

UP/UPS H.W.S. GLANDLESS IN-LINE CIRCULATORS

For hot water service circulation in domestic, commercial and industrial applications.



GRUNDFOS

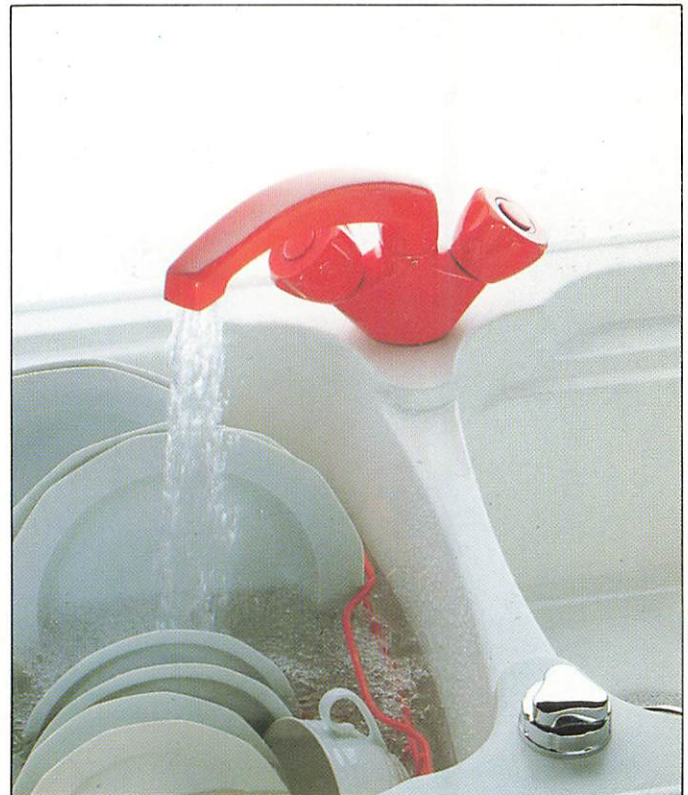
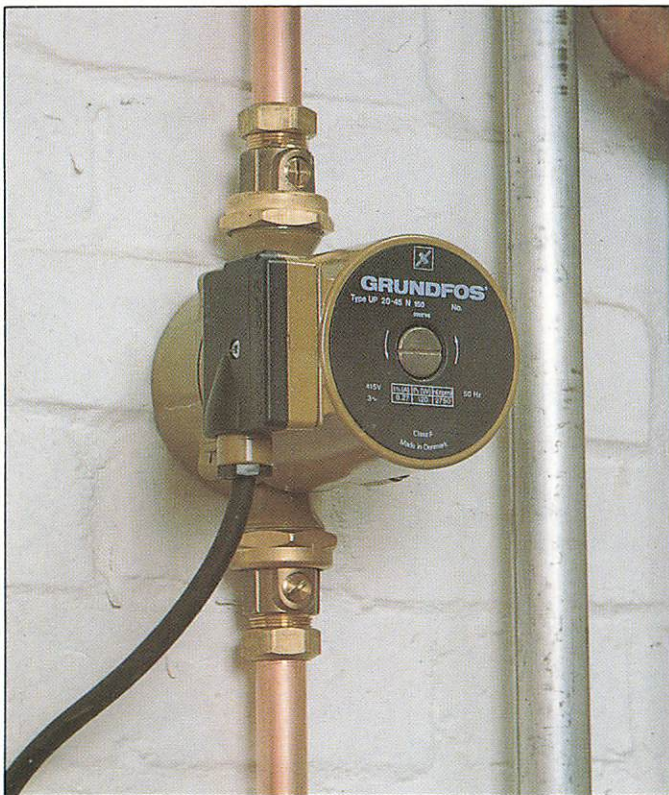


GRUNDFOS, THE SUPREME CHOICE IN DOMESTIC AND COMMERCIAL HOT WATER SERVICE CIRCULATORS.

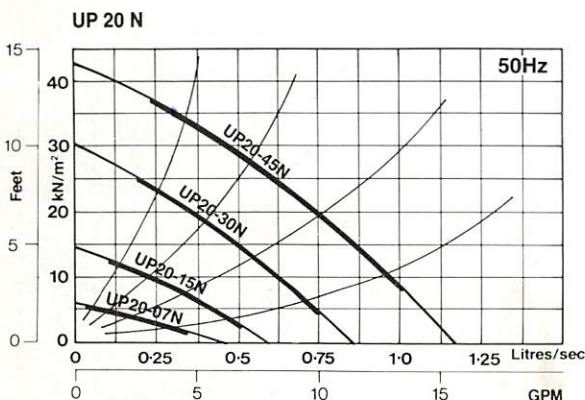
- * GLANDLESS HOT WATER SERVICE CIRCULATORS FOR PIPELINE MOUNTING.
- * STAINLESS STEEL AND BRONZE COMPONENTS FOR HIGH EFFICIENCY AND RESISTANCE TO CORROSION.
- * FLOWS UP TO 2.5 LITRES/SEC.
- * FRICTIONAL RESISTANCES UP TO 70kN/m².
- * ALL PUMPS SUPPLIED WITH FITTINGS.
- * PUMP HOUSING FLANGED TO

BS 4504:1969, TABLE 6/11 ON UP/UPS 40 MODELS.

- * 3/4" BSPF UNIONS OR OPTIONAL 22mm VALVES ON UP20N MODELS.
- * SIX SINGLE PHASE MODELS.
- * FOUR THREE PHASE MODELS.
- * MAXIMUM WATER TEMPERATURES UP TO 110°C (MAXIMUM HOT WATER SERVICE TEMPERATURE 65°C).



PERFORMANCE CURVES

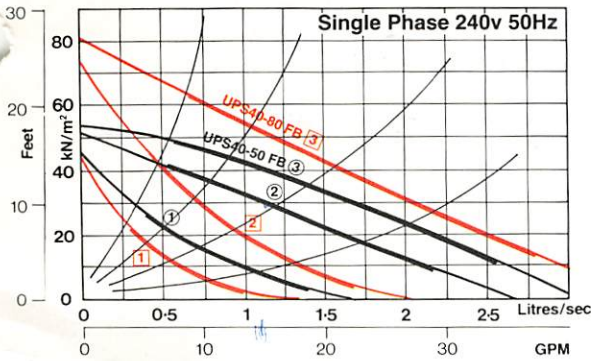


ELECTRICAL DATA

MODEL	R.P.M.	INPUT POWER WATTS	FULL LOAD CURRENT AMPS 1 × 240 VOLT	LOCKED ROTOR CURRENT AMPS
UP20-07N	2550	75	0.32	0.43
UP20-15N	2350	80	0.34	0.42
UP20-30N	1900	90	0.34	0.43
UP20-45N	2700	115	0.48	0.97
MODEL	R.P.M.	INPUT POWER WATTS	FULL LOAD CURRENT AMPS 3 × 415 VOLT	LOCKED ROTOR CURRENT AMPS
UP20-30N	1950	105	0.18	0.28
UP20-45N	2750	120	0.27	0.90

Capacitor Rating: UP20-07N, UP20-15N, UP20-30N - 2µF, UP20-45N - 3µF

UPS 40-50 FB and UPS 40-80 FB

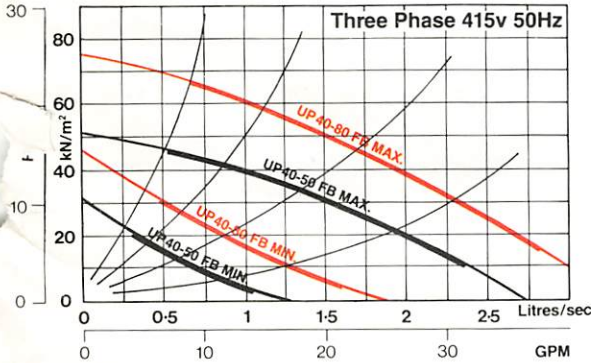


ELECTRICAL DATA

MODEL	R.P.M.	INPUT POWER WATTS	FULL LOAD CURRENT AMPS 1 × 240 VOLT	LOCKED ROTOR CURRENT AMPS
UPS40-50FB ③	2400	140	0.62	0.93
②	1650	125	0.57	0.66
①	1050	80	0.39	0.43
UPS40-80FB ③	2450	250	1.00	1.52
②	1700	215	0.91	1.10
①	1100	145	0.62	0.70

Capacitor Rating: UPS40-50FB – 3µF UPS40-80FB – 5µF

UP 40-50 FB and UP 40-80 FB

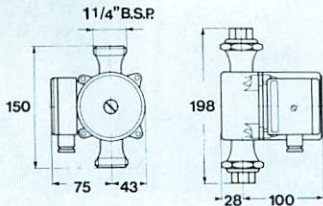


ELECTRICAL DATA

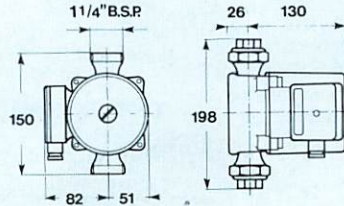
MODEL	R.P.M.	INPUT POWER WATTS	FULL LOAD CURRENT AMPS 3 × 415 VOLT	LOCKED ROTOR CURRENT AMPS
UP40-50FB	2700	160	0.29	0.86
UP40-80FB	2650	280	0.50	1.30

DIMENSIONS AND WEIGHTS

UP20-07N, UP20-15N, UP20-30N (1 × 240V)



UP20-45N (1 × 240V)

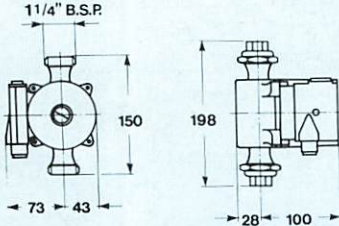


WEIGHTS AND VOLUME

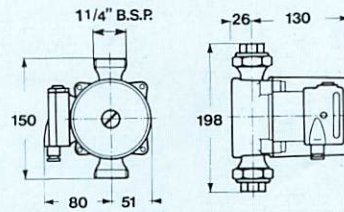
UP20-07N, UP20-15N, UP20-30N (1 × 240V)

Net Weight [kgs]	2,1
Gross Weight [kgs]	2,3
Shipping Volume [m ³]	0,0040

UP20-30N (3 × 415V)



UP20-45N (3 × 415V)



WEIGHTS AND VOLUME

UP20-45N (1 × 240V)

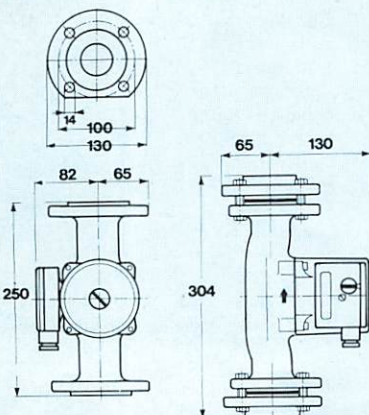
Net Weight [kgs]	4,0
Gross Weight [kgs]	4,3
Shipping Volume [m ³]	0,0080

WEIGHTS AND VOLUME

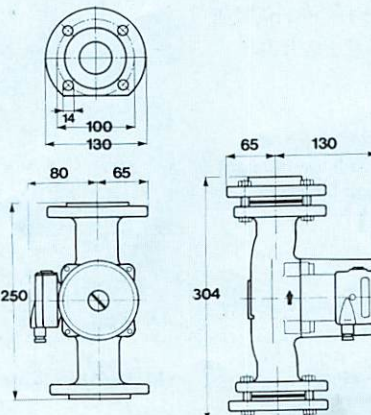
UP20-30N (3 × 415V)

Net Weight [kgs]	2,1
Gross Weight [kgs]	2,3
Shipping Volume [m ³]	0,0040

UPS40-50FB, UPS40-80FB



UP40-50FB, UP40-80FB



WEIGHTS AND VOLUME

UP20-45N (3 × 415V)

Net Weight [kgs]	4,0
Gross Weight [kgs]	4,3
Shipping Volume [m ³]	0,0080

WEIGHTS AND VOLUME

UPS40-50FB, UPS40-80FB

Net Weight [kgs]	8,4
Gross Weight [kgs]	8,8
Shipping Volume [m ³]	0,0122

WEIGHTS AND VOLUME

UP40-50FB, UP40-80FB

Net Weight [kgs]	8,6
Gross Weight [kgs]	9,0
Shipping Volume [m ³]	0,0122

TECHNICAL DATA

UP/UPS

APPLICATIONS

These models are suitable for hot water service applications. They are not suitable for chilled water or pressure boosting duties.

MOTOR DATA

Standard voltages available are 240V 1-phase 50Hz and 415V 3-phase 50Hz.

Motor enclosure class is: IP42 single phase; IP40 three phase.

Winding insulation is to Class F on all models.

Cable connection: A Pg compression gland is fitted as standard on all terminal boxes to enable direct cable connection without the need for additional fittings.

Single and three phase motors: PG11 compression gland.

MOTOR PROTECTION

All single phase models have internal motor protection by either thermal overload or impedance protection. Therefore no external motor protection is required for single phase motors.

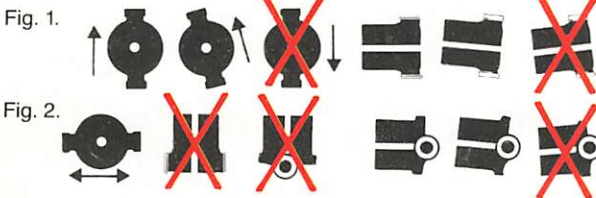
Three phase models must be connected to a contactor starter incorporating low voltage release, overload protection and a single phasing prevention device.

INSTALLATION

It is preferable to install Grundfos circulators in a vertical pipe pumping upwards (see Fig. 1).

This position ensures that the pump shaft is horizontal, which reduces the thrust bearing load and ensures positive air purging from both the rotor chamber and impeller housing.

Pumping downwards in a vertical pipe is not recommended, as this may lead to air locking of the pump, with resultant loss of performance.



Where pumps can only be installed in horizontal pipework, it is imperative that the pump shaft is horizontal, or slightly higher at the vent plug end (see Fig. 2). The shaft must not fall below the horizontal plane, even by a few degrees, as this causes premature wear of the top bearing and shaft. Pumps must never be installed with the shaft in a vertical plane, as this may lead to dry running of the top bearing, noise and possible pump failure.

MAXIMUM OPERATING CONDITIONS

All UP20N models are rated for a maximum system pressure of 10 Bar (145 psi). All UP/UPS40FB models are suitable for a maximum system pressure of 6 Bar (85 psi).

Maximum water temperature range: +15° to 110°C.
Practical limit for H.W.S.: +15° to 65°C.

To avoid condensation in the motor windings the pumped liquid temperature must always be higher than the ambient temperature.

MAXIMUM PERMISSIBLE OPERATING TEMPERATURES

System Water Temperature °C	110	105	100	90	80
Ambient Temperature °C	40	50	60	70	80

The minimum inlet pressure at 65°C should be 1.1m for UP20N models and 2.1m for UP/UPS40FB models. At 90°C, UP20N models require 1.5m and UP/UPS40FB models 2.5m.

FLOW ADJUSTMENT

The UP20-07N, UP20-15N, UP20-30N, and UP20-45N single and three phase units are fixed flow pumps in accordance with the relevant hydraulic curves i.e. for a pre-determined resistance one flow rate is available.

GRUNDFOS PUMPS LTD

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Northern Area Sales Office: Gawsworth Court, Risley Road, Risley, Warrington, Cheshire WA3 6NJ. Telephone (0925) 813300. Telex 628162. Facsimile (0925) 830014.

South East Service Depot: Unit 13a, Dartford Trade Park, Powder Mill Lane, Dartford, Kent DA1 1NX. Telephone (0322) 92422. Facsimile (0322) 91025.

The UPS40-50FB and UPS40-80FB are both single phase three speed pumps with a speed selector switch. Flow adjustment is made by selecting the appropriate speed for the duty required.

The UP40-50FB and UP40-80FB are both three phase single speed pumps. On the bottom of the pump case there is a mechanical flow adjuster with five settings. It is recommended that the pump be started with the flow on minimum.

SITING THE PUMP

- To avoid sediment, do not fit the pump in lowest point of system.
- Fit isolating valves on either side of the pump.
- To prevent noise, avoid sharp bends either side of the pump.
- Position the motor away from heat sources and allow access for removing pump head from base.
- Always try to ensure that the terminal box is not adjacent to hot surfaces. On UPS models the selector switch should be readily available for adjustment of pump speed.
- In open-vented systems, position the pump so that it neither pumps over into feed/expansion tank, nor sucks air down the vent pipe. Generally this means fitting the pump in the flow pipe, with the vent on the inlet side of the pump.
- In sealed systems, the pump can be fitted in flow or return pipes as required.
- In systems where all the flow can be stopped while the pump is still running, e.g. systems fitted with thermostatic valves, a by-pass should be fitted between flow and return lines to ensure water flow through the pump at all times (approx. 7.5% of maximum pump capacity).
- Ensure the pump is not stressed by the pipework and that the pipework is properly supported either side of the pump.

SUCTION/DISCHARGE PIPE CONNECTIONS

Model	Pump Connection	Pipe Connection
UP20-07N, UP20-15N UP20-30N, UP20-45N	1 1/4" B.S.P.M.	3/4" BSPF Unions – 22mm compression valves optional extra
UPS40-50FB, UPS40-80FB UP40-50FB, UP40-80FB	Flange to BS 4504: 1969 table 6/11 N.B. 40mm	1 1/2" BSPF Counter Flange to BS 4504: 1969 table 6/4

TYPE DESIGNATION

Type	UPS	40	50	FB
UP 2 pole single speed circulator	—	—	—	—
UPS 2 pole three speed circulator	—	—	—	—
Type Range	_____			
Nominal closed valve head kN/m ²	_____			
Pump Case Construction:	_____			
FB Bronze flanged connection	_____			
N Stainless Steel threaded connection	_____			

MATERIAL SPECIFICATION

Pump Housing:	Stainless Steel or Bronze	BS 1449 304 S15
Stator Housing:	Aluminium Alloy	
Shaft:	Ceramic	
Split Cone:	Stainless Steel	BS 1449 304 S15
Neck Ring:	Stainless Steel	BS 1449 304 S15
Rotor Can:	Stainless Steel	BS 1449 304 S15
Rotor Cladding:	Stainless Steel	BS 1449 304 S15
'O' Rings:	EPDM Rubber	
Radial Bearings:	Ceramic	
Axial Bearing:	Carbon	

It is the continuing policy of Grundfos to develop and improve our products, and we reserve the right to amend prices and specification without prior notice.

UP/UPS HWS 4/89

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