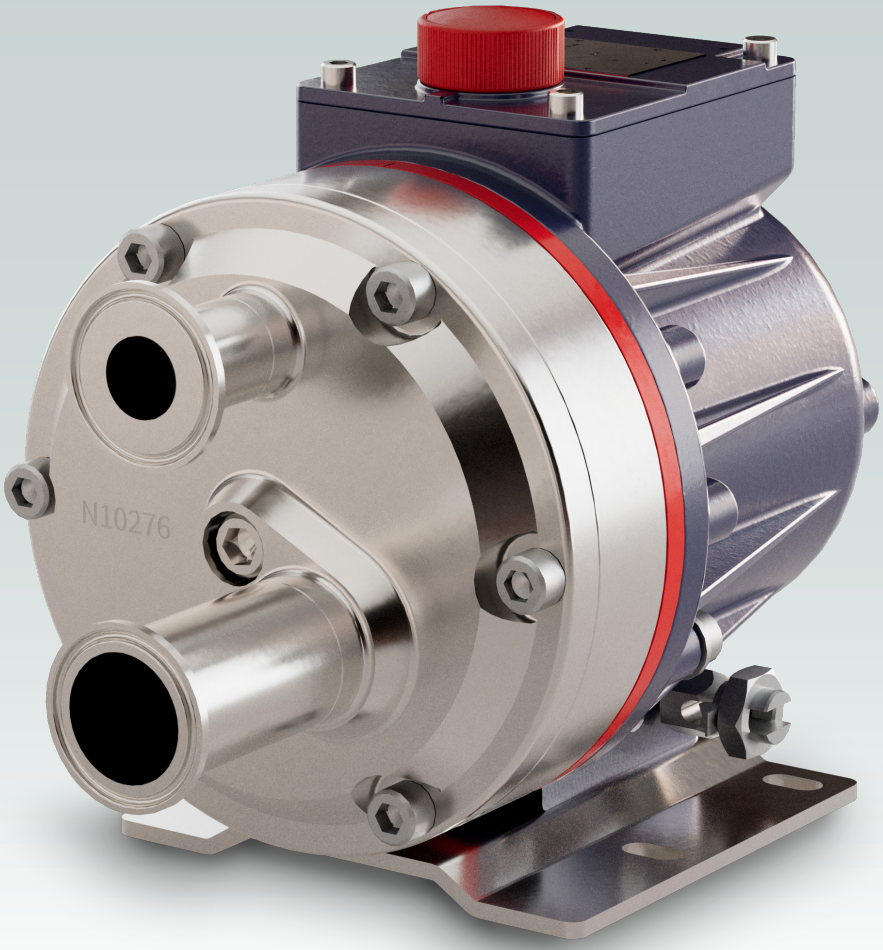
PH30 SERIES
PHARMACEUTICAL

Maximum Flow rate: 33.4 l/min (8.8 US gpm)
Maximum Pressure: 40 bar (580 psi) for Metallic Pump Heads

WANNER™ PHARMA-PRO™
LEADING INNOVATION IN SEAL-LESS PUMP TECHNOLOGIES™

ATEX AVAILABLE



PH30A Shaft-driven with Stainless Steel pump head with ASME BPE flanges

Low pulse flow. Control and reliability for continuous processes.

- Low pulse flow; no pulsation dampeners needed in most applications
- Unique multiple diaphragm arrangement results in compact design, saving on installation space
- Extremely accurate wide adjustable flow range for ultimate controllability
- Low shear pumping action
- Reliably handles challenging liquids and slurries including abrasives, corrosives, non-lubricating, and liquids with micron-sized particles
- Patented ADPC (Advanced Diaphragm Position Control) technology protects diaphragms under closed or restricted inlet conditions
- ASME BPE flange connections as standard
- Wetted surfaces polished to ≤ 0.8 Ra
- Diaphragm options to FDA compliance
- ATEX certification
- TSE / BSE-free materials
- Multipurpose: CIP and main process pump
- Full material traceability

WANNER INTERNATIONAL, LTD.

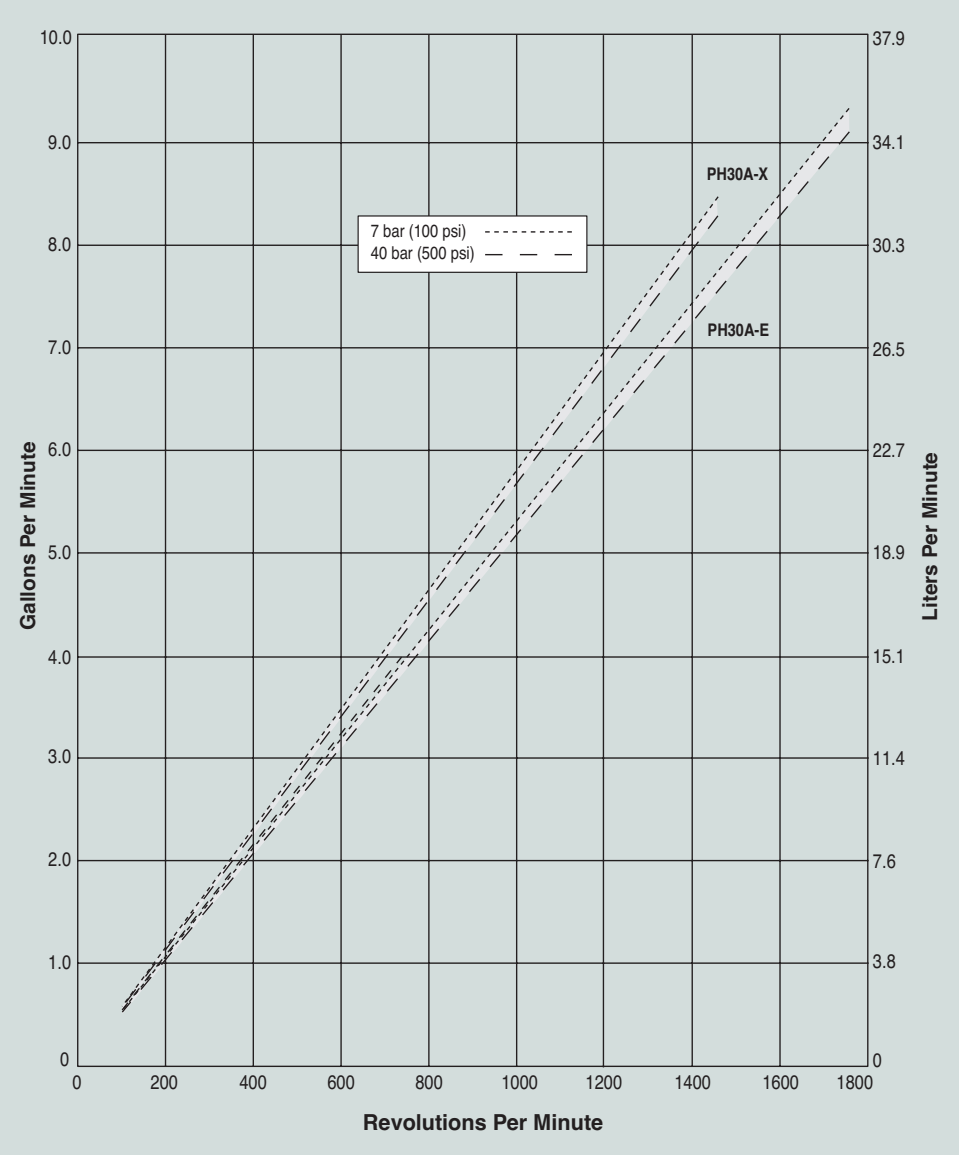
WANNER™

Capacities

Model	Max. Input rpm	Max. Flow Capacities @40 bar (580 psi) l/min	US gpm	Max. Inlet Pressure bar	psi	Max. Discharge Pressure Metallic Heads bar	psi
PH30AX	1450	30.6	8.1	17	250	40	580
PH30AE	1750	33.4	8.8	17	250	40	580

Performance and specification ratings apply to PH30A configurations unless specifically noted otherwise.

Maximum Flow at Designated Pressure



Metering & Dosing

Performance characteristics of better than

± 1% steady state accuracy
± 3% linearity
± 3% repeatability

can be achieved at speeds up to 1440 rpm and pressures up to 40 bar for X-cam pumps only.

Diaphragms per Liquid End 3

Flow Capacities @ 40 bar (580 psi) 4-pole Motor @ 50 Hz

Model	rpm	l/min	US gpm
PH30AX	1450	30.6	8.12
PH30AE	1450	27.7	7.39

Flow Capacities @ 40 bar (580 psi) 6-pole Motor @ 50 Hz

Model	rpm	l/min	US gpm
PH30AX	960	20.2	5.37
PH30AE	960	18.3	4.89

Delivery @ 40 bar (580 psi)

Model	litres/rev	gal/rev
PH30AX	0.0205	0.0054
PH30AE	0.0186	0.0049

Maximum Discharge Pressure
Metallic Heads: 40 bar (580 psi)

Maximum Inlet Pressure 17 bar (250 psi)

Maximum Operating Temperature
Metallic Heads: 90˚C (194˚F)
Consult Wanner for correct component selection for temperatures greater than 71˚C (160˚F).

Maximum Solids Size 500 microns

Inlet Port 1.5" ASME BPE

Discharge Port 1" ASME BPE

Shaft Diameter 22.2 mm (7/8 inch)

Shaft Rotation Bi-directional

Bearings Precision ball bearings

Oil Capacity 1.05 litres (1.1 US quarts)

Weight 22 Kg (48.5 lbs)

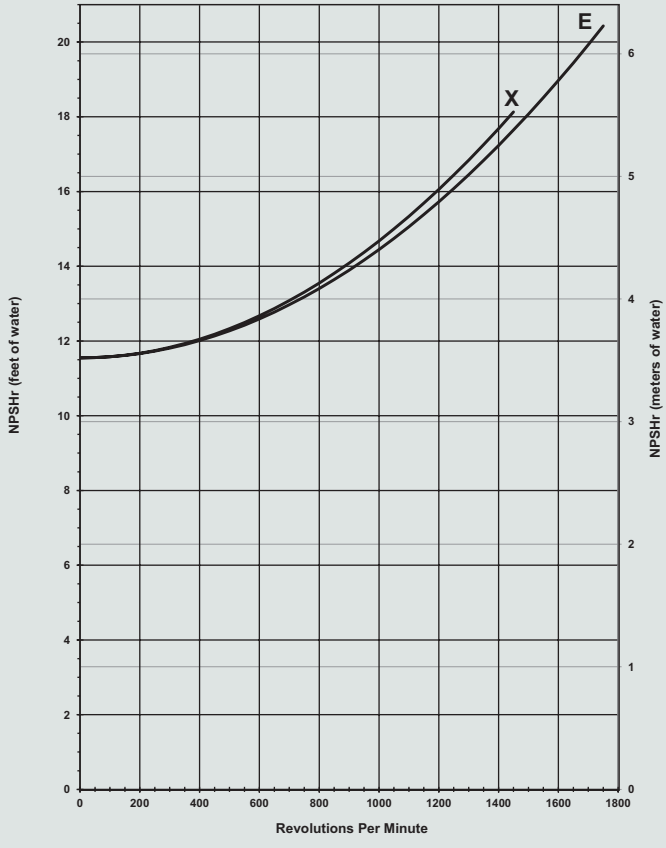
Calculating Required Power

$$\frac{15 \times \text{rpm}}{63{,}000} + \frac{\text{gpm} \times \text{psi}}{1{,}460} = \text{electric motor hp}$$

$$\frac{15 \times \text{rpm}}{84{,}428} + \frac{\text{l/min} \times \text{bar}}{511} = \text{electric motor kW}$$

When using a variable frequency drive (VFD) controller, calculate the hp or kW at minimum and maximum pump speed to ensure the correct hp or kW motor is selected. Note that motor manufacturers typically de-rate the service factor to 1.0 when operating with a VFD.

Net Positive Suction Head (NPSHr)



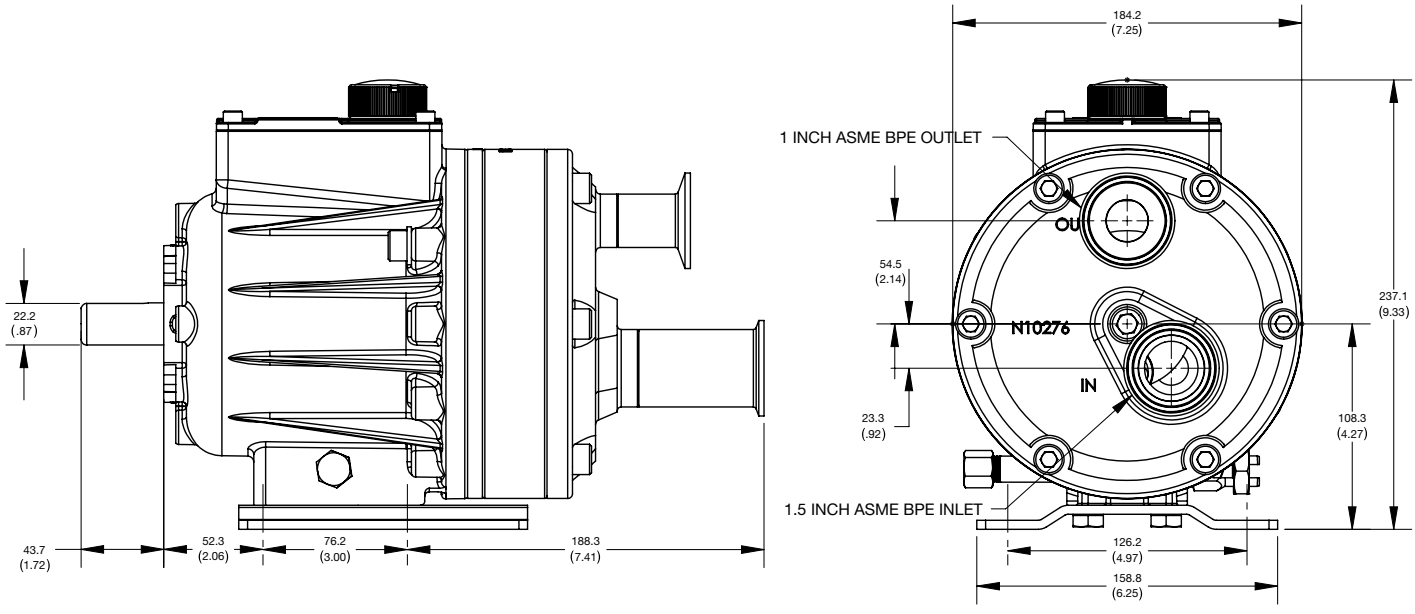
Notes: Positive inlet pressure required with PTFE diaphragms.
X cam line: Also applicable to PH30B & C

Suction Lift:

Each Pharma-Pro pump has different lift capability depending on model size, cam angle, speed, and fluid characteristics. To ensure that your specific lift characteristics are met, refer to the inlet calculations regarding friction and acceleration head losses in your Pharma-Pro Product Manual. Compare those calculations to the NPSHr curves above.

PH30A Models with ASME BPE Flanges mm (Inches)

Maximum Discharge Pressure: 40 bar (580 psi)

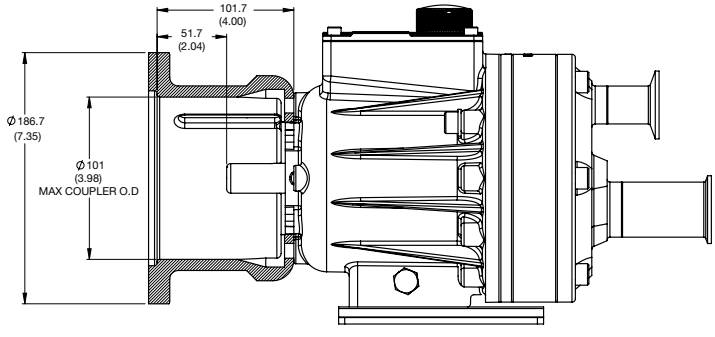


PH30A Pump / Motor Adapter mm (Inches)

Part Number: A04-003-1200

Must be ordered separately for PH30A models for use with IEC 80 - 90 frame motors, B5 flange.

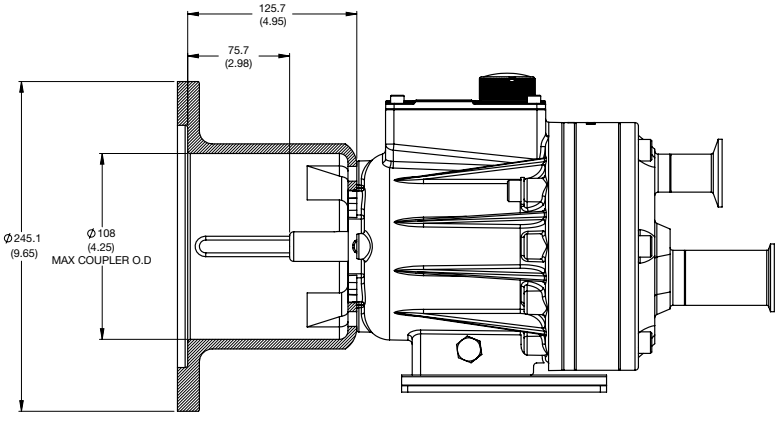
NEMA adapter available - consult Wanner.



Part Number: A04-004-1200

Must be ordered separately for PH30A models for use with IEC 100 - 112 frame motors, B5 flange.

NEMA adapter available - consult Wanner.

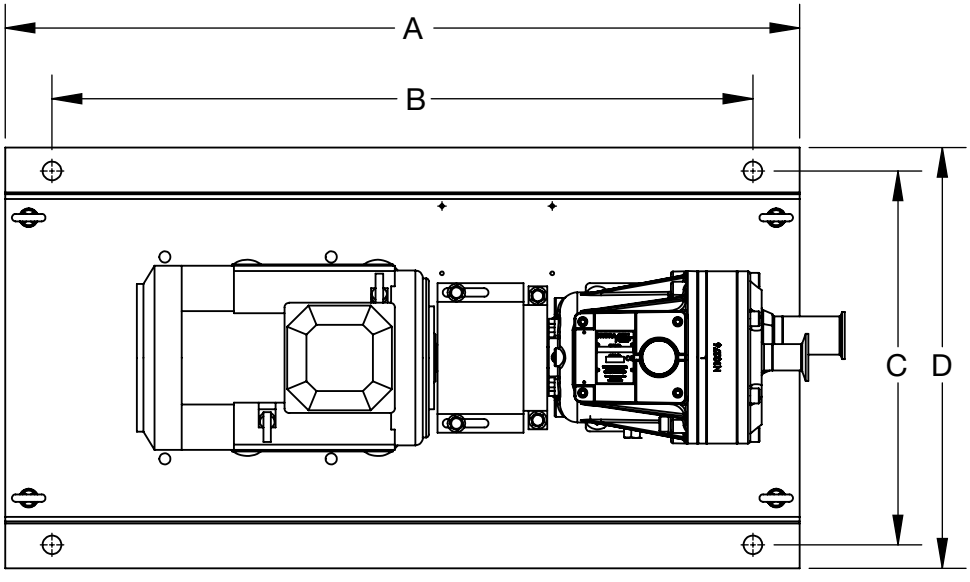


Note: Dimensions are for reference only. Contact Wanner for certified drawings.
Due to the Wanner Continuous Improvement Program, specifications and other data are subject to change.

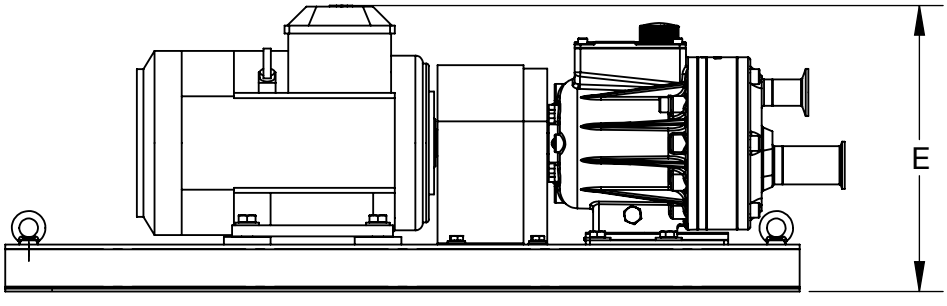
Baseplate Options for IEC Motor Frame sizes

Major Baseplate Dimensions:

Description	Dimensions (mm)					Weight Approx. (kg)
	A	B	C	D	E	
PH30A, long-coupled with IEC 90 Motor	850	750	400	450	289	66
PH30A, long-coupled with IEC 100 Motor	850	750	400	450	305	78
PH30A, long-coupled with IEC 132 Motor	850	750	400	450	305	142



A Baseplate overall length
B Mounting bolt positions – horizontal
C Mounting bolt positions – vertical
D Baseplate overall width
E Height to highest point on assembly



Note: Dimensions are for reference only. Contact Wanner for certified drawings.
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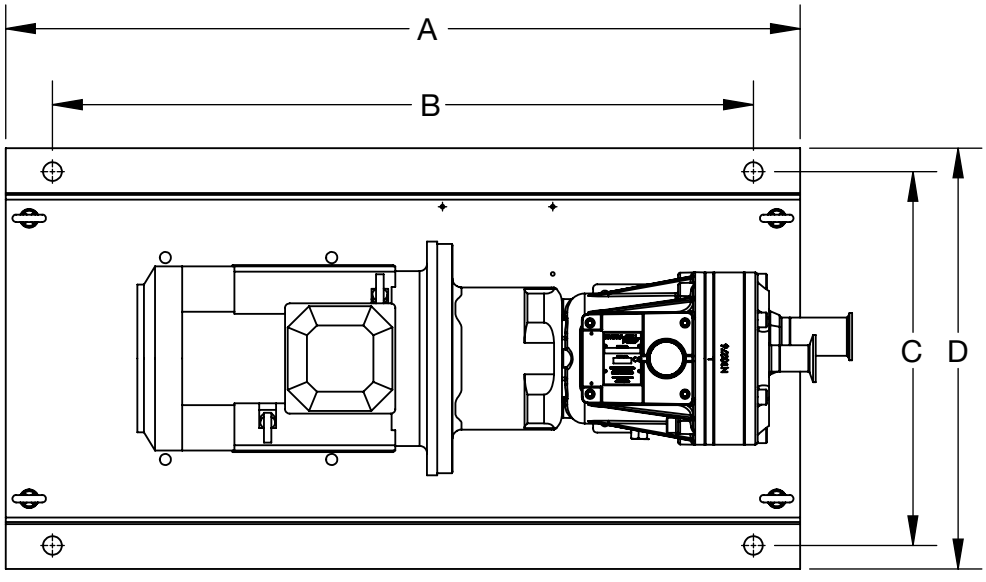
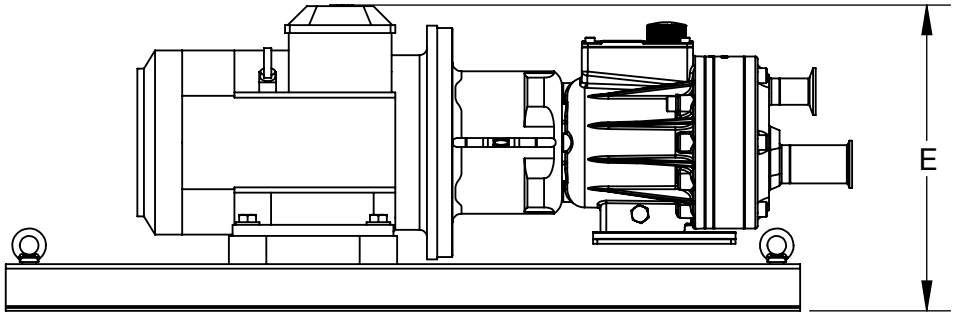
Baseplate Options for IEC Motor Frame sizes

Major Baseplate Dimensions:

Description	Dimensions (mm)					Weight Approx. (kg)
	A	B	C	D	E	
PH30A with Motor adapter and IEC 90 Motor	850	750	400	450	292	66
PH30A with Motor Adapter and IEC 100 Motor	850	750	400	450	326	78
PH30A with Motor Adapter and IEC 132 Motor	850	750	400	450	373	142





A Baseplate overall length
B Mounting bolt positions – horizontal
C Mounting bolt positions – vertical
D Baseplate overall width
E Height to highest point on assembly

Note: Dimensions are for reference only. Contact Wanner for certified drawings.
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PH30B Pharma-Pro™ | Specifications

Pump and Vertical Reduction Gearbox Options

Diaphragms per Liquid End	3
Flow Control	Electronic variable speed drive
Maximum Discharge Pressure	
Metallic Heads:	40 bar (580 psi)
Maximum Inlet Pressure	17 bar (250 psi)
Maximum Operating Temperature	
Metallic Heads:	90˚C (194˚F) – Consult Wanner for correct component selection for temperatures from 71˚C (160˚F).
Maximum Solids Size	500 microns

Inlet Port	1.5" ASME BPE
Discharge Port	1" ASME BPE
Shaft Diameter	22.2 mm (7/8")
Shaft Rotation	Bi-directional
Bearings	Precision ball bearings
Oil Capacity	1.05 litres (1.1 US quarts)
Weight (less motor)	
Metallic Heads:	30.0 kg (66 lbs.)
Controllers	
Mechanical Adjustment:	245 mm D x 200 mm H

Performance | Flow Capacities and Pressure Ratings

For Synchronous Speed, Self-cooled Motors

l/hr All Pumps			Pump rpm	Gear Ratio	Motor rpm
7 bar	17 bar	40 bar			
30.7	29.1	25.3	25	60:1	1500
37.1	35.4	31.5	30	50:1	
46.7	44.9	40.8	37.5	40:1	
62.7	60.7	56.2	50	30:1	
75.5	73.4	68.6	60	25:1	
94.7	92.4	87.1	75	20:1	
126.7	124.0	118.0	100	15:1	
190.6	187.3	179.8	150	10:1	
254.6	250.6	241.6	200	7.5:1	
382.5	377.2	365.2	300	5:1	
510.4	503.8	488.7	400	7.5:1	3000
766.2	757.0	735.9	600	5:1	

Required Motor kW 0.18 | 0.25 | 0.37 | 0.55 | 0.75 | 1.1

Notes:

1. *The motor kW are based on ambient temperature conditions up to 40˚C. For ambient temperatures above 40˚C, please contact Wanner.*
2. *Contact Wanner for performance specifications.*
3. *Based on using IE3 motors.*
4. *For intermittent or reduced pressure duties, please contact Wanner.*

For 10:1 Turndown, Self-cooled Motors

l/hr All Pumps			Pump rpm	Gear Ratio	Motor rpm
7 bar	17 bar	40 bar			
30.7	29.1	25.3	25	60:1	1500
37.1	35.4	31.5	30	50:1	
46.7	44.9	40.8	37.5	40:1	
62.7	60.7	56.2	50	30:1	
75.5	73.4	68.6	60	25:1	
94.7	92.4	87.1	75	20:1	
126.7	124.0	118.0	100	15:1	
190.6	187.3	179.8	150	10:1	
254.6	250.6	241.6	200	7.5:1	
382.5	377.2	365.2	300	5:1	
510.4	503.8	488.7	400	7.5:1	3000
766.2	757.0	735.9	600	5:1	

Required Motor kW 0.18 | 0.25 | 0.37 | 0.55 | 0.75 | 1.1 | 1.5 | 2.2 | 3.0

Notes:

1. *The motor kW are based on ambient temperature conditions up to 25˚C. For ambient temperatures above 25˚C, Force-cooled Motors may be required. Please contact Wanner.*
2. *Contact Wanner for performance specifications.*
3. *Based on using IE3 motors.*
4. *For intermittent or reduced pressure duties, please contact Wanner.*

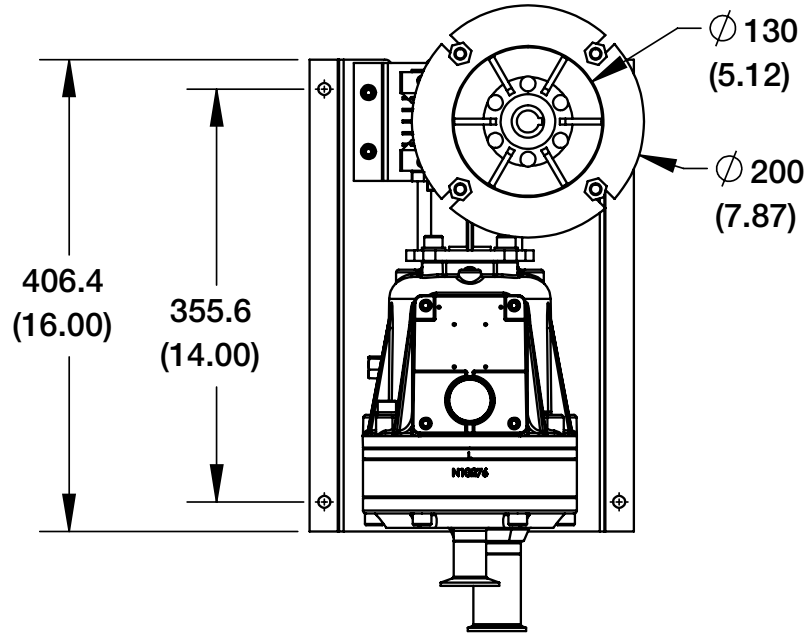
Mechanical Variator Options for ATEX / Explosive Areas

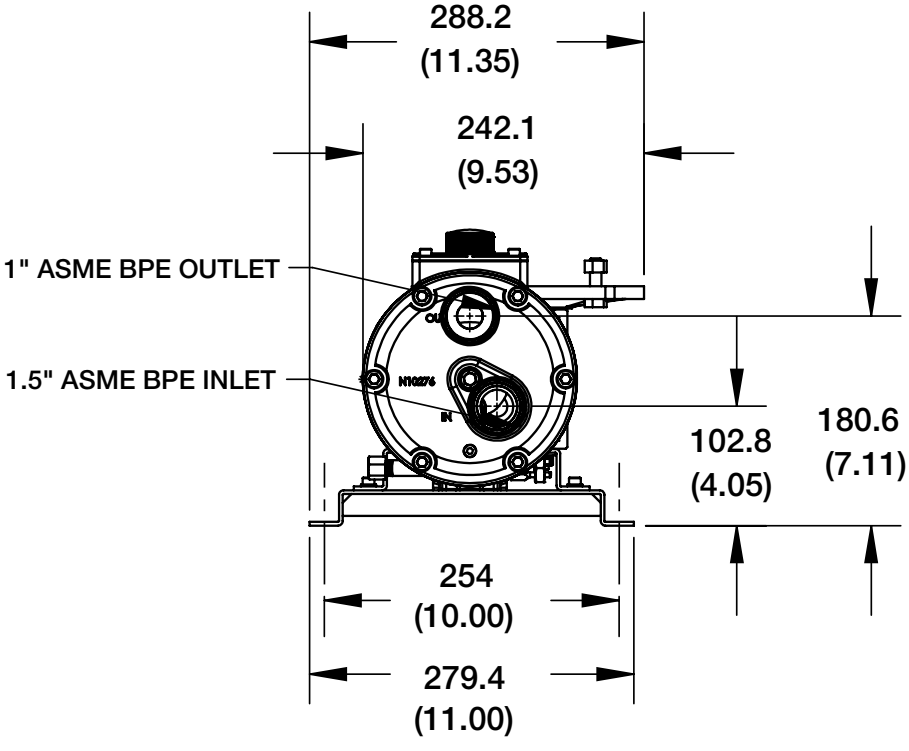
7 bar		17 bar		40 bar		Pump rpm	Gearbox Ratio	Variable Gearbox Model Number	Required Motor Size & Frame
Min	Max	Min	Max	Min	Max				
4.7	28.8	3.5	27.6	1.2	24.7	5 - 24	25:1	MEC5-71B14	0.37kW / IEC 71 / 4-Pole
	36.5		35.1		32.1	5 - 30	20:1		
	49.1		47.8		44.4	5 - 40	15:1		
	74.7		73.1		69.3	5 - 60	10:1	MEC5-80B14	0.55kW / IEC 80 / 4-Pole
	100.3		98.4		94.1	5 - 80	7.5:1		
	151.5		149.0		143.9	5 - 120	5:1		0.75kW / IEC 80 / 4-Pole
	202.6		199.7		193.6	5 - 160	7.5:1		1.1kW / IEC 80 / 2-Pole
	305.0		300.9		293.0	5 - 240	5:1	MEC5-90B14	1.5kW / IEC 90 / 2-Pole

All Min/Max flow rates in Litres per Hour (l/hr)

Major Dimensions

Model shown with IEC 80 Gearbox Adapter | Dimensions in mm (in)





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PH30C Pharma-Pro™ | Specifications

Pump with Inline Manual Mechanical Variator Options

Diaphragms per Liquid End 3

Flow Capacities @ 40 bar (580 psi)

Model	Max. Pump Input rpm	Min. Flow l/hr	Min. Flow US gph	Max. Flow l/hr	Max. Flow gph
PH30C...NA300*	1200	120	32	1470	388

Flow Capacities @ 20 bar (290 psi)

Model	Max. Pump Input rpm	Min. Flow l/hr	Min. Flow US gph	Max. Flow l/hr	Max. Flow gph
PH30C...NA100*	600	60	16	732	193
PH30C...NA200*	1200	120	32	1470	388

Maximum Discharge Pressure Metallic Heads

PH30C...NA100*	Up to 20 bar (290 psi) @ 600 rpm max
PH30C...NA200*	Up to 20 bar (290 psi) @ 1200 rpm max
PH30C...NA300*	Up to 40 bar (580 psi) @ 1200 rpm max

Maximum Inlet Pressure 17 bar (250 psi)

Maximum Operating Temperature

Metallic Heads	90˚C (194˚F) – Consult Wanner for correct component selection for temperatures from 71˚C (160˚F).

Maximum Solids Size 500 microns

Inlet Port	1.5" ASME BPE
Discharge Port	1" ASME BPE
Shaft Rotation	Bi-directional

Motor

PH30C....NA100*	Requires 0.75kW, IEC 80, 4-pole, B14 motor
PH30C....NA200*	Requires 2.2kW, IEC 90, 2-pole, B14 motor
PH30C....NA300*	Requires 4kW, IEC 112, 2-pole, B5 motor

Bearings	Precision ball bearings
Pump Oil Capacity	1.05 litres (1.1 US quarts)

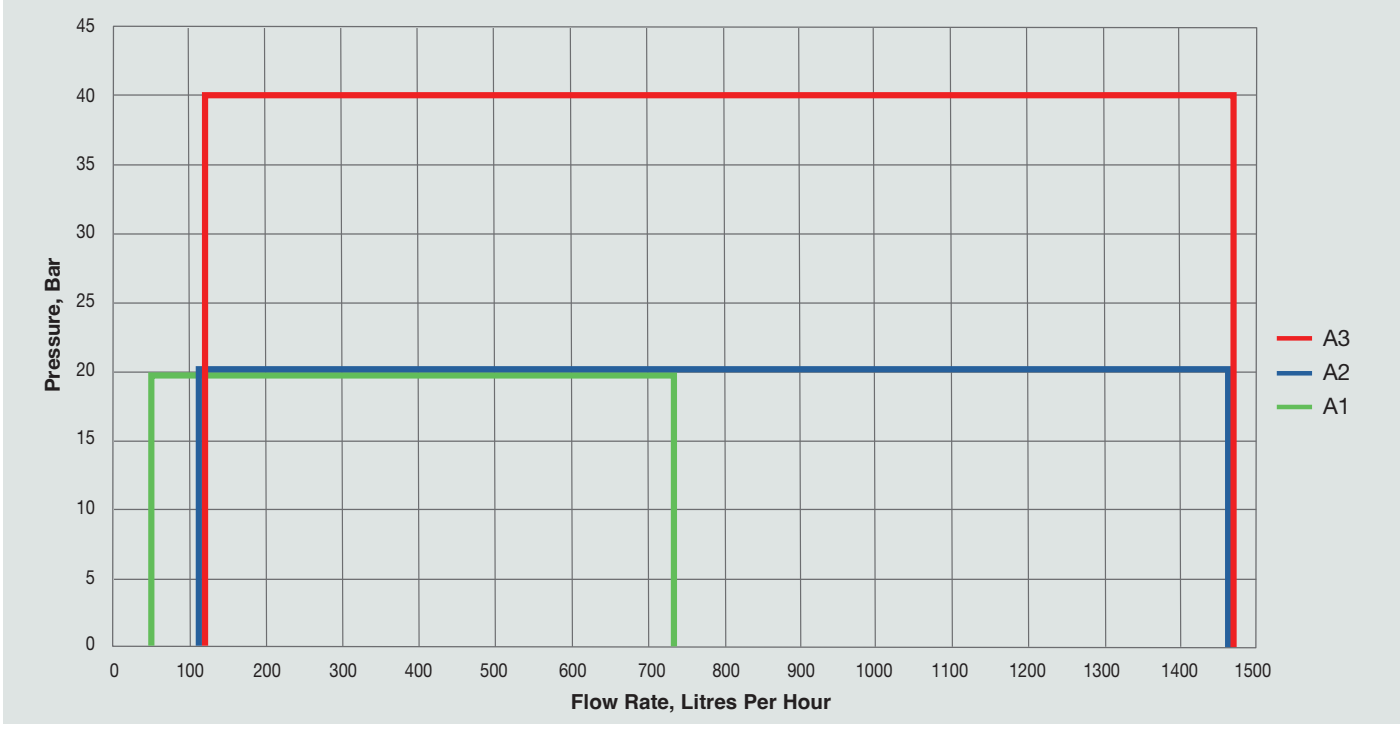
Traction Fluid Capacity

PH30C....NA100* Gearbox Only:	300 ml (0.32 US quarts)
PH30C....NA200* Gearbox Only:	300 ml (0.32 US quarts)
PH30C....NA300* Gearbox Only:	850 ml (0.90 US quarts)

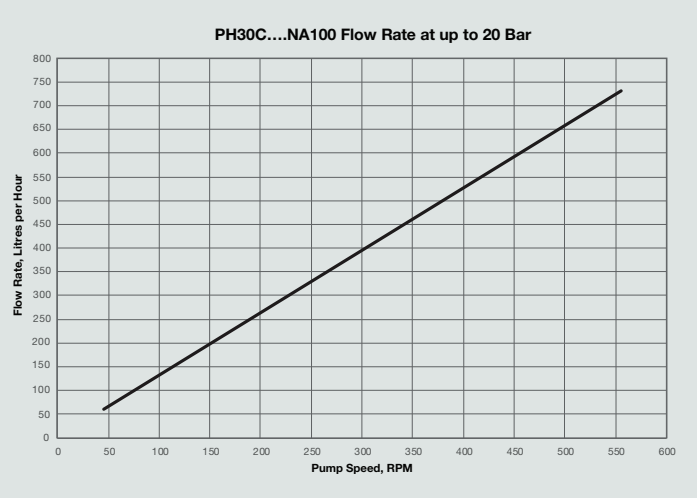
Weight	**Metallic Heads**
PH30 Pump:	21.8 kg (48 lbs.)
PH30C....NA100* Assembly:	~75 kg (165 lbs.)
PH30C....NA100* Assembly:	~83 kg (183 lbs.)
PH30C....NA300* Assembly:	~134 kg (295 lbs.)

** First 5 and last 5 digits – refer to How To Order page 12*

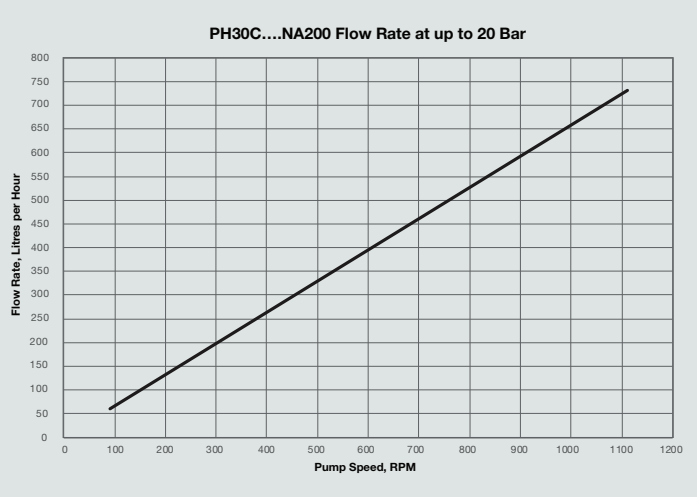
Flow Ranges PH30C



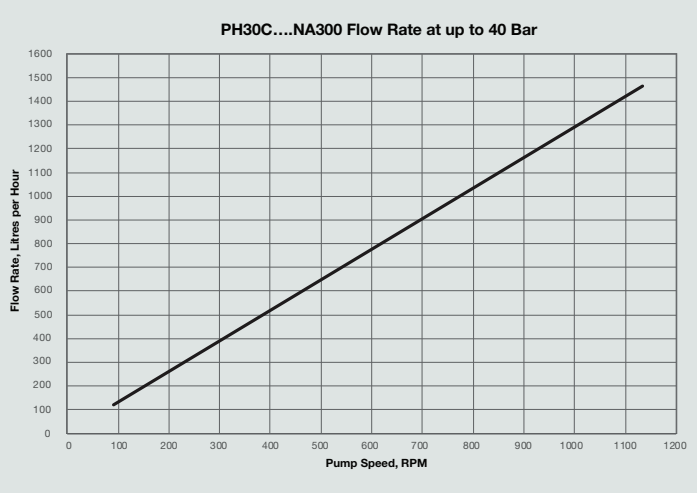
Flow Range PH30C



A1 PH30C – 60-732 l/hr (16-193 US gph) @ 600 rpm max. at up to 20 bar. Requires a 0.75kW, IEC 80, 4-Pole B14 Motor (Motor not included but available on request).



A2 PH30C – 120-1470 l/hr (32-388 US gph) @ 1200 rpm max. at up to 20 bar. Requires a 2.2kW, IEC 90, 2-Pole B14 Motor (Motor not included but available on request).

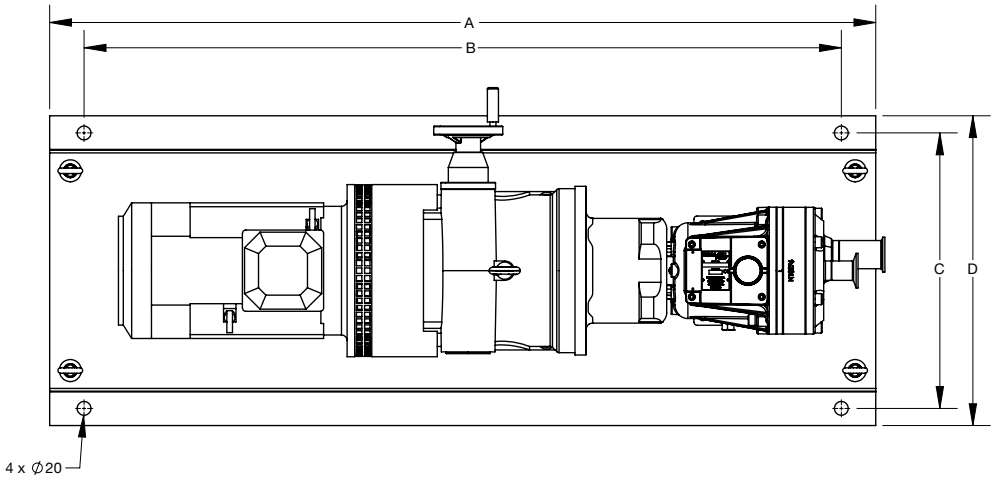


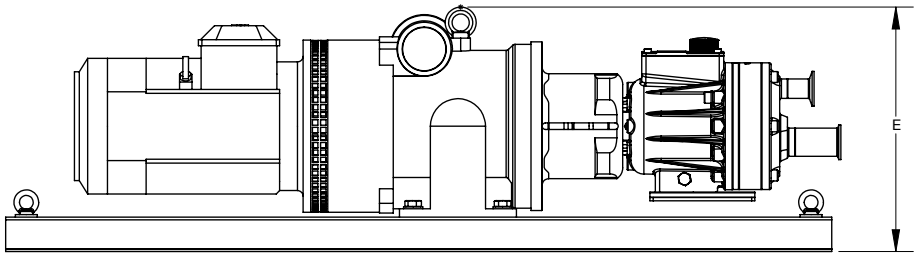
A3 PH30C – 120-1470 l/hr (32-388 US gph) @ 1200 rpm max. at up to 40 bar. Requires a 4kW, IEC 112, 2-Pole B5 Motor (Motor not included but available on request).

Baseplate Options

Major Baseplate Dimensions:

Description	Dimensions (mm)					Weight Approx. (Kg)
	A	B	C	D	E	
PH30C...NA100	900	800	400	450	287	75
PH30C...NA200	900	800	400	450	287	83
PH30C...NA300	1200	1100	400	450	355	134





A Baseplate overall length
B Mounting bolt positions – horizontal
C Mounting bolt positions – vertical
D Baseplate overall width
E Height to highest point on assembly

Note: Dimensions are for reference only. Contact Wanner for certified drawings.
Due to the Wanner Continuous Improvement Program, specifications and other data are subject to change.

Ordering Information

A complete PH30 Series Model Number contains 19 digits including 14 customer-specified design and materials options; example: PH30AXAT200JTCX0000

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
P	H	3	0									T						

Digit	Order Code	Description
1-5		**Pump Configuration**
	PH30A	Shaft-driven (up to 33 l/min) Pump/motor adapters sold separately; see page 4
	PH30B	Vertical Gear Reducer Unit Select an option from Digit 15 and 16-17
	PH30C	Inline Manual Mechanical Variator Reducer Unit Select an option from Digit 14 and 15-16
6		**Hydraulic End Cam**
	X	Max 30.6 l/min (8.0 US gpm) @ 1450 rpm
	E	Max 27.7 l/min (7.3 US gpm) @ 1450 rpm
7		**Pump Head Version** – [1] ADPC (Advanced Diaphragm Position Control System)
	A	ADPC[1] Non-Hazardous – Safe Area
	B	ADPC[1] Hazardous Area: ATEX CAT 2, Zone 1, IIC, T4
	C	ADPC[1] Hazardous Area: ATEX CAT 3, Zone 2, IIC, T4
8-9		**Pump Head Material & Connection Type*** (Machined, 3.1 material certs, ASME BPE Flange, Maximum Operating Pressure 40 bar)
	S2	316L stainless steel
	T2	Hastelloy C276
10		**Manifold Drain Options**
	0	No drain
	D	Drain – Only available with Digits 8-9 S2
11		**Diaphragm Rupture Detection**
	0	No detection
	A	High / Low oil level bowl – not required with Digit 7 – B and C
12		**Diaphragm / O-rings / Follower** (All process wetted materials FDA compliant and TSE/BSE free)
	J	PTFE / PTFE / Hastelloy C276 – Digit 6 E-cam pumps only
	K	FFKM / PTFE / Hastelloy C276
	E	EPDM / PTFE / Hastelloy C276 – Must be used with option "C" Digit 14
13		**Valve / Valve Seat / Valve Spring / Spring Retainer***
	T	Hastelloy C / Hastelloy C / Hastelloy C / Hastelloy C
14		**Hydra-Oil**
	C	EPDM-compatible oil, NSF H1 – Must be used with Digit 12 option "E"
	E	Food-contact oil, NSF H1

* Polished to 0.8 Ra

Digit	Order Code	Description
15		**Reduction Gearing Options**
	X	PH30A – Bare shaft pump; no reduction gearbox required
	C	PH30B – IEC 63 motor frame – B5 mounting (60, 50, 40 vertical gearbox ratio options)
	D	PH30B – IEC 71 motor frame – B5 mounting (30, 25, 20, 15, 10, 7.5 vertical gearbox ratio options)
	E	PH30B – IEC 80 motor frame – B5 mounting (7.5, 5 vertical gearbox ratio options)
	F	PH30B – IEC 90 motor frame – B5 mounting (7.5, 5 vertical gearbox ratio options)
	N	PH30C – Inline Manual Mechanical Variator options
16-17		**Vertical Reduction Gearbox Ratio Options**
	00	PH30A – No reduction gearbox
	60	PH30B – 60:1 reduction gearbox
	50	PH30B – 50:1 reduction gearbox
	40	PH30B – 40:1 reduction gearbox
	30	PH30B – 30:1 reduction gearbox
	25	PH30B – 25:1 reduction gearbox
	20	PH30B – 20:1 reduction gearbox
	15	PH30B – 15:1 reduction gearbox
	10	PH30B – 10:1 reduction gearbox
	07	PH30B – 7.5:1 reduction gearbox
	05	PH30B – 5:1 reduction gearbox
		Inline Manual Mechanical Variator Options DIGIT 15 "N" ONLY
	A1	PH30C – 60-732 l/hr (16-193 US gph) @ 600 rpm max. at up to 20 bar requires a 0.75kW, IEC 80, 4-pole B14 motor**
	A2	PH30C – 120-1470 l/hr (32-388 US gph) @ 1200 rpm max. at up to 20 bar requires a 2.2kW, IEC 90, 2-pole B14 motor**
	A3	PH30C – 120-1470 l/hr (32-388 US gph) @ 1200 rpm max. at up to 40 bar requires a 4kW, IEC 112, 2-pole B5 motor**
18-19		**Vertical Reduction Gearbox with Vertical Mechanical Variator Options;** see table on page 7 for options
	00	No mechanical variator
	M1	MEC5-71B14
	M2	MEC5-80B14
	M3	MEC5-90B14

** Motor not included but available on request