

CR, CRN

Vertical, multistage centrifugal pumps, North America, 60 Hz

CR, CRN 95, 125, 155, 185, 215, 255



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1. Product introduction

This data booklet covers Grundfos CR and CRN pumps with the following sizes, based on nominal flow:

- CR, CRN 95, 125 and 155
- CR, CRN 185, 215 and 255.

Options for smaller sizes are described in the data booklet for CR, CRI, CRN, 60 Hz NEMA available at the Grundfos Product Center at <http://net.grundfos.com/qr/i/98446676>.



CR, CRN 95-255

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1.1 Typical applications

The pumps are suitable for various applications. See some typical examples listed below.

Water supply:

- Filtration and transport waterworks
- distribution from waterworks
- pressure boosting of mains.

Industrial processes:

- Pressure boosting
- process water transfer
- boiler feed
- cooling and air conditioning
- firefighting systems
- special liquids transfer.

Water treatment:

- Filtration
- brackish water reverse osmosis.

Commercial building services:

- Chilled-water systems
- hot-water systems
- pressure boosting
- boiler feed
- firefighting systems
- district energy systems.

1.2 Pump Energy Index (PEI)

Pump Energy Index (PEI) was established by the U.S. Department of Energy (DOE) and adopted by Canada as the standard metric used to evaluate pump efficiency. The value is the ratio of the pump efficiency rating (PER) divided by the calculated minimally compliant PER (PER_{STD}) for the pump type. This provides a representation of the actual performance of a pump compared to the minimal standard performance required by regulation. The lower the PEI value, the more efficient a pump is at the tested operating points.

PER is determined by defined testing parameters required by the DOE. This includes testing a particular pump model at its best efficiency point (BEP).

For PEI values, there are two different versions:

- PEI_{CL} (constant load): applies to a bare-shaft pump and a pump sold with a motor
- PEI_{VL} (variable load): applies to pumps sold with a motor and controller (such as VFD, VSD).

The DOE has set the maximum PEI value to be 1.00. Any pump, pump and motor, or pump, motor and controller that exceeds a PEI value of 1.00 can no longer be manufactured after January 26, 2020.

PEI is a generalized efficiency value. PEI cannot be used to determine the efficiency of a pump in a specific application.

1.2.1 PEI values for CR 95-255

Product type	Poles	PEI_{CL} bare-shaft pump	PEI_{CL} pump with motor	PEI_{VL} pump with motor plus controller ¹	Impeller diameter [in (mm)]
CR, CRN 95	2	0.92	0.93	0.45	6.07
	4	0.94	0.94	0.47	(154)
CR, CRN 125	2	0.92	0.93	0.59	6.38
	4	0.94	0.94	0.47	(162)
CR, CRN 155	2	0.93	0.93	0.59	6.64
	4	0.95	0.95	0.47	(169)
CR, CRN 185 ²⁾	4	0.95	0.95	0.46	7.36 (187)
CR, CRN 215 ²⁾	4	0.96	0.96	0.47	7.80 (198)
CR, CRN 255 ²⁾	4	0.97	0.97	0.48	7.72 (196)

¹⁾ Grundfos CUE continuous controls

²⁾ 2-pole CR, CRN 185, 215, 255: out of scope for DOE PEI

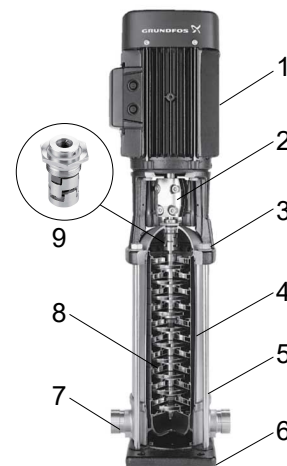
1.3 Features and benefits

Grundfos CR, CRN pumps are vertical, multistage centrifugal pumps. The in-line design allows installation in horizontal single-pipe systems, where the inlet and outlet ports are on the same horizontal plane and have identical pipe dimensions. This design results in a more compact pump.

The pumps are available in various sizes and various numbers of stages to meet the required flow rate and pressure. They are designed for a variety of applications, from pumping potable water to handling chemicals. The pumps are therefore suitable for various pumping systems where performance and materials meet specific demands.

A CR, CRN pump consists of two main components: the motor and the pump unit. The pump unit includes optimized hydraulics, various connection types, a sleeve, a pump head and other other components.

CR, CRN pumps are available in various material versions depending on the pumped liquid. CR pumps fitted with EPDM elastomers comply with ANSI/NSF 61 and ANSI/NSF 372. See UL file MH26400 or contact Grundfos.



CR pump

Pos.	Description
1	Motor
2	Coupling
3	Pump head
4	Sleeve
5	Staybolts
6	Base plate
7	Base
8	Impellers
9	Shaft seal (cartridge type)

Related information

4.1 Type key

1.3.1 Pump

CR pumps are non-self-priming, vertical multistage centrifugal pumps.

The pump consists of a base and a pump head. Staybolts secure the chamber stack and sleeve between the pump head and base. The base has inlet and outlet ports on the same level (in-line). All pumps are fitted with a maintenance-free cartridge type shaft seal that can be changed without removal of motor or disassembly of the pump.

1.3.2 Motors

CR and CRN pumps are fitted with a Grundfos-specified motor. The motors are all heavy-duty 2-pole, NEMA C-face motors (D-face for 100 HP motors and larger).

WEG motors are supplied as standard. Grundfos ML motors (15 to 30 HP, TEFC three-phase) are available on request.

Angular contact bearings are fitted at the drive end on motors up to 75 HP (55 kW), extending motor bearing life (L10) to match that of the pump.

1.3.2.1 Electrical data

Mounting designation	NEMA
Insulation class	F
Efficiency	Premium efficiency - EISA compliant
Enclosure	IP55 TEFC - Totally Enclosed Fan Cooled.
60 Hz standard voltages	3 × 208-230/460 V 3 × 575 V
Number of poles	2

Approvals, WEG



Approvals, Grundfos ML



systems, pressure boosting, and industrial applications. Depending on the application, they offer energy savings, increased comfort, and improved process efficiency.

See the CRE, CRIE, CRNE product guide available at the Grundfos Product Center at <http://product-selection.grundfos.com/>.

1.3.2.5 Optional motors

The Grundfos standard range of motors covers a wide variety of application demands. Furthermore, for special applications or operating conditions, Grundfos offers custom-built motor solutions such as the following:

- explosion-proof motors
- motors with anti-condensation heating unit
- motors with thermal protection.

Motor protection

Three-phase motors must be connected to a motor-protective circuit breaker according to local regulations.

Three-phase Grundfos ML motors 5 HP (3.7 kW) and larger have a built-in thermistor (PTC) according to the DIN 44082 (TP 211 according to IEC 34-11).

1.3.2.2 WEG motors 1/4 to 20 hp

- Rolled steel construction
- service factor 1.15
- suitable for VFD operation per NEMA MG 1 part 31.4.4.2
- certified Class I, Division 2, Groups A, B, C, D
- certified Class II, Division 2, Groups F, G (three-phase only).

1.3.2.3 WEG motors 25 to 300 hp

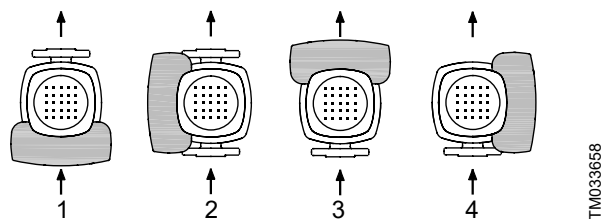
- Cast iron frame
- rated for severe duty
- service factor 1.25 (25 to 100 hp)
- service factor 1.15 (125 to 300 hp)
- inverter rated per NEMA MG 1 part 31
- certified Class I, Division 2, Groups A, B, C, D
- certified Class II, Division 2, Groups F, G.

1.3.2.4 Grundfos E-motors

We also offer frequency-controlled CRE pumps that are ideal for applications requiring variable flow rate at constant pressure. These pumps are suitable for water supply

1.4 Terminal box positions

As standard, the terminal box is fitted on the inlet side of the pump.



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Terminal box positions

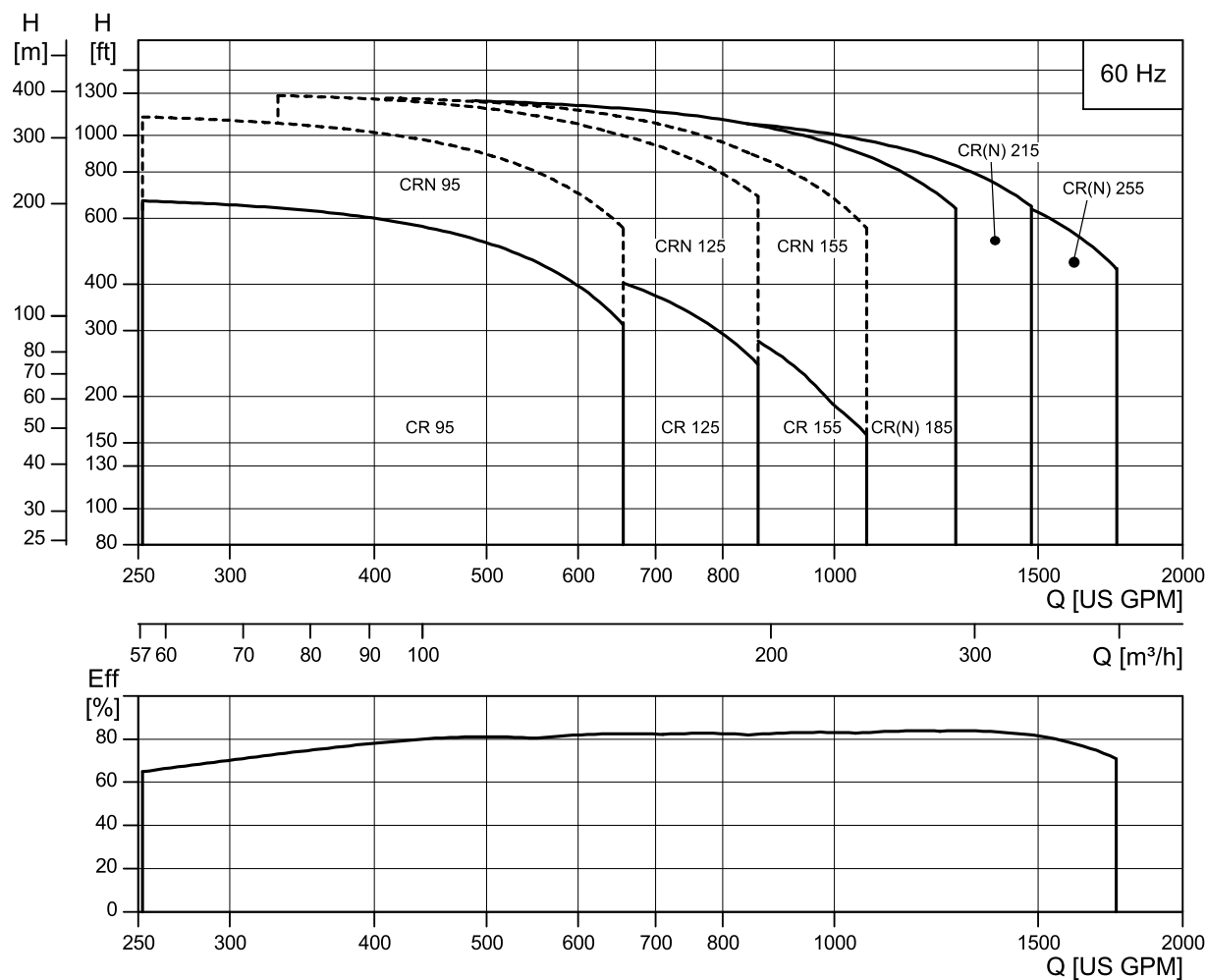
Pos.	Description
1	6-o'clock position (standard)
2	9-o'clock position
3	12-o'clock position
4	3-o'clock position

1.5 Viscosity

Pumping liquids with density or kinematic viscosity greater than that of water causes a considerable pressure drop, a drop in hydraulic performance and a rise in power consumption.

In such situations, the pump must be fitted with a larger motor. If in doubt, contact Grundfos.

2. Performance range



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Performance range, CR, CRN

3. Product range

CR, CRN pump size	95	125	155	185	215	255
Rated flow rate [US gpm (m ³ /h)]	500 (114)	660 (150)	820 (186)	980 (222)	1135 (258)	1350 (307)
Flow range [US gpm]	250-650	330-860	410-1060	490-1270	570-1480	675-1755
Minimum liquid temperature [°F (°C)]	-4 (-20) ³⁾	-4 (-20) ³⁾	-4 (-20) ³⁾	-4 (-20) ³⁾	-4 (-20) ³⁾	-4 (-20) ³⁾
Maximum liquid temperature [°F (°C)]	248 (120) ⁴⁾	248 (120) ⁴⁾	248 (120) ⁴⁾	248 (120) ⁴⁾	248 (120) ⁴⁾	248 (120) ⁴⁾
Maximum pump efficiency [%]	81	82	82	82	84	84
Maximum developed pressure [psi (bar)]	300 (21) ⁵⁾	435 (30) ⁵⁾	370 (26) ⁵⁾	560 (39)	525 (36.1)	395 (27.2)
Motor power [HP]	15-125	20-200	25-250	40-300	50-300	60-300
Standard versions						
CR:						
Cast iron and stainless steel EN 1.4301/AISI 304	•	•	•	•	•	•
CRN:						
Stainless steel EN 1.4401/AISI 316	•	•	•	•	•	•
CR pipe connection						
ANSI flange size	4" ANSI	6" ANSI	6" ANSI	8" ANSI	8" ANSI	8" ANSI
ANSI flange class	150/300 lb.	150/300 lb.	150 lb.	150/300 lb.	150/300 lb.	150/300 lb.
CRN pipe connection						
ANSI flange size	4" ANSI	6" ANSI	6" ANSI	8" ANSI	8" ANSI	8" ANSI
ANSI flange class	150/300 lb.	150/300 lb.	150/300 lb.	150/300 lb.	150/300 lb.	150/300 lb.
PJE coupling (Victaulic type)	4"	6"	6"	8"	8"	8"

3) For CRN 95-255, a minimum liquid temperature of -40 °F (-40 °C) is available on request.

4) For CR, CRN 95-255 operating above 363 psi (25 bar), the liquid temperature range is -4 to +176 °F (-20 to +80 °C).

5) For CR 95-155, the maximum operating pressure is 363 psi (25 bar).

For CRN 95-155, the maximum operating pressure is 580 psi (40 bar). Note that CRN 95 pumps with motors above 75 HP and CRN 125-155 pumps with motors above 150 HP require a soft starter or frequency converter.

- Available as standard

4. Identification

4.1 Type key

Example

CRE 95-1-1 A-G-A-E-HQQE-N-C-B

Code	Explanation
CR	Type range: CR, CRI, CRN
E	Pump with integrated frequency converter
95	Flow rate (nominal, 50 Hz) [m ³ /h]
1	Number of impellers
1	Number of reduced-diameter impellers
A	Code for pump version
G	Code for pipe connection
A	Code for materials
E	Code for rubber parts
	Code for shaft seal:
H	• Shaft seal type designation
Q	• Seal face material (rotating seal face)
Q	• Seal face material (stationary seal face)
E	• Secondary seal material (rubber parts)
N	Code for motor: P2 [HP (kW)]
C	Code for motor: phase and voltage [V]
B	Code for motor: speed variant [rpm]

4.1.1 Key to codes

Code	Description
Pump version	
A	Basic version
B	Oversize motor
C	CR compact
D	Pump with pressure intensifier
E	Pump with certificate
F	Pump for high temperatures (with air-cooled top)
G	E-pump without operating panel
H	Horizontal version
I	Different pressure rating
J	E-pump with a different maximum speed
K	Pump with low NPSH
L	Pump including Grundfos CUE and certificate
M	Magnetic drive
N	With sensor
O	Cleaned and dried
P	Undersize motor
Q	High-pressure pump with high-speed MLE motor
R	Belt-driven pump
S	High-pressure pump
T	Thrust handling device
U	ATEX-approved pump
V	Cascade function

Code	Description
W	Deep-well pump with ejector
X	Special version
6	Special version with NSF 61/372 approval
Y	Electropolished
Z	Pumps with bearing flange

Pipe connection	
A	Oval flange
B	NPT thread
CA	FlexiClamp
CX	TriClamp
F	DIN flange
FC	DIN 11853-2 flange (collar flange)
FE	EN 1092-1, type E
G	ANSI flange
J	JIS flange
N	Changed diameter of ports
P	PJE coupling (Victaulic type)
X	Special version

Materials	
A	Basic version
C	Carbon-free pump
D	Carbon-graphite-filled PTFE (bearings)/tungsten carbide
E	Pickled and passivated (Only Japan)
H	Flanges and base plate EN 1.4408
K	Bronze (bearings)/tungsten carbide
L	Motor stool, base plate and flanges EN 1.4408
M	Motor stool, base plate, coupling and flanges: EN 1.4408 Coupling guards: copper Bolts, nuts and spacing pipes: EN 1.4401 or higher grade
N	Flanges EN 1.4408
P	PEEK neck ring
Q	Silicon carbide/silicon carbide bearing: pump Silicon carbide/silicon carbide seal faces: thrust handling device
R	Silicon carbide/silicon carbide bearing
S	PTFE neck rings
T	Base plate EN 1.4408
U	Silicon carbide/silicon carbide bearing: pump Silicon carbide/tungsten carbide seal faces: thrust handling device
W	Tungsten carbide/tungsten carbide
X	Special version

Rubber parts in pump	
E	EPDM
F	FXM (Fluoraz®)
K	FFKM (Kalrez®)
N	CR (Neoprene)
V	FKM (Viton®)

Shaft seal type designation	
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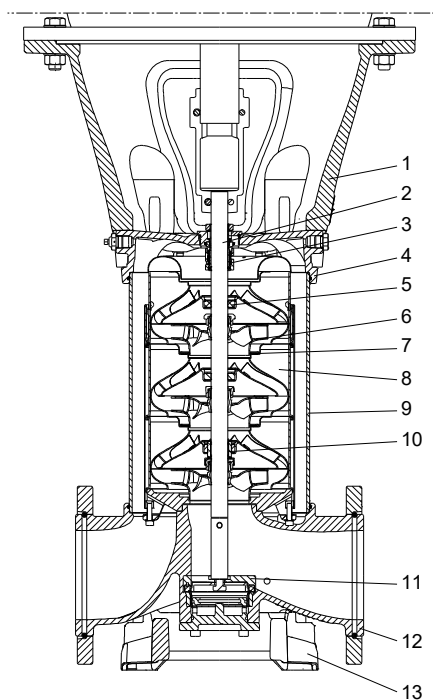
Code	Description
A	O-ring seal with fixed driver
H	Balanced cartridge seal with O-ring
O	Double seal, back-to-back
P	Double seal, tandem
X	Special version
Seal face material (rotating and stationary seal face)	
B	Carbon, synthetic resin-impregnated
U	Cemented tungsten carbide
Q	Silicon carbide
X	Other ceramics
Secondary seal material (rubber parts)	
E	EPDM
F	FXM (Fluoraz®)
K	FFKM (Kalrez®)
V	FKM (Viton®)

4.1.1.1 Codes for motor

Code	Description
P2 [hp (kW)]	
C	0.33 (0.25)
D	0.5 (0.37)
E	0.75 (0.55)
F	1 (0.75)
G	1.5 (1.1)
H	2 (1.5)
I	3 (2.2)
K	5 (4)
L	7.5 (5.5)
M	10 (7.5)
N	15 (11)
O	20 (15)
P	25 (18.5)
Q	30 (22)
R	40 (30)
S	50 (37)
T	60 (45)
U	75 (55)
V	100 (75)
W	120 (90)
1	150 (110)
2	175 (132)
3	215 (160)
4	270 (200)
5	335 (250)
Phase and voltage (V)	
A	1 × 200-240 V
B	3 × 200-240 V
C	3 × 440-480 V
D	3 × 380-500 V
X	Not defined
Speed variant (rpm)	
A	1450-2000
B	2900-4000
C	4000-5900
2	2-pole
4	4-pole

5. Construction

5.1 CR 95, 125, 155, 185, 215, 255



TM065161

Materials, CR

Pos.	Designation	Materials	DIN/EN	≈ AISI/ASTM
1	Motor stool	Ductile cast iron	EN 1563 EN-GJS-500-7	ASTM A536-84 65-45-12
2	Shaft	Stainless steel	EN 10088 1.4057 ⁶⁾ EN 10088 1.4462 ⁷⁾	AISI 431 ⁶⁾ AISI 318 LN ⁷⁾
3	Shaft seal (seal faces)	Silicon carbide/silicon carbide	-	-
4	Pump head	Ductile cast iron	EN 1563 EN-GJS-500-7	ASTM A536-84 65-45-12
5	Support bearing (bush)	Carbon-graphite-filled PTFE		
6	Impeller	Stainless steel	EN 10088 1.4301 EN 10088 1.4401 ⁸⁾	AISI 304 AISI 316 ⁸⁾
7	Neck ring	PEEK	-	-
8	Chamber	Stainless steel	EN 10088 1.4301 EN 10088 1.4401 ⁸⁾	AISI 304 AISI 316 ⁸⁾
9	Sleeve	Stainless steel	EN 10088 1.4301 ⁶⁾ EN 10088 1.4404 ⁷⁾	AISI 304 ⁶⁾ AISI 316 L ⁷⁾
10	Bearing ring	Tungsten carbide/tungsten carbide	-	-
11	Thrust handling device ⁹⁾	Stainless steel	EN 10088 1.4401 EN 10283 1.4408	AISI 316 CF 8M equal to AISI 316
		Silicon carbide/tungsten carbide	-	-

Pos.	Designation	Materials	DIN/EN	≈ AISI/ASTM
12	Base	Ductile cast iron	EN 1563 EN-GJS-500-7	ASTM A536-84 65-45-12
13	Base plate	Ductile cast iron	EN 1563 EN-GJS-500-7	ASTM A536-84 65-45-12
	Staybolts	Stainless steel	EN 10088 1.4057	AISI 431

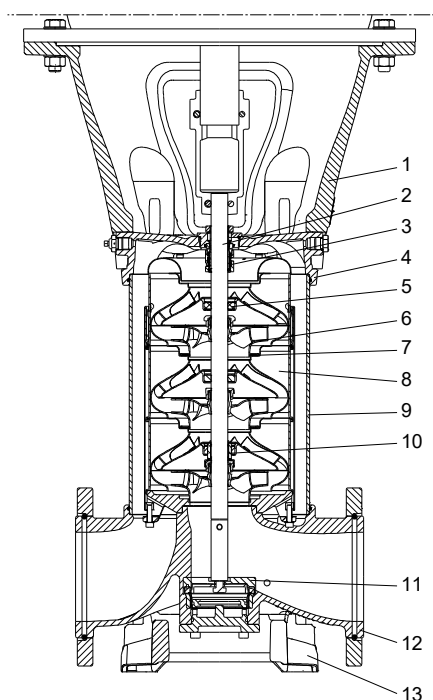
6) CR 95

7) For the CR 125, 155, 185, 215, 255, shaft made of duplex stainless steel

8) CR 185, 215, 255

9) If fitted

5.2 CRN 95, 125, 155, 185, 215, 255



TM065161

Materials, CRN

Pos.	Designation	Materials	DIN/EN	≈ AISI/ASTM
1	Motor stool	Ductile cast iron	EN 1563 EN-GJS-500-7	ASTM A536-84 65-45-12
2	Shaft	Stainless steel	EN 10088 1.4462 ¹⁰⁾	318 LN
3	Shaft seal (seal faces)	Silicon carbide/silicon carbide	-	-
4	Pump head	Stainless steel	EN 10283 1.4408	CF 8M
5	Support bearing (bush)	Carbon-graphite-filled PTFE	-	-
6	Impeller	Stainless steel	EN 10088 1.4401	AISI 316
7	Neck ring	PEEK	-	-
8	Chamber	Stainless steel	EN 10088 1.4401	AISI 316
9	Sleeve	Stainless steel	EN 10088 1.4404	AISI 316 L
10	Bearing ring	Tungsten carbide/tungsten carbide	-	-
11	Thrust handling device ¹¹⁾	Stainless steel	EN 10088 1.4401 EN 10283 1.4408	AISI 316 CF 8M equal to AISI 316
		Silicon carbide/tungsten carbide	-	-
12	Base	Stainless steel	EN 10283 1.4408	CF 8M
13	Base plate	Ductile cast iron	EN 1563 EN-GJS-500-7	ASTM A536-84 65-45-12
	Staybolts	Stainless steel	EN 10088 1.4057	AISI 431

¹⁰⁾ Duplex stainless steel

¹¹⁾ If fitted

6. Operating conditions

6.1 Pumped liquids

The pumps are suitable for pumping thin, non-explosive liquids, not containing solid particles or fibers. The liquid must not attack the pump materials.

CRN pumps are suitable for industrial liquids and are to be used in systems where all parts in contact with the liquid must be made of high-grade stainless steel.

6.1.1 List of pumped liquids

A number of typical liquids are listed below.

Other pump versions may be applicable, however, those listed are considered the best option. The table is intended as a general guide only and does not replace testing of the pumped liquids and pump materials under actual working conditions.

The list must, however, be used with caution, as factors such as the following may affect the chemical resistance of a specific pump version:

- concentration of the pumped liquid
- liquid temperature
- pressure.

Safety precautions must be made when pumping dangerous liquids.

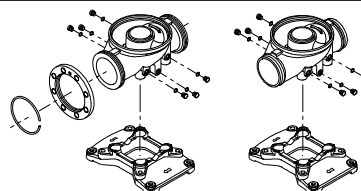
Notes

D	It is often used with additives.
E	Its density or viscosity differ from that of water. Allow for this when calculating motor output and pump performance.
F	Pump selection depends on many factors. Contact Grundfos.
H	There is a risk of crystallization or precipitation in shaft seal.
1	The pumped liquid is highly inflammable.
2	The pumped liquid is combustible.
3	It is insoluble in water.
4	It has low self-ignition point.

Pumped liquid	Chemical formula	Note	Liquid concentration, liquid temperature	CRN
Acetic acid	CH ₃ COOH	-	5 %, 68 °F (20 °C)	HQQE
Acetone	CH ₃ COCH ₃	1, F	100 %, 68 °F (20 °C)	HQQE
Alkaline degreasing agent		D, F	-	-
Ammonium bicarbonate	NH ₄ HCO ₃	E	20 %, 86 °F (86 °F (30 °C))	HQQE
Ammonium hydroxide	NH ₄ OH	-	20 %, 104 °F (40 °C)	-
Aviation fuel		1, 3, 4, F	100 %, 68 °F (20 °C)	-
Benzoic acid	C ₆ H ₅ COOH	H	0.5 %, 68 °F (20 °C)	HQQV
Boiler water		-	< 248 °F (120 °C)	-
		F	248-356 °F (120-180 °C)	-
Calcareous water		-	< 194 °F (90 °C)	-
Calcium acetate (as coolant with inhibitor)	Ca(CH ₃ COO) ₂	D, E	30 %, 122 °F (50 °C)	-
Calcium hydroxide	Ca (OH) ₂	E	Saturated solution, 122 °F (50 °C)	-
Chloride-containing water		F	< 86 °F (30 °C), maximum 500 ppm	HQQE
Chromic acid	H ₂ CrO ₄	H	1 %, 68 °F (20 °C)	HQQV
Citric acid	HOC(CH ₂ CO ₂ H) ₂ COOH	H	5 %, 104 °F (40 °C)	HQQE
Completely desalinated water (demineralized water)		-	248 °F (120 °C)	HQQE
Condensate		-	248 °F (120 °C)	-
Copper sulphate	CuSO ₄	E	10 %, 122 °F (50 °C)	HQQE
Corn oil		D, E, 3	100 %, 176 °F (80 °C)	-
Diesel oil		2, 3, 4, F	100 %, 68 °F (20 °C)	-
Domestic hot water (potable water)		-	< 248 °F (120 °C)	-
Ethanol (ethyl alcohol)	C ₂ H ₅ OH	1, F	100 %, 68 °F (20 °C)	-
Ethylene glycol	HOCH ₂ CH ₂ OH	D, E	50 %, 122 °F (50 °C)	-
Formic acid	HCOOH	-	5 %, 68 °F (20 °C)	HQQE
Glycerine (glycerol)	OHCH ₂ CH(OH)CH ₂ OH	D, E	50 %, 122 °F (50 °C)	-
Hydraulic oil (mineral)		E, 2, 3	100 %, 212 °F (100 °C)	-
Hydraulic oil (synthetic)		E, 2, 3	100 %, 212 °F (100 °C)	-
Isopropyl alcohol	CH ₃ CHOHCH ₃	1, F	100 %, 68 °F (20 °C)	-
Lactic acid	CH ₃ CH(OH)COOH	E, H	10 %, 68 °F (20 °C)	HQQV
Linoleic acid	C ₁₇ H ₃₁ COOH	E, 3	100 %, 68 °F (20 °C)	-
Methanol (methyl alcohol)	CH ₃ OH	1, F	100 %, 68 °F (20 °C)	-
Motor oil		E, 2, 3	100 %, 176 °F (80 °C)	-
Naphthalene	C ₁₀ H ₈	E, H	100 %, 176 °F (80 °C)	-
Nitric acid	HNO ₃	F	1 %, 68 °F (20 °C)	HQQE
Oil-containing water		-	< 212 °F (100 °C)	-
Olive oil		D, E, 3	100 %, 176 °F (80 °C)	-
Oxalic acid	(COOH) ₂	H	1 %, 68 °F (20 °C)	HQQE
Ozone-containing water	(O ₃)	-	< 212 °F (100 °C)	HQQE
Peanut oil		D, E, 3	100 %, 176 °F (80 °C)	-
Petrol		1, 3, 4, F	100 %, 68 °F (20 °C)	-
Phosphoric acid	H ₃ PO ₄	E	20 %, 68 °F (20 °C)	HQQE
Propanol	C ₃ H ₇ OH	1, F	100 %, 68 °F (20 °C)	-
Propylene glycol	CH ₃ CH(OH)CH ₂ OH	D, E	50 %, 194 °F (90 °C)	-
Potassium carbonate	K ₂ CO ₃	E	20 %, 122 °F (50 °C)	-
Potassium formate (as coolant with inhibitor)	KOOCH	D, E	30 %, 122 °F (50 °C)	-
Potassium hydroxide	KOH	E	20 %, 122 °F (50 °C)	HQQE
Potassium permanganate	KMnO ₄	-	5 %, 68 °F (20 °C)	HQQE
Rape seed oil		D, E, 3	100 %, 176 °F (80 °C)	-

Pumped liquid	Chemical formula	Note	Liquid concentration, liquid temperature	CRN
Salicylic acid	$C_6H_4(OH)COOH$	H	0.1 %, 68 °F (20 °C)	HQQE
Silicone oil		E, 3	100 %	-
Sodium bicarbonate	$NaHCO_3$	E	10 %, 140 °F (60 °C)	HQQE
Sodium chloride (as coolant)	$NaCl$	D, E	30 %, < 41 °F (5 °C), pH > 8	-
Sodium hydroxide	$NaOH$	E	20 %, 122 °F (50 °C)	HQQE
Sodium hypochlorite	$NaOCl$	F	0.1 %, 68 °F (20 °C)	HQQV
Sodium nitrate	$NaNO_3$	E	10 %, 140 °F (60 °C)	HQQE
Sodium phosphate	Na_3PO_4	E, H	10 %, 140 °F (60 °C)	HQQE
Sodium sulphate	Na_2SO_4	E, H	10 %, 140 °F (60 °C)	HQQE
Softened water		-	< 248 °F (120 °C)	HQQE
Soya oil		D, E, 3	100 %, 176 °F (80 °C)	-
Sulphuric acid	H_2SO_4	F	1 %, 68 °F (20 °C)	HQQV
Sulphurous acid	H_2SO_3	-	1 %, 68 °F (20 °C)	HQQE
Unsalted swimming-pool water		-	Approx. 2 ppm free chlorine (Cl_2)	-

6.2 Maximum operating pressure and liquid temperature

ANSI, PJE (Victaulic type)				
				
Pump type	ANSI flange class	Maximum permissible operating pressure in standard configurations ¹²⁾ [psi (bar)]	Minimum liquid temperature [°F (°C)]	Maximum liquid temperature [°F (°C)]
CR 95-1-1 → 95-4-1	150	232 (16)	-4 (-20)	248 (120)
CR 95-4 → 95-5-1	300	363 (25)	-4 (-20)	248 (120)
CR 125-1-1 → 125-3	150	232 (16)	-4 (-20)	248 (120)
CR 125-4-2	300	363 (25)	-4 (-20)	248 (120)
CR 155-1-1 → 155-3-2	150	232 (16)	-4 (-20)	248 (120)
CR 185-1-1 → 185-2	150	232 (16)	-4 (-20)	248 (120)
CR 185-3-3 → 185-4-2	300	363 (25)	-4 (-20)	248 (120)
CR 185-4-1 → 185-6	300	580 (40)	-4 (-20)	248 (120) ¹³⁾
CR 215-1-1 → 215-2	150	232 (16)	-4 (-20)	248 (120)
CR 215-3-3 → 215-4-3	300	363 (25)	-4 (-20)	248 (120)
CR 215-4-2 → 215-5-1	300	580 (40)	-4 (-20)	248 (120) ¹³⁾
CR 255-1-1 → 255-2-1	150	232 (16)	-4 (-20)	248 (120)
CR 255-2 → 255-3	300	363 (25)	-4 (-20)	248 (120)
CR 255-4-3 → 255-4-1	300	580 (40)	-4 (-20)	248 (120) ¹³⁾
CRN 95-1-1 → 95-4-1	150	232 (16)	-4 (-20)	248 (120)
CRN 95-5-2 → 95-5-1	300	363 (25)	-4 (-20)	248 (120)
CRN 95-6-3 → 95-8	300	580 (40)	-4 (-20)	248 (120) ¹³⁾
CRN 125-1-1 → 125-3	150	232 (16)	-4 (-20)	248 (120)
CRN 125-4-2	300	363 (25)	-4 (-20)	248 (120)
CRN 125-4-1 → 125-9-3	300	580 (40)	-4 (-20)	248 (120) ¹³⁾
CRN 155-1-1 → 155-3-2	150	232 (16)	-4 (-20)	248 (120)
CRN 155-3-1 → 155-8-3	300	580 (40)	-4 (-20)	248 (120) ¹³⁾
CRN 185-1-1 → 185-2	150	232 (16)	-4 (-20)	248 (120)
CRN 185-3-3 → 185-4-2	300	363 (25)	-4 (-20)	248 (120)
CRN 185-4-1 → 185-6	300	580 (40)	-4 (-20)	248 (120) ¹³⁾
CRN 215-1-1 → 215-2	150	232 (16)	-4 (-20)	248 (120)
CRN 215-3-3 → 215-4-3	300	363 (25)	-4 (-20)	248 (120)
CRN 215-4-2 → 215-5-1	300	580 (40)	-4 (-20)	248 (120) ¹³⁾
CRN 255-1-1 → 255-2-1	150	232 (16)	-4 (-20)	248 (120)
CRN 255-2 → 255-3	300	363 (25)	-4 (-20)	248 (120)
CRN 255-4-3 → 255-4-1	300	580 (40)	-4 (-20)	248 (120) ¹³⁾

¹²⁾ For operating conditions outside the standard, contact Grundfos.

¹³⁾ For operating pressures above 363 psi (25 bar), the liquid temperature range is -4 to 176 °F (-20 to 80 °C). Refer to the section on operating range of the shaft seal.

6.3 Operating range of the shaft seal

All pumps are delivered with a HQQE/V cartridge shaft seal as standard.

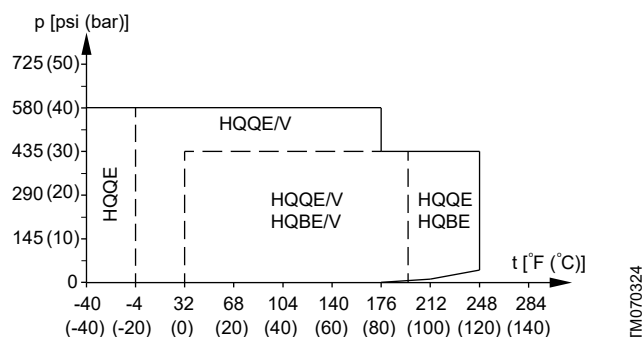
The operating range of the shaft seal depends on operating pressure, pump type, type of shaft seal and liquid temperature. The following curves apply to clean water and water with anti-freeze liquids. For selecting the right shaft seal, refer to the section on pumped liquids. If the operating range is exceeded, the life of the shaft seal may be reduced.

Related information

6.1.1 List of pumped liquids

6.3.1 CR, CRN 95-255

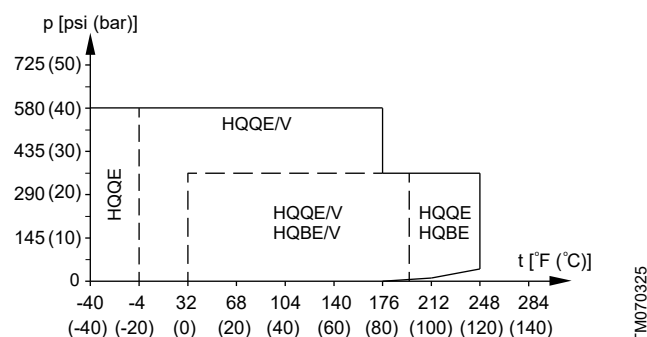
Ø22 shaft seals for 15-75 HP (11-55 kW)



Operating range of standard shaft seals for CR, CRN 95-255, 15-75 HP (11-55 kW)

Standard shaft seal	Motor size [HP (kW)]	Description	Liquid temperature [°F (°C)]
HQQE	15-75 (11-55)	O-ring (cartridge) (balanced seal), Silicon carbide/Silicon carbide, EPDM	-40 - +248 (-40 - +120)
HQQV		O-ring (cartridge) (balanced seal), Silicon carbide/Silicon carbide, FKM	-4 - +194 (-20 - +90)
HQBE		O-ring (cartridge) (balanced seal), Silicon carbide/carbon, EPDM	32 - +248 (0 - +120)
HQBV		O-ring (cartridge) (balanced seal), Silicon carbide/carbon, FKM	32 - +194 (0 - +90)

Ø28 and Ø36 shaft seals for 100-300 HP (75-224 kW)



Operating range of standard shaft seals for Ø28 and Ø36 for CR 125-255, 100-300 HP (75-224 kW)

Standard shaft seal	Motor size [HP (kW)]	Description	Liquid temperature [°F (°C)]
HQQE	100-300 (75-224)	O-ring (cartridge) (balanced seal), Silicon carbide/Silicon carbide, EPDM	-40 - +248 (-40 - +120)
HQQV		O-ring (cartridge) (balanced seal), Silicon carbide/Silicon carbide, FKM	-4 - +194 (-20 - +90)
HQBE		O-ring (cartridge) (balanced seal), Silicon carbide/carbon, EPDM	32 - +248 (0 - +120)
HQBV		O-ring (cartridge) (balanced seal), Silicon carbide/carbon, FKM	32 - +194 (0 - +90)

6.4 Maximum inlet pressure

The table below shows the maximum permissible inlet pressure for a pump at rest, vertically mounted, and fitted with a standard NEMA 60 Hz motor. For operating conditions, pumps running at lower speeds, or pumps with additional stages, contact Grundfos to determine the maximum permissible inlet pressure.

The actual inlet pressure plus the pressure against a closed valve must always be lower than the maximum permissible operating pressure. Exceeding this limit may damage the angular contact bearings of the motor and reduce the service life of the shaft seal.

Pump type	Maximum inlet pressure [psi (bar)]
CR, CRN 95	
CR, CRN 95-1-1 → 95-2-2	145 (10)
CR, CRN 95-2-1 → 95-4-1	218 (15)
CR, CRN 95-4 → 95-5-1	290 (20)
CRN 95-6-3 → 95-8	290 (20)
CR, CRN 125	
CR, CRN 125-1-1 → 125-1	145 (10)
CR, CRN 125-2-2 → 125-3-2	218 (15)
CR, CRN 125-3-1 → 125-4-2	290 (20)
CRN 125-4-1 → 125-9-3	290 (20)
CR, CRN 155	
CR, CRN 155-1-1	145 (10)
CR, CRN 155-1 → 155-2-1	218 (15)
CR, CRN 155-2 → 155-3-2	290 (20)
CRN 155-3-1 → 155-8-3	290 (20)
CR, CRN 185	
CR, CRN 185-1-1 → 185-1	218 (15)
CR, CRN 185-2-2 → 185-6	290 (20)
CR, CRN 215	
CR, CRN 215-1-1	218 (15)
CR, CRN 215-1 → 215-5-1	290 (20)
CR, CRN 255	
CR, CRN 255-1-1	218 (15)
CR, CRN 255-1 → 255-4-1	290 (20)

Examples of operating and inlet pressures

The values for operating and inlet pressures shown in the table must not be considered individually and must comply with the below statement.

The outlet pressure must be equal to or lower than the maximum operating pressure.

See the following definitions and examples.

Definitions

Pressure type	Definition
Maximum operating pressure	The maximum pressure is stated on the nameplate.
Pump differential pressure	The difference between the outlet pressure and inlet pressure.
Inlet pressure	The pressure measured at the pump inlet.
Outlet pressure	The inlet pressure added to the pump differential pressure.

Example

The following pump type has been selected: CR 95-3.

Maximum operating pressure: 363 psi (25 bar).

Maximum inlet pressure: 218 psi (15 bar).

Pump differential pressure when operating against a closed outlet valve (flow = 0 GPM (0 m³/h)):

436 ft head = 190 psi (133 m head = 13.07 bar).

See the performance curves and technical data.

This pump must not start at an inlet pressure of 218 psi (15 bar), but only at an inlet pressure of 173 psi (11.93 bar), calculated as 363 minus 190.

7. Selection and sizing

7.1 Selection of pump

Pump selection must be based on the following parameters:

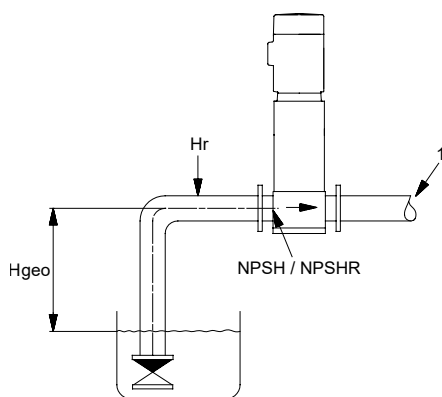
- duty point of the pump
- sizing data such as pressure loss as a result of height differences, friction loss in the pipes, pump efficiency
- pump materials
- pump connections
- shaft seal.

For details, refer to the relevant sections.

Sizing data

When sizing a pump, the following parameters must be taken into account:

- required flow rate and pressure at the draw-off point
- pressure loss as a result of height differences (H_{geo})
- friction loss in the pipes (H_f), with pressure loss in connection with long pipes, bends, valves, or similar taken into account
- best efficiency at the estimated duty point
- NPSH value (calculated as described in the relevant section).

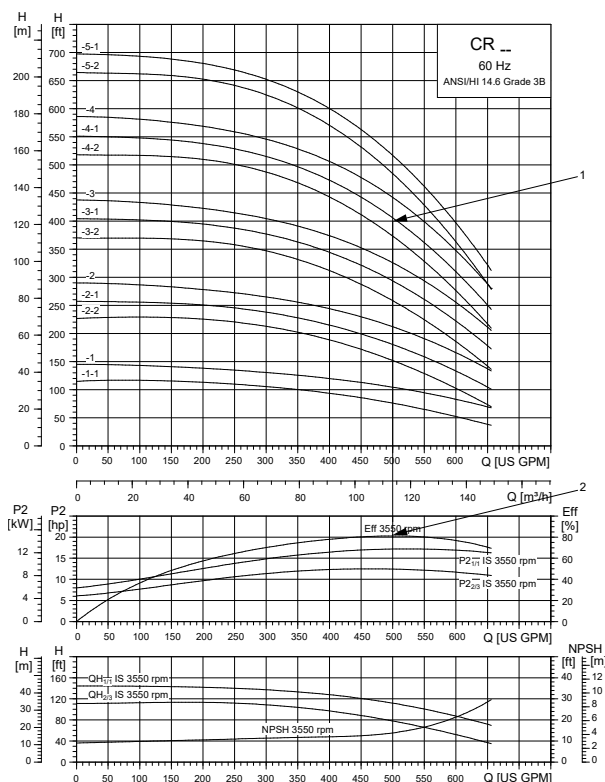


Sizing data

Pos.	Description
1	Required flow rate, required pressure

Pump efficiency

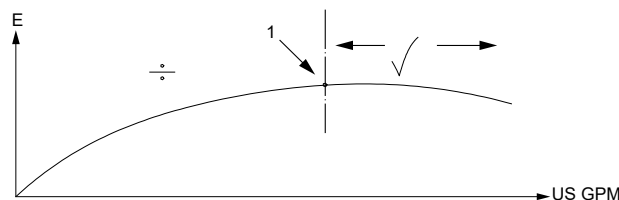
Before determining the best efficiency point, the operating profile of the pump must be established. If the pump is expected to operate at a constant duty point, it should be selected so that this duty point coincides with the best efficiency point on the pump curve.



Example of the duty point of a CR pump

Pos.	Description
1	Duty point
2	Best efficiency

As the pump is sized based on the maximum flow rate, the duty point must always lie to the right of the best efficiency point (Eff) on the efficiency curve. This must be considered to maintain high efficiency when the flow rate decreases.



Best efficiency

Pos.	Description
1	Best efficiency point

Pump material

Select the material variant based on the the pumped liquid. The product range covers the following basic types:

- CR, CRI pumps are suitable for clean, non-aggressive liquids, such as potable water and oils.
- CRN pumps are suitable for industrial liquids and acids. Refer to the section on pumped liquids, or contact Grundfos.

Duty point of the pump

A pump can be selected for the duty point based on the curve charts in the performance curves section. Ideally, the duty point should coincide with the best efficiency point on the pump curve.

Pump connection

Selection of the pump connection depends on the rated pressure and the piping. To meet various requirements, CR, CRN pumps offer a wide range of flexible connections such as the following:

- ANSI flange
- DIN flange
- PJE coupling (Victaulic type)
- other connections on request.

Shaft seal



Shaft seal (cartridge type)

As standard, the CR range is fitted with a Grundfos cartridge-type shaft seal suitable for the most common applications.

The following key parameters must be taken into account when selecting the shaft seal:

- type of pumped liquid
- liquid temperature
- maximum pressure.

Grundfos offers a wide range of shaft seal variants to meet specific demands. See the section on pumped liquids.

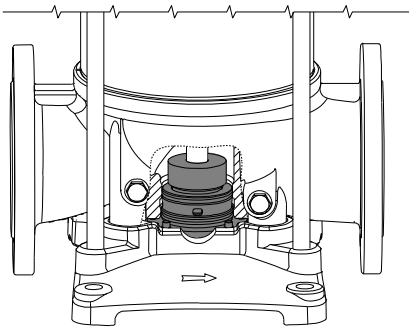
Servicing shaft seals

Replacement shaft seals are available as complete service kits.

Shaft seals fitted on CR, CRN 95-185 pumps with Ø28 mm or Ø36 mm shaft ends are serviceable. This means that the wear parts in these shaft seals are available as service kits and can be replaced without having to renew the complete shaft seal.

All service kits include detailed instructions on how to carry out the replacement.

Thrust-handling device



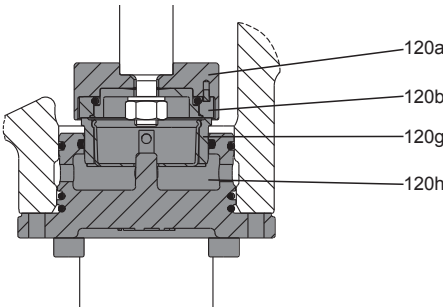
TM069669

Thrust-handling device

A thrust-handling device (THD) is factory-fitted on pumps with 100 HP (75 kW) motors or larger. The system consists of two parts: a rotating part mounted on the shaft end below the first impeller and a non-rotating part mounted in or on the pump base.

The THD absorbs the main part of the thrust force generated by the impellers and thereby reduces the resulting axial force the motor bearings must absorb. This allows the use of standard ball bearings in the motor instead of angular contact ball bearings.

For applications involving CIP (clean-in-place) and motors above 75 HP (55 kW), use a bearing flange and a base without THD.



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Position numbers for THD parts

Pos.	Description	Material
120a	Thrust disc	Stainless steel
120b	Rotating ring	Silicon carbide
120g	Stationary ring	Silicon carbide ¹⁴⁾ Tungsten carbide
120h	Lifting plate	Stainless steel
-	O-rings	EPDM/FKM

¹⁴⁾ On request for CRN

Operating pressure and inlet pressure

Do not exceed the limit values stated in the sections on maximum operating pressure, temperature range, and maximum inlet pressure for the following pressures: maximum inlet pressure and maximum operating pressure.

Grundfos Product Center

Pump sizing is recommended using the Grundfos Product Center, the selection tool provided by Grundfos.

Grundfos Product Center features an easy-to-use virtual guide leading the user through the pump selection process for the given application.

For further information, refer to the section on the Grundfos Product Center.

Related information

6.1 Pumped liquids

7.1.1 Minimum inlet pressure, NPSH

11. Grundfos Product Center

7.1.1 Minimum inlet pressure, NPSH

We recommend that you calculate the inlet pressure H in the following situations:

- The liquid temperature is high.
- The flow rate is significantly higher than the rated flow rate.
- Water is drawn from depths.
- Water is drawn through long pipes.
- Inlet conditions are poor.

To avoid cavitation, ensure that the minimum inlet pressure is maintained.

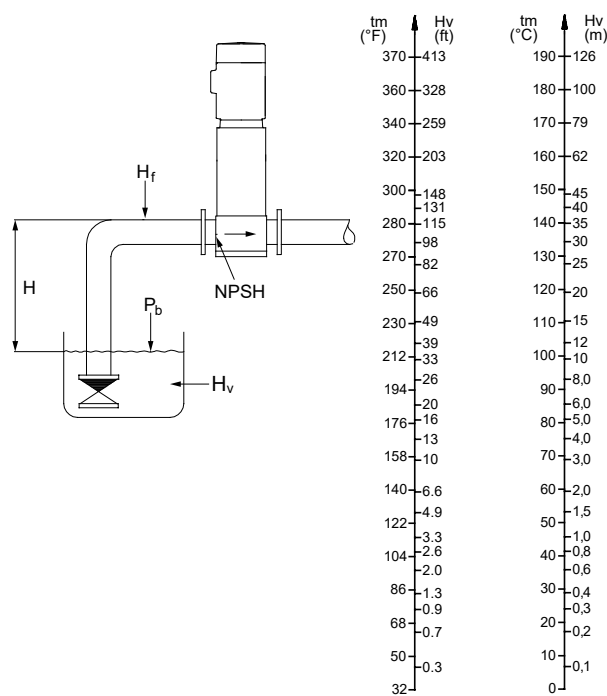
Calculate the maximum suction lift H in feet of head as follows:

$$H = p_b \times 2.31 - \text{NPSH} - H_f - H_v - H_s$$

p_b	Barometric pressure in psi The barometric pressure can be set to 14.5 psi (1 bar). In closed systems, p_b indicates the system pressure in psi.
NPSH	Net Positive Suction Head in feet of head, read from the NPSH-curve at the maximum pump flow rate
H_f	Friction loss in the inlet pipe in feet of head at the maximum pump flow rate
H_v	Vapor pressure in feet of head, read from the vapor pressure scale, depending on the liquid temperature T_m
H_s	Safety margin: minimum 1.64 feet (0.5 meters) of head

If the H calculated is positive, the pump can operate at a maximum suction lift of H feet.

If the H calculated is negative, a minimum inlet pressure of H feet is required.



Minimum inlet pressure, NPSH

To avoid cavitation, do not select a pump with a duty point too far to the right on the NPSH-curve.

Always verify the NPSH value at the maximum flow rate.

7.2 How to read the curve charts

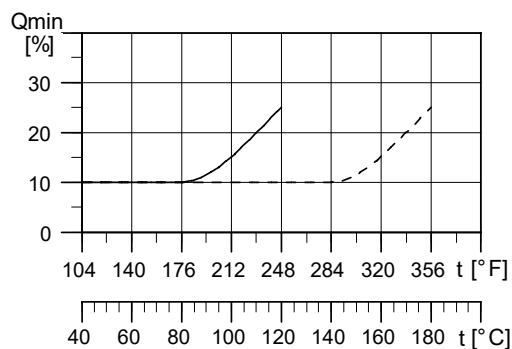
Pos.	Description
1	It shows the pump type, frequency, poles or speed as well as the ISO or ANSI standard.
2	The first figure indicates the number of stages, while the second figure indicates the number of reduced-diameter impellers.
3	It is the QH-curve of the individual pump with the bold curves indicating the recommended duty range for best efficiency.
4	The power curves indicate pump input power per stage . Curves are shown for full (1/1) and for reduced-diameter (2/3) impellers.
5	The Eff curve shows the efficiency of a pump with three full-size impellers. The efficiency of pumps with reduced-diameter impellers is approximately 2 % lower than the Eff curve shown in the chart.
6	It is the QH for each individual impeller. Curves are shown for full (1/1) and for reduced-diameter (2/3) impellers.
7	The NPSH curve is a maximum curve for all the variants shown.

7.3 Guidelines to performance curves

The guidelines below apply to the performance curves:

- Tolerances refer to the ANSI or ISO standards, such as ISO 9906:2012, Grade 3B, if indicated on the curve chart.
- The motors used for the measurements are standard Grundfos-specified motors.
- Measurements are completed with airless water at a temperature of 68 °F (20 °C).
- The curves apply to the following kinematic viscosity:
 $\nu = 1 \text{ mm}^2/\text{s}$ (1 cSt).
- Due to risk of overheating, the pumps must not be used at a flow rate below the minimum.
- The QH-curves apply to a rated motor speed of a three-phase mains-operated motor. For realistic curves, go to Grundfos Product Center at <http://product-selection.grundfos.com>, and insert data.

The curve below shows the minimum flow rate as a percentage of the rated flow rate in relation to the liquid temperature. The dotted line shows a CRN pump fitted with an air-cooled top assembly.

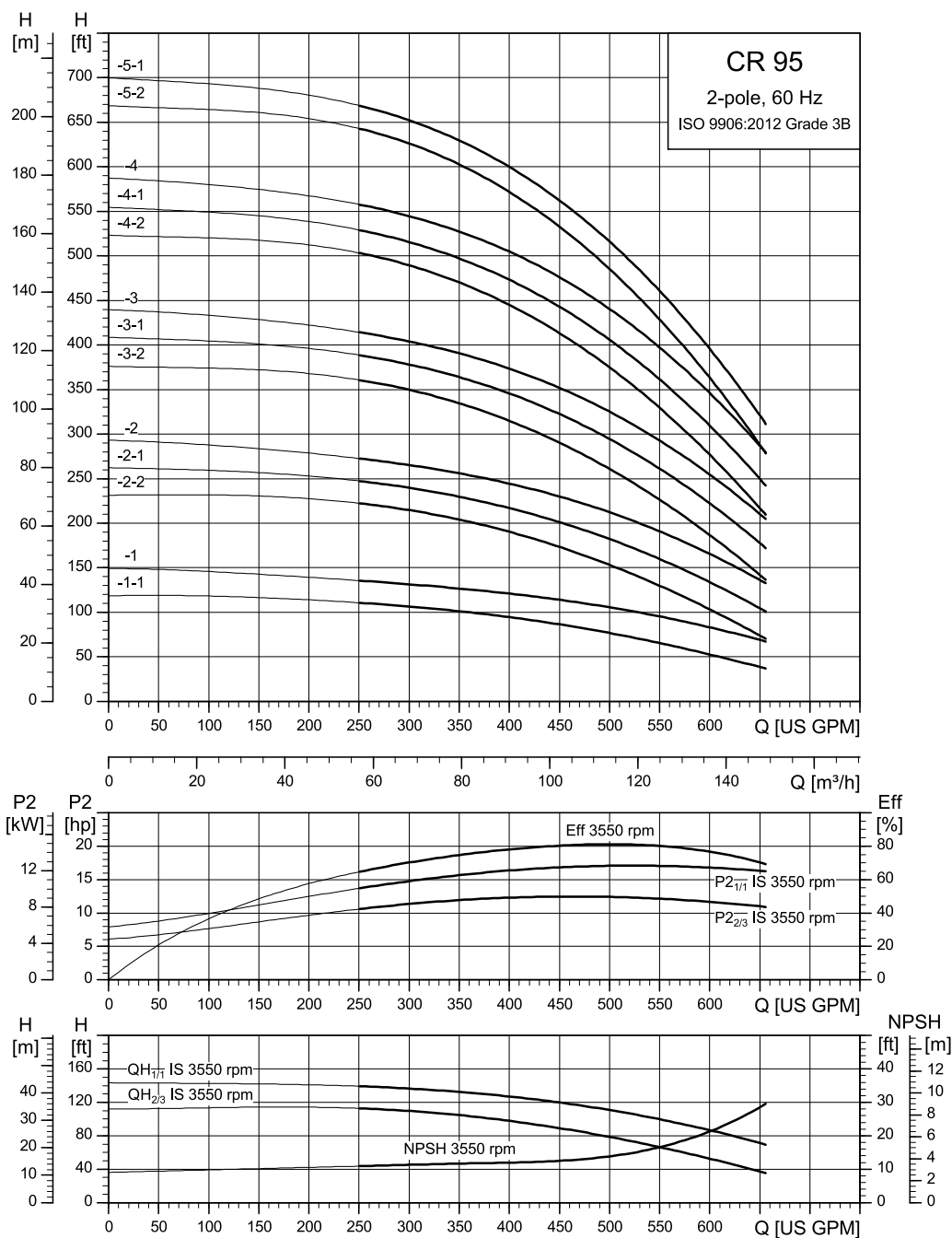


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Minimum flow rate

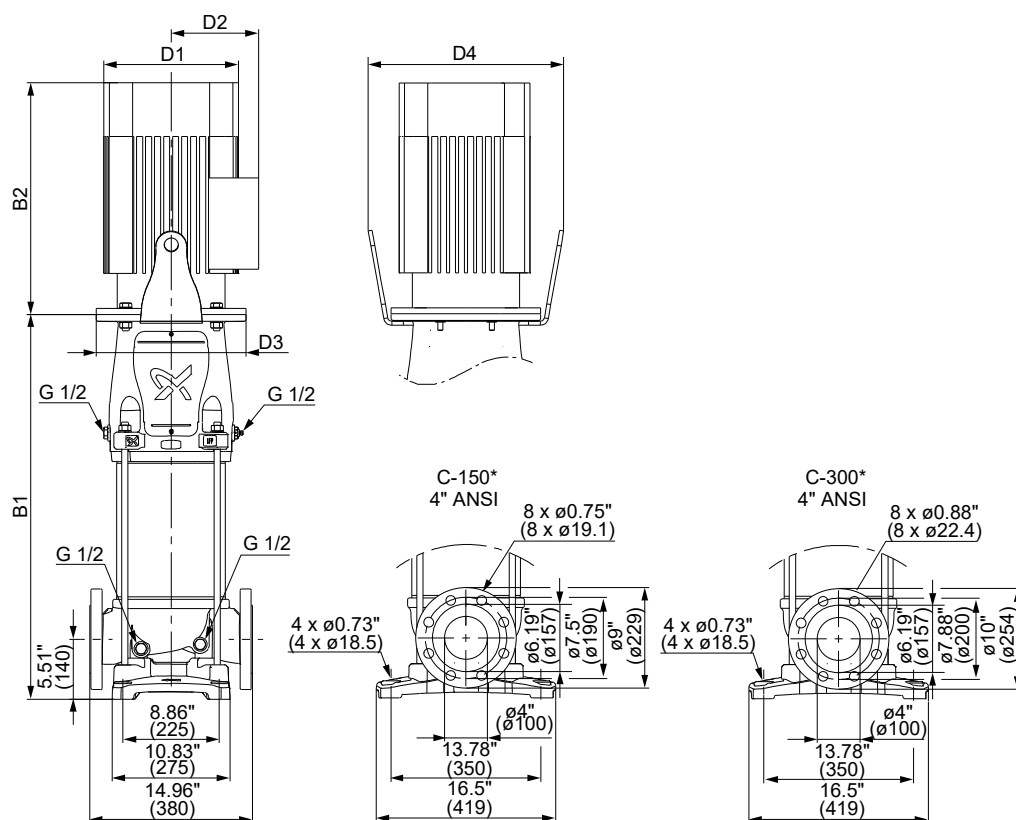
8. Performance curves and technical data

8.1 CR 95



The maximum pump efficiency (Eff) is based on a three-stage pump.

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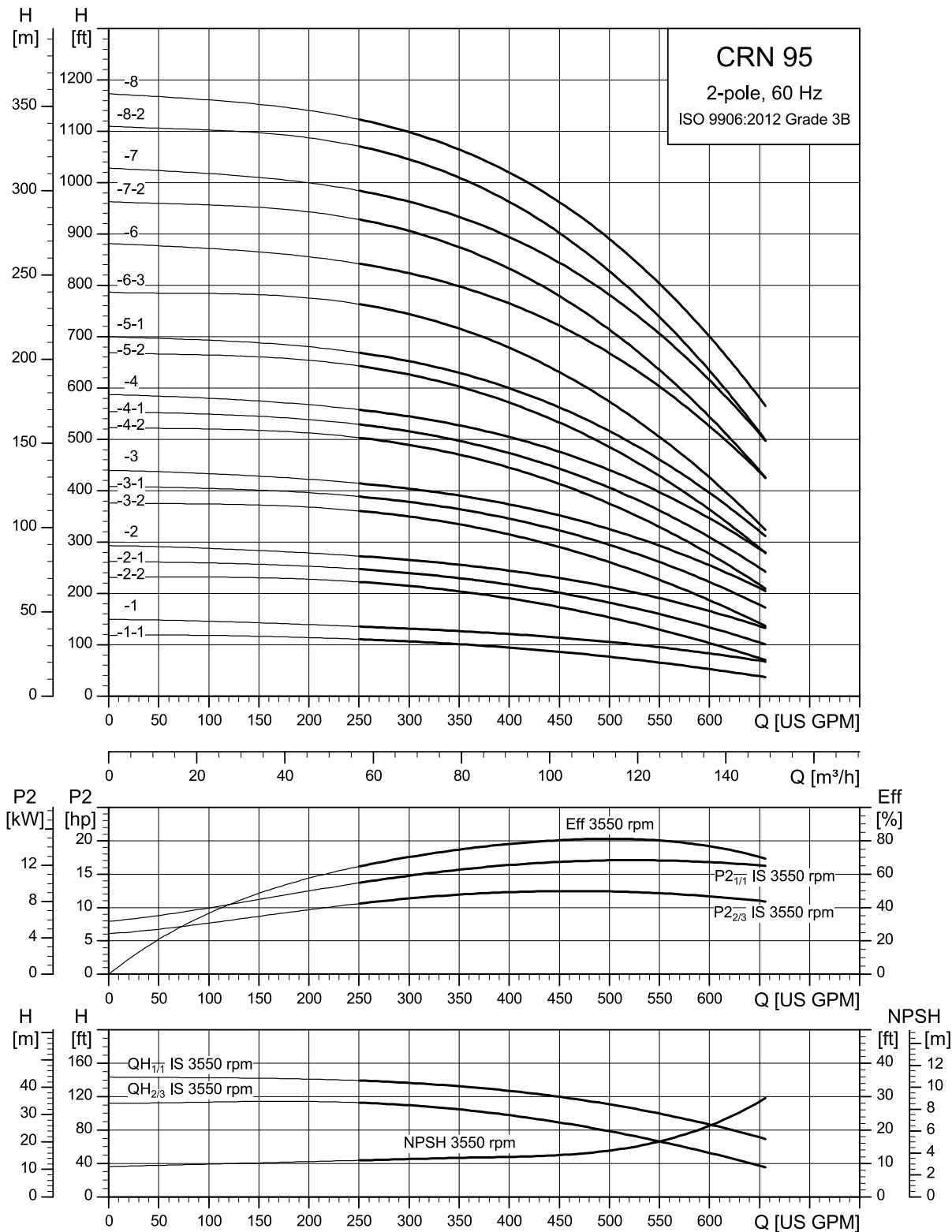
* C-150: CR 95 pumps with up to four stages (with one reduced-diameter impeller) are equipped with class 150 flanges as standard. Class 300 flanges are available on request.

* C-300: CR 95 pumps with four or more stages are equipped with class 300 flanges as standard.

Dimensions and weights

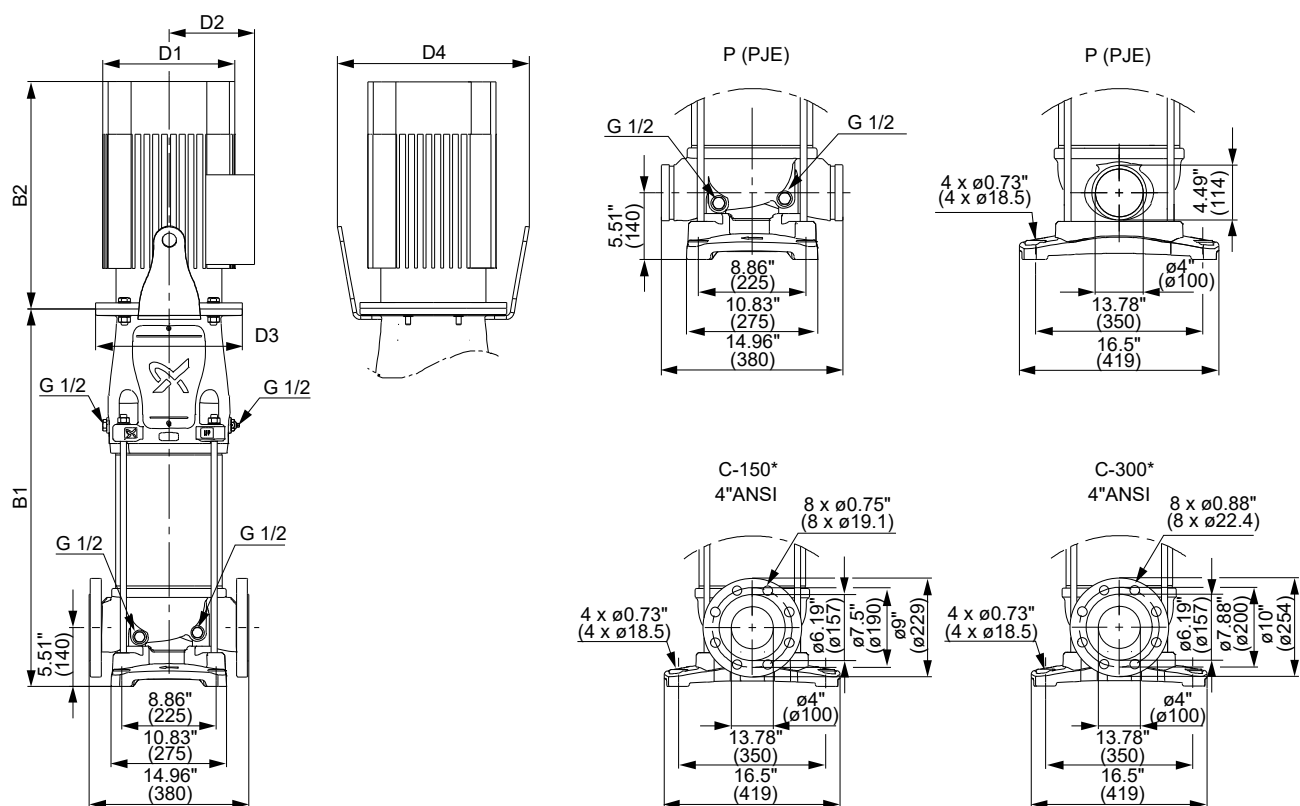
Pump type	Motor [HP]	Dimensions [inch (mm)]						Net weight [lbs (kg)]
		B1	B1+B2	D1	D2	D3	D4	
CR 95-1-1	15	27.4 (696)	46.2 (1174)	13.2 (335)	9.4 (240)	15.7 (400)	19.4 (492)	439 (199)
CR 95-1	20	27.4 (696)	47.0 (1194)	13.2 (335)	9.4 (240)	15.7 (400)	19.4 (492)	479 (217)
CR 95-2-2	25	31.5 (800)	55.1 (1399)	14.2 (360)	11.1 (282)	15.7 (400)	20.9 (532)	661 (300)
CR 95-2-1	30	31.5 (800)	55.1 (1399)	14.2 (360)	11.1 (282)	15.7 (400)	20.9 (532)	669 (303)
CR 95-2	30	31.5 (800)	55.1 (1399)	14.2 (360)	11.1 (282)	15.7 (400)	20.9 (532)	669 (303)
CR 95-3-2	40	36.4 (925)	62.5 (1588)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	825 (374)
CR 95-3-1	50	36.4 (925)	62.5 (1588)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	859 (390)
CR 95-3	50	36.4 (925)	62.5 (1588)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	859 (390)
CR 95-4-2	60	40.5 (1029)	69.3 (1761)	17.9 (455)	16.0 (407)	17.7 (450)	24.2 (614)	1172 (532)
CR 95-4-1	60	40.5 (1029)	69.3 (1761)	17.9 (455)	16.0 (407)	17.7 (450)	24.2 (614)	1172 (532)
CR 95-4	75	40.5 (1029)	69.3 (1761)	17.9 (455)	16.0 (407)	17.7 (450)	24.2 (614)	1186 (538)
CR 95-5-2	75	44.6 (1134)	73.5 (1866)	17.9 (455)	16.0 (407)	17.7 (450)	24.2 (614)	1200 (544)
CR 95-5-1	75	44.6 (1134)	73.5 (1866)	17.9 (455)	16.0 (407)	17.7 (450)	24.2 (614)	1200 (544)

8.2 CRN 95



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The maximum pump efficiency (Eff) is based on a three-stage pump.



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* C-150: CRN 95 pumps with one to four stages (with one reduced-diameter impeller) are equipped with class 150 flanges as standard. Class 300 flanges are available on request.

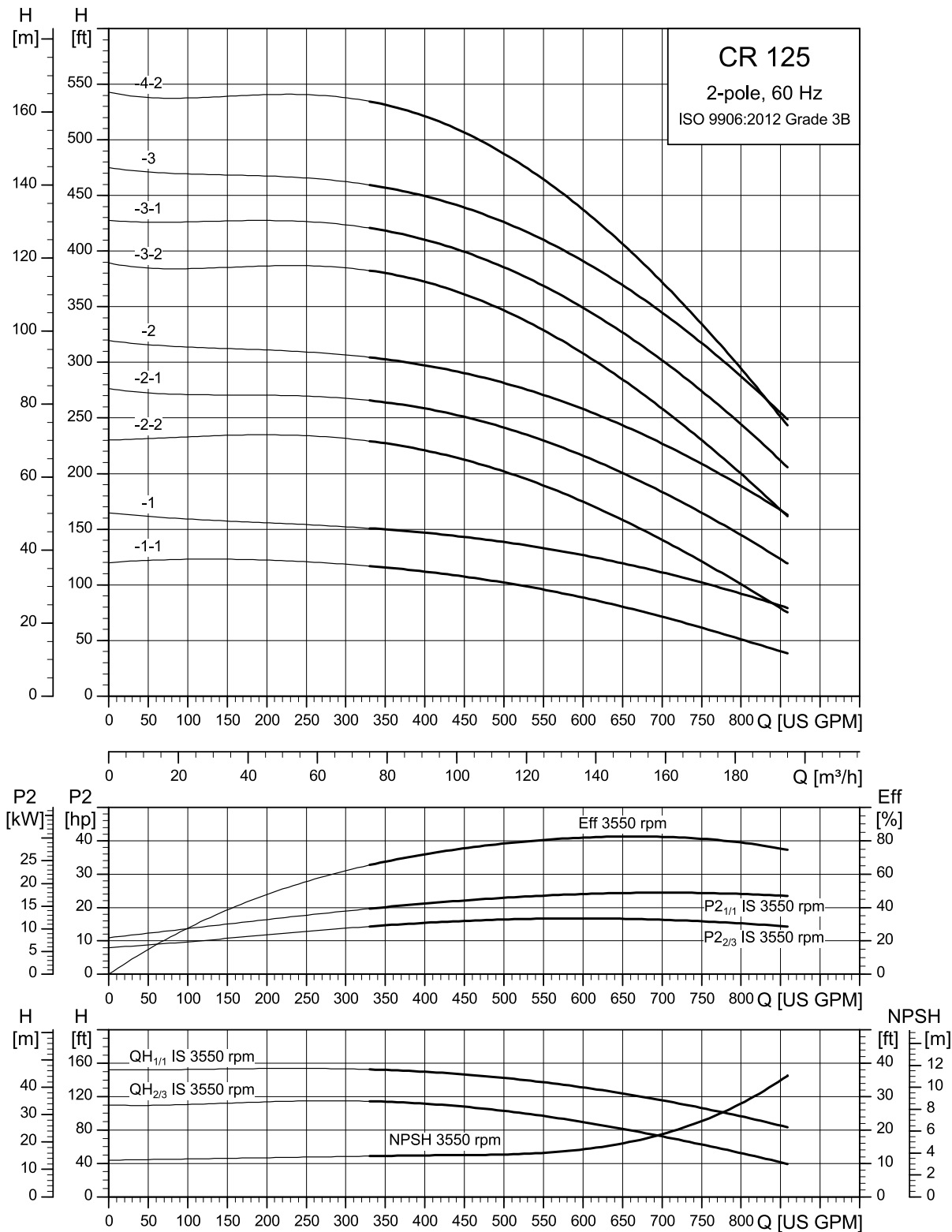
* C-300: CRN 95 pumps with four or more stages are equipped with class 300 flanges as standard.

Dimensions and weights

Pump type	Motor [HP]	Dimensions [inch (mm)]						Net weight [lbs (kg)]
		B1	B1+B2	D1	D2	D3	D4	
CRN 95-1-1	15	27.4 (696)	46.2 (1174)	13.2 (335)	9.4 (240)	15.7 (400)	19.4 (492)	439 (199)
CRN 95-1	20	27.4 (696)	47.0 (1194)	13.2 (335)	9.4 (240)	15.7 (400)	19.4 (492)	479 (217)
CRN 95-2-2	25	31.5 (800)	55.1 (1399)	14.2 (360)	11.1 (282)	15.7 (400)	20.9 (532)	661 (300)
CRN 95-2-1	30	31.5 (800)	55.1 (1399)	14.2 (360)	11.1 (282)	15.7 (400)	20.9 (532)	669 (303)
CRN 95-2	30	31.5 (800)	55.1 (1399)	14.2 (360)	11.1 (282)	15.7 (400)	20.9 (532)	669 (303)
CRN 95-3-2	40	36.4 (925)	62.5 (1588)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	825 (374)
CRN 95-3-1	50	36.4 (925)	62.5 (1588)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	859 (390)
CRN 95-3	50	36.4 (925)	62.5 (1588)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	859 (390)
CRN 95-4-2	60	40.5 (1029)	69.3 (1761)	17.9 (455)	16.0 (407)	17.7 (450)	24.2 (614)	1172 (532)
CRN 95-4-1	60	40.5 (1029)	69.3 (1761)	17.9 (455)	16.0 (407)	17.7 (450)	24.2 (614)	1172 (532)
CRN 95-4	75	40.5 (1029)	69.3 (1761)	17.9 (455)	16.0 (407)	17.7 (450)	24.2 (614)	1186 (538)
CRN 95-5-2	75	44.6 (1134)	73.5 (1866)	17.9 (455)	16.0 (407)	17.7 (450)	24.2 (614)	1200 (544)
CRN 95-5-1	75	44.6 (1134)	73.5 (1866)	17.9 (455)	16.0 (407)	17.7 (450)	24.2 (614)	1200 (544)
CRN 95-6-3 ¹⁵⁾	100	48.7 (1237)	81.2 (2062)	19.1 (486)	16.0 (407)	21.7 (550)	36.1 (918)	1569 (712)
CRN 95-6 ¹⁵⁾	100	48.7 (1237)	81.2 (2062)	19.1 (486)	16.0 (407)	21.7 (550)	36.1 (918)	1569 (712)
CRN 95-7-2 ¹⁵⁾	100	52.8 (1342)	85.3 (2167)	19.1 (486)	16.0 (407)	21.7 (550)	36.1 (918)	1582 (718)
CRN 95-7 ¹⁵⁾	125	52.8 (1342)	89.5 (2273)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2129 (966)
CRN 95-8-2 ¹⁵⁾	125	56.9 (1446)	93.6 (2377)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2142 (972)
CRN 95-8 ¹⁵⁾	125	56.9 (1446)	93.6 (2377)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2142 (972)

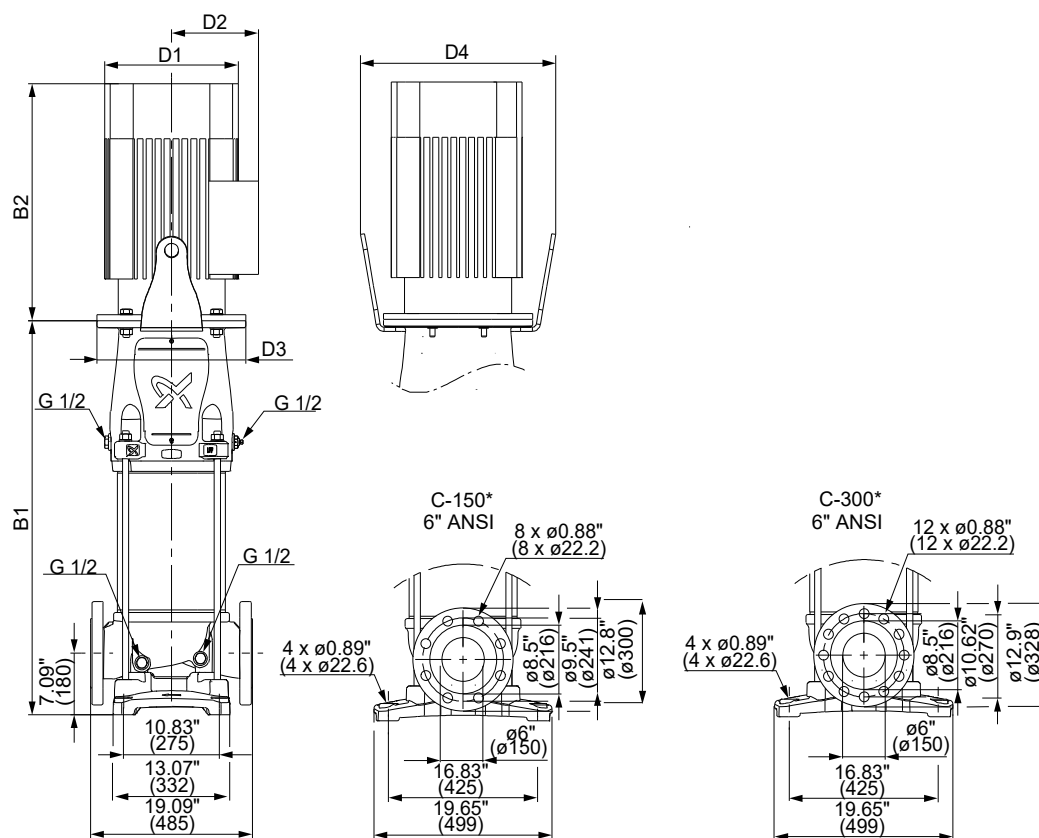
¹⁵⁾ Only to be used with soft starter or frequency converter

8.3 CR 125



TM065539

The maximum pump efficiency (Eff) is based on a three-stage pump.



TM066061

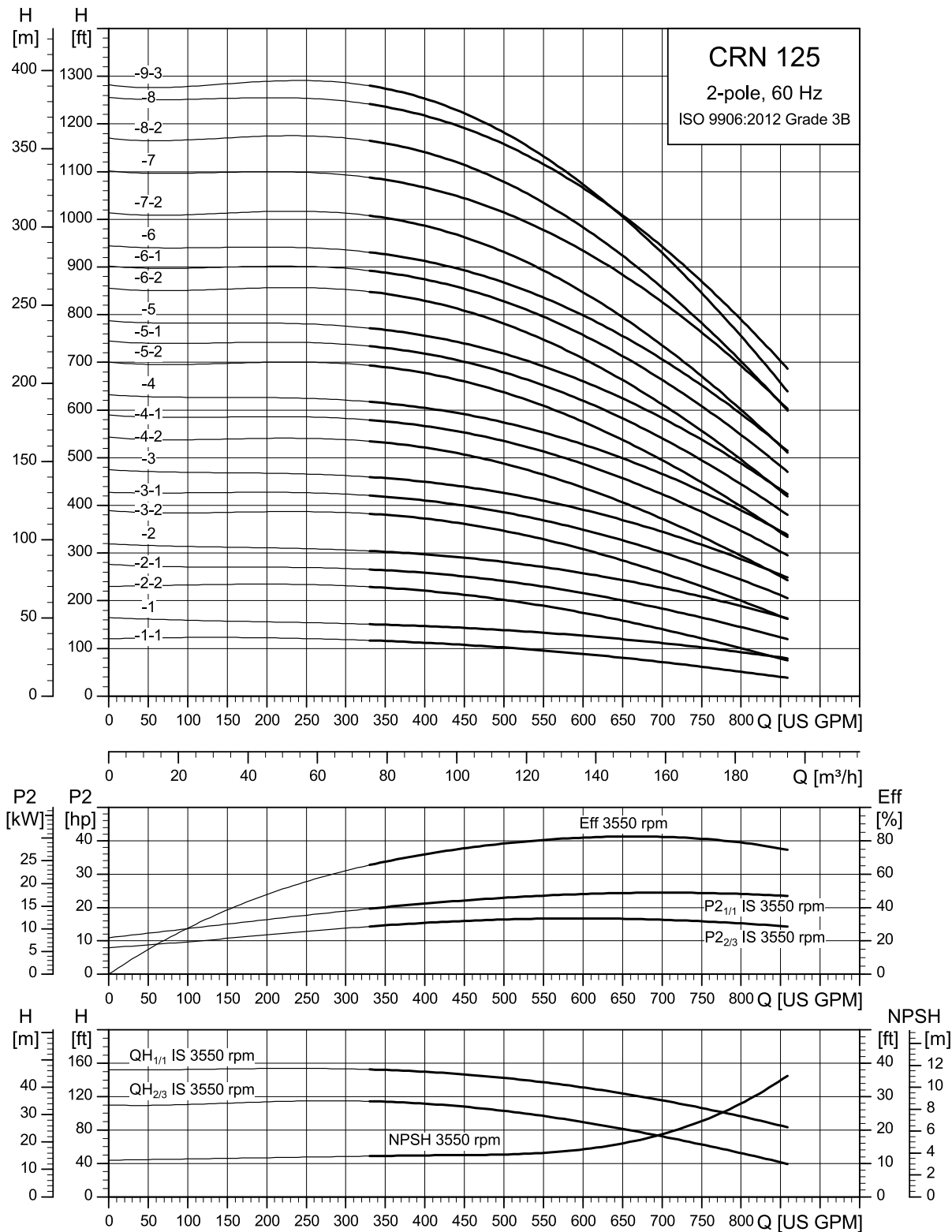
* C-150: CR 125 pumps with up to three stages are equipped with class 150 flanges as standard. Class 300 flanges are available on request.

* C-300: CR 125 pumps with four or more stages are equipped with class 300 flanges as standard.

Dimensions and weights

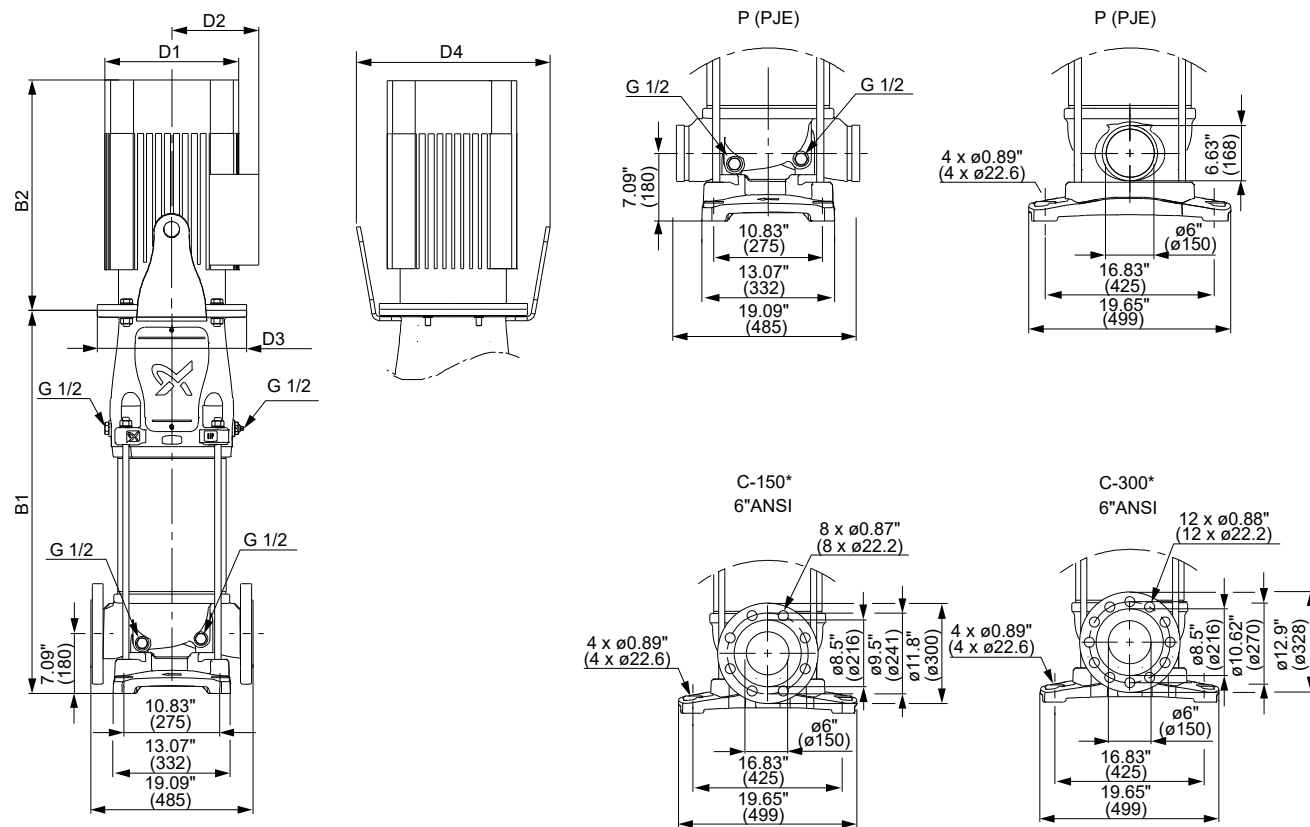
Pump type	Motor [HP]	Dimensions [inch (mm)]						Net weight [lbs (kg)]
		B1	B1+B2	D1	D2	D3	D4	
CR 125-1-1	20	30.8 (783)	50.4 (1281)	13.2 (335)	9.4 (240)	13.8 (350)	17.4 (442)	557 (253)
CR 125-1	25	30.9 (785)	54.5 (1384)	14.2 (360)	11.1 (282)	15.7 (400)	19.4 (492)	736 (334)
CR 125-2-2	30	35.7 (907)	59.3 (1506)	14.2 (360)	11.1 (282)	15.7 (400)	19.4 (492)	767 (348)
CR 125-2-1	40	36.6 (930)	62.7 (1593)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	916 (416)
CR 125-2	50	36.6 (930)	62.7 (1593)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	950 (431)
CR 125-3-2	60	41.4 (1052)	70.2 (1784)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1262 (573)
CR 125-3-1	75	41.4 (1052)	70.2 (1784)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1266 (574)
CR 125-3	75	41.4 (1052)	70.2 (1784)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1266 (574)
CR 125-4-2	75	46.2 (1174)	75.0 (1906)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1317 (597)

8.4 CRN 125



TM065540

The maximum pump efficiency (Eff) is based on a three-stage pump.



* C-150: CRN 125 pumps with up to three stages are equipped with class 150 flanges as standard. Class 300 flanges are available on request.

* C-300: CRN 125 pumps with four or more stages are equipped with class 300 flanges as standard.

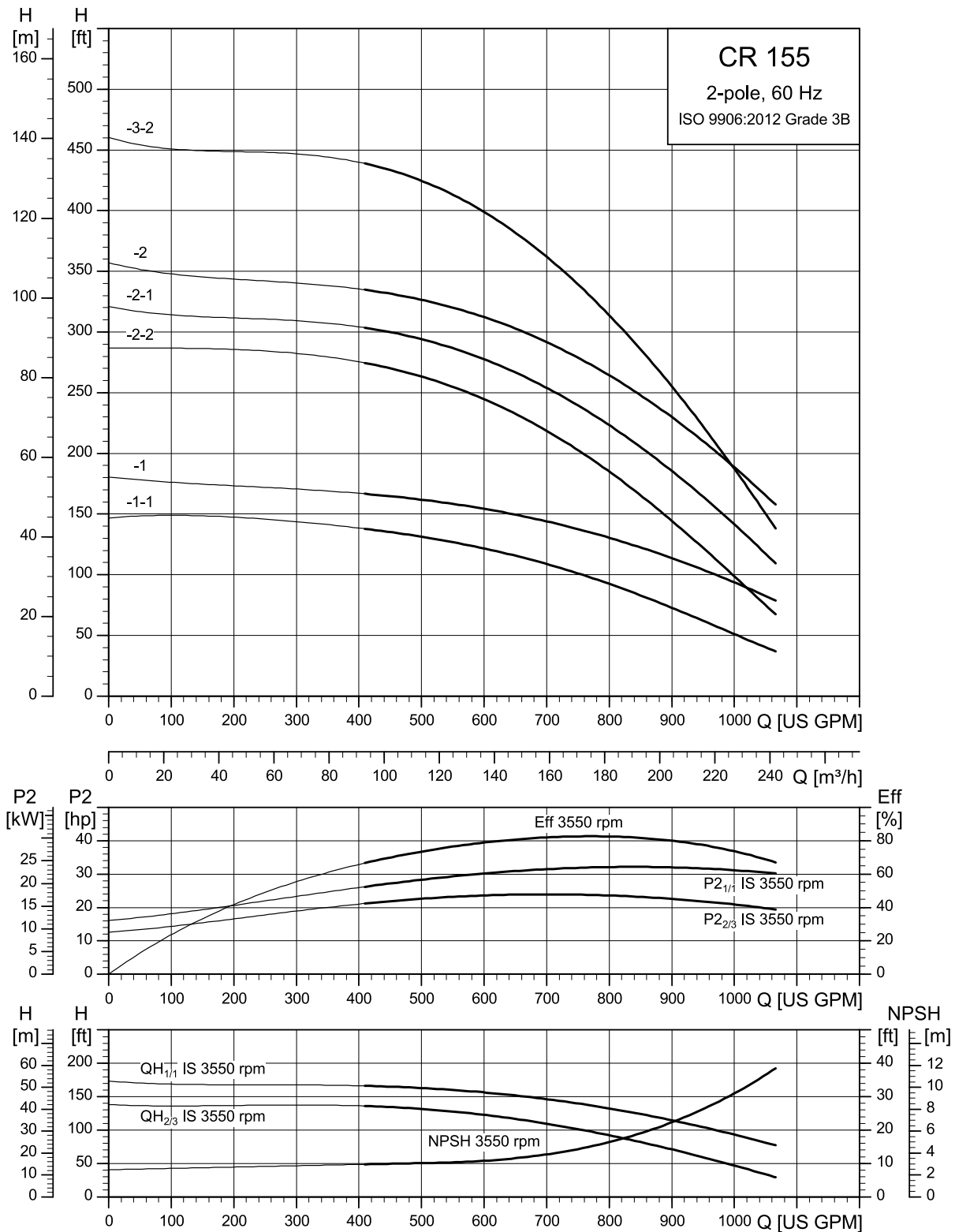
Dimensions and weights

Pump type	Motor [HP]	Dimensions [inch (mm)]						Net weight [lbs (kg)]
		B1	B1+B2	D1	D2	D3	D4	
CRN 125-1-1	20	30.8 (783)	50.4 (1281)	13.2 (335)	9.4 (240)	13.8 (350)	17.4 (442)	557 (253)
CRN 125-1	25	30.9 (785)	54.5 (1384)	14.2 (360)	11.1 (282)	15.7 (400)	19.4 (492)	736 (334)
CRN 125-2-2	30	35.7 (907)	59.3 (1506)	14.2 (360)	11.1 (282)	15.7 (400)	19.4 (492)	767 (348)
CRN 125-2-1	40	36.6 (930)	62.7 (1593)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	916 (416)
CRN 125-2	50	36.6 (930)	62.7 (1593)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	950 (431)
CRN 125-3-2	60	41.4 (1052)	70.2 (1784)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1262 (573)
CRN 125-3-1	75	41.4 (1052)	70.2 (1784)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1266 (574)
CRN 125-3	75	41.4 (1052)	70.2 (1784)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1266 (574)
CRN 125-4-2	75	46.2 (1174)	75.0 (1906)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1317 (597)
CRN 125-4-1	100	46.2 (1173)	78.7 (1998)	19.1 (486)	16.0 (407)	21.7 (550)	36.1 (918)	1691 (767)
CRN 125-4	100	46.2 (1173)	78.7 (1998)	19.1 (486)	16.0 (407)	21.7 (550)	36.1 (918)	1691 (767)
CRN 125-5-2	100	51.0 (1295)	83.5 (2120)	19.1 (486)	16.0 (407)	21.7 (550)	36.1 (918)	1713 (777)
CRN 125-5-1	125	51.0 (1295)	87.6 (2226)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2248 (1020)
CRN 125-5	125	51.0 (1295)	87.6 (2226)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2248 (1020)
CRN 125-6-2	125	55.8 (1417)	92.4 (2348)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2270 (1030)
CRN 125-6-1	150	55.8 (1417)	92.4 (2348)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2384 (1082)
CRN 125-6	150	55.8 (1417)	92.4 (2348)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2384 (1082)
CRN 125-7-2	150	60.6 (1539)	97.2 (2470)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2407 (1092)
CRN 125-7 ¹⁶⁾	200	60.6 (1539)	109 (2757)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	2873 (1303)

Pump type	Motor [HP]	Dimensions [inch (mm)]						Net weight [lbs (kg)]
		B1	B1+B2	D1	D2	D3	D4	
CRN 125-8-2 ¹⁶⁾	200	65.4 (1661)	113 (2879)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	2895 (1313)
CRN 125-8 ¹⁶⁾	200	65.4 (1661)	113 (2879)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	2895 (1313)
CRN 125-9-3 ¹⁶⁾	200	70.2 (1783)	118 (3001)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	2918 (1324)

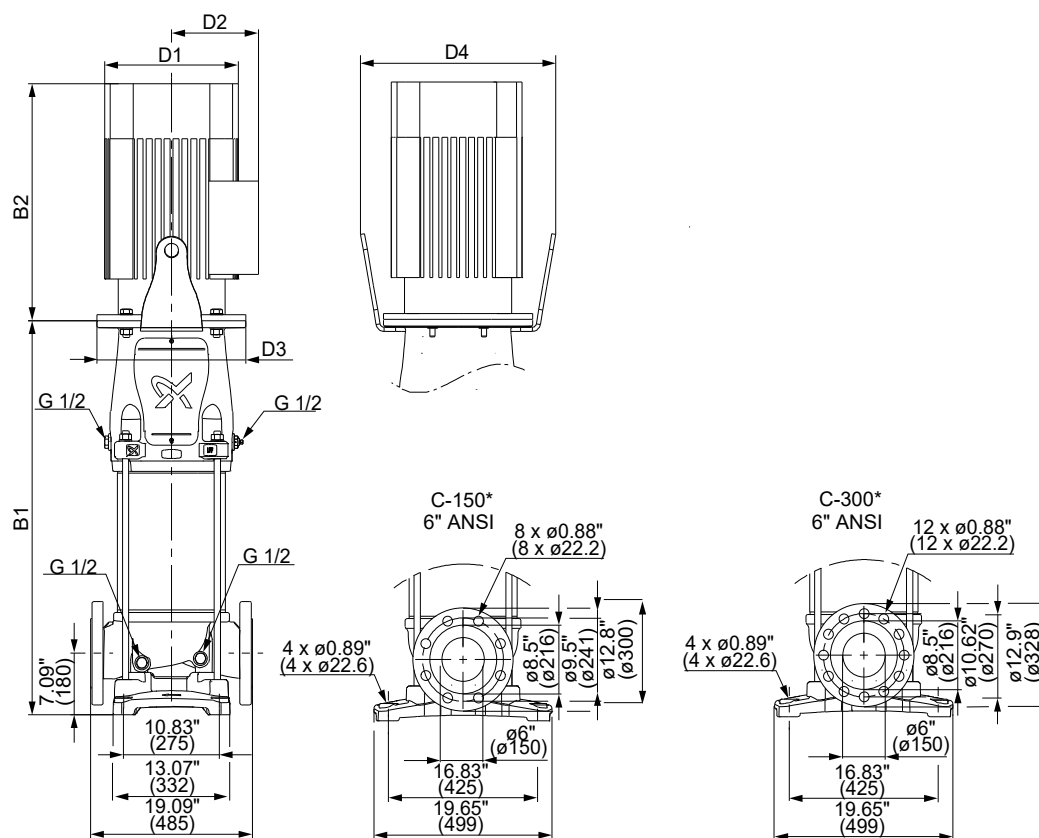
¹⁶⁾ Only to be used with soft starter or frequency converter

8.5 CR 155



TM065541

The maximum pump efficiency (Eff) is based on a three-stage pump.



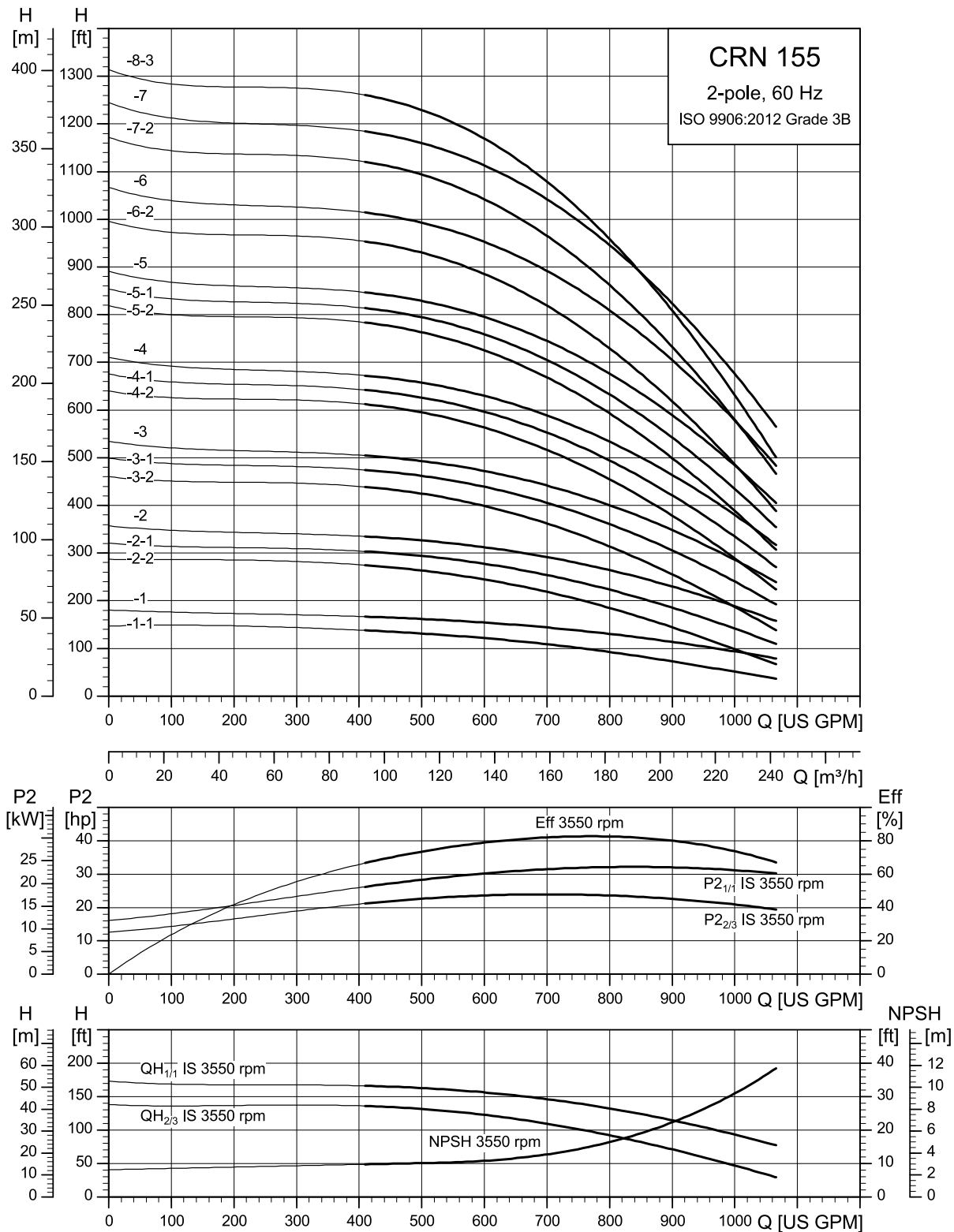
TM066061

* C-150: CR 155 pumps with up to three stages (with two reduced-diameter impellers) are equipped with class 150 flanges as standard. Class 300 flanges are available on request.

Dimensions and weights

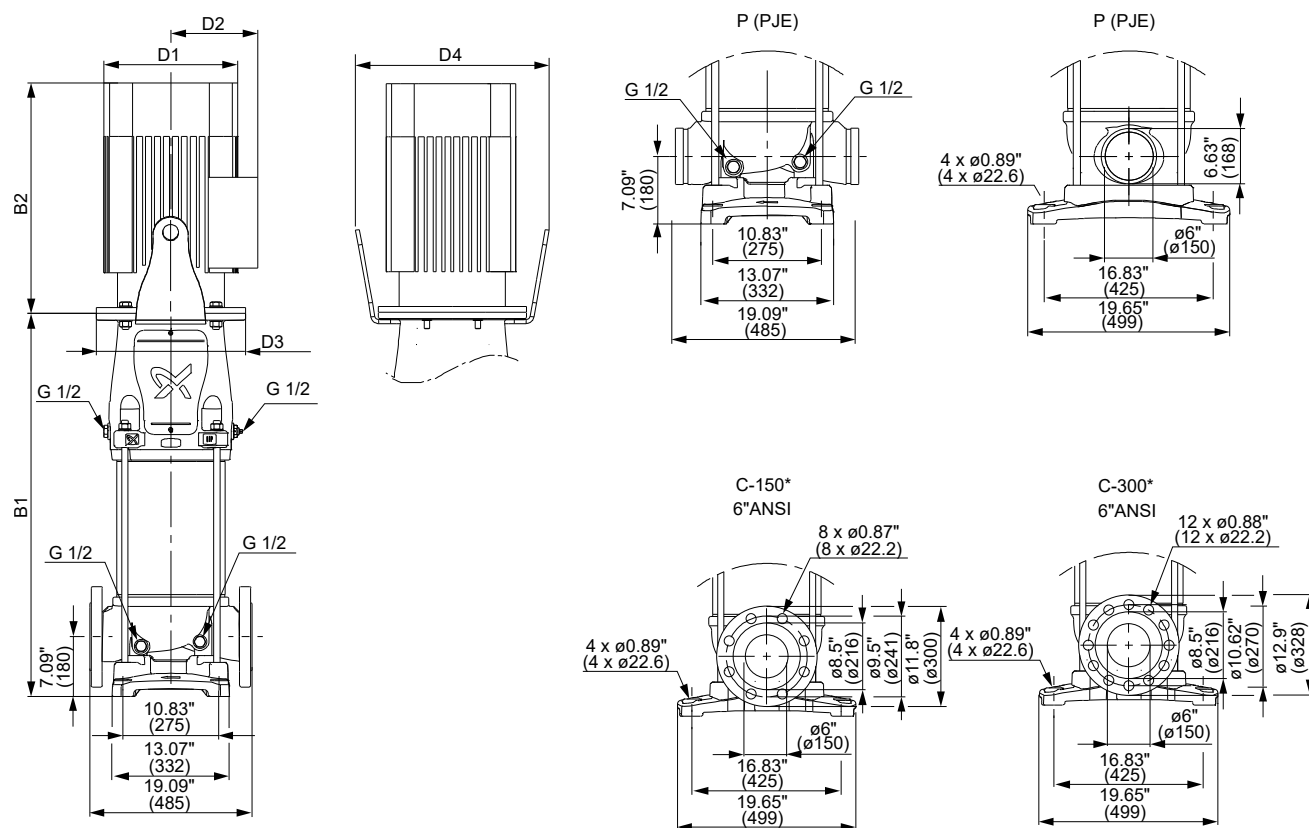
Pump type	Motor [HP]	Dimensions [inch (mm)]						Net weight [lbs (kg)]
		B1	B1+B2	D1	D2	D3	D4	
CR 155-1-1	25	30.9 (785)	54.5 (1384)	14.2 (360)	11.1 (282)	15.7 (400)	19.4 (492)	738 (335)
CR 155-1	40	31.8 (808)	57.9 (1471)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	895 (406)
CR 155-2-2	50	36.6 (930)	62.7 (1593)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	952 (432)
CR 155-2-1	60	36.6 (930)	65.4 (1662)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1242 (563)
CR 155-2	75	36.6 (930)	65.4 (1662)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1245 (565)
CR 155-3-2	75	41.4 (1052)	70.2 (1784)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1269 (576)

8.6 CRN 155



TM065542

The maximum pump efficiency (Eff) is based on a three-stage pump.



TM066062

* C-150: CRN 155 pumps with up to three stages (with two reduced-diameter impellers) are equipped with class 150 flanges as standard. Class 300 flanges are available on request.

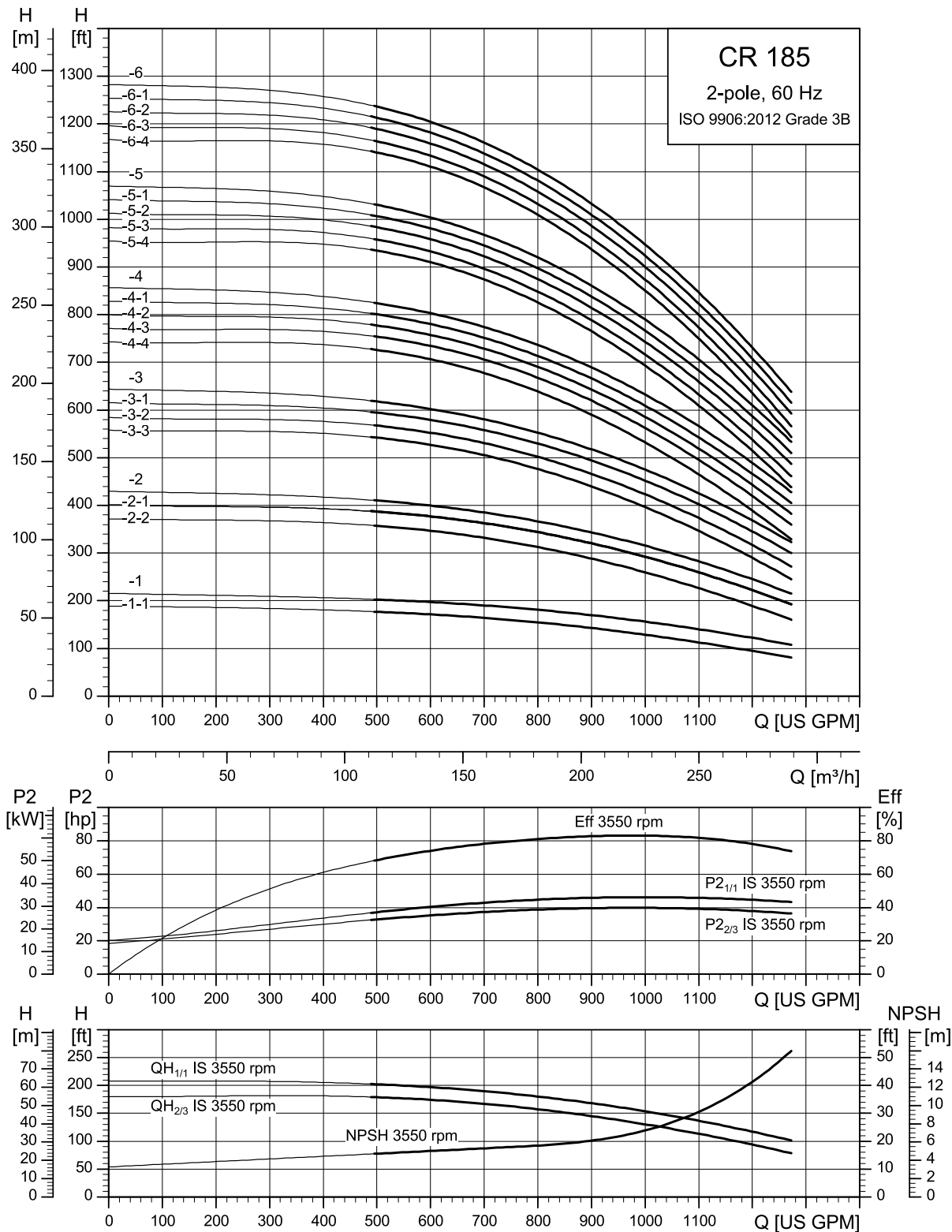
* C-300: CRN 155 pumps with three stages (with one reduced-diameter impeller) or more stages are equipped with class 300 flanges as standard.

Dimensions and weights

Pump type	Motor [HP]	Dimensions [inch (mm)]						Net weight [lbs (kg)]
		B1	B1+B2	D1	D2	D3	D4	
CRN 155-1-1	25	30.9 (785)	54.5 (1384)	14.2 (360)	11.1 (282)	15.7 (400)	19.4 (492)	738 (335)
CRN 155-1	40	31.8 (808)	57.9 (1471)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	895 (406)
CRN 155-2-2	50	36.6 (930)	62.7 (1593)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	952 (432)
CRN 155-2-1	60	36.6 (930)	65.4 (1662)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1242 (563)
CRN 155-2	75	36.6 (930)	65.4 (1662)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1245 (565)
CRN 155-3-2	75	41.4 (1052)	70.2 (1784)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1269 (576)
CRN 155-3-1	100	41.4 (1051)	73.9 (1876)	19.1 (486)	16.0 (407)	21.7 (550)	36.1 (918)	1672 (758)
CRN 155-3	100	41.4 (1051)	73.9 (1876)	19.1 (486)	16.0 (407)	21.7 (550)	36.1 (918)	1672 (758)
CRN 155-4-2	125	46.2 (1173)	82.8 (2104)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2229 (1011)
CRN 155-4-1	125	46.2 (1173)	82.8 (2104)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2229 (1011)
CRN 155-4	125	46.2 (1173)	82.8 (2104)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2229 (1011)
CRN 155-5-2	150	51.0 (1295)	87.6 (2226)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2367 (1074)
CRN 155-5-1	150	51.0 (1295)	87.6 (2226)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2367 (1074)
CRN 155-5 ¹⁷⁾	200	51.0 (1295)	94.1 (2390)	26.0 (660)	24.0 (609)	21.7 (550)	36.1 (918)	2757 (1250)
CRN 155-6-2 ¹⁷⁾	200	55.8 (1417)	104 (2635)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	2857 (1296)
CRN 155-6 ¹⁷⁾	200	55.8 (1417)	104 (2635)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	2857 (1296)
CRN 155-7-2 ¹⁷⁾	200	60.6 (1539)	109 (2757)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	2880 (1307)
CRN 155-7 ¹⁷⁾	250	60.6 (1539)	109 (2757)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3125 (1417)
CRN 155-8-3 ¹⁷⁾	250	65.4 (1661)	113 (2879)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3149 (1428)

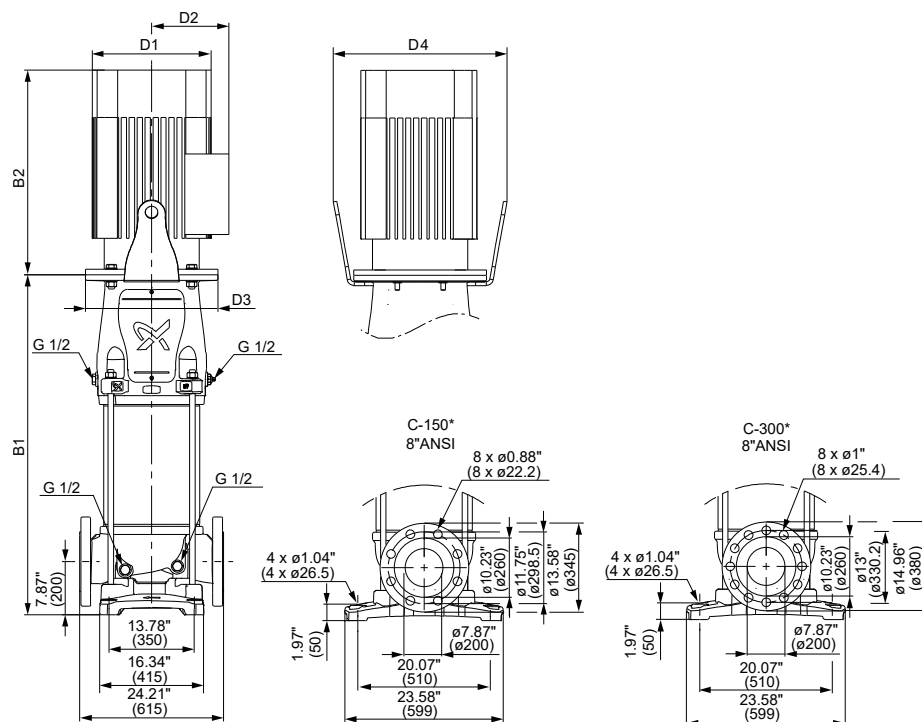
¹⁷⁾ Only to be used with soft starter or frequency converter

8.7 CR 185



The maximum pump efficiency (Eff) is based on a three-stage pump.

TM065543



TM077445

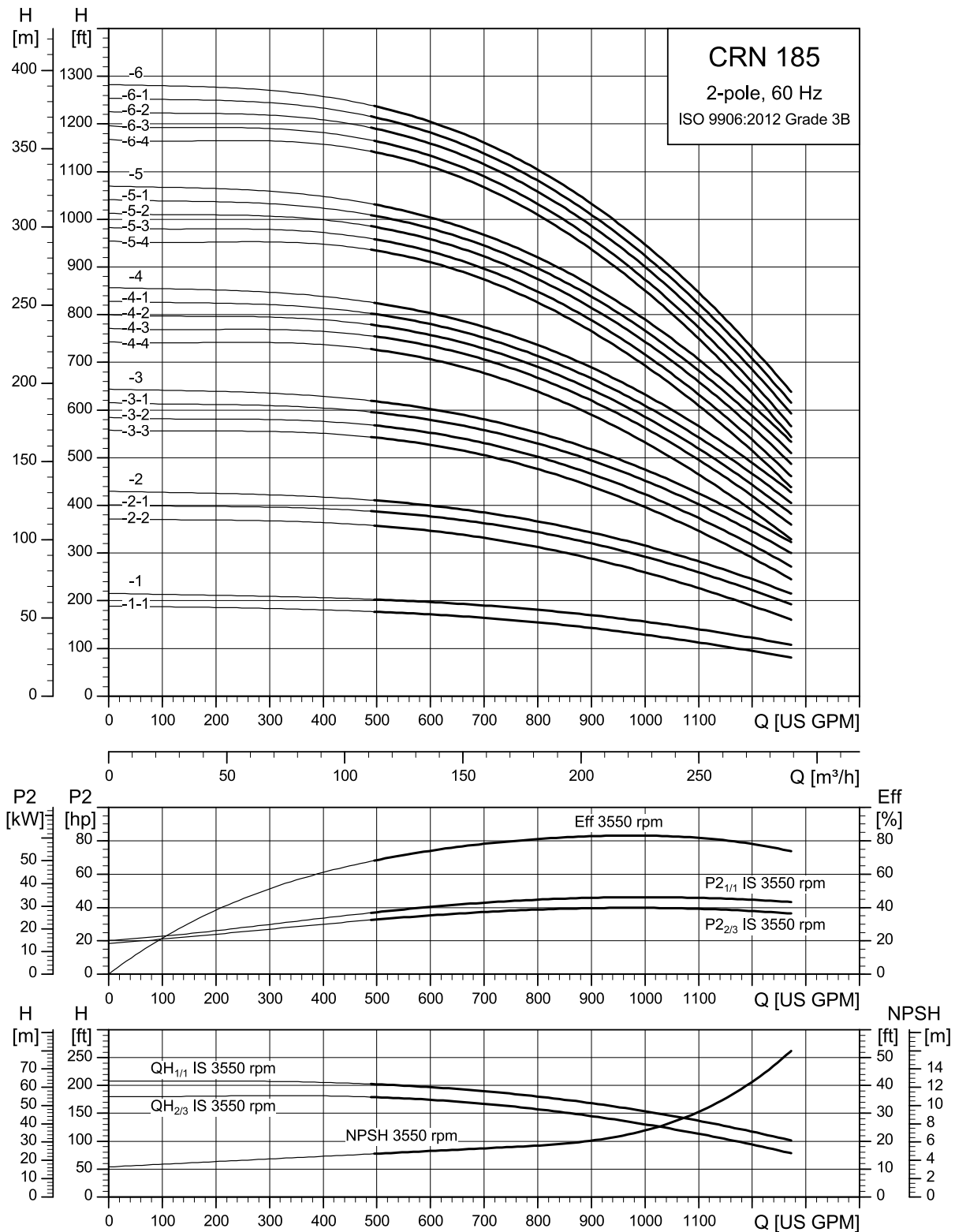
* C-150: CR 185 pumps with up to two stages are equipped with class 150 flanges as standard. Class 300 flanges are available on request.

* C-300: CR 185 pumps with three or more stages are equipped with class 300 flanges as standard.

Dimensions and weights

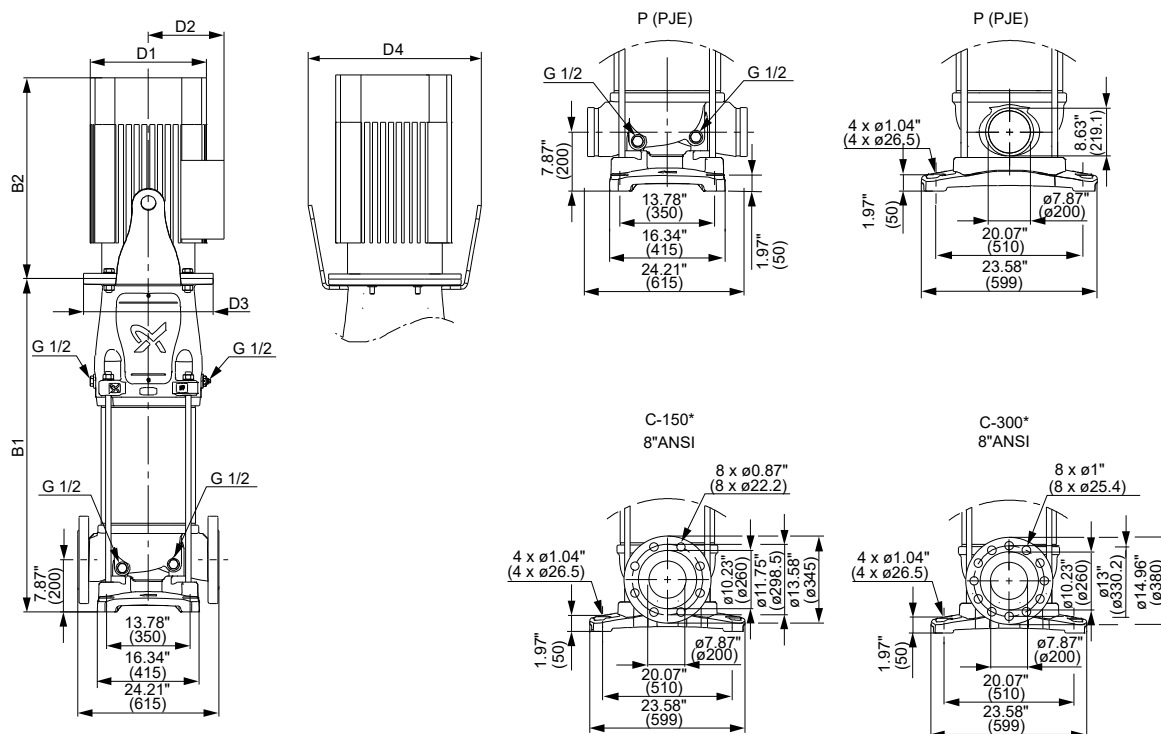
Pump type	Motor [HP]	Dimensions [inch (mm)]						Net weight [lbs (kg)]
		B1	B1+B2	D1	D2	D3	D4	
CR 185-1-1	40	34.6 (878)	60.7 (1541)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	1092 (495)
CR 185-1	50	34.6 (878)	60.7 (1541)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	1126 (511)
CR 185-2-2	75	39.6 (1006)	68.4 (1738)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1451 (658)
CR 185-2-1	100	39.8 (1012)	72.3 (1837)	19.1 (486)	16.0 (407)	21.7 (550)	36.1 (918)	1828 (829)
CR 185-2	100	39.8 (1012)	72.3 (1837)	19.1 (486)	16.0 (407)	21.7 (550)	36.1 (918)	1828 (829)
CR 185-3-3	125	44.9 (1140)	81.5 (2071)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2426 (1101)
CR 185-3-2	125	44.9 (1140)	81.5 (2071)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2426 (1101)
CR 185-3-1	150	44.9 (1140)	81.5 (2071)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2541 (1152)
CR 185-3	150	44.9 (1140)	81.5 (2071)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2541 (1152)
CR 185-4-4	150	49.9 (1268)	86.6 (2199)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2573 (1167)
CR 185-4-3	200	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3038 (1378)
CR 185-4-2	200	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3038 (1378)
CR 185-4-1	200	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3038 (1378)
CR 185-4	200	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3038 (1378)
CR 185-5-4	200	55.0 (1396)	103 (2614)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3071 (1393)
CR 185-5-3	200	55.0 (1396)	103 (2614)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3071 (1393)
CR 185-5-2	250	55.0 (1396)	103 (2614)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3315 (1504)
CR 185-5-1	250	55.0 (1396)	103 (2614)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3315 (1504)
CR 185-5	250	55.0 (1396)	103 (2614)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3315 (1504)
CR 185-6-4	250	60.0 (1524)	108 (2742)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3348 (1518)
CR 185-6-3	250	60.0 (1524)	108 (2742)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3348 (1518)
CR 185-6-2	300	60.0 (1524)	108 (2742)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3655 (1658)
CR 185-6-1	300	60.0 (1524)	108 (2742)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3655 (1658)
CR 185-6	300	60.0 (1524)	108 (2742)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3655 (1658)

8.8 CRN 185



The maximum pump efficiency (Eff) is based on a three-stage pump.

TM065544



TM077446

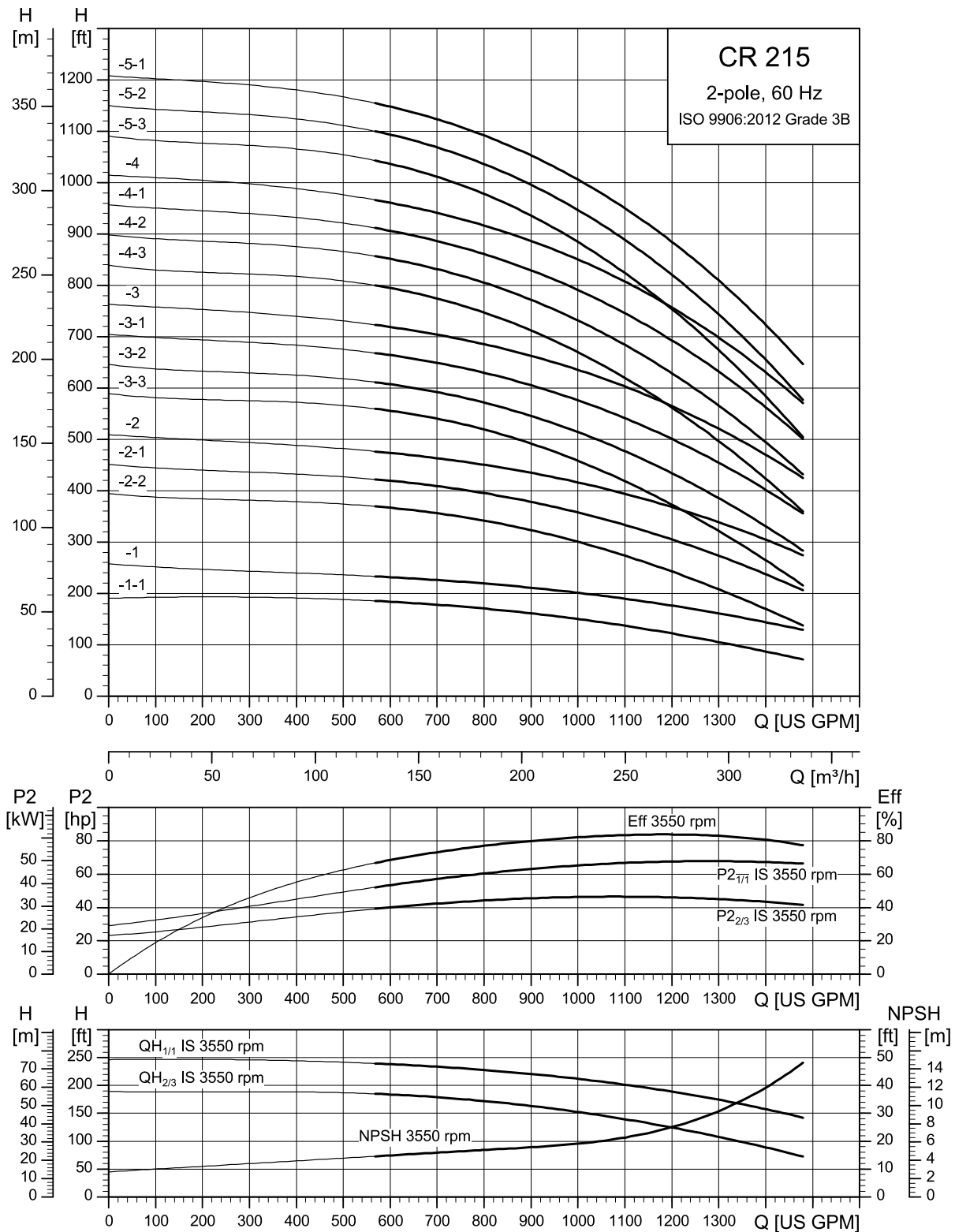
* C-150: CRN 185 pumps with up to two stages are equipped with class 150 flanges as standard. Class 300 flanges are available on request.

* C-300: CRN 185 pumps with three or more stages are equipped with class 300 flanges as standard.

Dimensions and weights

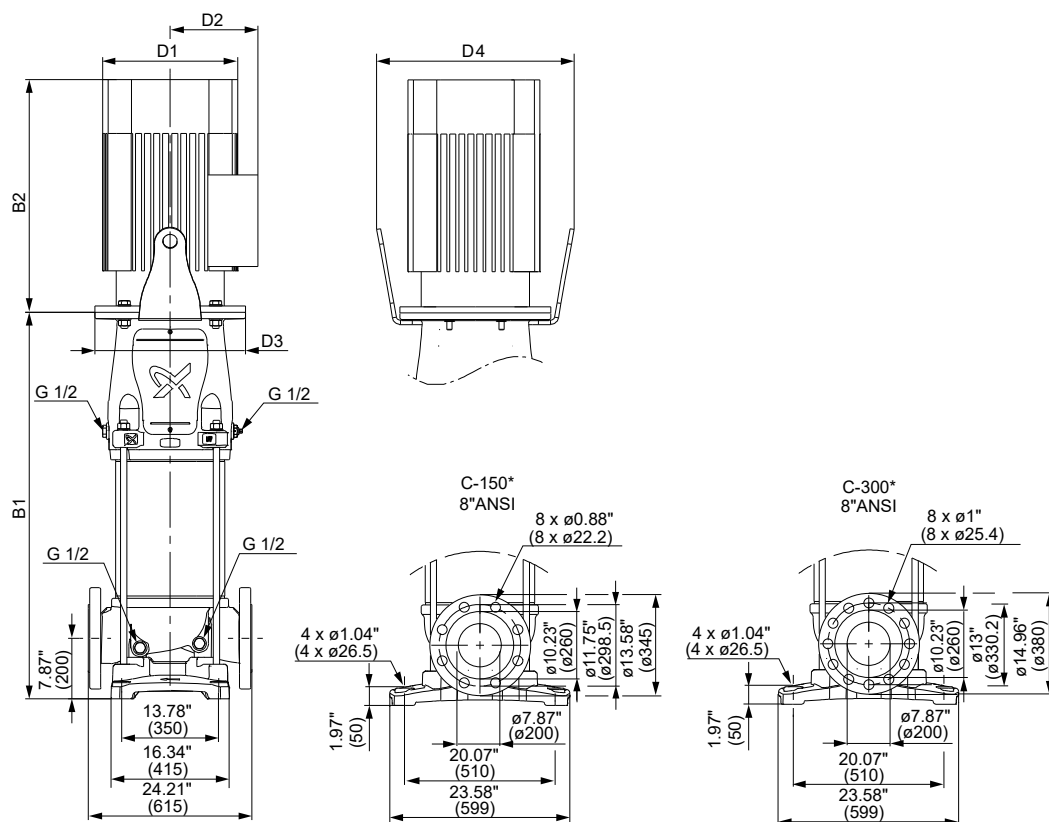
Pump type	Motor [HP]	Dimensions [inch (mm)]						Net weight [lbs (kg)]
		B1	B1+B2	D1	D2	D3	D4	
CRN 185-1-1	40	34.6 (878)	60.7 (1541)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	1092 (495)
CRN 185-1	50	34.6 (878)	60.7 (1541)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	1126 (511)
CRN 185-2-2	75	39.6 (1006)	68.4 (1738)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1451 (658)
CRN 185-2-1	100	39.8 (1012)	72.3 (1837)	19.1 (486)	16.0 (407)	21.7 (550)	36.1 (918)	1828 (829)
CRN 185-2	100	39.8 (1012)	72.3 (1837)	19.1 (486)	16.0 (407)	21.7 (550)	36.1 (918)	1828 (829)
CRN 185-3-3	125	44.9 (1140)	81.5 (2071)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2426 (1101)
CRN 185-3-2	125	44.9 (1140)	81.5 (2071)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2426 (1101)
CRN 185-3-1	150	44.9 (1140)	81.5 (2071)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2541 (1152)
CRN 185-3	150	44.9 (1140)	81.5 (2071)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2541 (1152)
CRN 185-4-4	150	49.9 (1268)	86.6 (2199)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2573 (1167)
CRN 185-4-3	200	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3038 (1378)
CRN 185-4-2	200	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3038 (1378)
CRN 185-4-1	200	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3038 (1378)
CRN 185-4	200	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3038 (1378)
CRN 185-5-4	200	55.0 (1396)	103 (2614)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3071 (1393)
CRN 185-5-3	200	55.0 (1396)	103 (2614)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3071 (1393)
CRN 185-5-2	250	55.0 (1396)	103 (2614)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3315 (1504)
CRN 185-5-1	250	55.0 (1396)	103 (2614)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3315 (1504)
CRN 185-5	250	55.0 (1396)	103 (2614)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3315 (1504)
CRN 185-6-4	250	60.0 (1524)	108 (2742)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3348 (1518)
CRN 185-6-3	250	60.0 (1524)	108 (2742)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3348 (1518)
CRN 185-6-2	300	60.0 (1524)	108 (2742)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3655 (1658)
CRN 185-6-1	300	60.0 (1524)	108 (2742)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3655 (1658)
CRN 185-6	300	60.0 (1524)	108 (2742)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3655 (1658)

8.9 CR 215



TM065545

The maximum pump efficiency (Eff) is based on a three-stage pump.



TM077445

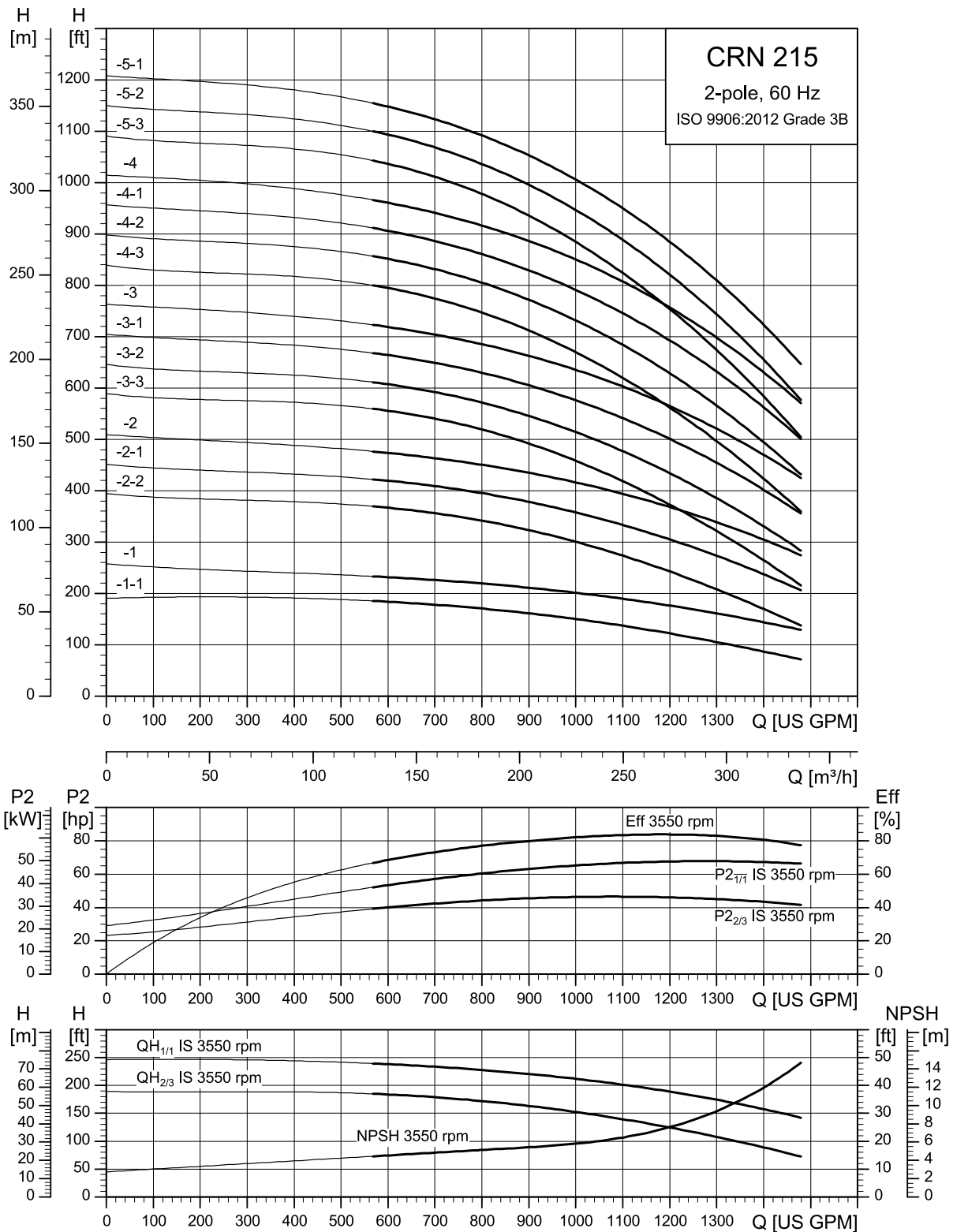
* C-150: CR 215 pumps with up to two stages are equipped with class 150 flanges as standard. Class 300 flanges are available on request.

* C-300: CR 215 pumps with three or more stages are equipped with class 300 flanges as standard.

Dimensions and weights

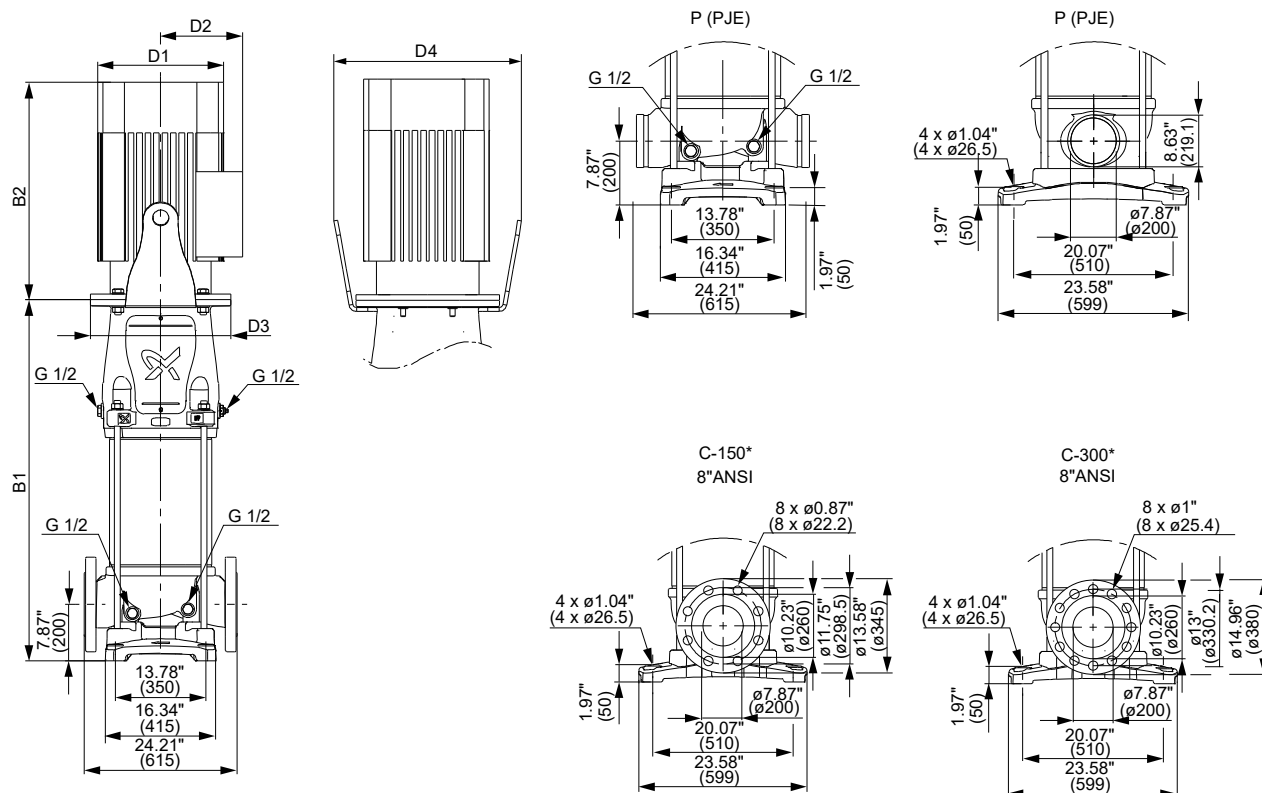
Pump type	Motor [HP]	Dimensions [inch (mm)]						Net weight [lbs (kg)]
		B1	B1+B2	D1	D2	D3	D4	
CR 215-1-1	50	34.6 (878)	60.7 (1541)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	1127 (511)
CR 215-1	75	34.6 (878)	63.4 (1610)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1420 (644)
CR 215-2-2	100	39.8 (1012)	72.3 (1837)	19.1 (486)	16.0 (407)	21.7 (550)	36.1 (918)	1831 (831)
CR 215-2-1	125	39.8 (1012)	76.5 (1943)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2366 (1073)
CR 215-2	125	39.8 (1012)	76.5 (1943)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2366 (1073)
CR 215-3-3	150	44.9 (1140)	81.5 (2071)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2545 (1155)
CR 215-3-2	150	44.9 (1140)	81.5 (2071)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2545 (1155)
CR 215-3-1	200	44.9 (1140)	92.8 (2358)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3011 (1366)
CR 215-3	200	44.9 (1140)	92.8 (2358)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3011 (1366)
CR 215-4-3	200	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3045 (1381)
CR 215-4-2	250	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3289 (1492)
CR 215-4-1	250	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3289 (1492)
CR 215-4	250	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3289 (1492)
CR 215-5-3	250	55.0 (1396)	103 (2614)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3323 (1507)
CR 215-5-2	300	55.0 (1396)	103 (2614)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3631 (1647)
CR 215-5-1	300	55.0 (1396)	103 (2614)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3631 (1647)

8.10 CRN 215



TM065546

The maximum pump efficiency (Eff) is based on a three-stage pump.



TM077446

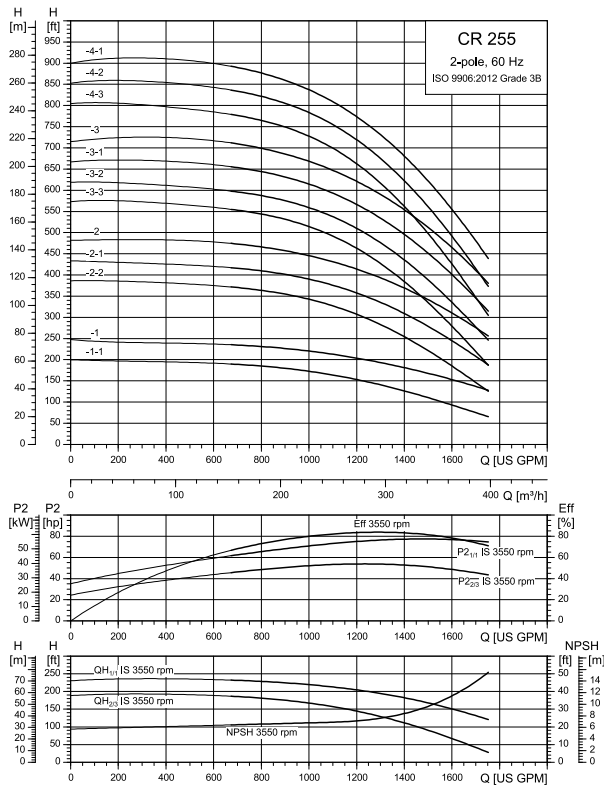
* C-150: CRN 215 pumps with up to two stages are equipped with class 150 flanges as standard. Class 300 flanges are available on request.

* C-300: CRN 215 pumps with three or more stages are equipped with class 300 flanges as standard.

Dimensions and weights

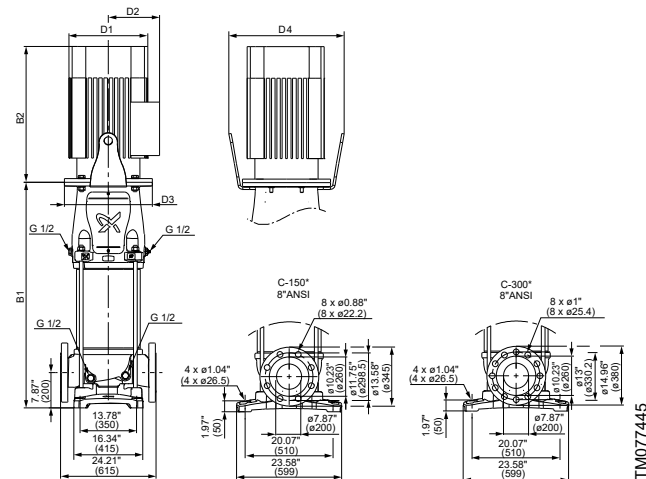
Pump type	Motor [HP]	Dimensions [inch (mm)]						Net weight [lbs (kg)]
		B1	B1+B2	D1	D2	D3	D4	
CRN 215-1-1	50	34.6 (878)	60.7 (1541)	15.8 (402)	12.6 (320)	17.7 (450)	22.6 (573)	1127 (511)
CRN 215-1	75	34.6 (878)	63.4 (1610)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1420 (644)
CRN 215-2-2	100	39.8 (1012)	72.3 (1837)	19.1 (486)	16.0 (407)	21.7 (550)	36.1 (918)	1831 (831)
CRN 215-2-1	125	39.8 (1012)	76.5 (1943)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2366 (1073)
CRN 215-2	125	39.8 (1012)	76.5 (1943)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2366 (1073)
CRN 215-3-3	150	44.9 (1140)	81.5 (2071)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2545 (1155)
CRN 215-3-2	150	44.9 (1140)	81.5 (2071)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2545 (1155)
CRN 215-3-1	200	44.9 (1140)	92.8 (2358)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3011 (1366)
CRN 215-3	200	44.9 (1140)	92.8 (2358)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3011 (1366)
CRN 215-4-3	200	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3045 (1381)
CRN 215-4-2	250	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3289 (1492)
CRN 215-4-1	250	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3289 (1492)
CRN 215-4	250	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3289 (1492)
CRN 215-5-3	250	55.0 (1396)	103 (2614)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3323 (1507)
CRN 215-5-2	300	55.0 (1396)	103 (2614)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3631 (1647)
CRN 215-5-1	300	55.0 (1396)	103 (2614)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3631 (1647)

8.11 CR 255



TM065547

The maximum pump efficiency (Eff) is based on a three-stage pump.



TM077445

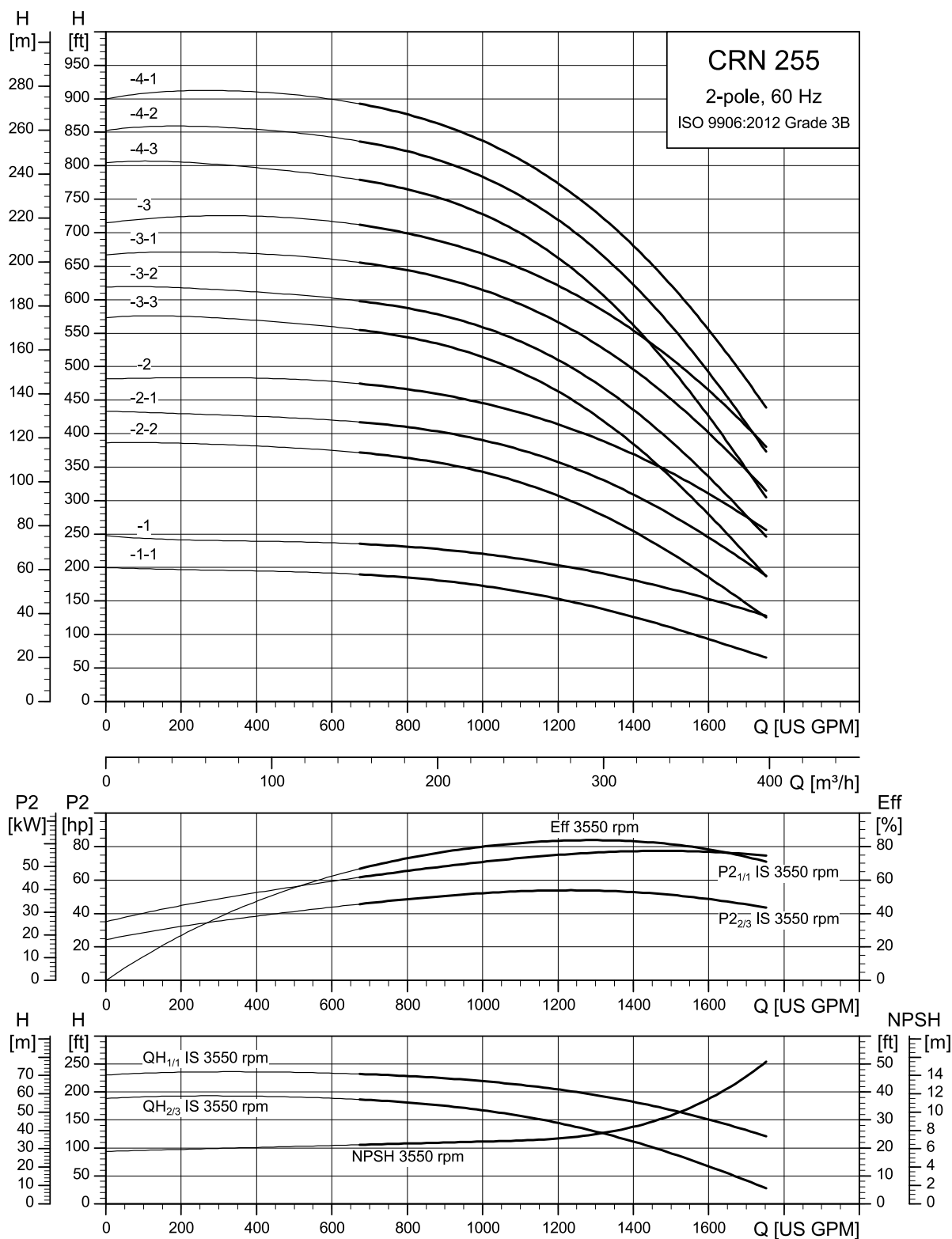
* C-150: CR 255 pumps with up to two stages with one reduced-diameter impeller are equipped with class 150 flanges as standard. Class 300 flanges are available on request.

* C-300: CR 255 pumps with two or more stages are equipped with class 300 flanges as standard.

Dimensions and weights

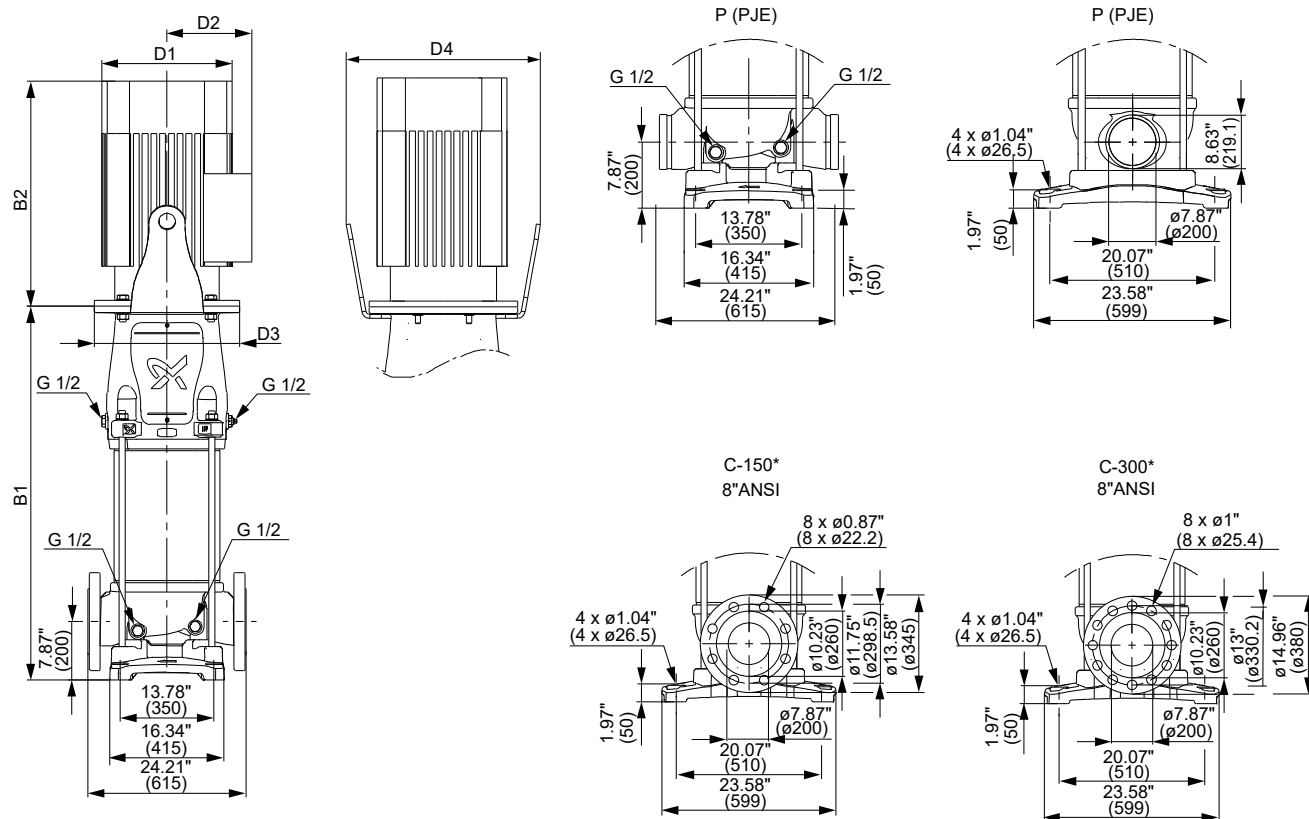
Pump type	Motor [HP]	Dimensions [inch (mm)]						Net weight [lbs (kg)]
		B1	B1+B2	D1	D2	D3	D4	
CR 255-1-1	60	34.6 (878)	63.4 (1610)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1417 (643)
CR 255-1	100	34.8 (884)	67.3 (1709)	19.1 (486)	16.0 (407)	21.7 (550)	36.1 (918)	1798 (815)
CR 255-2-2	125	39.8 (1012)	76.5 (1943)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2366 (1073)
CR 255-2-1	150	39.8 (1012)	76.5 (1943)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2480 (1125)
CR 255-2	200	39.8 (1012)	87.8 (2230)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	2977 (1350)
CR 255-3-3	200	44.9 (1140)	92.8 (2358)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3011 (1366)
CR 255-3-2	200	44.9 (1140)	92.8 (2358)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3011 (1366)
CR 255-3-1	250	44.9 (1140)	92.8 (2358)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3256 (1477)
CR 255-3	250	44.9 (1140)	92.8 (2358)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3256 (1477)
CR 255-4-3	250	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3289 (1492)
CR 255-4-2	300	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3597 (1632)
CR 255-4-1	300	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3597 (1632)

8.12 CRN 255



TM065548

The maximum pump efficiency (Eff) is based on a three-stage pump.



TM077446

* C-150: CRN 255 pumps with up to two stages with one reduced-diameter impeller are equipped with class 150 flanges as standard. Class 300 flanges are available on request.

* C-300: CRN 255 pumps with two or more stages are equipped with class 300 flanges as standard.

Dimensions and weights

Pump type	Motor [HP]	Dimensions [inch (mm)]						Net weight [lbs (kg)]
		B1	B1+B2	D1	D2	D3	D4	
CRN 255-1-1	60	34.6 (878)	63.4 (1610)	17.9 (455)	16.0 (407)	17.7 (450)	22.6 (573)	1417 (643)
CRN 255-1	100	34.8 (884)	67.3 (1709)	19.1 (486)	16.0 (407)	21.7 (550)	36.1 (918)	1798 (815)
CRN 255-2-2	125	39.8 (1012)	76.5 (1943)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2366 (1073)
CRN 255-2-1	150	39.8 (1012)	76.5 (1943)	23.6 (599)	18.6 (472)	21.7 (550)	36.1 (918)	2480 (1125)
CRN 255-2	200	39.8 (1012)	87.8 (2230)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	2977 (1350)
CRN 255-3-3	200	44.9 (1140)	92.8 (2358)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3011 (1366)
CRN 255-3-2	200	44.9 (1140)	92.8 (2358)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3011 (1366)
CRN 255-3-1	250	44.9 (1140)	92.8 (2358)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3256 (1477)
CRN 255-3	250	44.9 (1140)	92.8 (2358)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3256 (1477)
CRN 255-4-3	250	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3289 (1492)
CRN 255-4-2	300	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3597 (1632)
CRN 255-4-1	300	49.9 (1268)	97.9 (2486)	23.6 (599)	20.6 (522)	21.7 (550)	36.1 (918)	3597 (1632)

9. Motor data

9.1 Standard motors in the CR 95-255 range

Motors used in the CR pump range are the following:

- Grundfos-specified WEG motors
- Grundfos ML motors.

Type	Phase	Motor range [HP]	Enclosure
WEG	3	15 - 300	TEFC
	3	15 - 300	ODP
ML	3	15 - 30	TEFC

9.1.1 WEG motors 1/4 to 20 hp

- Rolled steel construction
- service factor 1.15
- suitable for VFD operation per NEMA MG 1 part 31.4.4.2
- certified Class I, Division 2, Groups A, B, C, D
- certified Class II, Division 2, Groups F, G (three-phase only).

9.1.2 WEG motors 25 to 300 hp

- Cast iron frame
- rated for severe duty
- service factor 1.25 (25 to 100 hp)
- service factor 1.15 (125 to 300 hp)
- inverter rated per NEMA MG 1 part 31
- certified Class I, Division 2, Groups A, B, C, D
- certified Class II, Division 2, Groups F, G.

9.2 TEFC motors

9.2.1 2-pole TEFC motors (WEG)

Totally enclosed, fan-cooled, constant-speed design



TM077440

hp	Ph	Frame	Service factor	Voltage [V]	Motor eff. η [%]	Full-load current $I_{1/1}$ [A]	Service-factor current [A]	Starting current I_{start} [A]	Power factor $\cos \phi_{1/1}$	Speed [rpm]
15	3	254TC	1.15	230/460	91.0	38.5-34.8/17.4	38.5-40.0/20	262-237/118	0.87	3525
	3	254TC	1.15	575	91.0	13.9	16.0	114	0.89	3520
20	3	256TC	1.15	230/460	91.0	50.2-45.4/22.7	50.2-52.2/26.1	331-300/150	0.91	3515
	3	256TC	1.15	575	91.0	18.2	20.9	120	0.91	3515
25	3	284TSC	1.25	230/460	91.7	63.6-57.6/28.8	63.6-72.0/36	401-363/181	0.88	3545
	3	284TSC	1.25	575	91.7	23	28.8	145	0.88	3545
30	3	286TSC	1.25	230/460	91.7	73.8-67.6/33.8	73.8-84.5/42.3	465-426/213	0.89	3540
	3	286TSC	1.25	575	91.7	27	33.8	170	0.89	3540
40	3	324TSC	1.25	230/460	92.4	101-92.6/46.3	101-116/57.9	636-583/292	0.88	3560
	3	324TSC	1.25	575	92.4	37	46.3	233	0.88	3560
50	3	326TSC	1.25	230/460	93.0	124-112/56.1	124-140/70.1	769-694/348	0.89	3550
	3	326TSC	1.25	575	93.0	44.9	56.1	278	0.89	3550
60	3	364TSC	1.25	230/460	93.6	148-134/67	148-168/83.8	977-884/442	0.90	3560
	3	364TSC	1.25	575	93.6	53.6	67.0	354	0.90	3560
75	3	365TSC	1.25	230/460	93.6	181-164/81.9	181-205/102	1213-1099/549	0.90	3555
	3	365TSC	1.25	575	93.6	65.6	82	440	0.90	3555
100	3	405TSD	1.25	460	94.1	112	140	728	0.89	3545
	3	405TSD	1.25	575	94.1	89.6	112	582	0.89	3545
125	3	444TSD	1.15	460	95.0	134	154	884	0.89	3570
	3	444TSD	1.15	575	95.0	107	123	706	0.89	3570
150	3	445TSD	1.15	460	95.0	163	187	1060	0.89	3570
	3	445TSD	1.15	575	95.0	130	150	845	0.89	3570
200	3	447TSD	1.15	460	95.4	222	255	1443	0.89	3570
	3	447TSD	1.15	575	95.4	178	205	1157	0.89	3570
250	3	447TSD	1.15	460	95.8	269	309	1802	0.90	3573
	3	447TSD	1.15	575	95.8	215	247	1441	0.90	3573
300	3	449TSD	1.15	460	95.8	320	368	2176	0.90	3570
	3	449TSD	1.15	575	95.8	256	294	1741	0.90	3570

Note that motors with a nameplate stating 230/460 V are suitable for operation at 208 V.

9.2.2 2-pole TEFC motors (Grundfos ML)

Totally enclosed, fan-cooled, constant-speed design



HP	P h	Frame	Service factor	Voltage [V]	Motor eff. η [%]	Full-load current $I_{1/1}$ [A]	Service-factor current [A]	Starting current I_{start} [A]	Power factor $\cos \Phi_{1/1}$	Speed [rpm]
15	3	254 TC	1.1	208-230/460	91.0	37.5-34.0/17	43-39/19.6	255-300/6/153	0.91-0.89	3490-3530
20	3	256 TC	1.1	208-230/460	91.0	50.5-46.0/23	58-53/26.5	308-370/3/186	0.92-0.90	3490-3530
25	3	284 TSC	1.1	208-230/460	91.7	62-56/28	71.5-64.5/32	341-420/0/210	0.92-0.91	3490-3530
30	3	286 TSC	1.1	208-230/460	91.7	74-67/33.5	85-77/38.5	400-480/9/245	0.92-0.91	3490-3540

Note that Grundfos ML motors are rated for 208-230/460 V.

9.3 ODP motors

9.3.1 Open drip-proof, constant-speed design

WEG motors

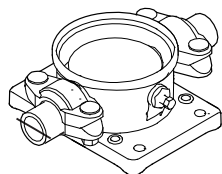
HP	P h	Frame	Service factor	Voltage [V]	Motor eff. η [%]	Full-load current $I_{1/1}$ [A]	Service-factor current [A]	Starting current I_{start} [A]	Power factor $\cos \Phi_{1/1}$	Speed [rpm]
15	3	254T C	1.15	230/460	90.2	38.9-35.2/17.6	38.9-40.5/20.2	292-264/32	0.87	3545
	3	254T C	1.15	575	90.2	14.1	16.2	106	0.87	3545
20	3	256T C	1.15	230/460	91.0	52.6-47.6/23.8	52.6-54.7/27.4	316-286/43	0.87	3525
	3	256T C	1.15	575	91.0	19	21.9	114	0.87	3525
25	3	284T SC	1.25	230/460	91.7	64.4-58.2/29.1	64.4-72.8/36.4	425-384/92	0.87	3544
	3	284T SC	1.25	575	91.7	23.3	29.1	154	0.87	3544
30	3	284T SC	1.25	230/460	91.7	77.4-70.0/35	77.4-87.5/43.8	488-441/21	0.86	3550
	3	284T SC	1.25	575	91.7	28	35.0	176	0.86	3550
40	3	324T SC	1.25	230/460	92.4	104.0-93.7/46.8	104-117/58.5	634-572/85	0.87	3557
	3	324T SC	1.25	575	92.4	37.5	46.9	229	0.87	3557
50	3	324T SC	1.25	230/460	93.0	131-119/59.4	131-149/74.3	825-750/74	0.84	3560
	3	324T SC	1.25	575	93.0	47.5	59.4	299	0.85	3560
60	3	326T SC	1.25	230/460	93.6	157-142/71	157-178/88.8	989-895/47	0.85	3560
	3	326T SC	1.25	575	93.6	56.8	71.0	358	0.85	3560

HP	P h	Frame	Service factor	Voltage [V]	Motor eff. η [%]	Full-load current $I_{1/1}$ [A]	Service-factor current [A]	Starting current I_{start} [A]	Power factor $\cos \Phi_{1/1}$	Speed [rpm]
75	3	365T SC	1.25	230/460	93.6	188-170/84.8	188-213/106	1241-1122/560	0.87	3555
	3	365T SC	1.25	575	93.6	67.8	84.8	447	0.87	3555
100	3	404T SD	1.25	460	93.6	115	144	782	0.87	3557
125	3	405T SD	1.25	460	94.1	136	170	925	0.88	3557
150	3	444T SD	1.15	460	94.1	169	194	1099	0.86	3570
200	3	444T SD	1.15	460	95.0	225	259	1463	0.88	3570
250	3	445T SD	1.15	460	95.0	278	320	1863	0.88	3570
300	3	445T SD	1.15	460	95.4	329	378	2139	0.88	3570

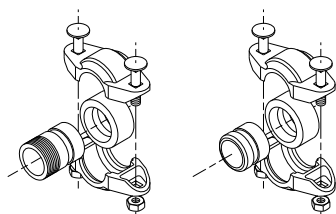
Note that motors listed at 230/460 V in the table are suitable for operation at 208 V.

10. Accessories

10.1 PJE couplings for CRN



TM079035



TM003808

Materials in contact with the pumped liquid are made of stainless steel AISI 316 and rubber.

A set consists of two coupling halves (Victaulic® type 77), one gasket, one pipe stub (for welding or threaded), bolts and nuts.

Pump type	Pipe stub	Max. pressure [psi (bar)]	Pipe connection	Rubber parts	Number of coupling sets required
CRN 95	For welding	1000 (69)	4"	EPDM	2
CRN 95	For welding	1000 (69)	4"	FKM	2

11. Grundfos Product Center

Online search and sizing tool to help you make the right choice.

From the international view, you can select your specific country to view the product range available to you.

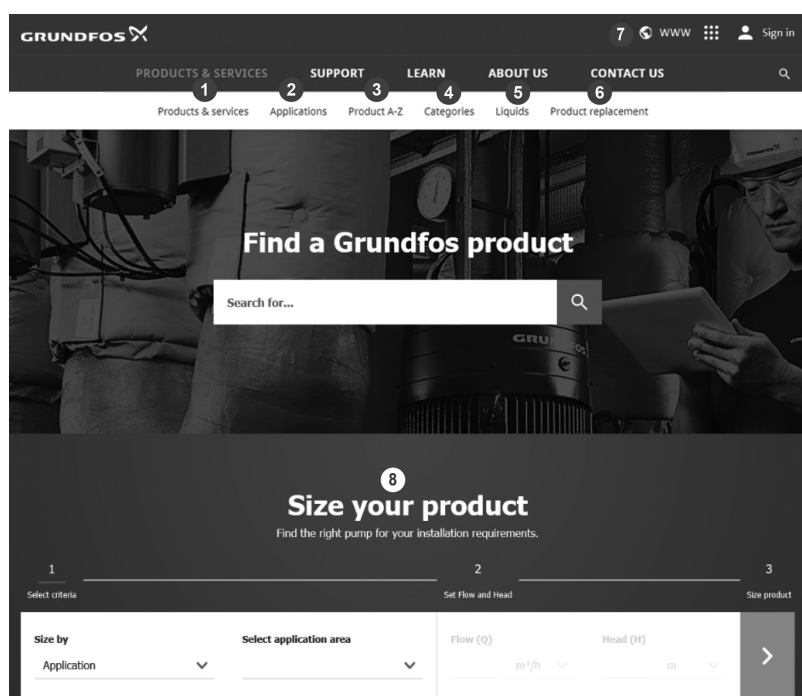
International view: <https://product-selection.grundfos.com>

All the information you need in one place

Performance curves, technical specifications, pictures, dimensional drawings, motor curves, wiring diagrams, spare parts, service kits, 3D drawings, documents, system parts. The Product Center displays any recent and saved items - including complete projects - right on the main page.

Downloads

On the product pages, you can download installation and operating instructions, data booklets, service instructions, etc., in PDF format.



When you select your country, you see the menus below. Note that some menus may not be available depending on the country.

Example: <https://product-selection.grundfos.com/uk>

Pos.	Description
1	Products & services enables you to find products and documents by typing a product number or name into the search field.
2	Applications enables you to choose an application to see how Grundfos can help you design and optimize your system.
3	Products A-Z enables you to look through a list of all the Grundfos products.
4	Categories enables you to look for a product category.
5	Liquids enables you to find pumps designed for aggressive, flammable or other special liquids.
6	Product replacement enables you to find a suitable replacement.
7	WWW enables you to select the country, which changes the language, the available product range and the structure of the website.
8	Sizing enables you to size a product based on your application and operating conditions.

11.1 Grundfos GO

Mobile solution for professionals on the GO!

The Grundfos GO is the mobile tool box for professional users on the go. It is the most comprehensive platform for mobile pump control and pump selection, including sizing, replacement and documentation. It offers intuitive, handheld assistance and access to Grundfos online tools, and it saves valuable time for reporting and data collection.



U.S.A.

Global Headquarters for WU
856 Koomey Road
Brookshire, Texas 77423 USA
Phone: +1-630-236-5500

GRUNDFOS CBS Inc.
902 Koomey Road
Brookshire, TX 77423 USA
Phone: 281-994-2700
Toll Free: 1-800-955-5847
Fax: 1-800-945-4777

GRUNDFOS Pumps Corporation
9300 Loiret Boulevard
Lenexa, Kansas 66219 USA
Tel.: +1 913 227 3400
Fax: +1 913 227 3500

Canada

GRUNDFOS Canada inc.
2941 Brighton Road
Oakville, Ontario
L6H 6C9
Tel.: +1-905 829 9533
Fax: +1-905 829 9512

Mexico

Bombas GRUNDFOS de México
S.A. de C.V.
Boulevard TLC No. 15
Parque industrial Stiva Aeropuerto
Apodaca, N.L. 66600
Tel.: +52-81-8144 4000
Fax: +52-81-8144 4010

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Grundfos Holding A/S
Poul Due Jensens Vej 7
DK-8850 Bjerringbro
Tel: +45 87 50 14 00
www.grundfos.com

GRUNDFOS 