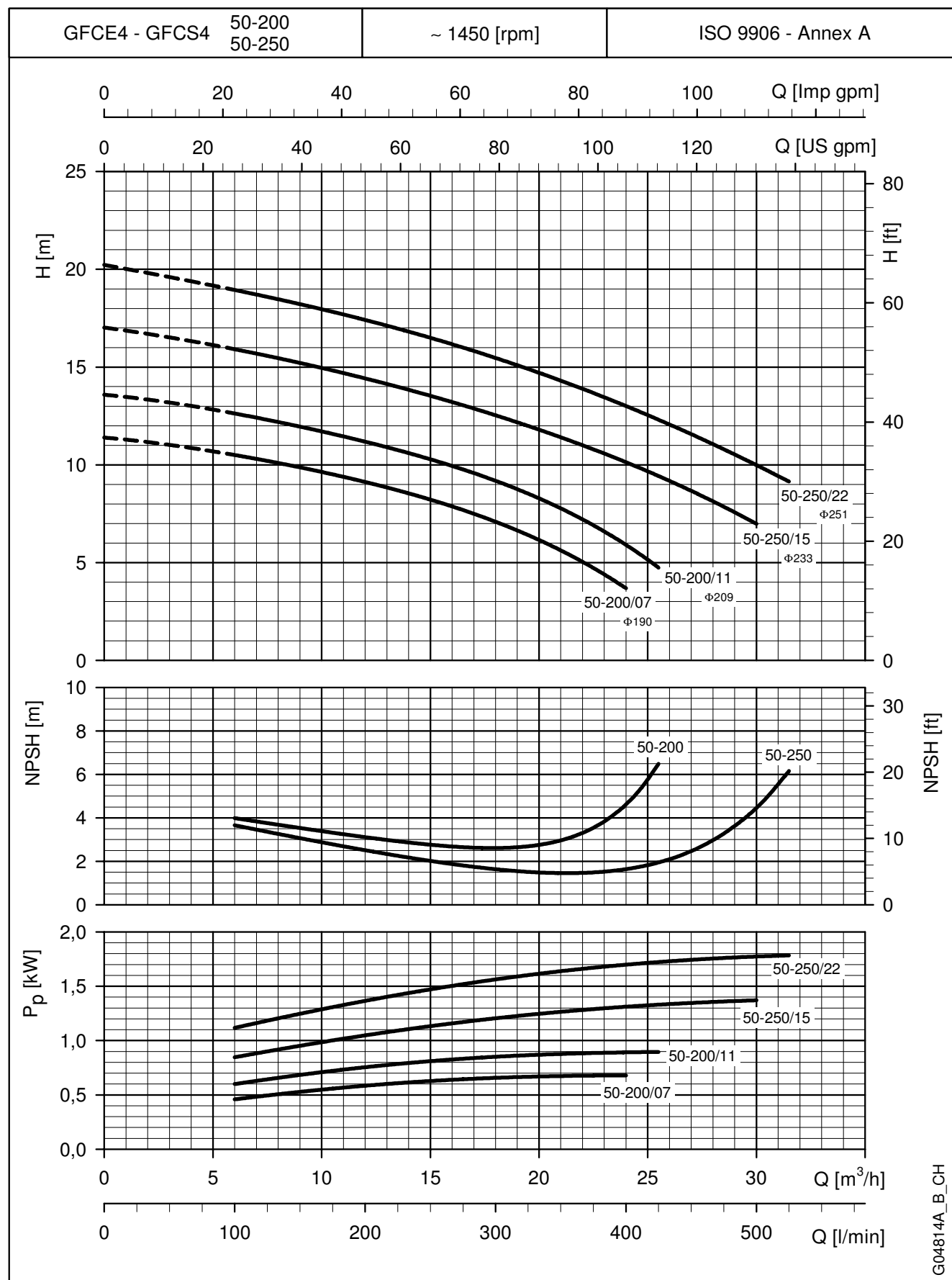
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



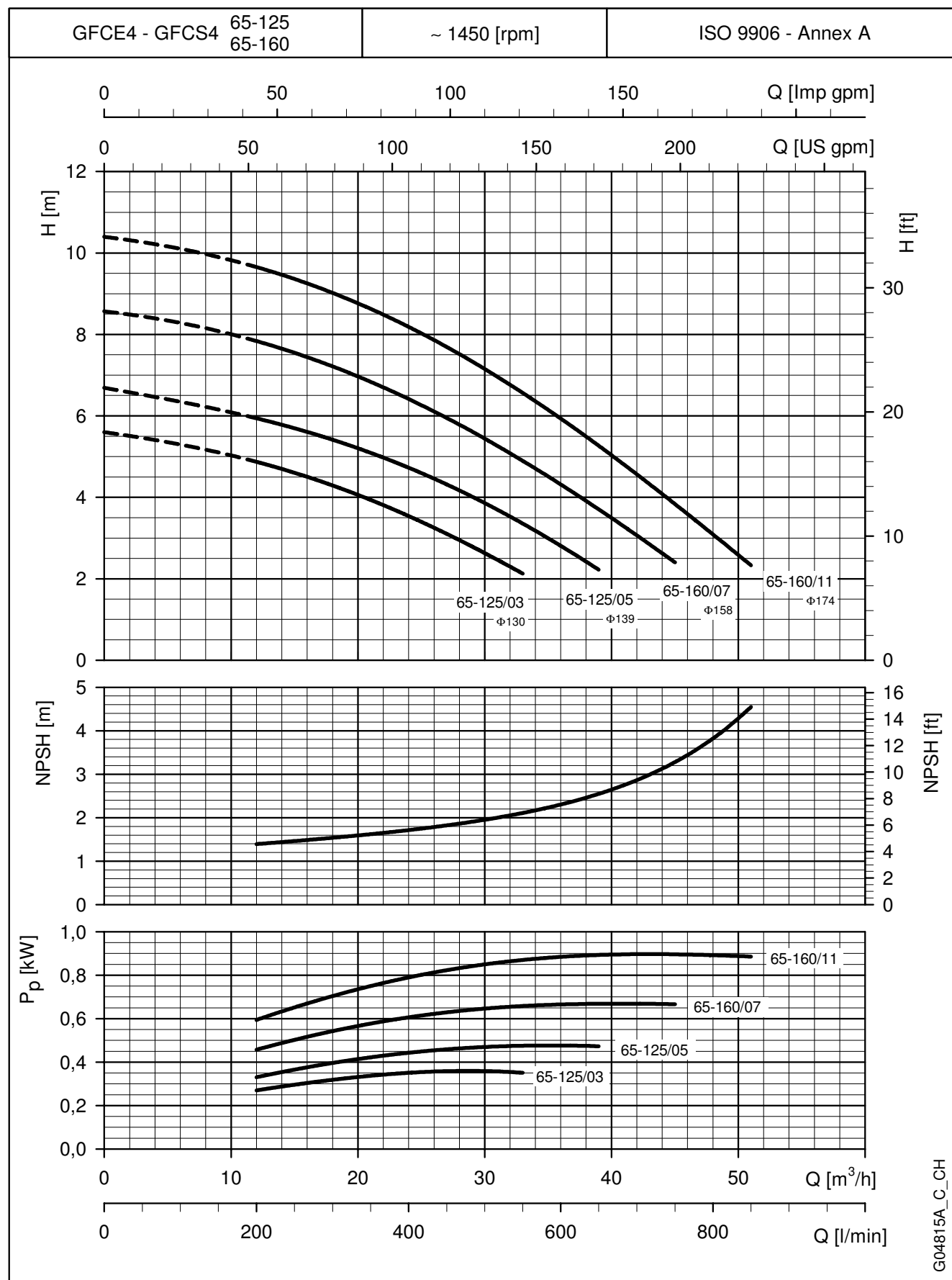
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE4-GFCS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



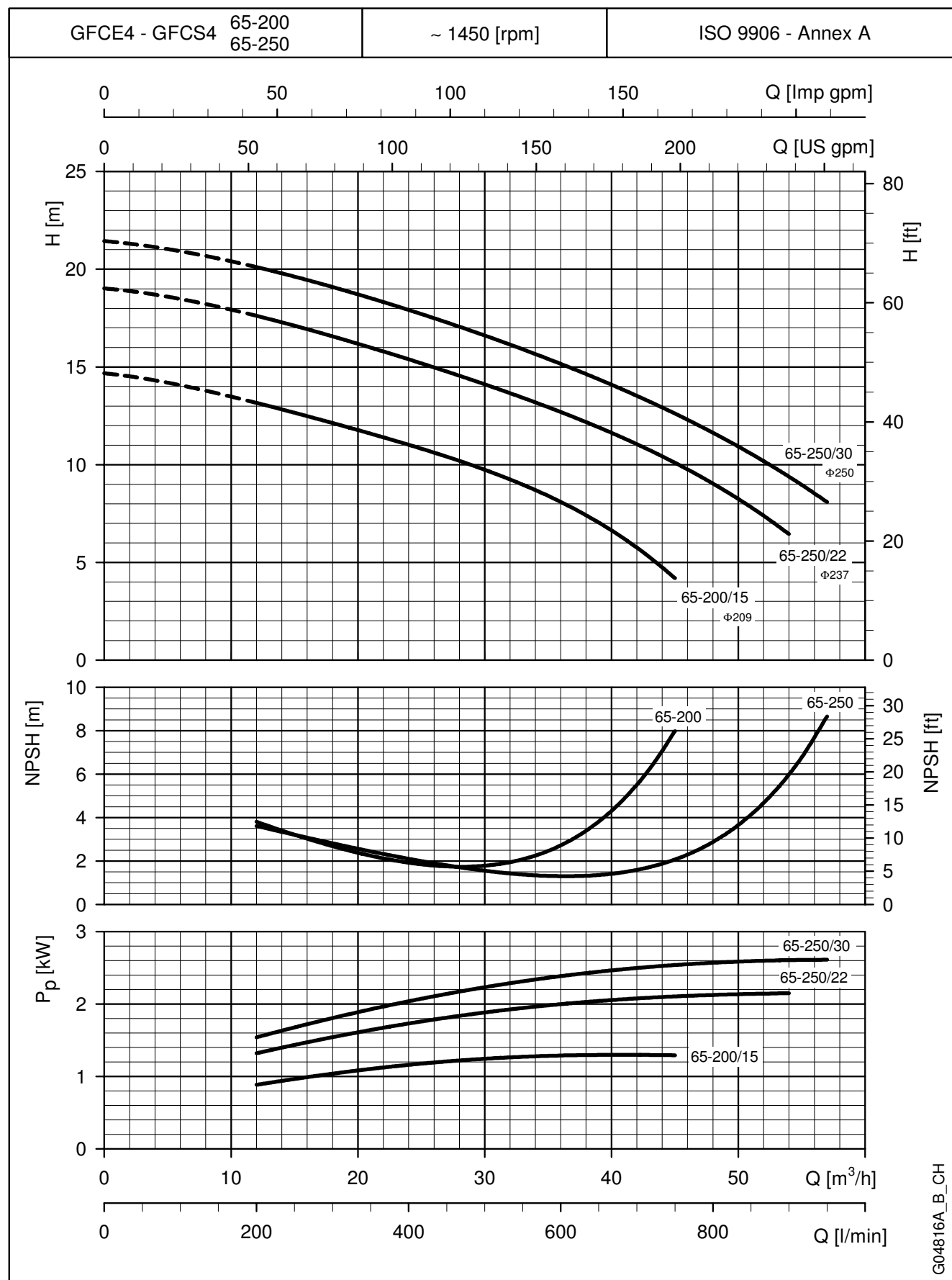
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE4-GFCS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



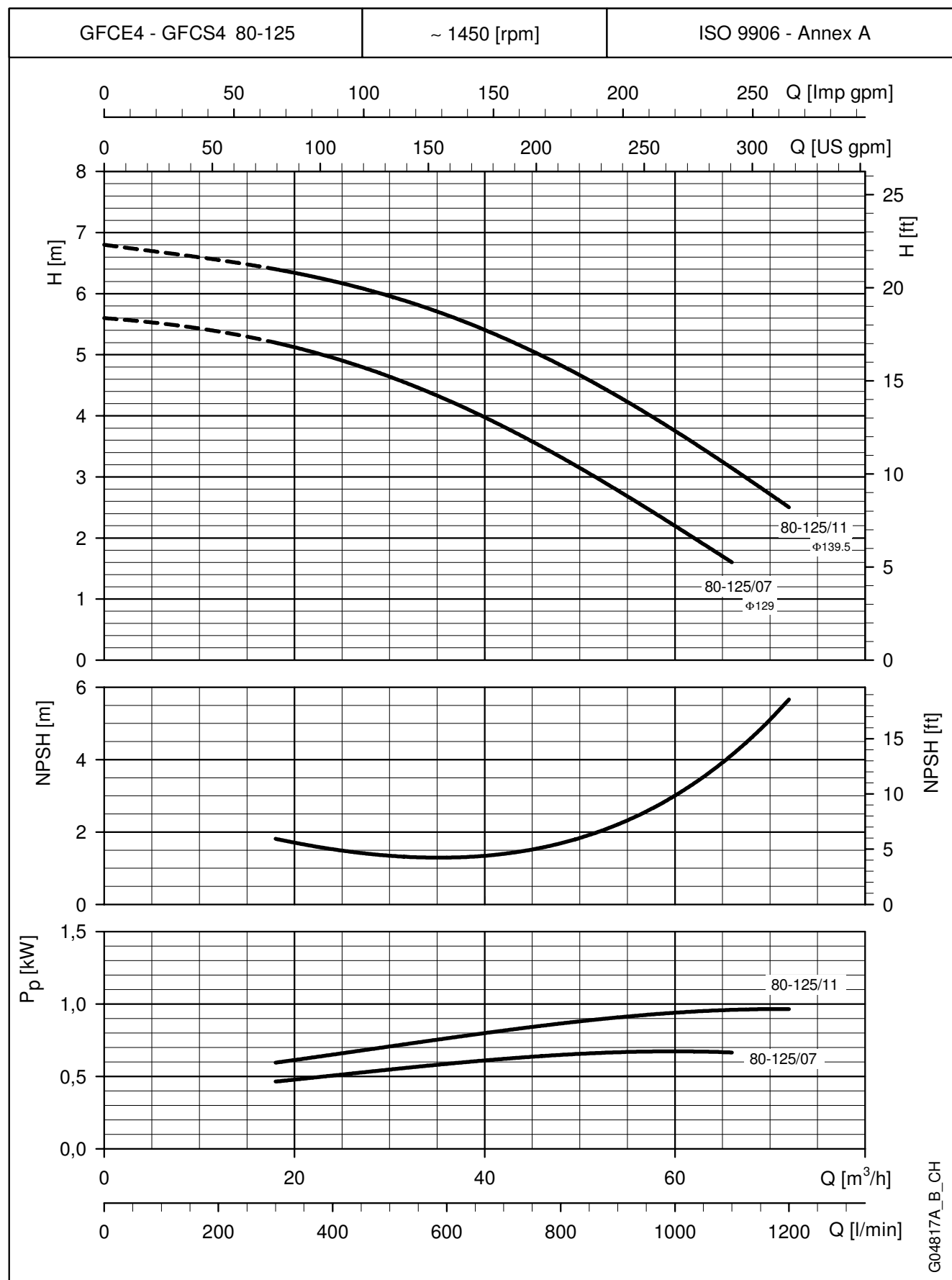
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE4-GFCS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



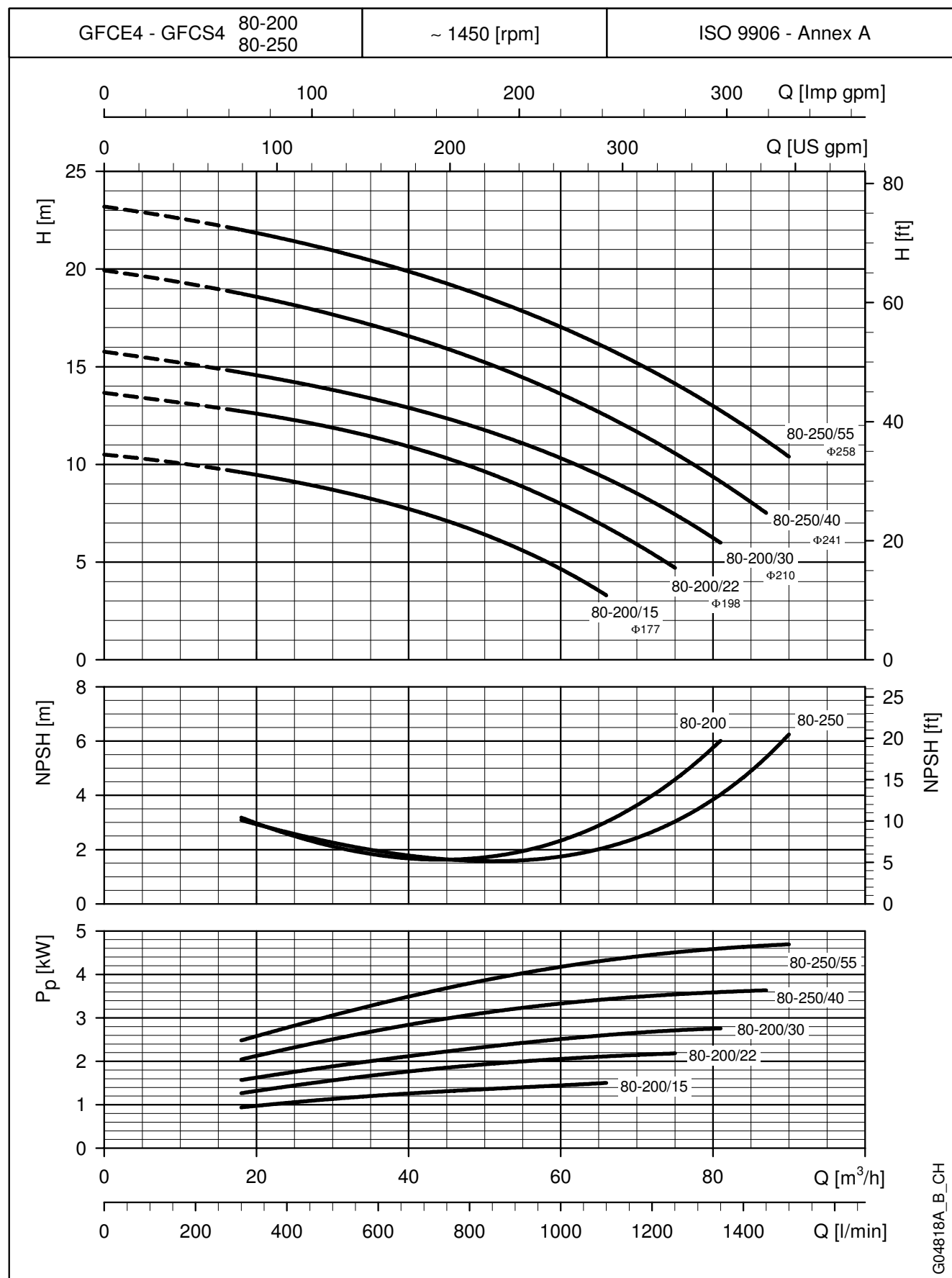
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE4-GFCS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



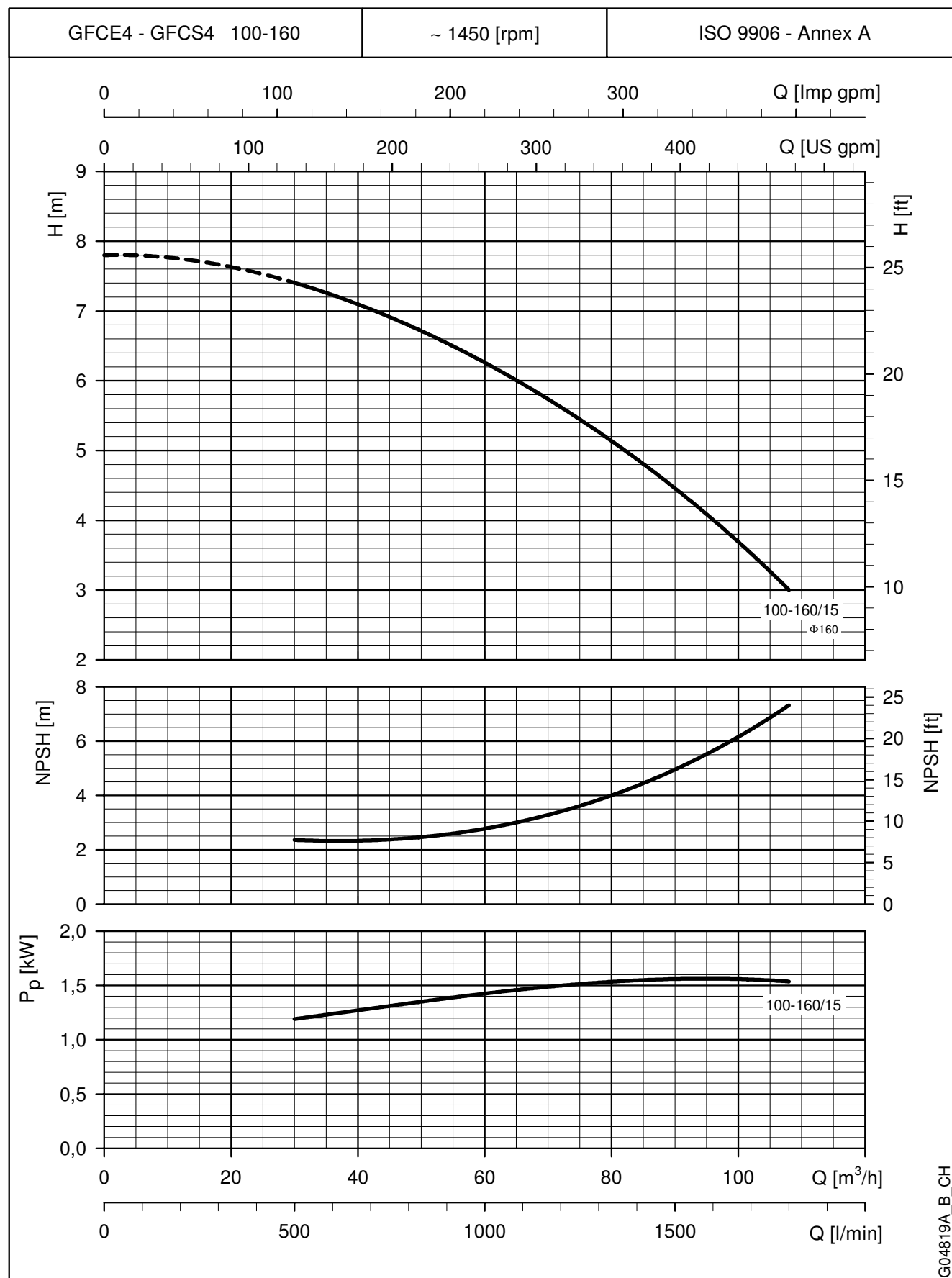
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE4-GFCS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



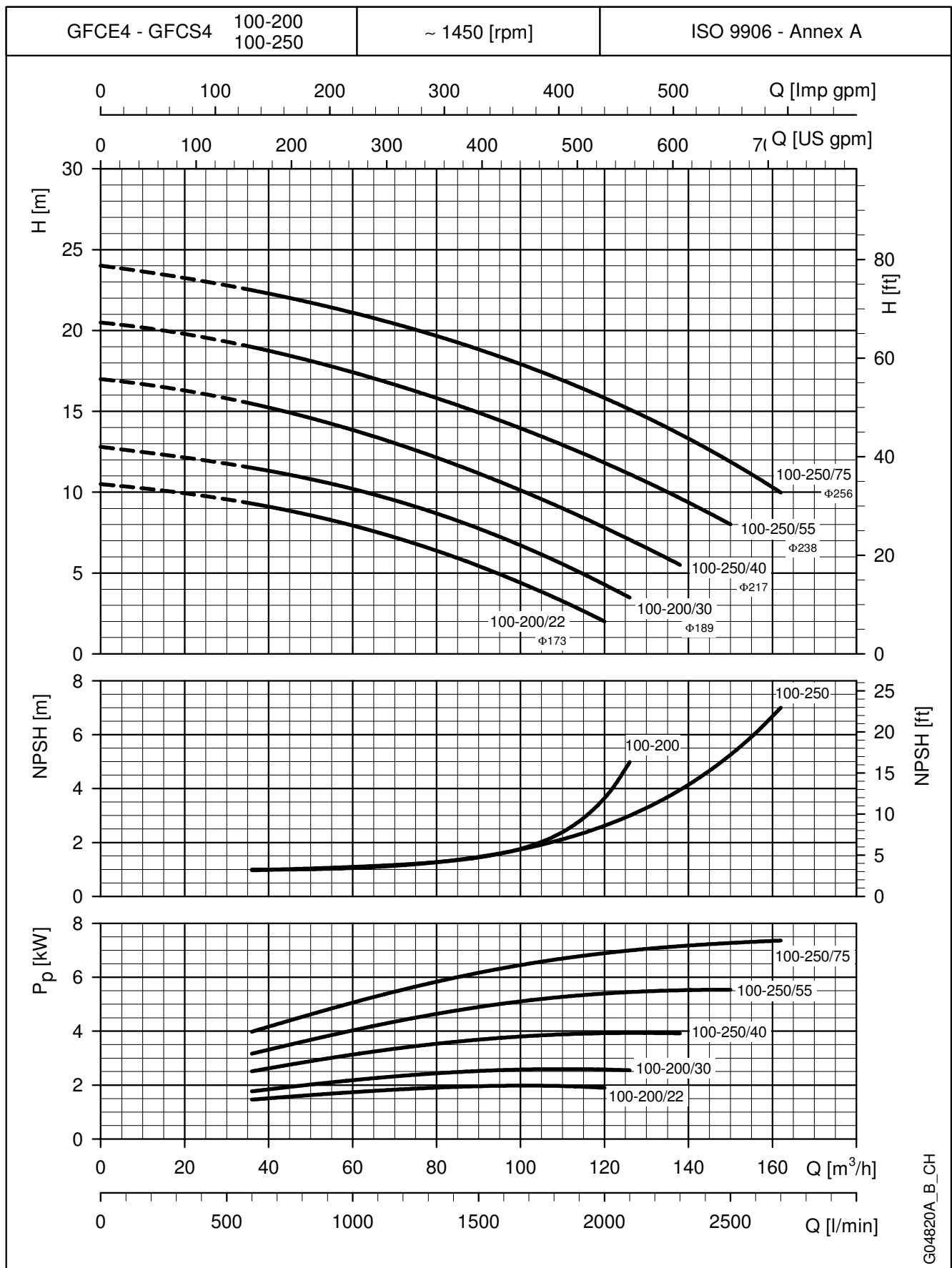
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE4-GFCS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



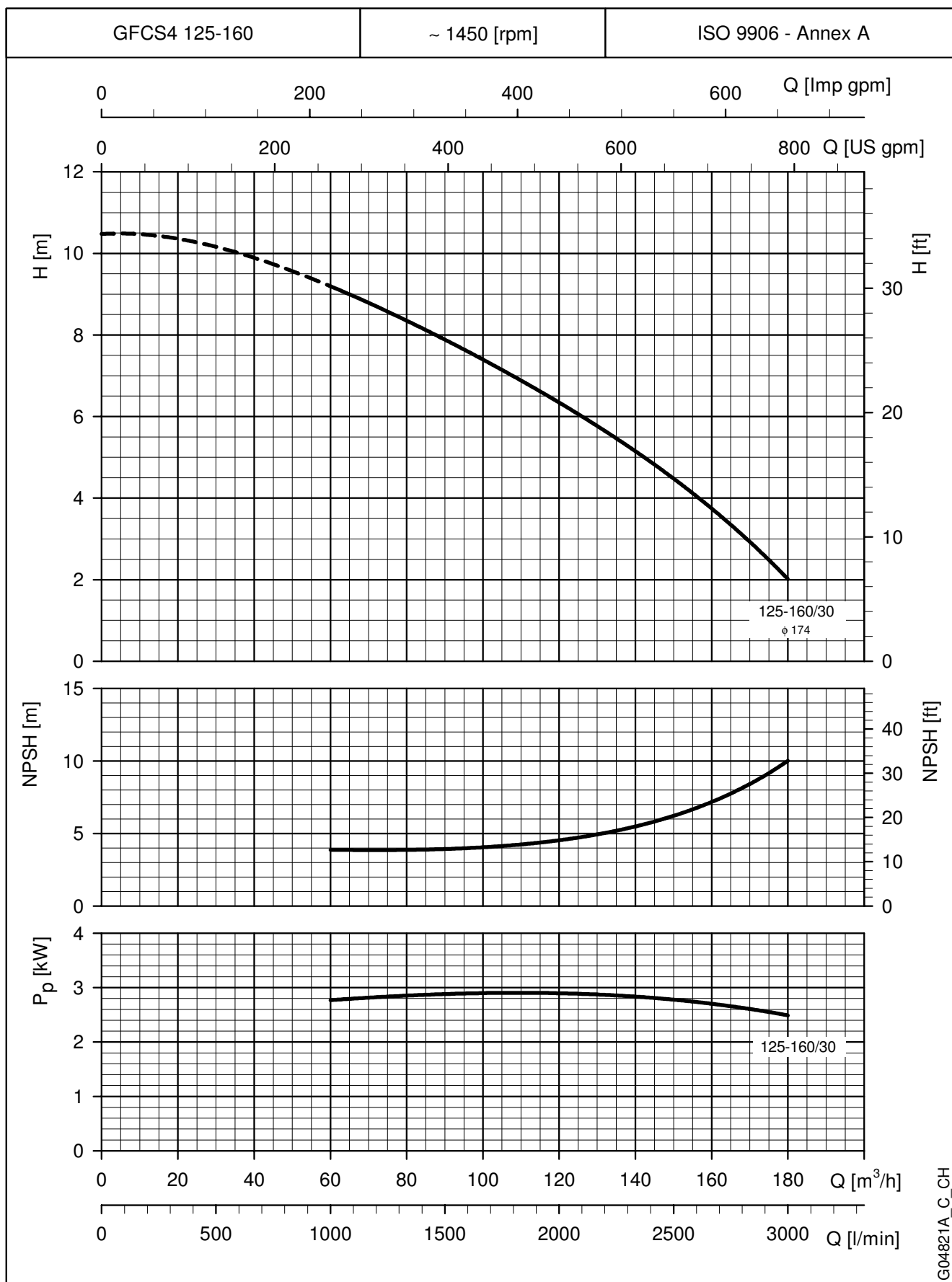
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCE4-GFCS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



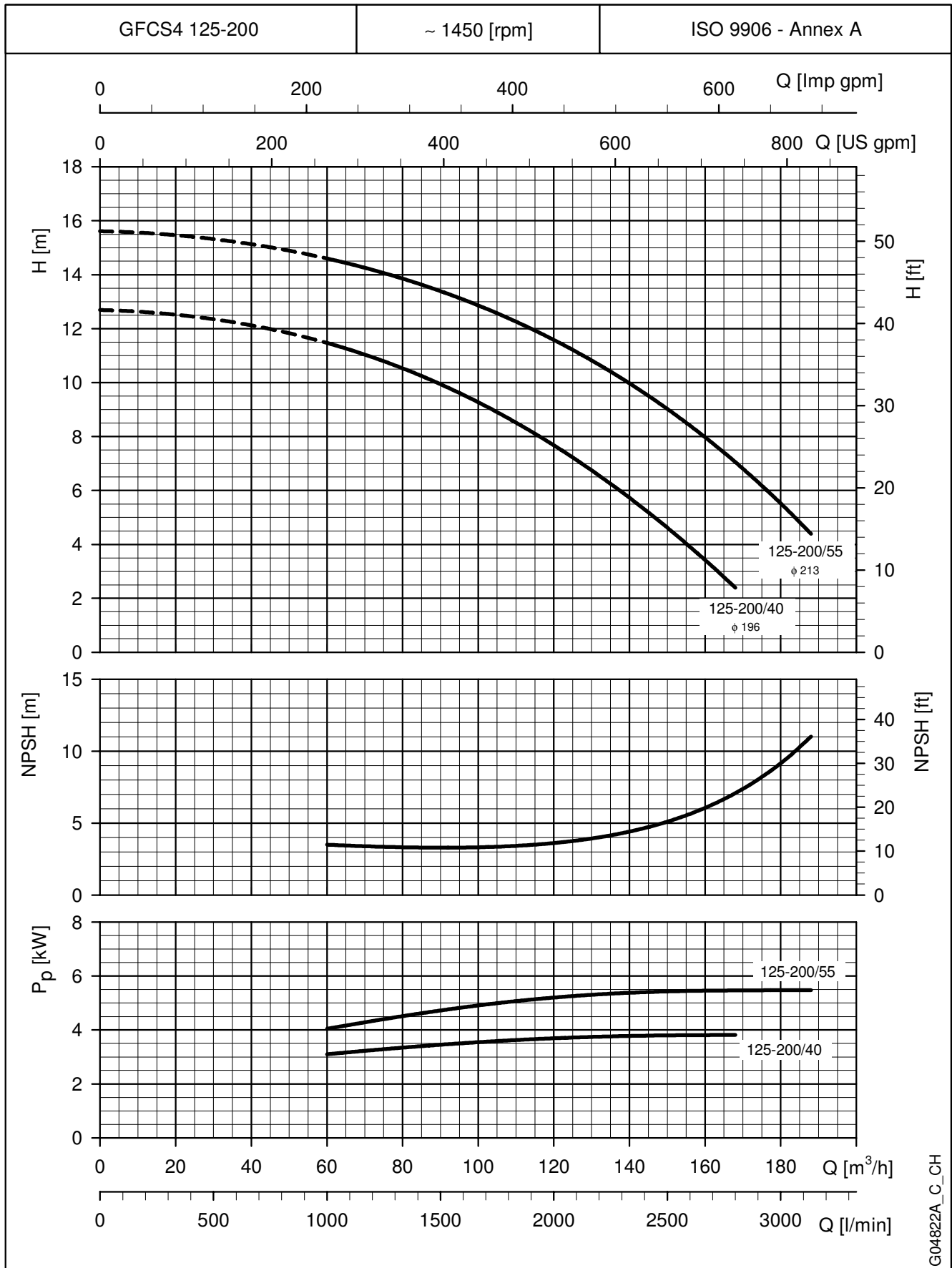
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



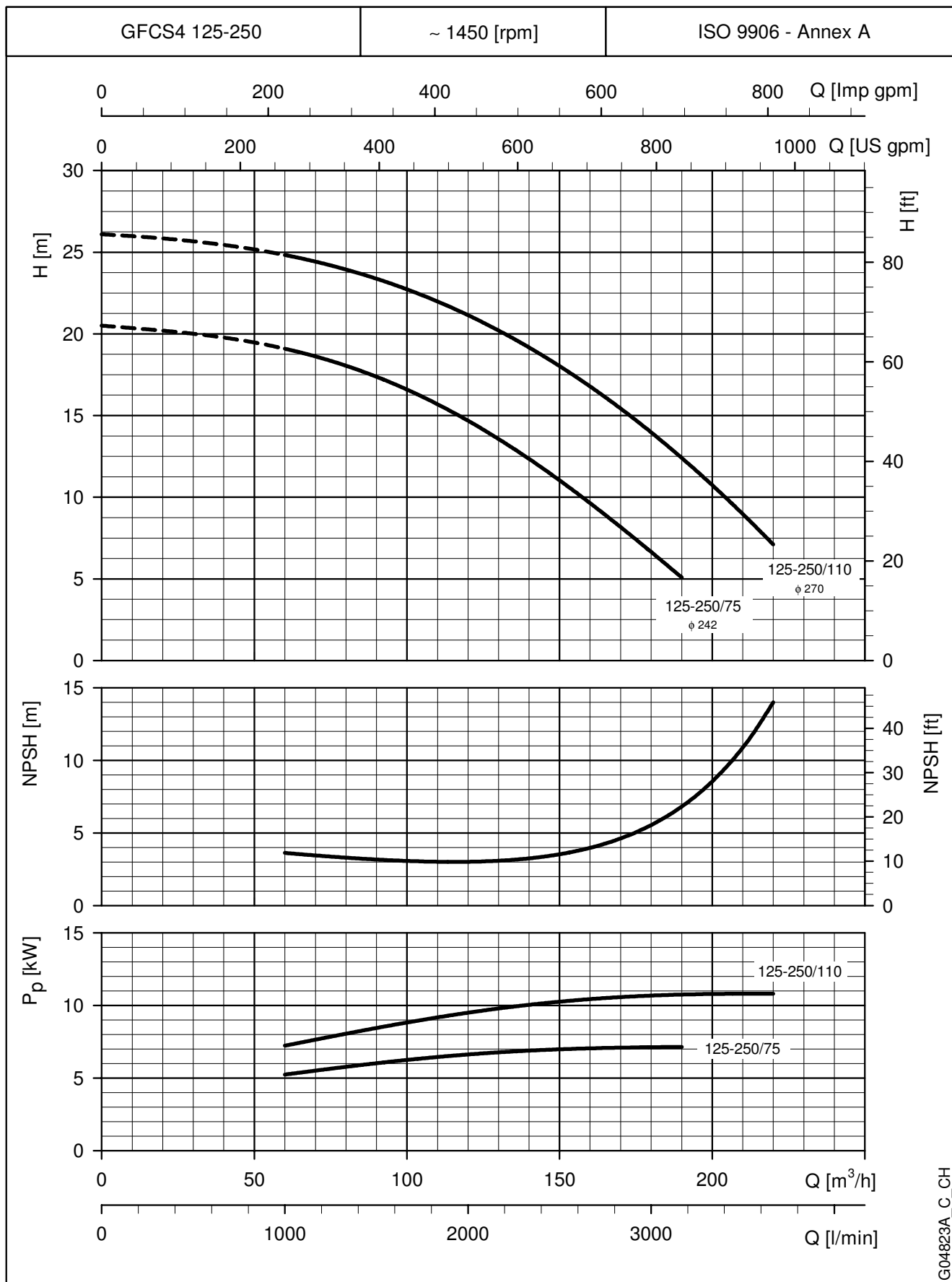
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



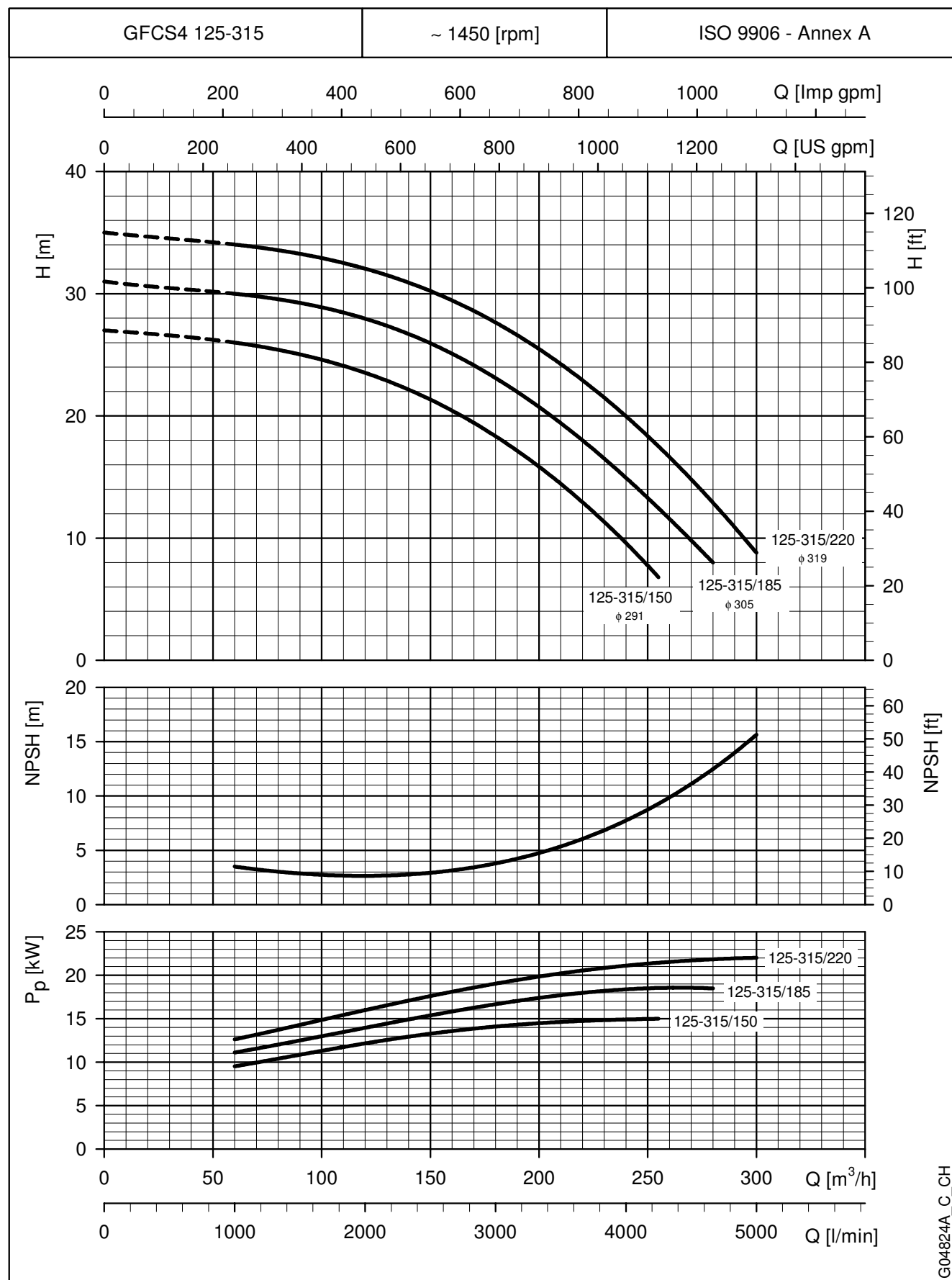
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



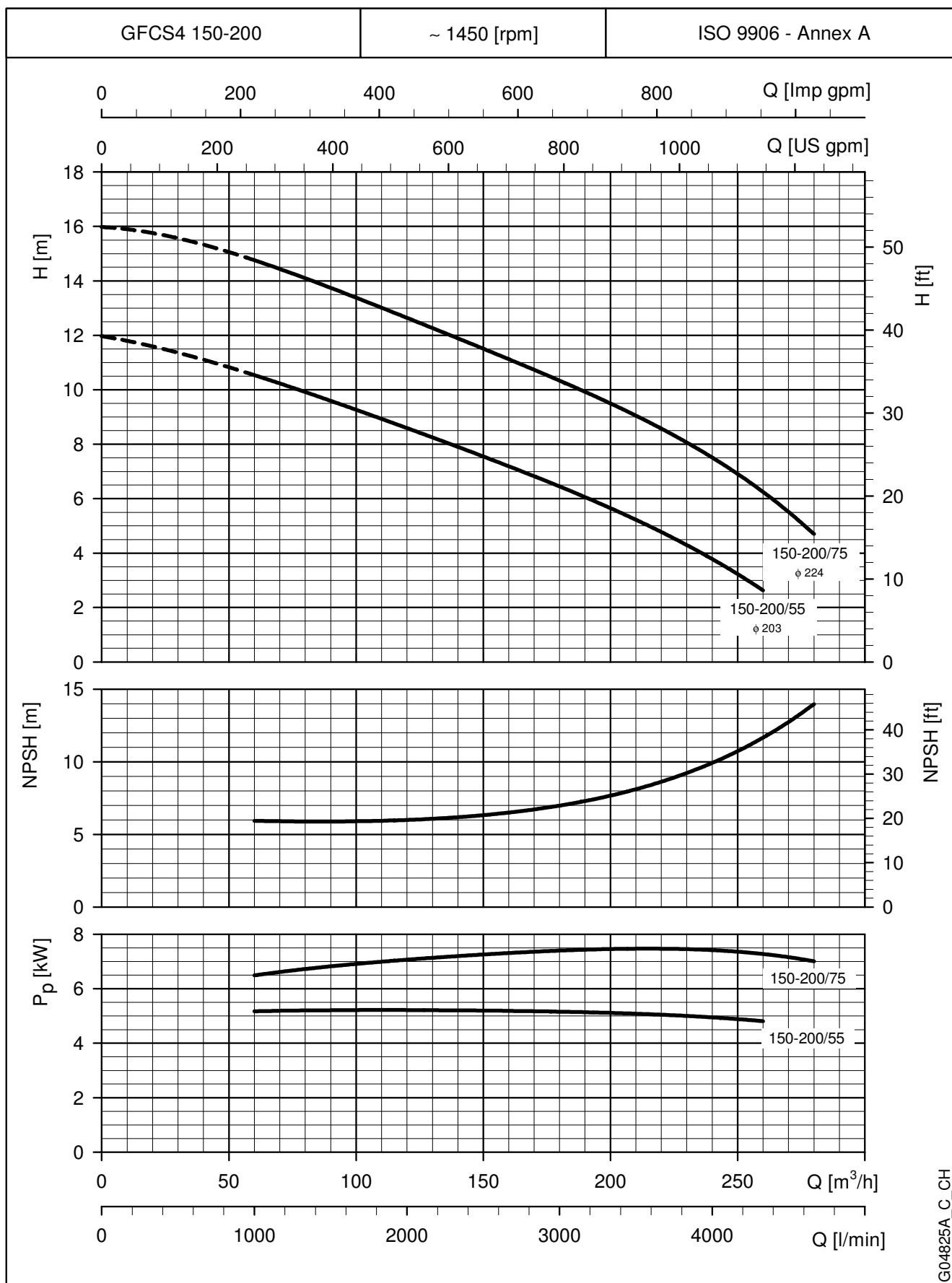
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



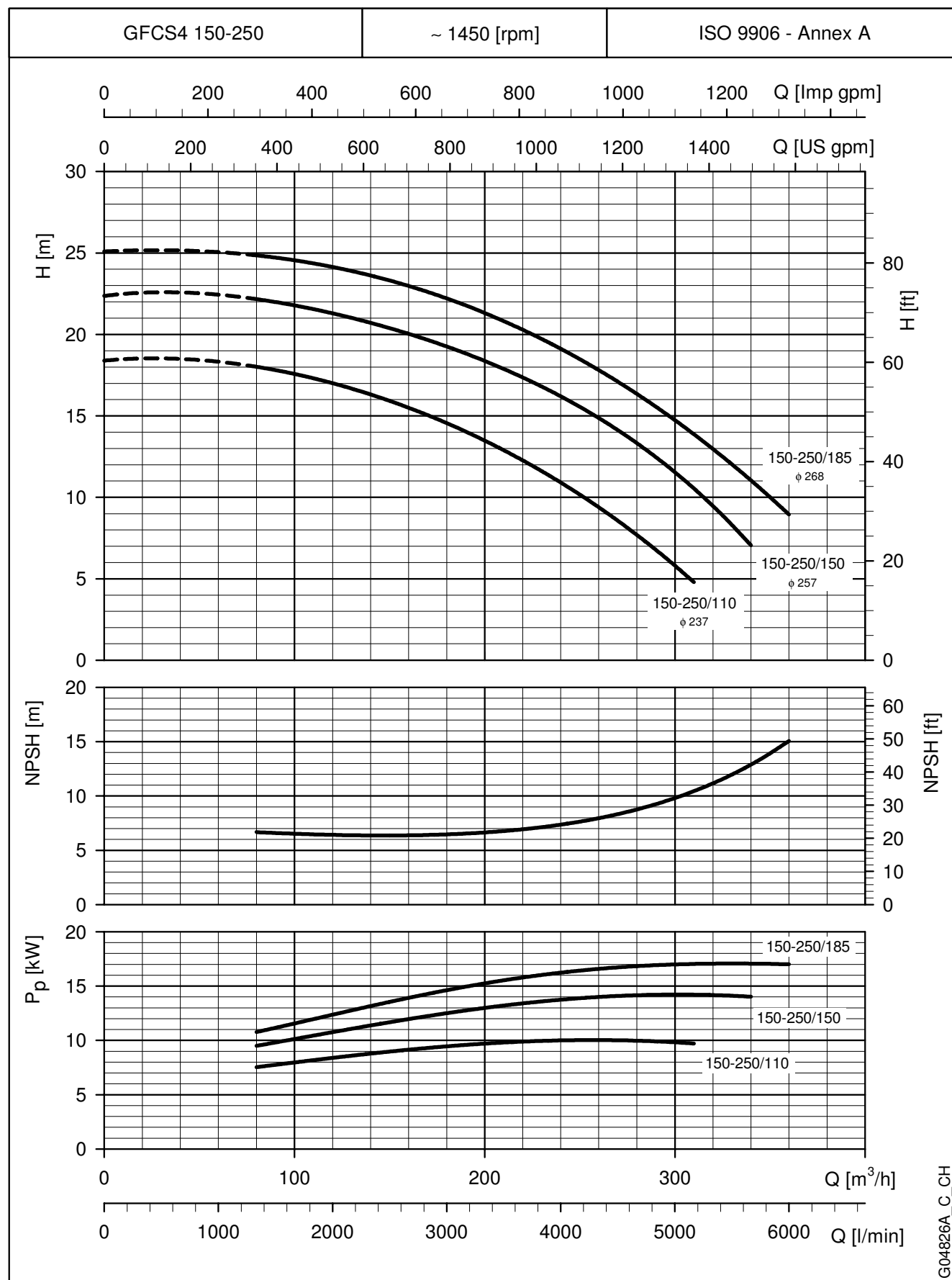
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



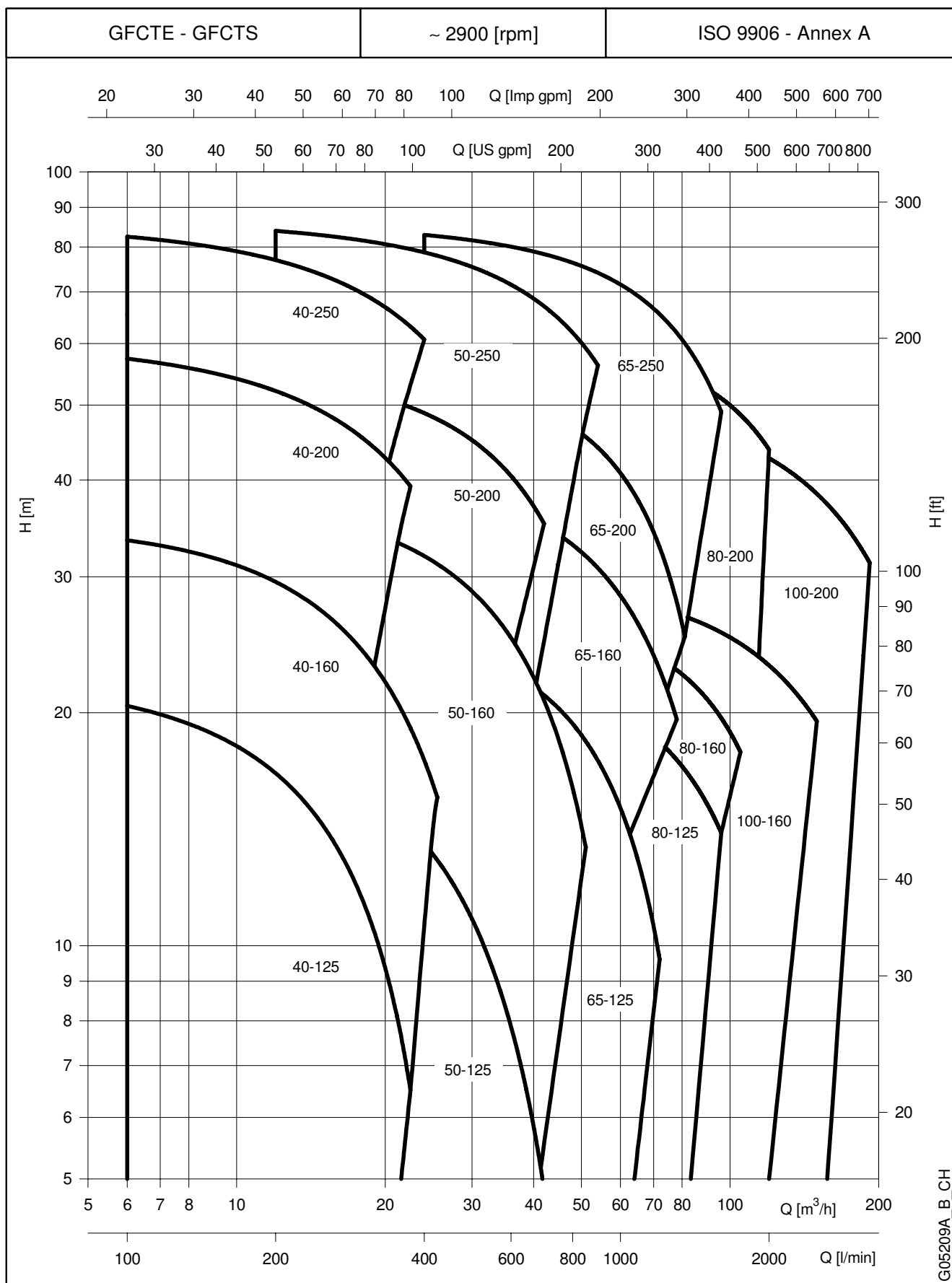
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GFCTE-GFCTS SERIES (SINGLE OPERATION)
HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 2 POLES**



These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE-GFCTS SERIES (SINGLE OPERATION)

HYDRAULIC PERFORMANCE TABLE AT 50 Hz, 2 POLES

PUMP TYPE	RATED POWER		Q = DELIVERY																	
			l/min 0	100	200	300	350	400	600	700	900	1000	1200	1300	1400	1600	1750	2000	2500	3000
	m³/h 0	6	12	18	21	24	36	42	54	60	72	78	84	96	105	120	150	180		
	kW	HP	H = TOTAL HEAD METRES COLUMN OF WATER																	
40-125/07	0,75	1	17,9	16,0	12,5	7,4	4,3													
40-125/11	1,1	1,5	22,6	20,4	16,7	11,5	8,3													
40-160/15	1,5	2	28,2	26,0	22,3	17,2	14,1	10,6												
40-160/22	2,2	3	35,3	33,4	29,5	24,0	20,8	17,4												
40-200/ *	*	*	43,2	39,3	33,9	27,1														
40-200/40	4	5,5	52,4	48,8	43,7	37,0	33,1													
40-200/55	5,5	7,5	61,0	57,4	52,1	45,3	41,4													
40-250/75	7,5	10	75,7	71,4	66,1	59,4	55,3													
40-250/110	11	15	86,2	82,5	76,9	69,7	65,4	60,7												
50-125/11	1,1	1,5	14,4		13,2	11,6	10,5	9,4	4,2											
50-125/15	1,5	2	18,4		17,6	15,9	14,8	13,6	7,9	4,8										
50-160/22	2,2	3	26,2		24,4	22,4	21,3	19,9	13,7	10,1										
50-160/30	3	4	33,1		30,3	28,3	27,1	25,7	19,3	15,4										
50-160/40	4	5,5	39,1		36,6	34,5	33,3	31,9	25,0	20,7										
50-200/55	5,5	7,5	47,9		44,9	42,6	41,2	39,7	31,7											
50-200/75	7,5	10	57,4		54,3	51,9	50,4	48,8	40,5	35,1										
50-250/**	**	**	64,4		60,9	58,7	57,4	56,1	49,2	44,8										
50-250/110	11	15	75,0		71,3	69,0	67,7	66,2	59,2	54,9										
50-250/150	15	20	87,4		83,9	81,6	80,2	78,7	71,5	67,1	56,3									
65-125/22	2,2	3	17,8					16,3	13,9	12,3	8,3	5,9								
65-125/30	3	4	21,8					20,3	17,9	16,3	12,3	10,0								
65-125/40	4	5,5	25,7					24,6	22,5	21,1	17,3	15,1	9,6							
65-160/55	5,5	7,5	34,1					32,8	30,6	29,1	25,2	22,9	17,4							
65-160/75	7,5	10	41,6					39,3	36,7	34,9	30,8	28,3	22,7	19,6						
65-200/**	**	**	52,0					48,7	45,8	43,9	38,9	35,8	28,1	23,4						
65-200/110	11	15	58,8					54,3	51,1	49,1	44,0	40,8	32,7	27,8						
65-250/150	15	20	69,8					65,5	62,7	61,1	56,9	54,4	48,1	44,4	40,1					
65-250/185	18,5	25	78,6					73,7	70,8	69,1	65,0	62,5	56,5	52,9	48,8					
65-250/220	22	30	86,8					82,9	80,1	78,3	74,1	71,5	65,5	62,0	58,1	49,0				
80-125/30	3	4	15,8						14,4	13,8	12,2	11,3	9,3	8,2	7,1					
80-125/40	4	5,5	19,0						17,8	17,3	15,9	15,1	13,3	12,3	11,2					
80-125/55	5,5	7,5	23,6						22,3	21,8	20,7	20,0	18,3	17,4	16,4	14,0				
80-160/75	7,5	10	28,2						26,7	26,3	25,4	24,9	23,5	22,7	21,8	19,7	17,8			
80-200/110	11	15	40,7						38,1	37,5	35,9	35,0	32,9	31,7	30,4	27,5	25,0			
80-200/150	15	20	51,1						48,0	47,3	45,7	44,7	42,6	41,5	40,2	37,3	34,8			
80-200/185	18,5	25	57,2						54,0	53,3	51,8	50,9	49,0	47,8	46,6	43,8	41,4			
80-200/220	22	30	63,9						60,9	60,3	58,8	58,0	56,1	55,0	53,8	51,0	48,6	43,8		
100-160/110	11	15	29,0									27,6	26,8	26,3	25,7	24,5	23,4	21,4	16,5	
100-200/185	18,5	25	39,8										37,9	37,5	37,0	36,0	35,2	33,5	29,5	
100-200/220	22	30	47,5										45,3	44,9	44,4	43,4	42,5	40,8	36,7	

* GFCTE 40-200/40A : 4 [kW] - 5.5 [HP] , GFCTS 40-200/30 : 3 [kW] - 4 [HP]

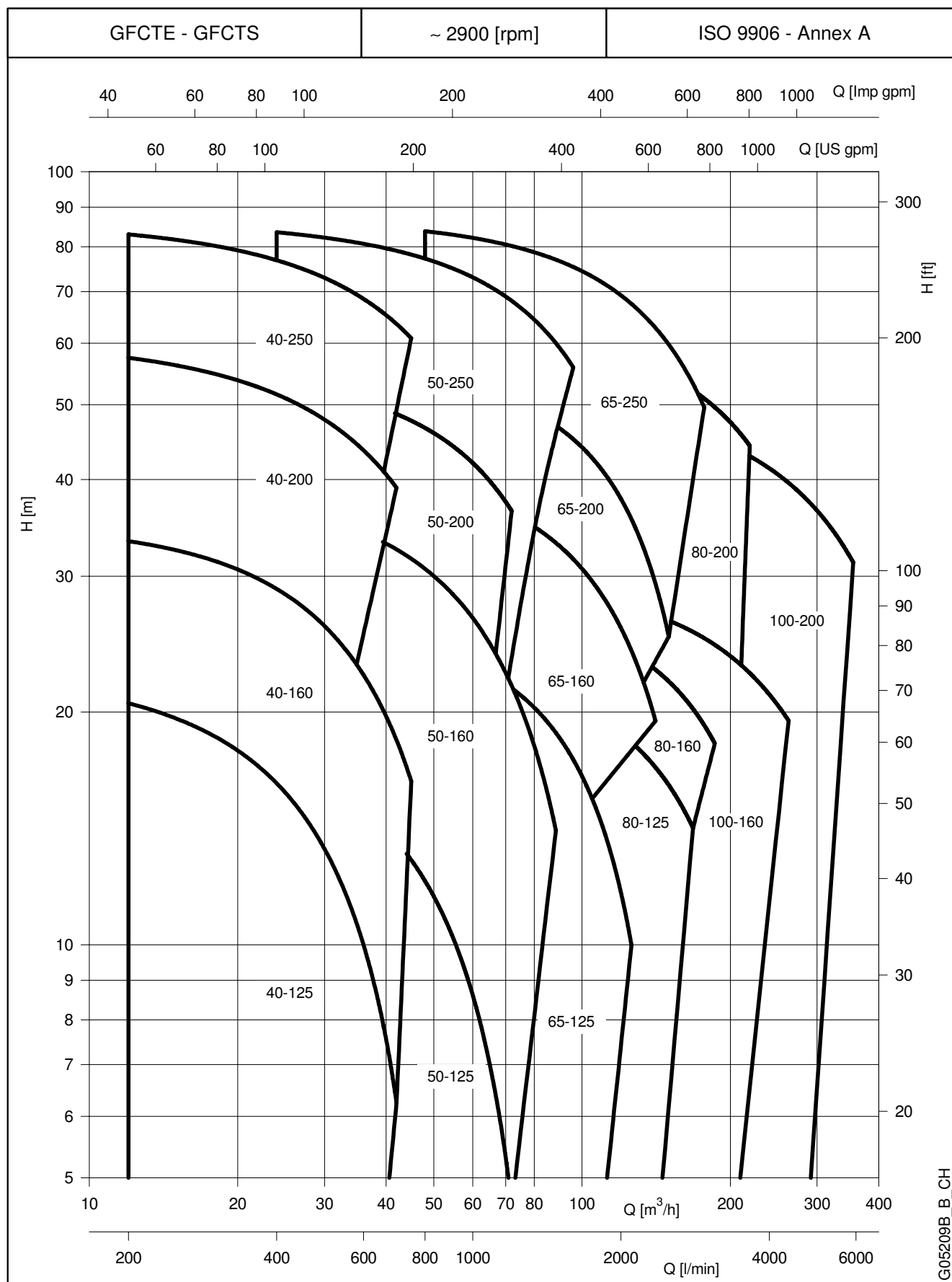
fcte-fcts-2p50S-en_c_th

** GFCTE 50-250/92 : 9.2 [kW] - 12.5 [HP] , GFCTS 50-250/110A : 11 [kW] - 15 [HP]

GFCTE 65-200/92 : 9.2 [kW] - 12.5 [HP] , GFCTS 65-200/110A : 11 [kW] - 15 [HP]

Performances according to ISO 9906 - Annex A.

**GFCTE-GFCTS SERIES (PARALLEL OPERATION)
HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 2 POLES**



These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE-GFCTS SERIES (PARALLEL OPERATION) HYDRAULIC PERFORMANCE TABLE AT 50 Hz, 2 POLES

PUMP TYPE	RATED POWER		Q = DELIVERY																	
	2 x	2 x	l/min 0	200	400	600	700	800	1000	1200	1600	1800	2000	2200	2400	2800	3200	3500	4250	5550
	kW	HP	m ³ /h 0	12	24	36	42	48	60	72	96	108	120	132	144	168	192	210	255	333
H = TOTAL HEAD METRES COLUMN OF WATER																				
40-125/07	0,75	1	17,9	15,9	11,7	5,6														
40-125/11	1,1	1,5	23,0	20,5	16,2	10,0	6,3													
40-160/15	1,5	2	28,4	26,0	21,6	15,4	11,7													
40-160/22	2,2	3	35,3	33,3	28,9	22,3	18,4													
40-200/ *	*	*	43,4	39,2	33,3	25,6														
40-200/40	4	5,5	52,5	48,5	42,8	35,3														
40-200/55	5,5	7,5	61,2	57,5	51,5	43,6	39,0													
40-250/75	7,5	10	75,1	69,5	62,8	54,6	49,9													
40-250/110	11	15	86,8	83,0	76,8	68,5	63,6													
50-125/11	1,1	1,5	14,2		12,7	10,6	9,3	7,8	4,4											
50-125/15	1,5	2	18,4		17,1	15,0	13,6	12,1	8,6	4,6										
50-160/22	2,2	3	26,4		24,0	21,6	20,1	18,5	14,8	10,4										
50-160/30	3	4	33,3		30,1	27,5	26,0	24,3	20,4	15,8										
50-160/40	4	5,5	39,5		36,8	34,1	32,5	30,7	26,5	21,6										
50-200/55	5,5	7,5	47,6		44,2	41,4	39,6	37,7	33,2											
50-200/75	7,5	10	56,9		53,3	50,4	48,6	46,6	42,0	36,4										
50-250/**	**	**	64,6		61,0	58,3	56,7	54,8	50,6	45,6										
50-250/110	11	15	75,1		71,2	68,4	66,7	64,9	60,8	55,9										
50-250/150	15	20	87,3		83,5	80,7	79,0	77,2	73,0	68,1	55,9									
65-125/22	2,2	3	18,1					15,8	14,5	12,8	8,3	5,4								
65-125/30	3	4	22,1					19,8	18,4	16,8	12,4	9,6								
65-125/40	4	5,5	25,7					24,2	23,0	21,5	17,4	14,7	11,7							
65-160/55	5,5	7,5	34,0					32,4	31,1	29,4	25,1	22,4	19,4							
65-160/75	7,5	10	41,8					39,4	37,9	36,1	31,6	28,8	25,7	22,3						
65-200/**	**	**	52,0					48,5	46,9	44,9	39,7	36,3	32,5	28,0						
65-200/110	11	15	58,7					54,2	52,5	50,4	45,1	41,7	37,7	33,2	27,9					
65-250/150	15	20	69,6					65,7	64,2	62,4	57,8	54,9	51,7	48,0	43,8					
65-250/185	18,5	25	78,3					74,1	72,5	70,7	66,0	63,2	60,0	56,4	52,4	43,0				
65-250/220	22	30	87,3					83,8	82,1	80,2	75,3	72,4	69,2	65,7	61,8	53,2				
80-125/30	3	4	15,7							14,1	12,4	11,3	10,2	9,0	7,8					
80-125/40	4	5,5	18,9							17,7	16,2	15,2	14,2	13,1	11,9					
80-125/55	5,5	7,5	23,6							21,7	20,4	19,6	18,8	17,8	16,7	14,2				
80-160/75	7,5	10	28,4							26,8	25,7	25,0	24,3	23,4	22,4	20,2				
80-200/110	11	15	40,9							38,2	36,5	35,5	34,3	33,1	31,8	28,7	25,1	22,1		
80-200/150	15	20	50,4							47,4	45,7	44,7	43,6	42,4	41,1	38,0	34,5	31,5		
80-200/185	18,5	25	57,8							54,5	52,8	51,8	50,7	49,5	48,2	45,3	41,9	39,0		
80-200/220	22	30	63,6							61,3	59,7	58,7	57,6	56,4	55,1	52,1	48,7	45,8		
100-160/110	11	15	28,8									27,7	27,3	26,8	26,3	25,0	23,5	22,3	18,5	
100-200/185	18,5	25	39,7											37,8	37,4	36,4	35,2	34,1	31,0	23,4
100-200/220	22	30	47,5											45,3	44,9	43,9	42,8	41,8	38,7	30,9

* GFCTE 40-200/40A : 4 [kW] - 5.5 [HP] , GFCTS 40-200/30 : 3 [kW] - 4 [HP]

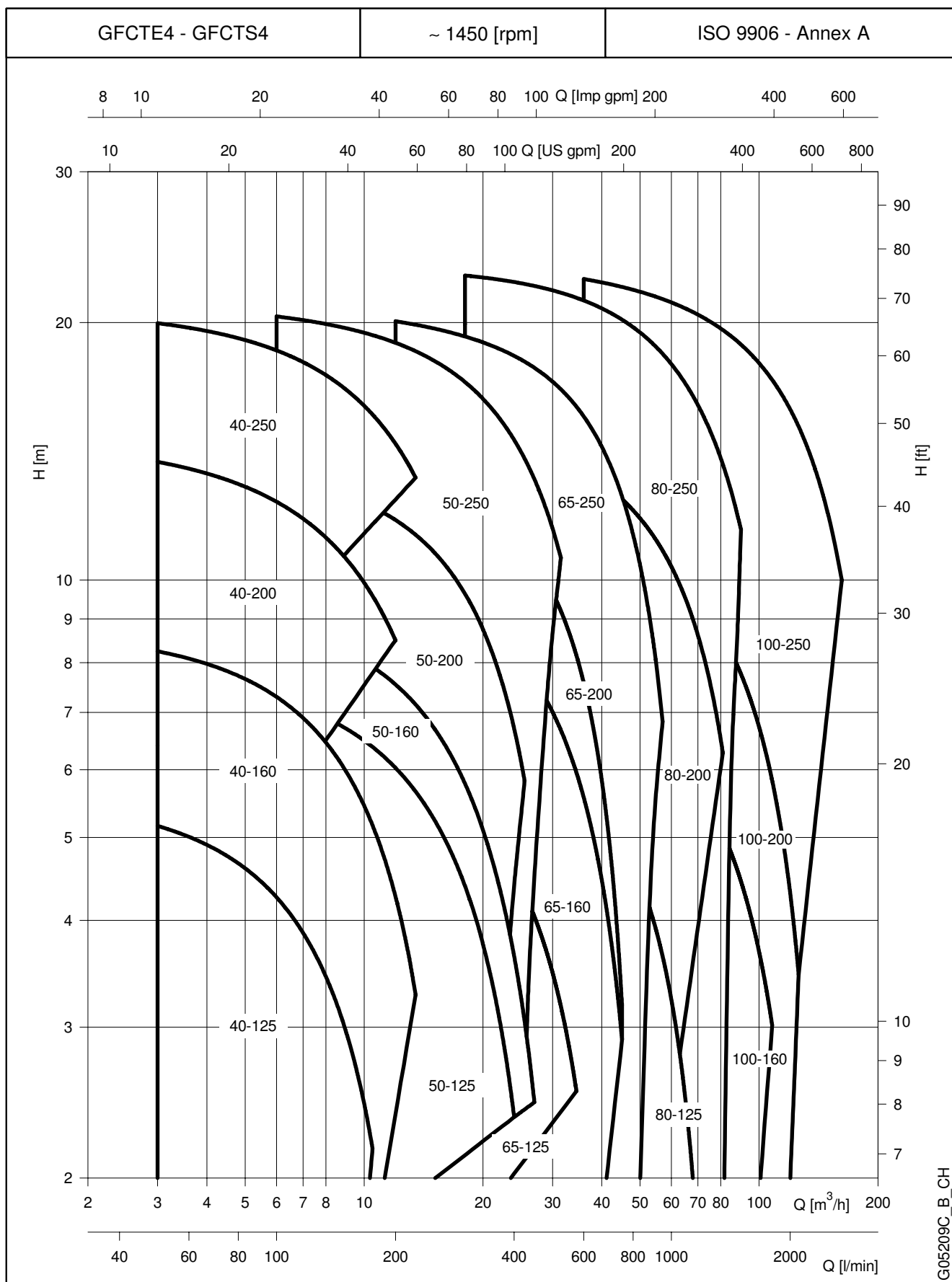
gfcte-gfcts-2p50P-en_c_th

** GFCTE 50-250/92 : 9.2 [kW] - 12.5 [HP] , GFCTS 50-250/110A : 11 [kW] - 15 [HP]

GFCTE 65-200/92 : 9.2 [kW] - 12.5 [HP] , GFCTS 65-200/110A : 11 [kW] - 15 [HP]

Performances according to ISO 9906 - Annex A.

**GFCTE4-GFCTS4 SERIES (SINGLE OPERATION)
HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 4 POLES**



These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE4-GFCTS4 SERIES (SINGLE OPERATION)

HYDRAULIC PERFORMANCE TABLE AT 50 Hz, 4 POLES

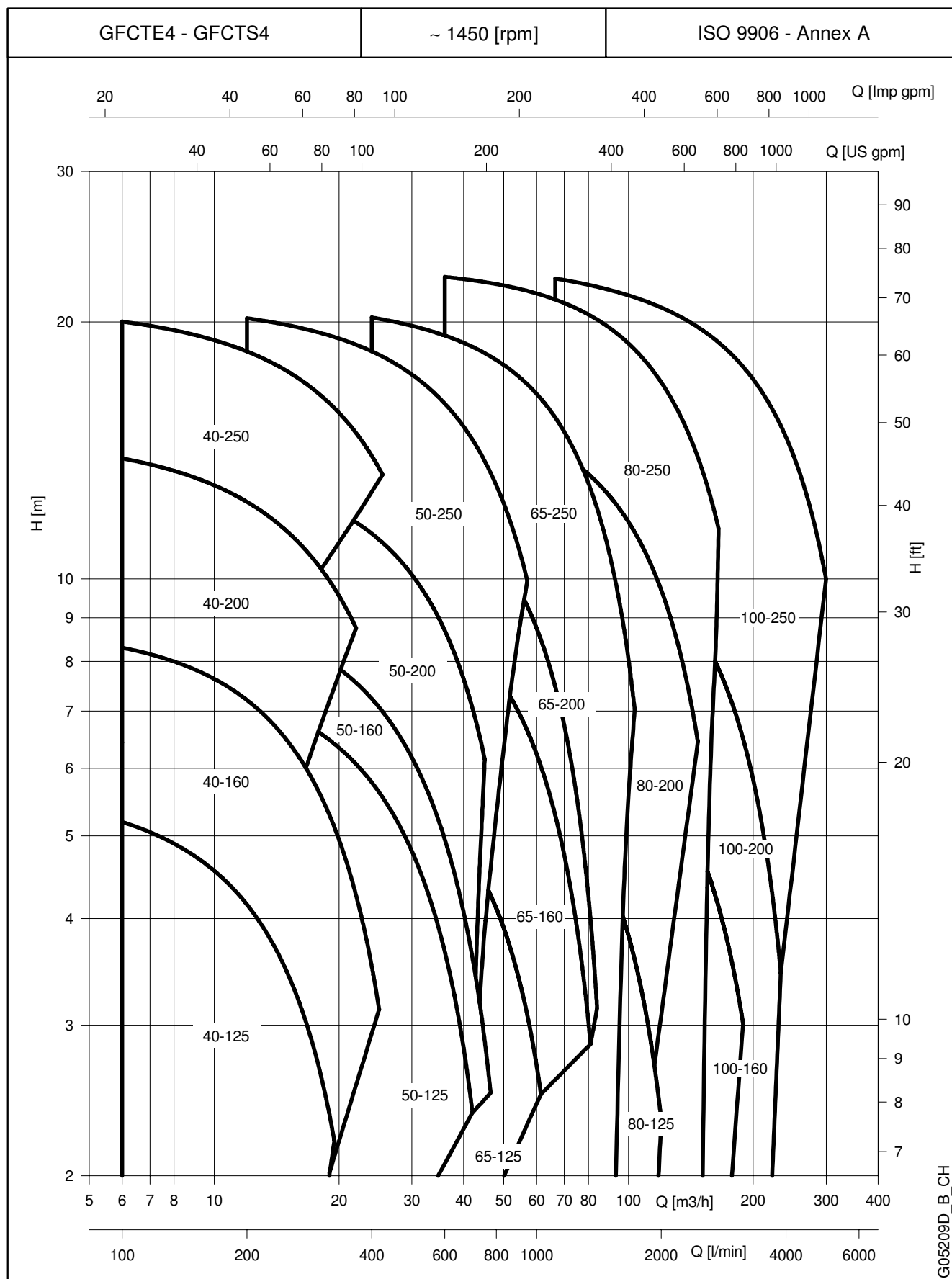
PUMP TYPE	RATED POWER		Q = DELIVERY																	
			l/min 0	50	100	150	175	200	300	400	500	600	700	900	1200	1400	1600	1750	2000	2500
	m³/h 0	3	6	9	10,5	12	18	24	30	36	42	54	72	84	96	105	120	150		
	kW	HP	H = TOTAL HEAD METRES COLUMN OF WATER																	
40-125/02A *	0,25	0,33	4,6	4,2	3,3	2,1														
40-125/02 *	0,25	0,33	5,7	5,2	4,3	3,0	2,2													
40-160/02 *	0,25	0,33	7,0	6,4	5,5	4,2	3,4	2,6												
40-160/03 *	0,37	0,5	8,8	8,3	7,3	6,0	5,2	4,3												
40-200/05	0,55	0,75	12,8	11,8	10,5	8,7	7,7													
40-200/07	0,75	1	14,5	13,6	12,2	10,3	9,3	8,1												
40-250/11	1,1	1,5	18,5	17,6	16,2	14,4	13,3	12,2												
40-250/15	1,5	2	20,9	20,0	18,6	16,7	15,6	14,4												
50-125/02 *	0,25	0,33	6,3		5,7	5,2	4,9	4,6	3,0											
50-125/03 *	0,37	0,5	7,9		7,3	6,8	6,4	6,0	4,3	2,4										
50-160/05 *	0,55	0,75	9,4		8,8	8,2	7,9	7,5	5,8	3,6										
50-200/07	0,75	1	11,7		10,7	10,0	9,6	9,2	7,1	4,2										
50-200/11	1,1	1,5	14,1		13,2	12,5	12,2	11,8	9,6	6,7										
50-250/15	1,5	2	18,1		17,0	16,3	16,0	15,6	13,7	11,3	8,1									
50-250/22	2,2	3	21,3		20,3	19,7	19,3	18,9	17,0	14,6	11,5									
65-125/03 *	0,37	0,5	5,6					4,9	4,3	3,4	2,3									
65-125/05 *	0,55	0,75	6,4					6,0	5,4	4,5	3,5									
65-160/07	0,75	1	8,4					8,0	7,3	6,3	5,2	3,8	2,3							
65-160/11	1,1	1,5	10,3					9,7	9,1	8,2	7,0	5,6	3,9							
65-200/15	1,5	2	14,3					13,2	12,3	11,2	9,7	7,6	4,8							
65-250/22	2,2	3	19,0					17,6	16,7	15,7	14,4	12,8	10,7	4,9						
65-250/30	3	4	21,4					20,1	19,3	18,3	17,1	15,5	13,6	8,5						
80-125/07	0,75	1	5,6						5,3	5,0	4,7	4,2	3,7	2,4						
80-125/11	1,1	1,5	7,0						6,6	6,3	6,0	5,7	5,2	4,0						
80-200/15	1,5	2	11,7						10,2	9,7	9,1	8,5	7,8	6,1						
80-200/22	2,2	3	14,7						13,3	12,8	12,2	11,5	10,8	9,2	6,3					
80-200/30	3	4	16,7						15,1	14,6	14,0	13,4	12,8	11,3	8,2					
80-250/40	4	5,5	19,6						19,1	18,6	18,1	17,4	16,7	14,8	11,2	8,2				
80-250/55	5,5	7,5	23,3						22,7	22,3	21,8	21,2	20,5	18,9	15,6	12,9				
100-160/15	1,5	2	7,9								7,6	7,4	7,1	6,4	5,0	4,0	2,9	2,1		
100-200/22	2,2	3	9,7									9,1	8,9	8,2	7,0	6,0	4,9	4,0	2,3	
100-200/30	3	4	11,6									10,9	10,7	10,0	8,8	7,8	6,6	5,6	3,8	
100-250/40	4	5,5	15,2									14,4	14,2	13,6	12,3	11,3	10,1	9,1	7,2	
100-250/55	5,5	7,5	18,7									17,8	17,6	17,0	15,7	14,8	13,6	12,7	10,9	
100-250/75	7,5	10	21,6									21,2	20,9	20,4	19,2	18,2	17,1	16,1	14,4	

* GFCTE4 VERSION ONLY

gfcte4-gfcts4-4p50S-en_e_th

Performances according to ISO 9906 - Annex A.

**GFCTE4-GFCTS4 SERIES (PARALLEL OPERATION)
HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 4 POLES**



These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE4-GFCTS4 SERIES (PARALLEL OPERATION) HYDRAULIC PERFORMANCE TABLE AT 50 Hz, 4 POLES

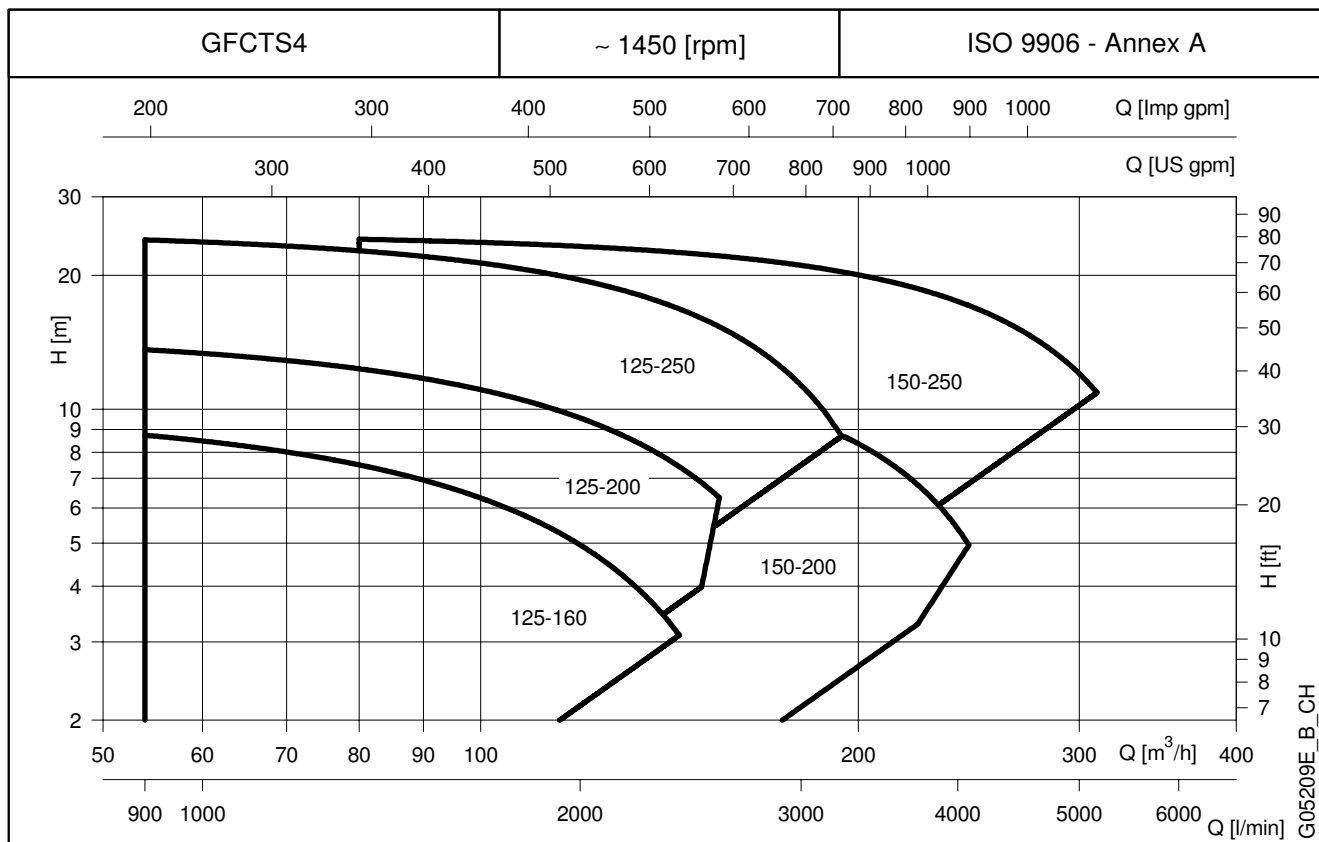
PUMP TYPE	RATED POWER		Q = DELIVERY																	
	2 x kW	2 x HP	l/min 0	100	200	300	350	400	600	700	900	1000	1100	1600	1800	2400	3000	3500	4000	4600
			m³/h 0	6	12	18	21	24	36	42	54	60	66	96	108	144	180	210	240	276
H = TOTAL HEAD METRES COLUMN OF WATER																				
40-125/02A *	0,25	0,33	4,6	4,1	3,2	1,7														
40-125/02 *	0,25	0,33	5,8	5,2	4,2	2,6														
40-160/02 *	0,25	0,33	7,0	6,4	5,4	3,8	2,9													
40-160/03 *	0,37	0,5	8,8	8,3	7,2	5,6	4,6	3,5												
40-200/05	0,55	0,75	12,9	11,8	10,3	8,4														
40-200/07	0,75	1	14,8	13,6	12,1	10,2	9,0													
40-250/11	1,1	1,5	18,5	17,6	16,1	14,0	12,8													
40-250/15	1,5	2	21,1	20,0	18,5	16,4	15,2	13,9												
50-125/02 *	0,25	0,33	6,3		5,6	5,0	4,6	4,2	2,2											
50-125/03 *	0,37	0,5	8,1		7,2	6,5	6,1	5,7	3,6	2,3										
50-160/05 *	0,55	0,75	9,6		8,8	8,1	7,7	7,2	5,0	3,6										
50-200/07	0,75	1	11,5		10,6	9,8	9,3	8,8	6,3	4,7										
50-200/11	1,1	1,5	14,0		13,0	12,3	11,8	11,3	8,7	7,1										
50-250/15	1,5	2	18,1		17,0	16,2	15,7	15,3	12,9	11,5	7,9									
50-250/22	2,2	3	21,3		20,2	19,4	19,0	18,5	16,0	14,6	11,0									
65-125/03 *	0,37	0,5	5,5					4,7	4,0	3,5	2,2									
65-125/05 *	0,55	0,75	6,3					5,9	5,2	4,7	3,4	2,7								
65-160/07	0,75	1	8,5					7,8	7,0	6,5	5,3	4,5	3,7							
65-160/11	1,1	1,5	10,2					9,7	8,9	8,3	7,0	6,2	5,4							
65-200/15	1,5	2	14,4					13,1	12,1	11,4	9,8	8,8	7,6							
65-250/22	2,2	3	19,3					17,7	16,6	16,1	14,6	13,8	12,8	5,9						
65-250/30	3	4	21,6					20,2	19,3	18,7	17,3	16,5	15,5	9,2						
80-125/07	0,75	1	5,7						5,2	5,0	4,6	4,4	4,1	2,4						
80-125/11	1,1	1,5	7,0						6,6	6,4	6,1	5,9	5,6	4,1	3,3					
80-200/15	1,5	2	11,5						10,1	9,8	9,2	8,9	8,6	6,5	5,5					
80-200/22	2,2	3	14,8						13,2	12,9	12,3	12,0	11,7	9,7	8,7					
80-200/30	3	4	16,7						15,7	15,4	14,9	14,6	14,2	12,0	10,9	6,8				
80-250/40	4	5,5	19,8						19,1	18,8	18,3	17,9	17,6	15,3	14,1	9,9				
80-250/55	5,5	7,5	23,2						22,6	22,4	21,9	21,6	21,3	19,2	18,2	14,3				
100-160/15	1,5	2	7,8								7,5	7,4	7,3	6,5	6,1	4,5	2,5			
100-200/22	2,2	3	9,7										9,1	8,3	7,9	6,4	4,5	2,6		
100-200/30	3	4	11,6										11,0	10,2	9,8	8,3	6,4	4,5	2,1	
100-250/40	4	5,5	15,1										14,4	13,7	13,3	11,8	9,9	7,9	5,5	
100-250/55	5,5	7,5	18,7										17,8	17,1	16,7	15,5	13,7	11,8	9,5	6,0
100-250/75	7,5	10	21,6										21,1	20,4	20,1	18,8	17,1	15,3	13,1	9,9

* GFCTE4 VERSION ONLY

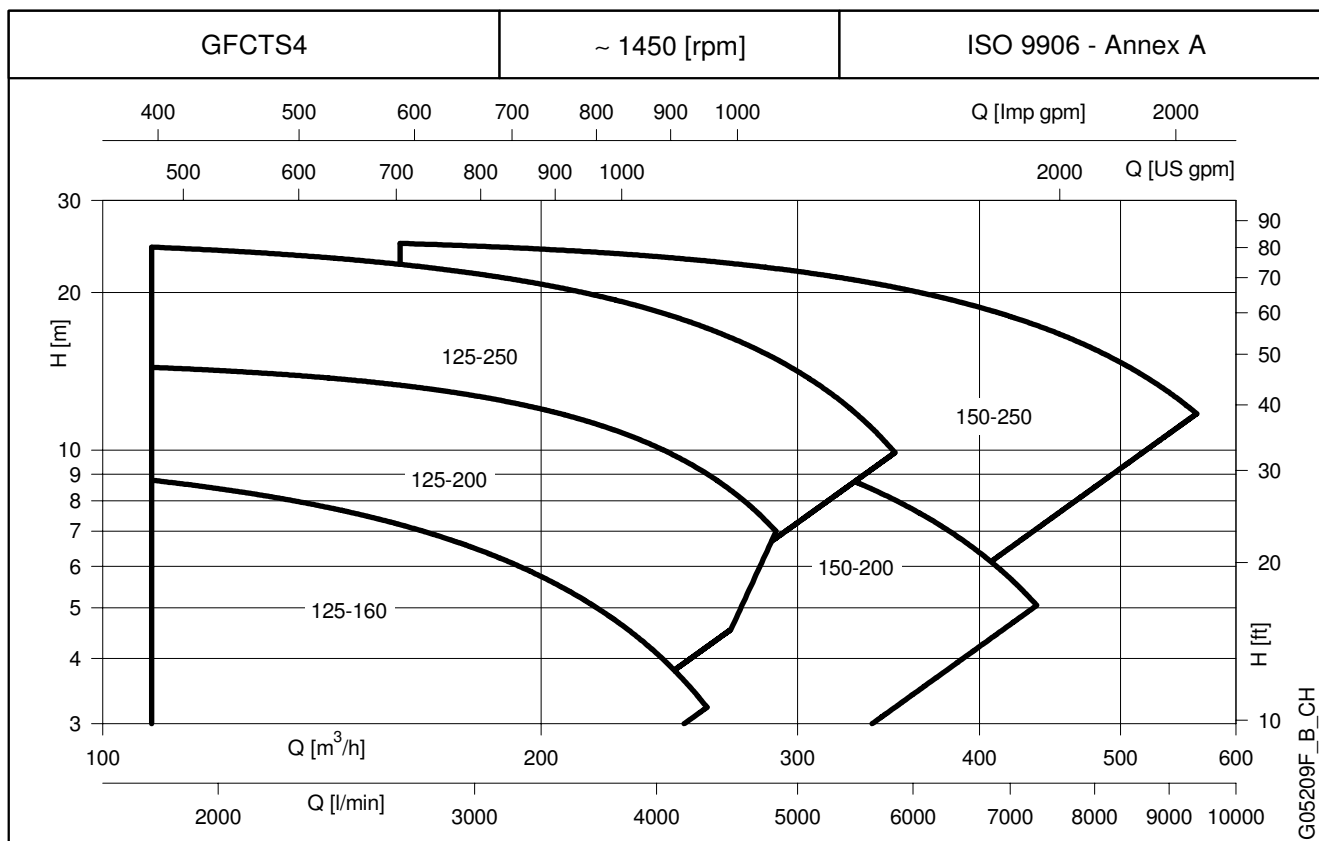
gfcte4-gfcts4-4p50P-en_e_th

Performances according to ISO 9906 - Annex A.

GFCTS4 SERIES (SINGLE OPERATION) **HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 4 POLES**



GFCTS4 SERIES (PARALLEL OPERATION) **HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 4 POLES**



These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTS4 SERIES (SINGLE OPERATION)

HYDRAULIC PERFORMANCE TABLE AT 50 Hz, 4 POLES

PUMP TYPE	RATED POWER		Q = DELIVERY																	
	kW	HP	l/min 0	900	1100	1333	1583	1667	1833	1917	2000	2333	2500	3000	3167	3667	4083	4500	4733	5167
			m³/h 0	54	66	80	95	100	110	115	120	140	150	180	190	220	245	270	284	310
			H =TOTAL HEAD METRES COLUMN OF WATER																	
125-160/30	3	4	10,1	8,7	8,2	7,5	6,6	6,3	5,7	5,3	5,0	3,4								
125-200/40	4	5,5	12,4	10,9	10,4	9,6	8,6	8,3	7,5	7,1	6,7	5,0	4,0							
125-200/55	5,5	7,5	15,0	13,6	13,1	12,3	11,4	11,1	10,3	10,0	9,6	7,8	6,8							
125-250/75	7,5	10	19,9	18,5	17,9	17,0	15,8	15,4	14,5	14,0	13,4	11,1	9,7							
125-250/110	11	15	25,5	24,0	23,5	22,7	21,7	21,3	20,5	20,0	19,5	17,3	16,0	11,3	9,5					
150-200/55	5,5	7,5	11,8			9,6	9,1	9,0	8,6	8,5	8,3	7,5	7,1	5,7	5,2	3,5				
150-200/75	7,5	10	15,4			13,3	12,9	12,8	12,5	12,3	12,1	11,4	11,0	9,5	9,0	7,0	5,0			
150-250/110	11	15	18,0			17,0	16,7	16,6	16,3	16,1	16,0	15,2	14,8	13,1	12,5	10,2				
150-250/150	15	20	22,1			21,3	21,0	20,8	20,5	20,4	20,2	19,4	19,0	17,5	17,0	15,0	13,2	11,1	9,8	
150-250/185	18,5	25	25,1			24,1	23,8	23,7	23,5	23,3	23,2	22,6	22,3	21,1	20,6	18,9	17,1	15,0	13,7	

Performances according to ISO 9906 - Annex A

lmz-fcts4-4p50S-en_b_th

GFCTS4 SERIES (PARALLEL OPERATION)

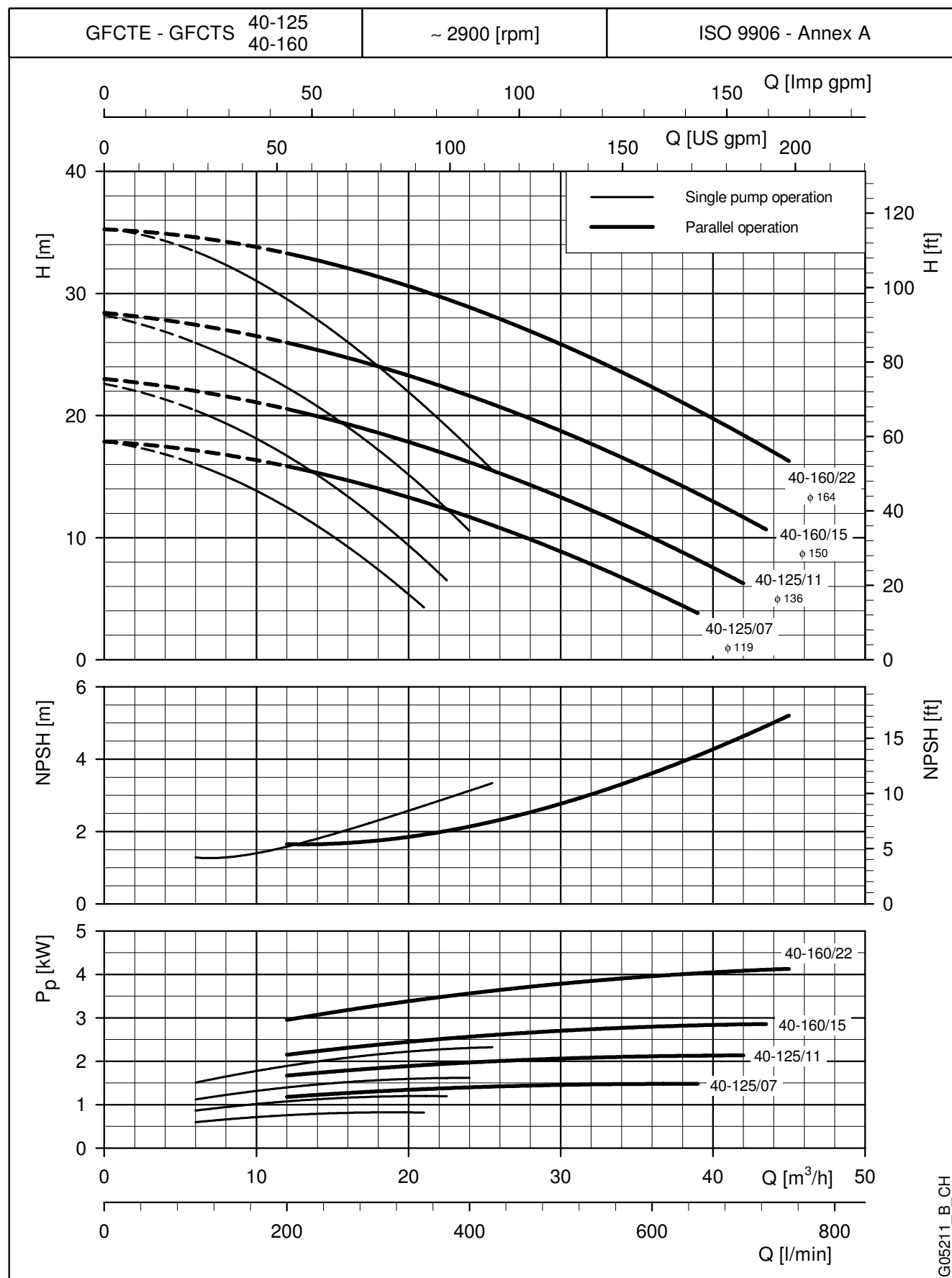
HYDRAULIC PERFORMANCE TABLE AT 50 Hz, 4 POLES

PUMP TYPE	RATED POWER		Q = DELIVERY																	
	kW	HP	l/min 0	1800	2200	2667	3000	3250	3500	3750	4000	4333	4833	5200	5667	6500	7333	7667	8333	9000
			m³/h 0	108	132	160	180	195	210	225	240	260	290	312	340	390	440	460	500	540
			H =TOTAL HEAD METRES COLUMN OF WATER																	
125-160/30	3	4	10,2	8,8	8,1	7,2	6,5	5,9	5,3	4,7	4,1	3,2								
125-200/40	4	5,5	12,7	11,2	10,6	9,7	9,0	8,4	7,8	7,1	6,3	5,2								
125-200/55	5,5	7,5	15,1	14,4	14,0	13,3	12,7	12,2	11,6	10,9	10,1	9,0	7,0							
125-250/75	7,5	10	20,3	17,8	17,2	16,4	15,6	15,0	14,2	13,4	12,4	10,9	8,2							
125-250/110	11	15	25,6	24,4	23,7	22,6	21,7	21,0	20,2	19,3	18,4	17,1	14,9	13,2	10,8					
150-200/55	5,5	7,5	11,6				8,6	8,2	7,9	7,5	7,1	6,6	5,8	5,2	4,5					
150-200/75	7,5	10	15,4				12,7	12,4	12,0	11,6	11,2	10,7	9,9	9,2	8,3	6,7				
150-250/110	11	15	18,7				17,2	16,9	16,6	16,3	16,0	15,5	14,7	14,0	13,1	11,2	9,0	8,0		
150-250/150	15	20	22,7				21,5	21,3	21,0	20,7	20,4	20,0	19,2	18,6	17,7	15,9	13,8	12,9	10,9	
150-250/185	18,5	25	25,4				24,5	24,3	24,0	23,7	23,4	23,0	22,2	21,6	20,8	19,1	17,2	16,4	14,7	12,9

Performances according to ISO 9906 - Annex A

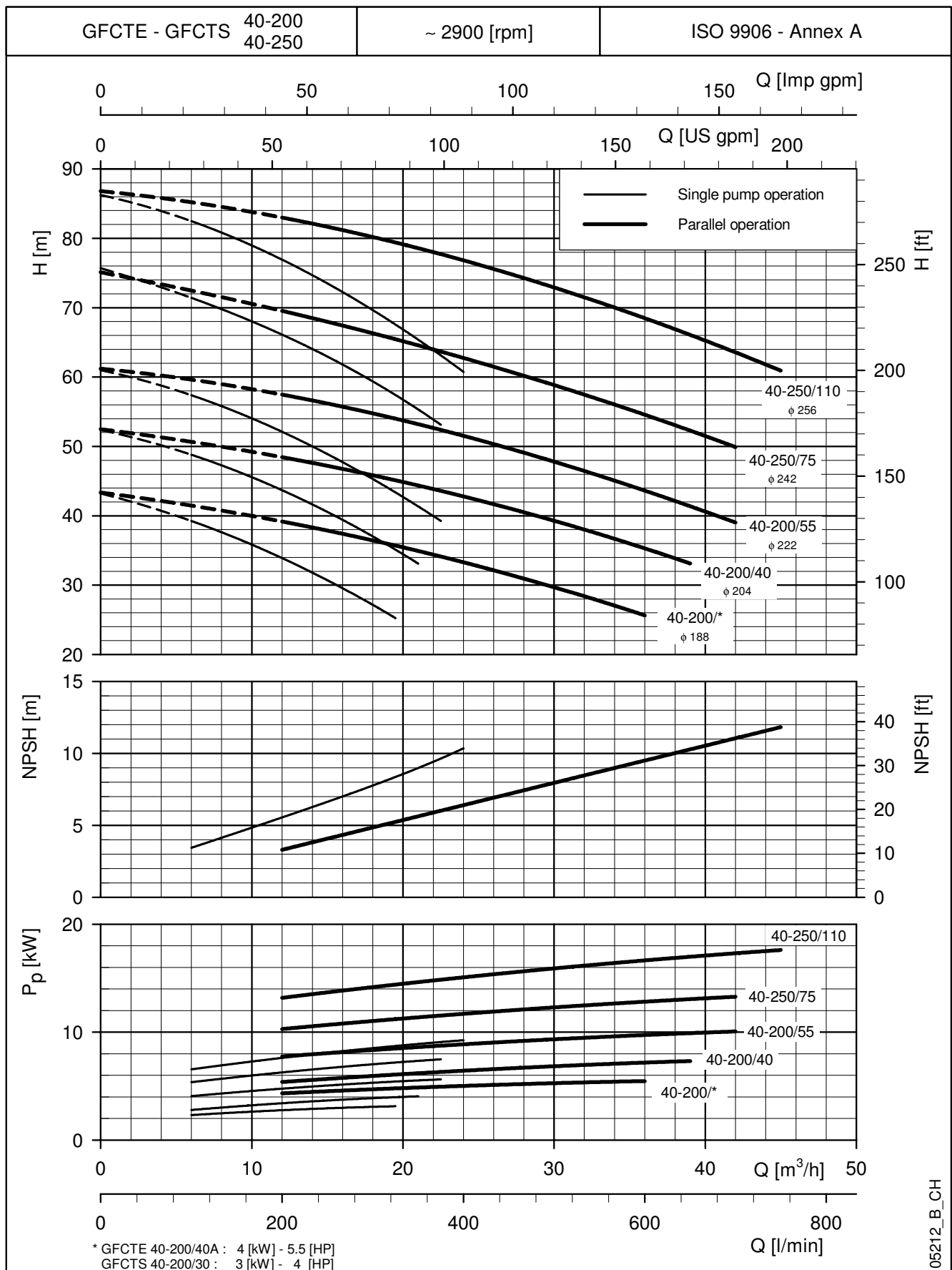
lmz-fcts4-4p50P-en_c_th

GFCTE-GFCTS SERIES OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



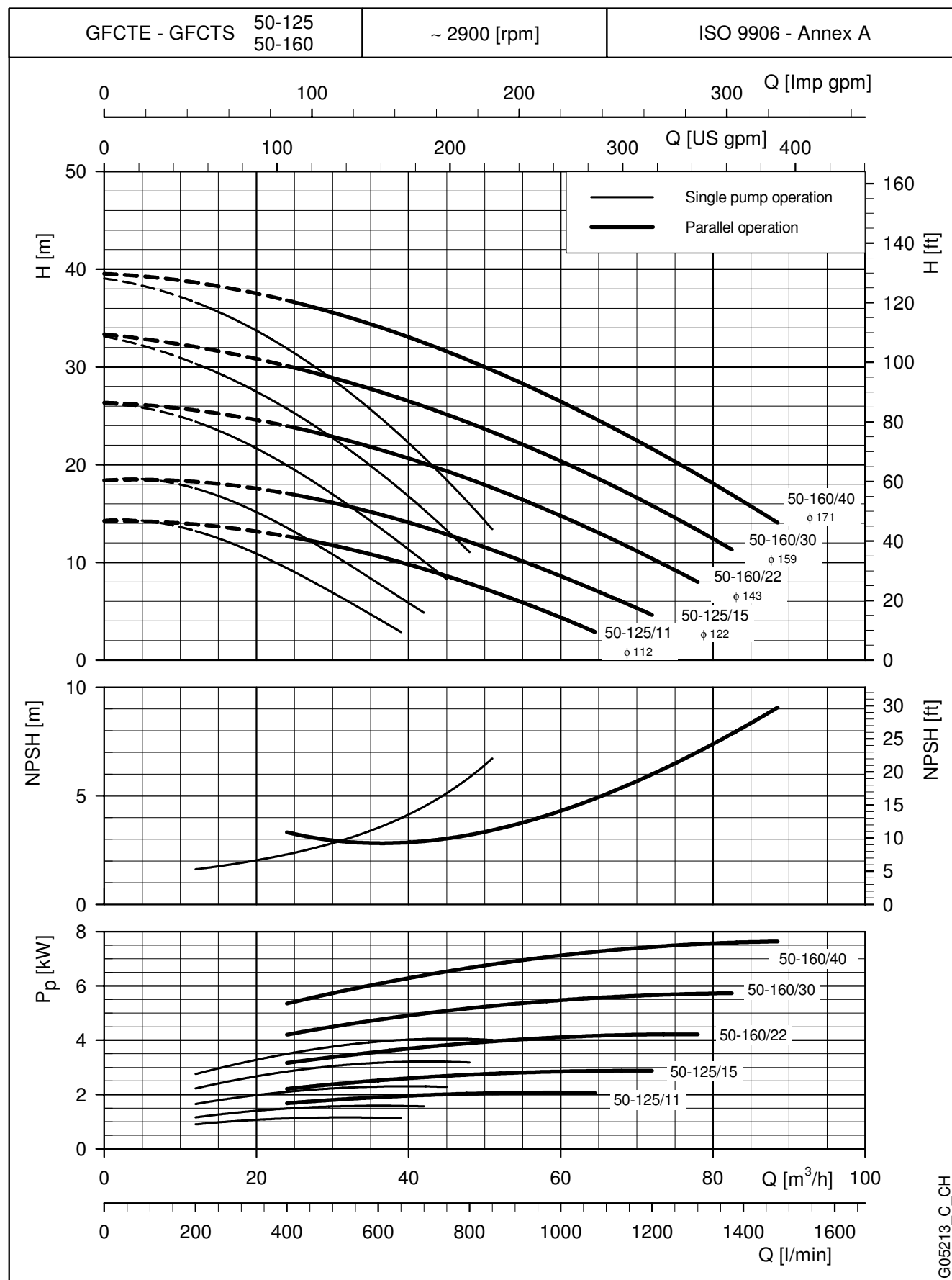
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE-GFCTS SERIES OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



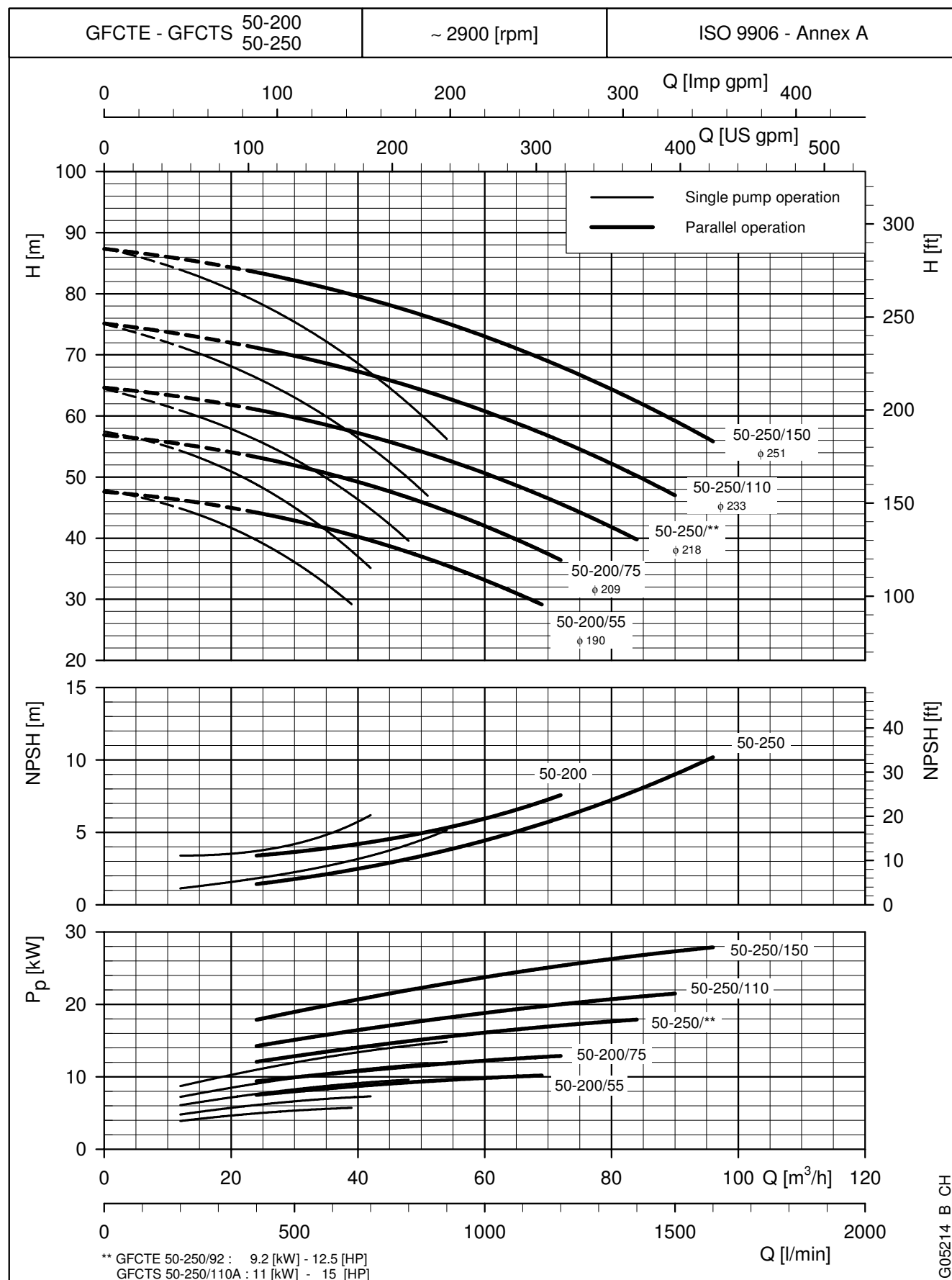
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE-GFCTS SERIES OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



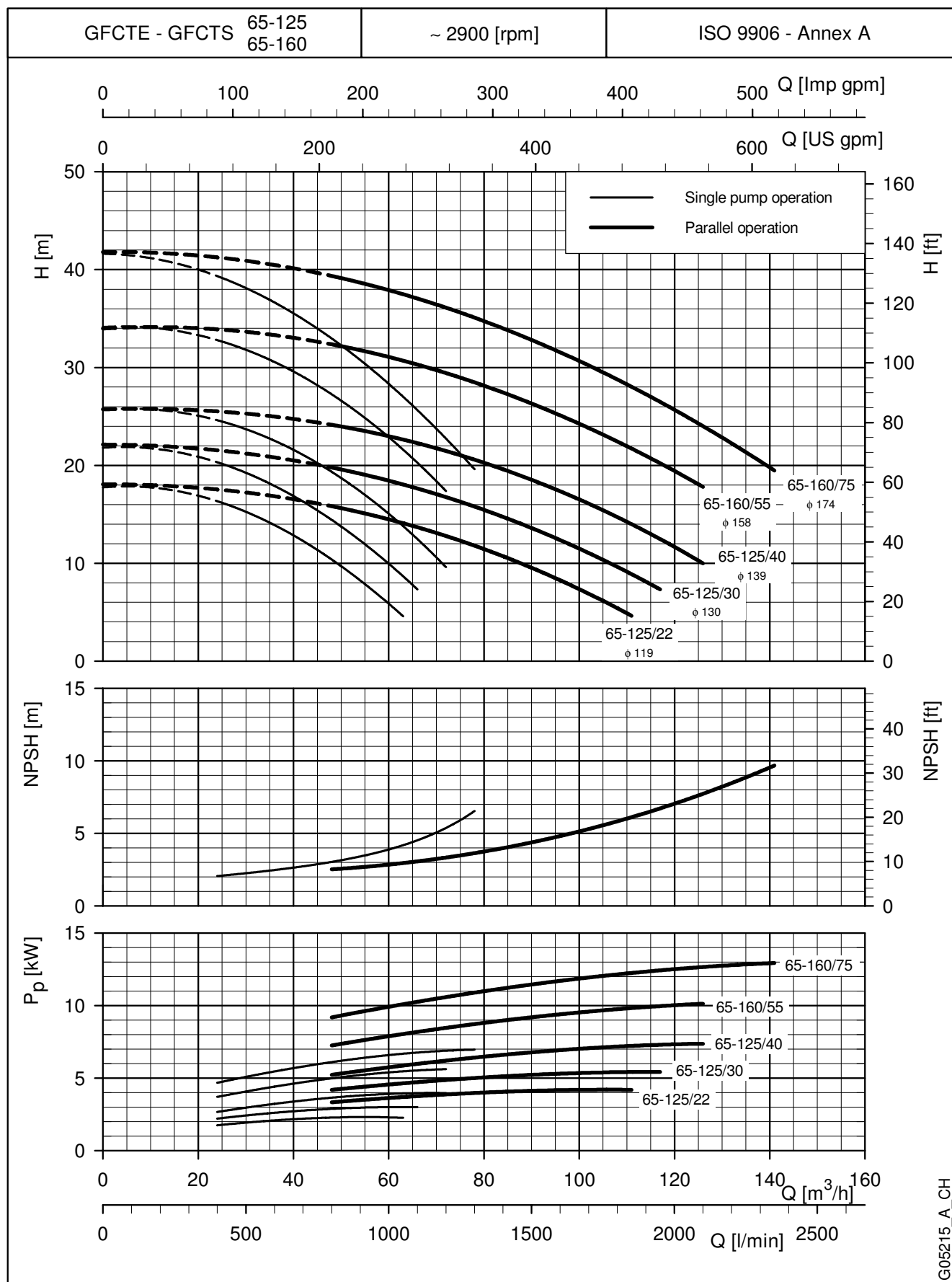
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE-GFCTS SERIES OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



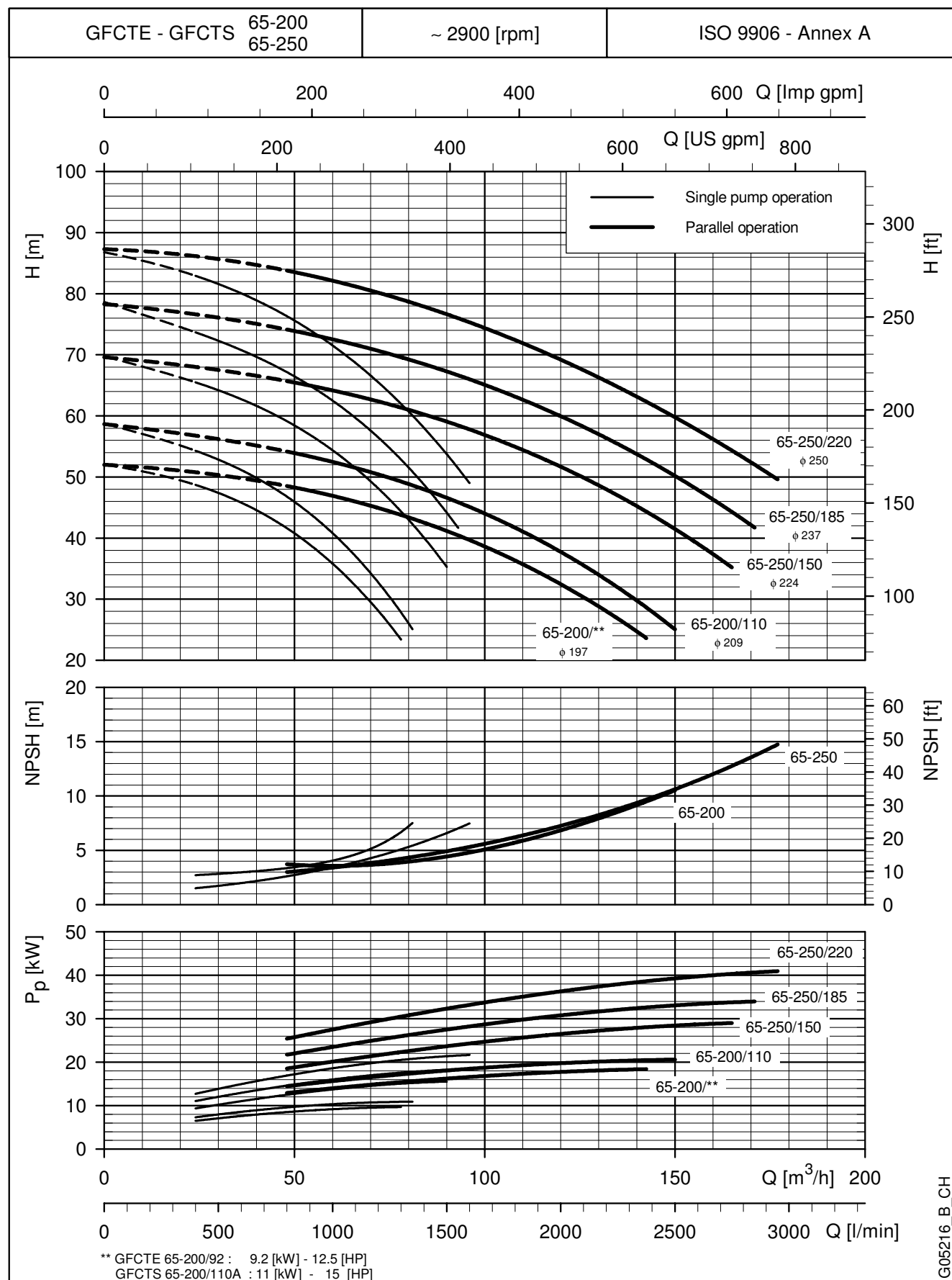
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE-GFCTS SERIES OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



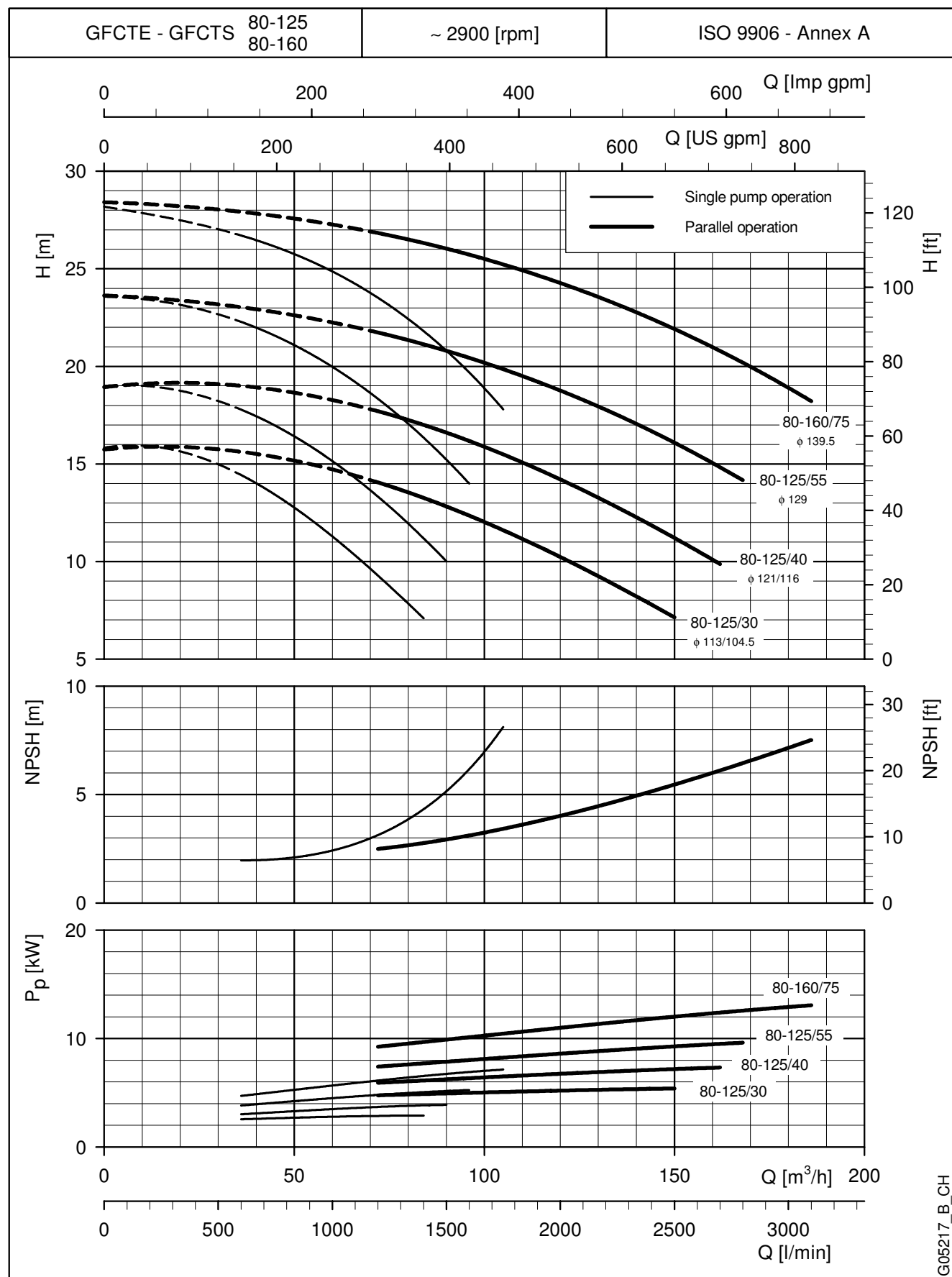
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
 These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE-GFCTS SERIES OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



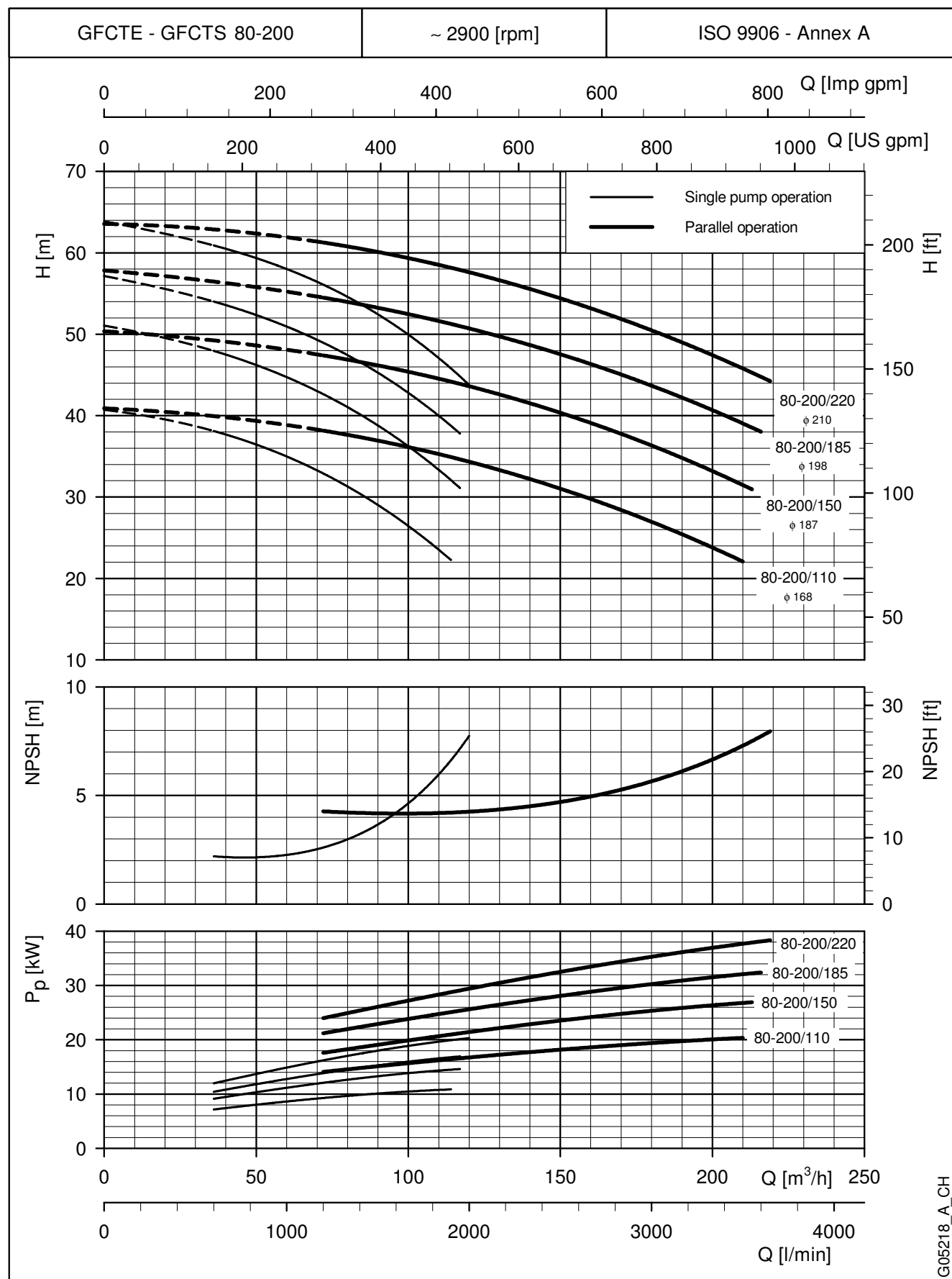
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE-GFCTS SERIES **OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



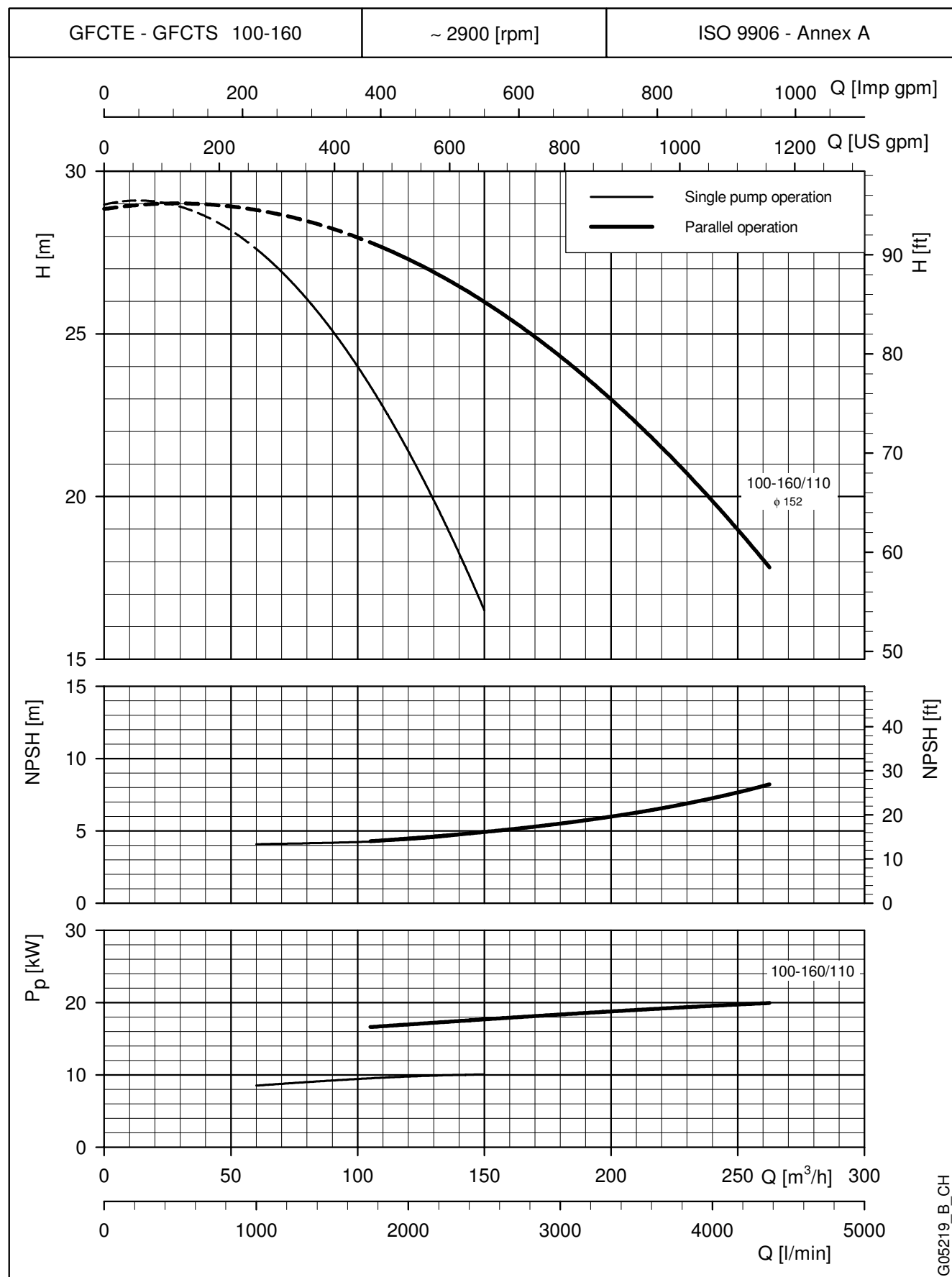
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE-GFCTS SERIES **OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



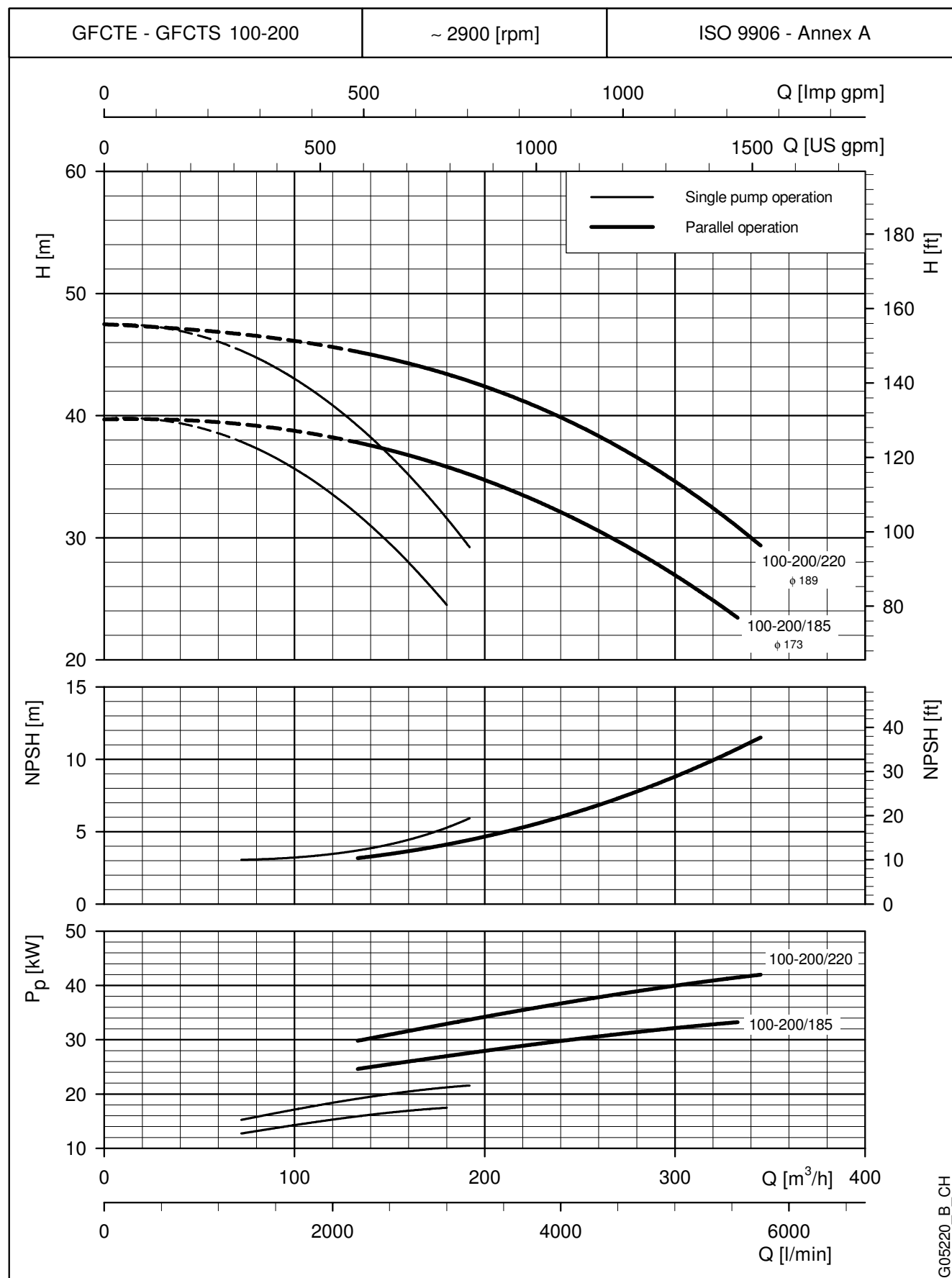
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE-GFCTS SERIES **OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



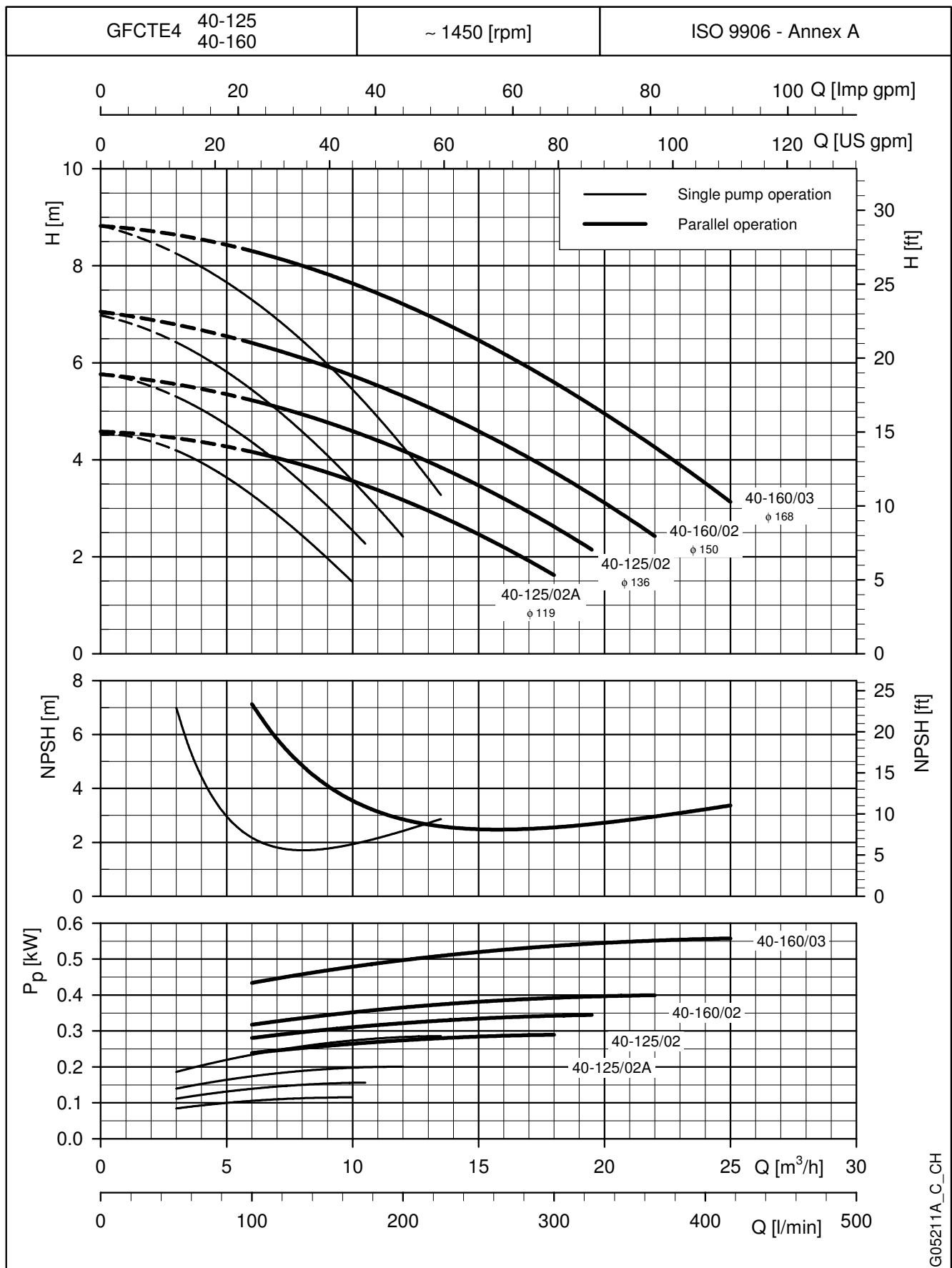
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE-GFCTS SERIES **OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



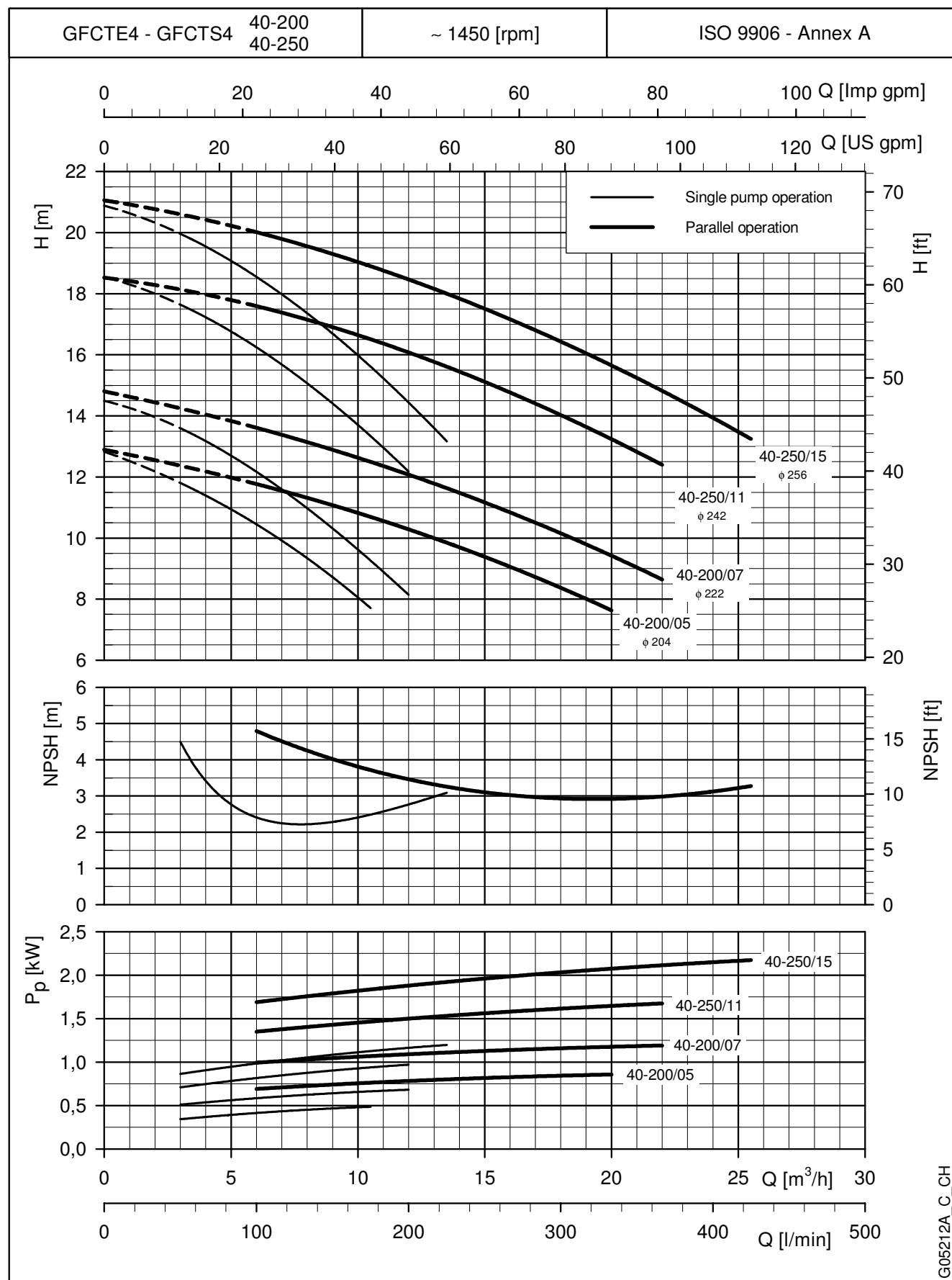
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



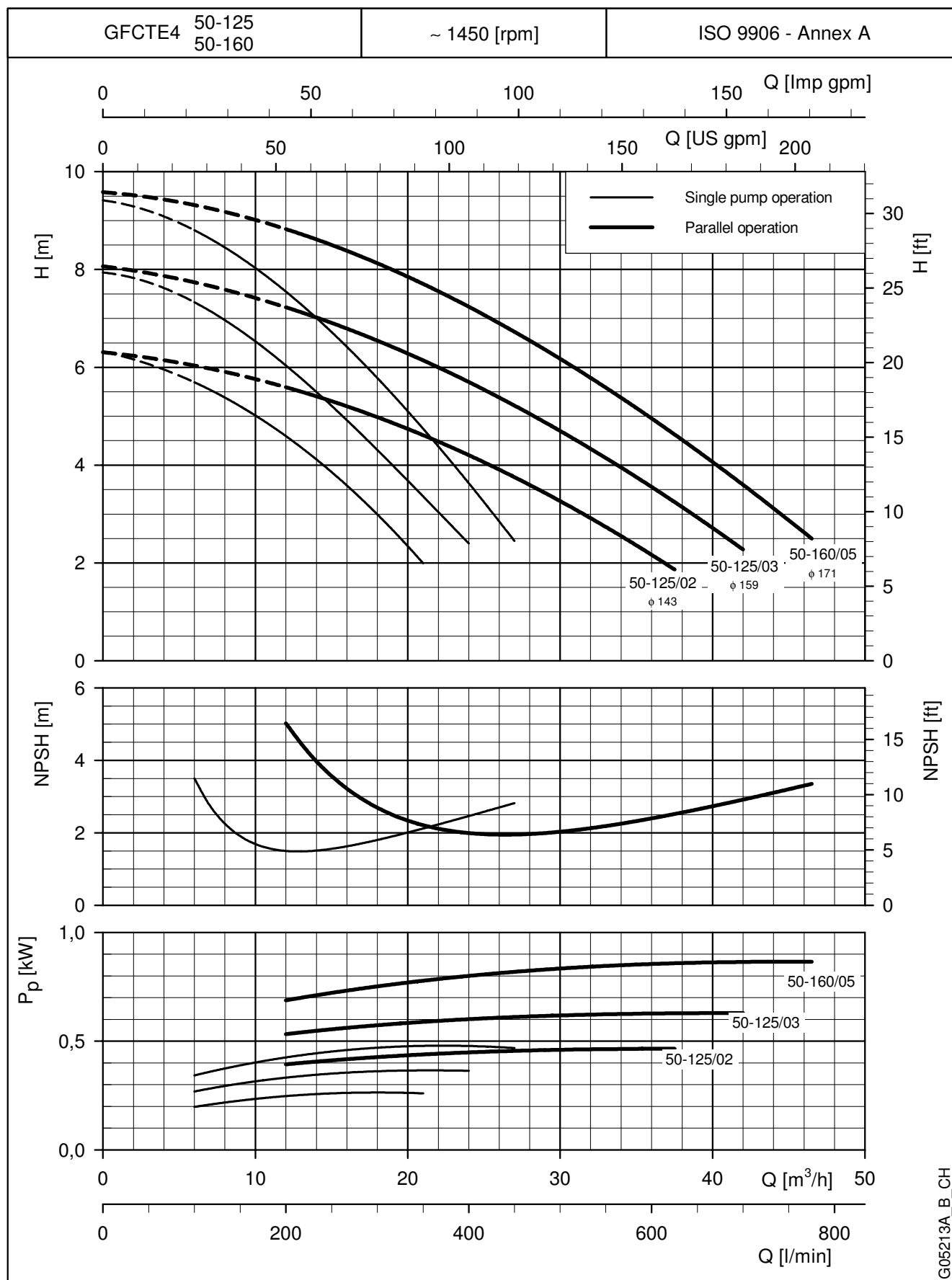
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE4-GFCTS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



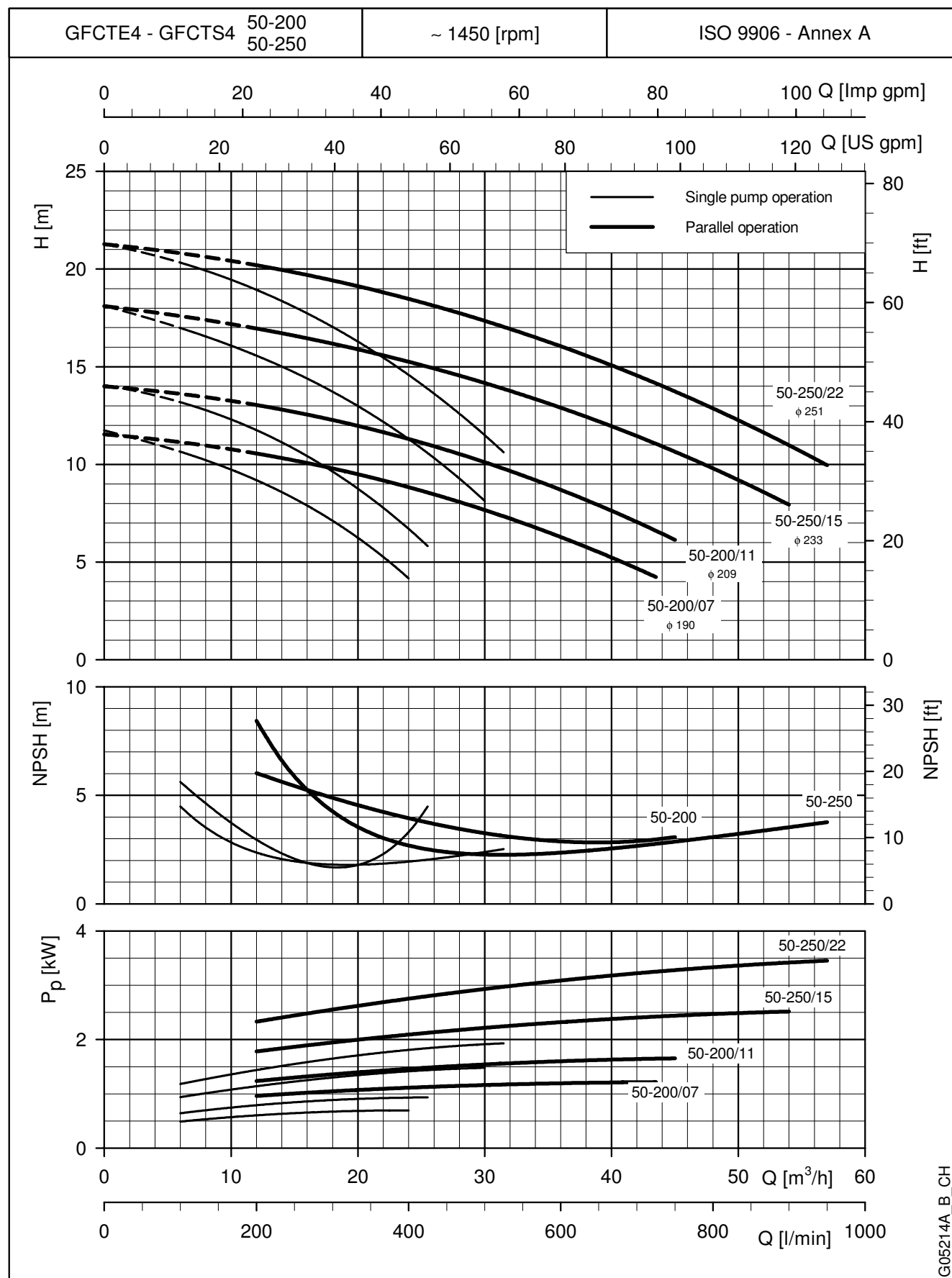
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



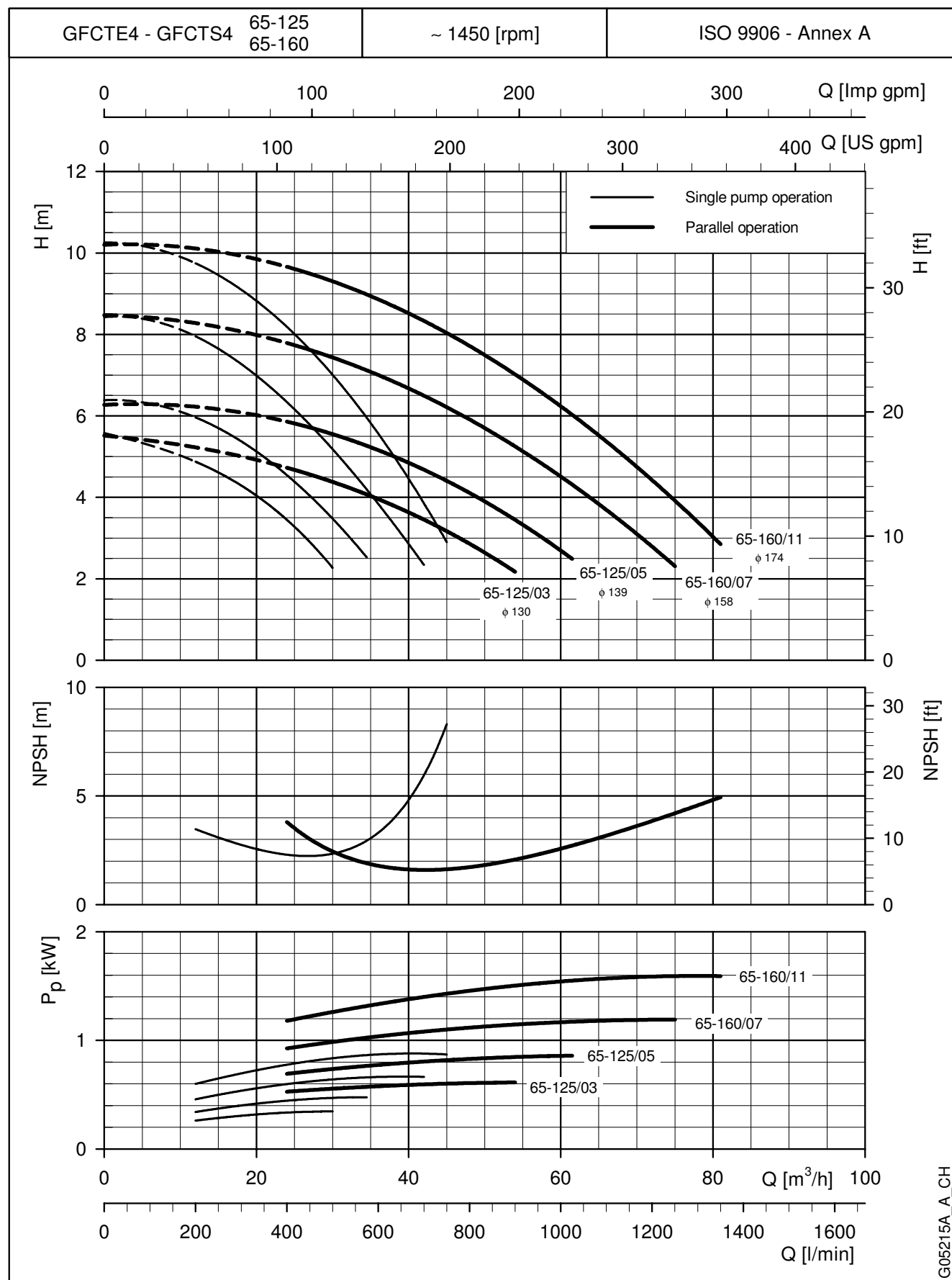
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
 These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE4-GFCTS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



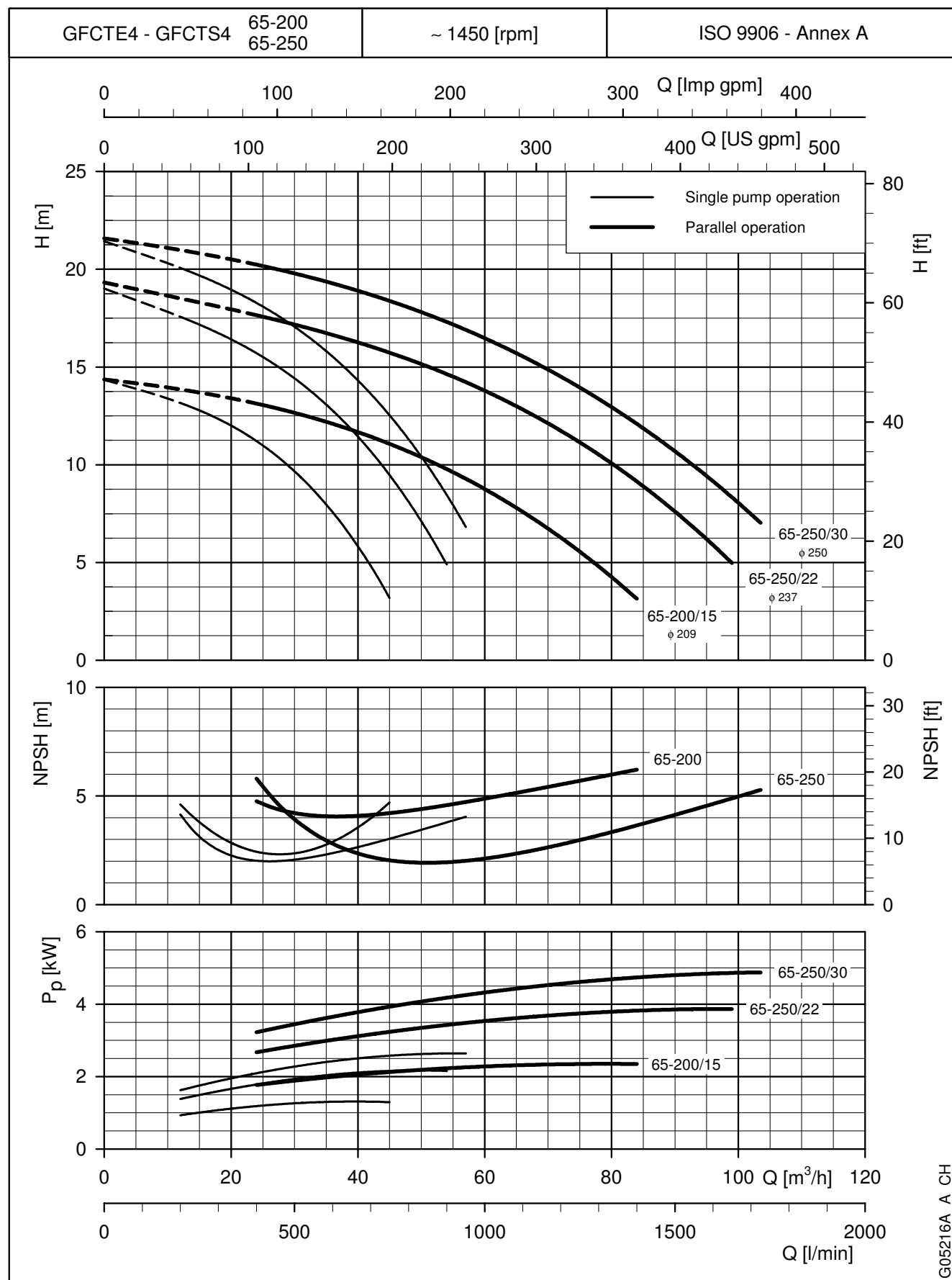
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE4-GFCTS4 SERIES **OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES**



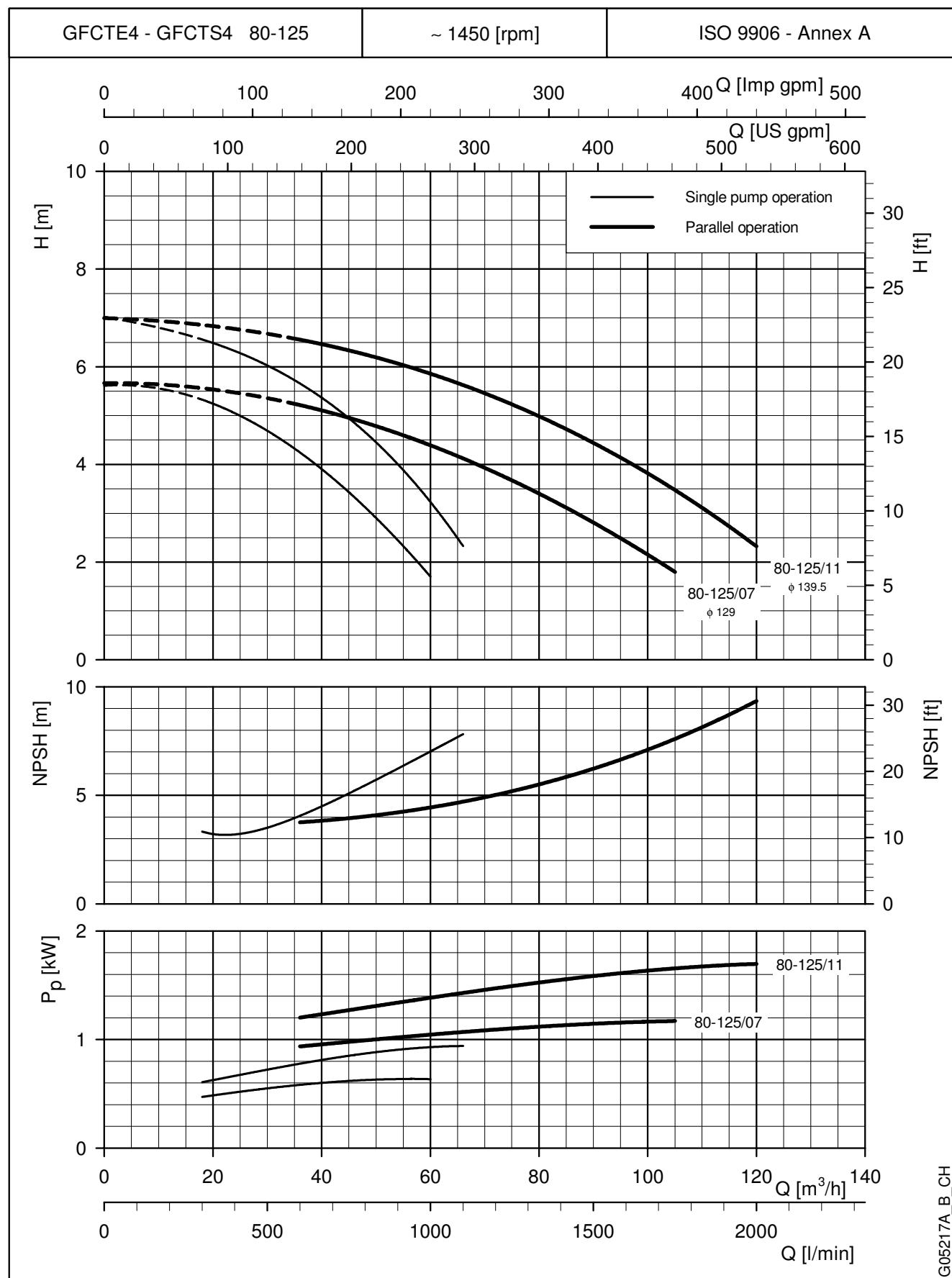
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE4-GFCTS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



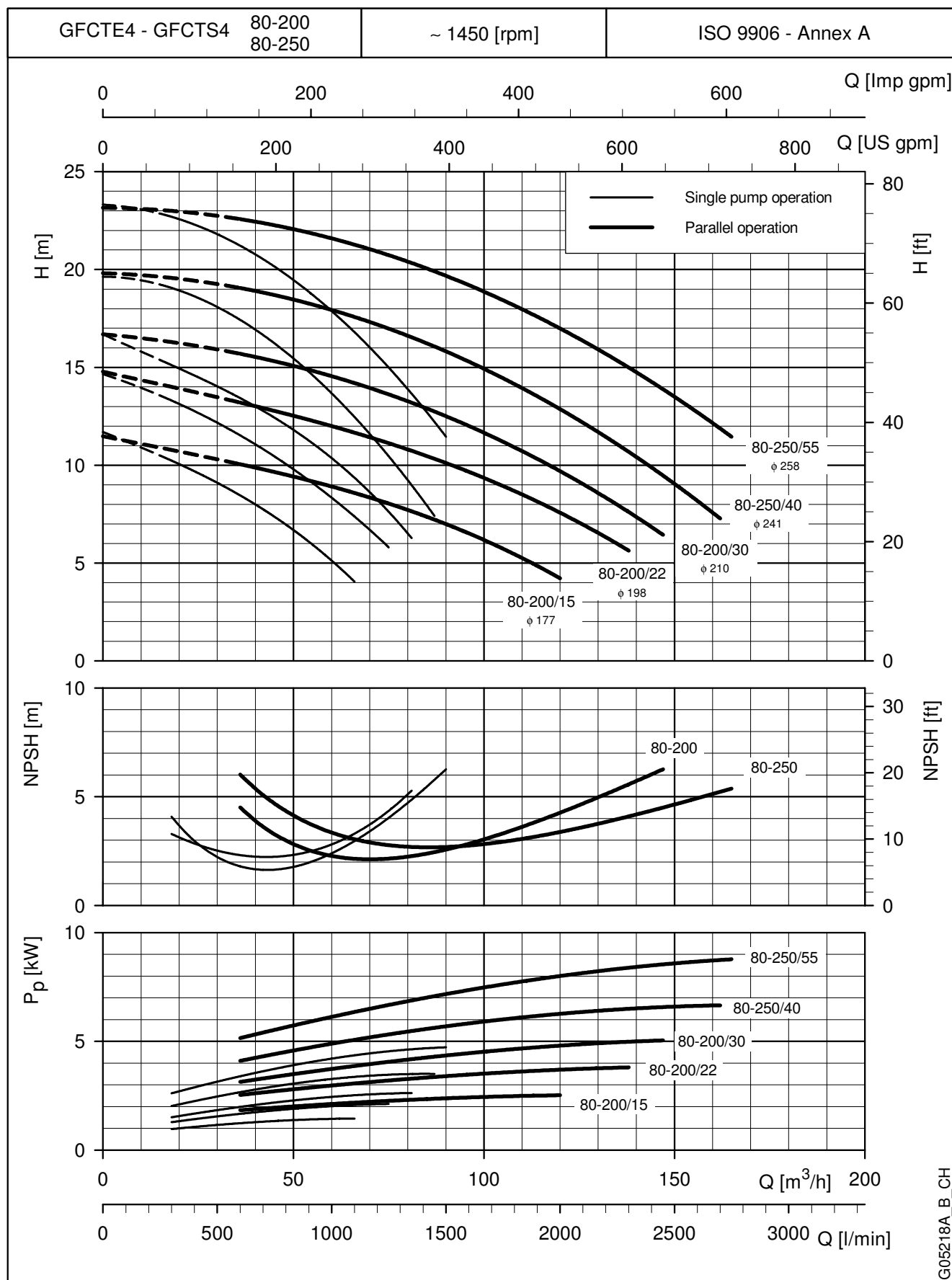
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE4-GFCTS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



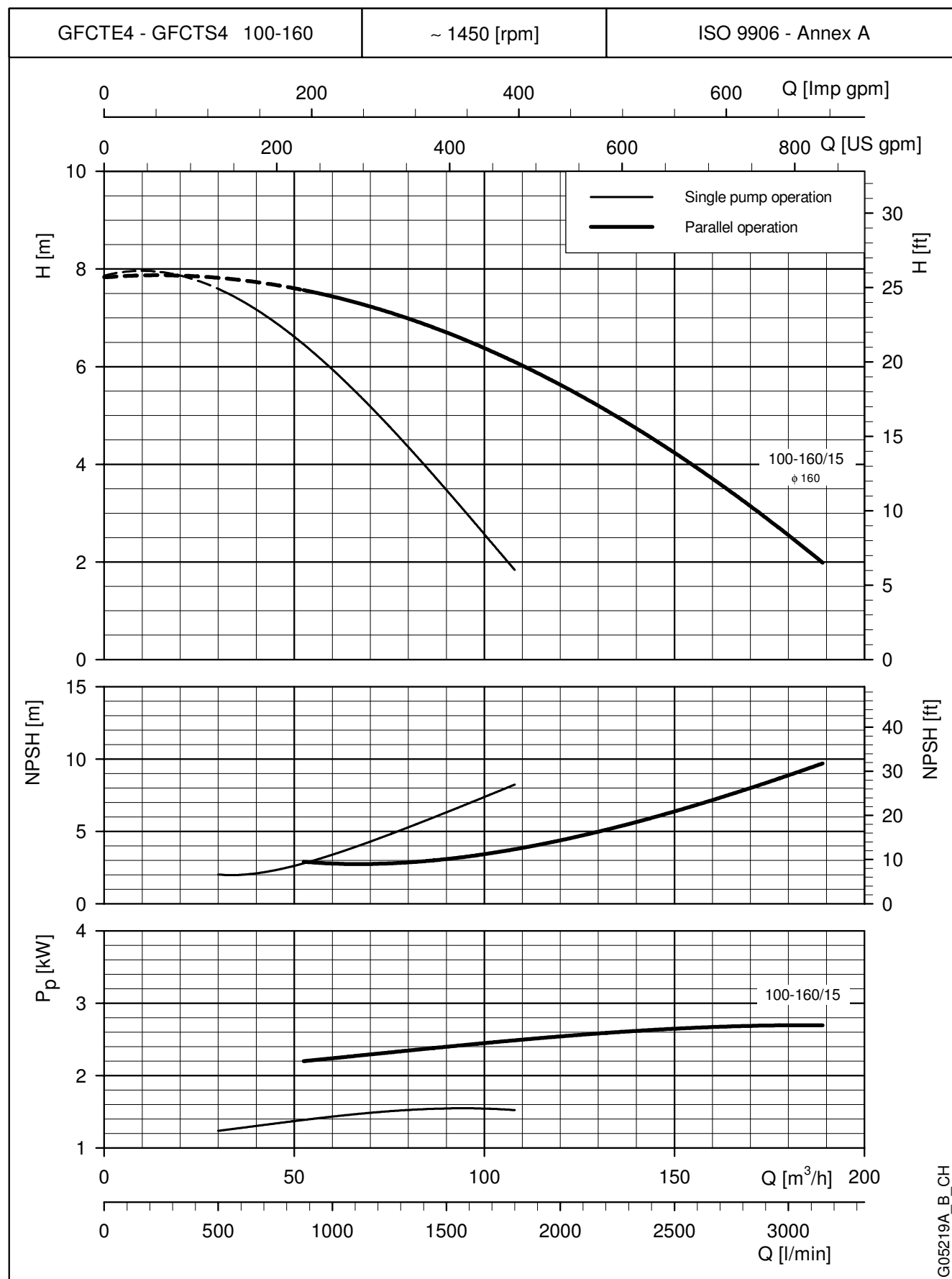
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE4-GFCTS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



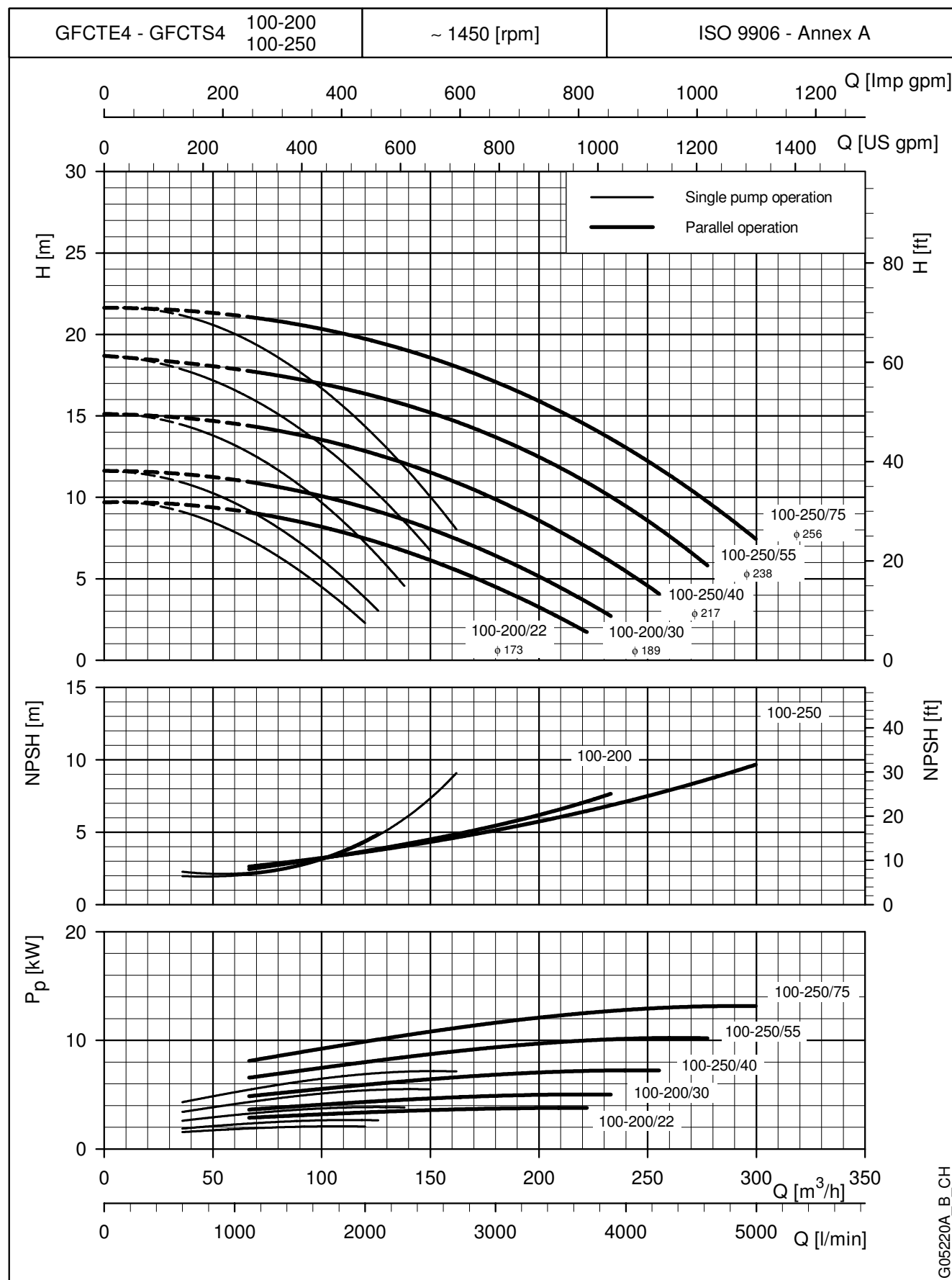
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE4-GFCTS4 SERIES **OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES**



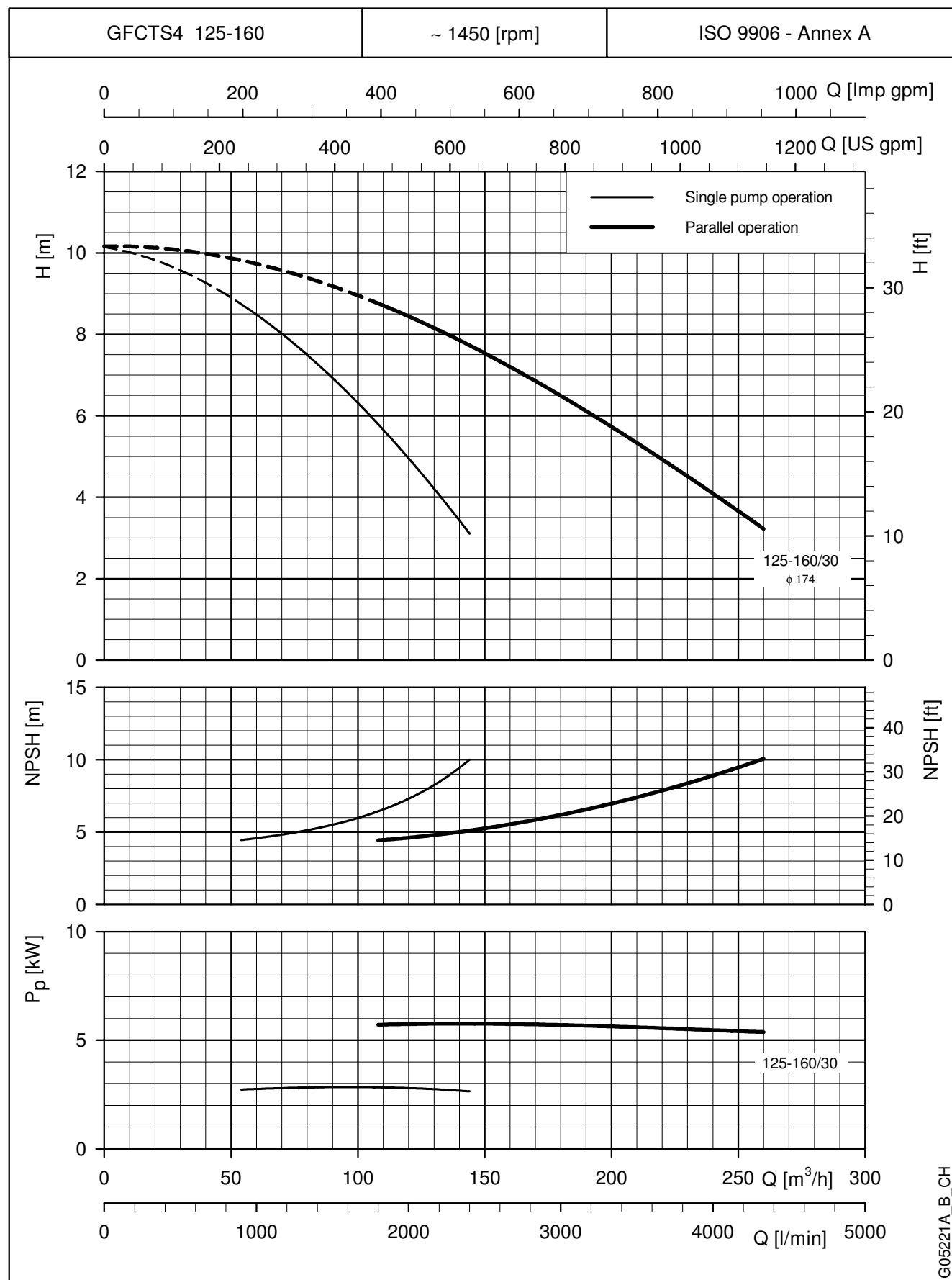
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTE4-GFCTS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



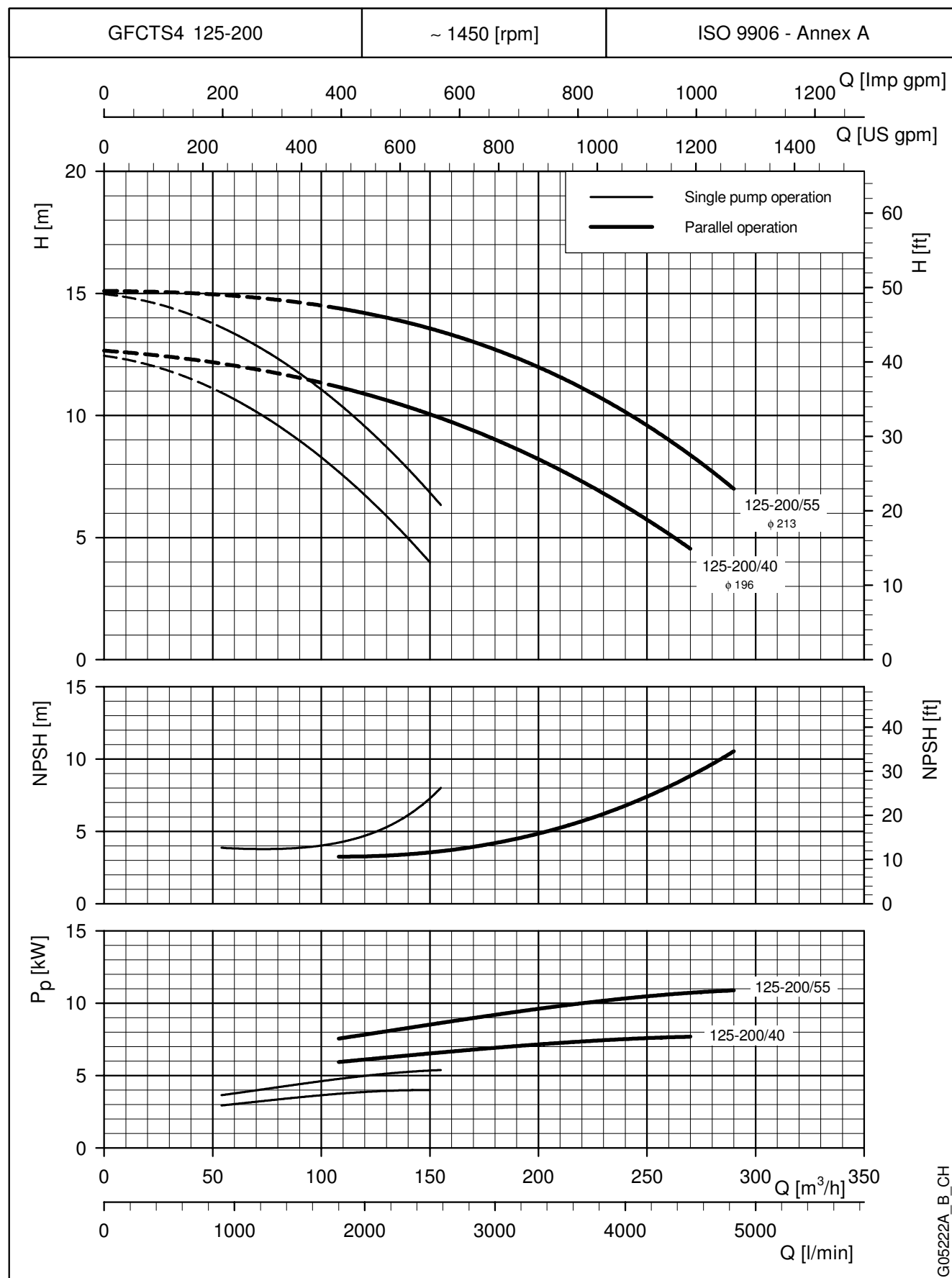
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



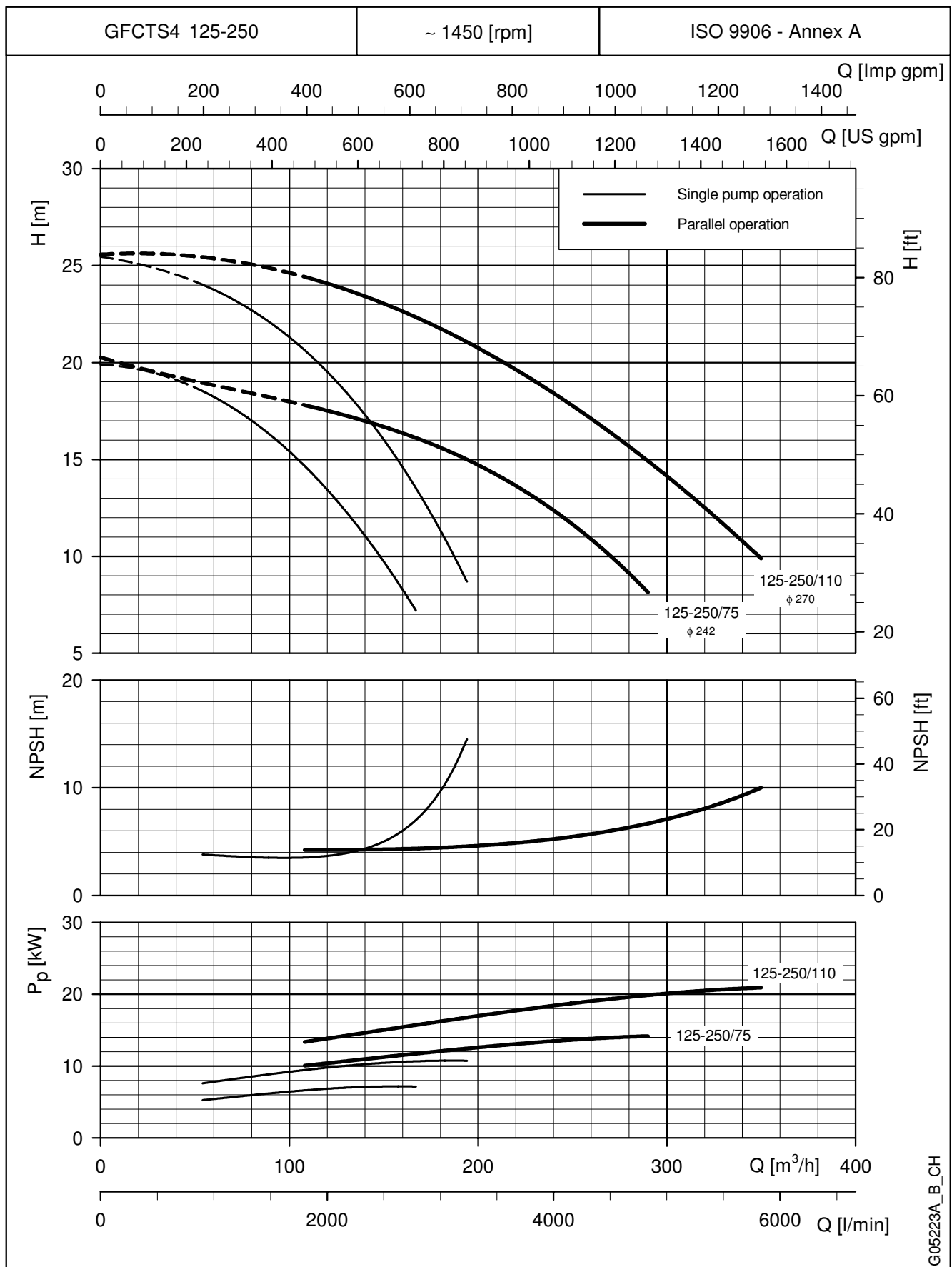
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



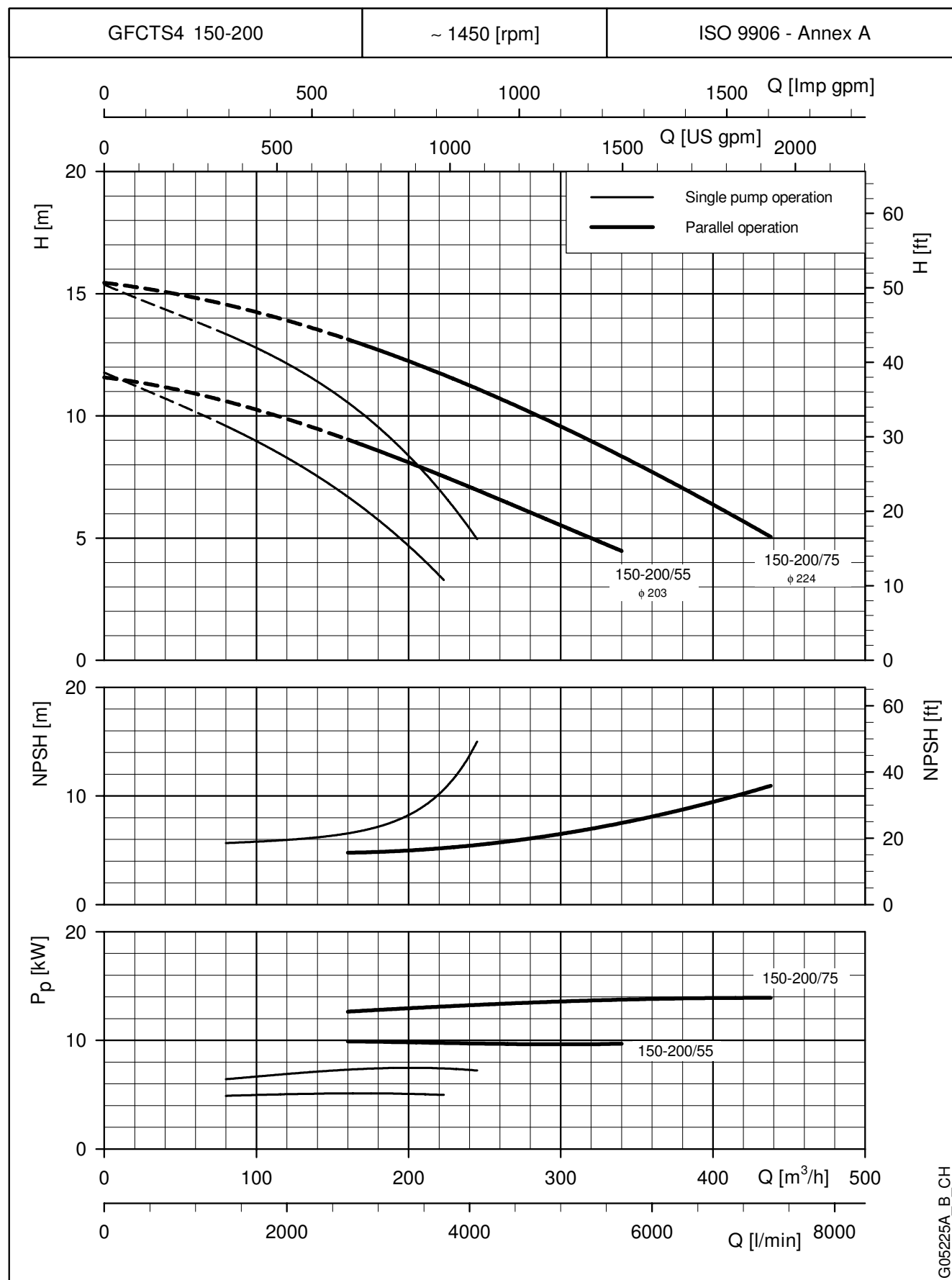
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



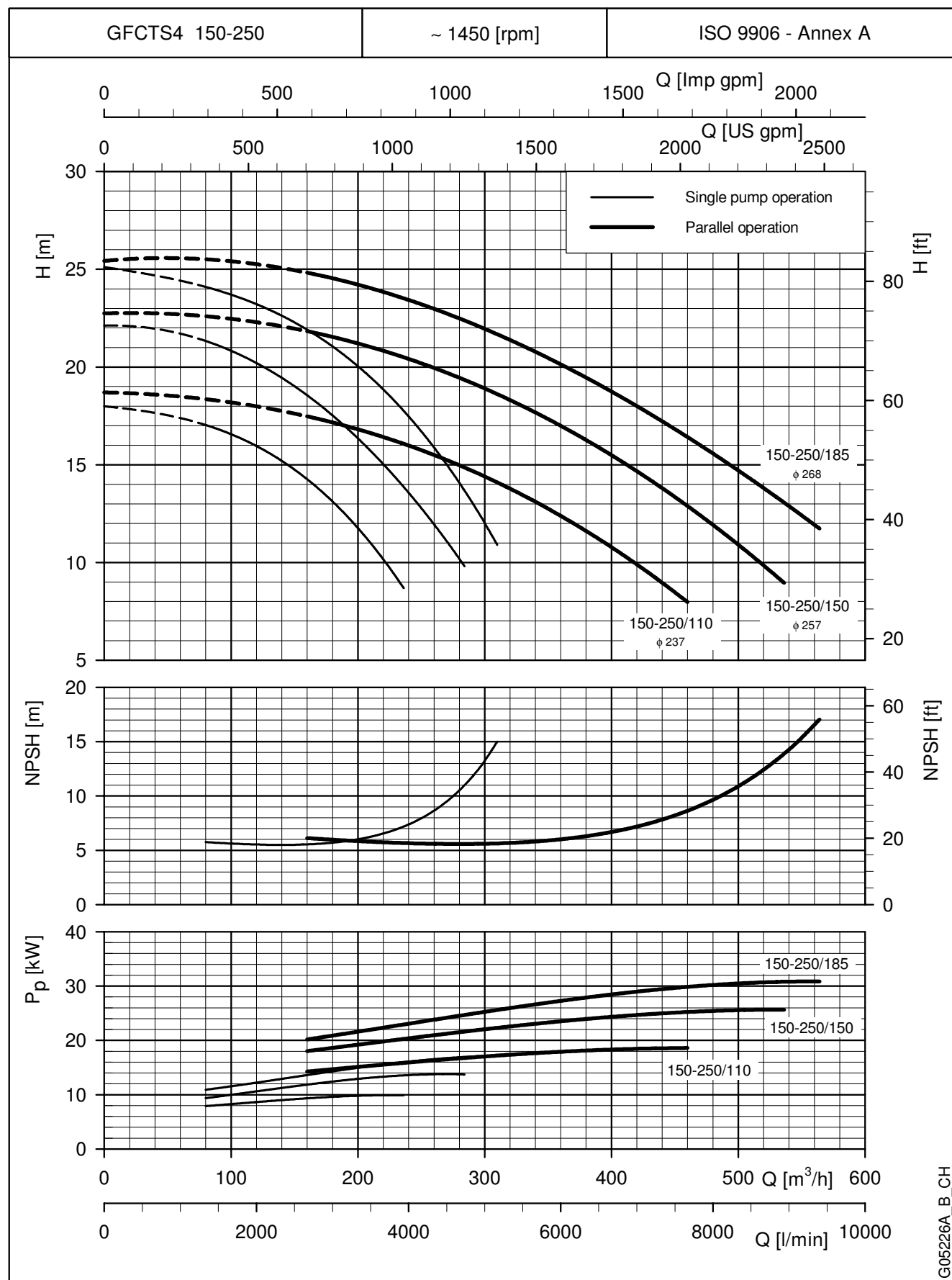
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GFCTS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

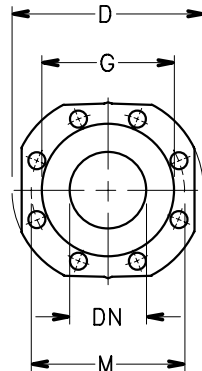
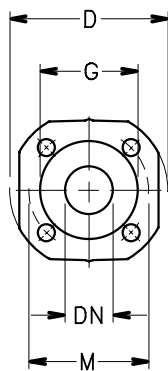
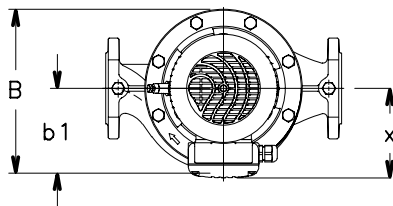
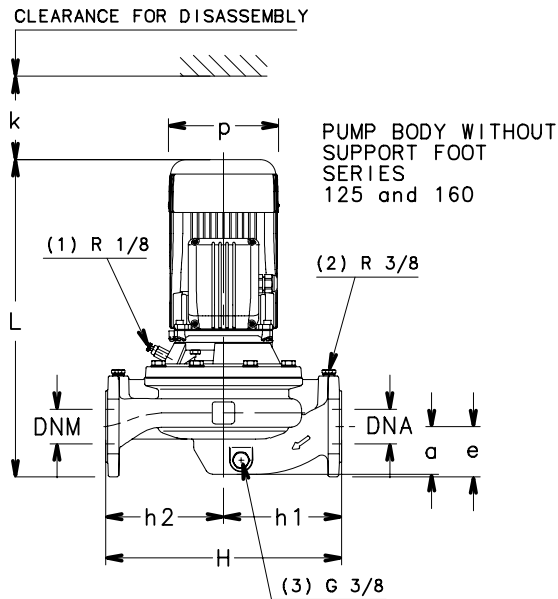
GFCTS4 SERIES OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

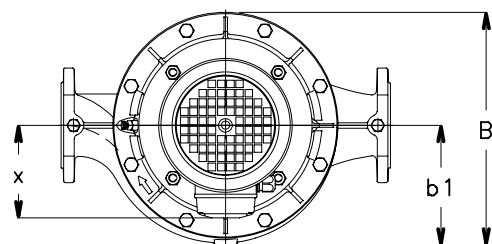
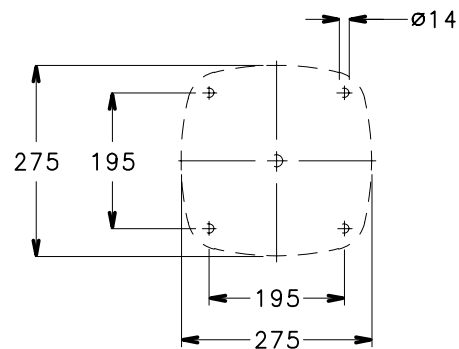
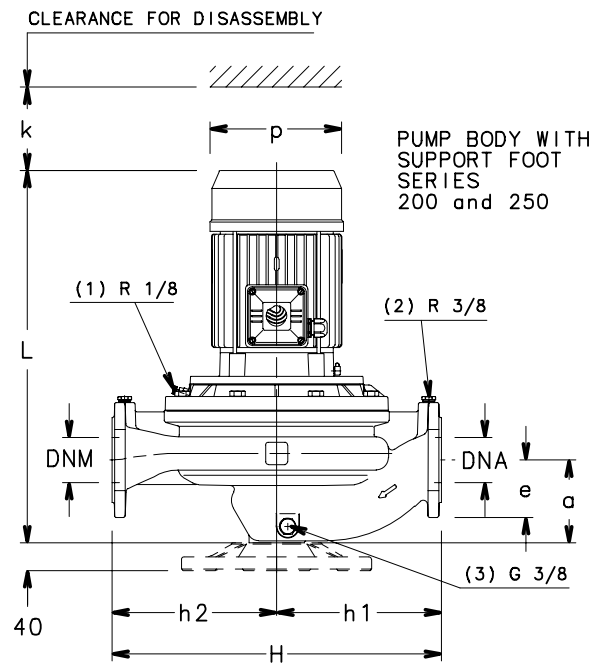
DIMENSIONS AND WEIGHTS

GFCE SERIES DIMENSIONS AND WEIGHTS AT 50 Hz



PUMP FLANGES

DN	D	M	G	HOLES		THICKNESS MAX.
				Nº	DIA.	
40	150	110	88	4	18	18
50	165	125	102	4	18	20
65	185	145	122	4	18	20
80	200	160	138	8	18	22
100	220	180	158	8	18	22



- (1) R 1/8 AIR VALVE
(2) R 3/8 PRESSURE GAUGE CONNECTOR
(3) G 3/8 DRAIN

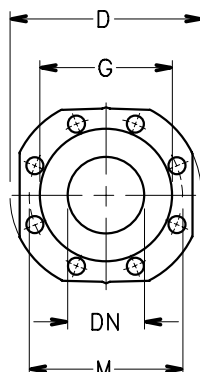
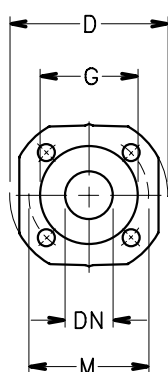
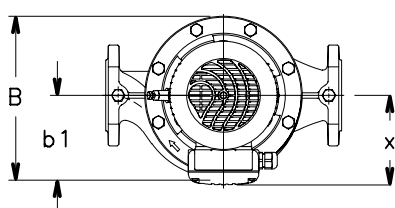
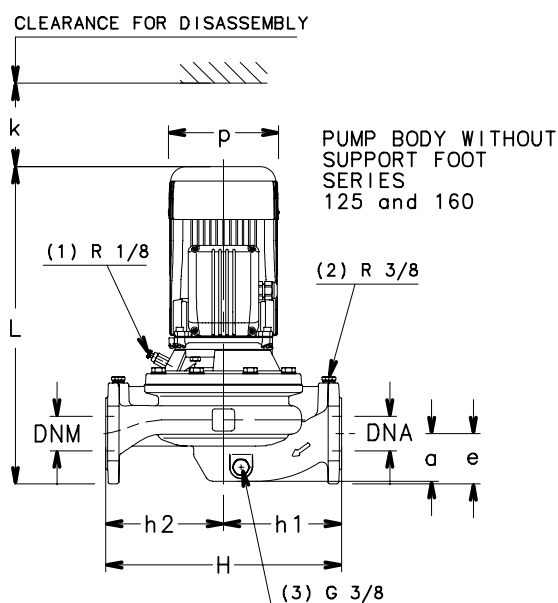
GFCE SERIES

DIMENSIONS AND WEIGHTS AT 50 Hz

PUMP TYPE	DIMENSIONS (mm)													WEIGHT
	DNA	DNM	a	e	h1	h2	x	b1	p	B	H max	L	k	
GFCE 40-125/07/D	40	40	70	70	160	160	129	116	155	243	320	448	86	29
GFCE 40-125/11/D	40	40	70	70	160	160	129	116	155	243	320	448	86	30
GFCE 40-160/15/D	40	40	70	70	160	160	129	116	155	243	320	448	86	31
GFCE 40-160/22/C	40	40	70	70	160	160	134	116	174	248	320	483	86	35
GFCE 40-200/40A/P	40	40	95	65	220	220	154	163	197	325	440	514	98	72
GFCE 40-200/40/P	40	40	95	65	220	220	154	163	197	325	440	514	98	72
GFCE 40-200/55/P	40	40	95	65	220	220	168	163	214	330	440	548	98	73
GFCE 40-250/75/P	40	40	95	65	220	220	191	163	256	353	440	562	98	91
GFCE 40-250/110/P	40	40	95	65	220	220	191	163	256	353	440	600	98	92
GFCE 50-125/11/D	50	50	69	73	170	170	129	122	155	243	340	457	88	32
GFCE 50-125/15/D	50	50	69	73	170	170	129	122	155	243	340	457	88	34
GFCE 50-160/22/C	50	50	69	73	170	170	134	122	174	248	340	492	88	44
GFCE 50-160/30/P	50	50	69	73	170	170	134	122	174	248	340	492	88	46
GFCE 50-160/40/P	50	50	69	73	170	170	154	122	197	268	340	513	88	49
GFCE 50-200/55/P	50	50	110	73	220	220	168	163	214	331	440	577	100	56
GFCE 50-200/75/P	50	50	110	73	220	220	191	163	256	354	440	591	100	72
GFCE 50-250/92/P	50	50	110	73	220	220	191	163	256	354	440	629	100	101
GFCE 50-250/110/P	50	50	110	73	220	220	191	163	256	354	440	629	100	107
GFCE 50-250/150/P	50	50	110	73	220	220	240	163	313	403	440	718	100	115
GFCE 65-125/22/C	65	65	77	83	170	170	134	137	174	274	340	511	92	54
GFCE 65-125/30/P	65	65	77	83	170	170	134	137	174	274	340	511	92	57
GFCE 65-125/40/P	65	65	77	83	170	170	154	137	197	291	340	532	92	61
GFCE 65-160/55/P	65	65	77	83	170	170	168	137	214	305	340	566	92	69
GFCE 65-160/75/P	65	65	77	83	170	170	191	137	256	328	340	580	92	86
GFCE 65-200/92/P	65	65	119	83	237,5	237,5	191	172	256	354	475	634	104	105
GFCE 65-200/110/P	65	65	119	83	237,5	237,5	191	172	256	354	475	634	104	112
GFCE 65-250/150/P	65	65	119	83	237,5	237,5	240	172	313	403	475	723	104	128
GFCE 65-250/185/P	65	65	119	83	237,5	237,5	240	172	313	403	475	723	104	138
GFCE 65-250/220/P	65	65	119	83	237,5	237,5	240	172	313	403	475	723	104	150
GFCE 80-125/30/P	80	80	90	90	175	185	134	148	174	287	360	545	102	64
GFCE 80-125/40/P	80	80	90	90	175	185	154	148	197	293	360	566	102	67
GFCE 80-125/55/P	80	80	90	90	175	185	168	148	214	307	360	600	102	69
GFCE 80-160/75/P	80	80	90	90	175	185	191	148	256	330	360	614	102	85
GFCE 80-200/110/P	80	80	130	90	250	250	191	184	256	354	500	661	112	120
GFCE 80-200/150/P	80	80	130	90	250	250	240	184	313	403	500	750	112	130
GFCE 80-200/185/P	80	80	130	90	250	250	240	184	313	403	500	750	112	140
GFCE 80-200/220/P	80	80	130	90	250	250	240	184	313	403	500	750	112	152
GFCE 100-160/110/P	100	100	105	105	225	225	191	172	256	330	450	677	117	127
GFCE 100-200/185/P	100	100	140	105	275	275	240	196	313	406	550	771	129	180
GFCE 100-200/220/P	100	100	140	105	275	275	240	196	313	406	550	771	129	192

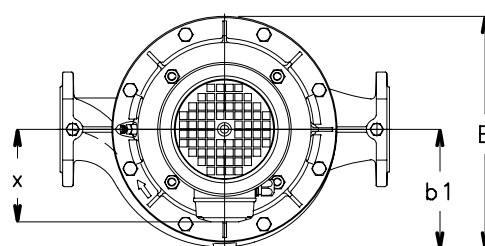
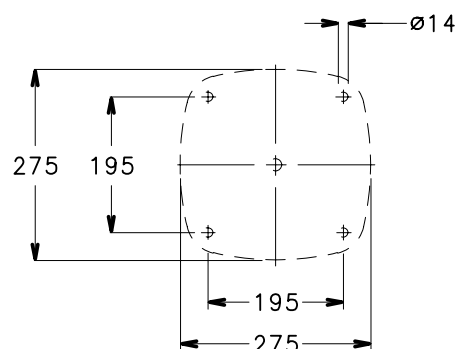
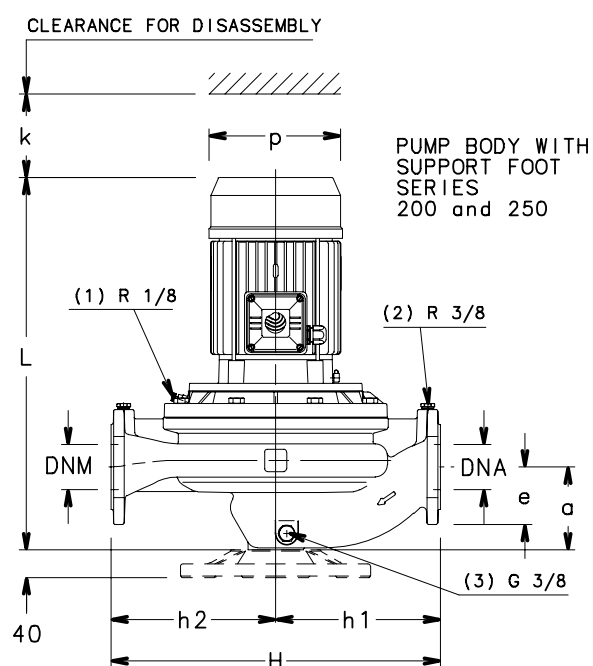
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GFCE4 SERIES DIMENSIONS AND WEIGHTS AT 50 Hz



PUMP FLANGES

DN	D	M	G	HOLES		THICKNESS MAX.
				Nº	DIA.	
40	150	110	88	4	18	18
50	165	125	102	4	18	20
65	185	145	122	4	18	20
80	200	160	138	8	18	22
100	220	180	158	8	18	22



- (1) R 1/8 AIR VALVE
(2) R 3/8 PRESSURE GAUGE CONNECTOR
(3) G 3/8 DRAIN

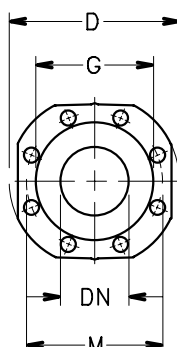
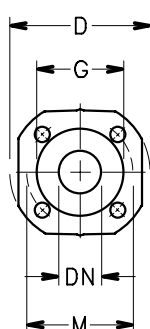
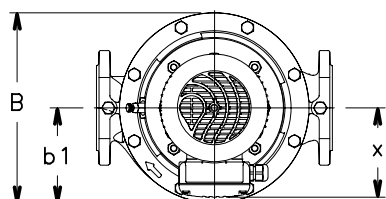
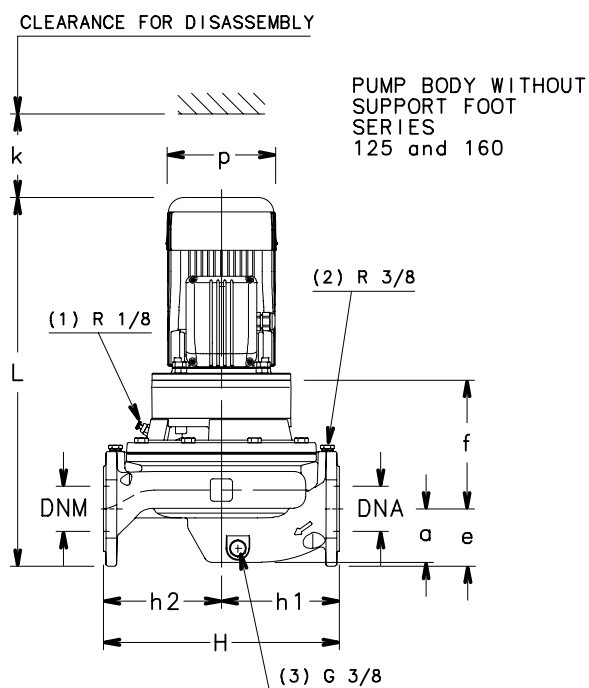
GFCE4 SERIES

DIMENSIONS AND WEIGHTS AT 50 Hz

PUMP TYPE	DIMENSIONS (mm)													WEIGHT kg
	DNA	DNM	a	e	h1	h2	x	b1	p	B	H max	L	k	
GFCE4 40-125/02A/A	40	40	70	70	160	160	121	116	140	235	320	416	86	24
GFCE4 40-125/02/A	40	40	70	70	160	160	121	116	140	235	320	416	86	24
GFCE4 40-160/02/A	40	40	70	70	160	160	121	116	140	235	320	416	86	25
GFCE4 40-160/03/A	40	40	70	70	160	160	121	116	140	235	320	416	86	26
GFCE4 40-200/05/A	40	40	95	65	220	220	129	163	155	325	440	458	98	44
GFCE4 40-200/07/C	40	40	95	65	220	220	128	163	159	325	440	426	98	45
GFCE4 40-250/11/P	40	40	95	65	220	220	134	163	174	325	440	493	98	64
GFCE4 40-250/15/P	40	40	95	65	220	220	134	163	174	325	440	493	98	65
GFCE4 50-125/02/A	50	50	69	73	170	170	121	122	140	236	340	425	88	28
GFCE4 50-125/03/A	50	50	69	73	170	170	121	122	140	236	340	425	88	29
GFCE4 50-160/05/A	50	50	69	73	170	170	129	122	155	243	340	457	88	31
GFCE4 50-200/07/C	50	50	110	73	220	220	128	163	159	326	440	455	100	54
GFCE4 50-200/11/P	50	50	110	73	220	220	134	163	174	326	440	522	100	63
GFCE4 50-250/15/P	50	50	110	73	220	220	134	163	174	326	440	522	100	66
GFCE4 50-250/22/P	50	50	110	73	220	220	168	163	214	331	440	546	100	72
GFCE4 65-125/03/A	65	65	77	83	170	170	121	137	140	274	340	444	92	38
GFCE4 65-125/05/A	65	65	77	83	170	170	129	137	155	274	340	476	92	42
GFCE4 65-160/07/C	65	65	77	83	170	170	128	137	159	274	340	444	92	47
GFCE4 65-160/11/P	65	65	77	83	170	170	134	137	174	274	340	511	92	54
GFCE4 65-200/15/P	65	65	119	83	237,5	237,5	134	172	174	335	475	527	104	69
GFCE4 65-250/22/P	65	65	119	83	237,5	237,5	168	172	214	335	475	551	104	80
GFCE4 65-250/30/P	65	65	119	83	237,5	237,5	168	172	214	335	475	582	104	82
GFCE4 80-125/07/C	80	80	90	90	175	185	128	148	159	287	360	478	102	51
GFCE4 80-125/11/P	80	80	90	90	175	185	134	148	174	287	360	545	102	59
GFCE4 80-200/15/P	80	80	130	90	250	250	134	184	174	347	500	554	112	81
GFCE4 80-200/22/P	80	80	130	90	250	250	168	184	214	347	500	578	112	87
GFCE4 80-200/30/P	80	80	130	90	250	250	168	184	214	347	500	609	112	91
GFCE4 80-250/40/P	80	80	130	90	250	250	168	184	214	347	500	654	112	117
GFCE4 80-250/55/P	80	80	130	90	250	250	191	184	256	354	500	661	112	125
GFCE4 100-160/15/P	100	100	105	105	225	225	134	172	174	311	450	570	117	74
GFCE4 100-200/22/P	100	100	140	105	275	275	168	196	214	362	550	599	129	99
GFCE4 100-200/30/P	100	100	140	105	225	275	168	196	214	362	550	630	129	101
GFCE4 100-250/40/P	100	100	140	105	275	275	168	196	214	362	550	675	129	125
GFCE4 100-250/55/P	100	100	140	105	275	275	191	196	256	362	550	682	129	131
GFCE4 100-250/75/P	100	100	140	105	275	275	191	196	256	362	550	682	129	141

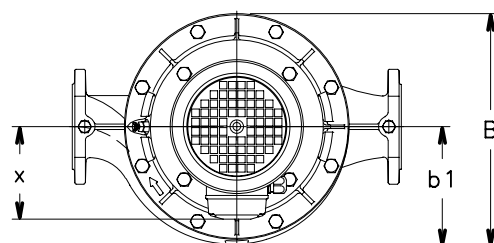
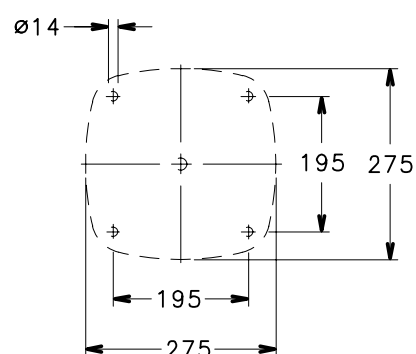
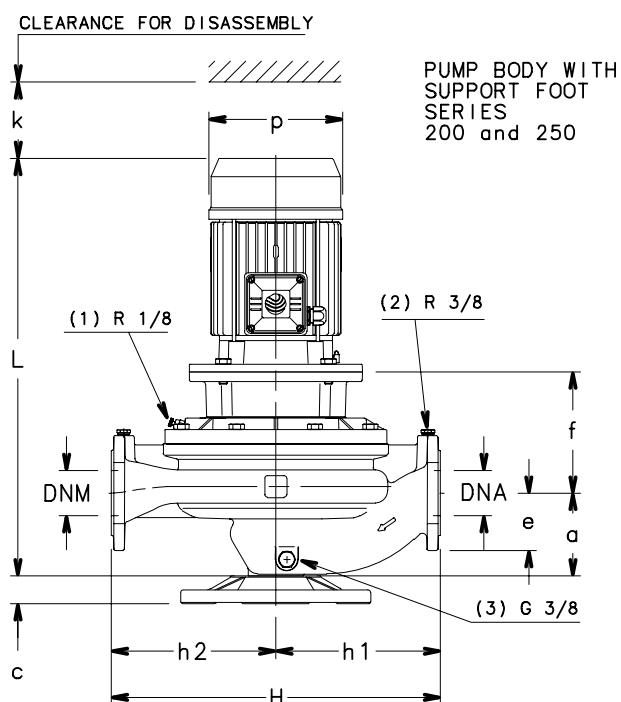
gfc_gfce4-4p50-en_g_td

GFCS SERIES DIMENSIONS AND WEIGHTS AT 50 Hz



PUMP FLANGES

DN	D	M	G	HOLES		THICKNESS MAX.
				Nº	DIA.	
40	150	110	88	4	18	18
50	165	125	102	4	18	20
65	185	145	122	4	18	20
80	200	160	138	8	18	22
100	220	180	158	8	18	22



- (1) R 1/8 AIR VALVE
(2) R 3/8 PRESSURE GAUGE CONNECTOR
(3) G 3/8 DRAIN

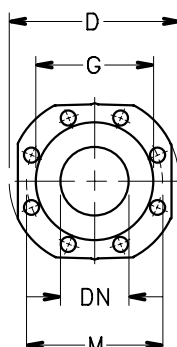
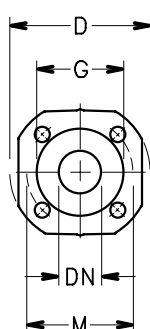
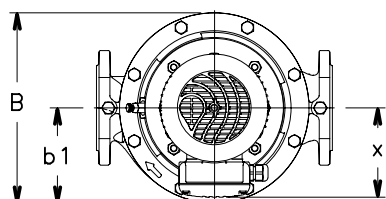
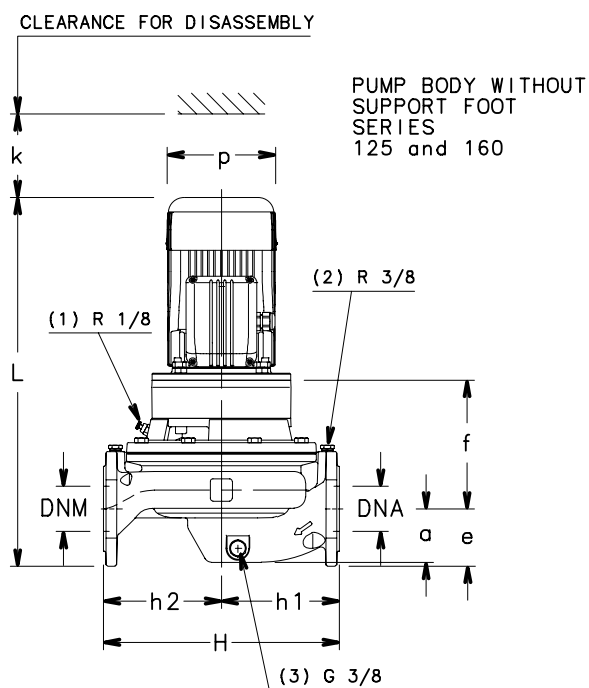
GFCS SERIES

DIMENSIONS AND WEIGHTS AT 50 Hz

PUMP TYPE	DIMENSIONS (mm)														WEIGHT kg
	DNA	DNM	a	e	f	h1	h2	x	b1	p	B	H max	L	k	
GFCS 40-125/07/D	40	40	70	70	170	160	160	129	116	155	243	320	503	86	32
GFCS 40-125/11/D	40	40	70	70	170	160	160	129	116	155	243	320	503	86	33
GFCS 40-160/15/D	40	40	70	70	170	160	160	129	116	155	243	320	503	86	34
GFCS 40-160/22/C	40	40	70	70	170	160	160	134	116	174	248	320	538	86	39
GFCS 40-200/30/P	40	40	95	65	165	220	220	134	163	174	325	440	558	98	69
GFCS 40-200/40/P	40	40	95	65	165	220	220	154	163	197	325	440	579	98	75
GFCS 40-200/55/P	40	40	95	65	192	220	220	168	163	214	330	440	662	98	88
GFCS 40-250/75/P	40	40	95	65	192	220	220	191	163	256	353	440	654	98	106
GFCS 40-250/110/P	40	40	95	65	222	220	220	191	163	256	353	440	745	98	120
GFCS 50-125/11/D	50	50	69	73	176	170	170	129	122	155	243	340	512	88	37
GFCS 50-125/15/D	50	50	69	73	176	170	170	129	122	155	243	340	512	88	38
GFCS 50-160/22/C	50	50	69	73	176	170	170	134	122	174	248	340	547	88	50
GFCS 50-160/30/P	50	50	69	73	186	170	170	134	122	174	248	340	557	88	51
GFCS 50-160/40/P	50	50	69	73	186	170	170	154	122	197	268	340	578	88	58
GFCS 50-200/55/P	50	50	110	73	206	220	220	168	163	214	331	440	691	100	91
GFCS 50-200/75/P	50	50	110	73	206	220	220	191	163	256	354	440	683	100	108
GFCS 50-250/110A/P	50	50	110	73	236	220	220	191	163	256	354	440	774	100	115
GFCS 50-250/110/P	50	50	110	73	236	220	220	191	163	256	354	440	774	100	115
GFCS 50-250/150/P	50	50	110	73	236	220	220	240	163	313	403	440	840	100	125
GFCS 65-125/22/C	65	65	77	83	185	170	170	134	137	174	274	340	566	92	69
GFCS 65-125/30/P	65	65	77	83	195	170	170	134	137	174	274	340	576	92	62
GFCS 65-125/40/P	65	65	77	83	195	170	170	154	137	197	291	340	597	92	67
GFCS 65-160/55/P	65	65	77	83	222	170	170	168	137	214	305	340	680	92	80
GFCS 65-160/75/P	65	65	77	83	222	170	170	191	137	256	328	340	672	92	95
GFCS 65-200/110A/P	65	65	119	83	232	237,5	237,5	191	172	256	354	475	779	104	133
GFCS 65-200/110/P	65	65	119	83	232	237,5	237,5	191	172	256	354	475	779	104	133
GFCS 65-250/150/P	65	65	119	83	232	237,5	237,5	240	172	313	403	475	845	104	134
GFCS 65-250/185/P	65	65	119	83	232	237,5	237,5	240	172	313	403	475	845	104	144
GFCS 65-250/220/P	65	65	119	83	232	237,5	237,5	240	172	313	403	475	845	104	154
GFCS 80-125/30/P	80	80	90	90	222	175	185	134	148	174	287	360	610	102	82
GFCS 80-125/40/P	80	80	90	90	222	175	185	154	148	197	293	360	631	102	83
GFCS 80-125/55/P	80	80	90	90	249	175	185	168	148	214	307	360	714	102	86
GFCS 80-160/75/P	80	80	90	90	249	175	185	191	148	256	330	360	706	102	102
GFCS 80-200/110/P	80	80	130	90	248	250	250	191	184	256	354	500	806	112	130
GFCS 80-200/150/P	80	80	130	90	248	250	250	240	184	313	403	500	872	112	140
GFCS 80-200/185/P	80	80	130	90	248	250	250	240	184	313	403	500	872	112	150
GFCS 80-200/220/P	80	80	130	90	248	250	250	240	184	313	403	500	872	112	162
GFCS 100-160/110/P	100	100	105	105	289	225	225	191	172	256	330	450	822	117	135
GFCS 100-200/185/P	100	100	140	105	259	275	275	240	196	313	406	550	893	129	190
GFCS 100-200/220/P	100	100	140	105	259	275	275	240	196	313	406	550	893	129	202

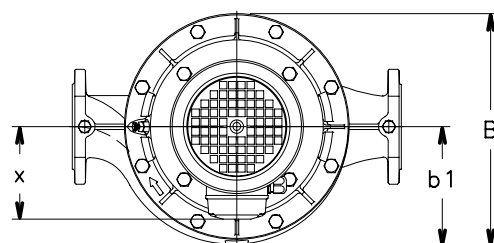
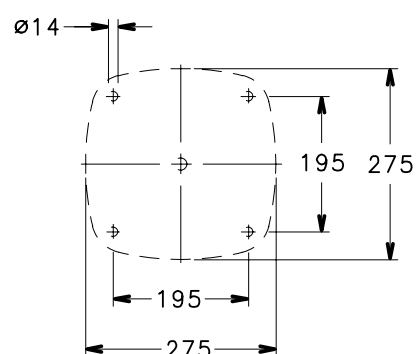
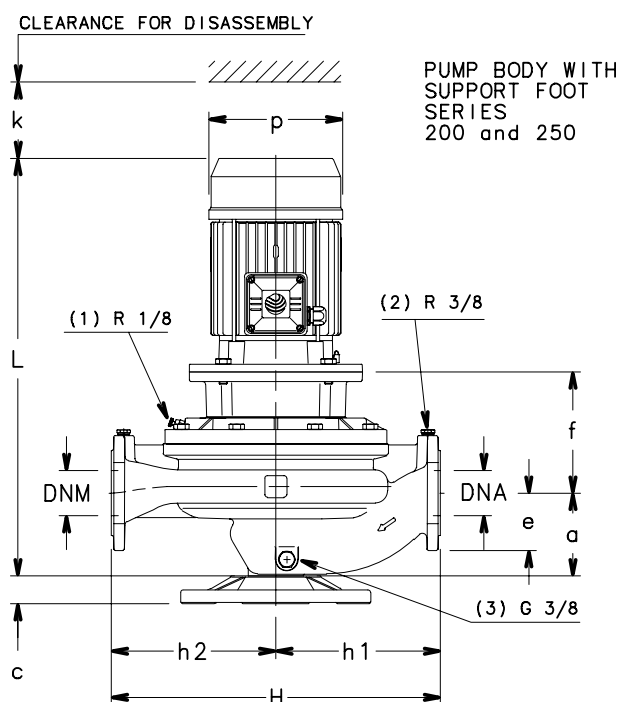
gfc_gfcs-2p50-en_g_td

GFCS4 SERIES DIMENSIONS AND WEIGHTS AT 50 Hz



PUMP FLANGES

DN	D	M	G	HOLES		THICKNESS MAX.
				Nº	DIA.	
40	150	110	88	4	18	18
50	165	125	102	4	18	20
65	185	145	122	4	18	20
80	200	160	138	8	18	22
100	220	180	158	8	18	22



- (1) R 1/8 AIR VALVE
- (2) R 3/8 PRESSURE GAUGE CONNECTOR
- (3) G 3/8 DRAIN

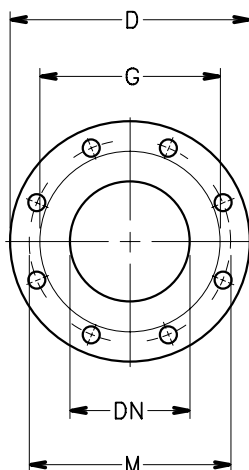
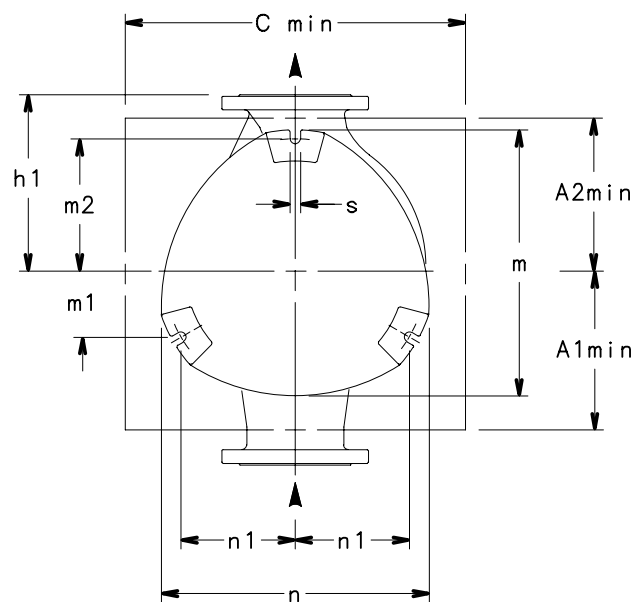
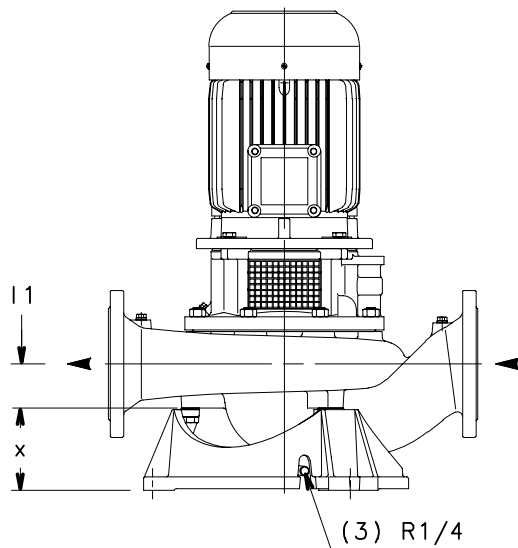
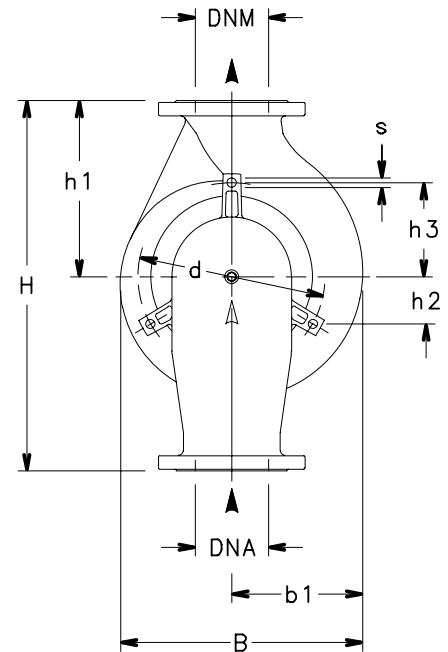
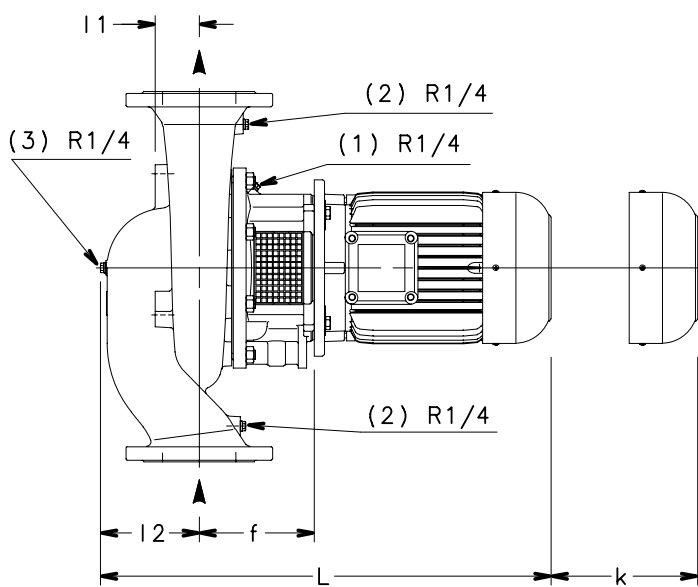
GFCS4 SERIES

DIMENSIONS AND WEIGHTS AT 50 Hz

PUMP TYPE	DIMENSIONS (mm)														WEIGHT kg
	DNA	DNM	a	e	f	h1	h2	x	b1	p	B	H max	L	k	
GFCS4 40-200/05/A	40	40	95	65	155	220	220	129	163	155	325	440	513	98	56
GFCS4 40-200/07/C	40	40	95	65	155	220	220	128	163	159	325	440	481	98	60
GFCS4 40-250/11/P	40	40	95	65	155	220	220	134	163	174	325	440	548	98	67
GFCS4 40-250/15/P	40	40	95	65	155	220	220	134	163	174	325	440	548	98	69
GFCS4 50-200/07/C	50	50	110	73	169	220	220	128	163	159	326	440	510	100	63
GFCS4 50-200/11/P	50	50	110	73	169	220	220	134	163	174	326	440	577	100	72
GFCS4 50-250/15/P	50	50	110	73	169	220	220	134	163	174	326	440	577	100	73
GFCS4 50-250/22/P	50	50	110	73	179	220	220	168	163	214	331	440	611	100	78
GFCS4 65-160/07/C	65	65	77	83	185	170	170	128	137	159	274	340	499	92	49
GFCS4 65-160/11/P	65	65	77	83	185	170	170	134	137	174	274	340	566	92	55
GFCS4 65-200/15/P	65	65	119	83	165	237,5	237,5	134	172	174	335	475	582	104	72
GFCS4 65-250/22/P	65	65	119	83	175	237,5	237,5	168	172	214	335	475	616	104	84
GFCS4 65-250/30/P	65	65	119	83	175	237,5	237,5	168	172	214	335	475	647	104	87
GFCS4 80-125/07/C	80	80	90	90	212	175	185	128	148	159	287	360	533	102	55
GFCS4 80-125/11/P	80	80	90	90	212	175	185	134	148	174	287	360	600	102	66
GFCS4 80-200/15/P	80	80	130	90	181	250	250	134	184	174	347	500	609	112	92
GFCS4 80-200/22/P	80	80	130	90	191	250	250	168	184	214	347	500	643	112	95
GFCS4 80-200/30/P	80	80	130	90	191	250	250	168	184	214	347	500	674	112	97
GFCS4 80-250/40/P	80	80	130	90	191	250	250	168	184	214	347	500	719	112	125
GFCS4 80-250/55/P	80	80	130	90	218	250	250	191	184	256	354	500	753	112	129
GFCS4 100-160/15/P	100	100	105	105	221	225	225	134	172	174	311	450	625	117	78
GFCS4 100-200/22/P	100	100	140	105	202	275	275	168	196	214	362	550	664	129	85
GFCS4 100-200/30/P	100	100	140	105	202	225	275	168	196	214	362	550	695	129	88
GFCS4 100-250/40/P	100	100	140	105	202	275	275	168	196	214	362	550	740	129	140
GFCS4 100-250/55/P	100	100	140	105	229	275	275	191	196	256	362	550	774	129	142
GFCS4 100-250/75/P	100	100	140	105	229	275	275	191	196	256	362	550	774	129	147

gfc_gfcs4-4p50-en_g_td

GFCS4 (125÷150) SERIES
DIMENSIONS AND WEIGHTS AT 50 Hz



- (1) R 1/4 AIR VALVE
(2) R 1/4 PRESSURE GAUGE CONNECTOR
(3) R 1/4 DRAIN

PUMP FLANGES

DN	D	M	G	HOLES		THICKNESS MAX.
				Nº	DIA.	
125	250	210	188	8	18	26
150	285	240	212	8	23	26

GFCS4 (125÷150) SERIES

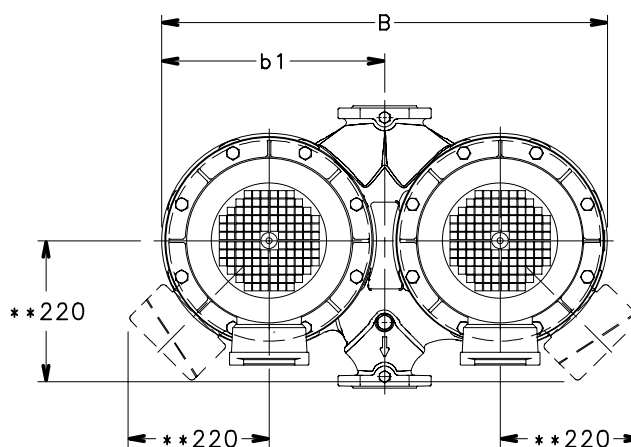
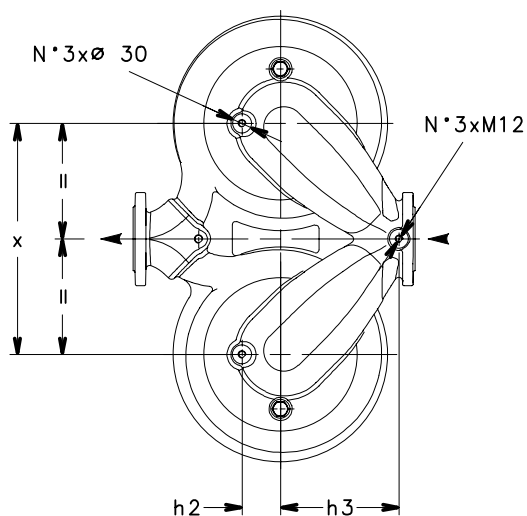
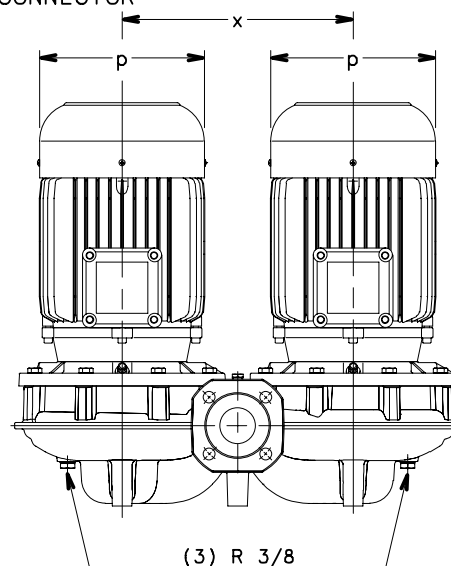
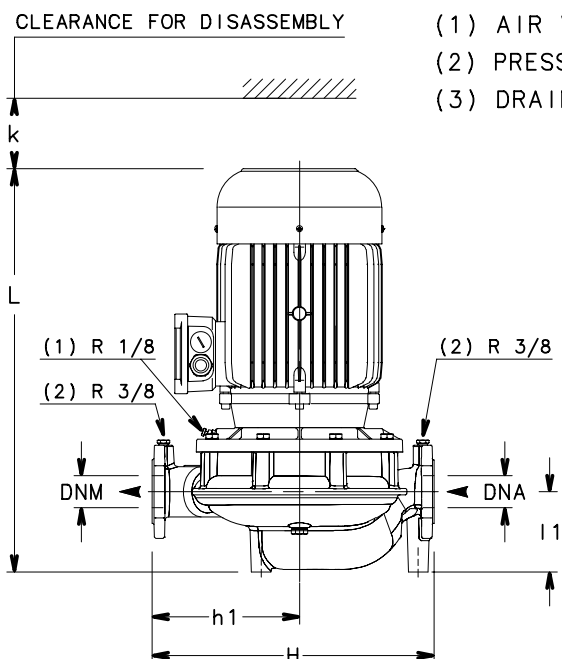
DIMENSIONS AND WEIGHTS AT 50 Hz

PUMP TYPE	DIMENSIONS (mm) PUMP														WEIGHT kg
	DNA	DNM	b1	d	f	h1	h2	h3	l1	l2	B	H max	L	k	
GFCS4 125-160/30/P	125	125	234	274	196	315	68	137	85	161	418	630	710	143	132
GFCS4 125-200/40/P	125	125	202	274	196	290	68	137	80	164	378	620	758	153	133
GFCS4 125-200/55/P	125	125	202	274	196	290	68	137	80	164	378	620	765	153	154
GFCS4 125-250/75/P	125	125	220	320	196	300	80	160	75	168	422	630	769	150	167
GFCS4 125-250/110/P	125	125	220	320	226	300	80	160	75	168	422	630	888	150	231
GFCS4 125-315/150/P	125	125	262	320	226	350	80	160	130	229	503	775	948	160	298
GFCS4 125-315/185/C	125	125	262	320	226	350	80	160	130	229	503	775	1009	160	334
GFCS4 125-315/220/C	125	125	262	320	226	350	80	160	130	229	503	775	1047	160	356
GFCS4 150-200/55/P	150	150	260	320	211	340	80	160	90	178	468	720	794	160	126
GFCS4 150-200/75/P	150	150	260	320	211	340	80	160	90	178	468	720	794	160	177
GFCS4 150-250/110/P	150	150	276	320	226	365	80	160	85	188	504	755	908	158	255
GFCS4 150-250/150/P	150	150	276	320	226	365	80	160	85	188	504	755	908	158	268
GFCS4 150-250/185/C	150	150	276	320	226	365	80	160	85	188	504	755	968	158	294

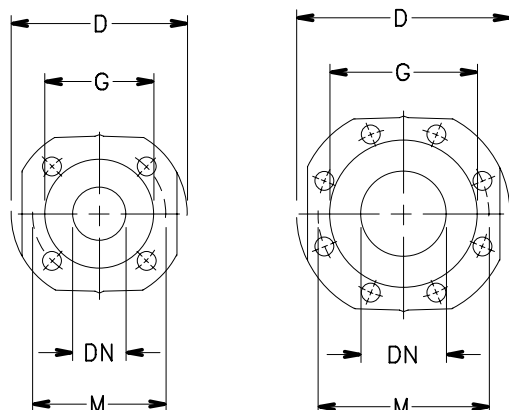
PUMP TYPE	DIMENSIONS (mm) SUPPORT FOOT									
	A1	A2	C	m	m1	m2	n	n1	s	x
GFCS4 125-160/30/P	230	250	480	388	96	192	389	166	M16	120
GFCS4 125-200/40/P	230	250	480	388	96	192	389	166	M16	120
GFCS4 125-200/55/P	230	250	480	388	96	192	389	166	M16	120
GFCS4 125-250/75/P	270	300	580	453	112	225	457	195	M16	140
GFCS4 125-250/110/P	270	300	580	453	112	225	457	195	M16	140
GFCS4 125-315/150/P	270	300	580	453	112	225	457	195	M16	140
GFCS4 125-315/185/C	270	300	580	453	112	225	457	195	M16	140
GFCS4 125-315/220/C	270	300	580	453	112	225	457	195	M16	140
GFCS4 150-200/55/P	270	300	580	453	112	225	457	195	M16	140
GFCS4 150-200/75/P	270	300	580	453	112	225	457	195	M16	140
GFCS4 150-250/110/P	270	300	580	453	112	225	457	195	M16	140
GFCS4 150-250/150/P	270	300	580	453	112	225	457	195	M16	140
GFCS4 150-250/185/C	270	300	580	453	112	225	457	195	M16	140

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GFCTE SERIES DIMENSIONS AND WEIGHTS AT 50 Hz



** ONLY FOR MODELS WITH
15-18.5-22 kW MOTORS



PUMP FLANGES

DN	D	M	G	HOLES		MAX. THICKNESS
				N°	DIA.	
40	150	110	88	4	18	18
50	165	125	102	4	18	20
65	185	145	122	4	18	20
80	200	160	138	8	18	22
100	220	180	158	8	18	22

05204-EN_B_DD

GFCTE SERIES

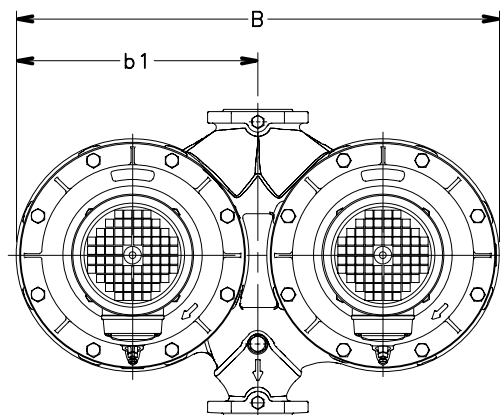
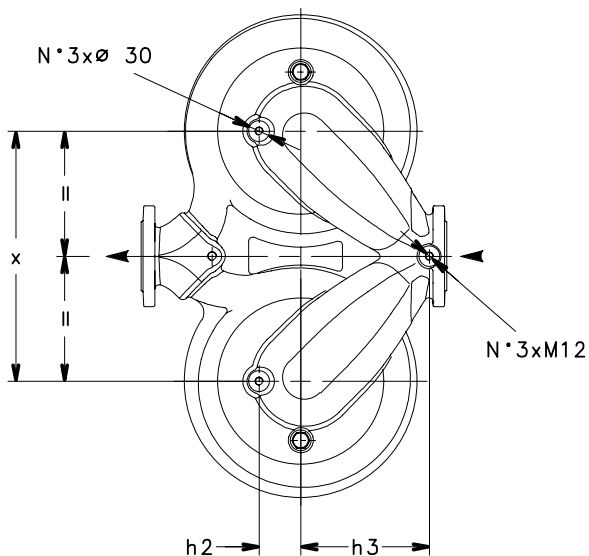
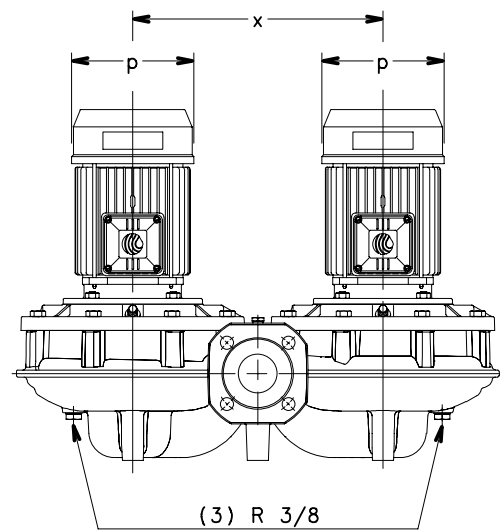
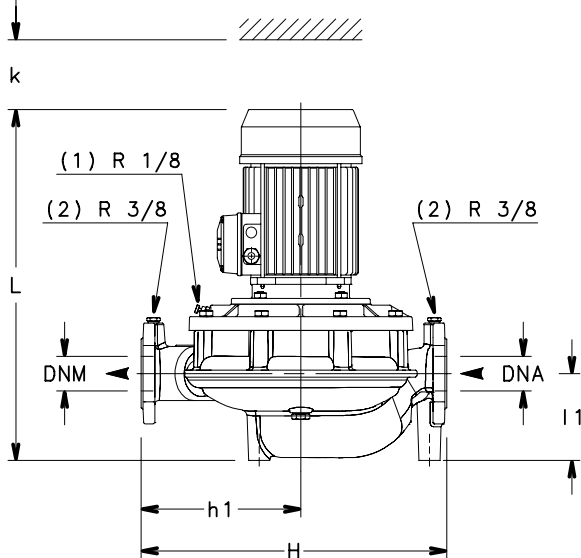
DIMENSIONS AND WEIGHTS AT 50 Hz

PUMP TYPE	DIMENSIONS (mm)													WEIGHT
	DNA	DNM	b1	h1	h2	h3	l1	p	x	B	H	L	k	kg
GFCTE 40-125/07/D	40	40	245	170	50	120	89	155	250	490	320	452	90	56
GFCTE 40-125/11/D	40	40	245	170	50	120	89	155	250	490	320	452	90	58
GFCTE 40-160/15/D	40	40	245	170	50	120	89	155	250	490	320	452	90	60
GFCTE 40-160/22/C	40	40	245	170	50	120	89	174	250	490	320	487	90	69
GFCTE 40-200/40A/P	40	40	348	220	50	190	97	197	360	695	440	516	101	139
GFCTE 40-200/40/P	40	40	348	220	50	190	97	197	360	695	440	516	101	139
GFCTE 40-200/55/P	40	40	348	220	50	190	97	214	360	695	440	550	101	141
GFCTE 40-250/75/P	40	40	348	220	50	190	97	256	360	695	440	564	101	177
GFCTE 40-250/110/P	40	40	348	220	50	190	97	256	360	695	440	602	101	179
GFCTE 50-125/11/D	50	50	250	180	55	130	92	155	260	500	340	457	91	57
GFCTE 50-125/15/D	50	50	250	180	55	130	92	155	260	500	340	457	91	63
GFCTE 50-160/22/C	50	50	250	180	55	130	92	174	260	500	340	492	91	82
GFCTE 50-160/30/P	50	50	250	180	55	130	92	174	260	500	340	491	91	85
GFCTE 50-160/40/P	50	50	250	180	55	130	92	197	260	500	340	512	91	91
GFCTE 50-200/55/P	50	50	348	230	60	185	125	214	360	695	440	578	110	108
GFCTE 50-200/75/P	50	50	348	230	60	185	125	256	360	695	440	592	110	140
GFCTE 50-250/92/P	50	50	348	230	60	185	125	256	360	695	440	630	110	198
GFCTE 50-250/110/P	50	50	348	230	60	185	125	256	360	695	440	630	110	210
GFCTE 50-250/150/P	50	50	348	230	60	185	125	313	360	695	440	719	110	226
GFCTE 65-125/22/C	65	65	297	185	55	125	108	174	310	593	340	509	96	108
GFCTE 65-125/30/P	65	65	297	185	55	125	108	174	310	593	340	509	96	113
GFCTE 65-125/40/P	65	65	297	185	55	125	108	197	310	593	340	530	96	121
GFCTE 65-160/55/P	65	65	297	185	55	125	108	214	310	593	340	564	96	137
GFCTE 65-160/75/P	65	65	297	185	55	125	108	256	310	593	340	578	96	171
GFCTE 65-200/92/P	65	65	348	260	59	185	130	256	360	695	475	635	109	202
GFCTE 65-200/110/P	65	65	348	260	59	185	130	256	360	695	475	635	109	216
GFCTE 65-250/150/P	65	65	348	260	59	185	130	313	360	695	475	724	109	248
GFCTE 65-250/185/P	65	65	348	260	59	185	130	313	360	695	475	724	109	252
GFCTE 65-250/220/P	65	65	348	260	59	185	130	313	360	695	475	724	109	272
GFCTE 80-125/30/P	80	80	304	210	70	110	141	174	320	607	400	548	106	127
GFCTE 80-125/40/P	80	80	304	210	70	110	141	197	320	607	400	569	106	133
GFCTE 80-125/55/P	80	80	304	210	70	110	141	214	320	607	400	603	106	137
GFCTE 80-160/75/P	80	80	304	210	70	110	141	256	320	607	400	617	106	169
GFCTE 80-200/110/P	80	80	368	280	80	140	157	256	380	722	500	662	112	231
GFCTE 80-200/150/P	80	80	368	280	80	140	157	313	380	722	500	751	112	251
GFCTE 80-200/185/P	80	80	368	280	80	140	157	313	380	722	500	751	112	271
GFCTE 80-200/220/P	80	80	368	280	80	140	157	313	380	722	500	751	112	295
GFCTE 100-160/110/P	100	100	340	270	72	150	175	256	360	670	500	681	118	252
GFCTE 100-200/185/P	100	100	408	310	80	150	180	313	410	798	550	774	128	363
GFCTE 100-200/220/P	100	100	408	310	80	150	180	313	410	798	550	774	128	387

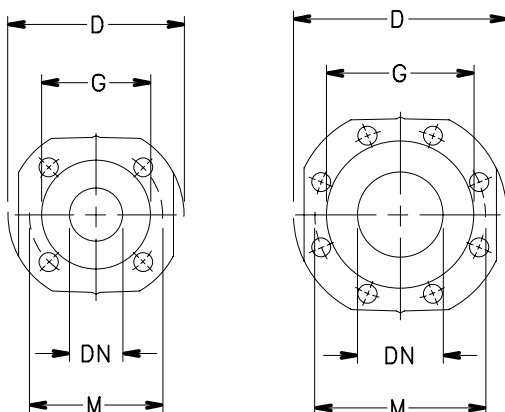
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GFCTE4 SERIES DIMENSIONS AND WEIGHTS AT 50 Hz

CLEARANCE FOR DISASSEMBLY



- (1) AIR VALVE
- (2) PRESSURE GAUGE CONNECTOR
- (3) DRAIN



PUMP FLANGES

DN	D	M	G	HOLES		THICKNESS MAX.
				Nº	DIA.	
40	150	110	88	4	18	18
50	165	125	102	4	18	20
65	185	145	122	4	18	20
80	200	160	138	8	18	22
100	220	180	158	8	18	22

05205-EN_A_DD

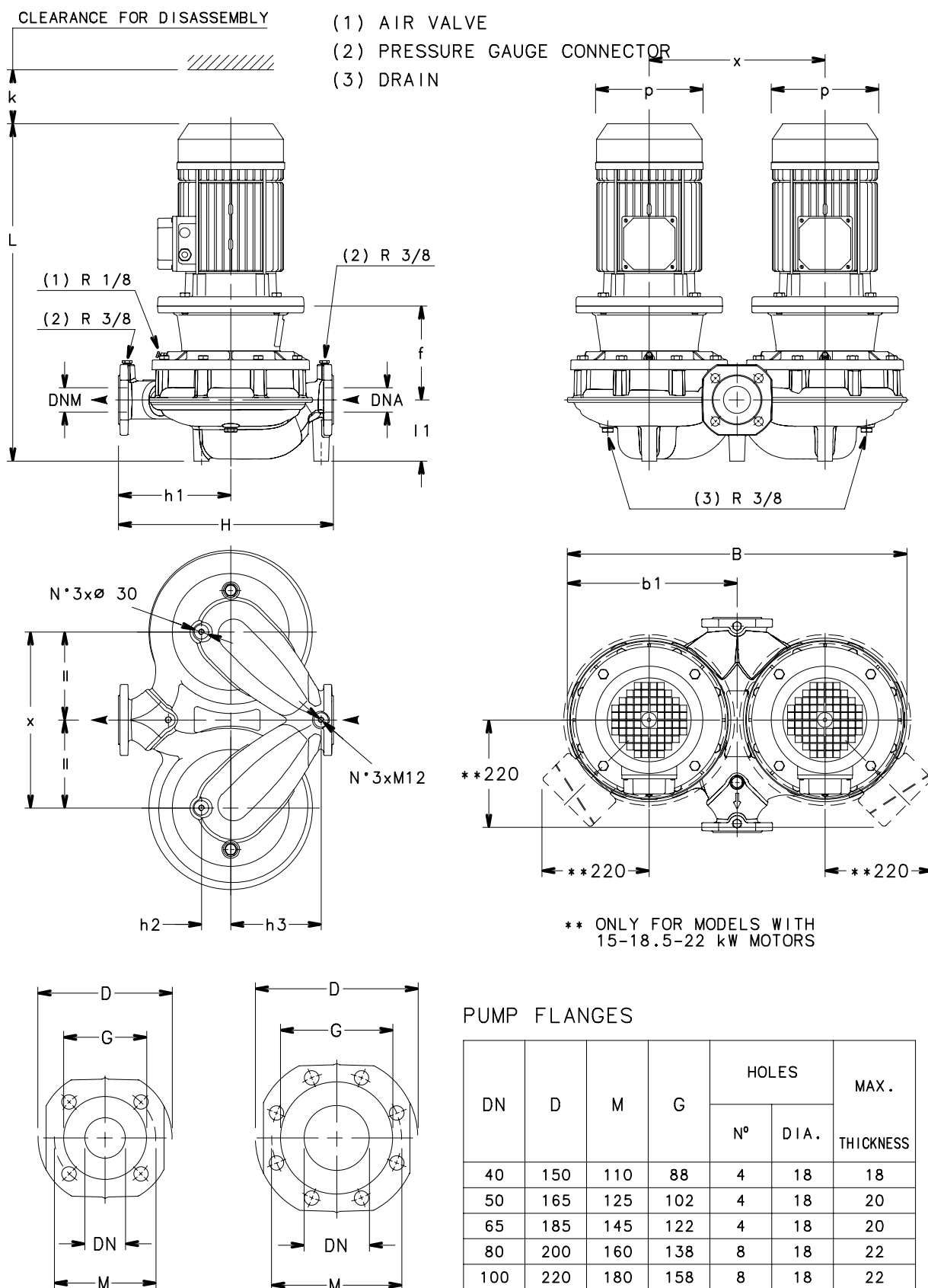
GFCTE4 SERIES

DIMENSIONS AND WEIGHTS AT 50 Hz

PUMP TYPE	DIMENSIONS (mm)													WEIGHT
	DNA	DNM	b1	h1	h2	h3	l1	p	x	B	H	L	k	kg
GFCTE4 40-125/02A	40	40	245	170	50	120	89	140	250	490	320	420	90	46
GFCTE4 40-125/02	40	40	245	170	50	120	89	140	250	490	320	420	90	46
GFCTE4 40-160/02	40	40	245	170	50	120	89	140	250	490	320	420	90	48
GFCTE4 40-160/03	40	40	245	170	50	120	89	140	250	490	320	420	90	50
GFCTE4 40-200/05	40	40	348	220	50	190	97	155	360	695	440	460	101	83
GFCTE4 40-200/07/C	40	40	348	220	50	190	97	159	360	695	440	428	101	86
GFCTE4 40-250/11/P	40	40	348	220	50	190	97	174	360	695	440	495	101	123
GFCTE4 40-250/15/P	40	40	348	220	50	190	97	174	360	695	440	495	101	125
GFCTE4 50-125/02	50	50	250	180	55	130	92	140	260	500	340	425	91	49
GFCTE4 50-125/03	50	50	250	180	55	130	92	140	260	500	340	425	91	51
GFCTE4 50-160/05	50	50	250	180	55	130	92	155	260	500	340	457	91	53
GFCTE4 50-200/07/C	50	50	348	230	60	185	125	159	360	695	440	456	110	105
GFCTE4 50-200/11/P	50	50	348	230	60	185	125	174	360	695	440	523	110	122
GFCTE4 50-250/15/P	50	50	348	230	60	185	125	174	360	695	440	523	110	128
GFCTE4 50-250/22/P	50	50	348	230	60	185	125	214	360	695	440	547	110	140
GFCTE4 65-125/03	65	65	297	185	55	125	108	140	310	593	340	442	96	75
GFCTE4 65-125/05	65	65	297	185	55	125	108	155	310	593	340	474	96	83
GFCTE4 65-160/07/C	65	65	297	185	55	125	108	159	310	593	340	442	96	94
GFCTE4 65-160/11/P	65	65	297	185	55	125	108	174	310	593	340	509	96	107
GFCTE4 65-200/15/P	65	65	348	260	59	185	130	174	360	695	475	528	109	130
GFCTE4 65-250/22/P	65	65	348	260	59	185	130	214	360	695	475	552	109	152
GFCTE4 65-250/30/P	65	65	348	260	59	185	130	214	360	695	475	583	109	156
GFCTE4 80-125/07/C	80	80	304	210	70	110	141	159	320	607	400	481	106	101
GFCTE4 80-125/11/P	80	80	304	210	70	110	141	174	320	607	400	548	106	116
GFCTE4 80-200/15/P	80	80	368	280	80	140	157	174	380	722	500	555	112	153
GFCTE4 80-200/22/P	80	80	368	280	80	140	157	214	380	722	500	579	112	165
GFCTE4 80-200/30/P	80	80	368	280	80	140	157	214	380	722	500	610	112	173
GFCTE4 80-250/40/P	80	80	368	280	80	140	157	214	380	722	500	655	112	225
GFCTE4 80-250/55/P	80	80	368	280	80	140	157	256	380	722	500	662	112	241
GFCTE4 100-160/15/P	100	100	340	270	72	150	175	174	360	670	500	574	118	146
GFCTE4 100-200/22/P	100	100	408	310	80	150	180	214	410	798	550	602	128	201
GFCTE4 100-200/30/P	100	100	408	310	80	150	180	214	410	798	550	633	128	205
GFCTE4 100-250/40/P	100	100	408	310	80	150	180	214	410	798	550	678	128	253
GFCTE4 100-250/55/P	100	100	408	310	80	150	180	256	410	798	550	685	128	265
GFCTE4 100-250/75/P	100	100	408	310	80	150	180	256	410	798	550	685	128	285

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GFCTS SERIES DIMENSIONS AND WEIGHTS AT 50 Hz



05253-EN_C_DD

GFCTS SERIES

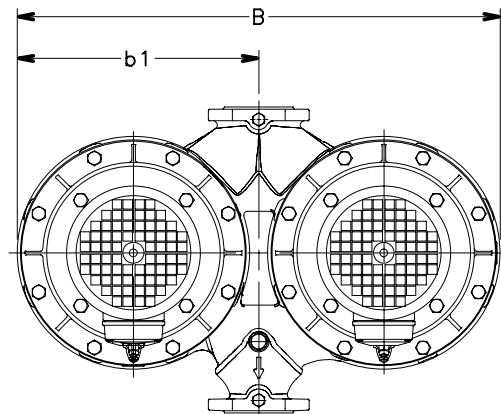
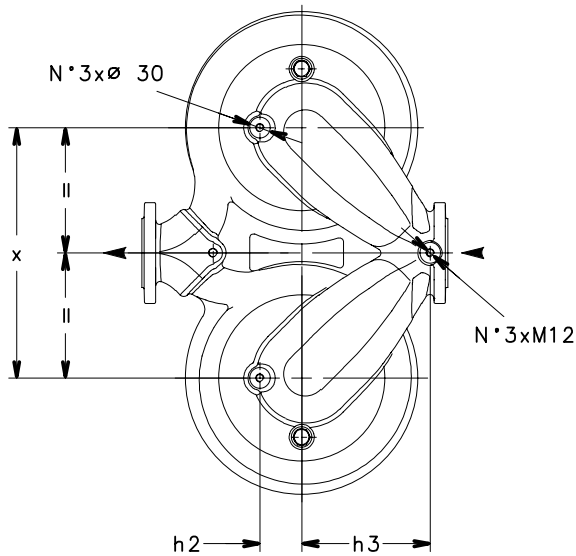
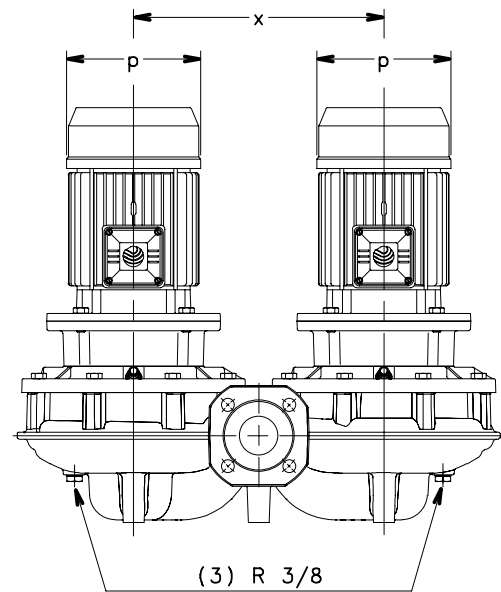
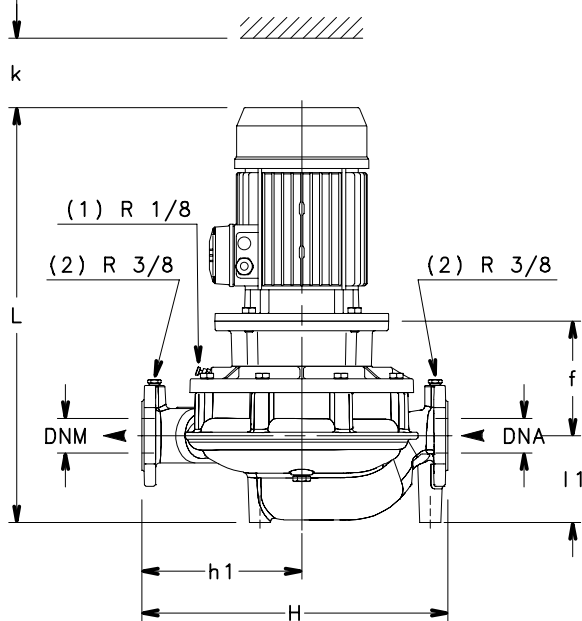
DIMENSIONS AND WEIGHTS AT 50 Hz

PUMP TYPE	DIMENSIONS (mm)														WEIGHT
	DNA	DNM	b1	f	h1	h2	h3	l1	p	x	B	H	L	k	
GFCTS 40-125/07/D	40	40	245	155	170	50	120	89	155	250	490	320	507	90	62
GFCTS 40-125/11/D	40	40	245	155	170	50	120	89	155	250	490	320	507	90	64
GFCTS 40-160/15/D	40	40	245	155	170	50	120	89	155	250	490	320	507	90	66
GFCTS 40-160/22/C	40	40	245	155	170	50	120	89	174	250	490	320	542	90	77
GFCTS 40-200/30/P	40	40	348	165	220	50	190	97	174	360	695	440	560	101	133
GFCTS 40-200/40/P	40	40	348	165	220	50	190	97	197	360	695	440	581	101	145
GFCTS 40-200/55/P	40	40	348	192	220	50	190	97	214	360	695	440	664	101	171
GFCTS 40-250/75/P	40	40	348	192	220	50	190	97	256	360	695	440	656	101	207
GFCTS 40-250/110/P	40	40	348	222	220	50	190	97	256	360	695	440	747	101	235
GFCTS 50-125/11/D	50	50	250	156	180	55	130	92	155	260	500	340	511	91	67
GFCTS 50-125/15/D	50	50	250	156	180	55	130	92	155	260	500	340	511	91	69
GFCTS 50-160/22/C	50	50	250	156	180	55	130	92	174	260	500	340	546	91	94
GFCTS 50-160/30/P	50	50	250	166	180	55	130	92	174	260	500	340	556	91	95
GFCTS 50-160/40/P	50	50	250	166	180	55	130	92	197	260	500	340	577	91	109
GFCTS50-200/55/P	50	50	348	192	230	60	185	125	214	360	695	440	692	110	178
GFCTS 50-200/75/P	50	50	348	192	230	60	185	125	256	360	695	440	684	110	212
GFCTS 50-250/110A/P	50	50	348	222	230	60	185	125	256	360	695	440	775	110	226
GFCTS 50-250/110/P	50	50	348	222	230	60	185	125	256	360	695	440	775	110	226
GFCTS 50-250/150/P	50	50	348	222	230	60	185	125	313	360	695	440	841	110	246
GFCTS 65-125/22/C	65	65	297	158	185	55	125	108	174	310	593	340	564	96	138
GFCTS 65-125/30/P	65	65	297	168	185	55	125	108	174	310	593	340	574	96	123
GFCTS 65-125/40/P	65	65	297	168	185	55	125	108	197	310	593	340	595	96	133
GFCTS 65-160/55/P	65	65	297	195	185	55	125	108	214	310	593	340	678	96	159
GFCTS 65-160/75/P	65	65	297	195	185	55	125	108	256	310	593	340	670	96	189
GFCTS 65-200/110A/P	65	65	348	222	260	59	185	130	256	360	695	475	780	109	258
GFCTS 65-200/110/P	65	65	348	222	260	59	185	130	256	360	695	475	780	109	258
GFCTS 65-250/150/P	65	65	348	222	260	59	185	130	313	360	695	475	846	109	260
GFCTS 65-250/185/P	65	65	348	222	260	59	185	130	313	360	695	475	846	109	272
GFCTS 65-250/220/P	65	65	348	222	260	59	185	130	313	360	695	475	846	109	292
GFCTS 80-125/30/P	80	80	304	174	210	70	110	141	174	320	607	400	613	106	162
GFCTS 80-125/40/P	80	80	304	174	210	70	110	141	197	320	607	400	634	106	164
GFCTS 80-125/55/P	80	80	304	201	210	70	110	141	214	320	607	400	717	106	170
GFCTS 80-160/75/P	80	80	304	201	210	70	110	141	256	320	607	400	709	106	202
GFCTS 80-200/110/P	80	80	368	222	280	80	140	157	256	380	722	500	807	112	251
GFCTS 80-200/150/P	80	80	368	222	280	80	140	157	313	380	722	500	873	112	271
GFCTS 80-200/185/P	80	80	368	222	280	80	140	157	313	380	722	500	873	112	291
GFCTS 80-200/220/P	80	80	368	222	280	80	140	157	313	380	722	500	873	112	315
GFCTS 100-160/110/P	100	100	340	223	270	72	150	175	256	360	670	500	826	118	268
GFCTS 100-200/185/P	100	100	408	222	310	80	150	180	313	410	798	550	896	128	384
GFCTS 100-200/220/P	100	100	408	222	310	80	150	180	313	410	798	550	896	128	407

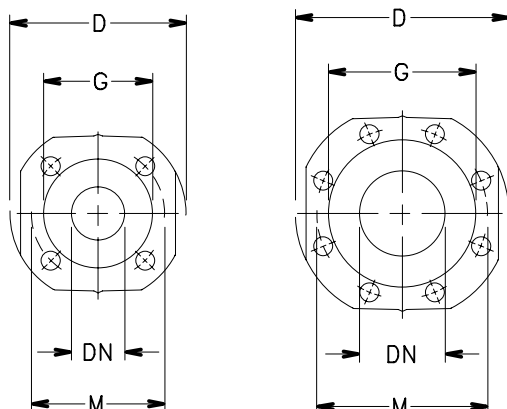
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GFCTS4 SERIES DIMENSIONS AND WEIGHTS AT 50 Hz

CLEARANCE FOR DISASSEMBLY



- (1) AIR VALVE
- (2) PRESSURE GAUGE CONNECTOR
- (3) DRAIN



PUMP FLANGES

DN	D	M	G	HOLES		THICKNESS MAX.
				Nº	DIA.	
40	150	110	88	4	18	18
50	165	125	102	4	18	20
65	185	145	122	4	18	20
80	200	160	138	8	18	22
100	220	180	158	8	18	22

05254-EN_A_DD

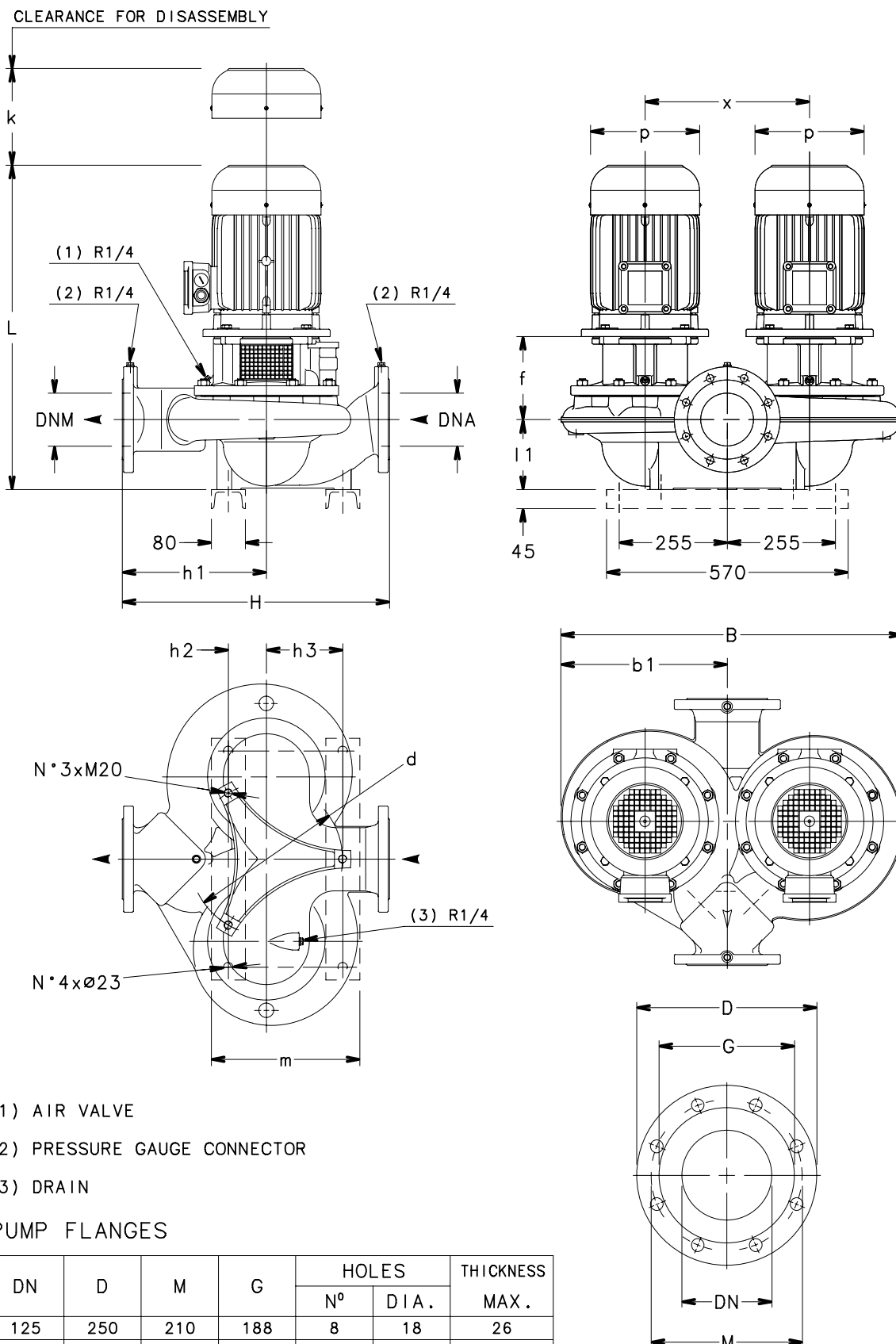
GFCTS4 SERIES

DIMENSIONS AND WEIGHTS AT 50 Hz

PUMP TYPE	DIMENSIONS (mm)											B	H max	L	k	WEIGHT kg
	DNA	DNM	b1	f	h1	h2	h3	l1	p	x						
GFCTS4 40-200/05	40	40	348	155	220	50	190	97	155	360	695	440	515	101	107	
GFCTS4 40-200/07/C	40	40	348	155	220	50	190	97	159	360	695	440	483	101	116	
GFCTS4 40-250/11/P	40	40	348	155	220	50	190	97	174	360	695	440	550	101	129	
GFCTS4 40-250/15/P	40	40	348	155	220	50	190	97	174	360	695	440	550	101	133	
GFCTS4 50-200/07/C	50	50	348	155	230	60	185	125	159	360	695	440	511	110	123	
GFCTS4 50-200/11/P	50	50	348	155	230	60	185	125	174	360	695	440	578	110	140	
GFCTS4 50-250/15/P	50	50	348	155	230	60	185	125	174	360	695	440	578	110	142	
GFCTS4 50-250/22/P	50	50	348	165	230	60	185	125	214	360	695	440	612	110	152	
GFCTS4 65-160/07/C	65	65	297	158	185	55	125	108	159	310	593	340	497	96	98	
GFCTS4 65-160/11/P	65	65	297	158	185	55	125	108	174	310	593	340	564	96	109	
GFCTS4 65-200/15/P	65	65	348	155	260	59	185	130	174	360	695	475	583	109	136	
GFCTS4 65-250/22/P	65	65	348	165	260	59	185	130	214	360	695	475	617	109	160	
GFCTS4 65-250/30/P	65	65	348	165	260	59	185	130	214	360	695	475	648	109	166	
GFCTS4 80-125/07/C	80	80	304	164	210	70	110	141	159	320	607	400	536	106	109	
GFCTS4 80-125/11/P	80	80	304	164	210	70	110	141	174	320	607	400	603	106	130	
GFCTS4 80-200/15/P	80	80	368	155	280	80	140	157	174	380	722	500	610	112	175	
GFCTS4 80-200/22/P	80	80	368	165	280	80	140	157	214	380	722	500	644	112	181	
GFCTS4 80-200/30/P	80	80	368	165	280	80	140	157	214	380	722	500	675	112	185	
GFCTS4 80-250/40/P	80	80	368	165	280	80	140	157	214	380	722	500	720	112	241	
GFCTS4 80-250/55/P	80	80	368	192	280	80	140	157	256	380	722	500	754	112	249	
GFCTS4 100-160/15/P	100	100	340	156	270	72	150	175	174	360	670	500	629	118	154	
GFCTS4 100-200/22/P	100	100	408	165	310	80	150	180	214	410	798	550	667	128	173	
GFCTS4 100-200/30/P	100	100	408	165	310	80	150	180	214	410	798	550	698	128	179	
GFCTS4 100-250/40/P	100	100	408	165	310	80	150	180	214	410	798	550	743	128	283	
GFCTS4 100-250/55/P	100	100	408	192	310	80	150	180	256	410	798	550	777	128	287	
GFCTS4 100-250/75/P	100	100	408	192	310	80	150	180	256	410	798	550	777	128	297	

gfct_gfcts4-4p50-en_e_td

GFCTS4 (125÷150) SERIES DIMENSIONS AND WEIGHTS AT 50 Hz



05255_A_DD

GFCTS4 (125÷150) SERIES

DIMENSIONS AND WEIGHTS AT 50 Hz

PUMP TYPE	PUMP DIMENSIONS (mm)																WEIGHT
	DNA	DNM	b1	d	f	h ₁	h ₂	h ₃	l ₁	m	p	x	B	H	L	k	kg
GFCTS4 125-160/30/P	125	125	422	360	196	350	90	180	175	350	214	386	800	630	724	143	254
GFCTS4 125-200/40/P	125	125	368	360	196	330	90	180	160	350	214	349	716	620	754	153	252
GFCTS4 125-200/55/P	125	125	368	360	196	330	90	180	160	350	256	349	716	620	761	153	294
GFCTS4 125-250/75/P	125	125	412	360	196	340	90	180	165	350	256	388	805	630	766	150	325
GFCTS4 125-250/110/P	125	125	412	360	226	340	90	180	165	350	313	388	805	630	885	150	453
GFCTS4 150-200/55/P	150	150	471	460	211	400	115	230	175	425	256	440	900	720	791	160	356
GFCTS4 150-200/75/P	150	150	471	460	211	400	115	230	175	425	256	440	900	720	791	160	350
GFCTS4 150-250/110/P	150	150	498	460	226	405	115	230	200	425	313	466	963	755	920	158	532
GFCTS4 150-250/150/P	150	150	498	460	226	405	115	230	200	425	313	466	963	755	920	158	538
GFCTS4 150-250/185/C	150	150	498	460	226	405	115	230	200	425	360	466	963	755	980	158	610

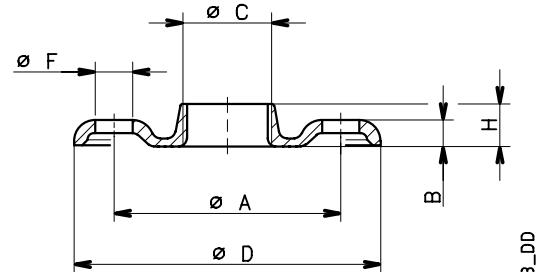
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ACCESSORIES

GFC-GFCT SERIES ROUND THREADED COUNTERFLANGES ACCORDING TO EN 1092-1

DN	ø C	DIMENSIONS (mm)				HOLES		
		ø A	B	ø D	H	ø F	N°	PN
40	Rp 1½	110	14	150	19	18	4	16
50	Rp 2	125	16	165	24	18	4	16
65	Rp 2½	145	16	185	23	18	4	16
80	Rp 3	160	17	200	27	18	8	16
100	Rp 4	180	18	220	31	18	8	16

fc-fct-ctf-tonde-f-en_a_td

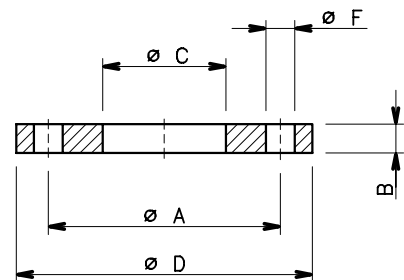


04430_B_DD

GFC-GFCT SERIES ROUND WELD COUNTERFLANGES ACCORDING TO EN 1092-1

DN	ø C	DIMENSIONS (mm)			HOLES		PN
		ø A	B	ø D	ø F	N°	
65	77	145	18	185	18	4	16
80	90	160	20	200	18	8	16
100	115,5	180	22	220	18	8	16
125	141,5	210	22	250	18	8	16
150	170,5	240	24	285	22	8	16

fc-fct-ctf-tonde-s-en_a_td

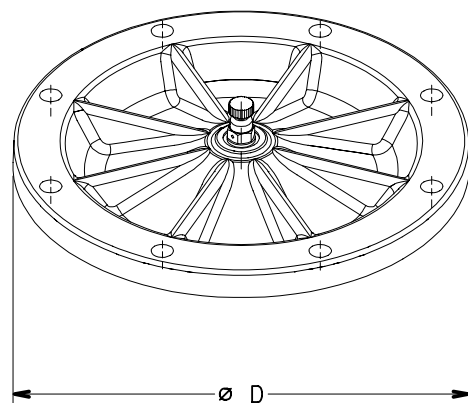


04431_A_DD

GFCT SERIES BLIND FLANGE KIT

FLANGE KIT		
PUMP TYPE	CODE	ø D
GFCT40-125 / GFCT40-160	109393750	225
GFCT50-125 / GFCT50-160		
GFCT65-125 / GFCT65-160	109393760	274
GFCT80-125 / GFCT80-160		
GFCT100-160	109393770	322
GFCT40-200 / GFCT40-250		
GFCT50-200 / GFCT50-250		
GFCT65-200 / GFCT65-250		
GFCT80-200 / GFCT80-250		
GFCT100-200 / GFCT100-250	109393800	280
GFCT125-160 / GFCT125-200		
GFCT150-200	109393810	305
GFCT125-250 / GFCT150-250	109393820	350

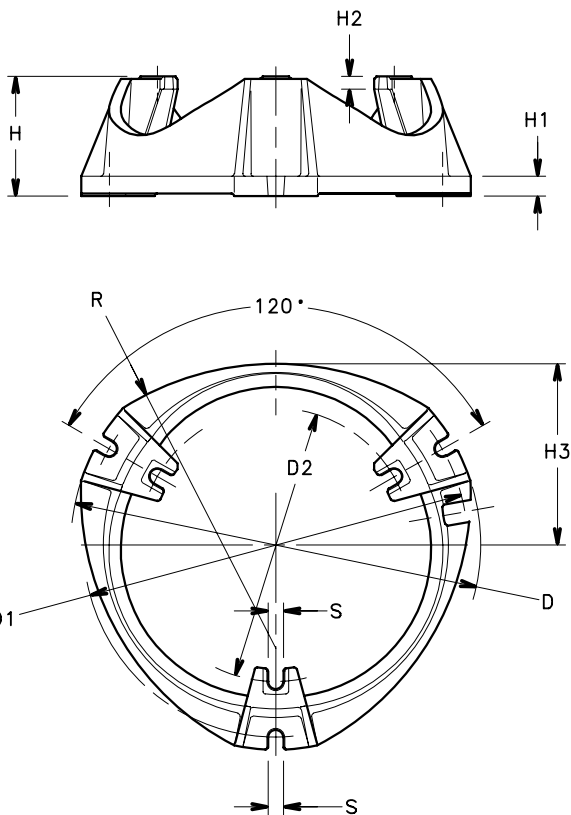
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GFC SERIES MOUNTING BASE

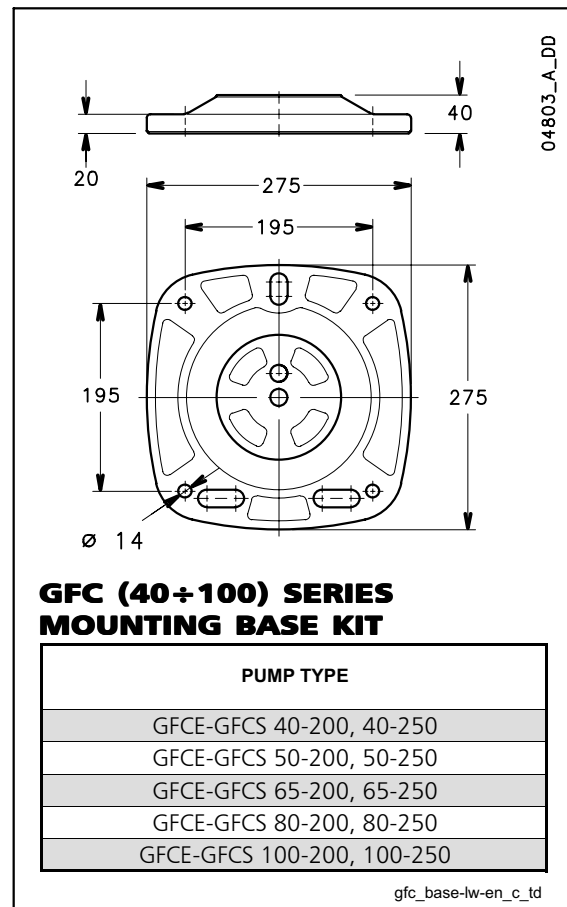
04803B_A_DD



GFC (125÷150) SERIES MOUNTING BASE KIT

PUMP TYPE	DIMENSIONS (mm)								
	R	D	D1	D2	H	H1	H2	H3	S
GFCS4 125-160, 125-200	273	410	384	274	120	20	14	183	14
GFCS4 125-250, 125-315, 150-200, 150-250	333	480	450	320	140	23	15	212	18

gfc_base-vo-en_c_td



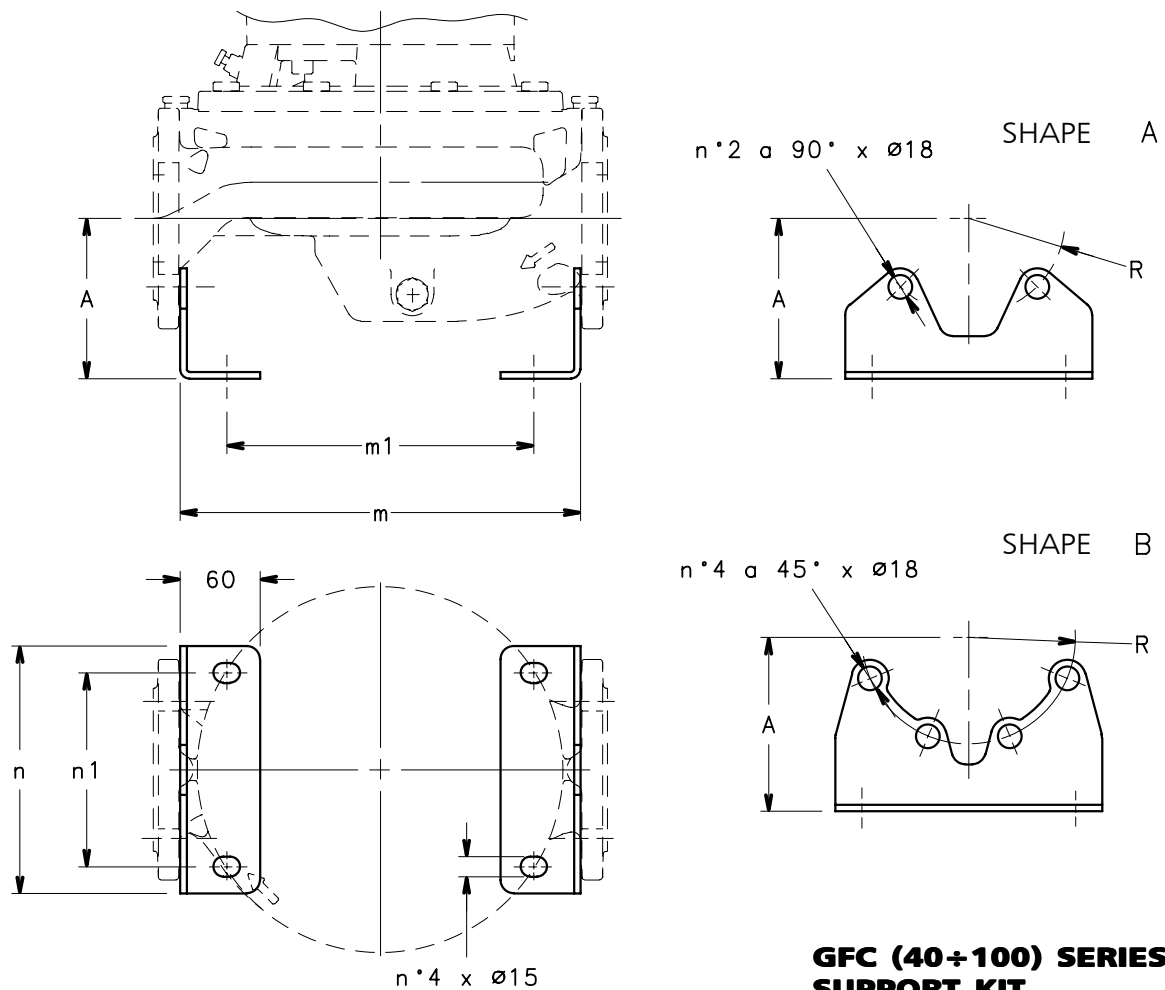
04803_A_DD

GFC (40÷100) SERIES MOUNTING BASE KIT

PUMP TYPE
GFCE-GFCS 40-200, 40-250
GFCE-GFCS 50-200, 50-250
GFCE-GFCS 65-200, 65-250
GFCE-GFCS 80-200, 80-250
GFCE-GFCS 100-200, 100-250

gfc_base-lw-en_c_td

GFC SERIES BRACKETS



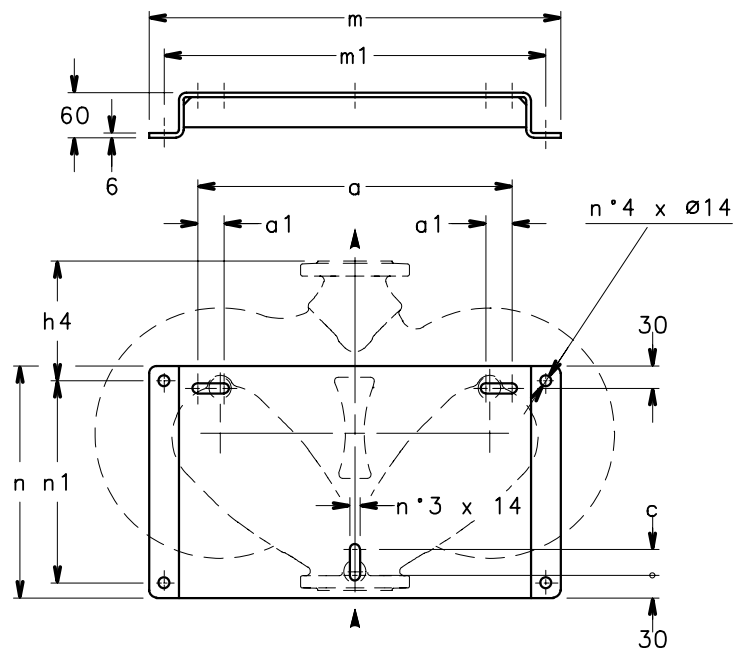
GFC (40+100) SERIES SUPPORT KIT

PUMP TYPE		SHAPE	DIMENSIONS (mm)				
			A	m	m1	n	n1
GFCE 40-125 / GFCE 40-160	GFCE4 40-125 / GFCE4 40-160	A	100	284	210	150	110
GFCS 40-125 / GFCS 40-160	GFCS4 40-125 / GFCS4 40-160						
GFCE 40-200 / GFCE 40-250	GFCE4 40-200 / GFCE4 40-250	A	100	404	330	150	110
GFCS 40-200 / GFCS 40-250	GFCS4 40-200 / GFCS4 40-250						
GFCE 50-125 / GFCE 50-160	GFCE4 50-125 / GFCE4 50-160	A	110	300	230	165	125
GFCS 50-125 / GFCS 50-160	GFCS4 50-125 / GFCS4 50-160						
GFCE 50-200 / GFCE 50-250	GFCE4 50-200 / GFCE4 50-250	A	110	400	330	165	125
GFCS 50-200 / GFCS 50-250	GFCS4 50-200 / GFCS4 50-250						
GFCE 65-125 / GFCE 65-160	GFCE4 65-125 / GFCE4 65-160	A	120	300	230	185	145
GFCS 65-125 / GFCS 65-160	GFCS4 65-160						
GFCE 65-200 / GFCE 65-250	GFCE4 65-200 / GFCE4 65-250	A	120	435	365	185	145
GFCS 65-200 / GFCS 65-250	GFCS4 65-200 / GFCS4 65-250						
GFCE 80-125 / GFCE 80-160	GFCE4 80-125	B	130	316	250	200	160
GFCS 80-125 / GFCS 80-160	GFCS4 80-125						
GFCE 80-200	GFCE4 80-200 / GFCE4 80-250	B	130	456	390	200	160
GFCS 80-200	GFCS4 80-200 / GFCS4 80-250						
GFCE 100-160	GFCE4 100-160	B	140	402	330	220	180
GFCS 100-160	GFCS4 100-160						
GFCE 100-200	GFCE4 100-200 / GFCE4 100-250	B	140	502	430	220	180
GFCS 100-200	GFCS4 100-200 / GFCS4 100-250						

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GFCT (40÷100) SERIES MOUNTING BASE KIT

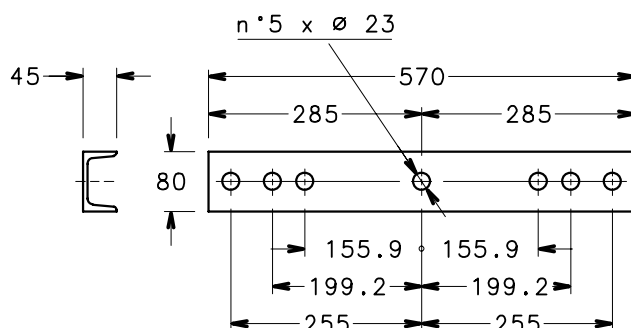


PUMP SIZE	a	a1	c	h4	m	m1	n	n1
40-125 / 40-160	330	45	25	110	460	420	250	210
50-125 / 50-160	330	45	25	115	460	420	250	210
65-125 / 65-160	330	45	25	120	460	420	250	210
80-125 / 80-160	330	45	25	130	460	420	250	210
100-160	420	35	35	188	550	510	310	270
40-200 / 40-250	420	35	35	160	550	510	310	270
50-200 / 50-250	420	35	35	160	550	510	310	270
65-200 / 65-250	420	35	35	191	550	510	310	270
80-200 / 80-250	420	35	35	190	550	510	310	270
100-200 / 100-250	420	35	35	220	550	510	310	270

fct-piede-en_a_td

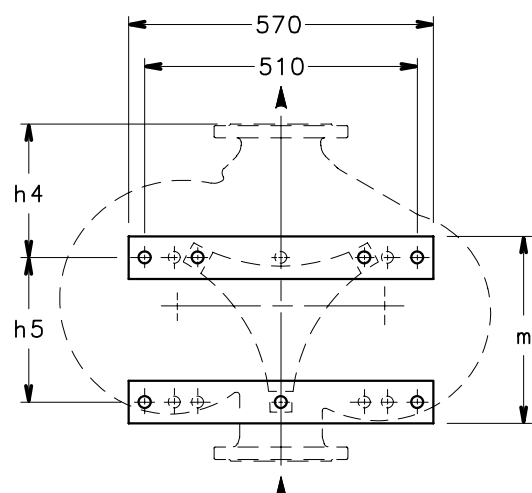
05260_A_DD

GFCT (125÷150) SERIES MOUNTING BASE KIT



PUMP TYPE	h4	h5	m
GFCTS4 125-160	260	270	350
GFCTS4 125-200	240	270	350
GFCTS4 125-250	250	270	350
GFCTS4 150-200	285	345	425
GFCTS4 150-250	290	345	425

lmz-gfcts4-piede-en_b_td



05261_A_DD

TECHNICAL APPENDIX

TYPICAL APPLICATIONS OF GFC, GFCT SERIES ELECTRIC PUMPS:

Heating, Ventilating &

Air Conditioning (HVAC):

Condensate return

Air scrubbers

Water re-circulation

Cooling towers

Cooling systems

Temperature control

Chillers

Induction heating

Heat exchangers

Water heating

Booster packagers

Graphics:

Film washing

Cooling of presses

Waste Management:

Waste treatment

Pollution control

Agriculture:

Irrigation

Greenhouses

Cotton humidifiers

Laundry:

Commercial washing

NPSH

The minimum operating values that can be reached at the pump suction end are limited by the onset of cavitation.

Cavitation is the formation of vapour-filled cavities within liquids where the pressure is locally reduced to a critical value, or where the local pressure is equal to, or just below the vapour pressure of the liquid.

The vapour-filled cavities flow with the current and when they reach a higher pressure area the vapour contained in the cavities condenses. The cavities collide, generating pressure waves that are transmitted to the walls. These, being subjected to stress cycles, gradually become deformed and yield due to fatigue. This phenomenon, characterized by a metallic noise produced by the hammering on the pipe walls, is called incipient cavitation.

The damage caused by cavitation may be magnified by electrochemical corrosion and a local rise in temperature due to the plastic deformation of the walls. The materials that offer the highest resistance to heat and corrosion are alloy steels, especially austenitic steel. The conditions that trigger cavitation may be assessed by calculating the total net suction head, referred to in technical literature with the acronym NPSH (Net Positive Suction Head).

The NPSH represents the total energy (expressed in m.) of the liquid measured at suction under conditions of incipient cavitation, excluding the vapour pressure (expressed in m.) that the liquid has at the pump inlet.

To find the static height h_z at which to install the machine under safe conditions, the following formula must be verified:

$$h_p + h_z \geq (\text{NPSH}_r + 0.5) + h_f + h_{pv} \quad (1)$$

where:

hp is the absolute pressure applied to the free liquid surface in the suction tank, expressed in m. of liquid; h_p is the quotient between the barometric pressure and the specific weight of the liquid.

hz is the suction lift between the pump axis and the free liquid surface in the suction tank, expressed in m.; h_z is negative when the liquid level is lower than the pump axis.

hf is the flow resistance in the suction line and its accessories, such as: fittings, foot valve, gate valve, elbows, etc.

h_{pv} is the vapour pressure of the liquid at the operating temperature, expressed in m. of liquid. h_{pv} is the quotient between the Pv vapour pressure and the liquid's specific weight.

0,5 is the safety factor.

The maximum possible suction head for installation depends on the value of the atmospheric pressure (i.e. the elevation above sea level at which the pump is installed) and the temperature of the liquid.

To help the user, with reference to water temperature (4° C) and to the elevation above sea level, the following tables show the drop in hydraulic pressure head in relation to the elevation above sea level, and the suction loss in relation to temperature.

Water temperature (°C)	20	40	60	80	90	110	120
Suction loss (m)	0,2	0,7	2,0	5,0	7,4	15,4	21,5

Elevation above sea level (m)	500	1000	1500	2000	2500	3000
Suction loss (m)	0,55	1,1	1,65	2,2	2,75	3,3

Friction loss is shown in the tables at pages 127-128 of this catalogue. To reduce it to a minimum, especially in cases of high suction head (over 4-5 m.) or within the operating limits with high flow rates, we recommend using a suction line having a larger diameter than that of the pump's suction port. It is always a good idea to position the pump as close as possible to the liquid to be pumped.

Make the following calculation:

Liquid: water at ~15°C $\gamma = 1 \text{ kg/dm}^3$

Flow rate required: 30 m³/h

Head for required delivery: 43 m.

Suction lift: 3,5 m.

The selection is an GFHE 40-200/75 pump whose NPSH required value is, at 30 m³/h, di 2,5 m.

For water at 15 °C

$$h_p = P_a / \gamma = 10,33\text{m}, h_{pv} = P_v / \gamma = 0,174\text{m} (0,01701 \text{ bar})$$

The H_f flow resistance in the suction line with foot valves is ~ 1,2 m.

By substituting the parameters in formula (1) with the numeric values above, we have:

$$10,33 + (-3,5) \geq (2,5 + 0,5) + 1,2 + 0,17$$

from which we have: 6,8 > 4,4

The relation is therefore verified.

TECHNICAL APPENDIX VAPOUR PRESSURE PS VAPOUR PRESSURE AND ρ DENSITY OF WATER TABLE

t °C	T K	ps bar	ρ kg/dm ³	t °C	T K	ps bar	ρ kg/dm ³	t °C	T K	ps bar	ρ kg/dm ³
0	273,15	0,00611	0,9998	55	328,15	0,15741	0,9857	120	393,15	1,9854	0,9429
1	274,15	0,00657	0,9999	56	329,15	0,16511	0,9852	122	395,15	2,1145	0,9412
2	275,15	0,00706	0,9999	57	330,15	0,17313	0,9846	124	397,15	2,2504	0,9396
3	276,15	0,00758	0,9999	58	331,15	0,18147	0,9842	126	399,15	2,3933	0,9379
4	277,15	0,00813	1,0000	59	332,15	0,19016	0,9837	128	401,15	2,5435	0,9362
5	278,15	0,00872	1,0000	60	333,15	0,1992	0,9832	130	403,15	2,7013	0,9346
6	279,15	0,00935	1,0000	61	334,15	0,2086	0,9826	132	405,15	2,867	0,9328
7	280,15	0,01001	0,9999	62	335,15	0,2184	0,9821	134	407,15	3,041	0,9311
8	281,15	0,01072	0,9999	63	336,15	0,2286	0,9816	136	409,15	3,223	0,9294
9	282,15	0,01147	0,9998	64	337,15	0,2391	0,9811	138	411,15	3,414	0,9276
10	283,15	0,01227	0,9997	65	338,15	0,2501	0,9805	140	413,15	3,614	0,9258
11	284,15	0,01312	0,9997	66	339,15	0,2615	0,9799	145	418,15	4,155	0,9214
12	285,15	0,01401	0,9996	67	340,15	0,2733	0,9793	155	428,15	5,433	0,9121
13	286,15	0,01497	0,9994	68	341,15	0,2856	0,9788	160	433,15	6,181	0,9073
14	287,15	0,01597	0,9993	69	342,15	0,2984	0,9782	165	438,15	7,008	0,9024
15	288,15	0,01704	0,9992	70	343,15	0,3116	0,9777	170	443,15	7,920	0,8973
16	289,15	0,01817	0,9990	71	344,15	0,3253	0,9770	175	448,15	8,924	0,8921
17	290,15	0,01936	0,9988	72	345,15	0,3396	0,9765	180	453,15	10,027	0,8869
18	291,15	0,02062	0,9987	73	346,15	0,3543	0,9760	185	458,15	11,233	0,8815
19	292,15	0,02196	0,9985	74	347,15	0,3696	0,9753	190	463,15	12,551	0,8760
20	293,15	0,02337	0,9983	75	348,15	0,3855	0,9748	195	468,15	13,987	0,8704
21	294,15	0,24850	0,9981	76	349,15	0,4019	0,9741	200	473,15	15,550	0,8647
22	295,15	0,02642	0,9978	77	350,15	0,4189	0,9735	205	478,15	17,243	0,8588
23	296,15	0,02808	0,9976	78	351,15	0,4365	0,9729	210	483,15	19,077	0,8528
24	297,15	0,02982	0,9974	79	352,15	0,4547	0,9723	215	488,15	21,060	0,8467
25	298,15	0,03166	0,9971	80	353,15	0,4736	0,9716	220	493,15	23,198	0,8403
26	299,15	0,03360	0,9968	81	354,15	0,4931	0,9710	225	498,15	25,501	0,8339
27	300,15	0,03564	0,9966	82	355,15	0,5133	0,9704	230	503,15	27,976	0,8273
28	301,15	0,03778	0,9963	83	356,15	0,5342	0,9697	235	508,15	30,632	0,8205
29	302,15	0,04004	0,9960	84	357,15	0,5557	0,9691	240	513,15	33,478	0,8136
30	303,15	0,04241	0,9957	85	358,15	0,5780	0,9684	245	518,15	36,523	0,8065
31	304,15	0,04491	0,9954	86	359,15	0,6011	0,9678	250	523,15	39,776	0,7992
32	305,15	0,04753	0,9951	87	360,15	0,6249	0,9671	255	528,15	43,246	0,7916
33	306,15	0,05029	0,9947	88	361,15	0,6495	0,9665	260	533,15	46,943	0,7839
34	307,15	0,05318	0,9944	89	362,15	0,6749	0,9658	265	538,15	50,877	0,7759
35	308,15	0,05622	0,9940	90	363,15	0,7011	0,9652	270	543,15	55,058	0,7678
36	309,15	0,05940	0,9937	91	364,15	0,7281	0,9644	275	548,15	59,496	0,7593
37	310,15	0,06274	0,9933	92	365,15	0,7561	0,9638	280	553,15	64,202	0,7505
38	311,15	0,06624	0,9930	93	366,15	0,7849	0,9630	285	558,15	69,186	0,7415
39	312,15	0,06991	0,9927	94	367,15	0,8146	0,9624	290	563,15	74,461	0,7321
40	313,15	0,07375	0,9923	95	368,15	0,8453	0,9616	295	568,15	80,037	0,7223
41	314,15	0,07777	0,9919	96	369,15	0,8769	0,9610	300	573,15	85,927	0,7122
42	315,15	0,08198	0,9915	97	370,15	0,9094	0,9602	305	578,15	92,144	0,7017
43	316,15	0,09639	0,9911	98	371,15	0,9430	0,9596	310	583,15	98,70	0,6906
44	317,15	0,09100	0,9907	99	372,15	0,9776	0,9586	315	588,15	105,61	0,6791
45	318,15	0,09582	0,9902	100	373,15	1,0133	0,9581	320	593,15	112,89	0,6669
46	319,15	0,10086	0,9898	102	375,15	1,0878	0,9567	325	598,15	120,56	0,6541
47	320,15	0,10612	0,9894	104	377,15	1,1668	0,9552	330	603,15	128,63	0,6404
48	321,15	0,11162	0,9889	106	379,15	1,2504	0,9537	340	613,15	146,05	0,6102
49	322,15	0,11736	0,9884	108	381,15	1,3390	0,9522	350	623,15	165,35	0,5743
50	323,15	0,12335	0,9880	110	383,15	1,4327	0,9507	360	633,15	186,75	0,5275
51	324,15	0,12961	0,9876	112	385,15	1,5316	0,9491	370	643,15	210,54	0,4518
52	325,15	0,13613	0,9871	114	387,15	1,6362	0,9476	374,15	647,30	221,20	0,3154
53	326,15	0,14293	0,9862	116	389,15	1,7465	0,9460				
54	327,15	0,15002	0,9862	118	391,15	1,8628	0,9445				

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TABLE OF FLOW RESISTANCE IN 100 m OF STRAIGHT CAST IRON PIPELINE (HAZEN-WILLIAMS FORMULA C=100)

FLOW RATE		NOMINAL DIAMETER in mm and INCHES																	
m ³ /h	l/min		15	20	25	32	40	50	65	80	100	125	150	175	200	250	300	350	400
			1/2"	3/4"	1"	1 1/4"	1 1/2"	2	2 1/2"	3"	4"	5"	6"	7"	8"	10"	12"	14"	16"
0,6	10	v	0,94	0,53	0,34	0,21	0,13			The hr values must be multiplied by: 0.71 for galvanized or painted steel pipes 0.54 for stainless steel or copper pipes 0.47 for PVC or PE pipes									
		hr	16	3,94	1,33	0,40	0,13												
0,9	15	v	1,42	0,80	0,51	0,31	0,20												
		hr	33,9	8,35	2,82	0,85	0,29												
1,2	20	v	1,89	1,06	0,68	0,41	0,27	0,17											
		hr	57,7	14,21	4,79	1,44	0,49	0,16											
1,5	25	v	2,36	1,33	0,85	0,52	0,33	0,21											
		hr	87,2	21,5	7,24	2,18	0,73	0,25											
1,8	30	v	2,83	1,59	1,02	0,62	0,40	0,25											
		hr	122	30,1	10,1	3,05	1,03	0,35											
2,1	35	v	3,30	1,86	1,19	0,73	0,46	0,30											
		hr	162	40,0	13,5	4,06	1,37	0,46											
2,4	40	v		2,12	1,36	0,83	0,53	0,34	0,20										
		hr		51,2	17,3	5,19	1,75	0,59	0,16										
3	50	v		2,65	1,70	1,04	0,66	0,42	0,25										
		hr		77,4	26,1	7,85	2,65	0,89	0,25										
3,6	60	v		3,18	2,04	1,24	0,80	0,51	0,30										
		hr		108	36,6	11,0	3,71	1,25	0,35										
4,2	70	v		3,72	2,38	1,45	0,93	0,59	0,35										
		hr		144	48,7	14,6	4,93	1,66	0,46										
4,8	80	v		4,25	2,72	1,66	1,06	0,68	0,40										
		hr		185	62,3	18,7	6,32	2,13	0,59										
5,4	90	v			3,06	1,87	1,19	0,76	0,45	0,30									
		hr			77,5	23,3	7,85	2,65	0,74	0,27									
6	100	v			3,40	2,07	1,33	0,85	0,50	0,33									
		hr			94,1	28,3	9,54	3,22	0,90	0,33									
7,5	125	v			4,25	2,59	1,66	1,06	0,63	0,41									
		hr			142	42,8	14,4	4,86	1,36	0,49									
9	150	v				3,11	1,99	1,27	0,75	0,50	0,32								
		hr				59,9	20,2	6,82	1,90	0,69	0,23								
10,5	175	v				3,63	2,32	1,49	0,88	0,58	0,37								
		hr				79,7	26,9	9,07	2,53	0,92	0,31								
12	200	v				4,15	2,65	1,70	1,01	0,66	0,42								
		hr				102	34,4	11,6	3,23	1,18	0,40								
15	250	v				5,18	3,32	2,12	1,26	0,83	0,53	0,34							
		hr				154	52,0	17,5	4,89	1,78	0,60	0,20							
18	300	v					3,98	2,55	1,51	1,00	0,64	0,41							
		hr					72,8	24,6	6,85	2,49	0,84	0,28							
24	400	v					5,31	3,40	2,01	1,33	0,85	0,54	0,38						
		hr					124	41,8	11,66	4,24	1,43	0,48	0,20						
30	500	v					6,63	4,25	2,51	1,66	1,06	0,68	0,47						
		hr					187	63,2	17,6	6,41	2,16	0,73	0,30						
36	600	v						5,10	3,02	1,99	1,27	0,82	0,57	0,42					
		hr						88,6	24,7	8,98	3,03	1,02	0,42	0,20					
42	700	v						5,94	3,52	2,32	1,49	0,95	0,66	0,49					
		hr						118	32,8	11,9	4,03	1,36	0,56	0,26					
48	800	v						6,79	4,02	2,65	1,70	1,09	0,75	0,55					
		hr						151	42,0	15,3	5,16	1,74	0,72	0,34					
54	900	v						7,64	4,52	2,99	1,91	1,22	0,85	0,62					
		hr						188	52,3	19,0	6,41	2,16	0,89	0,42					
60	1000	v							5,03	3,32	2,12	1,36	0,94	0,69	0,53				
		hr							63,5	23,1	7,79	2,63	1,08	0,51	0,27				
75	1250	v							6,28	4,15	2,65	1,70	1,18	0,87	0,66				
		hr							96,0	34,9	11,8	3,97	1,63	0,77	0,40				
90	1500	v							7,54	4,98	3,18	2,04	1,42	1,04	0,80				
		hr							134	48,9	16,5	5,57	2,29	1,08	0,56				
105	1750	v							8,79	5,81	3,72	2,38	1,65	1,21	0,93				
		hr							179	65,1	21,9	7,40	3,05	1,44	0,75				
120	2000	v								6,63	4,25	2,72	1,89	1,39	1,06	0,68			
		hr								83,3	28,1	9,48	3,90	1,84	0,96	0,32			
150	2500	v								8,29	5,31	3,40	2,36	1,73	1,33	0,85			
		hr								126	42,5	14,3	5,89	2,78	1,45	0,49			
180	3000	v									6,37	4,08	2,83	2,08	1,59	1,02	0,71		
		hr									59,5	20,1	8,26	3,90	2,03	0,69	0,28		
210	3500	v									7,43	4,76	3,30	2,43	1,86	1,19	0,83		
		hr									79,1	26,7	11,0	5,18	2,71	0,91	0,38		
240	4000	v									8,49	5,44	3,77	2,77	2,12	1,36	0,94		
		hr									101	34,2	14,1	6,64	3,46	1,17	0,48		
300	5000	v										6,79	4,72	3,47	2,65	1,70	1,18		
		hr										51,6	21,2	10,0	5,23	1,77	0,73		
360	6000	v										8,15	5,66	4,16	3,18	2,04	1,42		
		hr										72,3	29,8	14,1	7,33	2,47	1,02		
420	7000	v											6,61	4,85	3,72	2,38	1,65	1,21	
		hr											39,6	18,7	9,75	3,29	1,35	0,64	
480	8000	v											7,55	5,55	4,25	2,72	1,89	1,39	
		hr											50,7	23,9	12,49	4,21	1,73	0,82	
540	9000	v											8,49	6,24	4,78	3,06	2,12	1,56	1,19
		hr											63,0	29,8	15,5	5,24	2,16	1,02	0,53
600	10000	v												6,93	5,31	3,40	2,36	1,73	1,33
		hr												36,2	18,9	6,36	2,62	1,24	0,65

G-at-pct_a_th

hr = flow resistance for 100m of straight pipeline (m)

V = water speed (m/s)

FLOW RESISTANCE

TABLE OF FLOW RESISTANCE IN BENDS, VALVES AND GATES

The flow resistance is calculated using the equivalent pipeline length method according to the table below:

ACCESSORY TYPE	DN											
	25	32	40	50	65	80	100	125	150	200	250	300
	Equivalent pipeline length (m)											
45° bend	0,2	0,2	0,4	0,4	0,6	0,6	0,9	1,1	1,5	1,9	2,4	2,8
90° bend	0,4	0,6	0,9	1,1	1,3	1,5	2,1	2,6	3,0	3,9	4,7	5,8
90° smooth bend	0,4	0,4	0,4	0,6	0,9	1,1	1,3	1,7	1,9	2,8	3,4	3,9
Union tee or cross	1,1	1,3	1,7	2,1	2,6	3,2	4,3	5,3	6,4	7,5	10,7	12,8
Gate	-	-	-	0,2	0,2	0,2	0,4	0,4	0,6	0,9	1,1	1,3
Non return valve	1,1	1,5	1,9	2,4	3,0	3,4	4,7	5,9	7,4	9,6	11,8	13,9

G-a-pcv_a_th

The table is valid for the Hazen Williams coefficient $C = 100$ (cast iron pipework). For steel pipework, multiply the values by 1.41. For stainless steel, copper and coated cast iron pipework, multiply the values by 1.85.

When the **equivalent pipeline length** has been determined, the flow resistance is obtained from the table of flow resistance.

The values given are guideline values which are bound to vary slightly according to the model, especially for gate valves and non-return valves, for which it is a good idea to check the values supplied by the manufacturers.

VOLUMETRIC CAPACITY

Litres per minute l/min	Cubic metres per hour m ³ /h	Cubic feet per hour ft ³ /h	Cubic feet per minute ft ³ /min	Imp. gal. per minute Imp. gal./min	US gal. per minute Us gal./min
1,0000	0,0600	2,1189	0,0353	0,2200	0,2642
16,6667	1,0000	35,3147	0,5886	3,6662	4,4029
0,4719	0,0283	1,0000	0,0167	0,1038	0,1247
28,3168	1,6990	60,0000	1,0000	6,2288	7,4805
4,5461	0,2728	9,6326	0,1605	1,0000	1,2009
3,7854	0,2271	8,0208	0,1337	0,8327	1,0000

PRESSURE AND HEAD

Newton per square metre N/m ²	kilo Pascal kPa	bar bar	Pound force per square inch psi	metre of water m H ₂ O	millimetre of mercury mm Hg
1,0000	0,0010	1 x 10 ⁻⁵	1.45 x 10 ⁻⁴	1.02 x 10 ⁻⁴	0,0075
1000,0000	1,0000	0,0100	0,1450	0,1020	7,5006
1 x 10 ⁵	100,0000	1,0000	14,5038	10,1972	750,0638
6894,7570	6,8948	0,0689	1,0000	0,7031	51,7151
9806,6500	9,8067	0,0981	1,4223	1,0000	73,5561
133,3220	0,1333	0,0013	0,0193	0,0136	1,0000

LENGTH

millimetre mm	centimetre cm	metre m	inch in	foot ft	yard yd
1,0000	0,1000	0,0010	0,0394	0,0033	0,0011
10,0000	1,0000	0,0100	0,3937	0,0328	0,0109
1000,0000	100,0000	1,0000	39,3701	3,2808	1,0936
25,4000	2,5400	0,0254	1,0000	0,0833	0,0278
304,8000	30,4800	0,3048	12,0000	1,0000	0,3333
914,4000	91,4400	0,9144	36,0000	3,0000	1,0000

VOLUME

cubic metre m ³	litre litro	millilitre ml	imp. Gallon imp. gal.	US gallon US gal.	cubic foot ft ³
1,0000	1000,0000	1 x 10 ⁶	219,9694	264,1720	35,3147
0,0010	1,0000	1000,0000	0,2200	0,2642	0,0353
1 x 10 ⁻⁶	0,0010	1,0000	2.2 x 10 ⁻⁴	2.642 x 10 ⁻⁴	3.53 x 10 ⁻⁵
0,0045	4,5461	4546,0870	1,0000	1,2009	0,1605
0,0038	3,7854	3785,4120	0,8327	1,0000	0,1337
0,0283	28,3168	28316,8466	6,2288	7,4805	1,0000

G-at_pp-en_a_sc

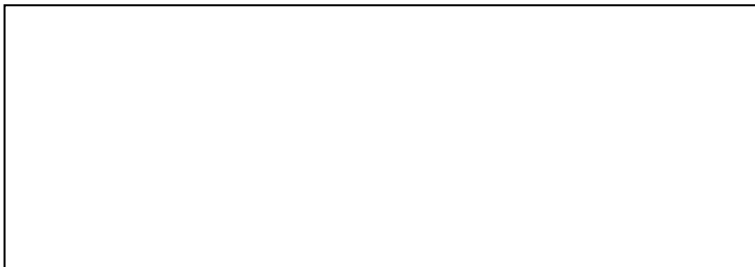
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Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

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