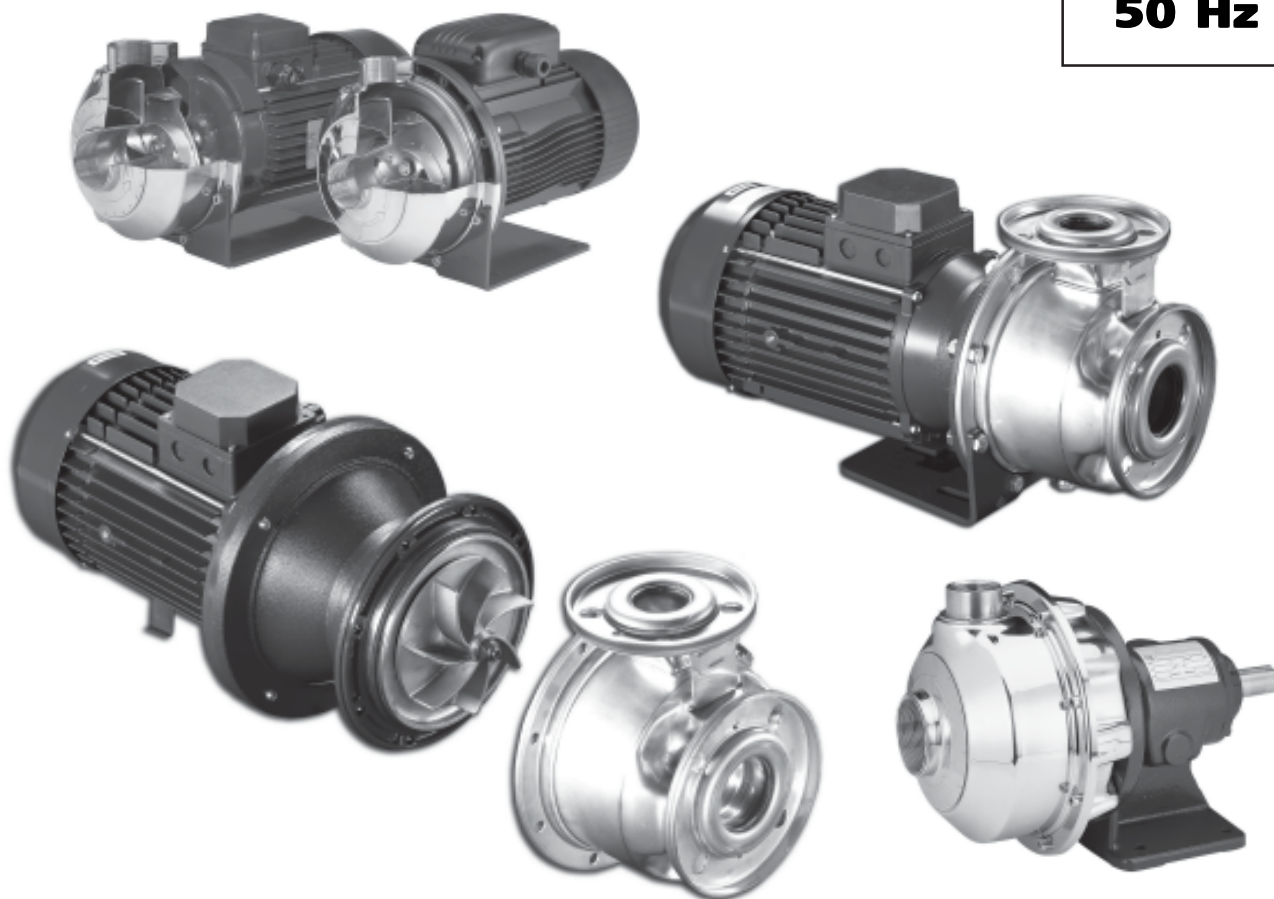


50 Hz



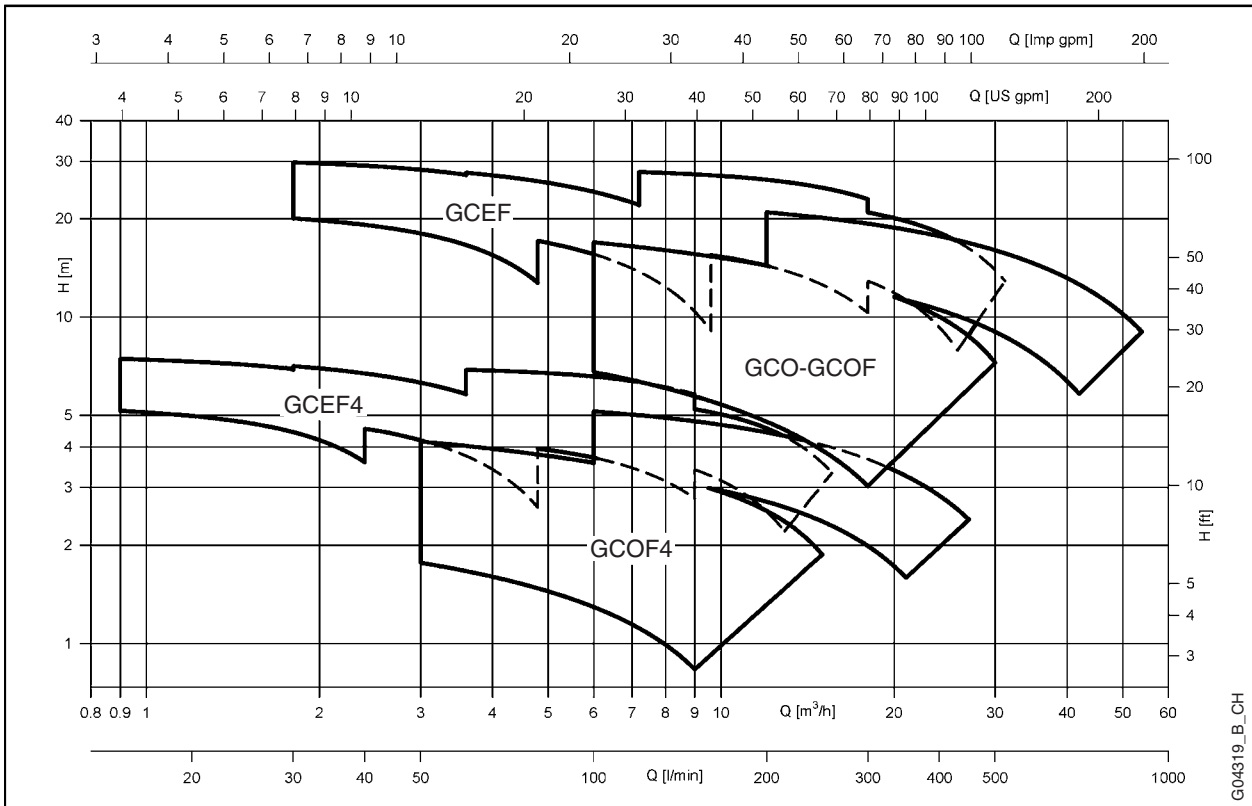
GCO-GSHO Series

CENTRIFUGAL PUMPS WITH OPEN IMPELLER EQUIPPED WITH
IE2/IE3 MOTORS COMPLYING WITH REGULATION (EC) no. 640/2009

GCOF-GCEF Series

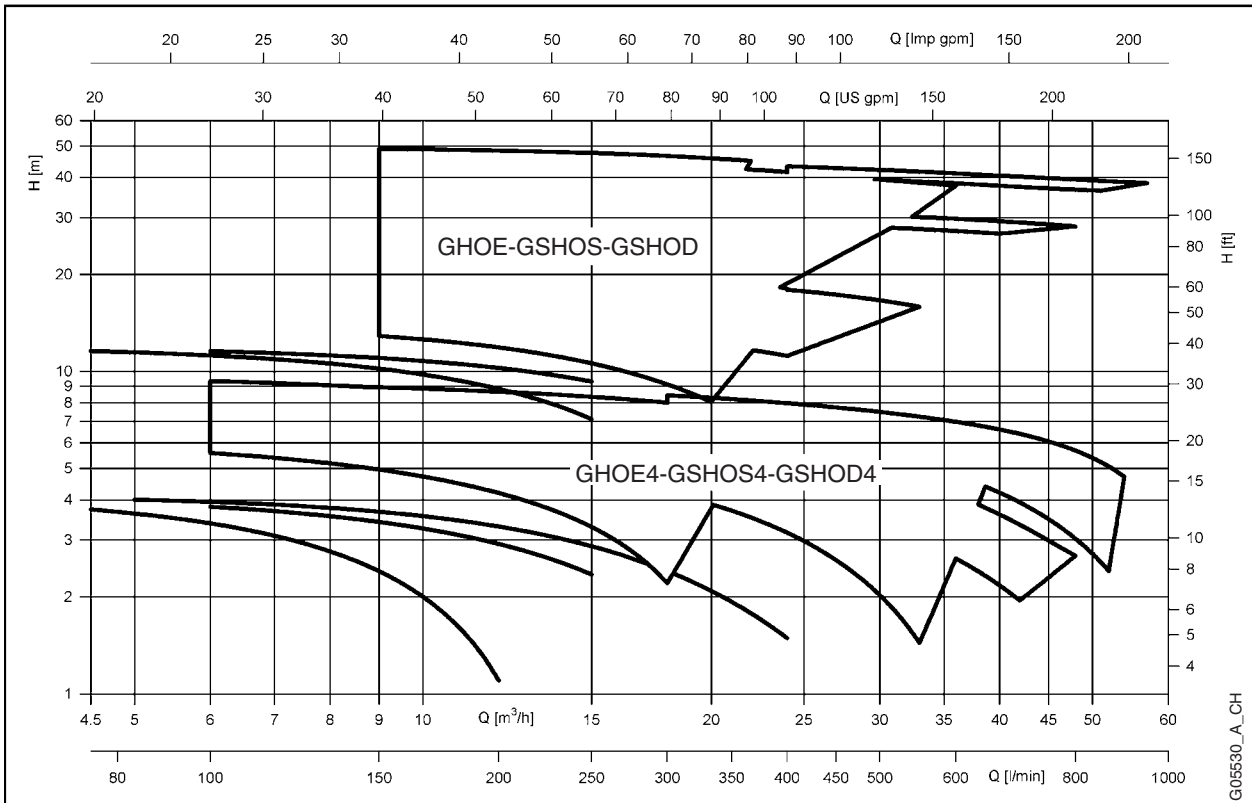
CENTRIFUGAL PUMPS BARE SHAFT

**GCO - GCOF - GCEF SERIES
 HYDRAULIC PERFORMANCE RANGE AT 50 Hz**



G04319_B_CH

**GSHO SERIES
 HYDRAULIC PERFORMANCE RANGE AT 50 Hz**



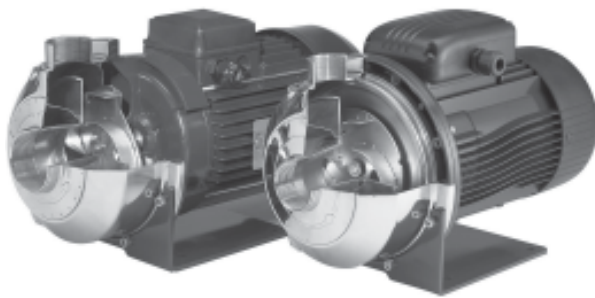
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Open impeller centrifugal electric pumps and threaded connections

GCO-GCOM Series



MARKET SECTORS

CIVIL, INDUSTRIAL.

APPLICATIONS

- Washing of metal parts and/or surface treatment.
- Washing of produce in the packaging industry.
- Food industry washing equipment and systems.
- Dyeing plant and textile industry.
- Plants for the circulation and transfer of moderately viscous liquids, with light chemical aggressiveness.
- Industrial washing machines and commercial dishwashers.

CONSTRUCTION FEATURES

- Close-coupled, single-impeller centrifugal pump with axial suction and radial delivery.
- Threaded suction and delivery ports (Rp ISO 7).
- Compact construction; adaptor for motor/pump coupling; the impeller is keyed directly to the motor shaft extension.
- Back pull-out design; no need to disconnect the pump body from the system pipes.
- **AISI 316L** stainless steel open impeller with four pressed vanes welded onto base disk.
- Impeller's front **wear surface** consists of a sturdy **AISI 316L** stainless steel plate welded onto the suction port.
- **AISI 316L** stainless steel pump body and seal housing disk, with no diffusers or cavities for easier cleaning and maintenance.
- Pump body tightened by 8 screws allowing rotation of the discharge head.
- **Mechanical seal:**
Standard version: Carbon/Ceramica faces, **FPM** elastomers. The other parts are made of AISI 316L stainless steel.
"K" version : faces are made of **Silicon Carbide and Tungsten Carbide.** **FPM** Elastomers. The other parts are made of AISI 316L stainless steel.
- **FPM O-Rings.**

SPECIFICATIONS

PUMP

- **Delivery** up to 900 l/min (54 m³/h).
- **Head** up to 24 m.
- **Temperature** of pumped liquid: -10°C to +110°C for standard version.
- Maximum working **pressure** : 8 bar (PN 8).
- **Suspended solids** handled up to:
GCO350: 11 mm.
GCO500: 20 mm.

MOTOR

- Asynchronous, squirrel cage rotor, enclosed construction in aluminium casing, external ventilation.
- **Protection:** IP55.
- Class 155 (F) **insulation.**
- Performances according to EN 60034-1.
- Maximum ambient **temperature:** 40°C.
- **Standard voltage:**
- **Single-phase** version: 220-240 V 50 Hz, 2 poles with built-in automatic reset overload protection up to 1,5 kW. For higher powers the protection must be provided by the user.
- **Three-phase** version: 220-240/380-415 V 50 Hz, 2 poles; overload protection to be provided by the user.
- Condensate drain plugs on all motors.

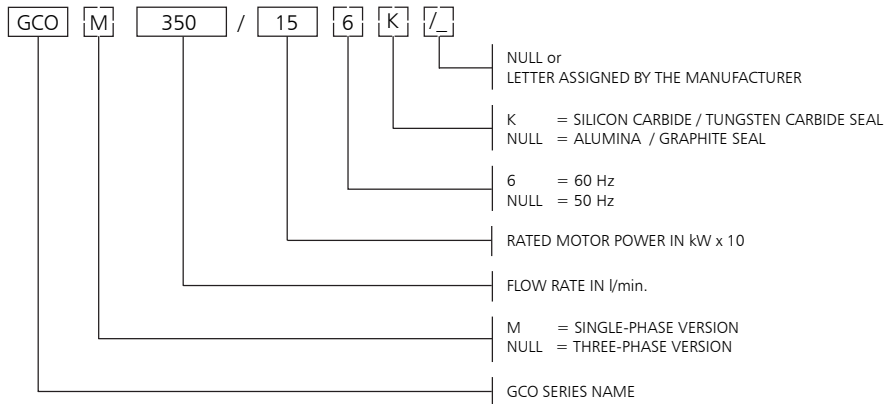
□ **All components in contact with pumped liquid are made of AISI 316L stainless steel**

□ **Mechanical seal made of Silicon carbide/tungsten carbide/FPM in the "K" version**

OPTIONAL FEATURES

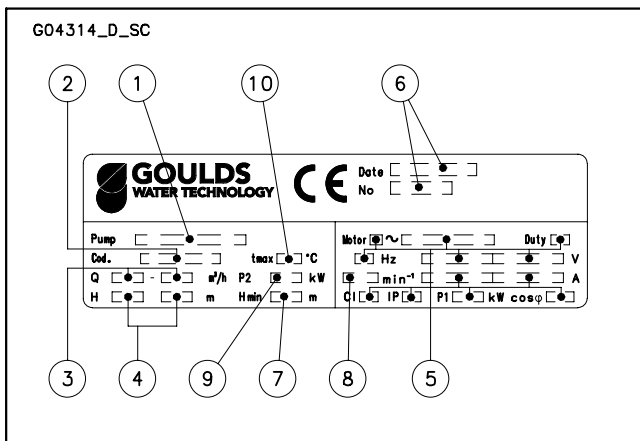
- Different voltages and frequencies.
- Different materials for the mechanical seal and O-rings.

GCO - GCOM SERIES IDENTIFICATION CODE



EXAMPLE : GCOM 350/156K
GCO series electric pump, single-phase, flow rate 350 l/min,
rated power 1,5 kW, 60 Hz version, Silicon Carbide / Tungsten Carbide seal.

RATING PLATE



LEGEND

- 1 - Electric pump type
- 2 - Code
- 3 - Delivery range
- 4 - Head range
- 5 - Motor type
- 6 - Date of manufacture and serial number
- 7 - Minimum head
- 8 - Speed
- 9 - Rated output
- 10 - Maximum operating temperature

**GCO - GCOM SERIES
LIST OF MODELS AND TABLE OF MATERIALS**

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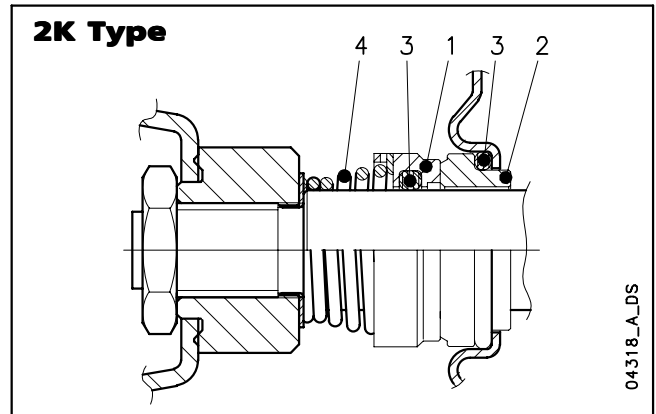
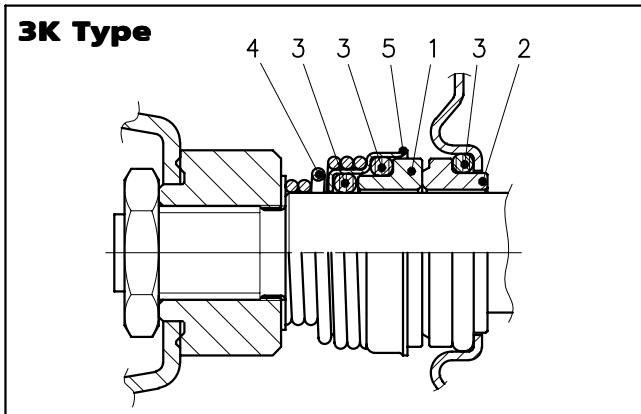
VERSIONS	
SINGLE-PHASE	THREE-PHASE
GCOM 350/03	GCO 350/03
GCOM 350/05	GCO 350/05
GCOM 350/07	GCO 350/07
GCOM 350/09	GCO 350/09
GCOM 350/11	GCO 350/11
GCOM 350/15	GCO 350/15
GCOM 500/15	GCO 500/15
GCOM 500/22	GCO 500/22
	GCO 500/30

gco-en_a_mo

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
2	Impeller	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
3	Seal housing	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
4	Shaft extension	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Impeller locknut and washer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
6	Fill/drain plugs	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
7	Mechanical seal	Ceramic / resin impregnated Carbon / FPM (standard version)		
8	Elastomers	FPM (standard version)		
9	Adapter	Aluminium	EN 1706-AC-AISi11Cu2(Fe)DF	ASTM Class 25
10	Pump body fastening bolts & screws	Galvanized steel		

co-en_a_tm

**GCO - GCOM SERIES
MECHANICAL SEAL**



04318_A_DS

LIST OF MATERIALS

POSITION 1 - 2	POSITION 3	POSITION 4 - 5
B : Resin impregnated carbon	E : EPDM	G : AISI 316
C : Special resin impregnated carbon	V : FPM	
V : Ceramic		
Q ₁ : Silicon Carbide		
U ₃ : Tungsten Carbide		

SEAL TYPES

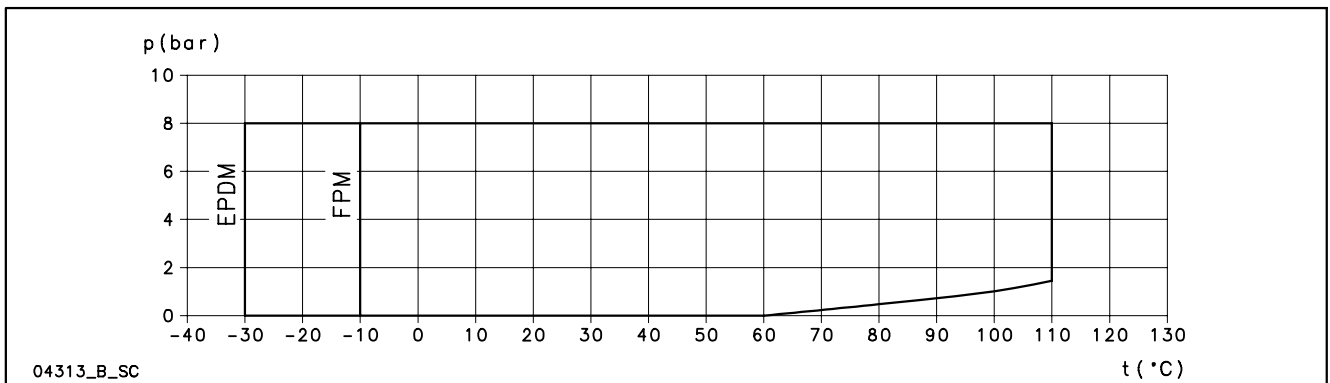
co_ten-mec-3-en_a_tm

TYPE	POSITION					TEMPERATURE (°C)
	1 ROTATING ASSEMBLY	2 FIXED ASSEMBLY	3 ELASTOMERS	4 SPRINGS	5 OTHER COMPONENTS	
STANDARD MECHANICAL SEAL						
3K - VB V G G	V	B	V	G	G	-10 +110
OTHER MECHANICAL SEAL TYPES						
3K - VC V G G	V	C	V	G	G	-10 +110
3K - Q ₁ CVGG	Q ₁	C	V	G	G	-10 +110
3K - Q ₁ Q ₁ VGG	Q ₁	Q ₁	V	G	G	-10 +110
2K - U ₃ Q ₁ VGG	U ₃	Q ₁	V	G	G	-10 +110
2K - U ₃ U ₃ VGG *	U ₃	U ₃	V	G	G	-10 +110
3K - VBEGG	V	B	E	G	G	-30 +110
3K - VCEGG	V	C	E	G	G	-30 +110
3K - Q ₁ CEGG	Q ₁	C	E	G	G	-30 +110
3K - Q ₁ Q ₁ EGG	Q ₁	Q ₁	E	G	G	-30 +110
2K - U ₃ Q ₁ EGG	U ₃	Q ₁	E	G	G	-30 +110
2K - U ₃ U ₃ EGG *	U ₃	U ₃	E	G	G	-30 +110

* Version with anti-rotation lockpin available on request.

co_tipi-ten-mec-3-en_b_tc

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



04313_B_SC

GCO - GCOM SERIES
HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 2 POLES

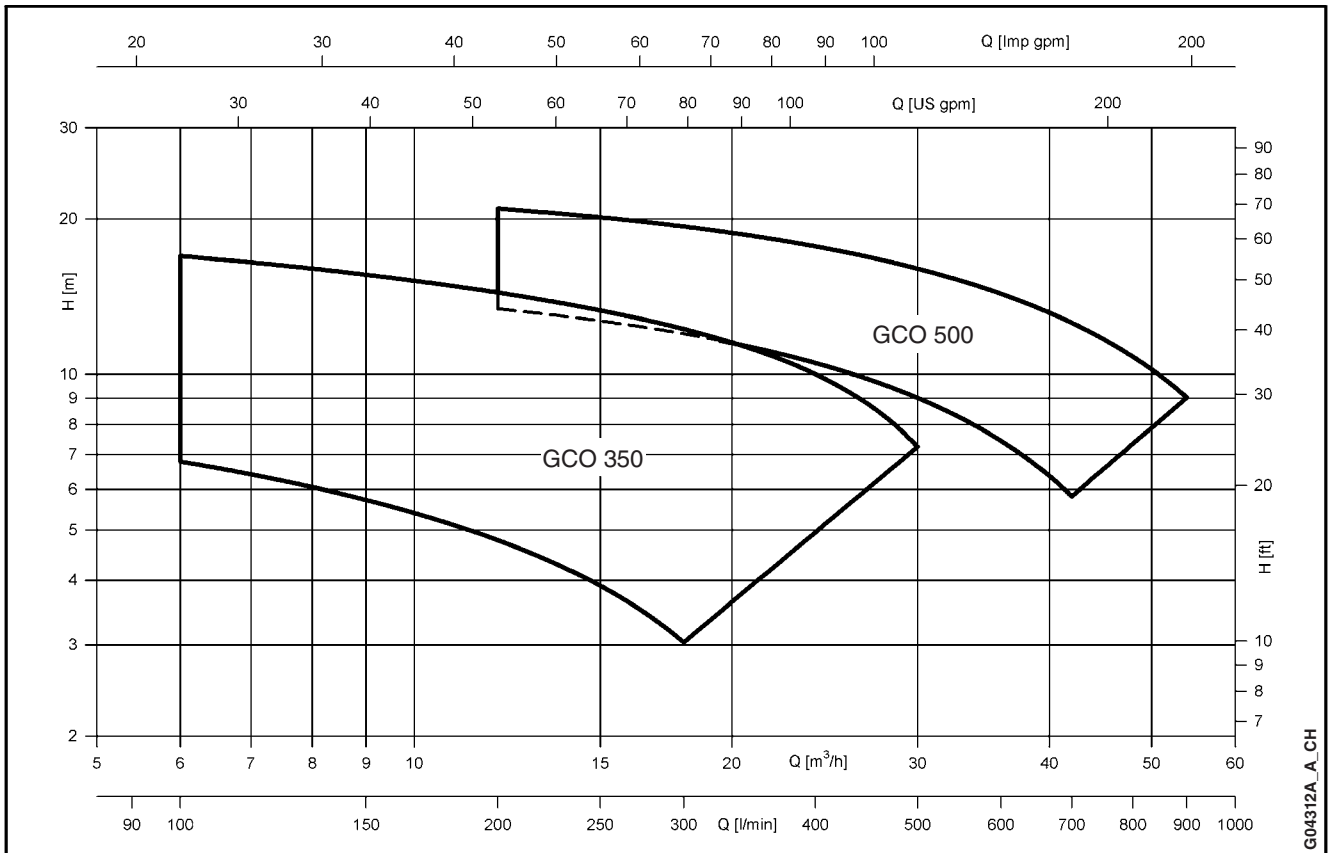


TABLE OF HYDRAULIC PERFORMANCES AT 50 Hz, 2 POLES

ELECTRIC PUMP TYPE	RATED POWER		Q = DELIVERY																				
			H = TOTAL HEAD METRES COLUMN OF WATER																				
			l/min	0	100	120	160	200	240	280	300	350	375	400	450	500	600	650	700	800	900		
kW		HP		m³/h	0	6	7,2	9,6	12	14,4	16,8	18	21	22,5	24	27	30	36	39	42	48	54	
GCO(M) 350/03	0,37	0,5	9,5	6,8	6,3	5,5	4,8	4,1	3,4	3,0													
GCO(M) 350/05	0,55	0,75	12,0	9,2	8,8	7,9	7,1	6,3	5,5	5,1	4,0												
GCO(M) 350/07	0,75	1	13,7	11,2	10,8	9,9	9,1	8,2	7,4	6,9	5,8	5,3											
GCO(M) 350/09	0,9	1,2	15,7	12,7	12,2	11,3	10,5	9,6	8,8	8,3	7,2	6,6	5,9										
GCO(M) 350/11	1,1	1,5	17,3	14,3	13,8	12,9	12,0	11,2	10,5	10,1	9,1	8,6	8,0	6,8									
GCO(M) 350/15	1,5	2	20,3	16,9	16,4	15,3	14,4	13,5	12,7	12,2	11,2	10,6	10,0	8,7	7,2								
GCO(M) 500/15	1,5	2	16,0				13,4	12,8	12,3	12,0	11,3	10,9	10,5	9,8	9,0	7,4	6,6	5,8					
GCO(M) 500/22	2,2	3	19,6				17,3	16,7	16,2	15,9	15,2	14,9	14,5	13,7	13,0	11,3	10,4	9,6	7,7				
GCO 500/30	3	4	24,1				20,9	20,3	19,7	19,3	18,5	18,1	17,7	16,9	16,0	14,3	13,5	12,6	10,8	9,0			

gco-2p50-en_d_th

PUMP TYPE	MOTOR TYPE	INPUT POWER*	INPUT CURRENT*	CAPACIT.	PUMP TYPE	MOTOR TYPE	INPUT POWER*	INPUT CURRENT*	INPUT CURRENT*
1~		kW	A	µF / 450 V	3~		kW	A	A
GCOM350/03	SM63BG/1045	0,63	2,82	14	GC0350/03	SM63BG/304	0,64	2,53	1,46
GCOM350/05	SM71BG/1055	0,88	4,25	16	GC0350/05	SM71BG/305	0,79	2,70	1,56
GCOM350/07	SM71BG/1075	1,02	4,67	20	GC0350/07	SM80BG/307PE	0,92	2,96	1,71
GCOM350/09	SM71BG/1095	1,21	5,46	25	GC0350/09	SM80BG/311PE	1,08	3,72	2,15
GCOM350/11	SM80BG/1115	1,75	7,85	30	GC0350/11	SM80BG/311PE	1,61	4,87	2,81
GCOM350/15	SM80BG/1155	2,04	9,21	40	GC0350/15	SM80BG/315PE	1,87	5,75	3,32
GCOM500/15	SM80BG/1155	2,02	9,12	40	GC0500/15	SM80BG/315PE	1,84	5,70	3,29
GCOM500/22	PLM90BG/1225	2,72	12,7	70	GC0500/22	PLM90BG/322	2,66	8,27	4,78
-	-	-	-	-	GC0500/30	PLM90BG/330	3,80	11,4	6,57

*Maximum value in specified range.

MOTORS FOR GCO 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.

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 (incorporated automatic-reset overload protection).
- **Three-phase** version: 220-240/380-415 V 50 Hz (overload protection to be provided by the user).

SINGLE-PHASE MOTORS AT 50 Hz, 2 POLES

P _N kW	MOTOR TYPE	IEC SIZE	Construction Design	INPUT		CAPACITOR		DATA FOR 230 V 50 Hz VOLTAGE						
				CURRENT I _N (A)	220-240 V	μF	V	n _N min ⁻¹	I _s / I _N	η %	cosφ	T _N Nm	T _s /T _N	T _m /T _N
0,4	SM63BG/1045	63	SPECIAL	2,79-2,85	14	450	2745	2,64	65,1	0,96	1,39	0,68	1,63	
0,55	SM71BG/1055	71		3,76-3,99	16	450	2820	3,72	68,9	0,91	1,86	0,61	2,00	
0,75	SM71BG/1075	71		4,90-4,85	20	450	2765	3,42	70,1	0,96	2,59	0,58	1,75	
0,95	SM71BG/1095	71		6,25-5,89	25	450	2740	3,39	71,1	0,98	3,31	0,58	1,66	
1,1	SM80BG/1115	80		6,88-6,65	30	450	2800	3,89	74,7	0,96	3,75	0,46	1,72	
1,5	SM80BG/1155	80		9,21-8,58	40	450	2810	4,00	76,1	0,98	5,09	0,39	1,74	
2,2	PLM80BG/1225	90		12,5-11,6	70	450	2825	4,47	82,4	0,97	7,43	0,53	1,87	

THREE-PHASE MOTORS AT 50 Hz, 2 POLES

co-motm-2p50-en_a_te

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					
0,4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	By June 2011	
0,55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
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	82,5	82,0	78,9		3
0,9	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	84,0	84,0	81,4		3
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	84,0	84,0	81,4		3
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	85,6	86,0	84,0		3
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	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	85,5	86,8	85,6		2

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	I _s / I _N	T _N Nm	T _s /T _N	T _m /T _N
	Model										
0,4	SM63BG/304		63	SPECIAL	2	50	0,66	4,32	1,38	4,14	3,13
0,55	SM71BG/305		71				0,74	5,97	1,85	3,74	3,56
0,75	SM80BG/307PE		80				0,78	7,38	2,48	3,57	3,75
0,9	SM80BG/311PE		80				0,79	8,31	3,63	3,95	3,95
1,1	SM80BG/311PE		80				0,79	8,31	3,63	3,95	3,95
1,5	SM80BG/315PE		80				0,80	8,80	4,96	4,31	4,10
2,2	PLM90BG/322		90				0,80	8,63	7,25	3,74	3,71
3	PLM90BG/330		90				0,82	8,39	9,96	3,50	3,32

P _N kW	Voltage U _N V											n _N min ⁻¹	See note.	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					
0,4	2,20	2,34	2,51	1,27	1,35	1,45	-	-	-	-	-	2740 ÷ 2790	≤ 1000	-15 / 40	No	
0,55	2,56	2,56	2,62	1,48	1,48	1,51	-	-	-	-	-	2825 ÷ 2850				
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				
0,9	4,19	4,14	4,16	2,42	2,39	2,40	2,41	2,38	2,38	1,39	1,37	2870 ÷ 2900				
1,1	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				

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

gco-ie2-mott-2p50-en_b_te

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

AVAILABLE VOLTAGES MOTORS FOR GCO SERIES

P _N kW	IEC SIZE	SINGLE-PHASE							
		50 Hz				60 Hz			
		1 x 220-240				1 x 220-230			
		1 x 100				1 x 100			
		1 x 110-120				1 x 110-115			
		1 x 120-127				1 x 120-127			
		1 x 200-210				1 x 200-210			
0,4	63	s	o	o	s	-	o	-	-
0,55	71	s	o	o	s	o	o	o	o
0,75	71	s	o	o	s	o	o	o	o
0,95	71	s	o	o	s	o	o	o	o
1,1	80	s	-	o	s	-	o	-	o
1,5	80	s	-	-	s	-	o	-	o
2,2	90	s	-	-	s	-	-	-	-

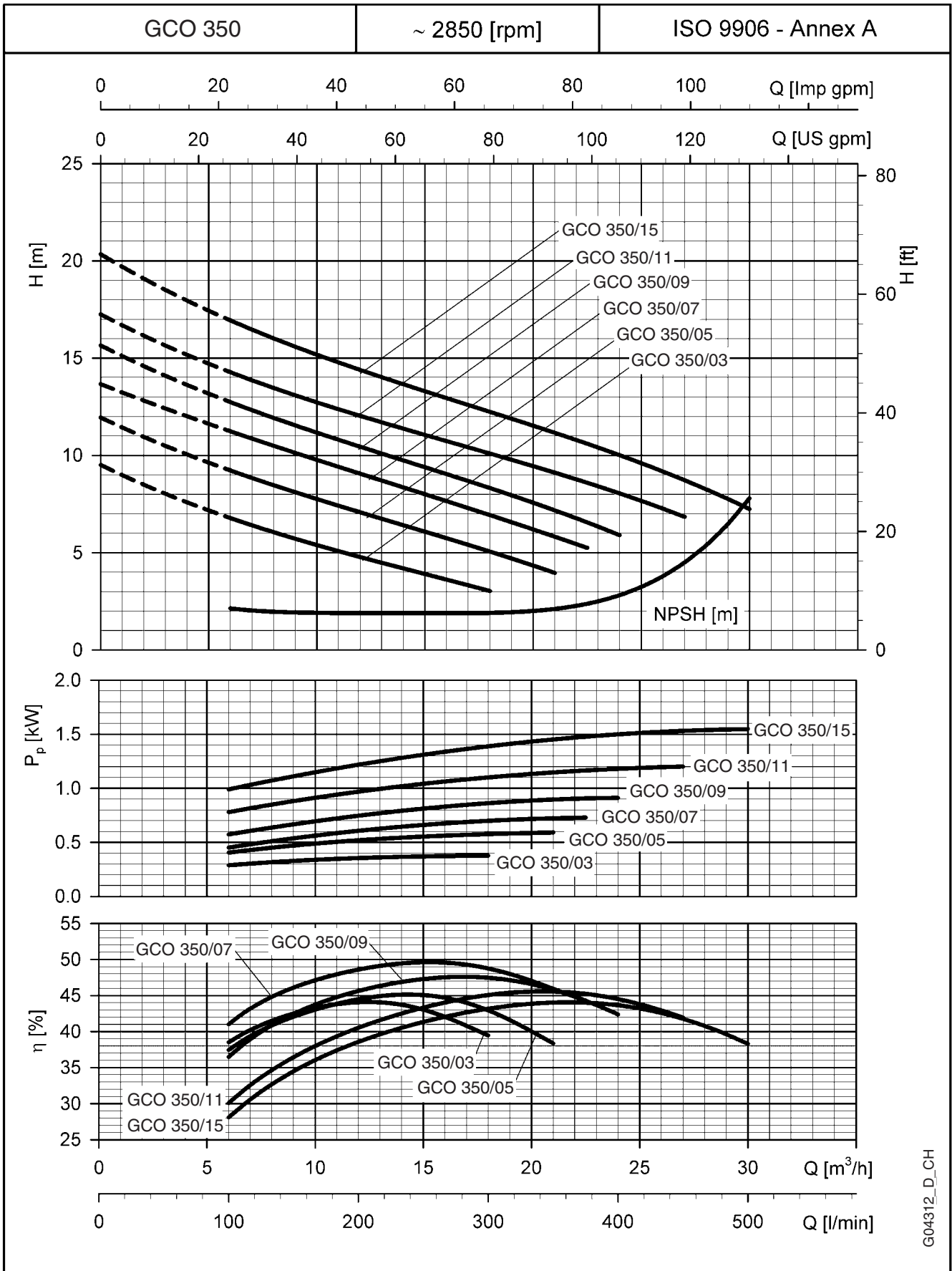
s = Standard voltage o = Optional voltage

P _N kW	THREE-PHASE - 2 POLES														
	50 Hz						60 Hz						50/60 Hz		
	3 x 220-230-240/380-400-415						3 x 220-230/380-400						3 x 230/400 50 Hz		
	3 x 380-400-415/660-690						3 x 255-265-277/440-460-480						3 x 265/460 60 Hz		
	3 x 200-208/346-360						3 x 380-400/660-690						3 x 400/690 50 Hz		
	3 x 255-265/440-460						3 x 440-460-480/-						3 x 460/- 60 Hz		
	3 x 290-300/500-525						3 x 110-115/190-200						3 x 460/- 60 Hz		
	3 x 440-460/-						3 x 200-208/346-360								
	3 x 500-525/-						3 x 330-346/575-600								
	3 x 220-230/380-400						3 x 575/-								
0,4	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o
0,55	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o
0,75	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o
0,95	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o
1,1	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o
1,5	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o
2,2	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o
3	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o

- = Not available

co-volt-low-a-en_a_te

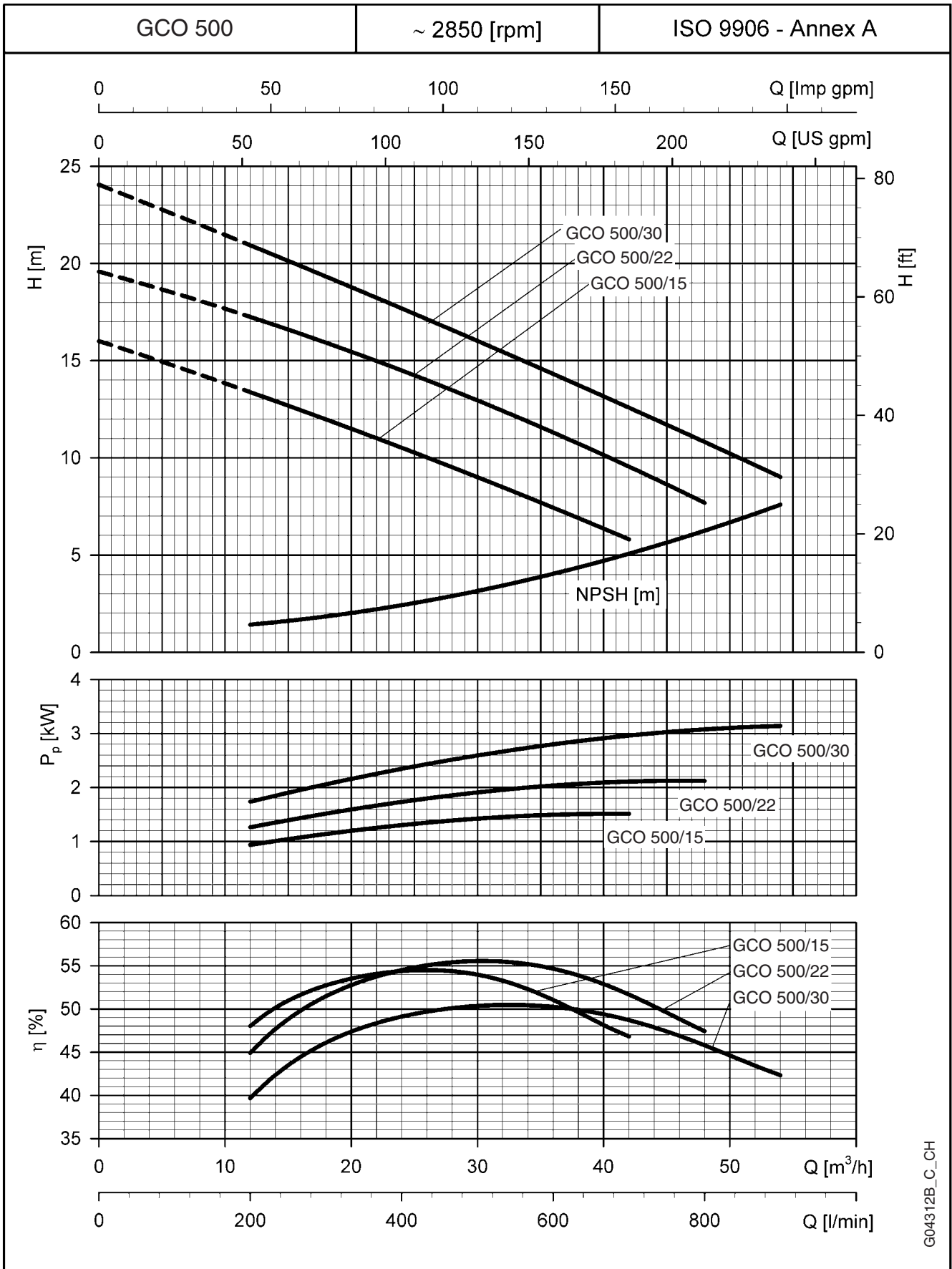
GCO350 SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



G04312_D_CH

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 $\nu = 1 \text{ mm}^2/\text{sec}$.

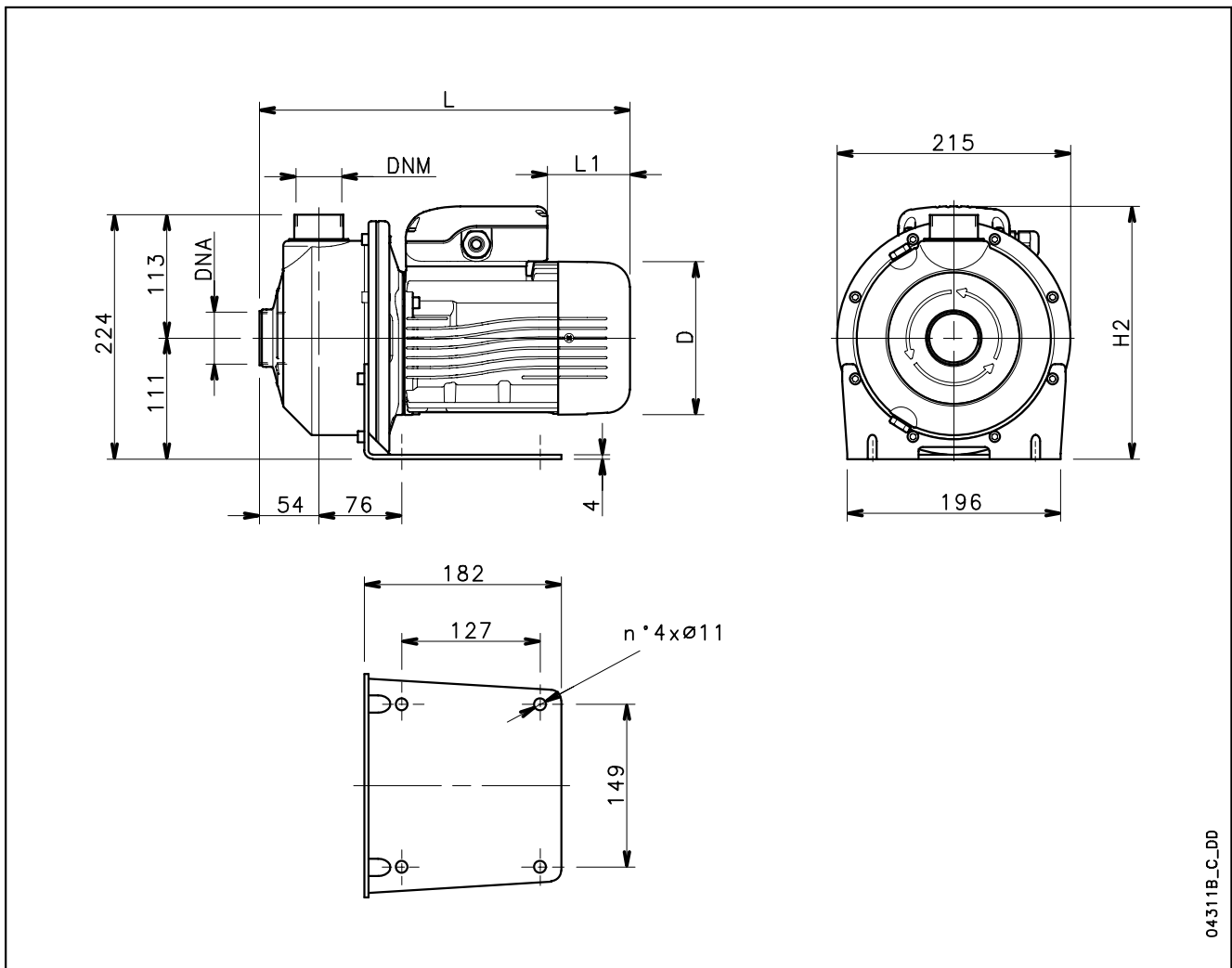
**GCO500 SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



G04312B_C_CH

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 $\nu = 1 \text{ mm}^2/\text{sec}$.

GCO SERIES
DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES



04311B_C_DD

PUMP TYPE	DIMENSIONS (mm)				DNA	DNM	WEIGHT kg
	D	H2	L	L1			
GCOM 350/03/A	120	222	325	62	Rp 1½	Rp 1¼	10
GCOM 350/05/A	140	232	339	76	Rp 1½	Rp 1¼	11,9
GCOM 350/07/A	140	232	339	76	Rp 1½	Rp 1¼	12,6
GCOM 350/09/A	140	241	339	31	Rp 1½	Rp 1¼	13,2
GCOM 350/11/A	156	248	385	69	Rp 1½	Rp 1¼	14,5
GCOM 350/15/A	156	248	385	69	Rp 1½	Rp 1¼	16,2
GCOM 500/15/A	156	248	385	69	Rp 2	Rp 1½	16,2
GCOM 500/22/P	174	262	429	84	Rp 2	Rp 1½	20
GCO 350/03/A	120	222	325	62	Rp 1½	Rp 1¼	10
GCO 350/05/A	140	232	339	76	Rp 1½	Rp 1¼	11,9
GCO 350/07/D	155	240	385	114	Rp 1½	Rp 1¼	14,1
GCO 350/09/D	155	240	385	114	Rp 1½	Rp 1¼	16
GCO 350/11/D	155	240	385	114	Rp 1½	Rp 1¼	16,3
GCO 350/15/D	155	240	385	114	Rp 1½	Rp 1¼	17,8
GCO 500/15/D	155	240	385	114	Rp 2	Rp 1½	17,8
GCO 500/22/C	174	245	429	172	Rp 2	Rp 1½	23
GCO 500/30/P	174	245	429	172	Rp 2	Rp 1½	25

Bare shaft centrifugal pumps with closed impeller (GCEF series) and open impeller (COF series)

MARKET SECTORS

CIVIL, AGRICULTURAL, INDUSTRIAL.

APPLICATIONS

- Pumping of moderately viscous water and liquids (GCOF series) with moderate chemical aggressiveness (GCEF, GCOF series).
- Water supply.
- Irrigation.
- Water circulation (cold, hot, refrigerated).
- Washing in the packaging, textile and food industries (GCOF series).

* For aggressive liquids, please contact our sales network.

GCEF-GCOF Series



- ☐ In the standard version, all parts in contact with pumped liquid are made of **AISI 316 stainless steel**
- ☐ **Suspended solids handled up to 11 mm (GCOF350) and 20 mm (GCOF500) in the open impeller version (GCOF)**
- ☐ **Sturdy support with permanently lubricated bearings**
- ☐ **Flexible couplings available for connection to motor shaft of various sizes**

SPECIFICATIONS PUMP

- **Delivery** up to 500 l/min (30 m³/h) at 2900 rpm (GCEF series).
- **Delivery** up to 900 l/min (54 m³/h) at 2900 rpm (GCOF series).
- **Head** up to 29 m at 2900 rpm (GCEF series).
- **Head** up to 24,5 m at 2900 rpm (GCOF series).
- **Temperature** of pumped liquid: -10°C to +110°C standard version.
- Maximum operating **pressure** : 8 bar (PN 8).
- Counterclockwise rotation facing the pump from the suction port.
- **Standard supplied IE2/IE3 motors are compliant with Regulation (EC) no. 640/2009 and IEC 60034-30.**

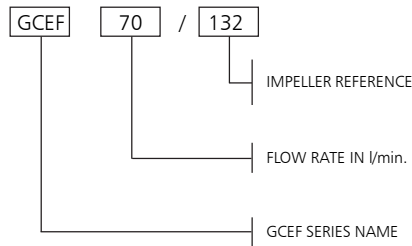
CONSTRUCTION FEATURES

- Close-coupled, single-impeller centrifugal pump featuring axial intake and radial discharge.
- Pump coupled by adapter to the bare shaft support; special shaft extension in common with pump are supported by ball bearing.
- Back pull-out design; no need to disconnect the pump body from the system pipes.
- Threaded suction and delivery ports (Rp ISO 7).
- High performance closed **impeller** made of **AISI 316** stainless steel (GCEF series).
- High performance open **impeller** made of **AISI 316** stainless steel (GCOF series).
- **Mechanical seal** with **Ceramic/Carbon** faces, **FPM** elastomers, other parts are made of **AISI 316** stainless steel (GCEF series).
- **Mechanical seal** with **Ceramic/Carbon** faces (**Silicon Carbide** and **Tungsten Carbide** in the "K" version), **FPM** elastomers, other parts are made of **AISI 316** stainless steel (GCOF series).
- **FPM O-rings.**

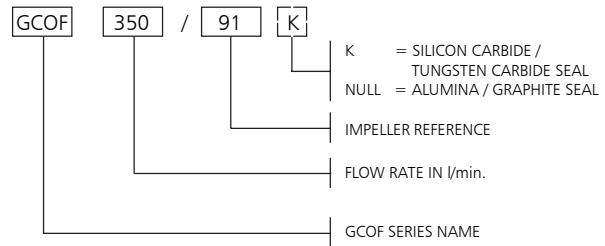
OPTIONAL FEATURES

- Different materials for the mechanical seal and O-rings.
- Electric pump unit (pump, motor, coupling, base).

GCEF - GCOF SERIES IDENTIFICATION CODE (PUMP)

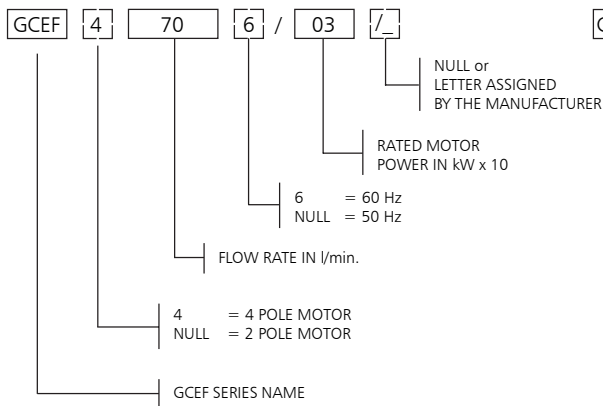


EXAMPLE : GCEF 70/132
GCEF pump series, flow rate 70 l/min,
impeller reference 132.

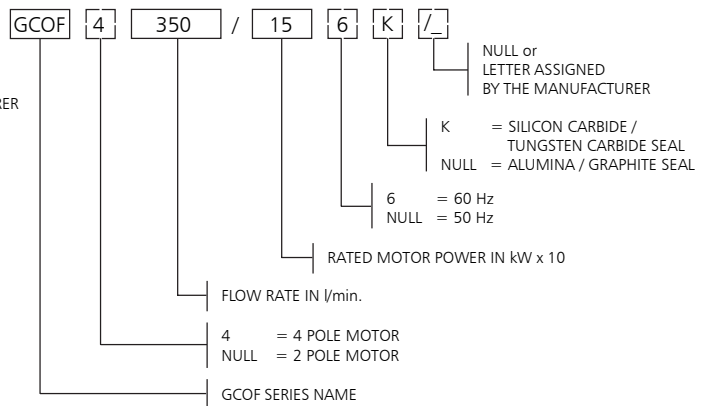


EXAMPLE : GCOF 350/91K
GCOF pump series, flow rate 350 l/min,
impeller reference 91, Silicon Carbide / Tungsten Carbide seal.

IDENTIFICATION CODE (ELECTRIC PUMP)

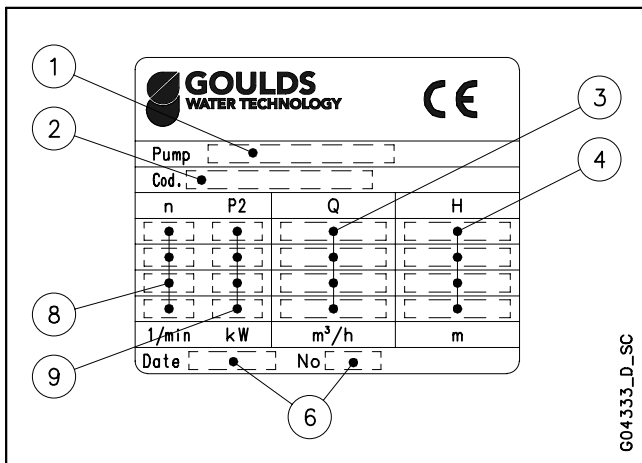


EXAMPLE : GCEF 70/03
GCEF electric pump series, flow rate 70 l/min,
0,37 kW rated motor power, 50 Hz version.

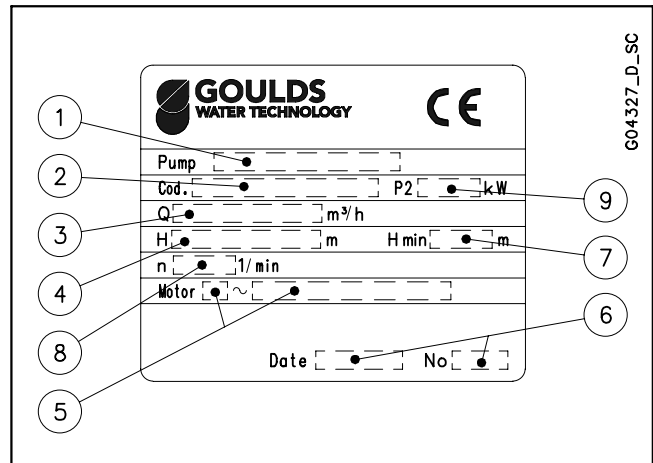


EXAMPLE : GCOF 350/15K
GCOF electric pump series, flow rate 350 l/min, 1,5 kW rated
motor power, 50 Hz version, Silicon Carbide / Tungsten Carbide seal.

RATING PLATE (PUMP)



(ELECTRIC PUMP)

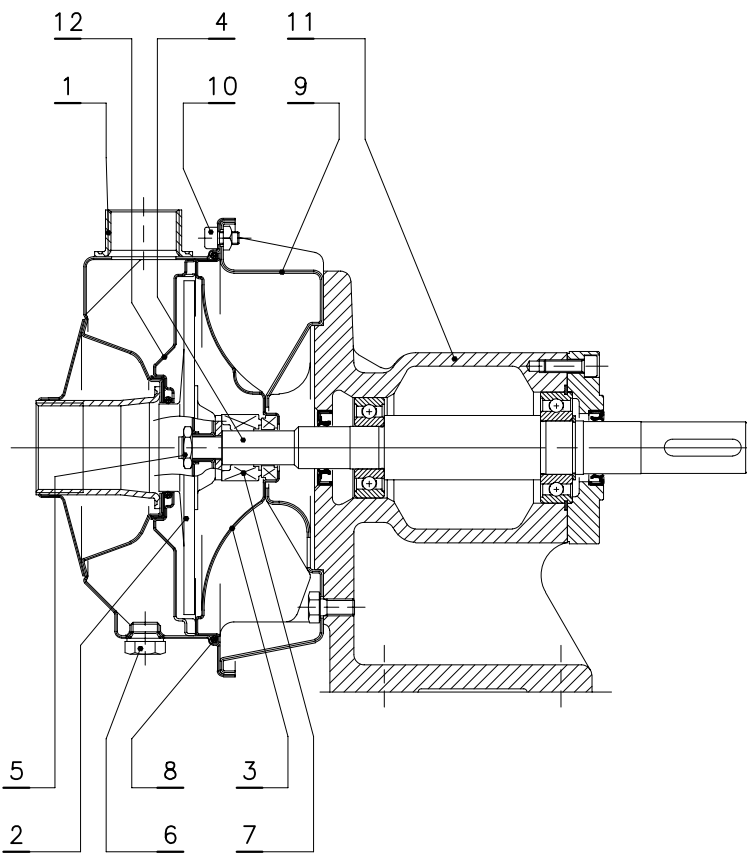


LEGEND

- 1 - Electric pump type
- 2 - Code
- 3 - Delivery range
- 4 - Head range
- 5 - Motor type
- 6 - Date of manufacture and serial number
- 7 - Minimum head
- 8 - Speed
- 9 - Rated output
- 10 - Maximum operating temperature

GCEF SERIES
LIST OF MODELS AND TABLE OF MATERIALS

04329_A_DS



VERSIONS	
GCEF 70	
GCEF 80	
GCEF 120	
GCEF 210	
GCEF 370	

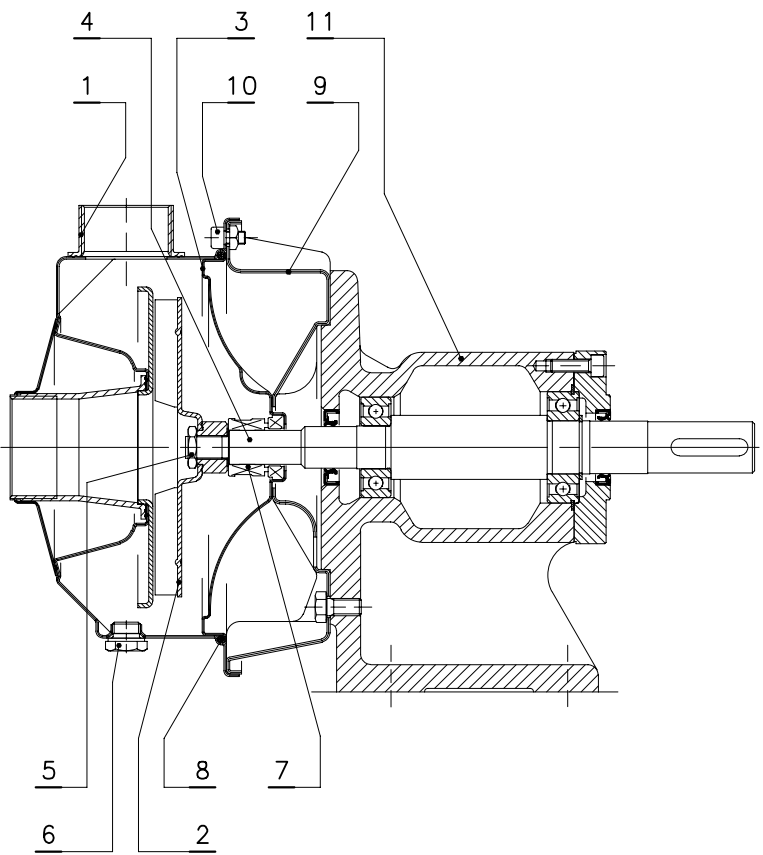
gcef-en_a_mo

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
2	Impeller	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
3	Seal housing	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
4	Shaft extension	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Impeller locknut and washer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
6	Fill/drain plugs	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
7	Mechanical seal	Ceramic / resin impregnated Carbon / FPM (standard version)		
8	Elastomers	FPM (standard version)		
9	Motor pump bracket	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
10	Pump body fastening bolts & screws	Galvanized steel		
11	Bracket casing	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35
12	Diffuser	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L

cef-en_a_tm

GCOF SERIES
LIST OF MODELS AND TABLE OF MATERIALS

04323_A_DS



VERSIONS

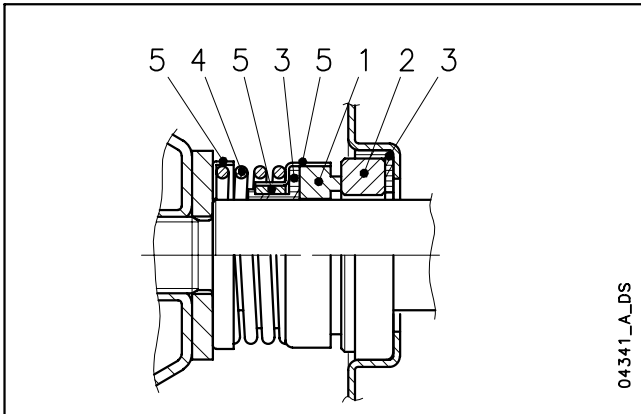
GCOF 350
GCOF 500

gcof-en_a_mo

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
2	Impeller	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
3	Seal housing	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
4	Shaft extension	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Impeller locknut and washer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
6	Fill/drain plugs	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
7	Mechanical seal	Ceramic / resin impregnated Carbon / FPM (standard version)		
8	Elastomers	FPM (standard version)		
9	Motor pump bracket	Stainless steel	EN 10088-1-X5CrNi18-10 (1.4301)	AISI 304
10	Pump body fastening bolts & screws	Galvanized steel		
11	Bracket casing	Cast iron	EN 1561-GJL-250 (JL1040)	ASTM Class 35

cof-en_a_tm

**GCEF - GCOF SERIES
MECHANICAL SEAL**



LIST OF MATERIALS

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

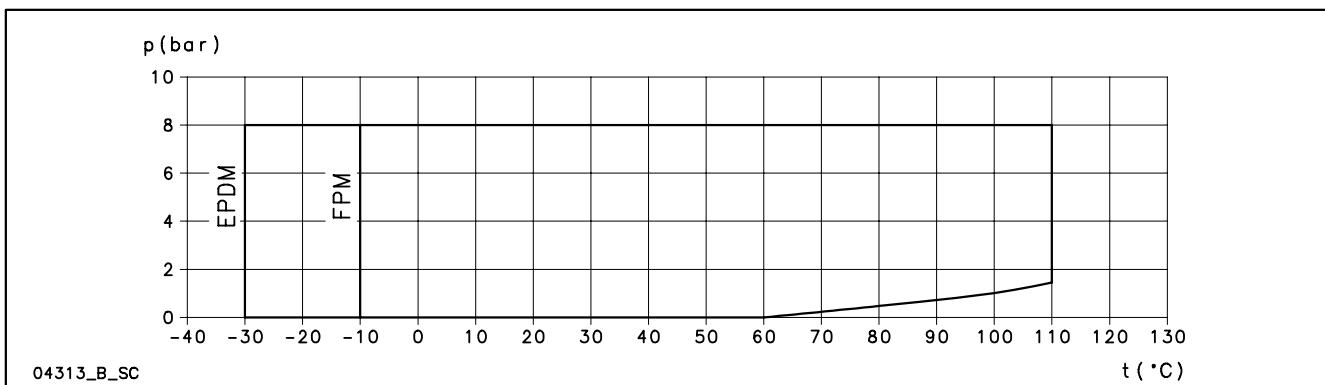
cof_ten-mec-j-c-21-en_a_tm

SEAL TYPES

TYPE	POSITION					TEMPERATURE (°C)
	1 ROTATING ASSEMBLY	2 FIXED ASSEMBLY	3 ELASTOMERS	4 SPRINGS	5 OTHER COMPONENTS	
STANDARD MECHANICAL SEAL						
VB V G G	V	B	V	G	G	-10 +110
OTHER MECHANICAL SEAL TYPES						
Q ₁ BEGG	Q ₁	B	E	G	G	-30 +110
Q ₁ Q ₁ EGG	Q ₁	Q ₁	E	G	G	-30 +110
U ₃ Q ₁ VGG	U ₃	Q ₁	V	G	G	-10 +110

cof_tipi-ten-mec-j-c-21-en_c_tc

**COMPLETE PUMP PRESSURE / TEMPERATURE OPERATING
LIMITS (WITH ANY OF THE SEALS LISTED ABOVE)**



MOTORS FOR GCEF - GCOF 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:

- **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.

THREE-PHASE MOTORS AT 50 Hz, 2 POLES

P _N kW	Efficiency η_N																		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				IE
	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		
0,37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0,55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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		
0,9	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	3	
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	81,8	81,8	81,8	81,8	81,8	81,8	81,8	81,8	81,8	81,8	81,8	81,8	81,8	81,8	81,8	81,8	81,8	81,8	2	
1,85	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		
2,2	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		
3	85,1	85,1	85,1	85,1	85,1	85,1	85,1	85,1	85,1	85,1	85,1	85,1	85,1	85,1	85,1	85,1	85,1	85,1		

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.						cos ϕ	I _s / I _N	T _N Nm	T _s /T _N	T _m /T _N
	Model										
0,37	SM71B3/304		71	B3	2	50	0,59	-	1,22	-	-
0,55	SM71B3/305		71				0,74	5,97	1,85	3,74	3,56
0,75	SM80B3/307 PE		80				0,78	7,38	2,48	3,57	3,75
0,9	SM80B3/311 PE		80				0,79	8,31	3,63	3,95	3,95
1,1	SM80B3/311 PE		80				0,79	8,31	3,63	3,95	3,95
1,5	PLM90B3/315		90				0,86	7,86	4,96	3,34	3,27
1,85	PLM90B3/322		90				0,80	8,63	7,25	3,74	3,71
2,2	PLM90B3/322		90				0,80	8,63	7,25	3,74	3,71
3	PLM100B3/330		100				0,84	9,45	9,83	3,59	4,27

P _N kW	Voltage U _N										n _N min ⁻¹	Condizioni operative **				
	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)											See note.	≤ 1000	-15 / 40	No	
0,37	2,10	2,13	2,30	1,21	1,23	1,33	-	-	-	-	-					2885 ÷ 2900
0,55	2,56	2,56	2,62	1,48	1,48	1,51	-	-	-	-	-					2825 ÷ 2850
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
0,9	4,19	4,14	4,16	2,42	2,39	2,40	2,41	2,38	2,38	1,39	1,37					2870 ÷ 2900
1,1	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	5,53	5,23	5,13	3,19	3,02	2,96	3,19	3,03	2,96	1,84	1,75					2865 ÷ 2895
1,85	8,05	8,04	8,09	4,65	4,64	4,67	4,62	4,61	4,63	2,67	2,66					2885 ÷ 2900
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	10,4	10,2	10,3	5,98	5,91	5,92	6,01	5,95	5,96	3,47	3,44	2905 ÷ 2920				

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

gcef-gcof-ie2-mott-2p50-en_c_te

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

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).

GCEF - GCOF MOTORS 2-POLES 50 Hz

POWER kW	MOTOR TYPE IEC SIZE	NOISE LpA dB
0,37	71	<70
0,55	71	<70
0,75	80	<70
0,9	80	<70
1,1	80	<70
1,5	90	<70
1,85	90	<70
2,2	90	<70
3	100	<70

cef-cof_mott-en_a_tr

AVAILABLE VOLTAGES MOTORS FOR GCEF - GCOF SERIES

P _N kW	THREE-PHASE - 2 POLES																		
	50 Hz							60 Hz							50/60 Hz				
	3 x 220-230-240/380-400-415	3 x 380-400-415/660-690	3 x 200-208/346-360	3 x 255-265/440-460	3 x 290-300/500-525	3 x 440-460/-	3 x 500-525/-	3 x 220-230/380-400	3 x 255-265-277/440-460-480	3 x 380-400/660-690	3 x 440-460-480/-	3 x 110-115/190-200	3 x 200-208/346-360	3 x 330-346/575-600	3 x 575/-	3 x 230/400 50 Hz	3 x 265/460 60 Hz	3 x 400/690 50 Hz	3 x 460/- 60 Hz
0,37	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o	o	o
0,55	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o	o	o
0,75	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o	o	o
0,95	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o	o	o
1,1	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o	o	o
1,5	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o	o	o
2,2	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o	o	o
3	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o	o	o

s = Standard voltage

o = Optional voltage

- = Not available

cef-volt-low-a-en_a_te

GCEF SERIES
HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 2 and 4 POLES

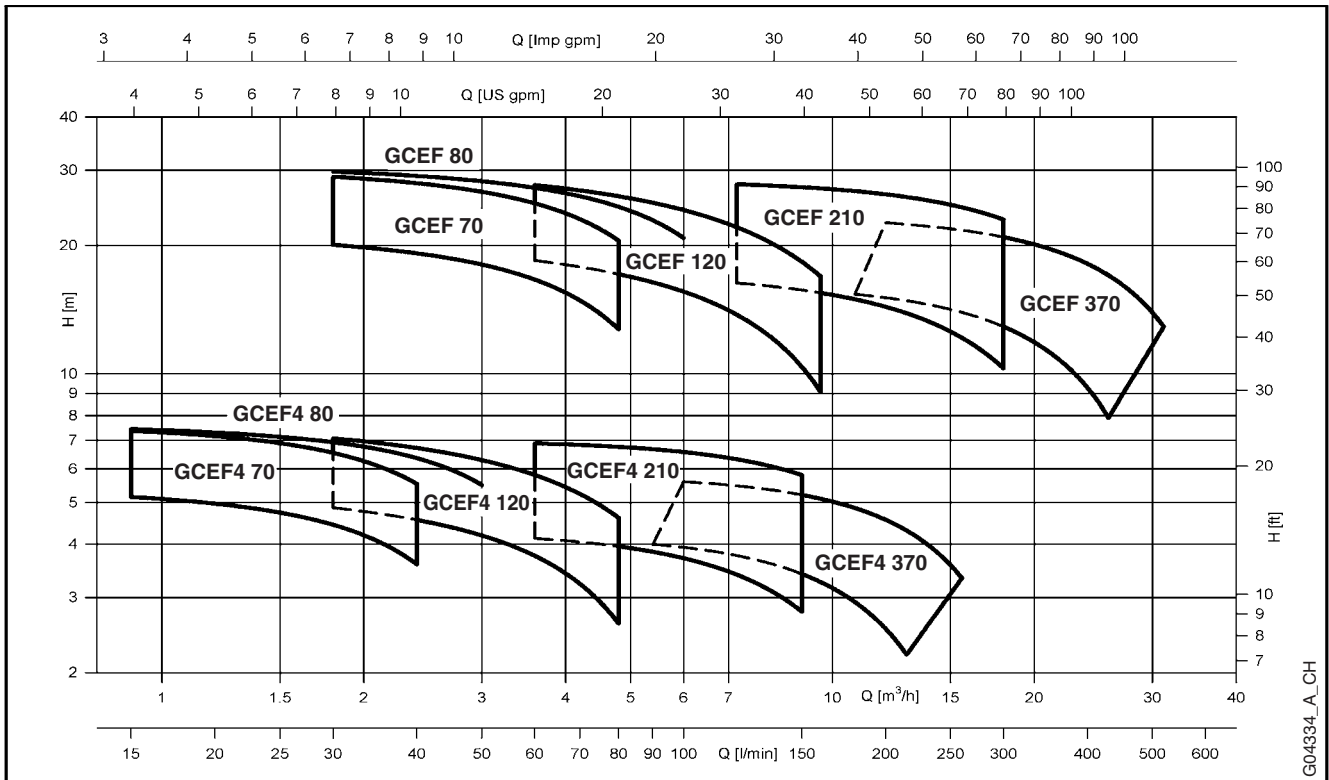


TABLE OF HYDRAULIC PERFORMANCES AT 50 Hz, 2 and 4 POLES

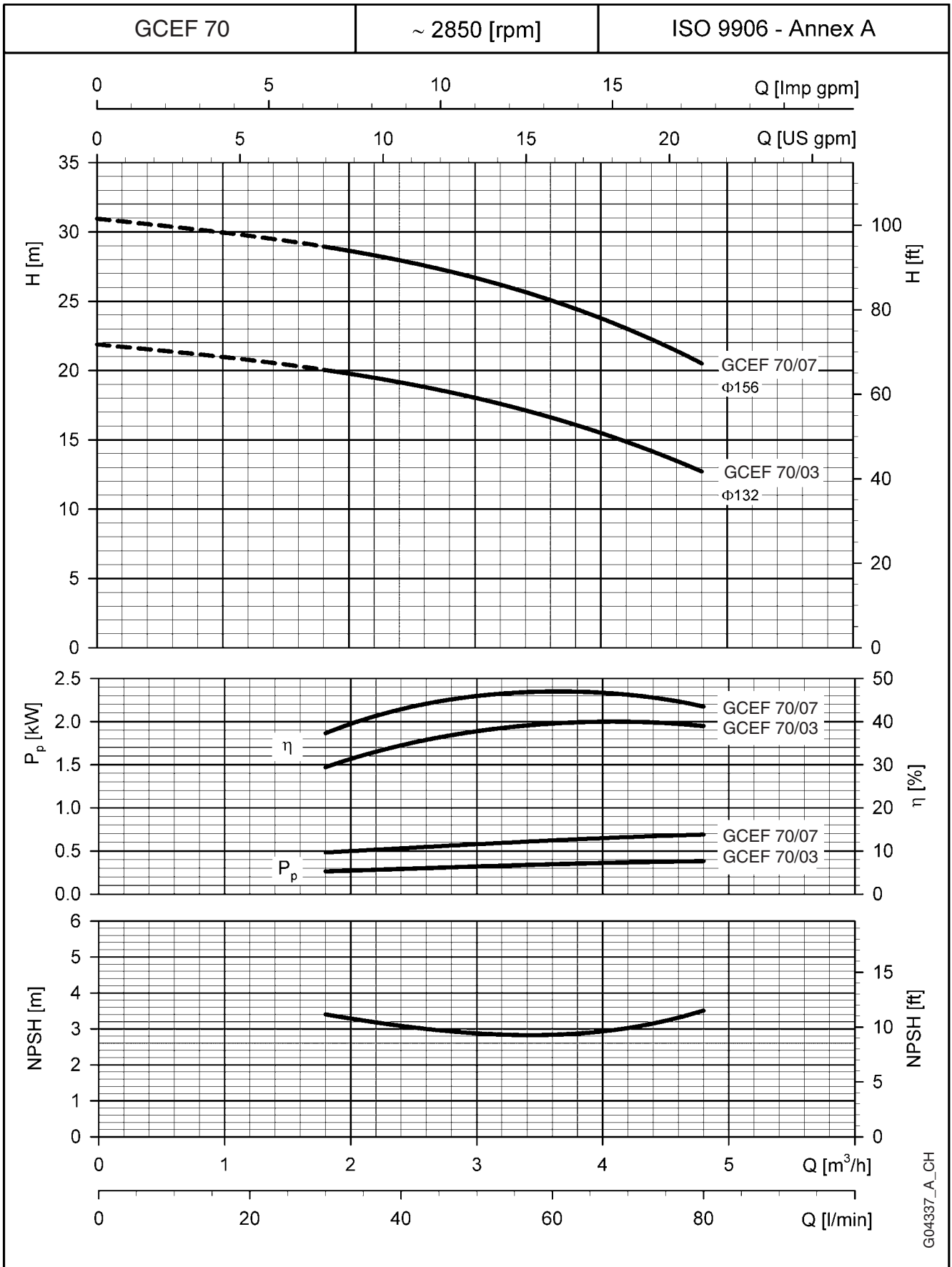
ELECTRIC PUMP TYPE	RATED POWER		Q = DELIVERY																	
			l/min	30	40	60	80	100	120	140	160	180	200	250	300	350	400	430	480	520
			m³/h	1,8	2,4	3,6	4,8	6	7,2	8,4	9,6	10,8	12	15	18	21	24	26	29	31
			H = TOTAL HEAD METRES COLUMN OF WATER																	
GCEF 70/03	0,37	0,5	21,9	20,0	19,2	16,6	12,7													
GCEF 70/05	0,55	0,75	30,9	28,9	28,0	25,1	20,5													
GCEF 80/07	0,75	1	31,4	29,8	29,1	27,3	24,6	20,8												
GCEF 120/05	0,55	0,75	21,6			18,4	17,1	15,6	13,8	11,6	9,1									
GCEF 120/09	0,9	1,2	31,0			27,7	26,1	24,2	22,1	19,6	16,9									
GCEF 210/07	0,75	1	17,3						16,3	15,9	15,5	15,0	14,4	12,6	10,3					
GCEF 210/11	1,1	1,5	20,3						19,4	19,1	18,7	18,3	17,8	16,3	14,2					
GCEF 210/15	1,5	2,2	24,9						24,4	24,1	23,7	23,2	22,7	21,0	18,8					
GCEF 210/18	1,85	2,5	28,4						27,8	27,5	27,2	26,8	26,3	24,9	23,0					
GCEF 370/11	1,1	1,5	15,9									15,3	15,1	14,1	12,9	11,3	9,3	7,9		
GCEF 370/15	1,5	2,2	19,9										18,8	18,0	16,9	15,6	13,9	12,7	10,5	
GCEF 370/22	1,85	2,5	23,9										22,6	21,9	20,9	19,7	18,1	17,0	14,9	12,9

gcef-2p50-en_d_th

PUMP TYPE	PUMP MAX INPUT POWER kW	Q = DELIVERY																	
		l/min	15	20	25	30	40	50	60	70	80	90	100	130	150	190	215	240	260
		m³/h	0,9	1,2	1,5	1,8	2,4	3	3,6	4,2	4,8	5,4	6	7,8	9	11,4	13	14	16
		H = TOTAL HEAD METRES COLUMN OF WATER																	
GCEF4 70/132	0,05	5,5	5,2	5,0	4,7	4,4	3,6												
GCEF4 70/156	0,09	7,8	7,4	7,2	6,9	6,5	5,5												
GCEF4 80/156	0,10	7,8	7,4	7,3	7,1	6,9	6,4	5,5											
GCEF4 120/132	0,08	5,6				4,9	4,6	4,2	3,8	3,2	2,6								
GCEF4 120/156	0,13	7,8				7,1	6,7	6,3	5,8	5,2	4,6								
GCEF4 210/121	0,11	4,3							4,1	4,0	3,9	3,8	3,7	3,2	2,8				
GCEF4 210/130	0,14	5,0							4,9	4,8	4,7	4,6	4,5	4,1	3,7				
GCEF4 210/148	0,19	6,1							6,1	6,0	5,9	5,8	5,7	5,2	4,8				
GCEF4 210/156	0,23	7,0							6,9	6,8	6,8	6,7	6,6	6,2	5,8				
GCEF4 370/121	0,15	4,0										4,0	3,9	3,7	3,4	2,7	2,2	1,6	
GCEF4 370/130	0,21	5,0											4,8	4,6	4,4	3,8	3,4	2,9	
GCEF4 370/134	0,26	5,8											5,6	5,4	5,2	4,7	4,3	3,8	3,3

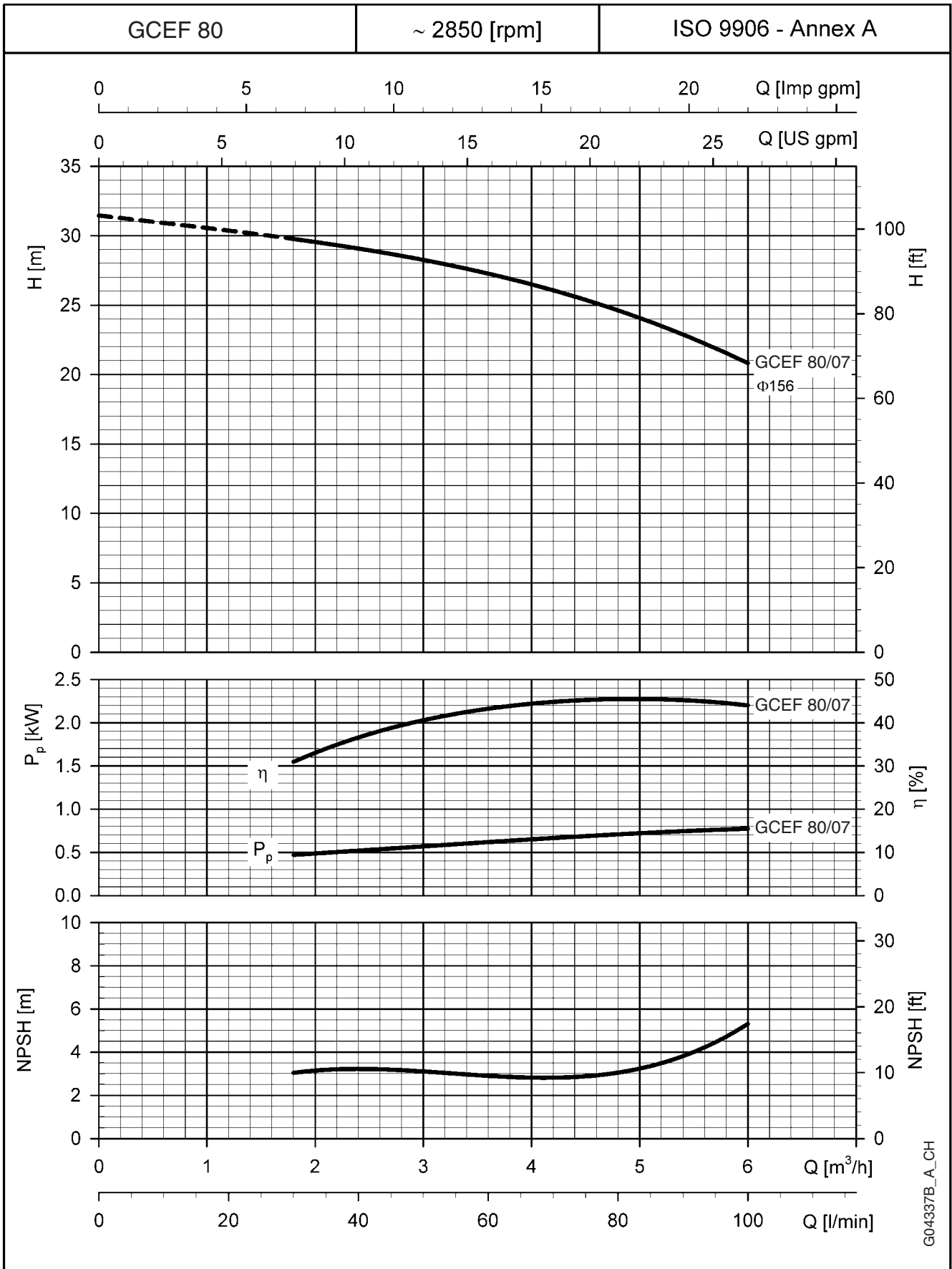
gcef4-4p50-en_c_th

**GCEF 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 $\nu = 1 \text{ mm}^2/\text{sec}$.

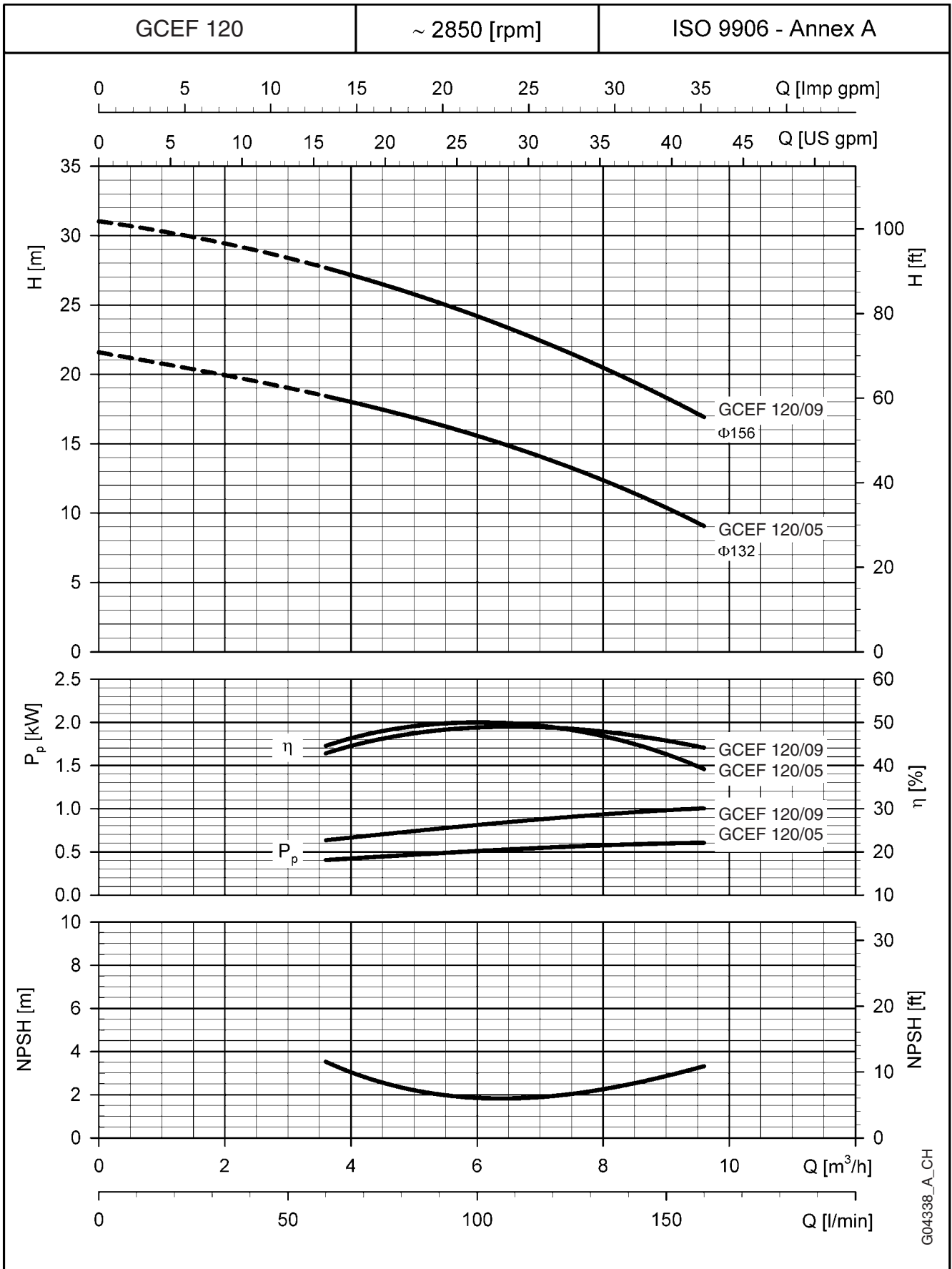
**GCEF SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



G04337B_A_CH

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 $\nu = 1 \text{ mm}^2/\text{sec}$.

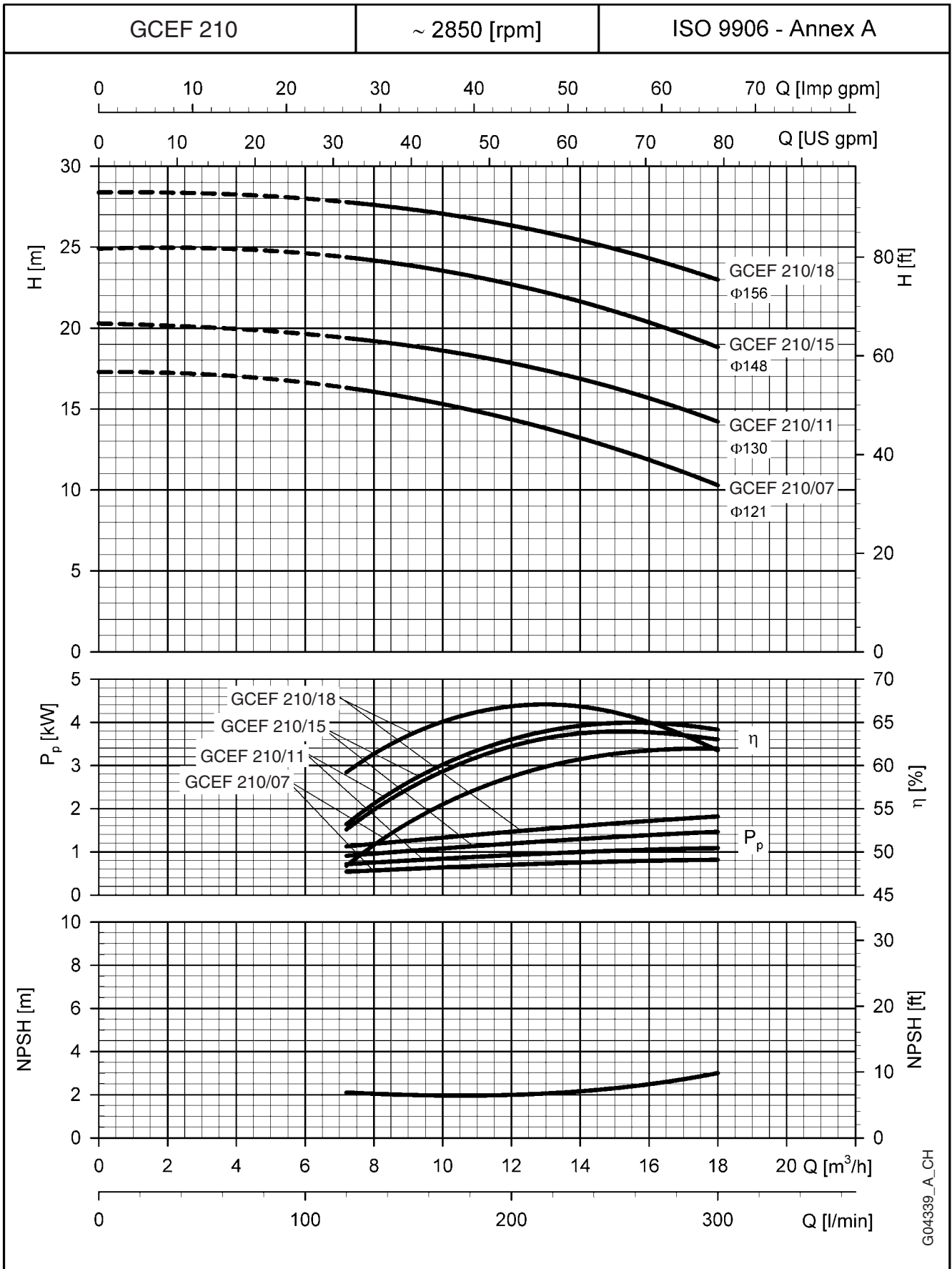
**GCEF SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



G04338_A_CH

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 $\nu = 1 \text{ mm}^2/\text{sec}$.

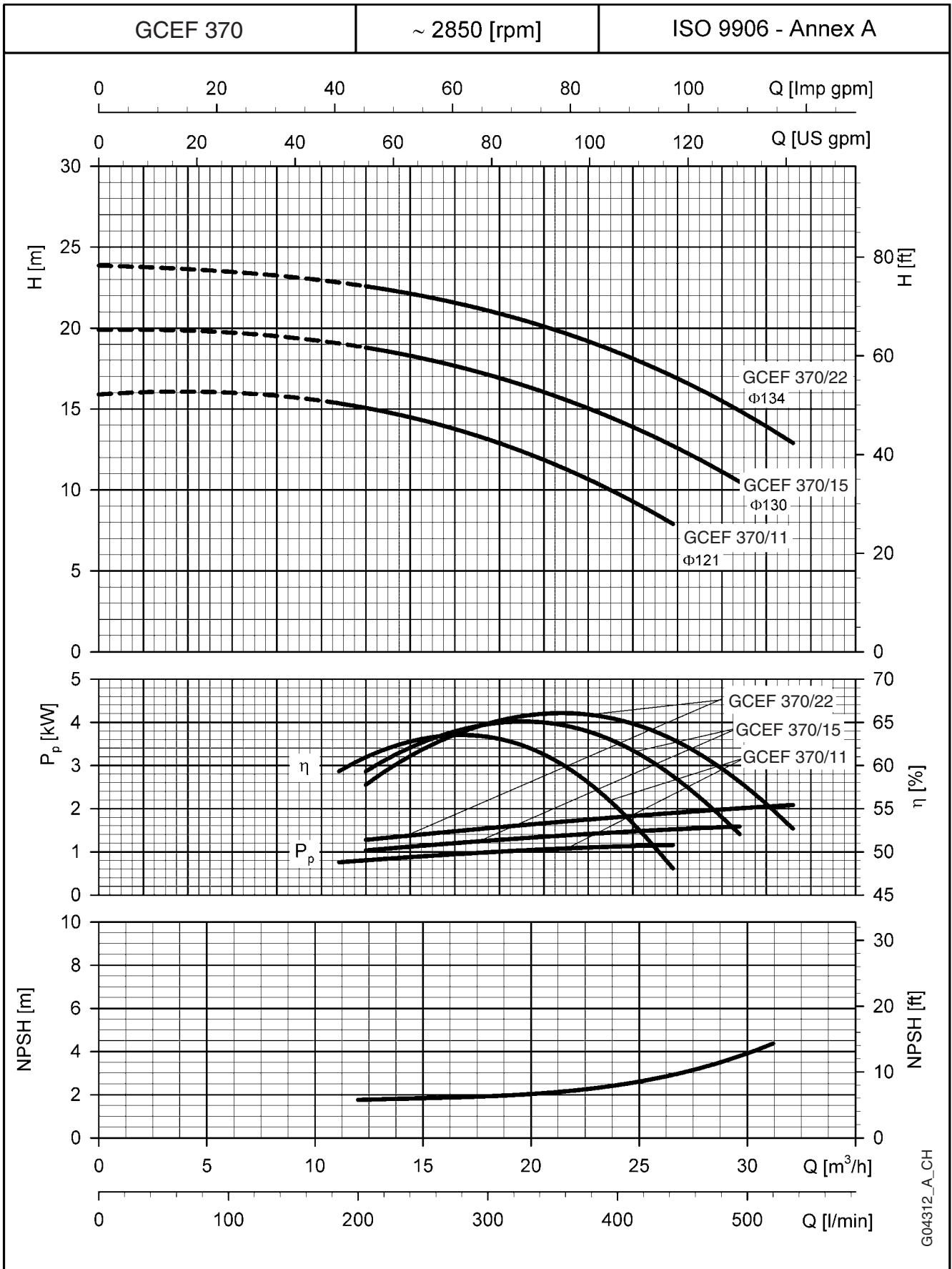
GCEF SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



G04339_A_CH

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 $\nu = 1 \text{ mm}^2/\text{sec}$.

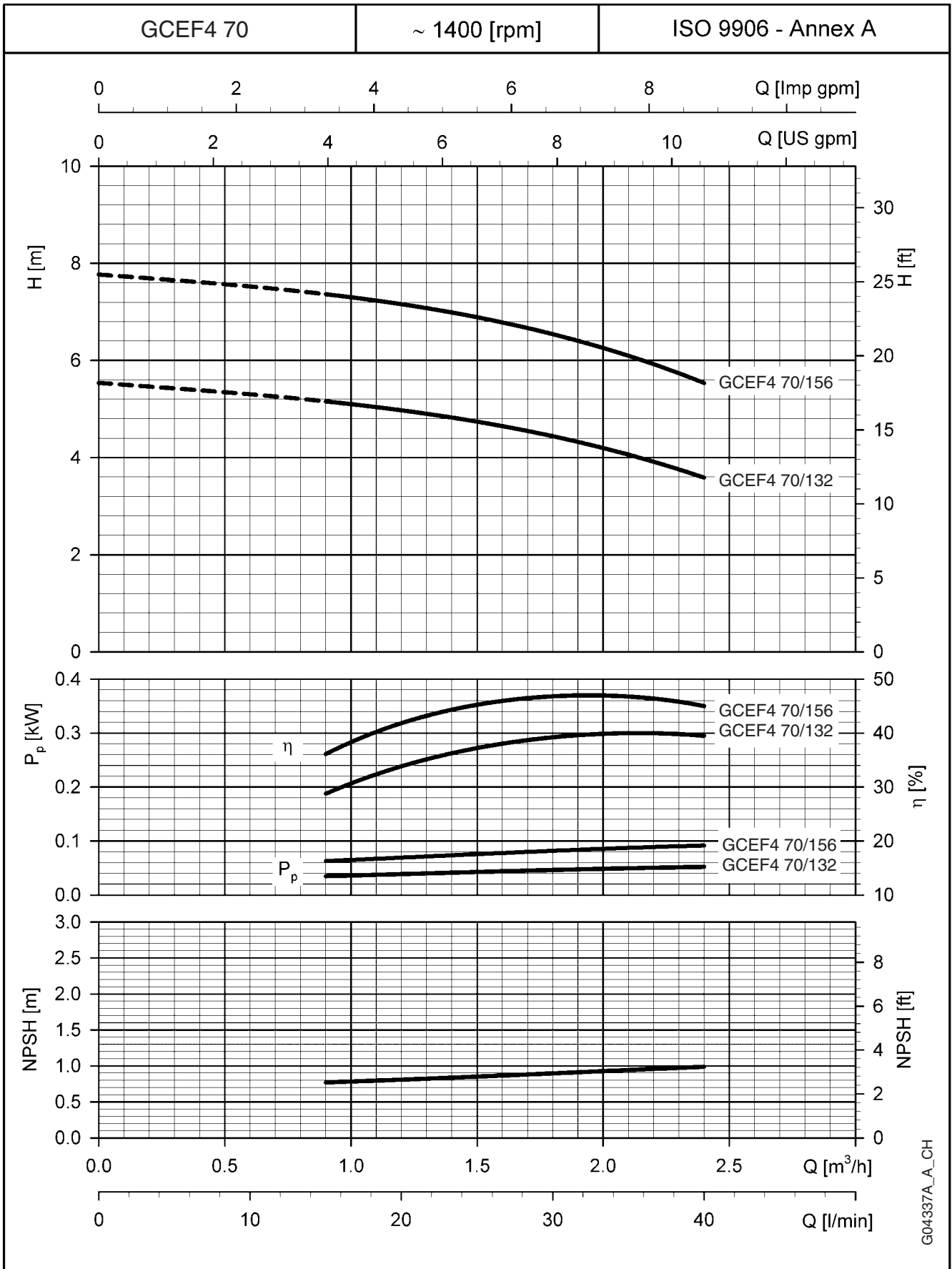
**GCEF SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



G04312_A_CH

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 $\nu = 1 \text{ mm}^2/\text{sec}$.

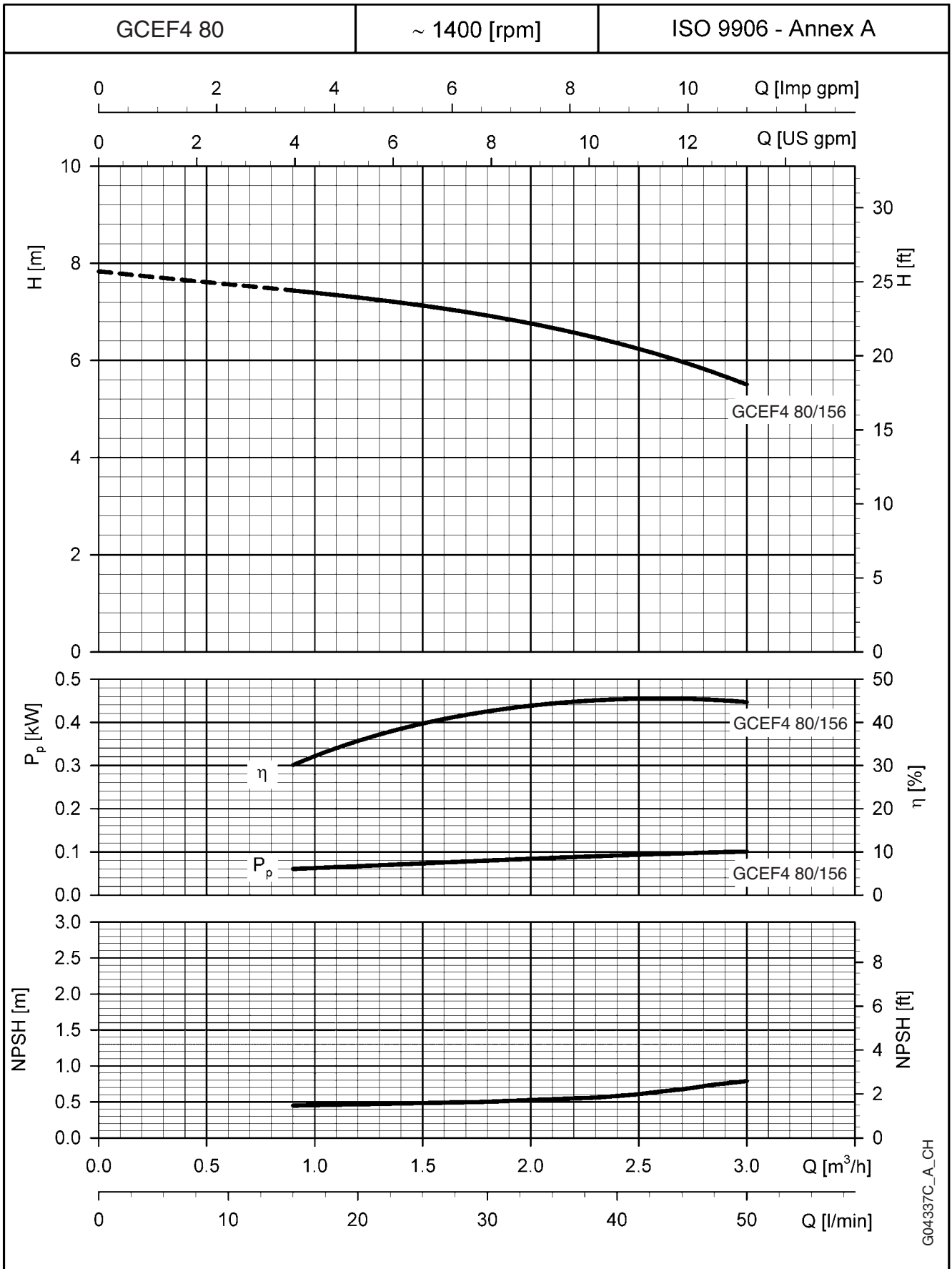
**GCEF4 SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES**



G04337A_A_CH

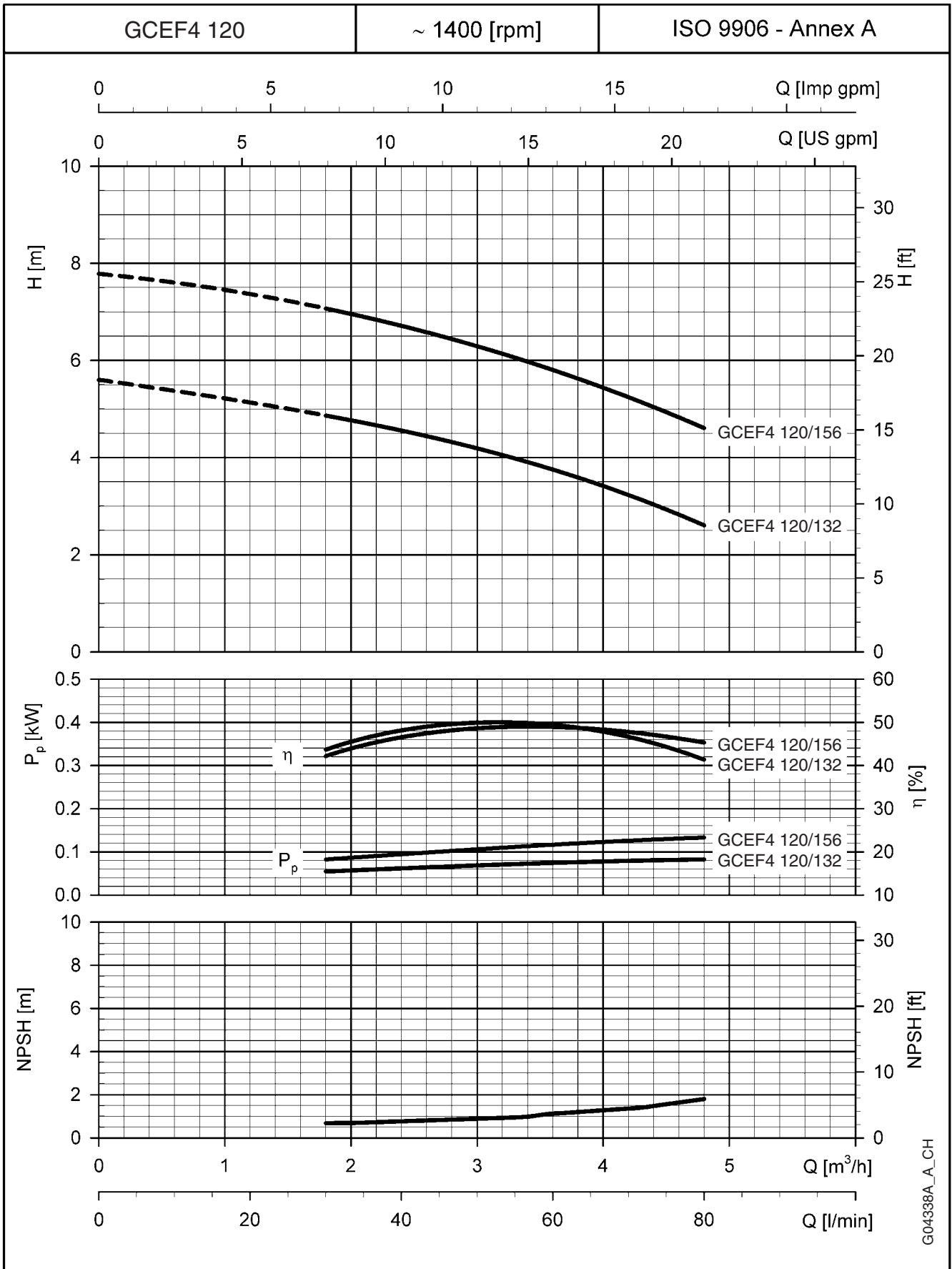
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GCEF4 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 $\nu = 1 \text{ mm}^2/\text{sec}$.

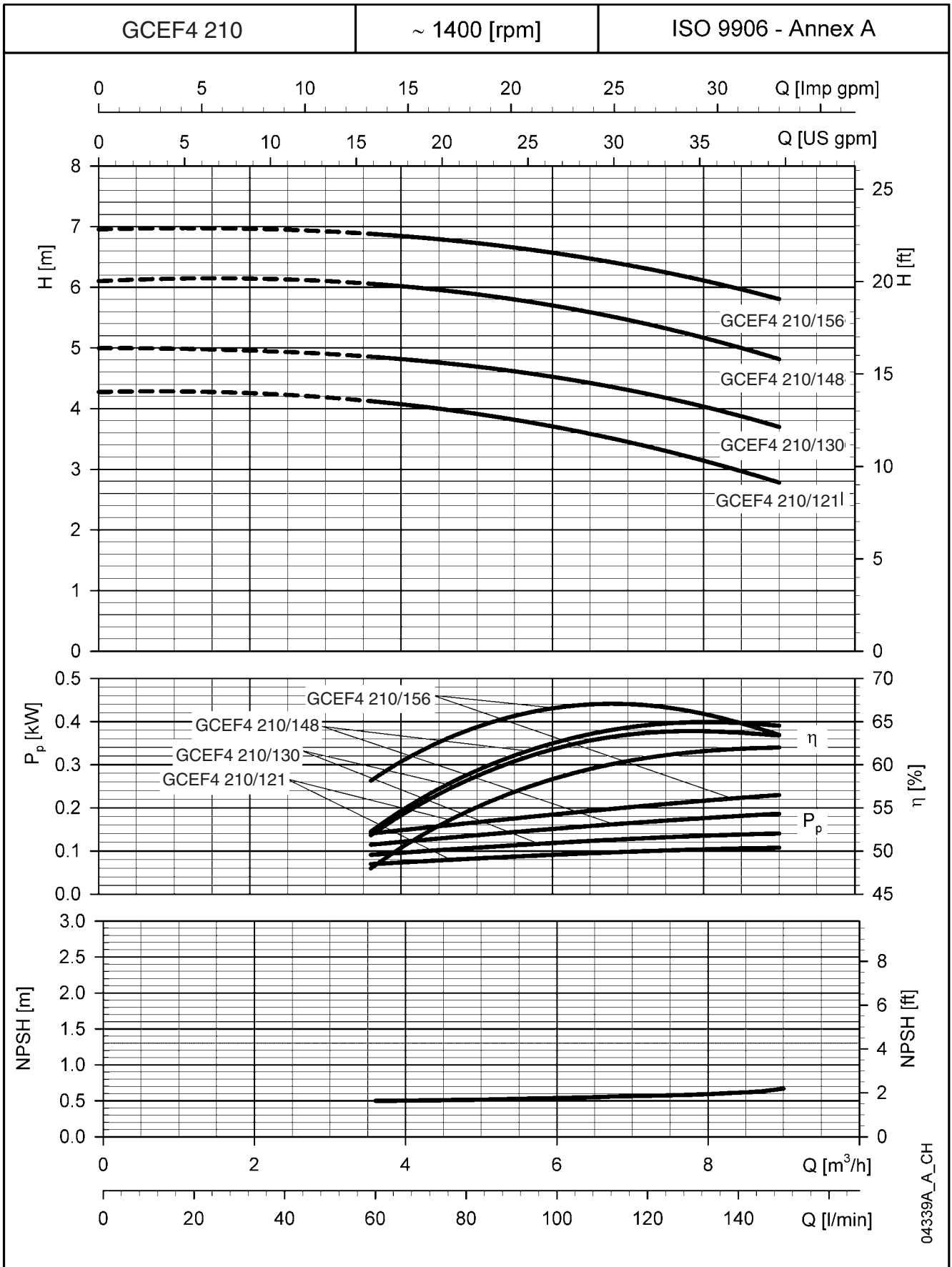
GCEF4 SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



G04388A_A_CH

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 $\nu = 1 \text{ mm}^2/\text{sec}$.

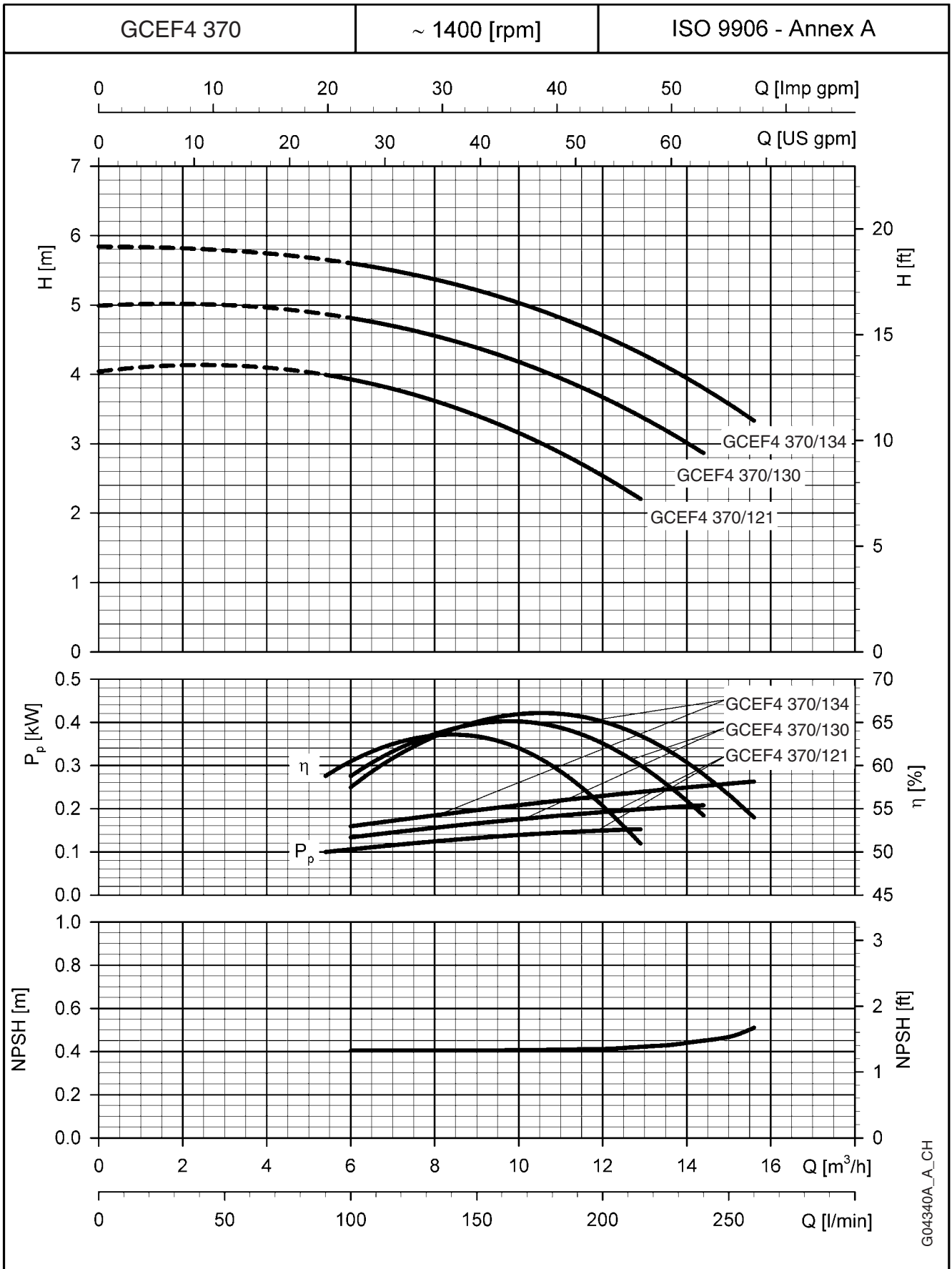
**GCEF4 SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES**



04339A_A_CH

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 $\nu = 1 \text{ mm}^2/\text{sec}$.

**GCEF4 SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES**



G04340A_A_CH

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 $\nu = 1 \text{ mm}^2/\text{sec}$.

GCOF SERIES
HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 2 and 4 POLES

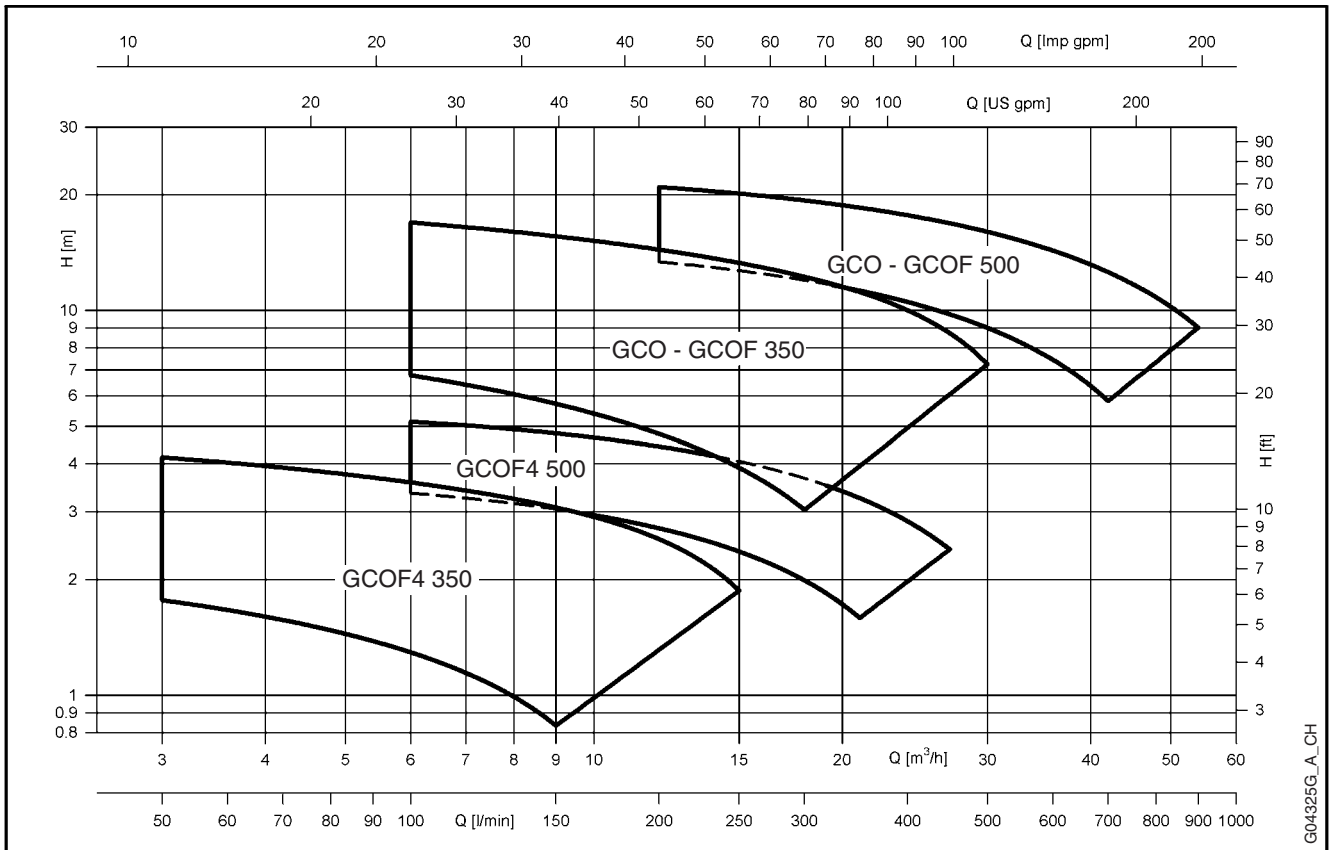


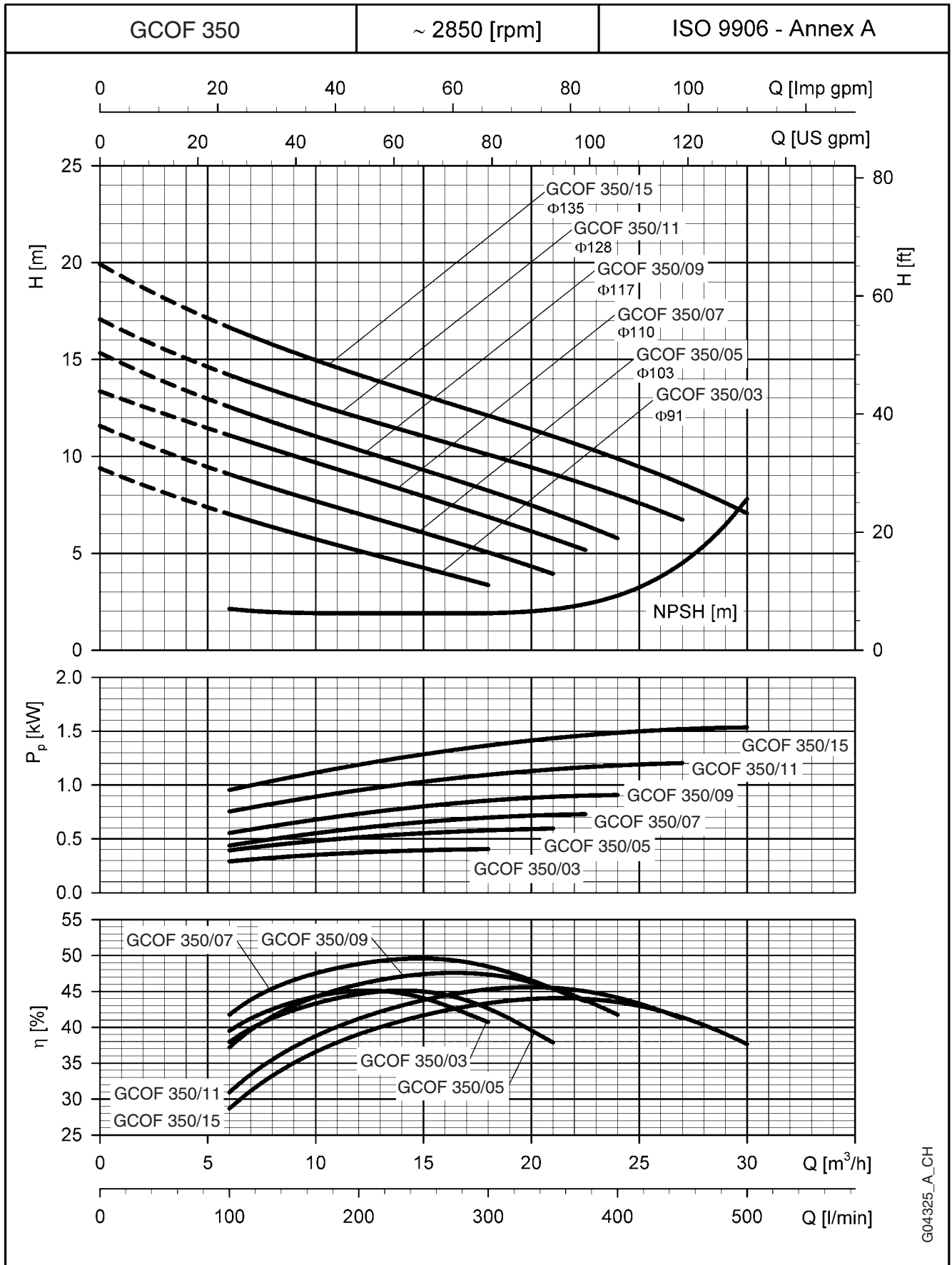
TABLE OF HYDRAULIC PERFORMANCES AT 50 Hz, 2 POLES

ELECTRIC PUMP TYPE	RATED POWER		Q = DELIVERY																	
			l/min 0	100	120	160	200	240	280	300	350	375	400	450	500	600	650	700	800	900
			m³/h 0	6	7,2	9,6	12	14,4	16,8	18	21	22,5	24	27	30	36	39	42	48	54
			H = TOTAL HEAD METRES COLUMN OF WATER																	
GCOF 350/03	0,37	0,5	9,4	7,0	6,6	5,8	5,1	4,4	3,7	3,4										
GCOF 350/05	0,55	0,75	11,6	9,1	8,6	7,8	7,0	6,3	5,5	5,0	3,9									
GCOF 350/07	0,75	1	13,4	11,1	10,7	9,8	9,0	8,2	7,3	6,9	5,8	5,2								
GCOF 350/09	0,9	1,2	15,3	12,6	12,1	11,2	10,3	9,5	8,7	8,2	7,1	6,4	5,8							
GCOF 350/11	1,1	1,5	17,1	14,2	13,7	12,8	12,0	11,2	10,5	10,1	9,1	8,6	8,0	6,7						
GCOF 350/15	1,5	2	19,9	16,7	16,1	15,1	14,2	13,4	12,5	12,1	11,0	10,5	9,9	8,6	7,1					
GCOF 500/15	1,5	2	15,9				13,5	13,0	12,4	12,2	11,5	11,1	10,8	10,0	9,3	7,7	6,9	6,1		
GCOF 500/22	2,2	3	19,1				17,0	16,5	16,0	15,7	15,1	14,7	14,4	13,6	12,8	11,2	10,3	9,4	7,6	
GCOF 500/30	3	4	23,5				20,6	20,0	19,4	19,1	18,3	17,9	17,5	16,7	15,9	14,2	13,3	12,5	10,7	8,9

TABLE OF HYDRAULIC PERFORMANCES AT 50 Hz, 4 POLES

PUMP TYPE	PUMP MAX INPUT POWER kW	Q = DELIVERY															
		l/min 0	50	75	100	125	150	175	187	200	225	250	300	350	400	450	
		m³/h 0	3	4,5	6	7,5	9	10,5	11,22	12	13,5	15	18	21	24	27	
		H = TOTAL HEAD METRES COLUMN OF WATER															
GCOF4 350/91	0,05	2,4	1,8	1,5	1,3	1,1	0,8										
GCOF4 350/103	0,08	2,9	2,3	2,1	1,9	1,6	1,4	1,1									
GCOF4 350/110	0,09	3,3	2,8	2,5	2,3	2,0	1,8	1,5	1,4								
GCOF4 350/117	0,12	3,8	3,1	2,9	2,6	2,4	2,1	1,8	1,7	1,5							
GCOF4 350/128	0,17	4,6	3,8	3,6	3,3	3,1	2,8	2,6	2,4	2,3	2,0						
GCOF4 350/135	0,20	4,9	4,2	3,8	3,6	3,3	3,1	2,8	2,7	2,5	2,2	1,9					
GCOF4 500/113	0,19	3,9			3,4	3,2	3,0	2,9	2,8	2,7	2,5	2,4	2,0	1,6			
GCOF4 500/125	0,27	4,7			4,2	4,1	3,9	3,8	3,7	3,6	3,5	3,3	2,9	2,5	2,0		
GCOF4 500/138	0,41	5,8			5,1	5,0	4,8	4,6	4,5	4,4	4,2	4,1	3,7	3,3	2,8	2,4	

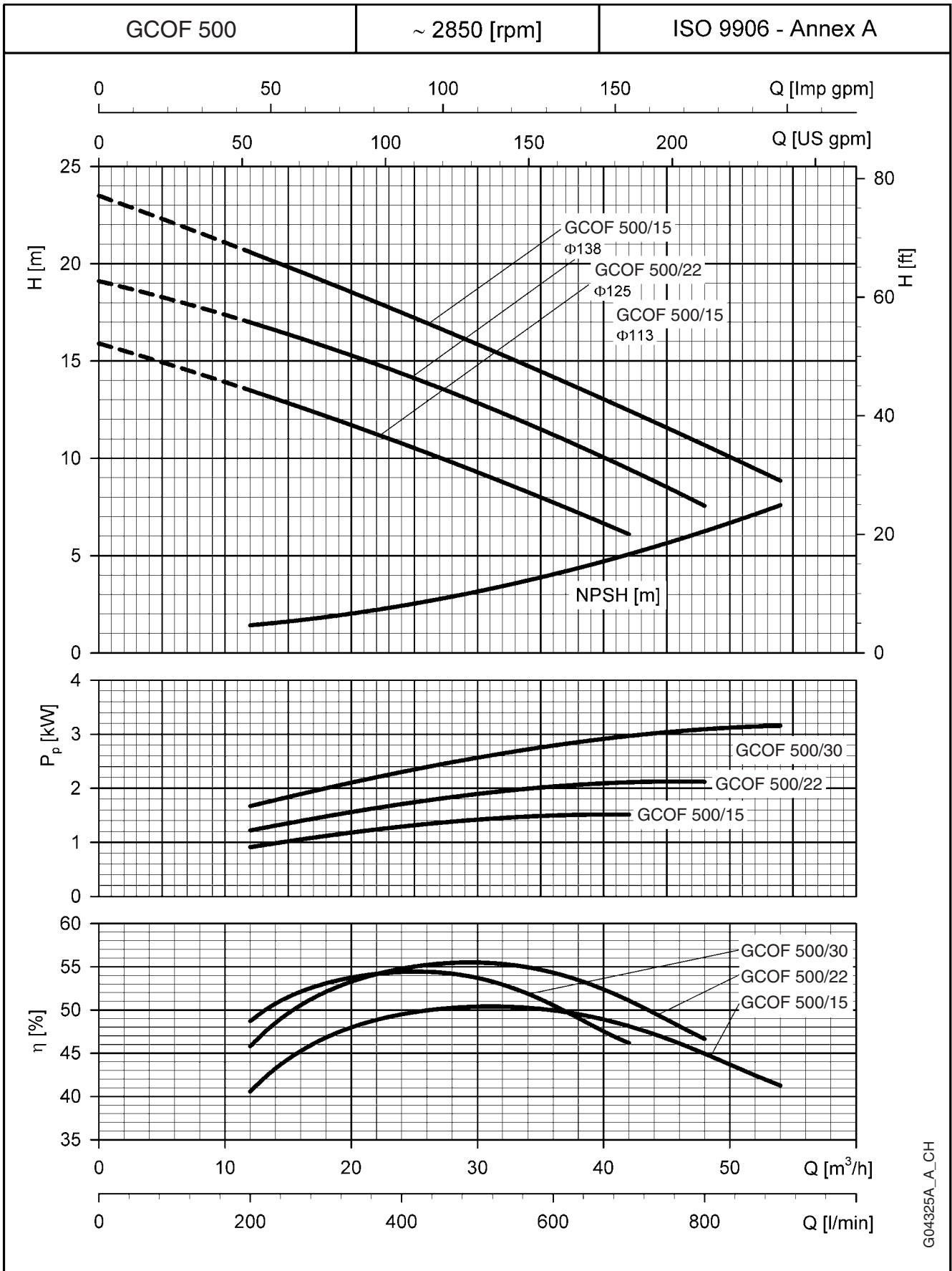
GCOF SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



G04325_A_CH

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 $\nu = 1 \text{ mm}^2/\text{sec}$.

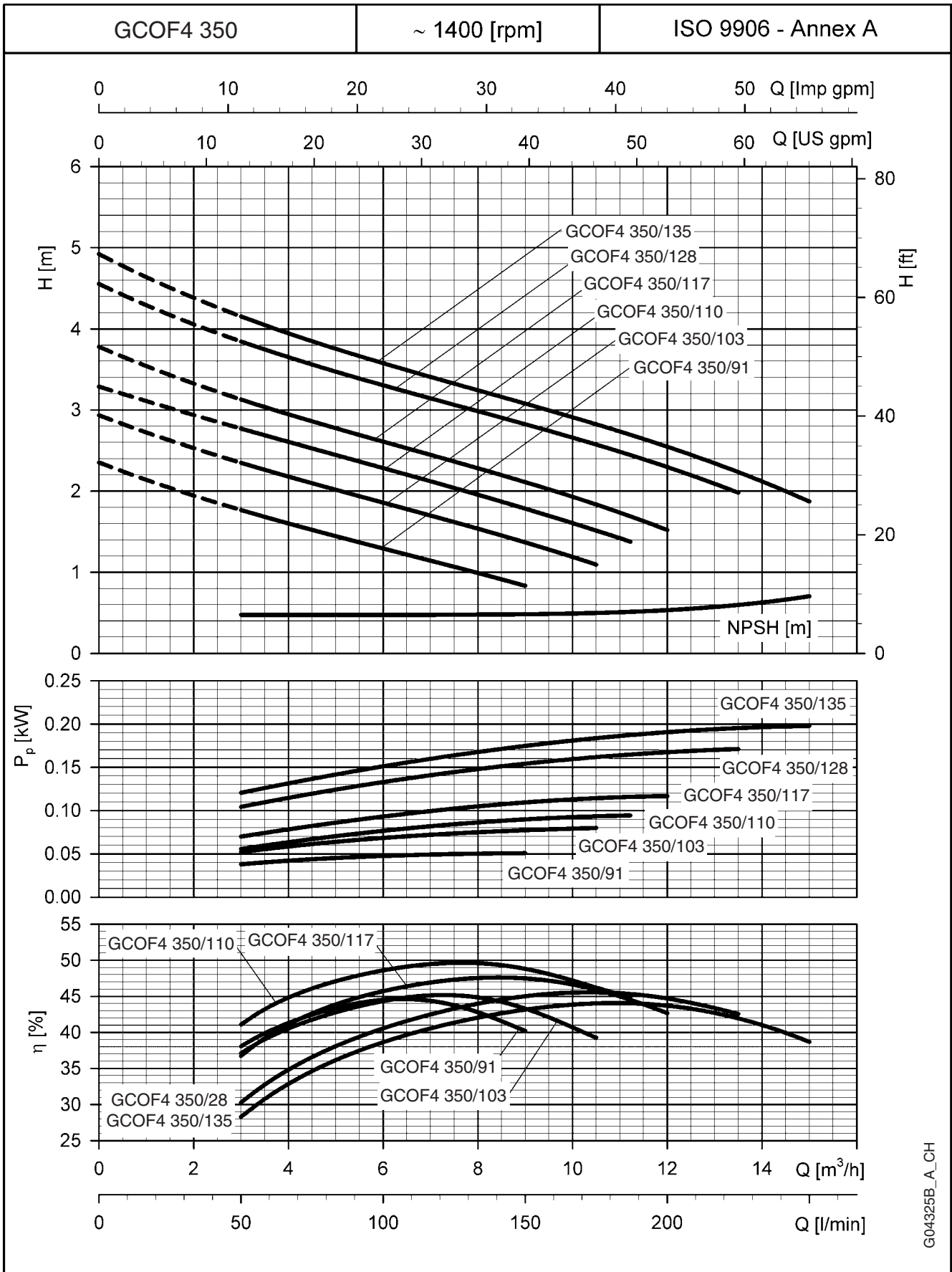
GCOF SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



G04325A_A_CH

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 $\nu = 1 \text{ mm}^2/\text{sec}$.

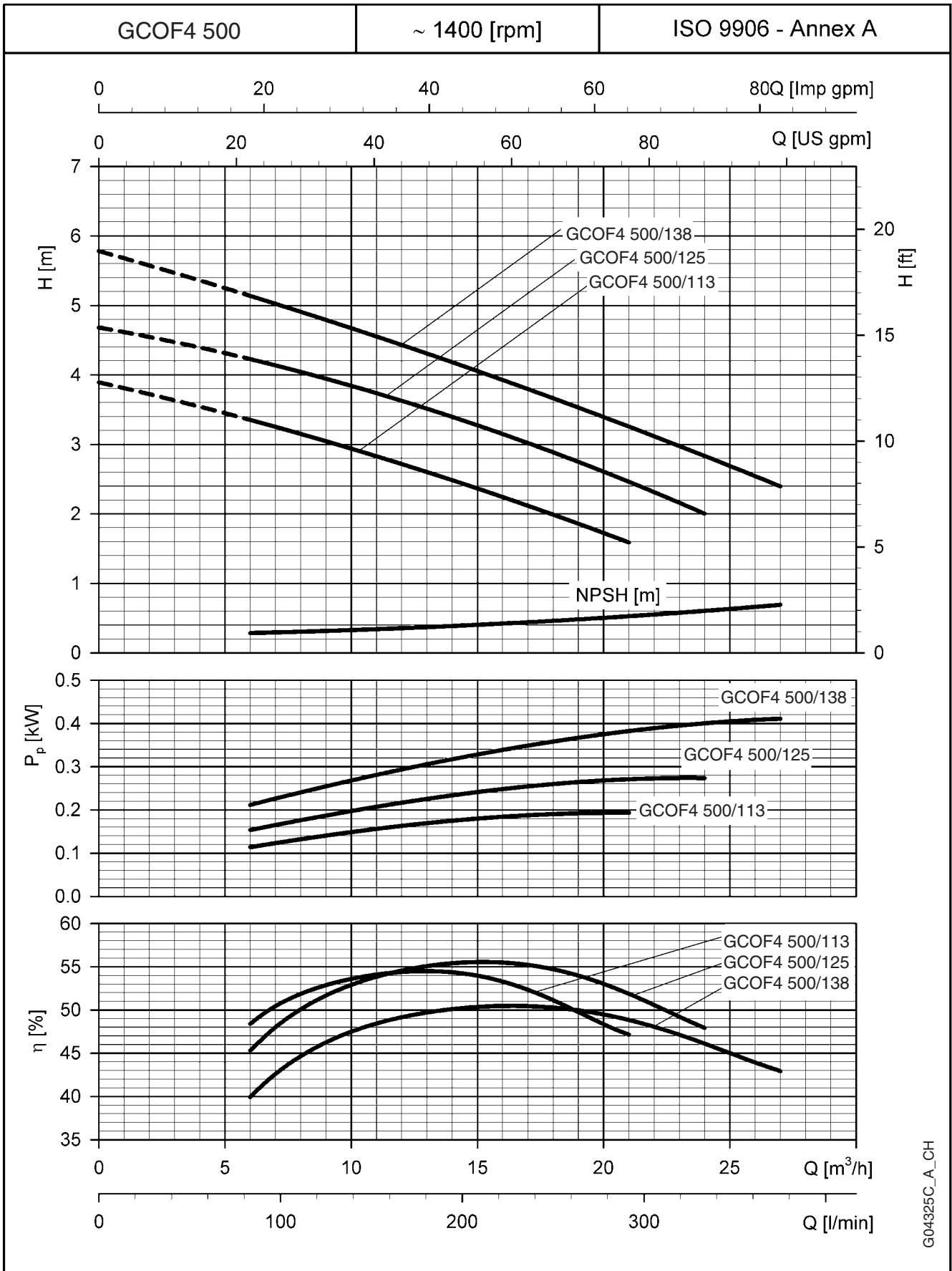
**GCOF4 SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES**



G04325B_A_CH

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 $\nu = 1 \text{ mm}^2/\text{sec}$.

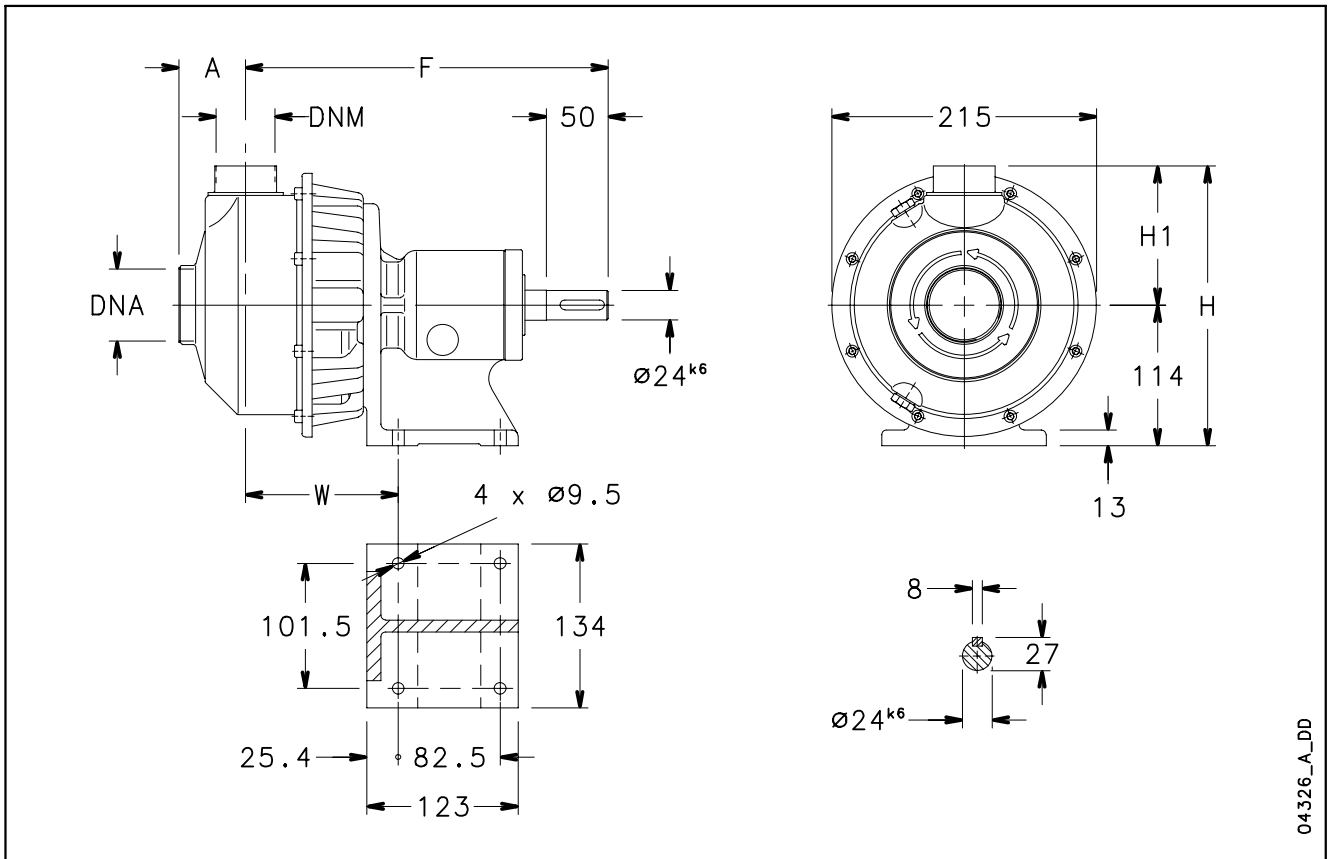
GCOF4 SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



G04325C_A_CH

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 $\nu = 1 \text{ mm}^2/\text{sec}$.

**GCEF - GCOF BARE SHAFT SERIES
DIMENSIONS AND WEIGHTS AT 50 Hz**



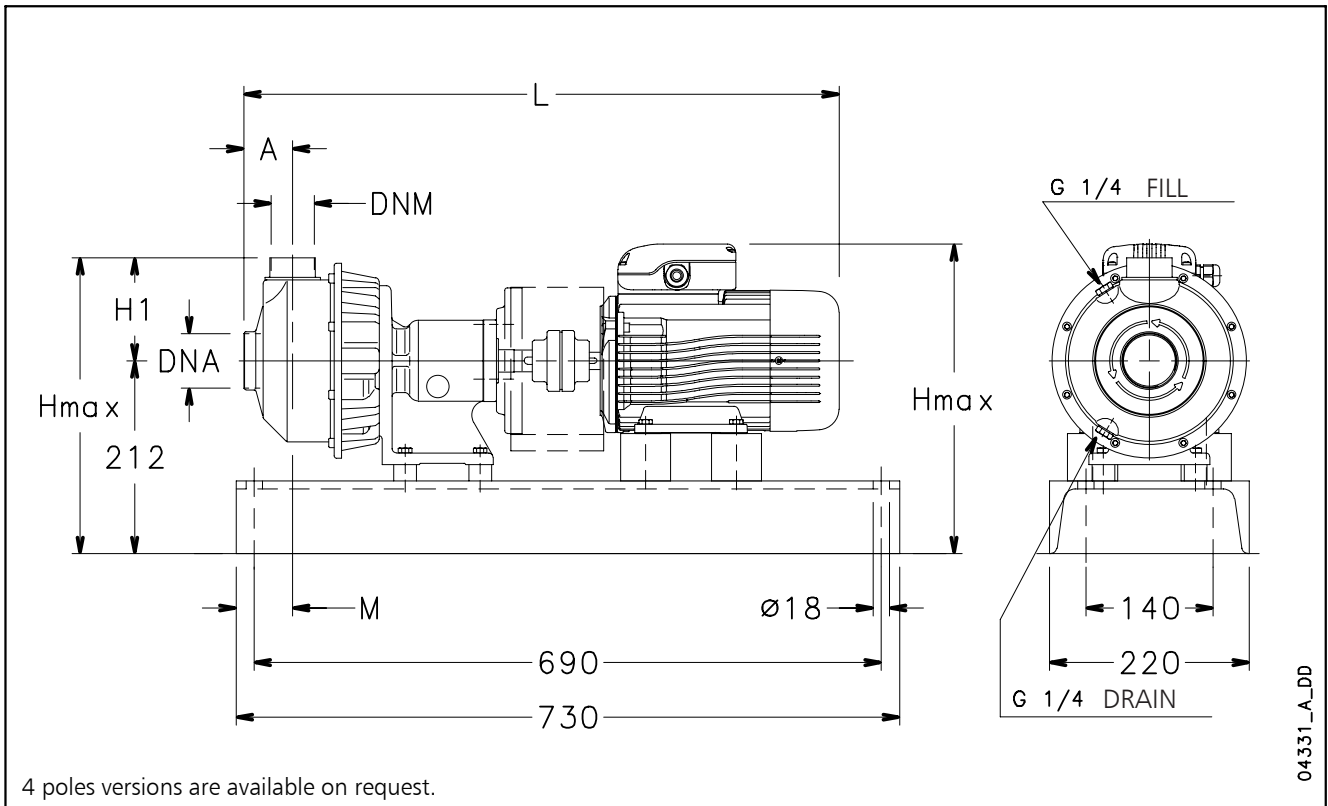
PUMP TYPE	DIMENSIONS (mm)					DNA	DNM	WEIGHT kg
	A	F	H	H1	W			
GCEF 70/132	51	282	225	111	112,5	Rp 1¼	Rp 1	11,5
GCEF 70/156	51	282	225	111	112,5	Rp 1¼	Rp 1	11,5
GCEF 80/156	51	282	225	111	112,5	Rp 1¼	Rp 1	11,5
GCEF 120/132	51	282	225	111	112,5	Rp 1¼	Rp 1	11,5
GCEF 120/156	51	282	225	111	112,5	Rp 1¼	Rp 1	11,5
GCEF 210/121	54	293	227	113	123,7	Rp 1½	Rp 1¼	12
GCEF 210/130	54	293	227	113	123,7	Rp 1½	Rp 1¼	12
GCEF 210/148	54	293	227	113	123,7	Rp 1½	Rp 1¼	12
GCEF 210/156	54	293	227	113	123,7	Rp 1½	Rp 1¼	12
GCEF 370/121	54	293	227	113	123,7	Rp 2	Rp 1¼	12
GCEF 370/130	54	293	227	113	123,7	Rp 2	Rp 1¼	12
GCEF 370/134	54	293	227	113	123,7	Rp 2	Rp 1¼	12

gcef-pompa-en_a_td

PUMP TYPE	DIMENSIONS (mm)					DNA	DNM	WEIGHT kg
	A	F	H	H1	W			
GCOF 350/91	54	293	227	113	124	Rp 1½	Rp 1¼	11
GCOF 350/103	54	293	227	113	124	Rp 1½	Rp 1¼	11
GCOF 350/110	54	293	227	113	124	Rp 1½	Rp 1¼	11
GCOF 350/117	54	293	227	113	124	Rp 1½	Rp 1¼	11
GCOF 350/128	54	293	227	113	124	Rp 1½	Rp 1¼	11
GCOF 350/135	54	293	227	113	124	Rp 1½	Rp 1¼	11
GCOF 500/113	54	293	227	113	124	Rp 2	Rp 1½	11,5
GCOF 500/125	54	293	227	113	124	Rp 2	Rp 1½	11,5
GCOF 500/138	54	293	227	113	124	Rp 2	Rp 1½	11,5

gcof-pompa-en_a_td

**GCEF - GCOF BASE-MOUNTED SERIES
DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES**



ELECTRIC PUMP TYPE	DIMENSIONS (mm)					DNA	DNM	WEIGHT kg
	A	H max	H1	L	M			
GCEF 70/03/A	51	333	111	600	73	Rp 1 1/4	Rp 1	41
GCEF 70/05/A	51	333	111	600	73	Rp 1 1/4	Rp 1	42
GCEF 80/07/D	51	341	111	642	73	Rp 1 1/4	Rp 1	46
GCEF 120/05/A	51	333	111	600	73	Rp 1 1/4	Rp 1	42
GCEF 120/09/D	51	341	111	642	73	Rp 1 1/4	Rp 1	47
GCEF 210/07/D	54	341	113	656	62	Rp 1 1/2	Rp 1 1/4	46
GCEF 210/11/D	54	341	113	656	62	Rp 1 1/2	Rp 1 1/4	48
GCEF 210/15/P	54	346	113	700	62	Rp 1 1/2	Rp 1 1/4	53
GCEF 210/18/P	54	346	113	700	62	Rp 1 1/2	Rp 1 1/4	54
GCEF 370/11/D	54	341	113	656	62	Rp 2	Rp 1 1/4	48
GCEF 370/15/P	54	346	113	700	62	Rp 2	Rp 1 1/4	53
GCEF 370/22/P	54	346	113	700	62	Rp 2	Rp 1 1/4	54

gcef-el-p-2p50-en_e_td

ELECTRIC PUMP TYPE	DIMENSIONS (mm)					DNA	DNM	WEIGHT kg
	A	H max	H1	L	M			
GCOF 350/03/A	54	333	113	612	62	Rp 1 1/2	Rp 1 1/4	57
GCOF 350/05/A	54	333	113	612	62	Rp 1 1/2	Rp 1 1/4	58
GCOF 350/07/D	54	341	113	654	62	Rp 1 1/2	Rp 1 1/4	61
GCOF 350/09/D	54	341	113	654	62	Rp 1 1/2	Rp 1 1/4	62
GCOF 350/11/D	54	341	113	654	62	Rp 1 1/2	Rp 1 1/4	62
GCOF 350/15/P	54	346	113	700	62	Rp 1 1/2	Rp 1 1/4	69
GCOF 500/15/P	54	346	113	700	62	Rp 2	Rp 1 1/2	71
GCOF 500/22/P	54	346	113	700	62	Rp 2	Rp 1 1/2	72
GCOF 500/30/P	54	366	113	731	62	Rp 2	Rp 1 1/2	73

gcof-el-p-2p50-en_d_td

Centrifugal pumps with open impeller and flanged connections

GSHO Series

MARKET SECTORS

CIVIL, INDUSTRIAL.

APPLICATIONS

- Industrial washing machines.
- Commercial dishwashers.
- Washing of metal parts, surface treatment.
- Food industry washing equipment and systems.
- Dyeing plants and textile industry.
- Plants for the circulation and transfer of moderately viscous liquids, with light chemical aggressiveness.



SPECIFICATIONS

PUMP and

APPLICATION RANGE

- The GSHO series consists of single stage centrifugal pumps made of pressed AISI 316 stainless steel with **open and recessed impeller made of AISI CF8M stainless steel (casted AISI 316)**.
- **Delivery** up to 56 m³/h 2 poles and up to 54 m³/h 4 poles.
- **Head** up to 50 m, 2 poles and up to 12 m, 4 poles.
- **Temperature** of pumped liquid: -10°C to +120°C for standard version.
- Maximum working **pressure**: 12 bar (PN 12).
- Available sizes: DN25 to DN50.
- **GSHOD** execution with **double mechanical seal**.
- **Suspended solids** handled up to:
 - Ø **20-22 mm**. for models in DN25 and DN32 nominal sizes.
 - Ø **30 mm**. for models in DN40 nominal sizes.
 - Ø **40 mm**. for models in DN50 nominal sizes.

MOTOR

- Three-phase asynchronous, squirrel cage rotor, enclosed construction, external ventilation.
- Performances according to EN 60034-1.
- Standard internal production motors with condensation drain plugs.
- **Standard supplied IE2/IE3 motors are compliant with Regulation (EC) no. 640/2009 and IEC 60034-30.**
- **IP55 Protection.**
- Class 155 (F) **insulation.**
- Max. ambient **temperature** : 40°C. For different environmental conditions check the power.
- Overload protection to be provided by user.
- Standard voltage, 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;

CONSTRUCTION CHARACTERISTICS

- Stainless steel centrifugal pump with end suction and radial discharge ports.
- Pump body made of AISI 316L stainless steel.
- Open and recessed impeller in AISI CF8M stainless steel.
- Mechanical seal according to EN 12756 (ex DIN 24960).
- AISI 316L stainless steel fill & drain plugs.
- Flanges in compliance with EN 1092-1 (ex UNI 2236) and DIN 2532.

MOTOR-PUMP COUPLING

- **GSHOE**: close-coupled by means of a bracket with impeller keyed directly to the motor shaft extension.
- **GSHOS**: with a bracket, adaptor and rigid coupling keyed to the standard motor shaft extension.
- **GSHOD**: execution with double mechanical seal. Bracket, adaptor and rigid coupling keyed to the standard motor shaft extension.

ACCESSORIES ON REQUEST

- AISI 316 stainless steel or galvanized iron counter-flanges.
- Intermediate flange with pressure gauge connection.
- Pump and motor shims.

DIMENSIONS OF DISPLACED SOLIDS

TYPE	SIZE	∅ SOLIDS (mm)
GSHOE	25-32 / 200	20
GSHOS	25-32 / 125 - 160	22
GSHOD	40 / 125 - 160	30
	50 / 125 - 160	40

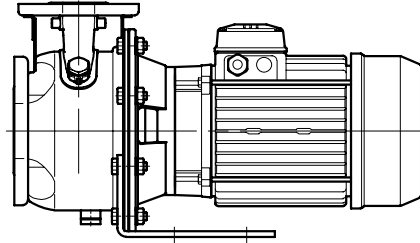
gsho-pas-sol-en_a_ps

The GSHO pumps are not drainage pumps, so can not be used for applications like waste water disposal or black waters. The GSHO series can be used in washing systems or for clean water with small solid particles included.

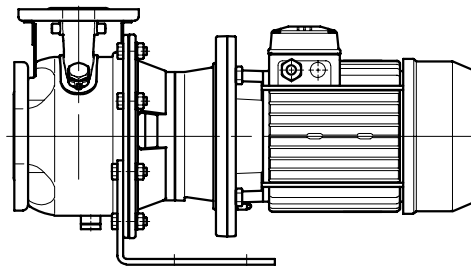
The recessed position of the impeller allows the pumping of liquids with small solid particles reducing the risk of clogging the pump.

The dimensions of the solids are indicated in the table.

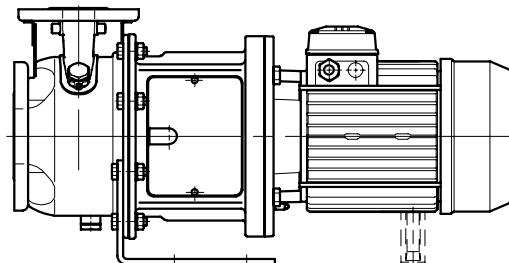
GSHOE - GSHOE4



GSHOS - GSHOS4

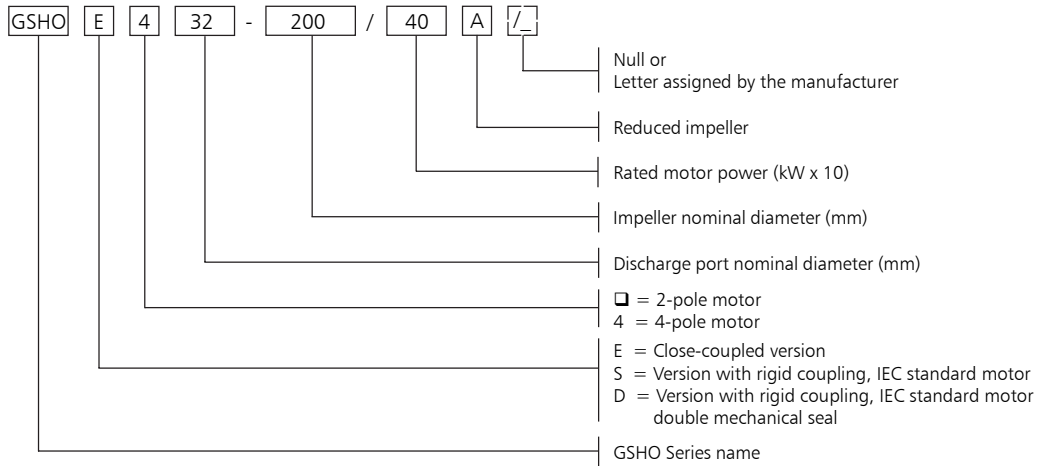


GSHOD - GSHOD4

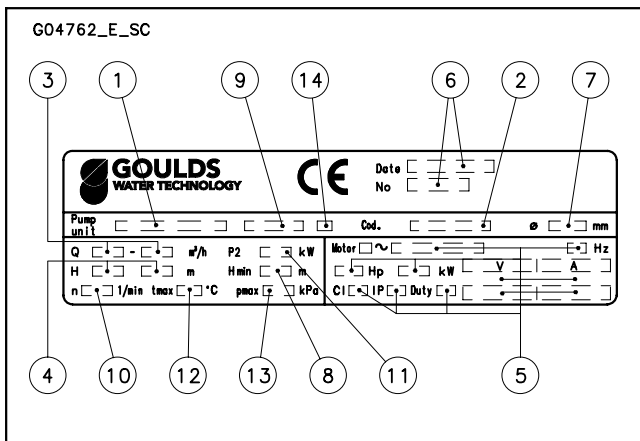


G05502_A_SC

GSHO SERIES IDENTIFICATION CODE



RATING PLATE



LEGEND

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

LIST OF MODELS GSHO SERIES 50 Hz 2 POLES

SIZE	kW	VERSIONS		
		GSHOE	GSHOS	GSHOD
25-125/11	1,1	•	•	•
25-125/15	1,5	•	•	•
25-125/22	2,2	•	•	•
25-160/30	3	•	•	•
25-160/40	4	•	•	•
25-160/55	5,5	•	•	•
25-200/30	3	•	•	•
25-200/40	4	•	•	•
25-200/55	5,5	•	•	•
32-125/11	1,1	•	•	•
32-125/15	1,5	•	•	•
32-125/22	2,2	•	•	•
32-160/30	3	•	•	•
32-160/40	4	•	•	•
32-160/55	5,5	•	•	•
32-200/30	3	•	•	•
32-200/40	4	•	•	•
32-200/55	5,5	•	•	•
40-125/15	1,5	•	•	•
40-125/22	2,2	•	•	•
40-125/30	3	•	•	•
40-160/40	4	•	•	•
40-160/55	5,5	•	•	•
40-160/75	7,5	•	•	•
50-125/55	5,5	•	•	•
50-125/75	7,5	•	•	•
50-160/92	9,2	•	-	-
50-160/110A	11	-	•	•
50-160/110	11	•	•	•

• = Available

gsho_2p50-en_a_tem

4 POLES

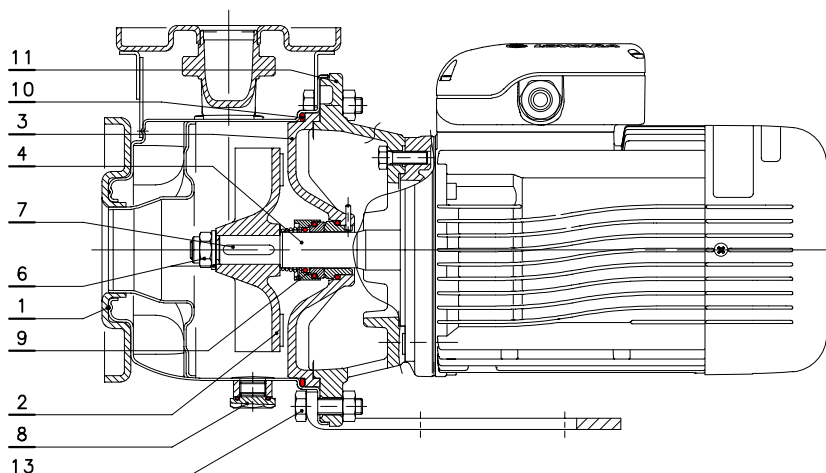
SIZE	kW	VERSIONS		
		GSHOE4	GSHOS4	GSHOD4
25-125/03	0,37	•	•	•
25-160/03	0,37	•	•	•
25-160/05	0,55	•	•	•
25-160/07	0,75	•	•	•
25-200/07	0,75	•	•	•
32-125/03	0,37	•	•	•
32-160/03	0,37	•	•	•
32-160/05	0,55	•	•	•
32-160/07	0,75	•	•	•
32-200/07	0,75	•	•	•
40-125/03	0,37	•	•	•
40-160/05	0,55	•	•	•
40-160/07	0,75	•	•	•
40-160/11	1,1	•	•	•
50-125/07	0,75	•	•	•
50-125/11	1,1	•	•	•
50-160/11	1,1	•	•	•
50-160/15	1,5	•	•	•

• = Available

gsho4_4p50_a_tem

**GSHOE - GSHOE4 SERIES
LIST OF MODELS AND TABLE OF MATERIALS**

05505_A_DS



VERSIONS	
2 POLES	4 POLES
GSHOE 25-125/11	GSHOE4 25-160/05
GSHOE 25-125/15	GSHOE4 25-160/07
GSHOE 25-125/22	GSHOE4 25-200/07
GSHOE 25-160/30	GSHOE4 32-160/05
GSHOE 25-160/40	GSHOE4 32-160/07
GSHOE 25-160/55	GSHOE4 32-200/07
GSHOE 25-200/30	GSHOE4 40-160/05
GSHOE 25-200/40	GSHOE4 40-160/07
GSHOE 25-200/55	GSHOE4 40-160/11
GSHOE 32-125/11	GSHOE4 50-125/07
GSHOE 32-125/15	GSHOE4 50-125/11
GSHOE 32-125/22	GSHOE4 50-160/11
GSHOE 32-160/30	GSHOE4 50-160/15
GSHOE 32-160/40	
GSHOE 32-160/55	
GSHOE 32-200/30	
GSHOE 32-200/40	
GSHOE 32-200/55	
GSHOE 40-125/15	
GSHOE 40-125/22	
GSHOE 40-125/30	
GSHOE 40-160/40	
GSHOE 40-160/55	
GSHOE 40-160/75	
GSHOE 50-125/55	
GSHOE 50-125/75	
GSHOE 50-160/92	
GSHOE 50-160/110	

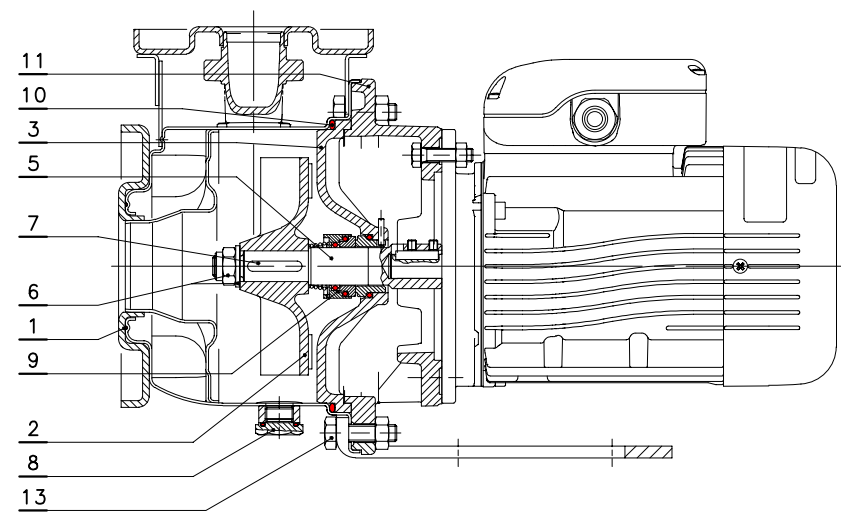
gshoe-gshoe4-p-en_a_mo

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
2	Impeller	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (cast AISI 316)
3	Seal housing	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (cast AISI 316)
4	Shaft extension	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
5	Rigid shaft coupling	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
6	Impeller locknut and washer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
7	Tab	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
8	Fill/drain plugs	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
9	Mechanical seal	Silicon Carbide / Silicon Carbide / FPM (standard version)		
10	Elastomers	FPM (standard version)		
11	Adapter	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
13	Pump body fastening bold & screws	Galvanized steel		

shoe-en_a_tm

GSHOE4 SERIES
LIST OF MODELS AND TABLE OF MATERIALS

05506_A_DS



VERSIONS	
4 POLES	
GSHOE4 25-125/03	
GSHOE4 25-160/03	
GSHOE4 25-200/03	
GSHOE4 32-125/03	
GSHOE4 32-160/03	
GSHOE4 40-125/03	

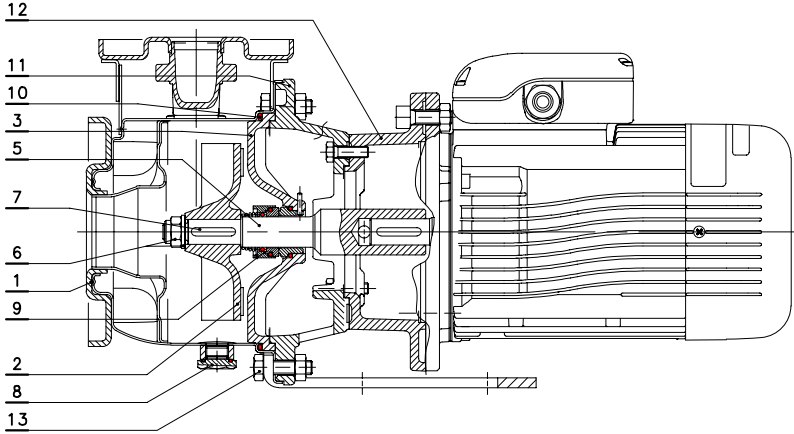
gshoe4-p-en_a_mo

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
2	Impeller	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (cast AISI 316)
3	Seal housing	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (cast AISI 316)
4	Shaft extension	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
5	Rigid shaft coupling	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
6	Impeller locknut and washer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
7	Tab	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
8	Fill/drain plugs	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
9	Mechanical seal	Silicon Carbide / Silicon Carbide / FPM (standard version)		
10	Elastomers	FPM (standard version)		
11	Adapter	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
13	Pump body fastening bold & screws	Galvanized steel		

shoe-en_a_tm

GSHOS - GSHOS4 SERIES
LIST OF MODELS AND TABLE OF MATERIALS

05555_A_DS



VERSIONS	
2 POLES	4 POLES
GSHOS 25-125/11	GSHOS4 25-125/03
GSHOS 25-125/15	GSHOS4 25-160/03
GSHOS 25-125/22	GSHOS4 25-160/05
GSHOS 25-160/30	GSHOS4 25-160/07
GSHOS 25-160/40	GSHOS4 25-200/07
GSHOS 25-160/55	GSHOS4 32-125/03
GSHOS 25-200/30	GSHOS4 32-160/03
GSHOS 25-200/40	GSHOS4 32-160/05
GSHOS 25-200/55	GSHOS4 32-160/07
GSHOS 32-125/11	GSHOS4 32-200/07
GSHOS 32-125/15	GSHOS4 40-125/03
GSHOS 32-125/22	GSHOS4 40-160/05
GSHOS 32-160/30	GSHOS4 40-160/07
GSHOS 32-160/40	GSHOS4 40-160/11
GSHOS 32-160/55	GSHOS4 50-125/07
GSHOS 32-200/30	GSHOS4 50-125/11
GSHOS 32-200/40	GSHOS4 50-160/11
GSHOS 32-200/55	GSHOS4 50-160/15
GSHOS 40-125/15	
GSHOS 40-125/22	
GSHOS 40-125/30	
GSHOS 40-160/40	
GSHOS 40-160/55	
GSHOS 40-160/75	
GSHOS 50-125/55	
GSHOS 50-125/75	

gshos-gshos4-p-en_a_mo

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
2	Impeller 25-32-40-50-65(160)	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (cast AISI 316)
3	Seal housing	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (cast AISI 316)
5	Rigid shaft coupling	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
6	Impeller locknut and washer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
7	Tab	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
8	Fill/drain plugs	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
9	Mechanical seal	Silicon Carbide / Silicon Carbide / FPM (standard version)		
10	Elastomers	FPM (standard version)		
11	Adapter	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
12	Adapter-motor coupling	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
13	Pump body fastening bolts & screws	Galvanized steel		

GSHOS SERIES
LIST OF MODELS AND TABLE OF MATERIALS

05556_A_DS

VERSIONS
2 POLES
GSHOS 50-160/110A
GSHOS 50-160/110

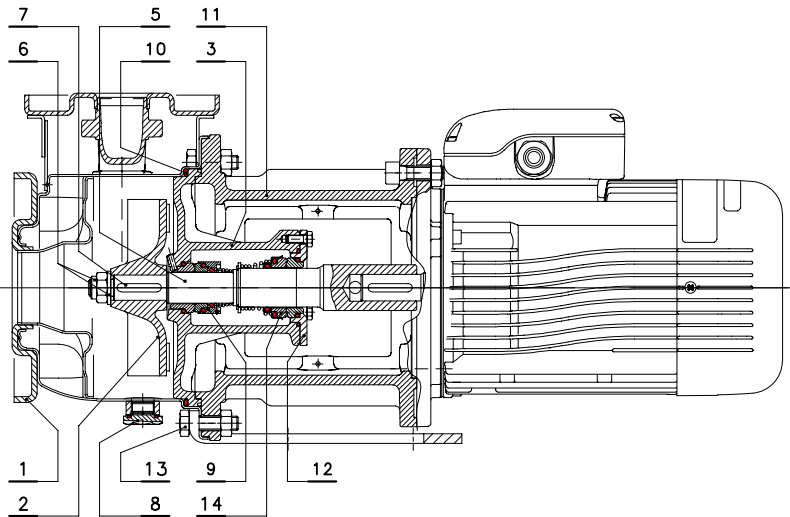
gshos-s-en_a_mo

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
2	Impeller 25-32-40-50-65(160)	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (cast AISI 316)
3	Seal housing	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (cast AISI 316)
5	Rigid shaft coupling	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
6	Impeller locknut and washer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
7	Tab	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
8	Fill/drain plugs	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
9	Mechanical seal	Silicon Carbide / Silicon Carbide / FPM (standard version)		
10	Elastomers	FPM (standard version)		
11	Adapter	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
12	Adapter-motor coupling	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
13	Pump body fastening bolts & screws	Galvanized steel		

shos-en_a_tm

**GSHOD - GSHOD4 SERIES (DOUBLE MECHANICAL SEAL)
LIST OF MODELS AND TABLE OF MATERIALS**

05575_A_DS



VERSIONS	
2 POLES	4 POLES
GSHOD 25-125/11	GSHOD4 25-125/03
GSHOD 25-125/15	GSHOD4 25-160/03
GSHOD 25-125/22	GSHOD4 25-160/05
GSHOD 25-160/30	GSHOD4 25-160/07
GSHOD 25-160/40	GSHOD4 25-200/07
GSHOD 25-160/55	GSHOD4 32-125/03
GSHOD 25-200/30	GSHOD4 32-160/03
GSHOD 25-200/40	GSHOD4 32-160/05
GSHOD 25-200/55	GSHOD4 32-160/07
GSHOD 32-125/11	GSHOD4 32-200/07
GSHOD 32-125/15	GSHOD4 40-125/03
GSHOD 32-125/22	GSHOD4 40-160/05
GSHOD 32-160/30	GSHOD4 40-160/07
GSHOD 32-160/40	GSHOD4 40-160/11
GSHOD 32-160/55	GSHOD4 50-125/07
GSHOD 32-200/30	GSHOD4 50-125/11
GSHOD 32-200/40	GSHOD4 50-160/11
GSHOD 32-200/55	GSHOD4 50-160/15
GSHOD 40-125/15	
GSHOD 40-125/22	
GSHOD 40-125/30	
GSHOD 40-160/40	
GSHOD 40-160/55	
GSHOD 40-160/75	
GSHOD 50-125/55	
GSHOD 50-125/75	

gshod-gshod4-p-en_a_mo

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
2	Impeller	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (cast AISI 316)
3	Seal housing	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (cast AISI 316)
5	Rigid shaft coupling	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
6	Impeller locknut and washer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
7	Tab	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
8	Fill/drain plugs	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
9	(front) Mechanical seal	Silicon Carbide / Silicon Carbide / FPM (standard version)		
10	Elastomers	FPM (standard version)		
11	Adapter	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
12	Seal cover	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
13	Pump body fastening bolts & screws	Galvanized steel		
14	(back) Mechanical seal	Ceramic / Carbon / FPM (standard version)		

**GSHOD SERIES (DOUBLE MECHANICAL SEAL)
LIST OF MODELS AND TABLE OF MATERIALS**

05576_A_DS

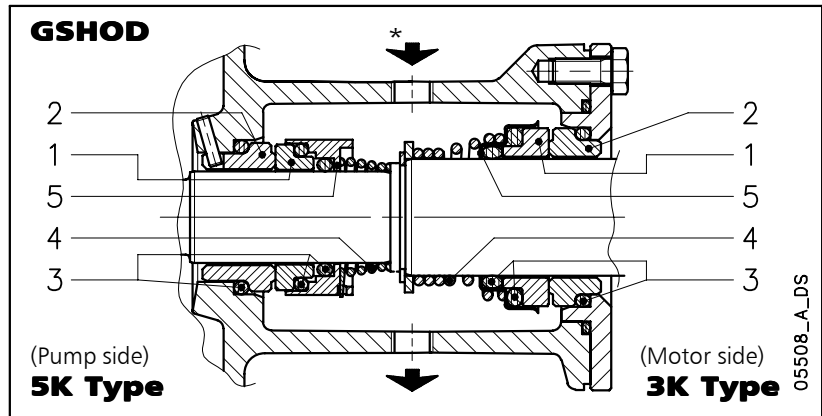
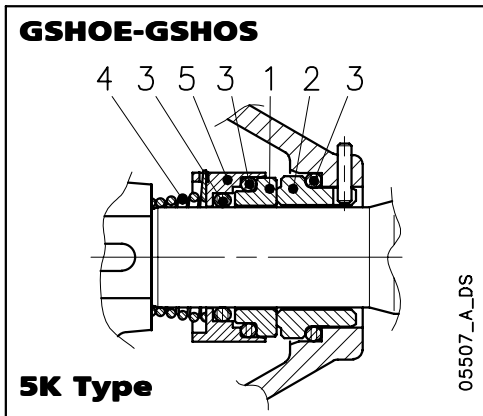
VERSIONS	
2 POLES	
GSHOD 50-160/110A	
GSHOD 50-160/110	

gshod-s-en_a_mo

REF. N.	NAME	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Pump body	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
2	Impeller	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (cast AISI 316)
3	Seal housing	Stainless steel	EN 10213-4-GX5CrNiMo19-11-2 (1.4408)	ASTM CF8M (cast AISI 316)
5	Rigid shaft coupling	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
6	Impeller locknut and washer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
7	Tab	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
8	Fill/drain plugs	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
9	(front) Mechanical seal	Silicon Carbide / Silicon Carbide / FPM (standard version)		
10	Elastomers	FPM (standard version)		
11	Adapter	Cast iron	EN 1561-GJL-200 (JL1030)	ASTM Class 25
12	Seal cover	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
13	Pump body fastening bolts & screws	Galvanized steel		
14	(back) Mechanical seal	Ceramic / Carbon / FPM (standard version)		

GSHE MECHANICAL SEAL SERIES, ACCORDING TO EN 12756

Mechanical seal with mounting dimensions according to EN12756 (ex DIN 24960) and ISO 3069.



(*) Flushing of the seals has to be done with clean liquid and external flushing circuit. The liquid has to be compatible with the pumped liquid and with a pressure 0,5 bar higher than the pressure in the pump.
(Rp 1/4 connections).

LIST OF MATERIALS

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

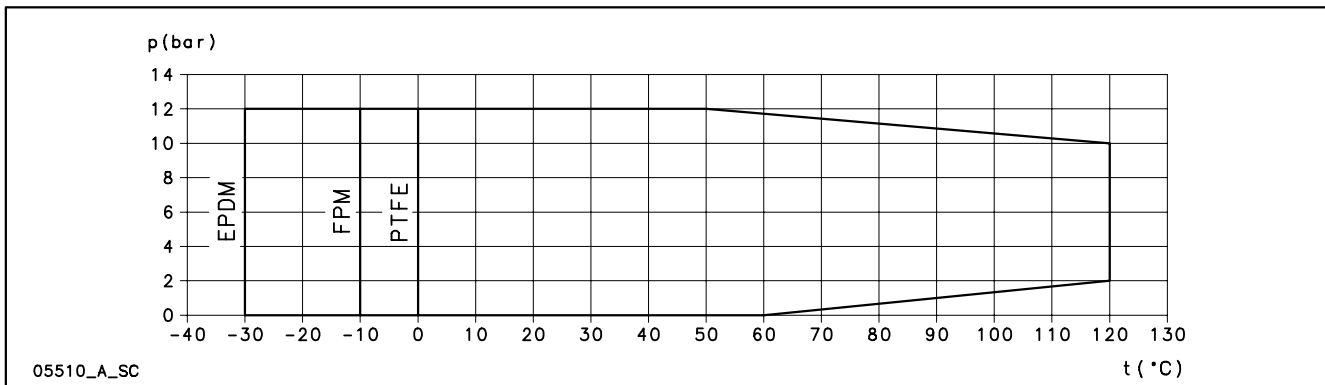
sho-shod_ten-mec-en_a_tm

SEAL TYPES

TYPE	POSITION					TEMPERATURE (°C)
	1 ROTATING ASSEMBLY	2 FIXED ASSEMBLY	3 ELASTOMERS	4 SPRINGS	5 OTHER COMPONENTS	
STANDARD MECHANICAL SEALS						
3K - V B V G G	V	B	V	G	G	-10 +120
5K - Q ₁ Q ₁ V G G	Q ₁	Q ₁	V	G	G	-10 +120
OTHER MECHANICAL SEAL TYPES						
3K - V B E G G	V	B	E	G	G	-30 +120
5K - Q ₁ B V G G	Q ₁	B	V	G	G	-10 +120
5K - Q ₁ Q ₁ E G G	Q ₁	Q ₁	E	G	G	-30 +120
5K - Q ₁ B E G G	Q ₁	B	E	G	G	-30 +120
5K - Q ₁ C T G G	Q ₁	C	T	G	G	0 +120
5K - Q ₁ Q ₁ T G G	Q ₁	Q ₁	T	G	G	0 +120

sho-shod_tipi-ten-mec-en_a_tc

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



MOTORS FOR GSHO 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:

- **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.

GSHOE 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					
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	84,0	81,4	3	By June 2011	
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	85,6	86,0	84,0		3
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	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	85,5	86,8	85,6		2
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	86,3	86,3	86,3		2
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	87,6	87,6	87,6		2
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	88,6	88,1	88,1		2
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	89,3	88,8	88,8		2
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	91,0	91,1	90,3		2

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.						cos ϕ	I _s / I _N	T _N Nm	T _s /T _N	T _m /T _N
	Model										
1,1	SM90RB14/311PE		90R	SPECIAL	2	50	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

P _N kW	Voltage U _N V										n _N min ⁻¹	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)															
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	See note:	≤ 1000	-15 / 40	No
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				

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

gshoe-ie2-mott-2p50-en_b_te

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

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

GSHOS - GSHOD 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			
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	3	By June 2011	
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			
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	2		By June 2011
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	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			

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.						cos ϕ	I _s / I _N	T _N Nm	T _s /T _N	T _m /T _N
	Model										
1,1	SM80B5/311PE		80	B5	2	50	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	PLM160B35/3110		160				B35	0,88	8,14	35,6	2,22

P _N kW	Voltage U _N V										n _N min ⁻¹	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	
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	See note.	≤ 1000	-15 / 40	No
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	35,5	34,3	33,4	20,5	19,8	19,3	20,6	19,9	19,5	11,9	11,5	2940 ÷ 2950				

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

gshos-gshod-ie2-mott-2p50-en_b_te

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

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

GSHOE4 - GSHOS4 - GSHOD4 SERIES THREE-PHASE MOTORS AT 50 Hz, 4 POLES

P _N kW	Efficiency η_N %																		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				IE		
	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				
0,37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	By June 2011
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	80,4	81,2	78,4	
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	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	83,1	83,1	82,0	
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	80,4	81,2	78,4	
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	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	83,1	83,1	82,0	

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.						cos ϕ	I _s / I _N	T _N Nm	Ts/T _N	Tm/T _N	
	Model											
0,37	SM471B5/304		GSHOE4	71	SPECIAL	4	50	0,60	3,39	2,57	3,40	2,47
0,55	SM490RB14S/305			90R				0,67	3,95	3,77	2,45	2,38
0,75	LLM490RB14S/307			90				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
0,37	SM480B5/304		GSHOS GSHOD	80	B5	4	50	0,60	3,39	2,57	3,40	2,47
0,55	SM480B5/305			80				0,67	3,95	3,77	2,45	2,38
0,75	LLM480B5/307			90				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

P _N kW	Voltage U _N V											n _N min ⁻¹	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					
0,37	2,46	2,53	2,62	1,42	1,46	1,51	-	-	-	-	-	1355 ÷ 1380	See note.	≤ 1000	-15 / 40	No
0,55	2,98	3,03	3,1	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				
0,37	2,46	2,53	2,62	1,42	1,46	1,51	-	-	-	-	-	1355 ÷ 1380				
0,55	2,98	3,03	3,1	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				

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

gshoe4-ie2-mott-4p50-en_a_te

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

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).

GSHOE 50 Hz 2-POLE MOTOR NOISE

POWER kW	MOTOR TYPE SIZE IEC*	NOISE LpA dB
1,1	90R	<70
1,5	90R	<70
2,2	90R	<70
3	90	<70
4	112R	<70
5,5	112	<70
7,5	132	71
9,2	132	73
11	132	73

GSHOS-GSHOD 50 Hz 2-POLE MOTOR NOISE

POWER kW	MOTOR TYPE SIZE IEC*	NOISE LpA dB
1,1	80	<70
1,5	90R	<70
2,2	90R	<70
3	100R	<70
4	112R	<70
5,5	132R	<70
7,5	132	71
11	160	71

GSHOE4 50 Hz 4-POLE MOTOR NOISE

POWER kW	MOTOR TYPE SIZE IEC*	NOISE LpA dB
0,37	71	<70
0,55	90R	<70
0,75	90R	<70
1,1	90	<70
1,5	90	<70

GSHOS4-GSHOD4 50 Hz 4-POLE MOTOR NOISE

POWER kW	MOTOR TYPE SIZE IEC	NOISE LpA dB
0,37	80	<70
0,55	80	<70
0,75	80	<70
1,1	90	<70
1,5	90	<70

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

sho_mott-en_b_tr

AVAILABLE VOLTAGES MOTORS FOR GSHO SERIES

P _N kW	THREE-PHASE - 2 POLES																	
	50 Hz							60 Hz							50/60 Hz			
	3 x 220-230-240/380-400-415	3 x 380-400-415/660-690	3 x 200-208/346-360	3 x 255-265/440-460	3 x 290-300/500-525	3 x 440-460/-	3 x 500-525/-	3 x 220-230/380-400	3 x 255-265-277/440-460-480	3 x 380-400/660-690	3 x 440-460-480/-	3 x 110-115/190-200	3 x 200-208/346-360	3 x 330-346/575-600	3 x 575/-	3 x 230/400 50 Hz	3 x 265/460 60 Hz	3 x 400/690 50 Hz
1,1	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o	o
1,5	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o	o
2,2	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o	o
3	s	o	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o	o
4	o	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o	o
5,5	o	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o	o
7,5	o	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o	o
9,2	o	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o	o
11	o	s	o	o	o	o	o	s	o	o	o	o	o	o	o	o	o	o

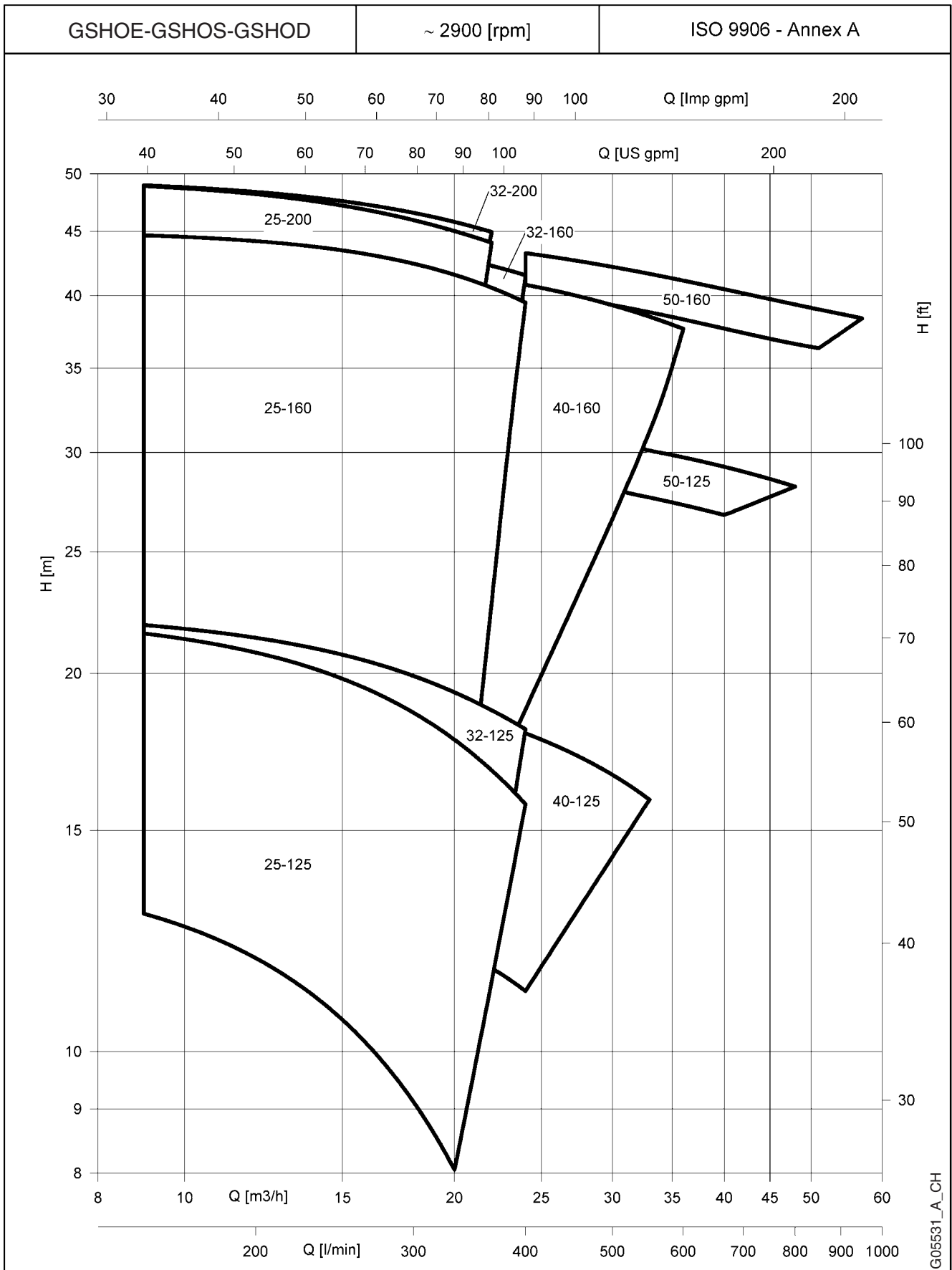
s = Standard voltage

o = Optional voltage

- = Not available

sho-volt-low-a-en_a_te

GSHOE - GSHOS - GSHOD SERIES
HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 2 POLES



G05531_A_CH

These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$

GSHOE - GSHOS - GSHOD SERIES

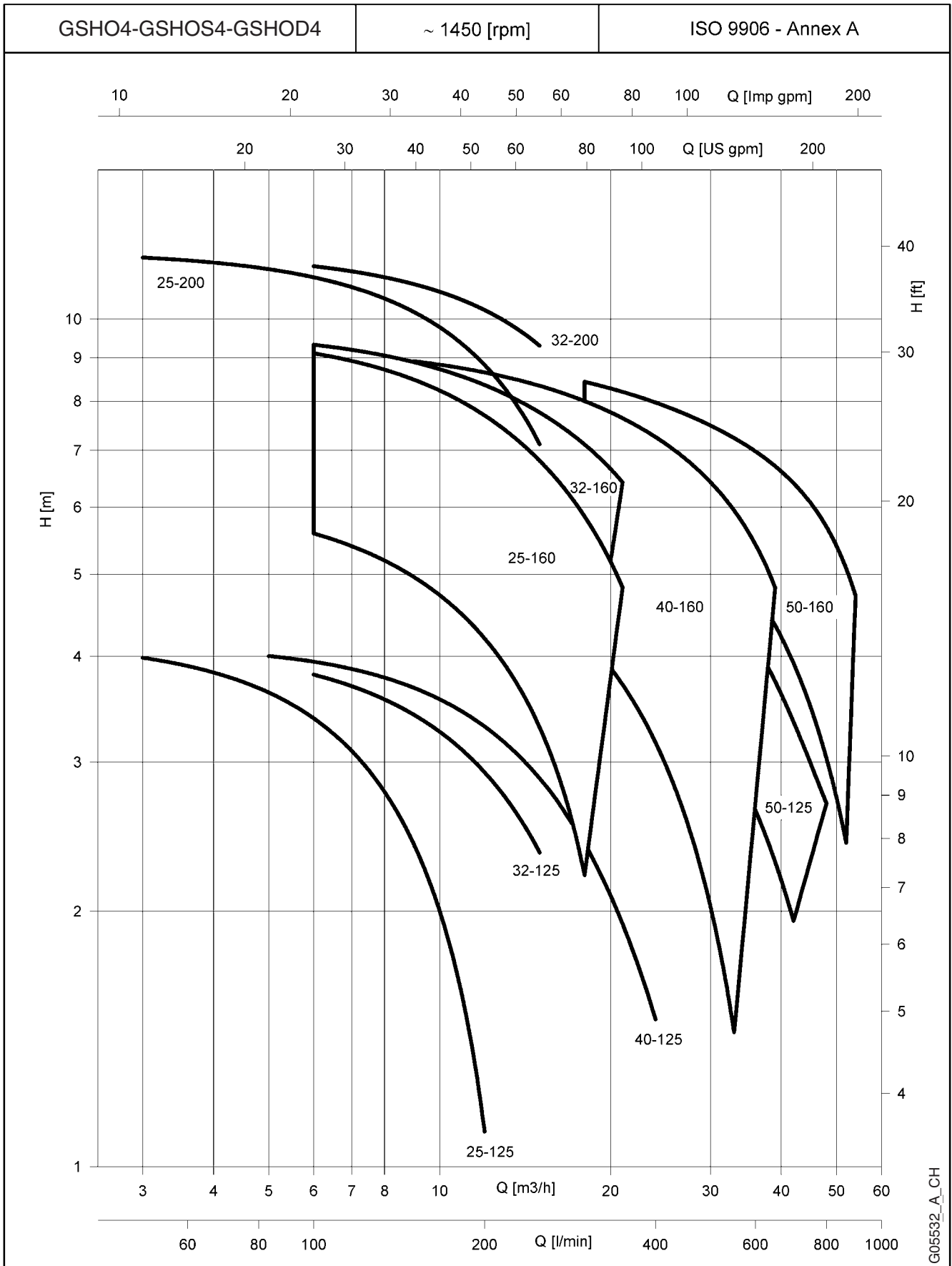
TABLE OF HYDRAULIC PERFORMANCES AT 50 Hz, 2 POLES

PUMP TYPE	RATED POWER		Q = DELIVERY																Passes solids up to (mm)		
			l/min	150	200	250	300	333	350	367	383	400	500	550	567	600	667	800		950	
			m ³ /h	9	12	15	18	20	21	22	23	24	30	33	34	36	40	48		57	
H = TOTAL HEAD METRES COLUMN OF WATER																					
GSHO.. 25-125/11	1,1	1,5	14,1	12,9	11,9	10,6	9,1	8,0											22		
GSHO.. 25-125/15	1,5	2	17,6	16,6	15,7	14,6	13,4	12,4	11,9	11,4									22		
GSHO.. 25-125/22	2,2	3	22,4	21,5	20,8	19,8	18,6	17,7	17,2	16,8	16,3	15,7							22		
GSHO.. 25-160/30	3	4	29,3	28,3	27,4	26,2	24,9	23,9	23,4	22,9									22		
GSHO.. 25-160/40	4	5,5	36,7	36,2	35,5	34,4	33,2	32,2	31,7	31,2	30,6								22		
GSHO.. 25-160/55	5,5	7,5	44,8	44,7	44,2	43,5	42,4	41,6	41,1	40,6	40,1	39,5							22		
GSHO.. 25-200/30	3	4	32,6	31,4	30,4	29,2	27,6	26,5											20		
GSHO.. 25-200/40	4	5,5	40,7	40,0	39,2	38,1	36,8	35,8	35,2										20		
GSHO.. 25-200/55	5,5	7,5	49,3	48,9	48,2	47,2	45,9	45,0	44,6	44,1									20		
GSHO.. 32-125/11	1,1	1,5	14,0	13,2	12,4	11,5	10,4	9,6											22		
GSHO.. 32-125/15	1,5	2	17,6	16,7	16,1	15,4	14,4	13,7	13,4	13,0									22		
GSHO.. 32-125/22	2,2	3	22,7	21,9	21,4	20,7	19,9	19,3	19,0	18,7	18,4	18,1							22		
GSHO.. 32-160/30	3	4	29,3	28,6	27,9	27,1	26,1	25,4	25,0	24,6									22		
GSHO.. 32-160/40	4	5,5	36,8	36,4	36,0	35,3	34,4	33,7	33,3	32,9	32,5								22		
GSHO.. 32-160/55	5,5	7,5	44,7	44,7	44,5	44,0	43,4	42,9	42,6	42,2	41,9	41,5							22		
GSHO.. 32-200/30	3	4	32,6	31,4	30,6	29,5	28,1	27,0											20		
GSHO.. 32-200/40	4	5,5	40,9	40,3	39,5	38,6	37,4	36,5	36,1										20		
GSHO.. 32-200/55	5,5	7,5	49,5	49,0	48,4	47,6	46,6	45,8	45,4	45,0									20		
GSHO.. 40-125/15	1,5	2	14,0		13,5	13,1	12,5	12,1	11,9	11,7	11,4	11,2							30		
GSHO.. 40-125/22	2,2	3	18,6		17,8	17,3	16,8	16,4	16,2	16,0	15,9	15,7	14,3						30		
GSHO.. 40-125/30	3	4	20,9		19,9	19,5	19,0	18,7	18,5	18,3	18,1	17,9	16,6	15,9					30		
GSHO.. 40-160/40	4	5,5	31,3		30,7	30,2	29,5	29,1	28,8	28,6	28,3	28,1	26,6						30		
GSHO.. 40-160/55	5,5	7,5	38,7		38,3	37,9	37,4	36,9	36,7	36,4	36,1	35,9	34,1	33,2	33,0				30		
GSHO.. 40-160/75	7,5	10	42,9		42,8	42,4	42,0	41,6	41,4	41,2	41,0	40,8	39,3	38,5	38,2	37,6			30		
GSHO.. 50-125/55	5,5	7,5	29,7				29,3	29,1	29,0	28,9	28,8	28,7	28,0	27,6	27,5	27,2	26,7		40		
GSHO.. 50-125/75	7,5	10	32,0				31,7	31,6	31,5	31,4	31,3	31,2	30,5	30,1	30,0	29,7	29,2	28,2	40		
GSHO.. 50-160/92	9,2	12,5	41,9										40,4	39,3	38,8	38,6	38,3	37,7	36,6	30	
GSHO.. 50-160/110	11	15	45,1										43,2	42,2	41,6	41,5	41,1	40,5	39,4	38,4	30

Performances according to ISO standards 9906 - Annex A.

gsho_2p50-en_c_th

GSHOE4 - GSHOS4 - GSHOD4 SERIES
HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 4 POLES



G05532_A_CH

These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$

GSHOE4 - GSHOS4 - GSHOD4 SERIES

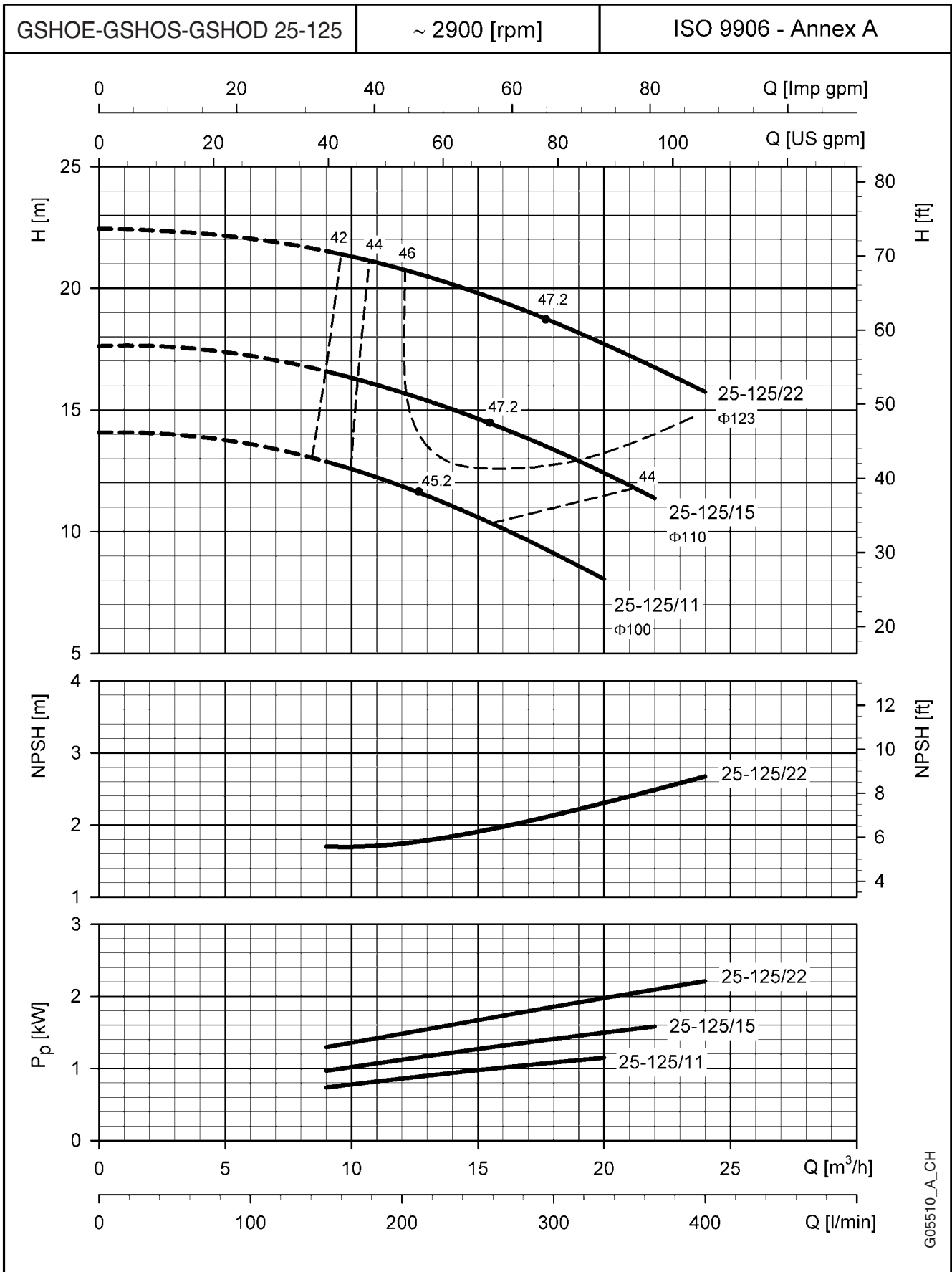
TABLE OF HYDRAULIC PERFORMANCES AT 50 Hz, 4 POLES

PUMP TYPE	RATED POWER		Q = DELIVERY																Passes solids up to (mm)	
	kW	HP	l/min m ³ /h	0	50	100	150	200	250	300	350	400	500	550	600	650	700	800		867
			H = TOTAL HEAD METRES COLUMN OF WATER																	
			0	3	6	9	12	15	18	21	24	30	33	36	39	42	48	52	54	
GSHO..4 25-125/03	0,37	0,5	4,2	4,0	3,4	2,4	1,1													22
GSHO..4 25-160/03	0,37	0,5	6,1		5,6	5,0	4,2	3,3	2,2											22
GSHO..4 25-160/05	0,55	0,75	7,8		7,3	6,7	6,0	5,1	4,1											22
GSHO..4 25-160/07	0,75	1	9,5		9,1	8,5	7,7	6,8	5,9	4,8										22
GSHO..4 25-200/07	0,75	1	12,0	11,8	11,2	10,2	8,8	7,1												20
GSHO..4 32-125/03	0,37	0,5	4,2		3,8	3,4	2,9	2,3												22
GSHO..4 32-160/03	0,37	0,5	6,2		5,7	5,2	4,7	4,0	3,3											22
GSHO..4 32-160/05	0,55	0,75	7,8		7,5	7,0	6,5	6,0	5,3											22
GSHO..4 32-160/07	0,75	1	9,5		9,3	8,9	8,4	7,8	7,1	6,4										22
GSHO..4 32-200/07	0,75	1	12,0		11,5	11,0	10,2	9,3												20
GSHO..4 40-125/03	0,37	0,5	3,7			3,3	3,0	2,6	2,2	1,8	1,4									30
GSHO..4 40-160/05	0,55	0,75	5,9			5,4	5,1	4,7	4,2	3,7	3,2	2,0	1,4							30
GSHO..4 40-160/07	0,75	1	7,5			7,0	6,7	6,3	6,0	5,5	5,1	4,0	3,4	2,8						30
GSHO..4 40-160/11	1,1	1,5	9,3			8,9	8,7	8,3	8,0	7,6	7,3	6,4	5,9	5,4	4,8					30
GSHO..4 50-125/07	0,75	1	5,4					4,9	4,7	4,4	4,0	3,3	3,0	2,6	2,3	1,9				40
GSHO..4 50-125/11	1,1	1,5	6,5					6,2	6,1	5,8	5,6	4,9	4,5	4,1	3,7	3,3	2,7			40
GSHO..4 50-160/11	1,1	1,5	7,4					6,9	6,7	6,4	6,1	5,5	5,1	4,8	4,4	3,9	3,0	2,4		40
GSHO..4 50-160/15	1,5	2	9,2					8,6	8,4	8,2	8,0	7,5	7,2	7,0	6,7	6,4	5,7	5,1	4,7	40

Performances according to ISO standards 9906 - Annex A.

gsho_4p50-en_c_th

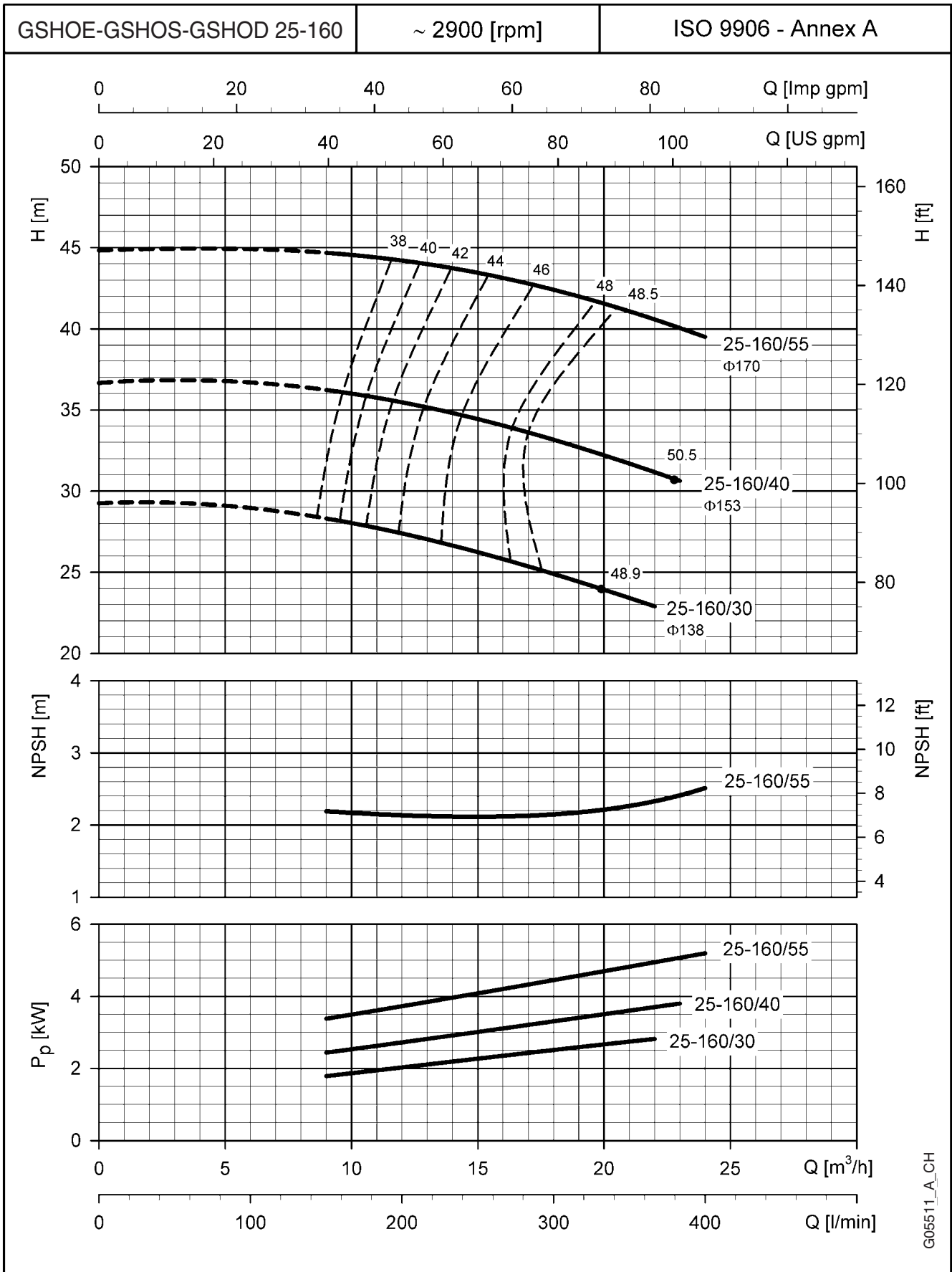
**GSHOE - GSHOS - GSHOD SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



G05510_A_CH

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 $\nu = 1 \text{ mm}^2/\text{sec}$.

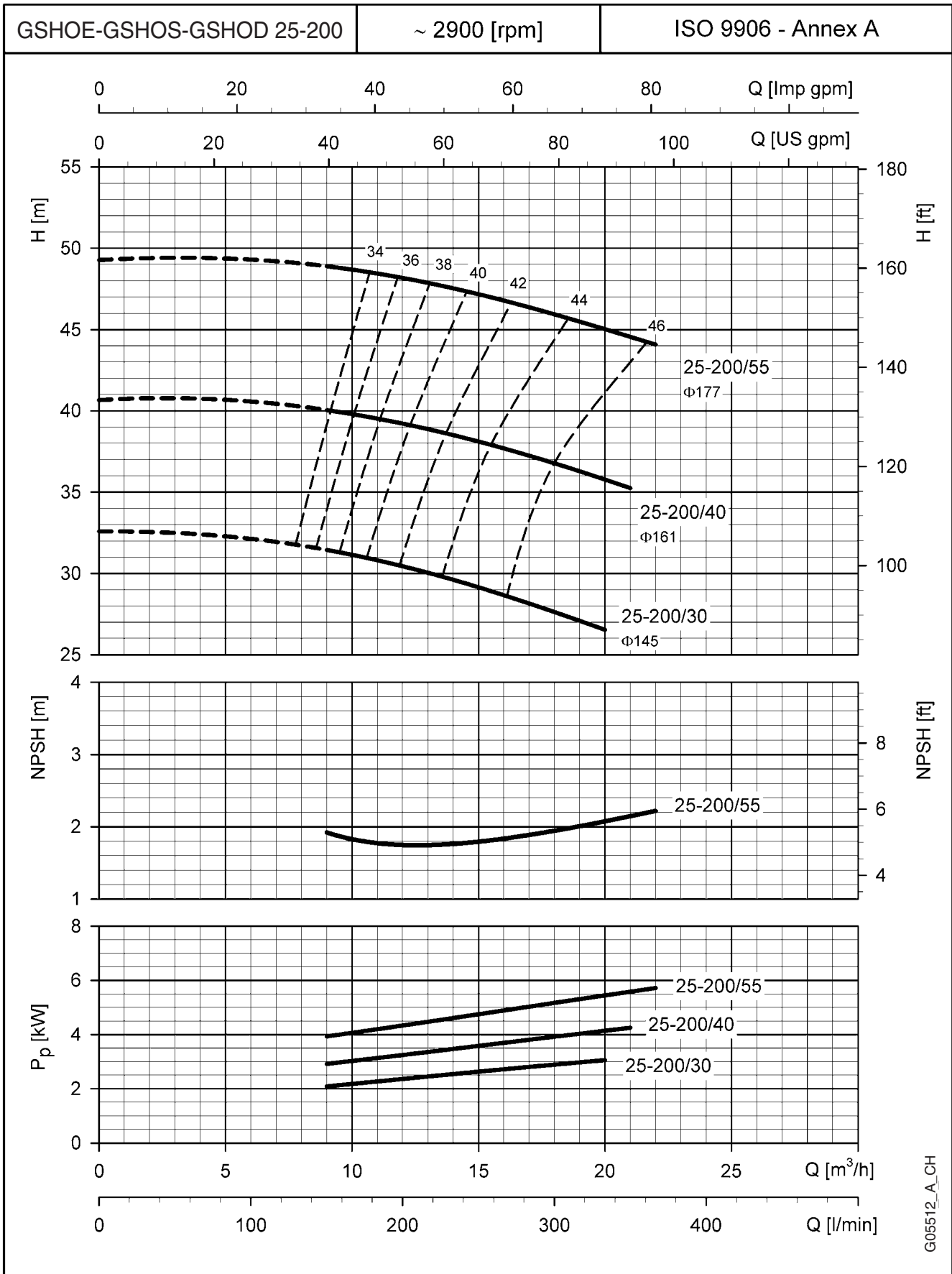
GSHOE - GSHOS - GSHOD SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



G05511_A_CH

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 $\nu = 1 \text{ mm}^2/\text{sec}$.

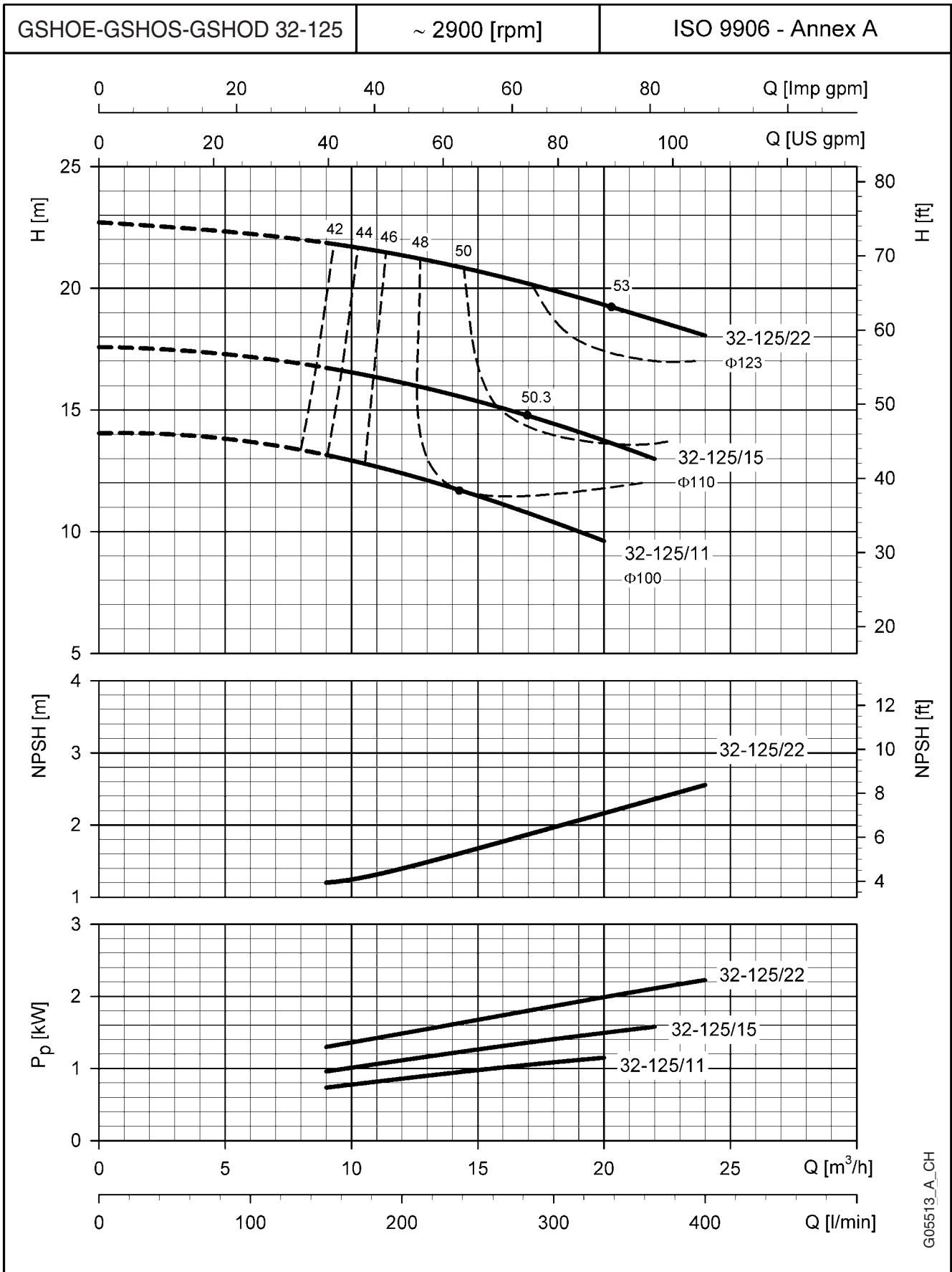
**GSHOE - GSHOS - GSHOD SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



G05512_A_CH

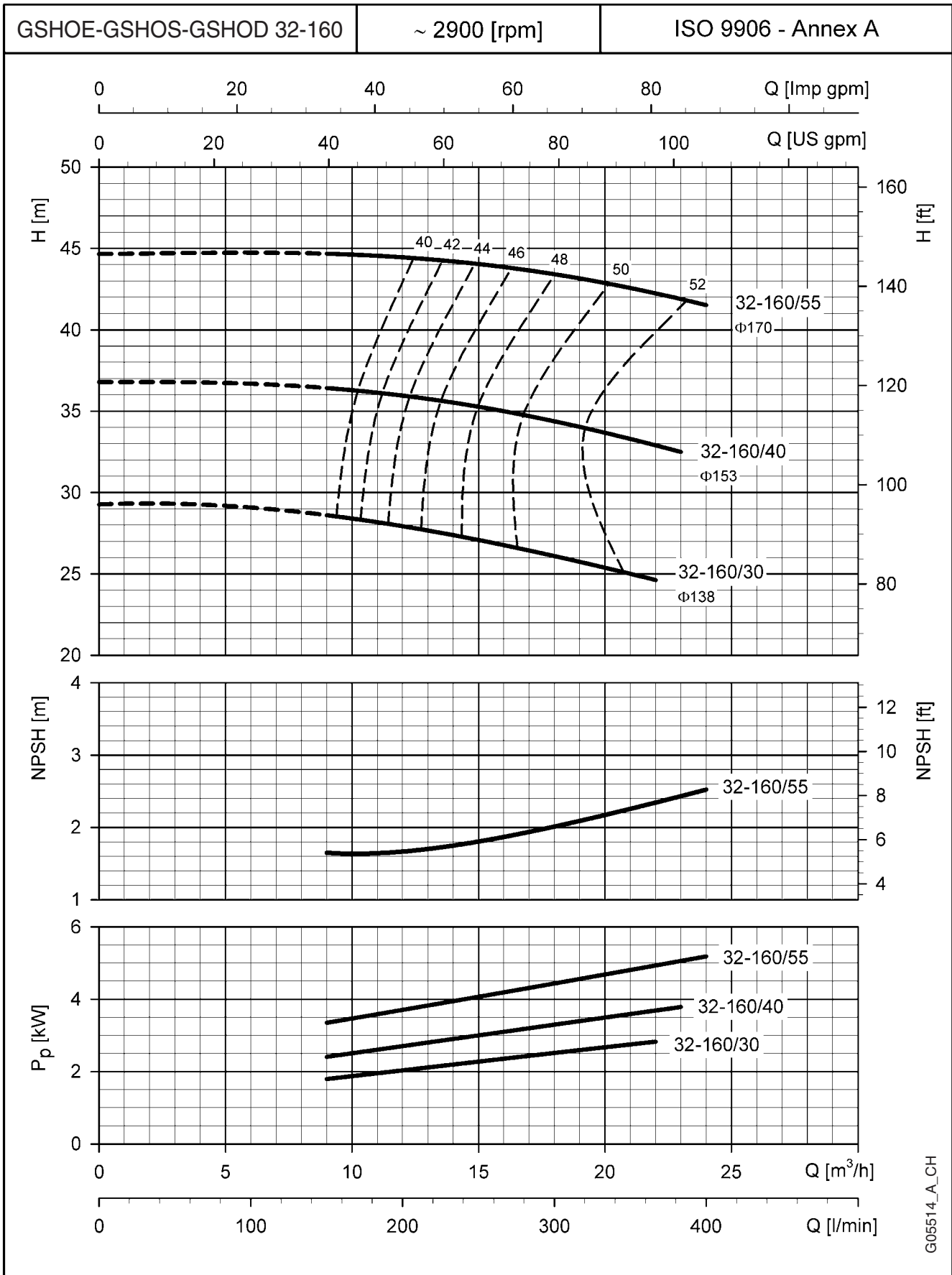
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GSHOE - GSHOS - GSHOD 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 $\nu = 1 \text{ mm}^2/\text{sec}$.

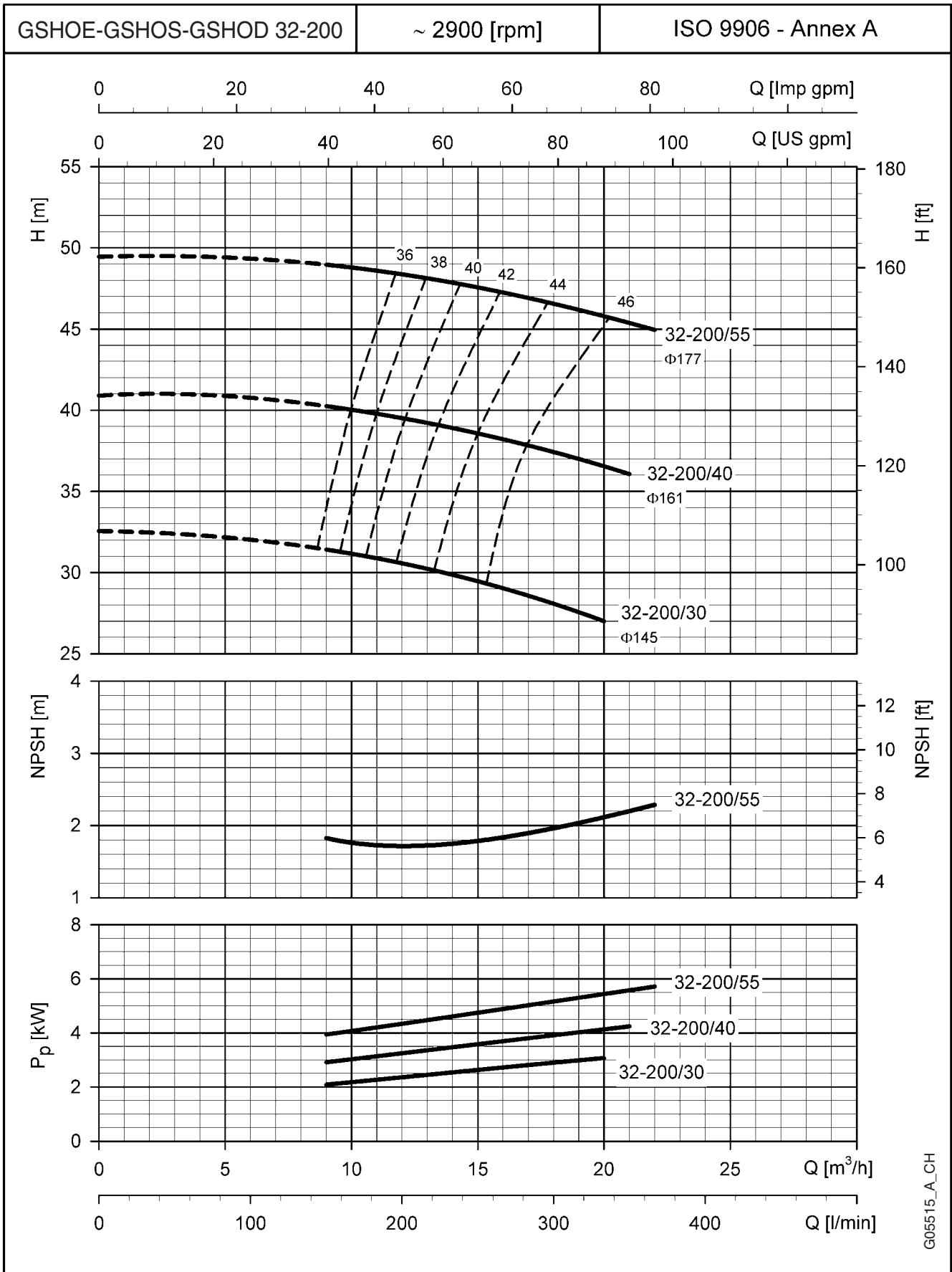
GSHOE - GSHOS - GSHOD SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



G05514_A_CH

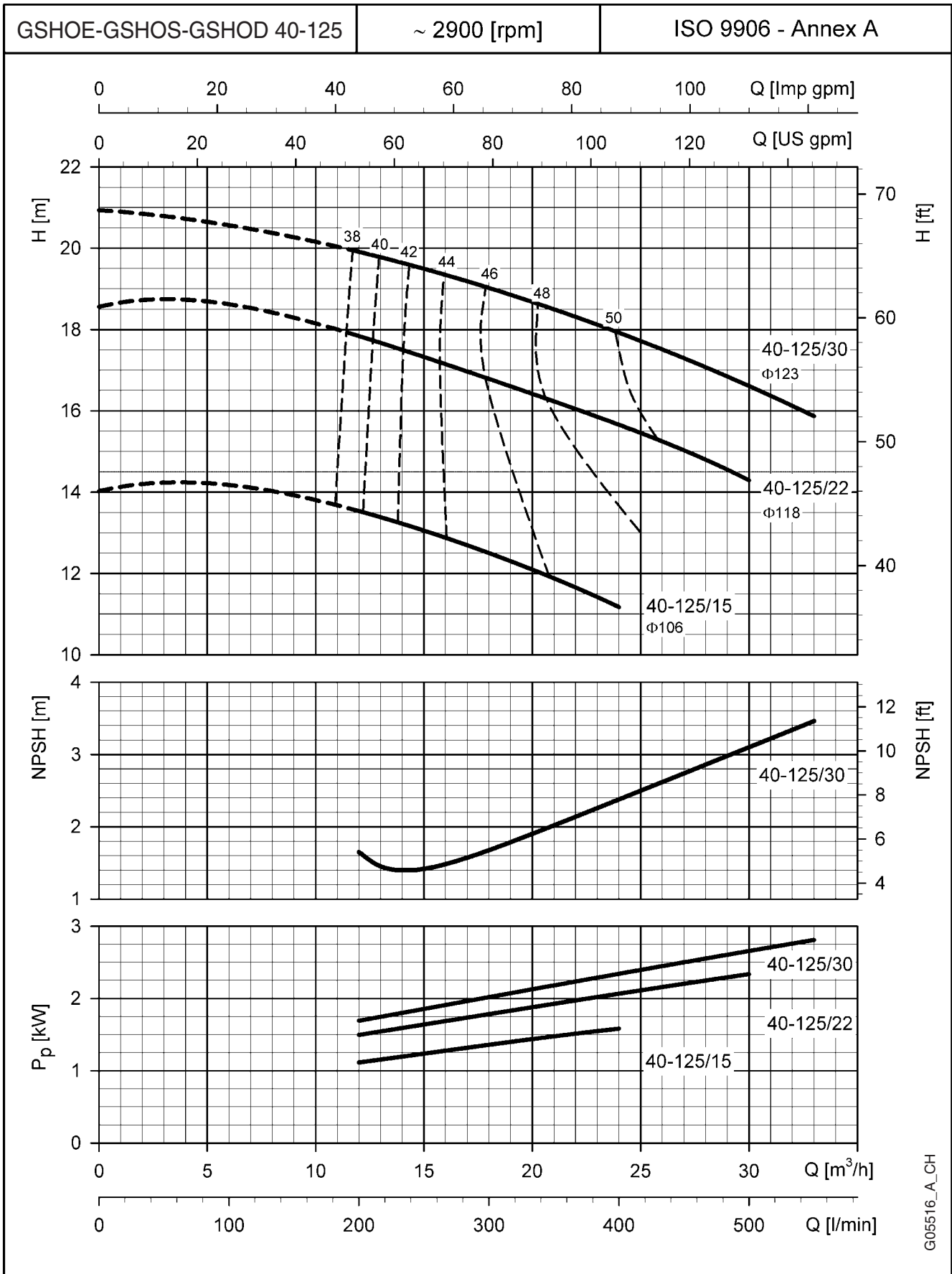
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
 These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GSHOE - GSHOS - GSHOD 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 $\nu = 1 \text{ mm}^2/\text{sec}$.

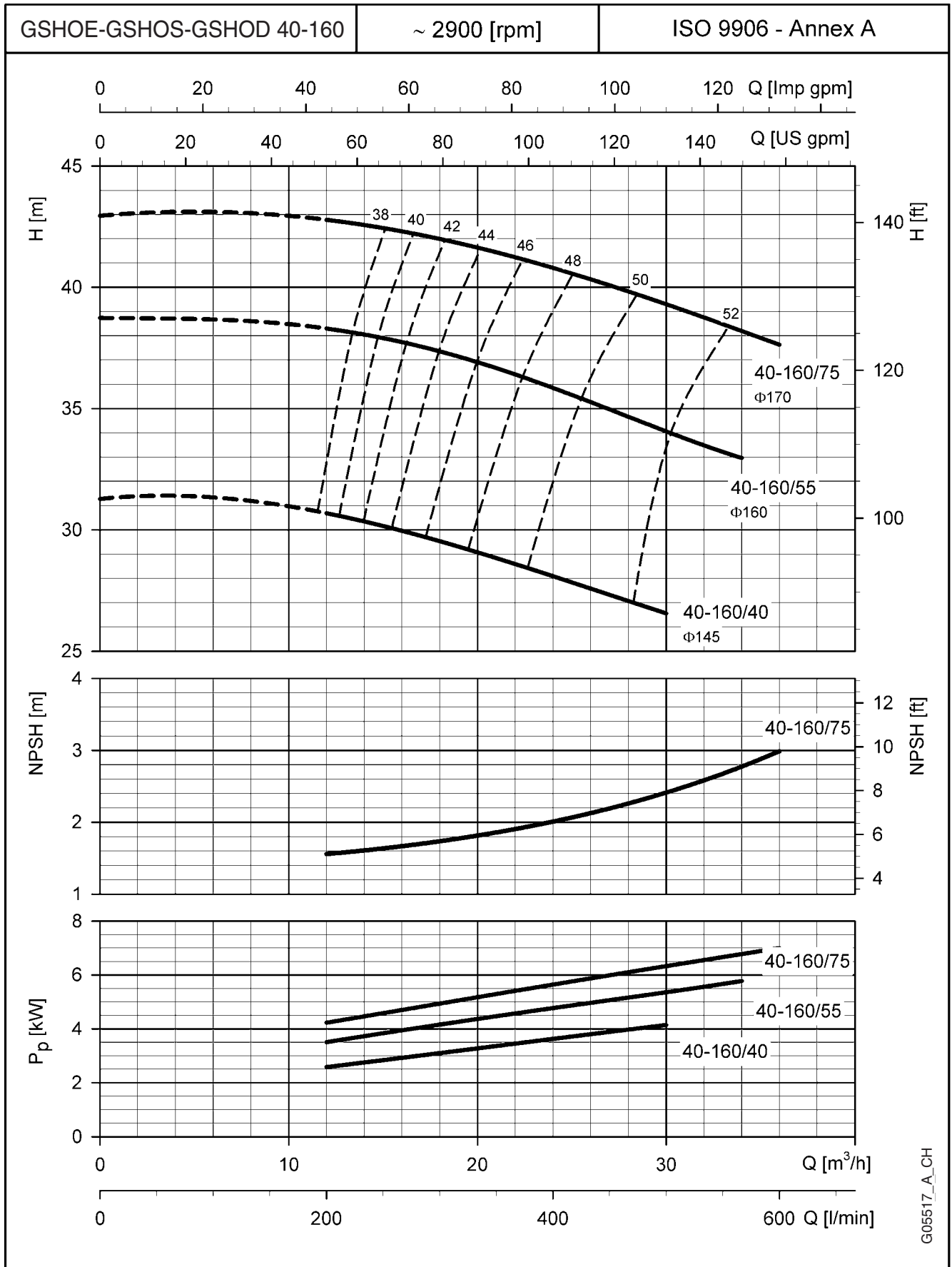
**GSHOE - GSHOS - GSHOD SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



G05516_A_CH

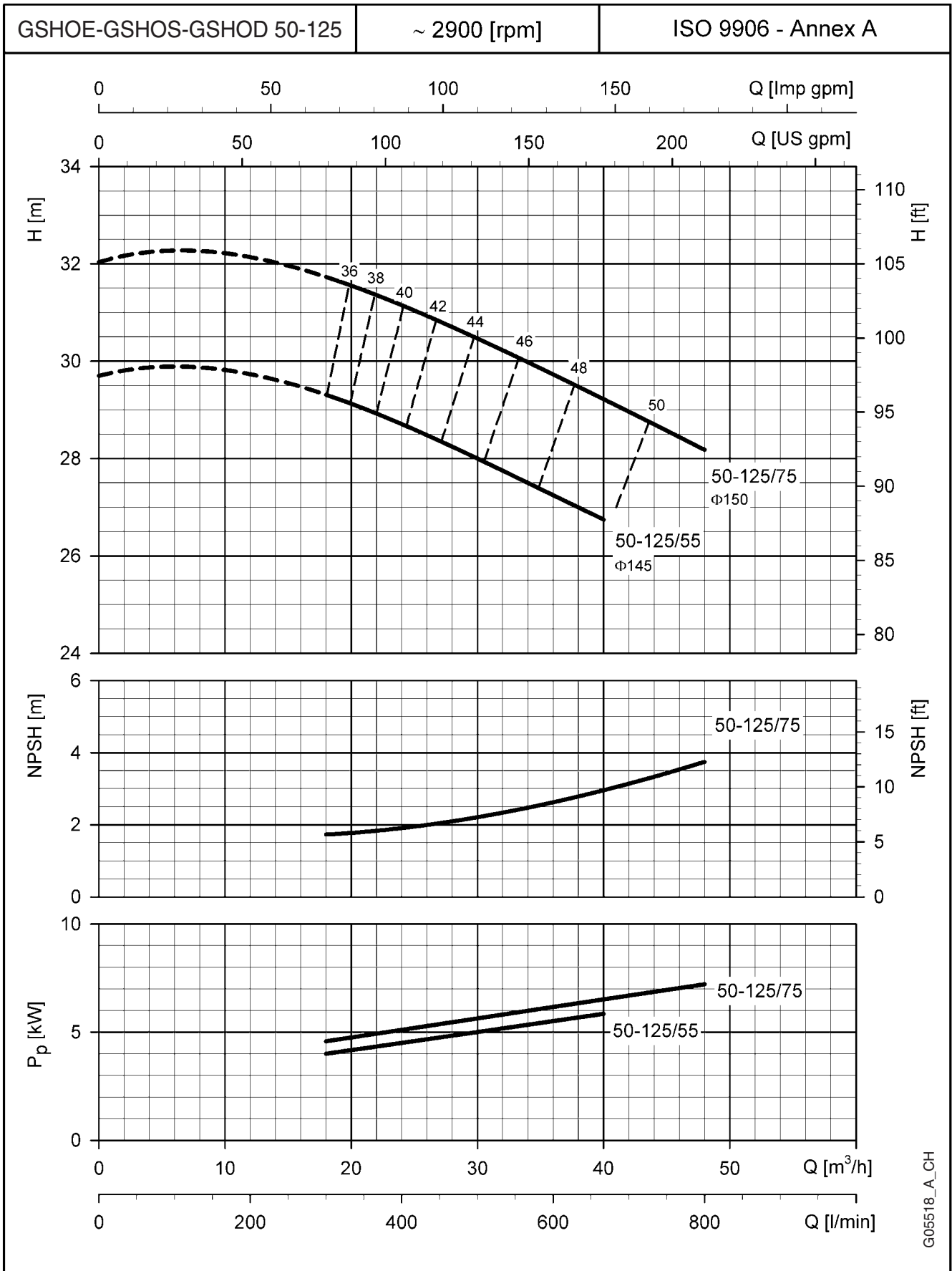
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GSHOE - GSHOS - GSHOD 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 $\nu = 1 \text{ mm}^2/\text{sec}$.

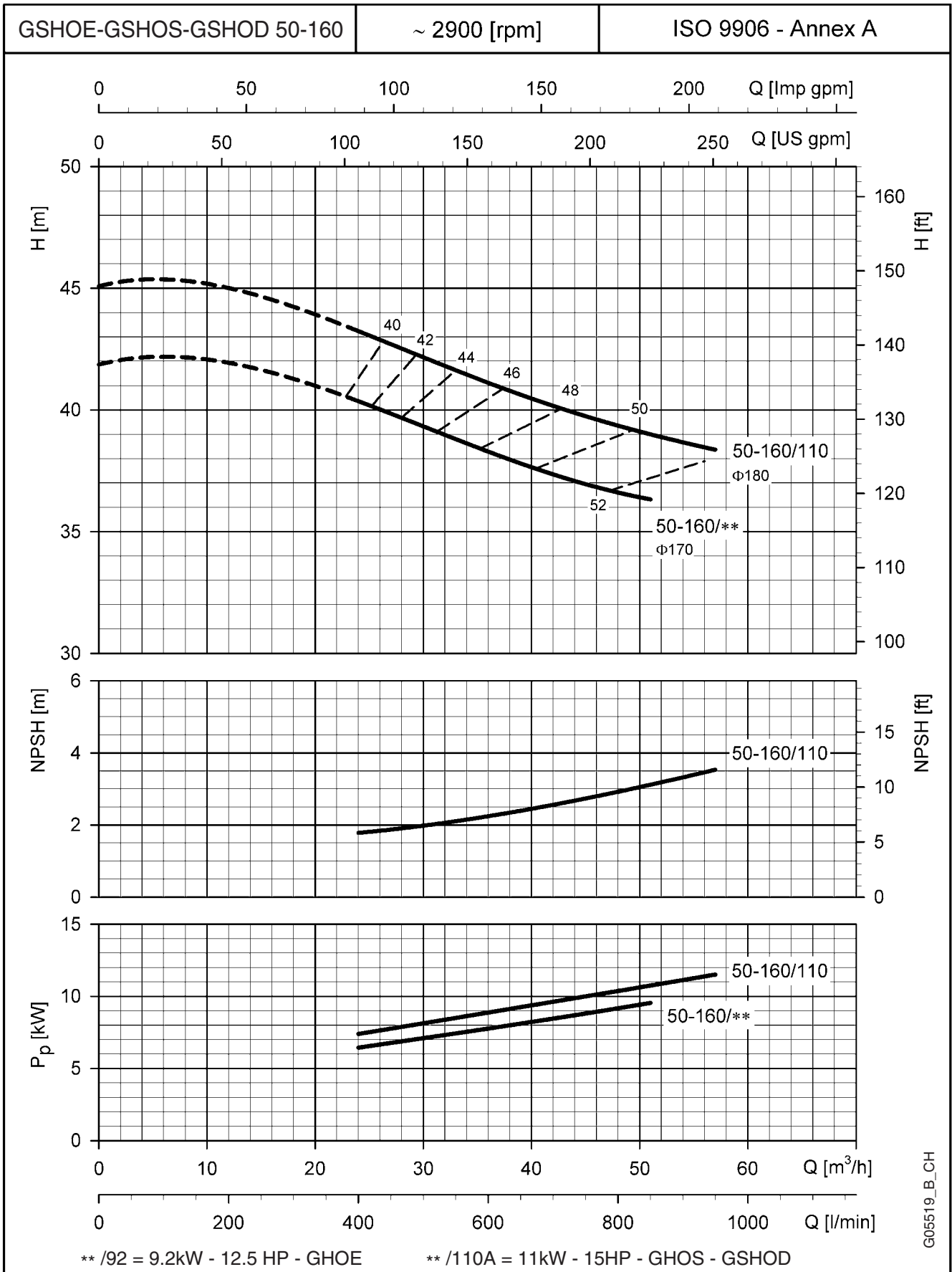
GSHOE - GSHOS - GSHOD SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES



G05518_A_CH

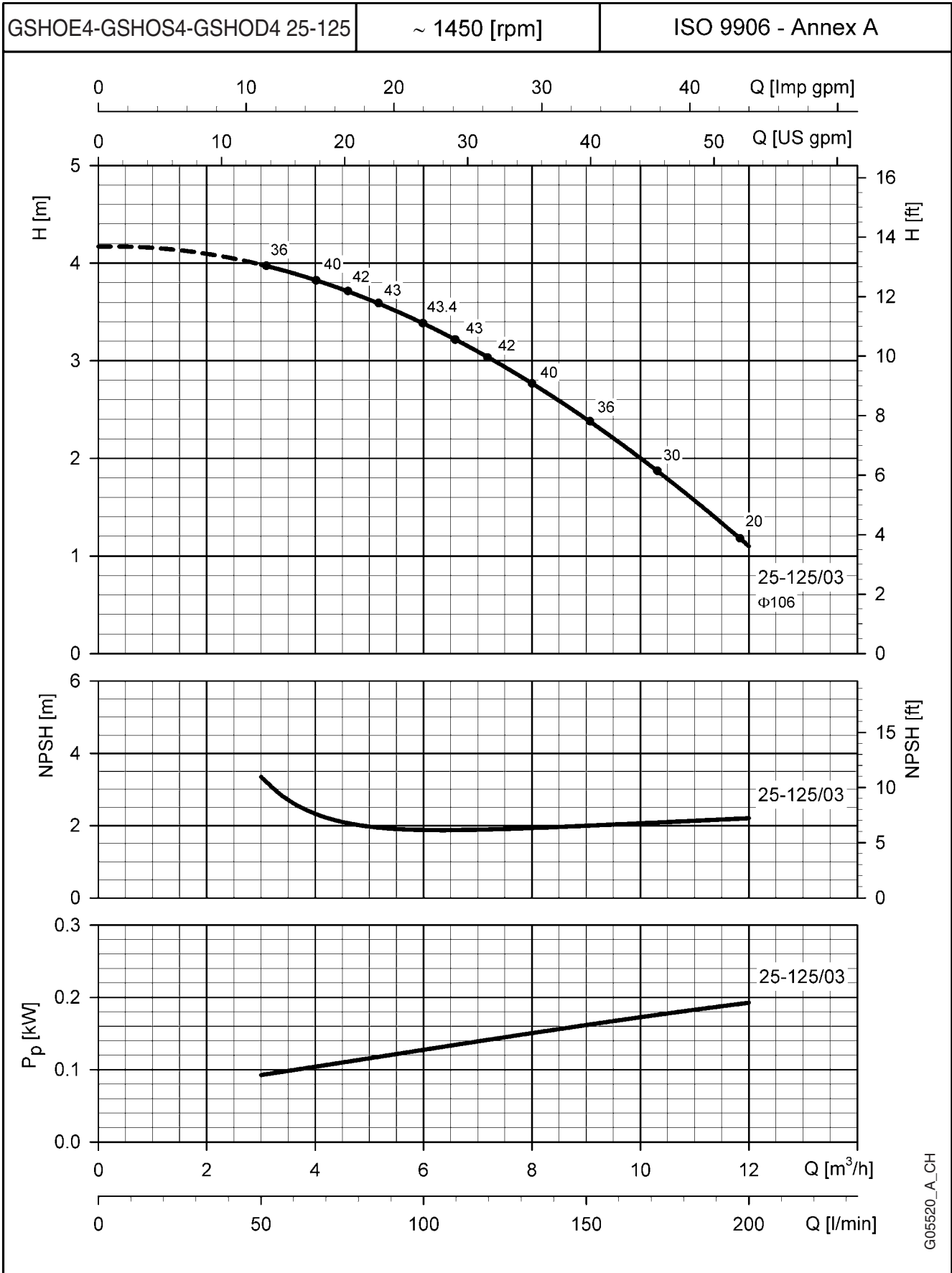
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GSHOE - GSHOS - GSHOD SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 2 POLES**



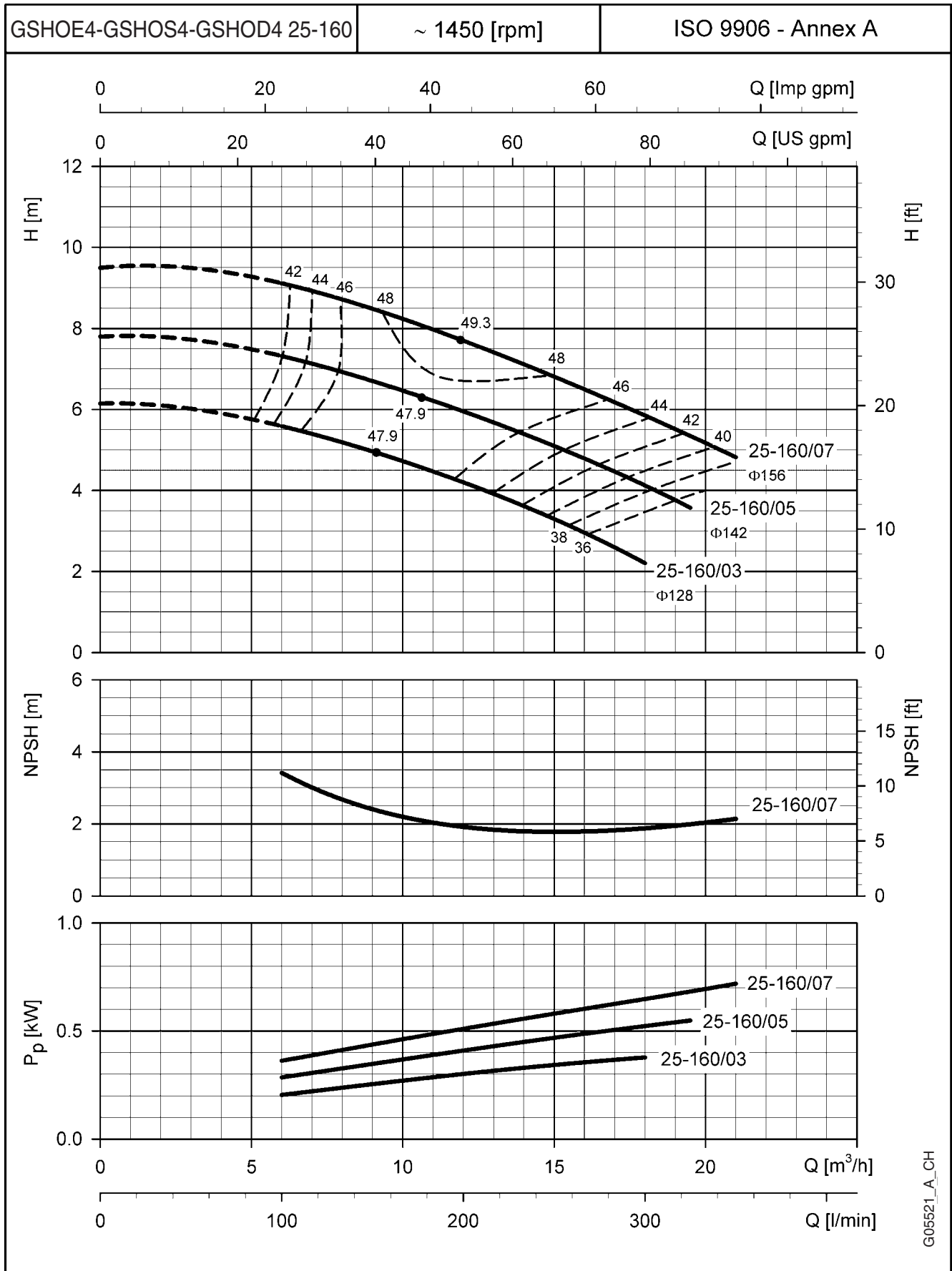
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GSHOE4 - GSHOS4 - GSHOD4 SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES**



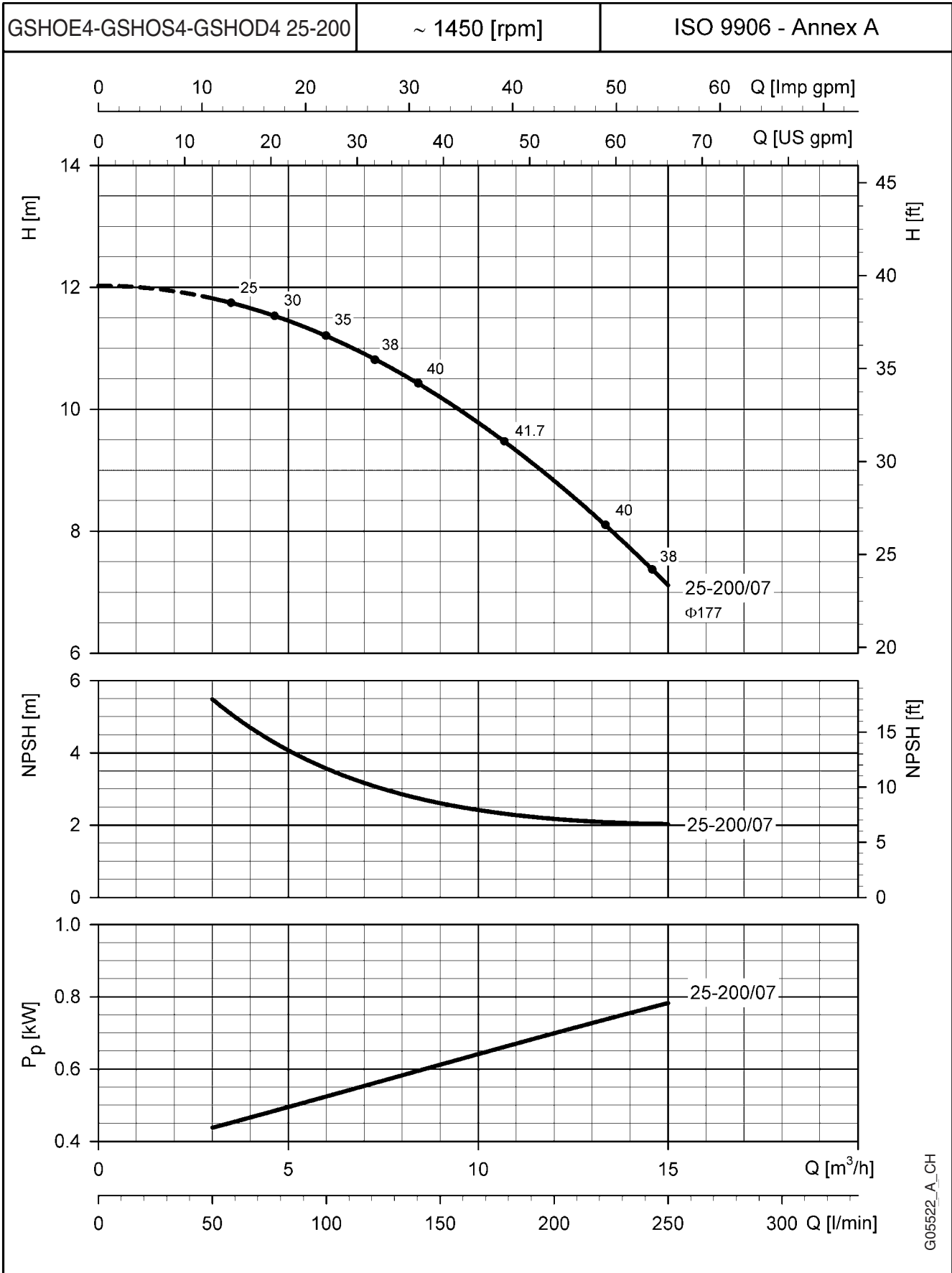
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GSHOE4 - GSHOS4 - GSHOD4 SERIES
 OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES**



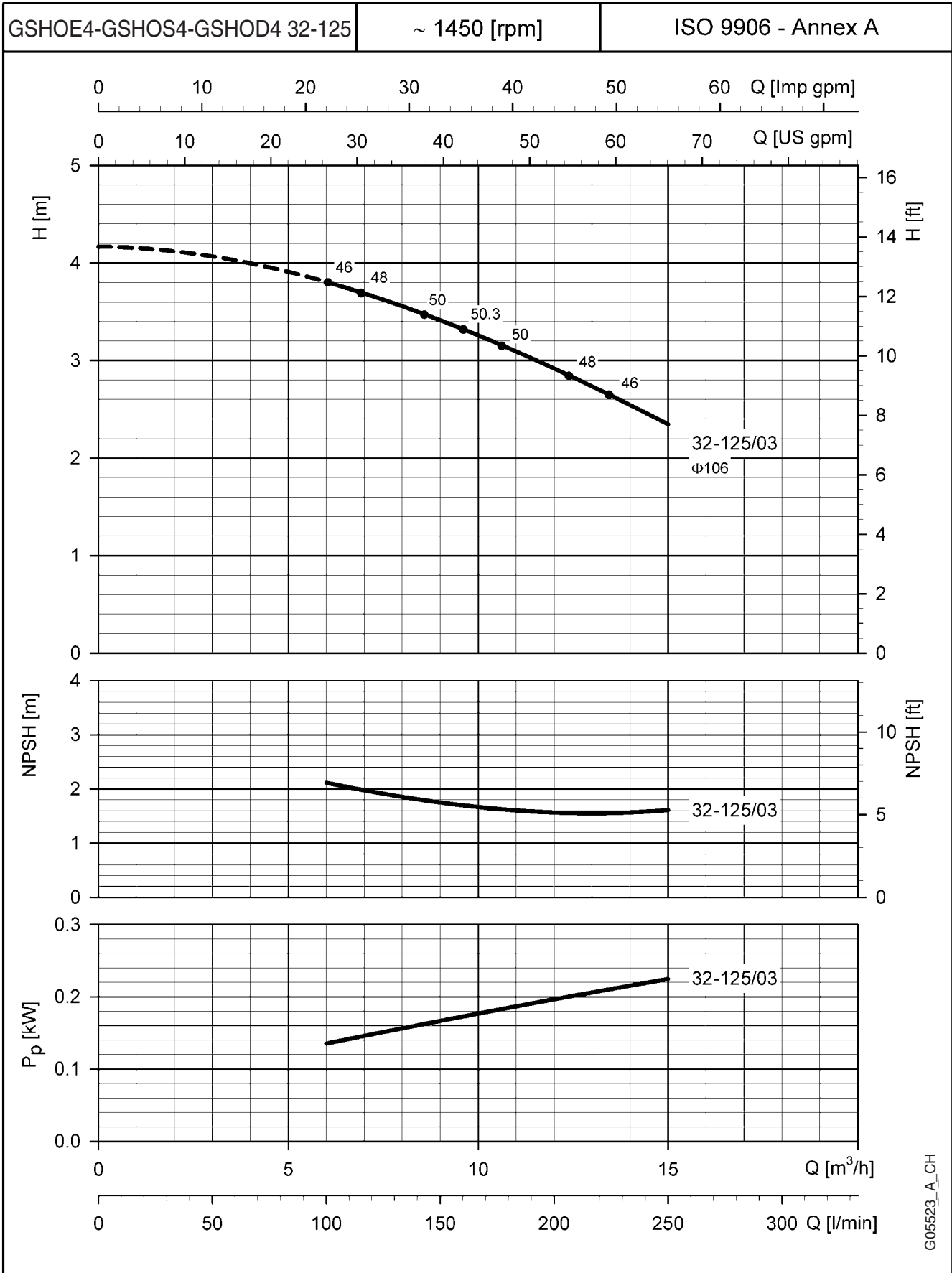
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
 These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GSHOE4 - GSHOS4 - GSHOD4 SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES**



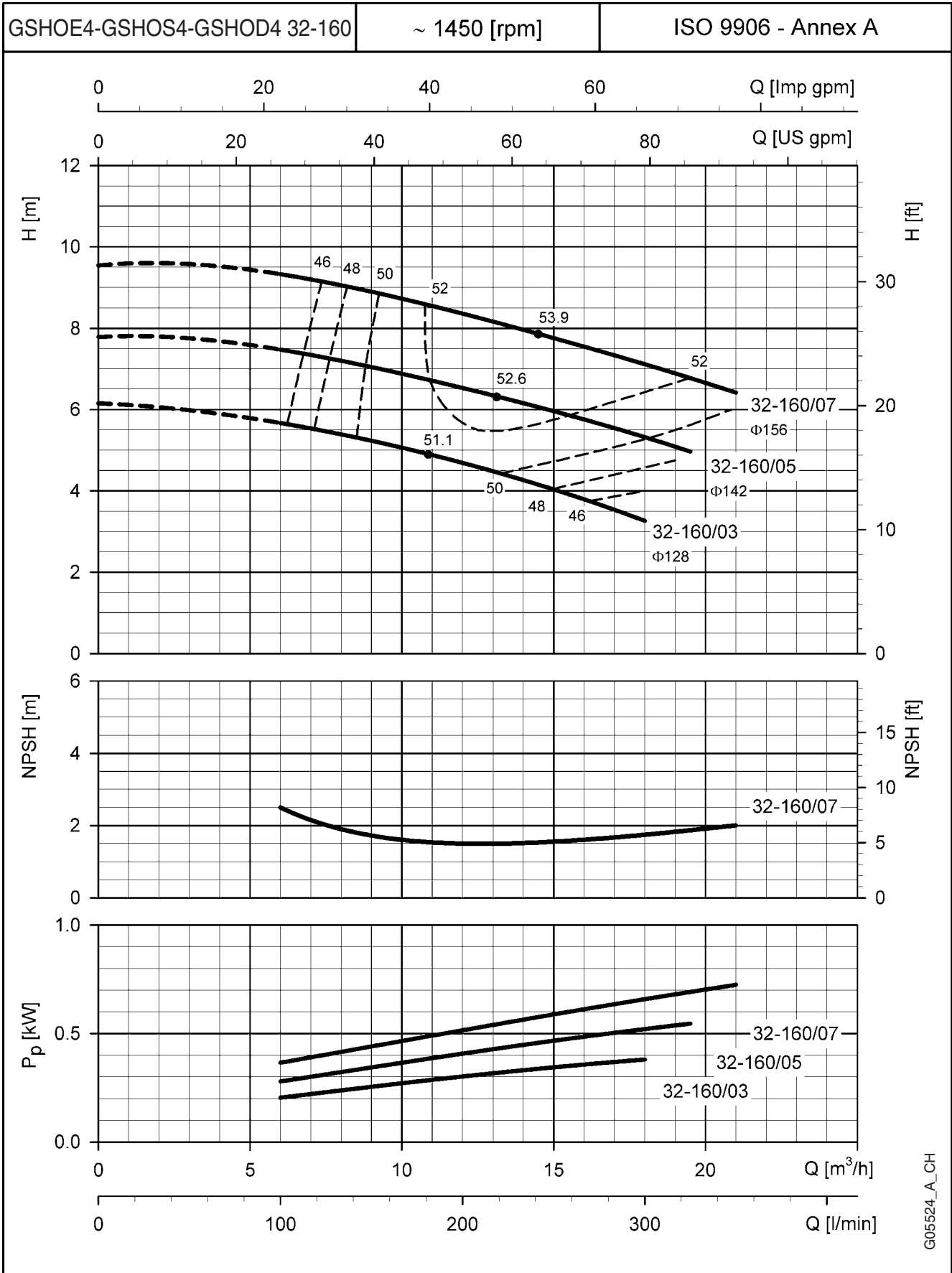
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

GSHOE4 - GSHOS4 - GSHOD4 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 $\nu = 1 \text{ mm}^2/\text{sec}$.

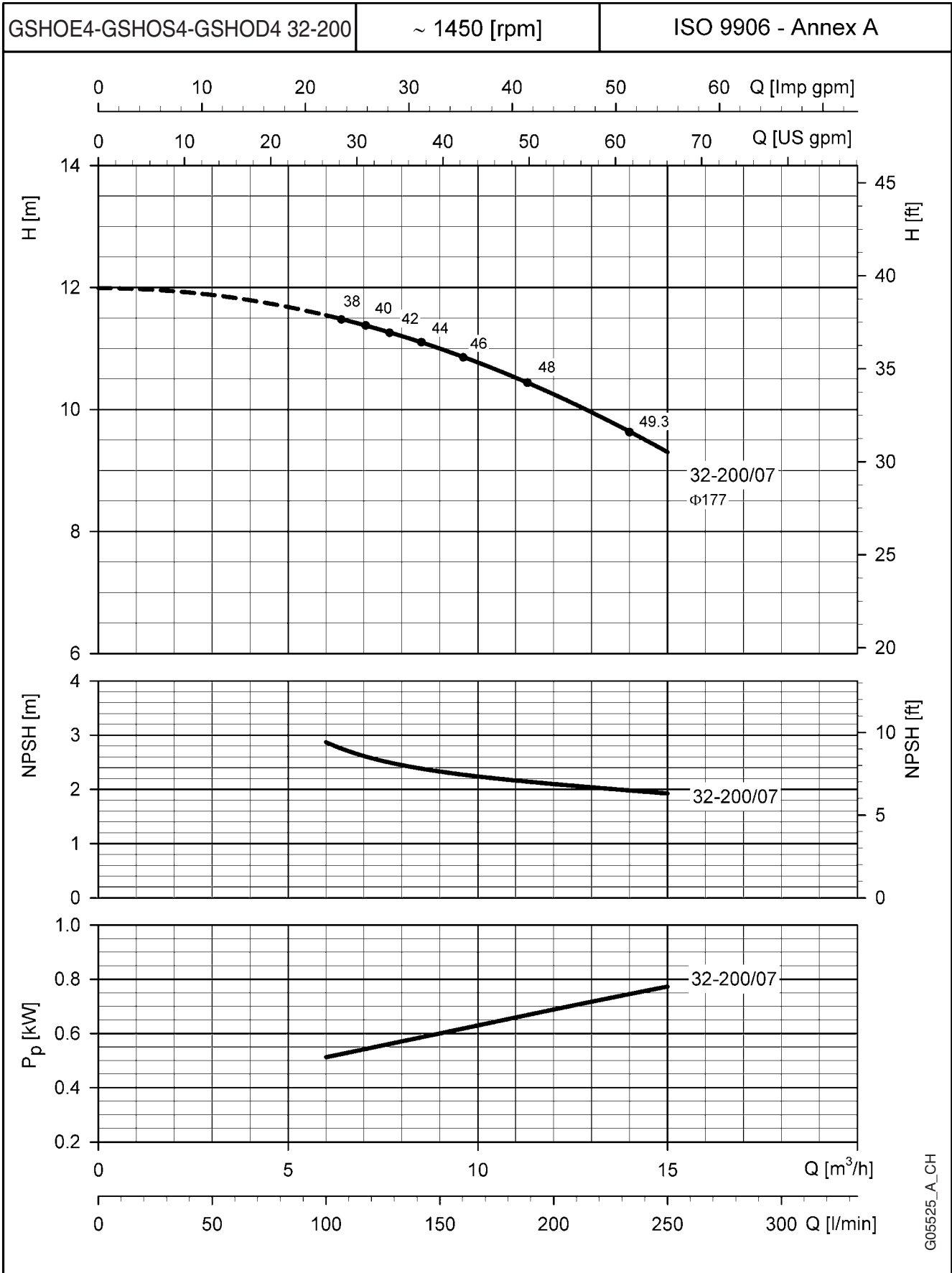
**GSHOE4 - GSHOS4 - GSHOD4 SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES**



G05524_A_CH

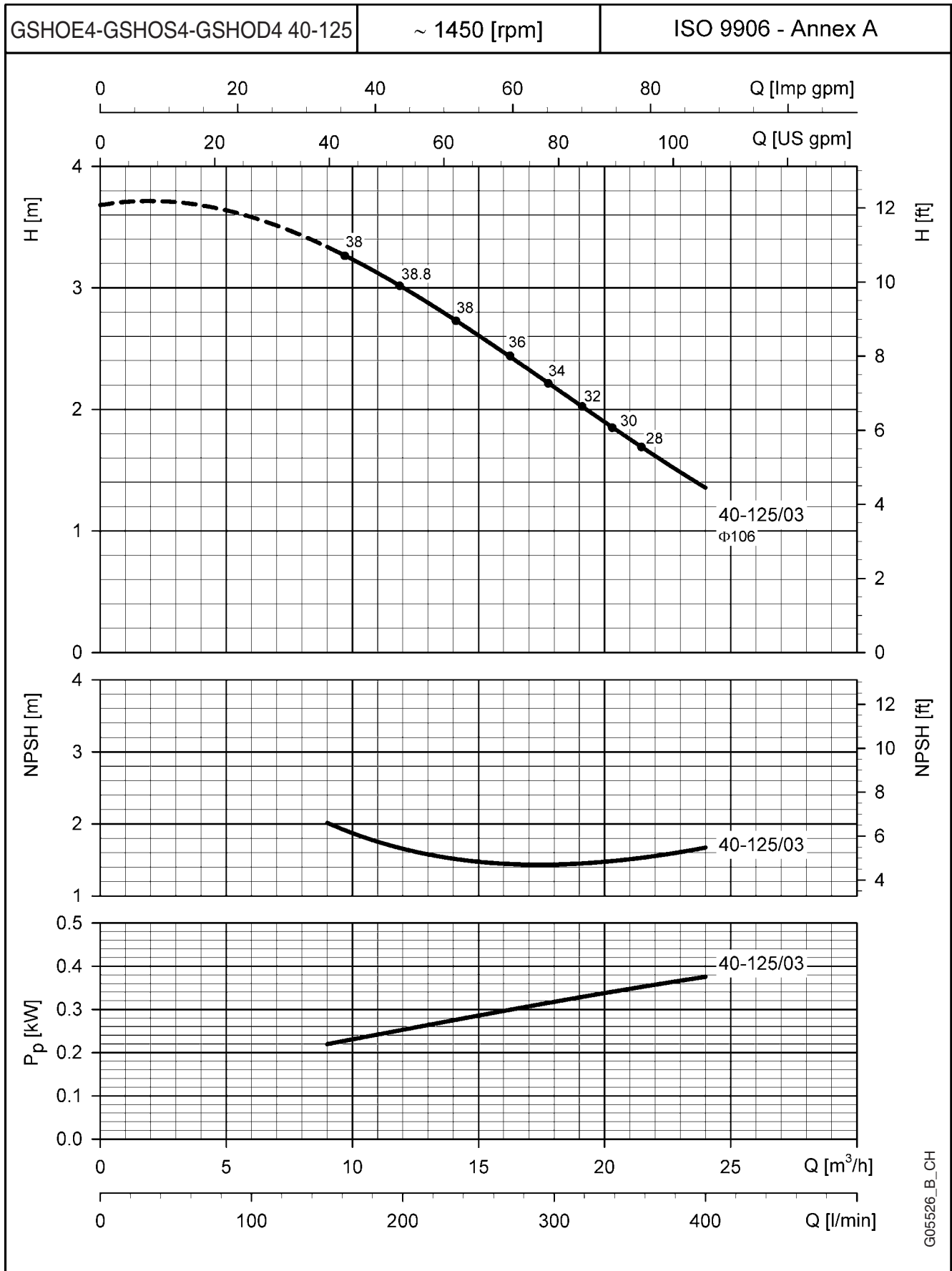
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GSHOE4 - GSHOS4 - GSHOD4 SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES**



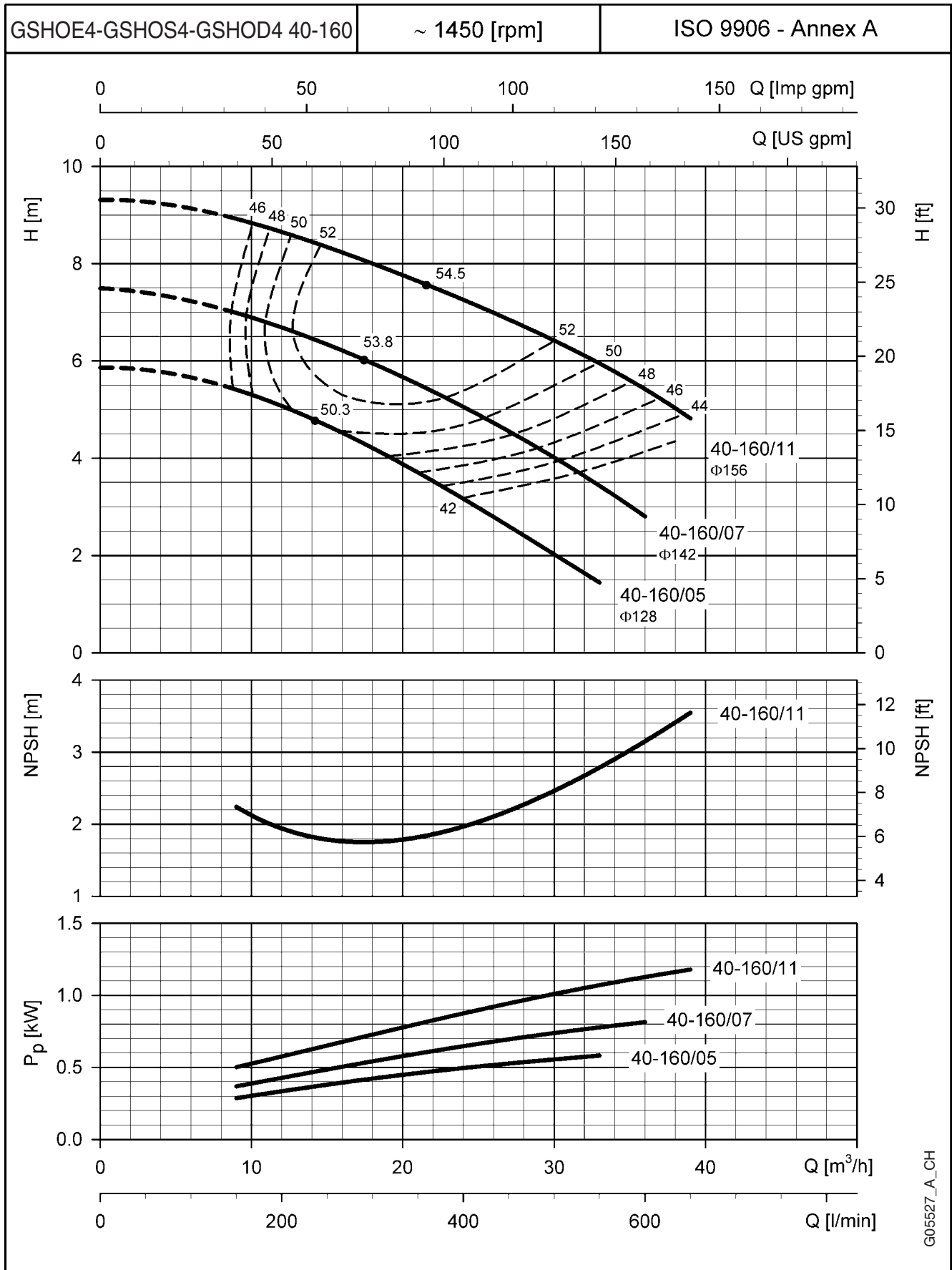
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GSHOE4 - GSHOS4 - GSHOD4 SERIES
 OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES**



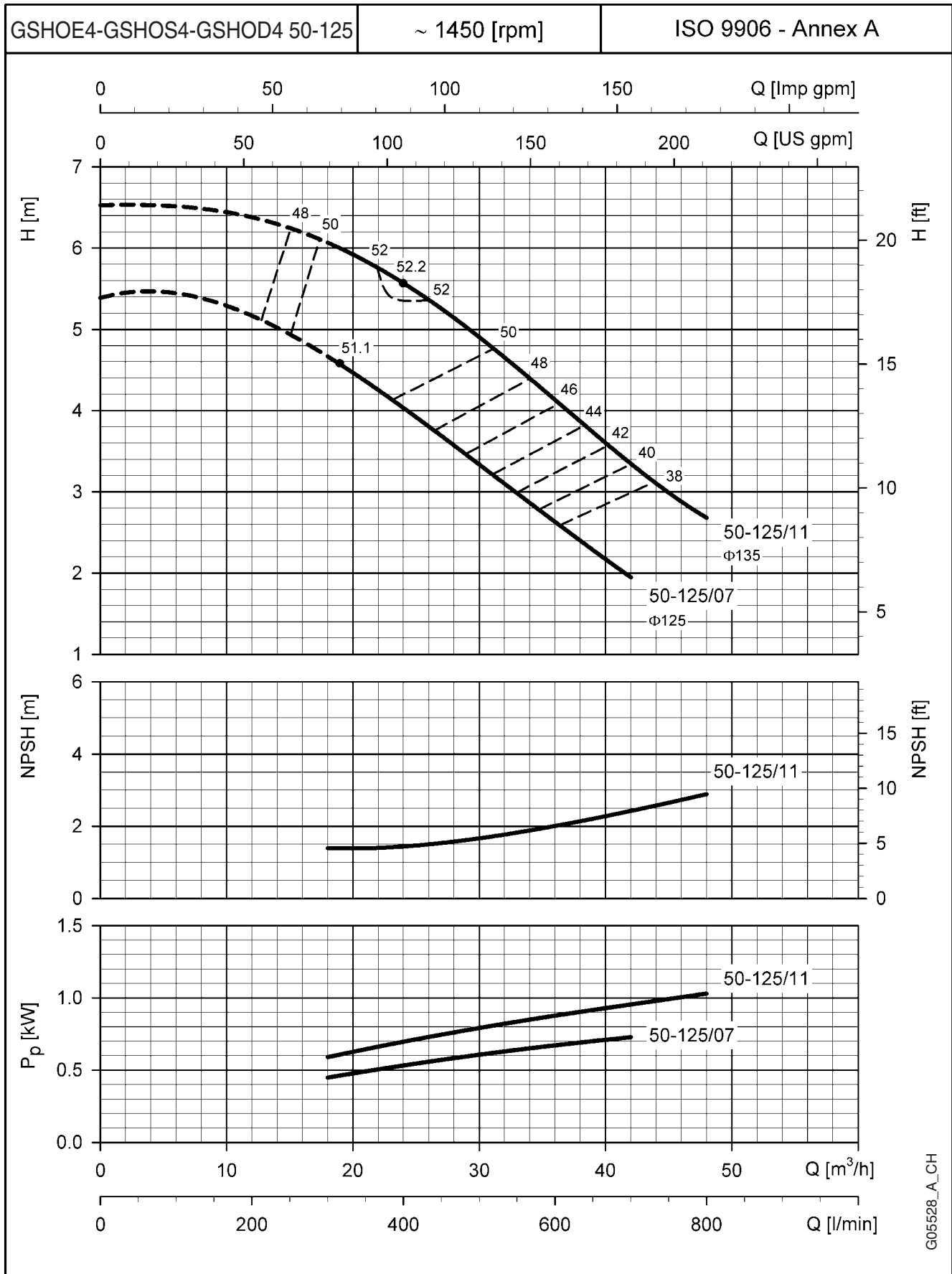
The NPSH values are laboratory values: for practical use we suggest increasing these values by 0,5 m.
 These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GSHOE4 - GSHOS4 - GSHOD4 SERIES
 OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES**



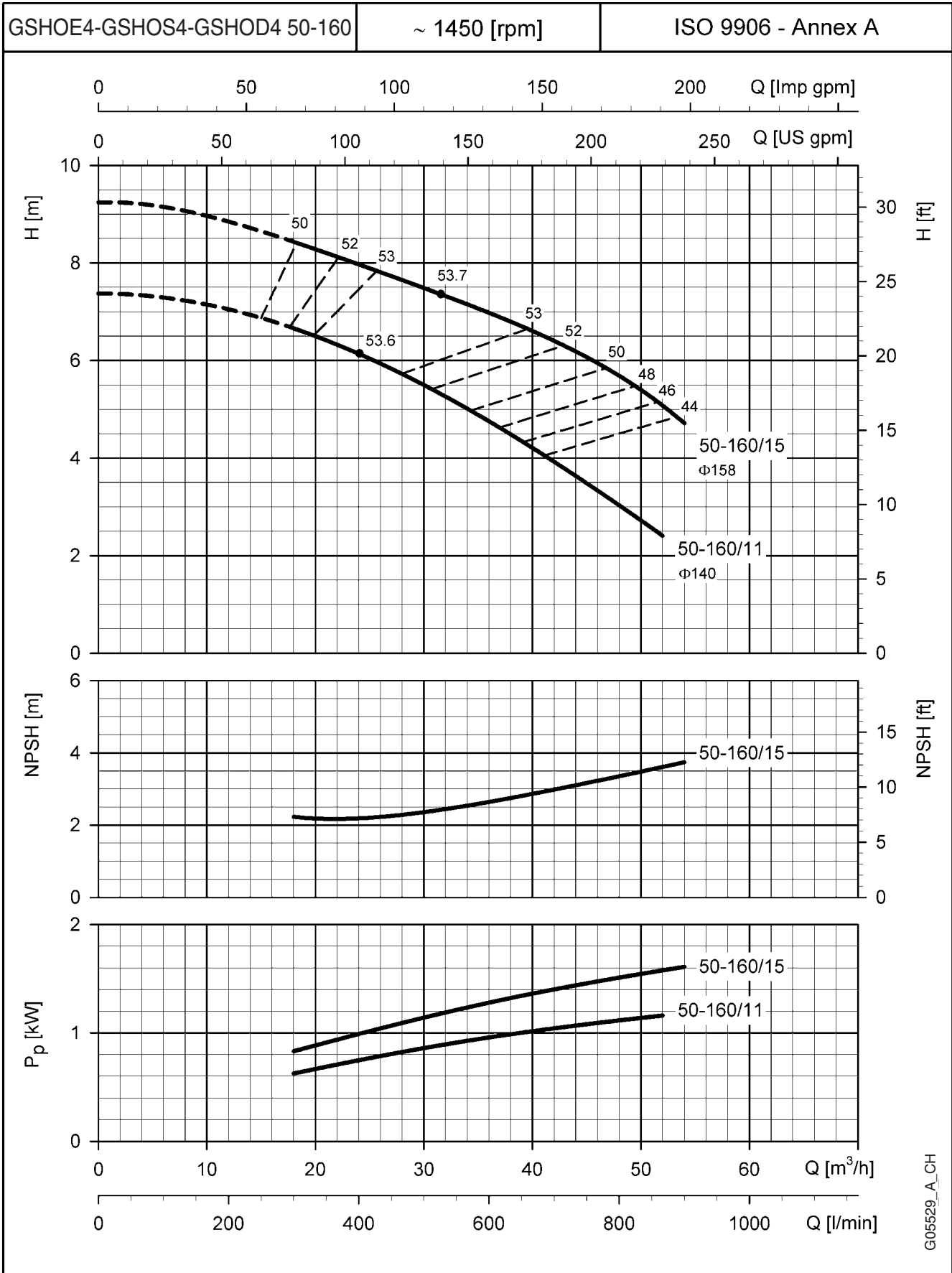
The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
 These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

**GSHOE4 - GSHOS4 - GSHOD4 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 $\nu = 1 \text{ mm}^2/\text{sec}$.

**GSHOE4 - GSHOS4 - GSHOD4 SERIES
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES**

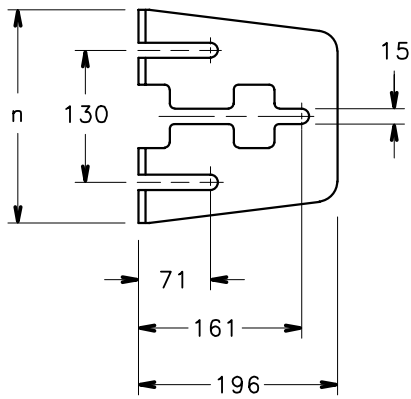
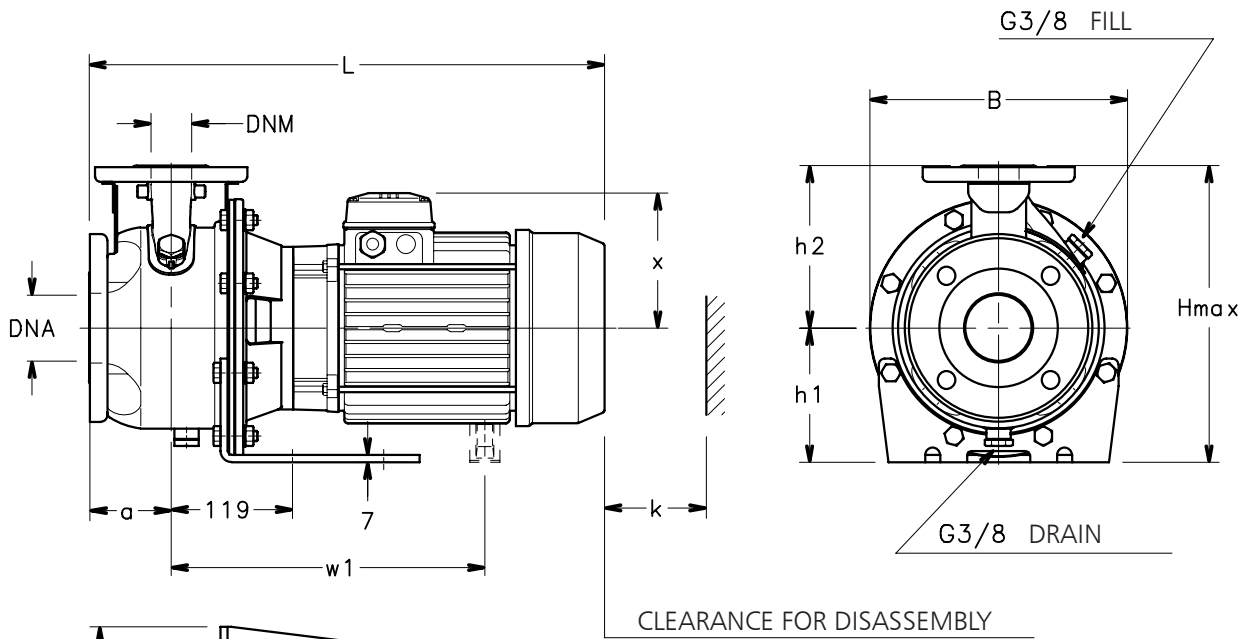


G05529_A_CH

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 $\nu = 1 \text{ mm}^2/\text{sec}$.

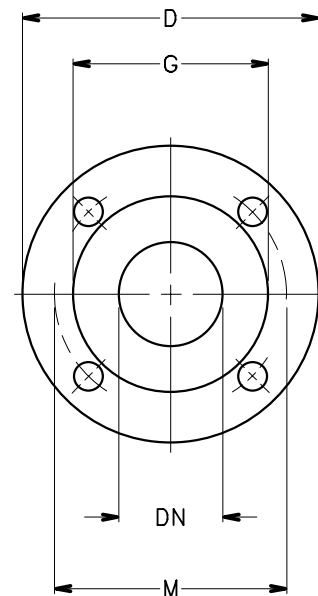
GSHO SERIES DIMENSIONS AND WEIGHTS

GSHOE SERIES
DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES



PUMP FLANGES

DN	D	M	G	HOLES		MAX THICKNESS
				Nº	DIA.	
25	115	85	56	4	18	16
32	140	100	64	4	18	16
40	150	110	68	4	18	16
50	165	125	83	4	18	18
65	185	145	104	4	18	18

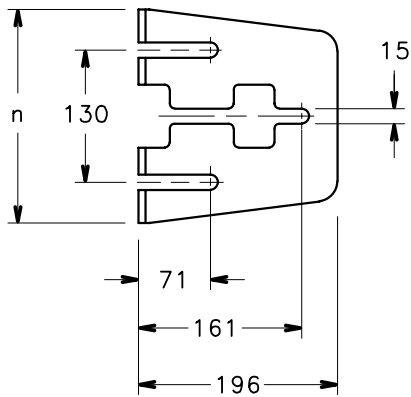
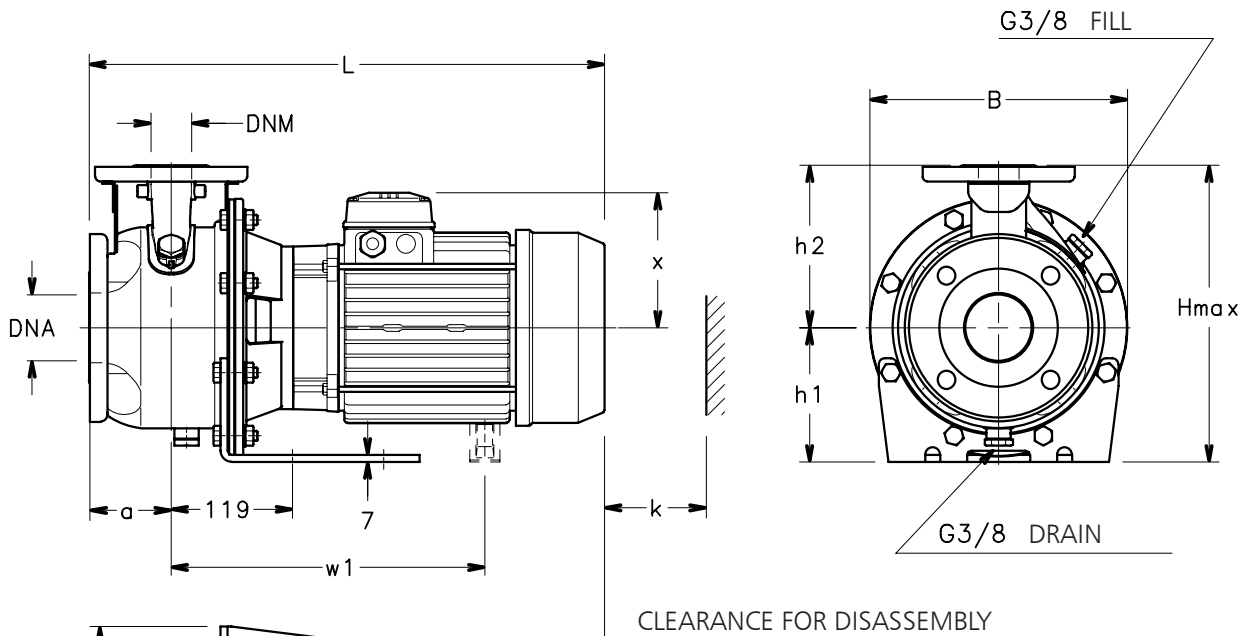


GSHOE SERIES DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES

PUMP TYPE	DIMENSIONS (mm)											WEIGHT kg	
	PUMP						SUPPORT		B	H max	L		k
	DNM	DNA	a	h2	w1	x	h1	n					
GSHOE 25-125/11/D	25	50	80	140	-	129	112	190	219	252	453	98	22
GSHOE 25-125/15/D	25	50	80	140	-	129	112	190	219	252	453	98	23
GSHOE 25-125/22/P	25	50	80	140	-	134	112	190	219	252	488	98	28
GSHOE 25-160/30/P	25	50	80	160	-	134	132	210	254	292	488	98	33
GSHOE 25-160/40/P	25	50	80	160	-	154	132	210	254	292	509	98	40
GSHOE 25-160/55/P	25	50	80	160	-	168	132	210	254	292	543	98	48
GSHOE 25-200/30/P	25	50	80	180	-	134	160	230	284	340	488	98	36
GSHOE 25-200/40/P	25	50	80	180	-	154	160	230	284	340	509	98	42
GSHOE 25-200/55/P	25	50	80	180	-	168	160	230	284	340	543	98	51
GSHOE 32-125/11/D	32	50	80	140	-	129	112	190	219	252	453	98	22
GSHOE 32-125/15/D	32	50	80	140	-	129	112	190	219	252	453	98	23
GSHOE 32-125/22/P	32	50	80	140	-	134	112	190	219	252	488	98	28
GSHOE 32-160/30/P	32	50	80	160	-	134	132	210	254	292	488	98	33
GSHOE 32-160/40/P	32	50	80	160	-	154	132	210	254	292	509	98	40
GSHOE 32-160/55/P	32	50	80	160	-	168	132	210	254	292	543	98	48
GSHOE 32-200/30/P	32	50	80	180	-	134	160	230	284	340	488	98	36
GSHOE 32-200/40/P	32	50	80	180	-	154	160	230	284	340	509	98	42
GSHOE 32-200/55/P	32	50	80	180	-	168	160	230	284	340	543	98	51
GSHOE 40-125/15/D	40	65	80	140	-	129	112	190	219	252	463	100	24
GSHOE 40-125/22/P	40	65	80	140	-	134	112	190	219	252	498	100	29
GSHOE 40-125/30/P	40	65	80	140	-	134	112	190	219	252	498	100	32
GSHOE 40-160/40/P	40	65	80	160	-	154	132	210	254	292	519	100	41
GSHOE 40-160/55/P	40	65	80	160	-	168	132	210	254	300	553	100	49
GSHOE 40-160/75/P	40	65	80	160	-	191	132	210	254	323	567	100	64
GSHOE 50-125/55/P	50	65	100	160	-	168	132	210	254	300	573	104	49
GSHOE 50-125/75/P	50	65	100	160	-	191	132	210	254	323	587	104	65
GSHOE 50-160/92/P	50	65	100	180	363	191	160	210	254	351	625	104	60
GSHOE 50-160/110/P	50	65	100	180	363	191	160	210	254	351	625	104	63

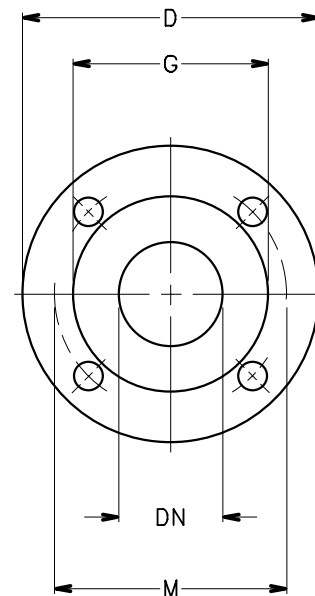
gshoe-2p50-en_d_td

GSHOE4 SERIES
DIMENSIONS AND WEIGHTS AT 50 Hz, 4 POLES



PUMP FLANGES

DN	D	M	G	HOLES		MAX THICKNESS
				Nº	DIA.	
25	115	85	56	4	18	16
32	140	100	64	4	18	16
40	150	110	68	4	18	16
50	165	125	83	4	18	18
65	185	145	104	4	18	18



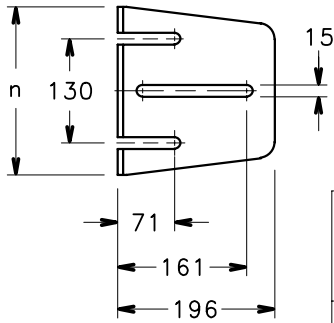
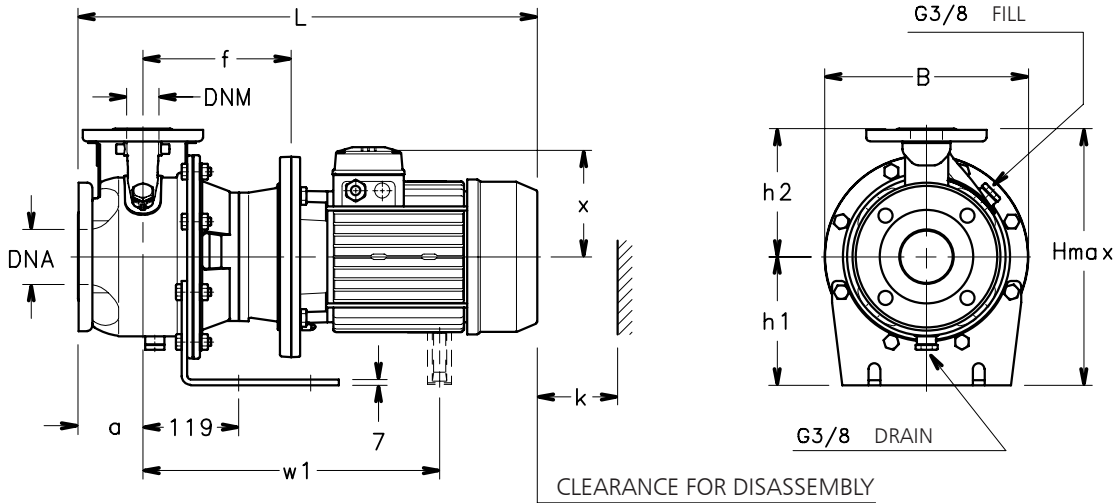
GSHOE4 SERIES

DIMENSIONS AND WEIGHTS AT 50 Hz, 4 POLES

PUMP TYPE	DIMENSIONS (mm)							B	H max	L	k	WEIGHT kg
	DNM	DNA	PUMP		x	h1	n					
			a	h2								
GSHOE4 25-125/03	25	50	80	140	121	112	190	219	252	421	98	19
GSHOE4 25-160/03	25	50	80	160	121	132	210	254	292	421	98	23
GSHOE4 25-160/05	25	50	80	160	129	132	210	254	292	453	98	25
GSHOE4 25-160/07/C	25	50	80	160	128	132	210	254	292	421	98	27
GSHOE4 25-200/07/C	25	50	80	180	128	160	230	284	340	421	98	30
GSHOE4 32-125/03	32	50	80	140	121	112	190	219	252	421	98	19
GSHOE4 32-160/03	32	50	80	160	121	132	210	254	292	421	98	23
GSHOE4 32-160/05	32	50	80	160	129	132	210	254	292	453	98	25
GSHOE4 32-160/07/C	32	50	80	160	128	132	210	354	292	421	98	27
GSHOE4 32-200/07/C	32	50	80	180	128	160	230	284	340	421	98	30
GSHOE4 40-125/03	40	65	80	140	121	112	190	219	252	431	100	21
GSHOE4 40-160/05	40	65	80	160	129	132	210	254	292	463	100	26
GSHOE4 40-160/07/C	40	65	80	160	128	132	210	254	292	431	100	27
GSHOE4 40-160/11/P	40	65	80	160	134	132	210	254	292	498	100	31
GSHOE4 50-125/07/C	50	65	100	160	128	132	210	254	292	451	104	28
GSHOE4 50-125/11/P	50	65	100	160	134	132	210	254	292	518	104	34
GSHOE4 50-160/11/P	50	65	100	180	134	160	210	254	340	518	104	35
GSHOE4 50-160/15/P	50	65	100	180	134	160	210	254	340	518	104	38

gshoe4-4p50-en_d_td

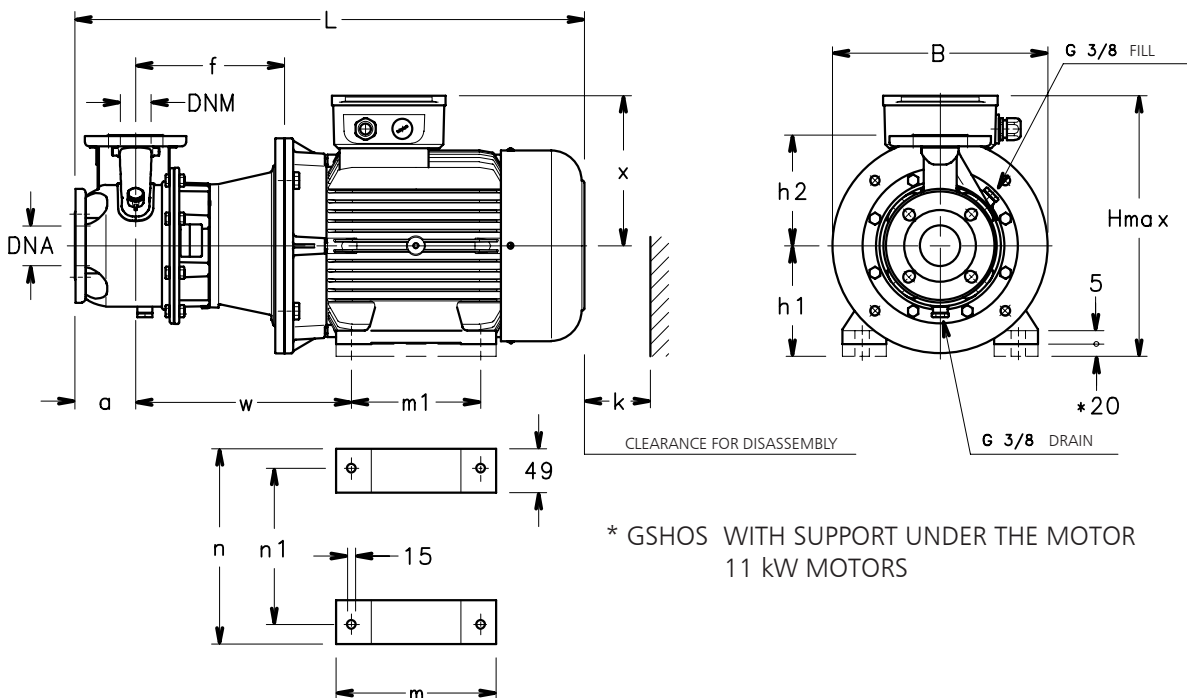
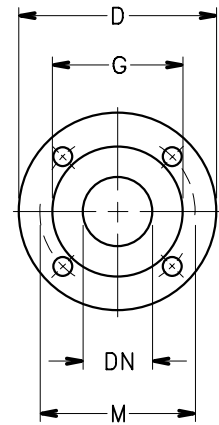
GSHOS SERIES
DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES



GSHOS WITH PUMP SUPPORT FOOT
 MOTORS UP TO 7,5 kW

PUMP FLANGES

DN	D	M	G	HOLES		MAX THICKNESS
				Nº	DIA.	
25	115	85	56	4	18	16
32	140	100	64	4	18	16
40	150	110	68	4	18	16
50	165	125	83	4	18	18
65	185	145	104	4	18	18



* GSHOS WITH SUPPORT UNDER THE MOTOR
 11 kW MOTORS

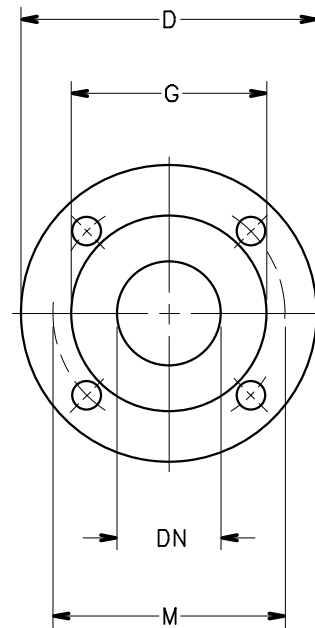
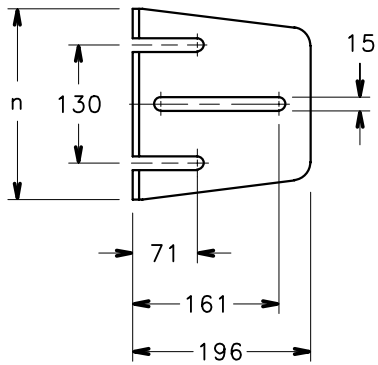
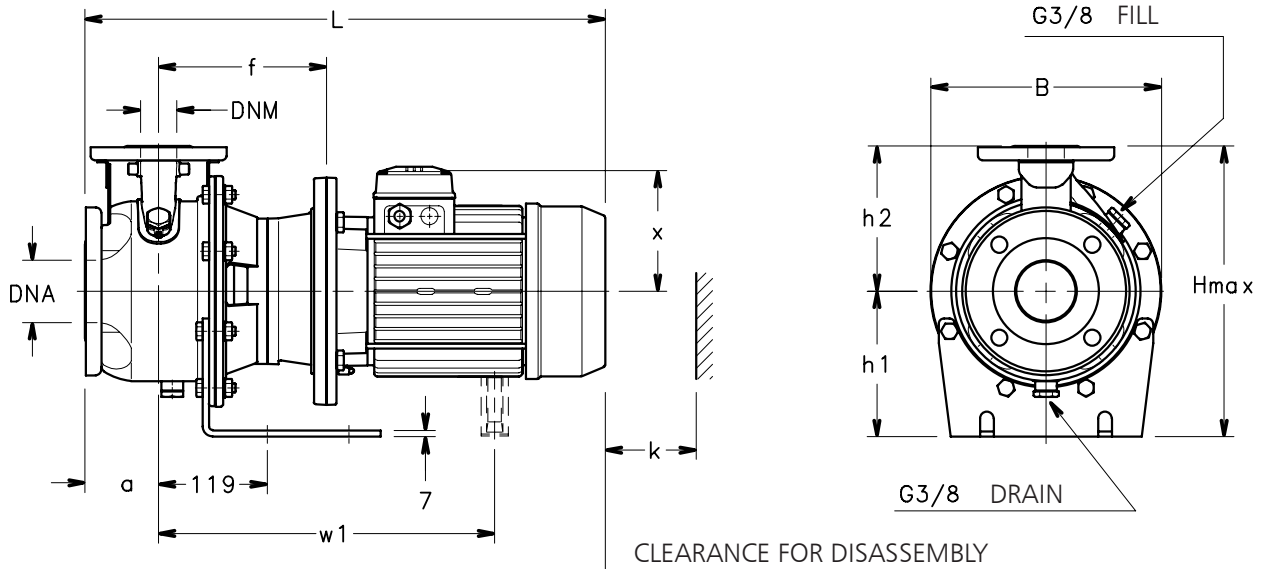
GSHOS SERIES DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES

PUMP TYPE	DIMENSIONS (mm)														B	H max	L	k	WEIGHT kg
	PUMP								SUPPORT										
	DNM	DNA	a	f	h2	w	w1	x	h1	m	m1	n	n1						
GSHOS 25-125/11/D	25	50	80	165	140	-	-	129	112	-	-	190	-	219	252	508	98	26	
GSHOS 25-125/15/D	25	50	80	165	140	-	-	129	112	-	-	190	-	219	252	508	98	27	
GSHOS 25-125/22/P	25	50	80	165	140	-	-	134	112	-	-	190	-	219	252	543	98	33	
GSHOS 25-160/30/P	25	50	80	175	160	-	-	134	160	-	-	210	-	254	320	553	98	42	
GSHOS 25-160/40/P	25	50	80	175	160	-	-	154	160	-	-	210	-	254	320	574	98	47	
GSHOS 25-160/55/P	25	50	80	202	160	-	409	168	160	-	-	210	-	254	320	657	98	60	
GSHOS 25-200/30/P	25	50	80	175	180	-	-	134	160	-	-	230	-	284	340	553	98	44	
GSHOS 25-200/40/P	25	50	80	175	180	-	-	154	160	-	-	230	-	284	340	574	98	50	
GSHOS 25-200/55/P	25	50	80	202	180	-	409	168	160	-	-	230	-	284	340	657	98	63	
GSHOS 32-125/11/D	32	50	80	165	140	-	-	129	112	-	-	190	-	219	252	508	98	26	
GSHOS 32-125/15/D	32	50	80	165	140	-	-	129	112	-	-	190	-	219	252	508	98	27	
GSHOS 32-125/22/P	32	50	80	165	140	-	-	134	112	-	-	190	-	219	252	543	98	33	
GSHOS 32-160/30/P	32	50	80	175	160	-	-	134	160	-	-	210	-	254	320	553	98	42	
GSHOS 32-160/40/P	32	50	80	175	160	-	-	154	160	-	-	210	-	254	320	574	98	47	
GSHOS 32-160/55/P	32	50	80	202	160	-	409	168	160	-	-	210	-	254	320	657	98	60	
GSHOS 32-200/30/P	32	50	80	175	180	-	-	134	160	-	-	230	-	284	340	553	98	44	
GSHOS 32-200/40/P	32	50	80	175	180	-	-	154	160	-	-	230	-	284	340	574	98	50	
GSHOS 32-200/55/P	32	50	80	202	180	-	409	168	160	-	-	230	-	284	340	657	98	63	
GSHOS 40-125/15/D	40	65	80	175	140	-	-	129	112	-	-	190	-	219	252	518	100	28	
GSHOS 40-125/22/P	40	65	80	175	140	-	-	134	112	-	-	190	-	219	252	553	100	34	
GSHOS 40-125/30/P	40	65	80	185	140	-	-	134	160	-	-	190	-	219	300	563	100	40	
GSHOS 40-160/40/P	40	65	80	185	160	-	-	154	160	-	-	210	-	254	320	584	100	48	
GSHOS 40-160/55/P	40	65	80	212	160	-	419	168	160	-	-	210	-	254	328	667	100	61	
GSHOS 40-160/75/P	40	65	80	212	160	-	417	191	160	-	-	210	-	254	351	659	100	79	
GSHOS 50-125/55/P	50	65	100	212	160	-	419	168	160	-	-	210	-	254	328	687	104	61	
GSHOS 50-125/75/P	50	65	100	212	160	-	417	191	160	-	-	210	-	254	351	679	104	79	
GSHOS 50-160/110A/P	50	65	100	242	180	350	-	240	180	304	210	304	254	350	420	836	104	117	
GSHOS 50-160/110/P	50	65	100	242	180	350	-	240	180	304	210	304	254	350	420	836	104	117	

* Motor shim (20 mm) on request

gshos-2p50-en_d_td

GSHOS4 SERIES
DIMENSIONS AND WEIGHTS AT 50 Hz, 4 POLES



PUMP FLANGES

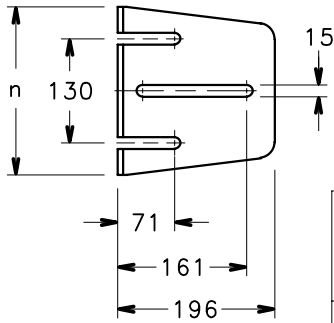
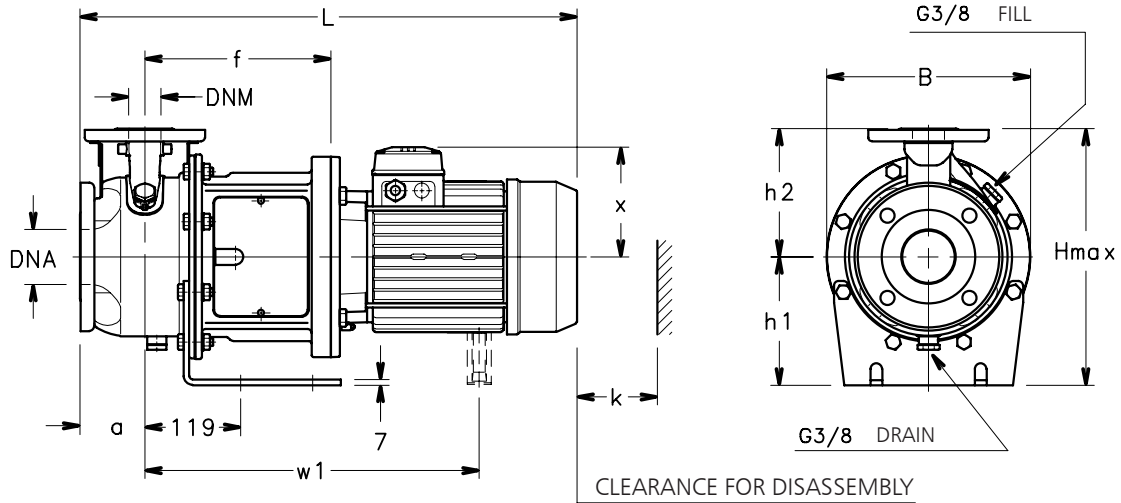
DN	D	M	G	HOLES		MAX THICKNESS
				Nº	DIA.	
25	115	85	56	4	18	16
32	140	100	64	4	18	16
40	150	110	68	4	18	16
50	165	125	83	4	18	18
65	185	145	104	4	18	18

GSHOS4 SERIES DIMENSIONS AND WEIGHTS AT 50 Hz, 4 POLES

PUMP TYPE	DIMENSIONS (mm)											WEIGHT kg	
	PUMP						SUPPORT		B	H max	L		k
	DNM	DNA	a	f	h2	x	h1	n					
GSHOS4 25-125/03	25	50	80	165	140	129	112	190	219	252	508	98	24
GSHOS4 25-160/03	25	50	80	165	160	129	132	210	254	292	508	98	27
GSHOS4 25-160/05	25	50	80	165	160	129	132	210	254	292	508	98	27
GSHOS4 25-160/07/C	25	50	80	165	160	128	132	210	254	292	476	98	29
GSHOS4 25-200/07/C	25	50	80	165	180	128	160	230	284	340	476	98	33
GSHOS4 32-125/03	32	50	80	165	140	129	112	190	219	252	508	98	24
GSHOS4 32-160/03	32	50	80	165	160	129	132	210	254	292	508	98	27
GSHOS4 32-160/05	32	50	80	165	160	129	132	210	254	292	508	98	27
GSHOS4 32-160/07/C	32	50	80	165	160	128	132	210	254	292	476	98	29
GSHOS4 32-200/07/C	32	50	80	165	180	128	160	230	284	340	476	98	33
GSHOS4 40-125/03	40	65	80	175	140	129	112	190	219	252	518	100	25
GSHOS4 40-160/05	40	65	80	175	160	129	132	210	254	292	518	100	29
GSHOS4 40-160/07/C	40	65	80	175	160	128	132	210	254	292	486	100	31
GSHOS4 40-160/11/P	40	65	80	175	160	134	132	210	254	292	553	100	37
GSHOS4 50-125/07/C	50	65	100	175	160	128	132	210	254	292	506	104	31
GSHOS4 50-125/11/P	50	65	100	175	160	134	132	210	254	292	573	104	38
GSHOS4 50-160/11/P	50	65	100	175	180	134	160	230	254	340	573	104	39
GSHOS4 50-160/15/P	50	65	100	175	180	134	160	230	254	340	573	104	41

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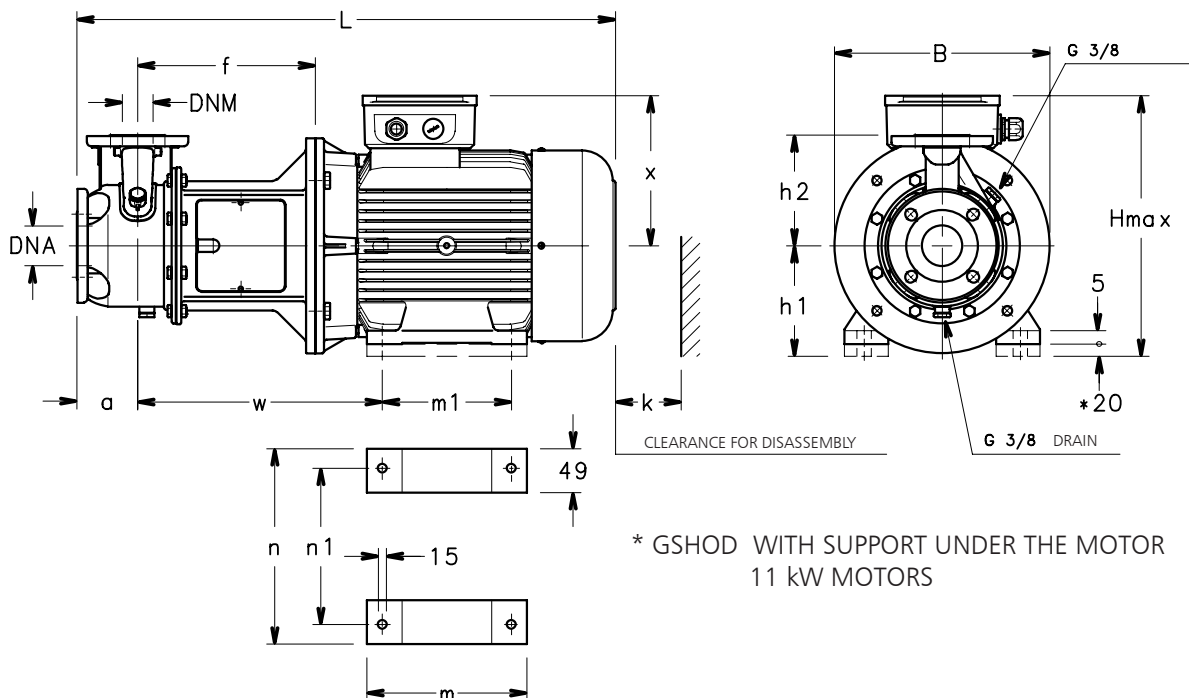
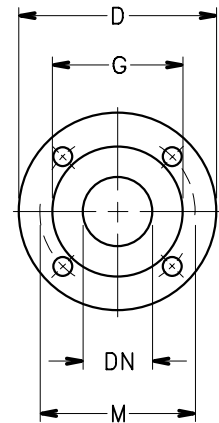
GSHOD SERIES
DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES



GSHOD WITH PUMP SUPPORT FOOT
MOTORS UP TO 7,5 kW

PUMP FLANGES

DN	D	M	G	HOLES		MAX THICKNESS
				Nº	DIA.	
25	115	85	56	4	18	16
32	140	100	64	4	18	16
40	150	110	68	4	18	16
50	165	125	83	4	18	18
65	185	145	104	4	18	18



* GSHOD WITH SUPPORT UNDER THE MOTOR
11 kW MOTORS

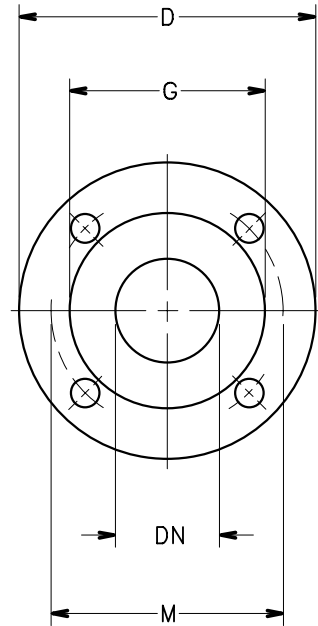
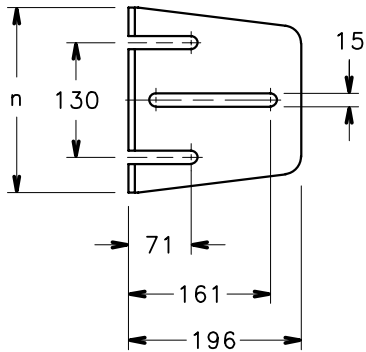
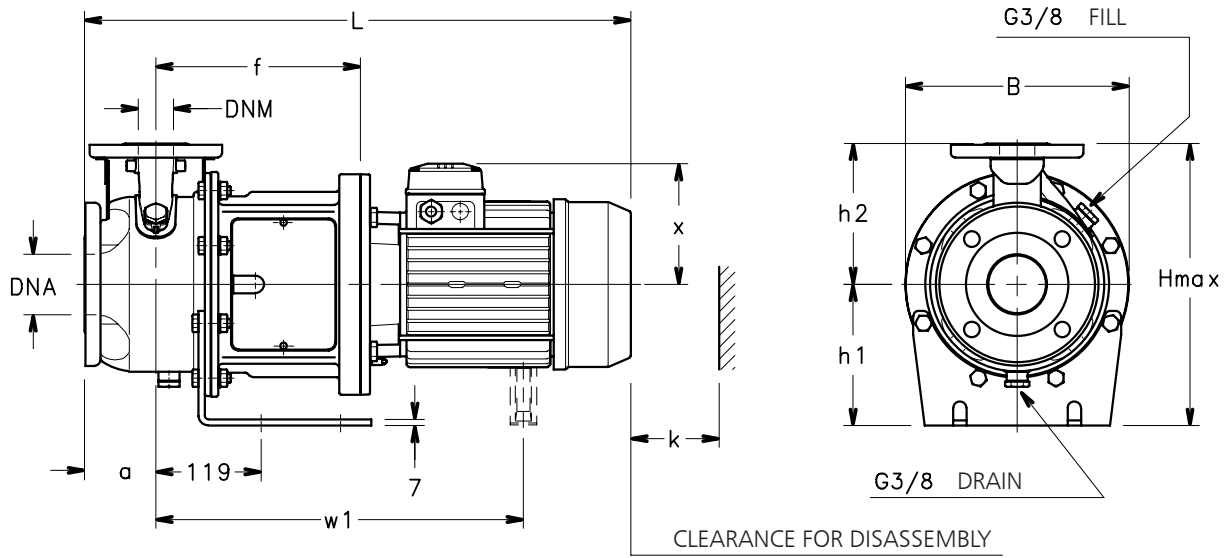
GSHOD SERIES DIMENSIONS AND WEIGHTS AT 50 Hz, 2 POLES

PUMP TYPE	DIMENSIONS (mm)														B	H max	L	k	WEIGHT kg
	PUMP								SUPPORT										
	DNM	DNA	a	f	h2	w	w1	x	h1	m	m1	n	n1						
GSHOD 25-125/11/D	25	50	80	212	140	-	-	129	112	-	-	190	-	219	252	555	98	28	
GSHOD 25-125/15/D	25	50	80	212	140	-	-	129	112	-	-	190	-	219	252	555	98	29	
GSHOD 25-125/22/P	25	50	80	212	140	-	-	134	112	-	-	190	-	219	252	590	98	35	
GSHOD 25-160/30/P	25	50	80	222	160	-	-	134	160	-	-	210	-	254	320	600	98	44	
GSHOD 25-160/40/P	25	50	80	222	160	-	-	154	160	-	-	210	-	254	320	621	98	49	
GSHOD 25-160/55/P	25	50	80	249	160	-	456	168	160	-	-	210	-	254	320	704	98	61	
GSHOD 25-200/30/P	25	50	80	222	180	-	-	134	160	-	-	230	-	284	340	600	98	46	
GSHOD 25-200/40/P	25	50	80	222	180	-	-	154	160	-	-	230	-	284	340	621	98	52	
GSHOD 25-200/55/P	25	50	80	249	180	-	456	168	160	-	-	230	-	284	340	704	98	65	
GSHOD 32-125/11/D	32	50	80	212	140	-	-	129	112	-	-	190	-	219	252	555	98	28	
GSHOD 32-125/15/D	32	50	80	212	140	-	-	129	112	-	-	190	-	219	252	555	98	29	
GSHOD 32-125/22/P	32	50	80	212	140	-	-	134	112	-	-	190	-	219	252	590	98	35	
GSHOD 32-160/30/P	32	50	80	222	160	-	-	134	160	-	-	210	-	254	320	600	98	44	
GSHOD 32-160/40/P	32	50	80	222	160	-	-	154	160	-	-	210	-	254	320	621	98	49	
GSHOD 32-160/55/P	32	50	80	249	160	-	456	168	160	-	-	210	-	254	320	704	98	61	
GSHOD 32-200/30/P	32	50	80	222	180	-	-	134	160	-	-	230	-	284	340	600	98	46	
GSHOD 32-200/40/P	32	50	80	222	180	-	-	154	160	-	-	230	-	284	340	621	98	52	
GSHOD 32-200/55/P	32	50	80	249	180	-	456	168	160	-	-	230	-	284	340	704	98	65	
GSHOD 40-125/15/D	40	65	80	222	140	-	-	129	112	-	-	190	-	219	252	565	100	29	
GSHOD 40-125/22/P	40	65	80	222	140	-	-	134	112	-	-	190	-	219	252	600	100	35	
GSHOD 40-125/30/P	40	65	80	232	140	-	-	134	160	-	-	190	-	219	300	610	100	41	
GSHOD 40-160/40/P	40	65	80	232	160	-	-	154	160	-	-	210	-	254	320	631	100	51	
GSHOD 40-160/55/P	40	65	80	259	160	-	466	168	160	-	-	210	-	254	328	714	100	65	
GSHOD 40-160/75/P	40	65	80	259	160	-	464	191	160	-	-	210	-	254	351	706	100	82	
GSHOD 50-125/55/P	50	65	100	259	160	-	466	168	160	-	-	210	-	254	328	734	104	65	
GSHOD 50-125/75/P	50	65	100	259	160	-	464	191	160	-	-	210	-	254	351	726	104	83	
GSHOD 50-160/110A/P	50	65	100	289	180	397	-	240	180	304	210	304	254	350	420	883	104	120	
GSHOD 50-160/110/P	50	65	100	289	180	397	-	240	180	304	210	304	254	350	420	883	104	120	

* Motor shim (20 mm) on request

gshod-2p50-en_d_td

**GSHOD4 SERIES
DIMENSIONS AND WEIGHTS AT 50 Hz, 4 POLES**



PUMP FLANGES

DN	D	M	G	HOLES		MAX THICKNESS
				Nº	DIA.	
25	115	85	56	4	18	16
32	140	100	64	4	18	16
40	150	110	68	4	18	16
50	165	125	83	4	18	18
65	185	145	104	4	18	18

GSHOD4 SERIES

DIMENSIONS AND WEIGHTS AT 50 Hz, 4 POLES

PUMP TYPE	DIMENSIONS (mm)											WEIGHT kg	
	PUMP						SUPPORT		B	H max	L		k
	DNM	DNA	a	f	h2	x	h1	n					
GSHOD4 25-125/03	25	50	80	212	140	129	112	190	219	252	555	98	26
GSHOD4 25-160/03	25	50	80	212	160	129	132	210	254	292	555	98	29
GSHOD4 25-160/05	25	50	80	212	160	129	132	210	254	292	555	98	29
GSHOD4 25-160/07/C	25	50	80	212	160	128	132	210	254	292	523	98	31
GSHOD4 25-200/07/C	25	50	80	212	180	128	160	230	284	340	523	98	34
GSHOD4 32-125/03	32	50	80	212	140	129	112	190	219	252	555	98	26
GSHOD4 32-160/03	32	50	80	212	160	129	132	210	254	292	555	98	29
GSHOD4 32-160/05	32	50	80	212	160	129	132	210	254	292	555	98	29
GSHOD4 32-160/07/C	32	50	80	212	160	128	132	210	254	292	523	98	31
GSHOD4 32-200/07/C	32	50	80	212	180	128	160	230	284	340	523	98	34
GSHOD4 40-125/03	40	65	80	222	140	129	112	190	219	252	565	100	26
GSHOD4 40-160/05	40	65	80	222	160	129	132	210	254	292	565	100	29
GSHOD4 40-160/07/C	40	65	80	222	160	128	132	210	254	292	533	100	31
GSHOD4 40-160/11/P	40	65	80	222	160	134	132	210	254	292	600	100	38
GSHOD4 50-125/07/C	50	65	100	222	160	128	132	210	254	292	553	104	32
GSHOD4 50-125/11/P	50	65	100	222	160	134	132	210	254	292	620	104	38
GSHOD4 50-160/11/P	50	65	100	222	180	134	160	230	254	340	620	104	39
GSHOD4 50-160/15/P	50	65	100	222	180	134	160	230	254	340	620	104	41

gshod4-4p50-en_d_td

TECHNICAL APPENDIX

TYPICAL APPLICATIONS OF GCO - GSHO SERIES ELECTRIC PUMPS

Water Purification:

De-ionized water
Water treatment
Filtration
Commercial pools

Food and Drink:

Food processing
Bottle washing
Citrus processing
Dish washing
Brewing
Sanitary ware

Medical:

Laser cooling
Medical chillers
Sanitary equipment

Heating, Ventilating & Air Conditioning (HVAC)

Air scrubbers
Water re-circulation
Cooling towers
Cooling systems
Temperature control
Chillers
Induction heating
Heat exchangers
Water heating

Graphics:

Film washing
Cooling

Plastics:

Extrusion machines
Temperature control
Manufacture of polymers

Waste Management:

Waste treatment

Machine Tool:

Degreasing
Parts washing
Chemical treatment
Heat treatment

Laundry:

Industrial and Commercial washing

General Industry:

Spray Booths
Light chemical transfer
Booster systems
Firefighting systems

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:

$$h_p + h_z \geq (\text{NPSHr} + 0.5) + h_f + h_{pv}$$

where:

- h_p** 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.
- h_z** 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.
- h_f** 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 P_v 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 100-101 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.

FLOW RESISTANCE

TABLE OF FLOW RESISTANCE IN 100 m OF A NEW AND STRAIGHT CAST IRON PIPELINE

FLOW RATE		NOMINAL DIAMETER IN mm AND INCHES																	
m ³ /h	l/min.	15 1/2"	20 3/4"	25 1"	32 1 1/4"	40 1 1/2"	50 2"	65 2 1/2"	80 3"	100 4"	125 5"	150 6"	175 7"	200 8"	250 10"	300 12"	350 14"	400 16"	
0,6	10	V 0,94 hr 11,8	0,53 2,82	0,34 1	0,21 0,25														
0,9	15	V 1,42 hr 25,1	0,8 6,04	0,51 2,16	0,31 0,55														
1,2	20	V 1,89 hr 43,1	1,06 10,4	0,68 3,72	0,41 0,95	0,27 0,31													
1,5	25	V 2,36 hr 64,5	1,33 15,8	0,85 5,68	0,52 1,47	0,33 0,47													
1,8	30	V 2,83 hr 92	1,59 22,3	1,02 8	0,62 2,09	0,4 0,66													
2,1	35	V 3,3 hr 123	1,86 29,8	1,19 10,8	0,73 2,81	0,46 0,89	0,3 0,31												
2,4	40	V 3,77 hr 164	2,12 38,2	1,36 13,8	0,83 2,65	0,53 1,15	0,34 0,4												
3	50	V 4,72 hr 246	2,65 58,2	1,7 21,5	1,04 5,6	0,66 1,75	0,42 0,61												
3,6	60	V 3,18 hr 82	2,04 82	1,24 30	0,8 8	0,51 2,48	0,86												
4,2	70	V 3,72 hr 110	2,38 40	1,45 10,8	0,93 3,33	0,59 1,14													
4,8	80	V 4,25 hr 141	2,72 51,5	1,66 13,9	1,06 4,3	0,68 1,46													
5,4	90	V 3,06 hr 64	1,87 64	1,19 17,5	0,76 5,4	0,45 1,82	0,46												
6	100	V 3,4 hr 79	2,07 79	1,33 21,4	1,33 6,6	0,85 2,22	0,5 0,56												
7,5	125	V 4,25 hr 120	2,59 120	1,66 33	1,06 10	0,63 0,86													
9	150	V 3,11 hr 47	3,11 47	1,99 14,2	1,27 4,74	0,75 1,21	0,5 0,43												
10,5	175	V 3,63 hr 63	2,32 63	1,49 19	0,88 6,3	0,58 1,63	0,57												
12	200	V 4,15 hr 82	2,65 82	1,7 24,5	1,01 8,1	0,66 2,1	0,74												
15	250	V 5,18 hr 126	3,32 126	2,12 37,5	1,26 12,3	0,83 3,2	0,53 1,12	0,36											
18	300	V 3,98 hr 53	2,55 17,3	1,51 4,5	1 1,58	0,64 0,51													
24	400	V 5,31 hr 92	3,4 29,5	2,01 7,8	1,33 2,7	0,85 0,89													
30	500	V 6,63 hr 140	4,25 44,8	2,51 12	1,66 4,13	1,06 1,36	0,68 0,48												
36	600	V 5,1 hr 63	3,02 16,9	1,99 5,8	1,27 1,93	0,82 0,68													
42	700	V 5,94 hr 84	3,52 22,6	2,32 7,8	1,49 2,6	0,95 0,9													
48	800	V 6,79 hr 108	4,02 29	2,65 10	1,70 3,35	1,09 1,16	0,75 0,43												
54	900	V 7,64 hr 134	4,52 134	2,99 12,5	1,91 4,2	1,22 1,45	0,85 0,54												
60	1000	V 5,03 hr 44,5	3,32 15,2	2,12 5,14	1,36 1,76	0,94 0,66													
75	1250	V 6,28 hr 68	4,15 23	2,65 7,9	1,70 2,68	1,18 0,48	0,87 0,48												
90	1500	V 7,54 hr 96	4,98 32,6	3,18 11,2	2,04 3,77	1,42 1,42	1,04 0,68												
105	1750	V 8,79 hr 129	5,81 43,5	3,72 15	2,38 5,04	1,65 1,9	1,21 0,91	0,93 0,45											
120	2000	V 6,63 hr 56	4,25 19,4	2,72 6,5	1,89 2,43	1,39 1,18	1,06 0,58	0,68 0,16											
150	2500	V 8,29 hr 85	5,31 30	3,40 9,8	2,36 3,75	1,73 1,79	1,33 0,89	0,85 0,25											
180	3000	V 9,95 hr 120	6,37 42	4,08 13,8	2,83 5,3	2,08 2,53	1,59 1,25	1,02 0,35	0,71 0,15										
300	5000	V 10,62 hr 124,9	6,79 41,3	4,72 16,74	3,47 7,81	2,65 4,03	1,70 1,34	1,18 0,54	0,87 0,25	0,66 0,13									
600	10000	V 13,59 hr 161	9,44 65	6,93 30,2	5,31 15,6	3,4 2,09	2,36 0,97	1,73 0,5	1,33 0,5	1,33 0,5									
1200	20000	V 6,79 hr 20,1	4,72 8,13	3,47 3,8	2,65 3,8	1,70 1,95	1,34 1,95	1,02 1,95	0,71 1,95	0,66 1,95									
1800	30000	V 7,7 hr 18,07	5,2 8,39	4,0 4,32	2,83 4,32	2,08 4,32	1,59 4,32	1,02 4,32	0,71 4,32	0,66 4,32									
3000	50000	V 11,8 hr 49,5	8,67 23	6,63 11,8	5,2 11,8	4,0 11,8	2,83 11,8	2,08 11,8	1,59 11,8	1,02 11,8									
4500	75000	V 17,7 hr 110,5	13 51,3	9,9 51,3	7,7 51,3	5,2 51,3	4,0 51,3	2,83 51,3	2,08 51,3	1,59 51,3									
6000	100000	V 17,33 hr 90,6	13,27 90,6	9,9 90,6	7,7 90,6	5,2 90,6	4,0 90,6	2,83 90,6	2,08 90,6	1,59 90,6									


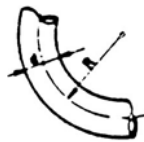
THE FLOW RESISTANCE MUST BE MULTIPLIED BY:

- 0.8 for stainless steel pipes
- 1.25 for slightly rusted steel pipes
- 1.7 for pipes with deposits that reduce the flow section
- 0.7 for aluminium pipes
- 1.3 for fibre-cement pipes

Hr = FLOW RESISTANCE (m/100 m OF PIPELINE)
V = WATER SPEED (m/sec)

FLOW RESISTANCE

TABLE OF FLOW RESISTANCE OF BENDS AND VALVES IN cm OF COLUMN OF WATER

WATER SPEED m/ ec	SHARP BENDS 					SMOOTH BENDS 					STANDARD GATE VALVES	FOOT VALVES	CHECK VALVES
	a = 30°	a = 40°	a = 60°	a = 80°	a = 90°	$\frac{d}{R} = 0,4$	$\frac{d}{R} = 0,6$	$\frac{d}{R} = 0,8$	$\frac{d}{R} = 1$	$\frac{d}{R} = 1,5$			
0,10	0,03	0,04	0,05	0,07	0,08	0,007	0,008	0,01	0,0155	0,027	0,030	30	30
0,15	0,06	0,07	0,10	0,14	0,17	0,016	0,019	0,024	0,033	0,06	0,033	31	31
0,2	0,11	0,13	0,18	0,26	0,31	0,028	0,033	0,04	0,058	0,11	0,058	31	31
0,25	0,17	0,21	0,28	0,4	0,48	0,044	0,052	0,063	0,091	0,17	0,090	31	31
0,3	0,25	0,30	0,41	0,6	0,7	0,063	0,074	0,09	0,13	0,25	0,13	31	31
0,35	0,33	0,40	0,54	0,8	0,93	0,085	0,10	0,12	0,18	0,33	0,18	31	31
0,4	0,43	0,52	0,71	1,0	1,2	0,11	0,13	0,16	0,23	0,43	0,23	32	31
0,5	0,67	0,81	1,1	1,6	1,9	0,18	0,21	0,26	0,37	0,67	0,37	33	32
0,6	0,97	1,2	1,6	2,3	2,8	0,25	0,29	0,36	0,52	0,97	0,52	34	32
0,7	1,35	1,65	2,2	3,2	3,9	0,34	0,40	0,48	0,70	1,35	0,70	35	32
0,8	1,7	2,1	2,8	4,0	4,8	0,45	0,53	0,64	0,93	1,7	0,95	36	33
0,9	2,2	2,7	3,6	5,2	6,2	0,57	0,67	0,82	1,18	2,2	1,20	37	34
1,0	2,7	3,3	4,5	6,4	7,6	0,7	0,82	1,0	1,45	2,7	1,45	38	35
1,5	6,0	7,3	10	14	17	1,6	1,9	2,3	3,3	6	3,3	47	40
2,0	11	14	18	26	31	2,8	3,3	4,0	5,8	11	5,8	61	48
2,5	17	21	28	40	48	4,4	5,2	6,3	9,1	17	9,1	78	58
3,0	25	30	41	60	70	6,3	7,4	9	13	25	13	100	71
3,5	33	40	55	78	93	8,5	10	12	18	33	18	123	85
4,0	43	52	70	100	120	11	13	16	23	42	23	150	100
4,5	55	67	90	130	160	14	21	26	37	55	37	190	120
5,0	67	82	110	160	190	18	29	36	52	67	52	220	140

- 1) Flow resistance in bends is due to the contraction of the liquid threads resulting from the change of direction: the development of the bends must therefore be included in the length of the pipeline.
- 2) Flow resistance in valves and gates was determined on the basis of practical tests.

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- 2) a leading global water technology company.

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