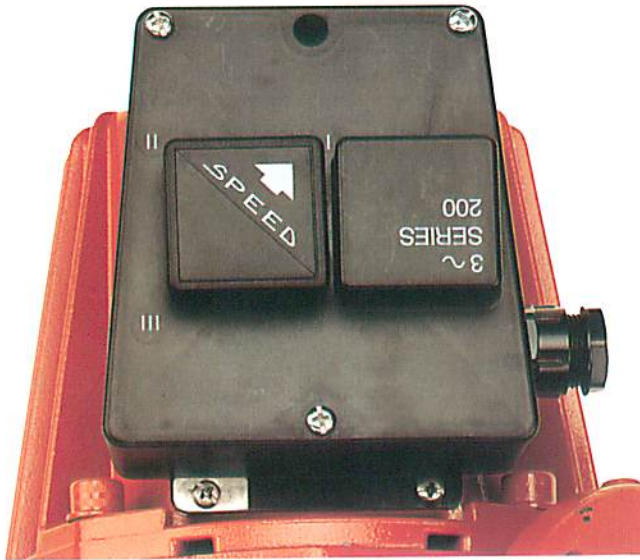


TECHNICAL DATA

UMC/UPC

MULTI SPEED SELECTION

Each pump head has a built-in speed selector on the motor terminal box. The speed and performance of the pump head is altered by pulling out the speed switch (this disconnects the power to the motor) and turning the switch to the required speed as indicated by the arrow printed on the switch, and then press back into position.



DP/DPD CONSTANT PRESSURE CONTROLLER

By utilising the DP222 for single head or the DPD222 for twin head models, in conjunction with the DPT pressure transducer included, all UMC(D)/UPC(D) models, (with the exception of model UPC(D)80-120) can be speed controlled.

For further details please refer to the relevant sales literature for DP/DPD Controller.

When using the DP/DPD222 with single phase UMC(D)/UPC(D) models the relay/relays must be removed and replaced with block plugs, as supplied.



UPE SERIES 2000 CIRCULATORS

The UPE 2000 series of heating circulator pumps have been designed to operate on a constant pressure principle without the need for an external controller.

For further details please refer to the relevant sales literature for UPE Series 2000 pumps.



MATERIAL SPECIFICATION

Pump Base	Cast Iron BS1452 Grade 180 Bronze (HWS)
Pump Head	Aluminium Alloy
Shaft	Stainless Steel
Impeller	Stainless Steel BS1449 304 S15
Impeller Nut	Stainless Steel BS1449 304 S15
Neck Ring	Stainless Steel BS1449 304 S15
Rotor Can	Stainless Steel BS1449 304 S15
Rotor Cladding	Stainless Steel BS1449 304 S15
'O' Rings	EPDM Rubber
Shaft Bearings	Tungsten Carbide CG40
Top Bearing	Ceramic
Bottom Bearing	Ceramic
Thrust Bearing	Carbon
Bearing Plate	Stainless Steel BS1449 304 S15

SUCTION/DISCHARGE PIPE CONNECTIONS

MODEL	COUNTER FLANGES (Cast Iron Models)
UPC(D) 40	BS4504 : 1969 table 6/4 N.B. 1½" B.S.P.
UPC(D) 40	BS4504 : 1969 table 6/4 N.B. 1½" B.S.P. opened out to 2" B.S.P. and the flange is suitable for maximum 4 bar.
UMC(D) 50	BS4504 : 1969 table 6/4 N.B. 2" B.S.P.
UPC(D) 50	BS4504 : 1969 table 6/4 N.B. 2" B.S.P.
UMC(D) 65	BS4504 : 1969 table 6/4 N.B. 2½" B.S.P.
UPC(D) 65	BS4504 : 1969 table 6/4 N.B. 2½" B.S.P.
UMC(D) 80	BS4505 : 1969 table 6/4 N.B. 3" B.S.P.
UPC(D) 80	BS4504 : 1969 table 6/4 N.B. 3" B.S.P.
UMC(D) 100	BS4504 : 1969 table 6/4 N.B. 4" B.S.P.

Counter flanges for bronze HWS models should be suitable for 10 Bar rating. These flanges are not available from Grundfos.

TYPE DESIGNATION

TYPE DESIGNATION	UMC	(D)	50	-	60
UMC 4 pole 3 speed circulator	_____	_____	_____	_____	_____
UPC 2 pole 3 speed circulator	_____	_____	_____	_____	_____
UMCD 4 pole twin head pump	_____	_____	_____	_____	_____
UPCD 2 pole twin head pump	_____	_____	_____	_____	_____
Nominal diameter for suction and discharge ports in mm	_____				
Nominal closed valve head in KPA	_____				

GRUNDFOS PUMPS LTD

Southern Area: Grovebury Road, Leighton Buzzard, Beds. LU7 8TL.
Tel: 01525 850000/775200. Fax: 01525 850011.

Northern Area: Gawsworth Court, Risley Road, Risley, Warrington, Cheshire WA3 6NJ. Tel: 01925 813300. Fax: 01925 830014.

Scotland & N. Ireland: Fleming Road, Kirkton Campus, Livingston, West Lothian, Scotland EH54 7BN. Tel: 01506 461666. Fax: 01506 461555.

Wales & South West: Celtic Lakes, Newport, Gwent NP1 9UH.
Tel: 01633 811817. Fax: 01633 811818.

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.

UMC/UPC 5/95

GRUNDFOS 

MOTOR DATA

Motor enclosure to IP24 drip proof. The winding insulation is suitable for a maximum temperature rise of 35°C or 50°C. This information is stamped on the pump nameplate. Each model is fitted with a PG16 compression gland in the terminal box to facilitate cable entry. Other compression glands are fitted for capacitor wires on single phase models as required.

MOTOR PROTECTION

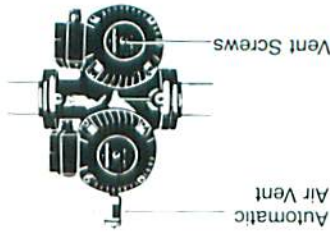
1. In accordance with IEE Wiring Regulations, the electric motors must be connected to contactor type starters.
 2. All contactor type starters must incorporate no voltage release overload protection, and for three phase motors failure protection (single phase prevention). The overloads should be set to trip out at 10% above the motor full load current.
 3. All motors have built-in thermal overload protection. Single phase motors are fitted with a relay, connected in circuit with the thermal overload in the motor and this will cut off the electrical supply to the motor in the event of overload. The built-in thermal overload on three phase motors should be connected in series with the coil circuit of a contactor starter fitted to the incoming electrical supply for the motor.
 4. The thermal overload will protect the motor on installations where automatic speed changing is incorporated. Resetting the motor overloads in the contactor starter may prove to be impractical for installations where speed changing is required.

SITING THE PUMP

1. To avoid sediment, do not fit the pump in the lowest part of the system.
 2. It is advisable to fit isolating valves either side of the pump.
 3. If a balancing valve is required to govern the back pressure in the system a separate lockable/temperatureproof valve should be fitted in addition to the isolating valves.
 4. To prevent noise avoid sharp bends either side of the pump.
 5. Position the motor away from heat sources and allow access for removing pump head from base and terminal box from the head.
 6. Always try to ensure that the terminal box is not adjacent to hot surfaces.
 The selector switch should be easily accessible for adjustment of pump speed.

7. In open-vented systems position the pump so that it neither pumps over into the feed and expansion tank, nor causes air to be drawn down the vent pipe. Generally, this means fitting the pump in the flow pipe with the vent on the inlet side of the pump.
 8. In sealed systems the pump can be fitted in either flow or return pipes as required. However, the pressurisation unit should be connected to the system on the inlet side of the pump to minimise the possibility of cavitation.
 9. In systems where all the flow can be stopped while the pump is running, e.g. in systems fitted with thermostatic radiator valves, a bypass should be fitted between flow and return pipes, to ensure water flow through the boiler and pump at all times. (Approx 75% of maximum pump capacity).
 10. Ensure that the pump is not stressed by the pipework and that the pipework is properly supported either side of the pump. If necessary use proprietary mounting brackets.

When connecting the pump to the pipework or to valves the gasket and flange should be assembled dry. It is not necessary to use proprietary sealants. Ensure that the gasket is correctly positioned and tighten the flange bolts firmly. Do not overtighten and take care not to displace or distort the gasket.
MINIMUM INLET PRESSURE
 Minimum pressure required at pump inlet during operation on speed 3 to ensure satisfactory bearing life and to avoid cavitation.
 The speed 3 value can be reduced to 75% if the pump is operated on speed 2, e.g. UPC40-60 at 82°C requires a minimum inlet pressure of 3.0m for speed 3. This can be reduced to (3 x 0.75) = 2.25m for speed 2.
 For twin head models installed in horizontal pipes it is recommended that an automatic air vent (1/8 inch BSP) is fitted as shown.

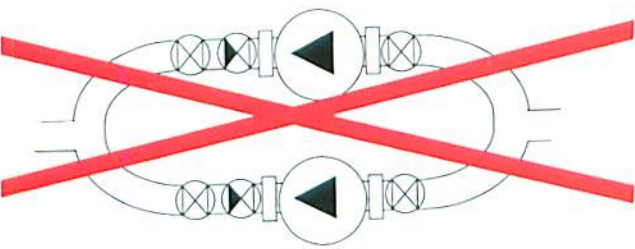
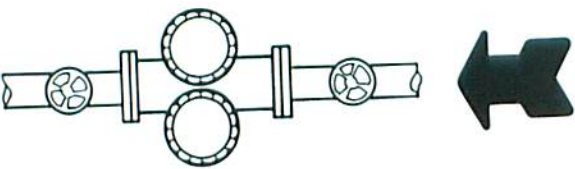


TWIN HEAD MODELS

Water Temp 82°C	3.0m	5.0m	7.0m
Water Temp 95°C	6.25m	8.25m	10.25m
Water Temp 120°C	17.5m	19.5m	21.5m
UPC(D)40-60	UPC(D)40-120	UPC(D)80-60	UPC(D)65-120
UPC(D)50-120	UPC(D)80-120	UMC(D)65-60	UMC(D)100-60

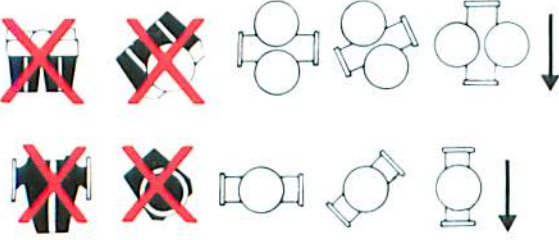
ADVANTAGES OF GRUNDOS TWIN HEAD PUMPS

Grundos Twin Head pumps provide a neat, compact and space saving installation where duty and standby operation is required, while only taking up the identical flange to flange space of its single head counterpart (see diagram). A built-in non-return valve in the pump discharge port prevents reverse circulation through the stationary pump and obviates the need for manual valve opening or closing. When the duty pump is switched off and the standby pump is brought into use, the non-return valve will automatically change its position. This design eliminates unnecessary isolating and non-return valves, yet still enables pump head replacement to be carried out in a matter of minutes without serious interruption to the operation of the heating system. Blanking flanges can be supplied for this purpose at a small extra cost.



INSTALLATION

It is preferable to install Grundos circulators in a vertical pipe pumping upwards.
 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. However, pumping downwards is acceptable, (except on HWS applications), provided an effective air vent is incorporated in the system before the pump.
 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.
 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 not 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.



OPERATING

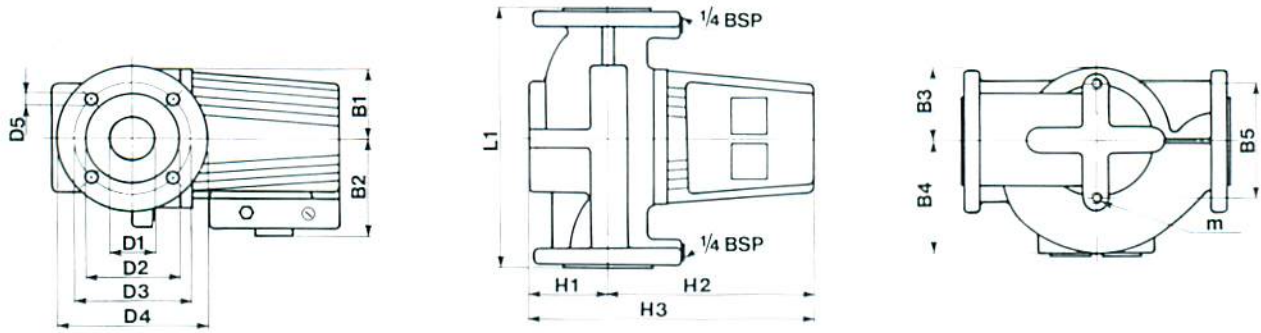
All heating models are suitable for maximum system pressures of 6 Bar (85 psi). UPC40 pumps with 2" flanges have a 4 bar rating. Water temperature range: +15°C to +120°C. Bronze models are suitable for maximum system pressure of 10 Bar (145psi).
 * To avoid condensation in the motor windings the pumped liquid temperature must always be higher than the ambient temperature. For chilled water applications the UMT/UPT range are recommended.

Maximum Permissible Operating Temperatures	85	90	100	50	60	65
System Water Temp °C	120	110	100	40	50	60
Air Temp °C	30	120	110	30	40	50



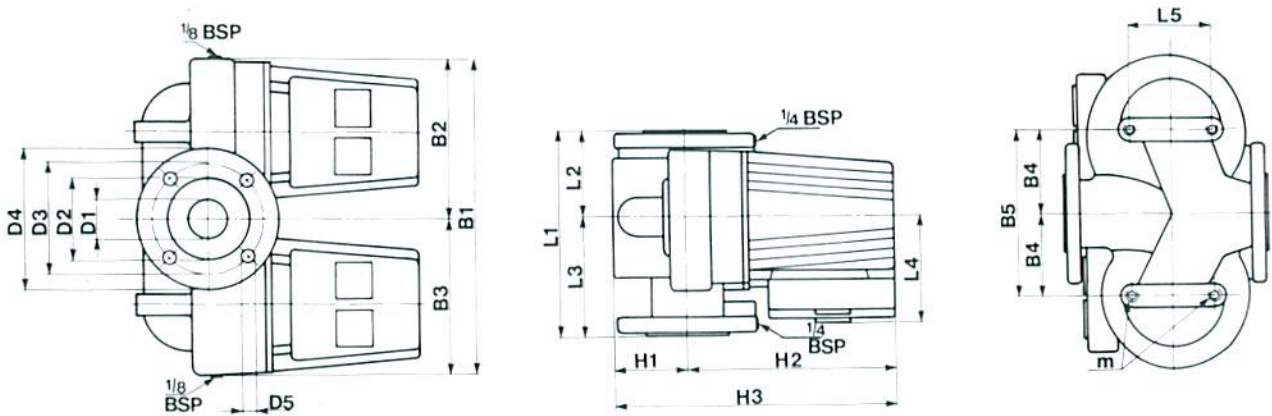
Please note that all information provided in this leaflet relating to pump installation is for guidance at the system design stage. When installing pumps, it is imperative to refer to the installation instructions provided with the pump.

DIMENSIONS AND WEIGHTS



SINGLE HEAD PUMPS UMC/UPC

Pump Model	Dimensions (mm)															Weight		Volume m ³	
	D1	D2	D3	D4	D5	No	H1	H2	H3	L1	B1	B2	B3	B4	B5	m	Net kg		Gross kg
UPC40-60	42	80	100	130	14	4	67	221	288	250	73	129	73	90	96	M12	14.5	17.3	0.034
UPC40-60FB	42	88	110	150	18	4	67	221	288	250	73	129	73	90	96	M12	15.0	17.8	0.034
UPC40-120	42	80	100	130	14	4	67	221	288	250	73	129	73	90	96	M12	15.5	18.3	0.034
UPC40-120FB	42	88	110	150	18	4	67	221	288	250	73	129	73	90	96	M12	16.0	18.8	0.034
UMC50-60	50	90	110	140	14	4	75	210	285	280	91	144	91	104	96	M12	22.0	24.8	0.034
UMC50-60FB	50	102	125	165	18	4	75	210	285	280	91	144	91	104	96	M12	22.5	25.3	0.034
UPC50-120	50	90	110	140	14	4	75	210	285	280	91	144	91	104	96	M12	22.5	25.3	0.034
UPC50-120FB	50	102	125	165	18	4	75	210	285	280	91	144	91	104	96	M12	23.0	25.8	0.034
UMC65-50	65	110	130	160	14	4	82	262	344	340	98	144	98	124	96	M12	29.0	32.6	0.053
UMC65-50FB	65	122	145	185	18	4	82	262	344	340	98	144	98	124	96	M12	30.0	33.6	0.053
UPC65-120	65	110	130	160	14	4	82	262	344	340	98	144	98	124	96	M12	30.0	33.6	0.053
UPC65-120FB	65	122	145	185	18	4	82	262	344	340	98	144	98	124	96	M12	31.0	34.6	0.053
UMC80-60	80	128	150	190	18	4	97	264	361	360	102	144	102	130	96	M12	35.0	38.6	0.053
UMC80-60FB	80	138	160	200	18	4	97	264	361	360	102	144	102	130	96	M12	36.0	39.6	0.053
UPC80-120	80	128	150	190	18	4	97	264	361	360	102	144	102	130	96	M12	36.0	39.6	0.053
UPC80-120FB	80	138	160	200	18	4	97	264	361	360	102	144	102	130	96	M12	37.0	40.6	0.053
UMC100-60	100	128	170	210	18	4	107	304	411	450	123	144	123	167	144	M16	44.0	49.9	0.110

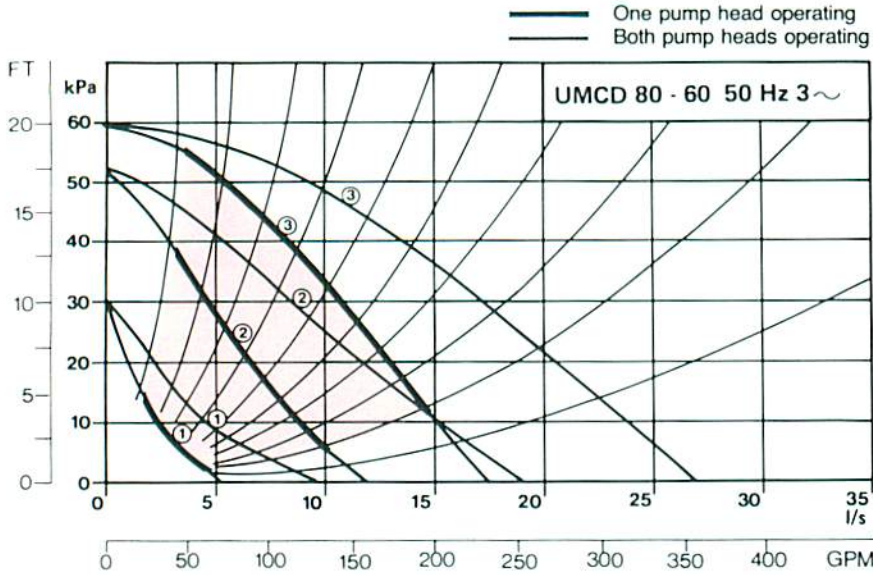


TWIN HEAD PUMPS UMCD/UPCD

Pump Model	Dimensions (mm)																	Weight		Volume m ³			
	D1	D2	D3	D4	D5	No	H1	H2	H3	L1	L2	L3	L4	L5	B1	B2	B3	B4	B5		m	Net kg	Gross kg
UPCD40-60	42	80	100	130	14	4	68	221	289	250	99	151	129	96	364	184	180	100	200	M12	27.5	31.8	0.061
UPCD40-120	42	80	100	130	14	4	68	221	289	250	99	151	129	96	364	184	180	100	200	M12	29.5	33.8	0.061
UMCD50-60	50	90	110	140	14	4	76	210	286	280	120	160	144	120	440	220	220	120	240	M12	42.0	46.3	0.061
UPCD50-120	50	90	110	140	14	4	76	210	286	280	120	160	144	120	440	220	220	120	240	M12	43.0	47.3	0.061
UMCD65-50	65	110	130	160	14	4	84	262	346	340	140	200	144	120	455	231	224	120	240	M12	53.0	58.4	0.095
UPCD65-120	65	110	130	160	14	4	84	262	346	340	140	200	144	120	455	231	224	120	240	M12	54.0	59.4	0.095
UMCD80-60	80	128	150	190	18	4	98	264	362	360	145	215	144	120	464	236	228	120	240	M12	59.0	64.4	0.095
UPCD80-120	80	128	150	190	18	4	98	264	362	360	145	215	144	120	464	236	228	120	240	M12	61.0	66.4	0.095
UMCD100-60	100	128	170	210	18	4	108	304	412	450	189	261	144	144	560	286	274	140	280	M16	80.0	87.7	0.172

TWIN HEAD MODELS

3 × 415V 50Hz

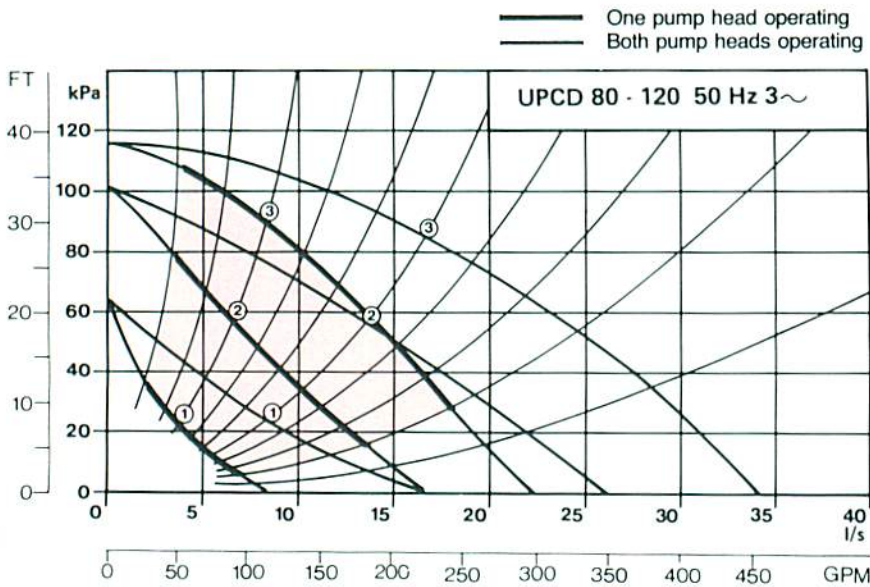


ELECTRICAL DATA

Speed	R.P.M.	Input Power Watts	Full Load Current Amps 3 x 415V
③	1380	950	2.14
②	1050	575	1.03
①	610	245	0.46

Maximum permissible power consumption: All models are suitable for the values shown plus 10% overload.

Pump selection should be within the shaded area for optimum performance.

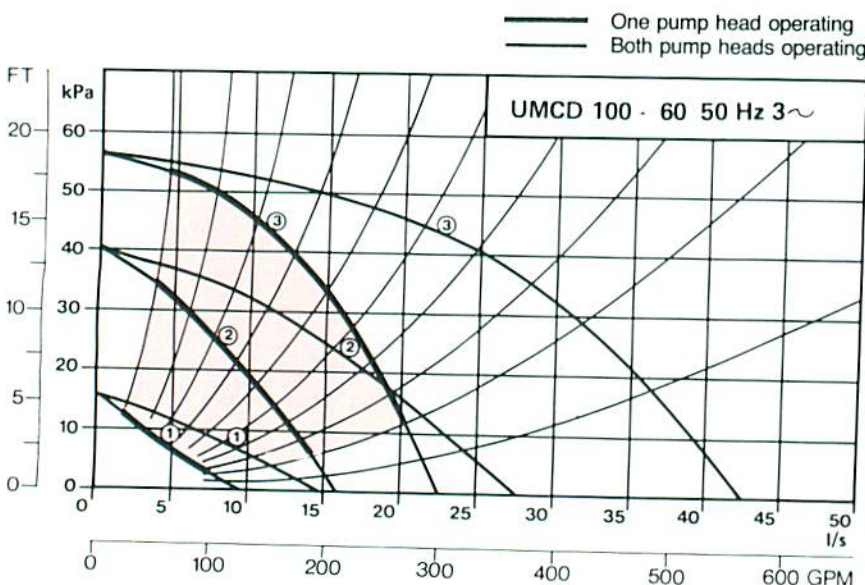


ELECTRICAL DATA

Speed	R.P.M.	Input Power Watts	Full Load Current Amps 3 x 415V
③	2800	2020	3.51
②	2250	1385	2.22
①	1420	665	1.12

Maximum permissible power consumption: All models are suitable for the values shown plus 10% overload.

Pump selection should be within the shaded area for optimum performance.



ELECTRICAL DATA

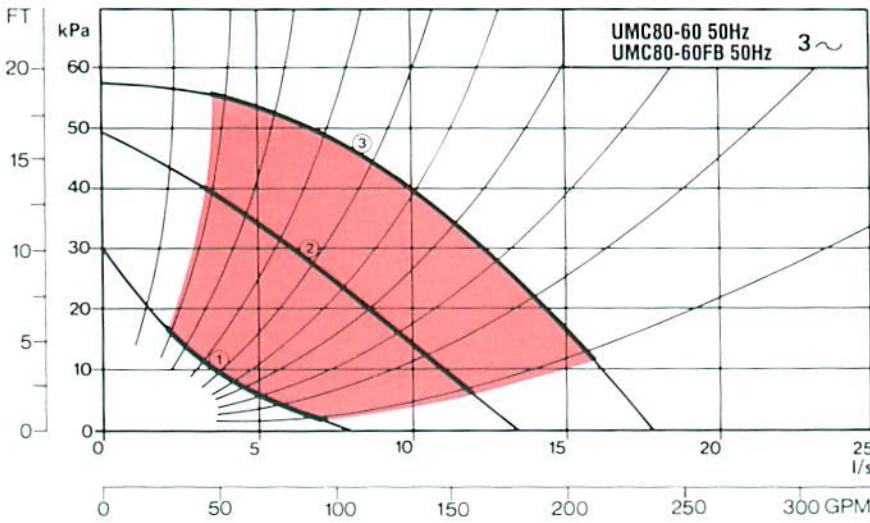
Speed	R.P.M.	Input Power Watts	Full Load Current Amps 3 x 415V
③	1360	1370	2.90
②	980	780	1.39
①	560	315	0.59

Maximum permissible power consumption: All models are suitable for the values shown plus 10% overload.

Pump selection should be within the shaded area for optimum performance.

SINGLE HEAD MODELS

3 × 415V 50Hz



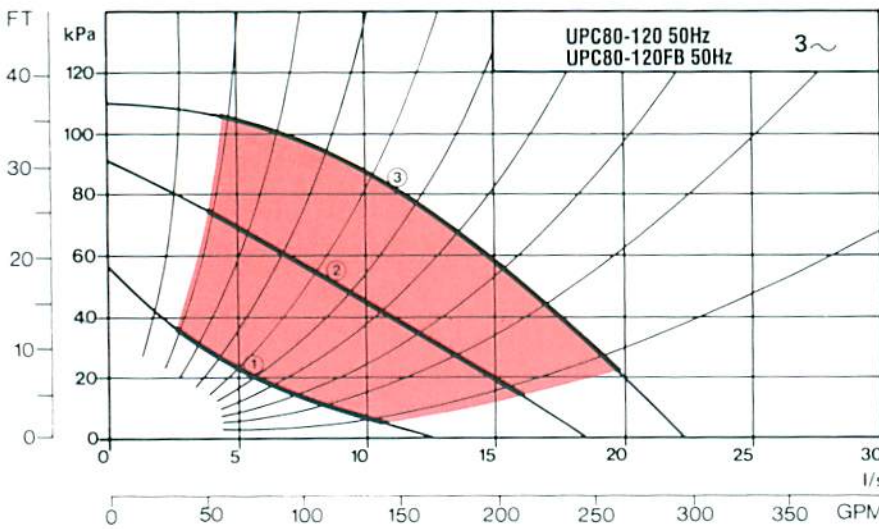
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Maximum permissible power consumption:
All models are suitable for the values shown plus 10% overload.

This model is available in bronze for HWS applications

Pump selection should be within the shaded area for optimum performance.



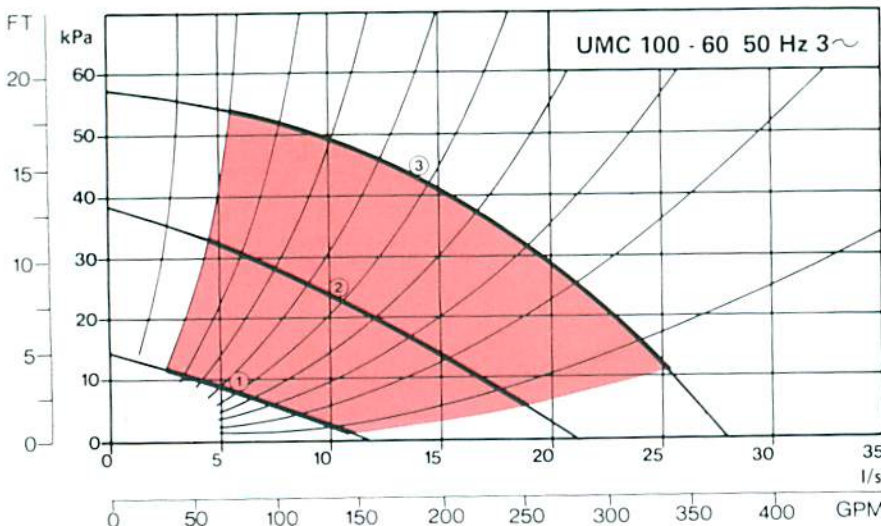
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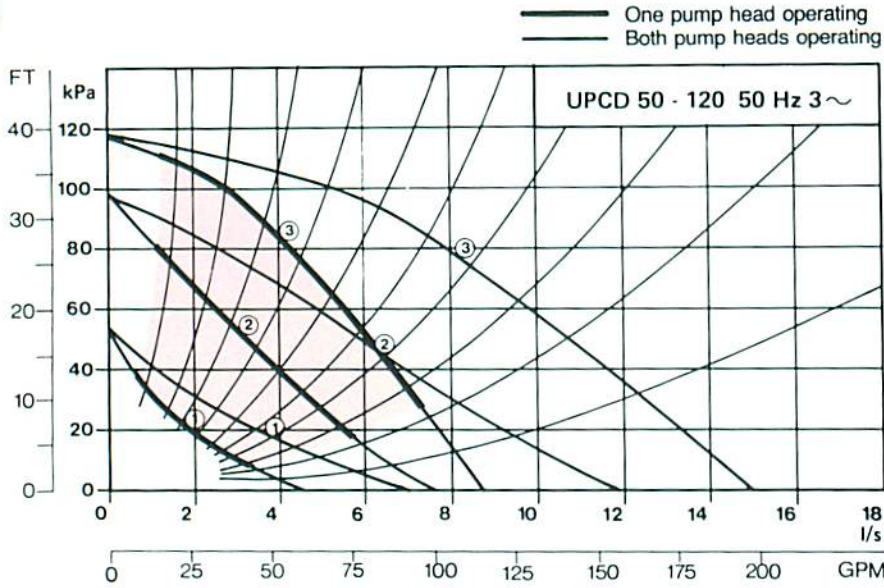
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TWIN HEAD MODELS

3 × 415V 50Hz

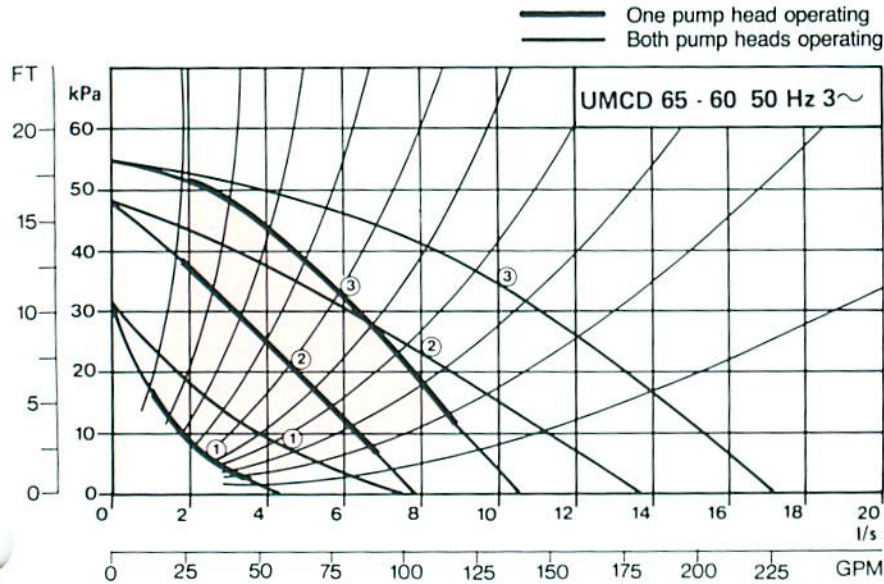


ELECTRICAL DATA

Speed	R.P.M.	Input Power Watts	Full Load Current Amps 3x 415V
③	2760	940	1.69
②	2100	590	0.98
①	1250	265	0.45

Maximum permissible power consumption:
All models are suitable for the values shown plus 10% overload.

Pump selection should be within the shaded area for optimum performance.

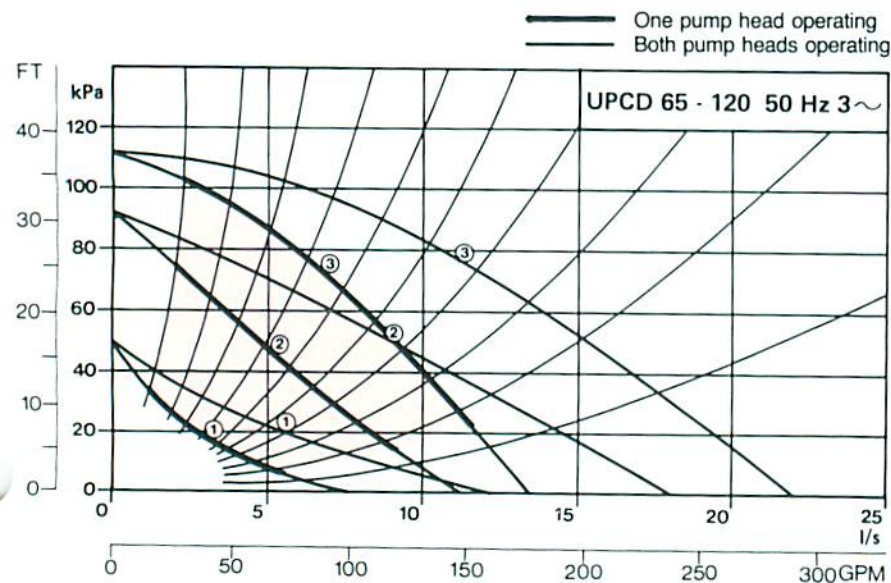


ELECTRICAL DATA

Speed	R.P.M.	Input Power Watts	Full Load Current Amps 3x 415V
③	1410	570	1.47
②	1140	370	0.64
①	680	170	0.31

Maximum permissible power consumption:
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Pump selection should be within the shaded area for optimum performance.



ELECTRICAL DATA

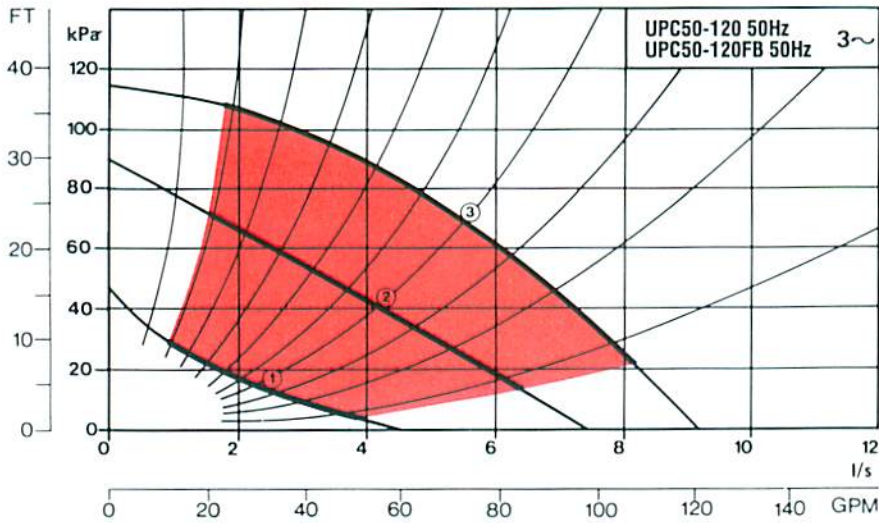
Speed	R.P.M.	Input Power Watts	Full Load Current Amps 3x 415V
③	2790	1350	2.36
②	2210	915	1.48
①	1350	430	0.72

Maximum permissible power consumption:
All models are suitable for the values shown plus 10% overload.

Pump selection should be within the shaded area for optimum performance.

SINGLE HEAD MODELS

3 × 415V 50Hz



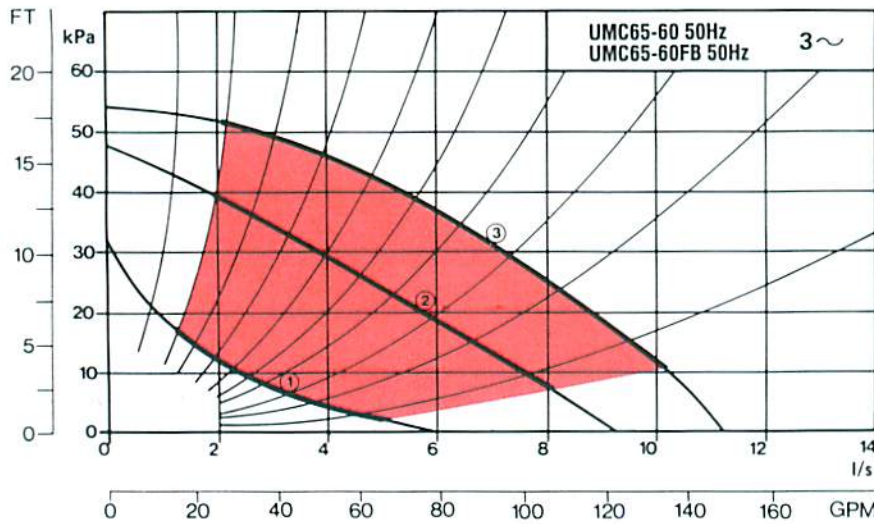
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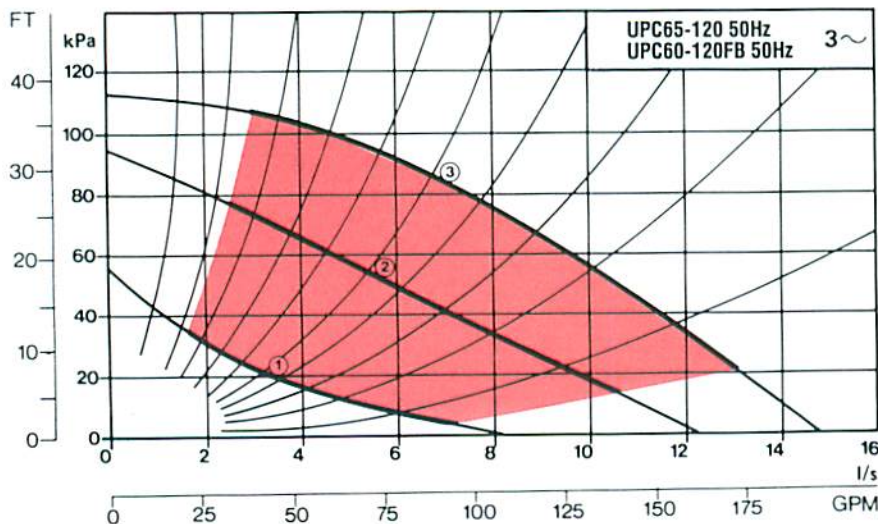
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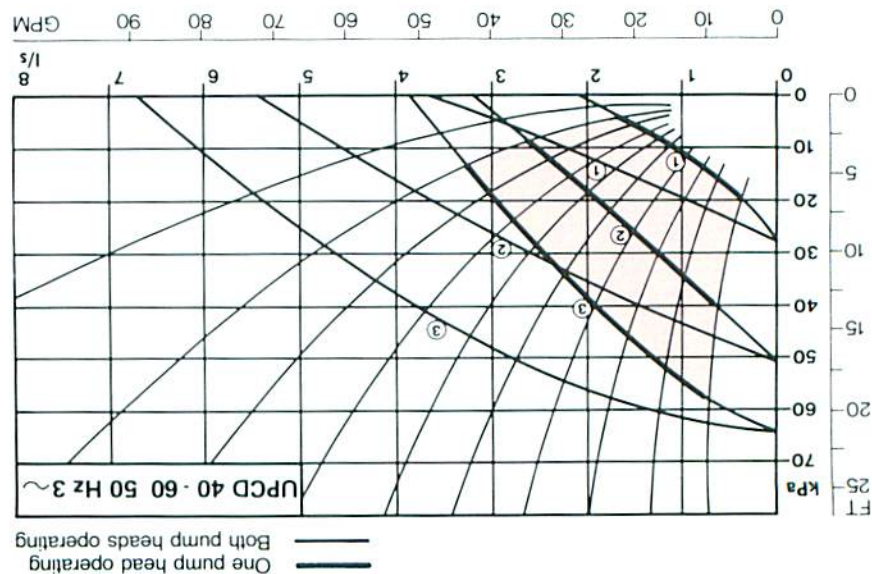
Maximum permissible power consumption:
All models are suitable for the values shown plus 10% overload.

This model is available in bronze for HWS applications

Pump selection should be within the shaded area for optimum performance.

TWIN HEAD MODELS

3 × 415V 50HZ

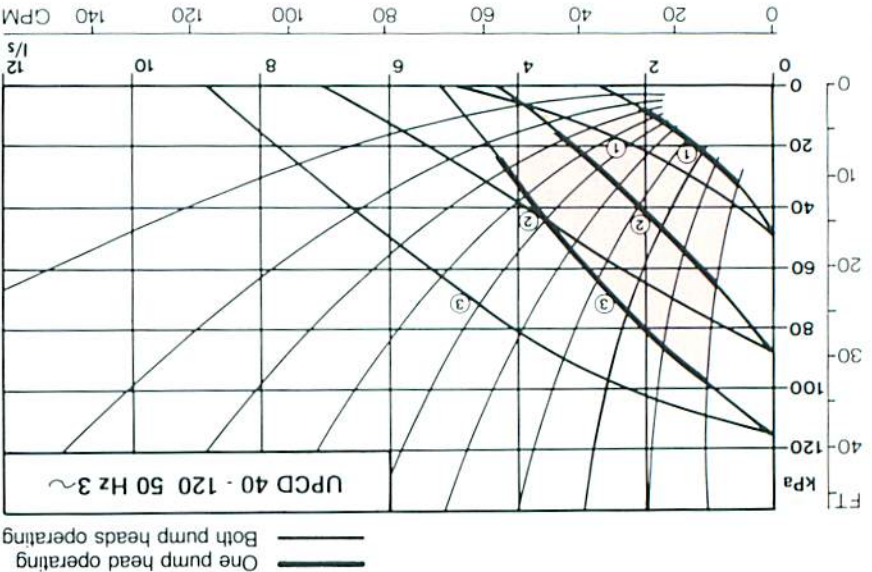


ELECTRICAL DATA

Speed	R.P.M.	Input Power Watts	Full Load Current Amps 3 x 415V
①	1440	95	0.16
②	2240	185	0.31
③	2790	290	0.64

Maximum permissible power consumption:
All models are suitable for the values shown
plus 10% overload.

Pump selection should be within the shaded area
for optimum performance.

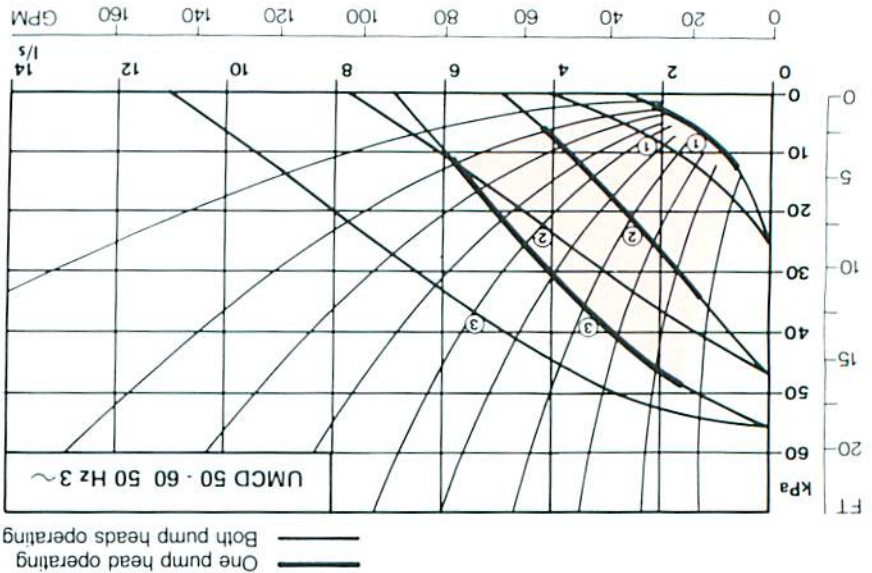


ELECTRICAL DATA

Speed	R.P.M.	Input Power Watts	Full Load Current Amps 3 x 415V
①	1270	145	0.25
②	2070	330	0.56
③	2730	545	1.03

Maximum permissible power consumption:
All models are suitable for the values shown
plus 10% overload.

Pump selection should be within the shaded area
for optimum performance.



ELECTRICAL DATA

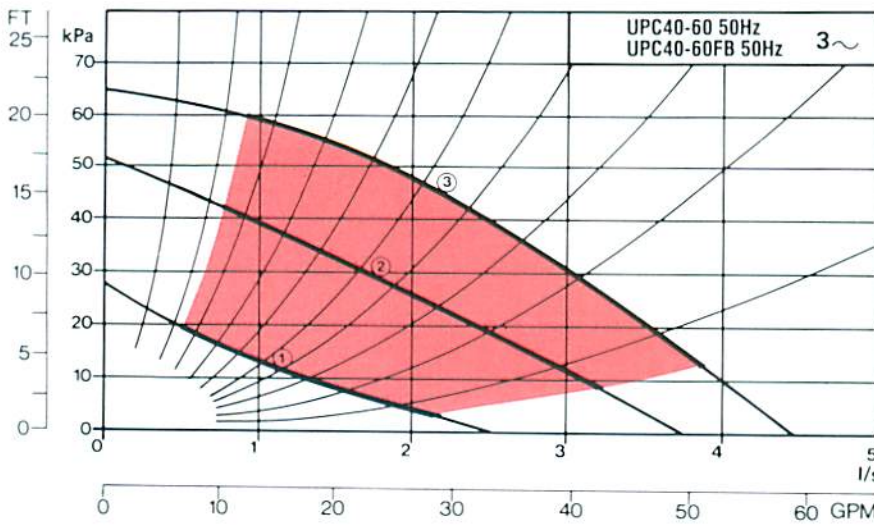
Speed	R.P.M.	Input Power Watts	Full Load Current Amps 3 x 415V
①	580	110	0.19
②	1040	255	0.44
③	1380	435	1.02

Maximum permissible power consumption:
All models are suitable for the values shown
plus 10% overload.

Pump selection should be within the shaded area
for optimum performance.

SINGLE HEAD MODELS

3 × 415V 50Hz



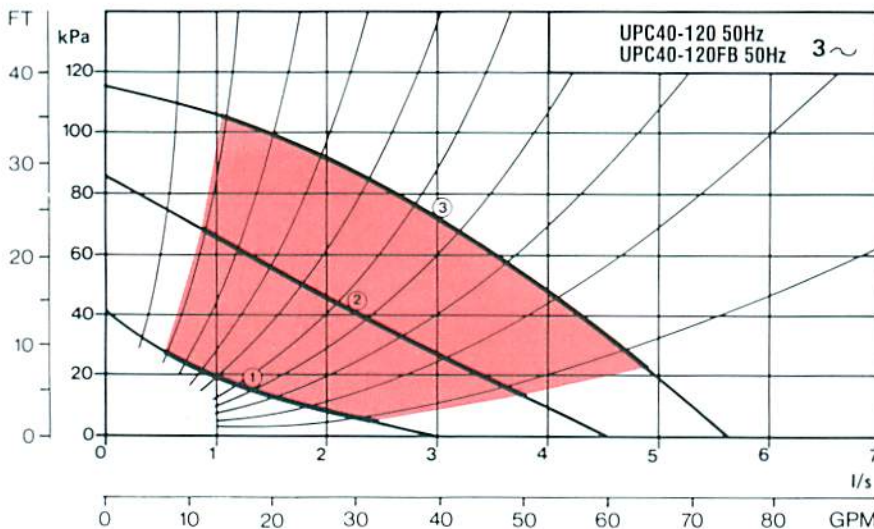
ELECTRICAL DATA

Speed	R.P.M.	Input Power Watts	Full Load Current Amps 3 x 415V
③	2790	290	0.64
②	2240	185	0.31
①	1440	95	0.16

Maximum permissible power consumption:
All models are suitable for the values shown plus 10% overload.

This model is available in bronze for HWS applications

Pump selection should be within the shaded area for optimum performance.



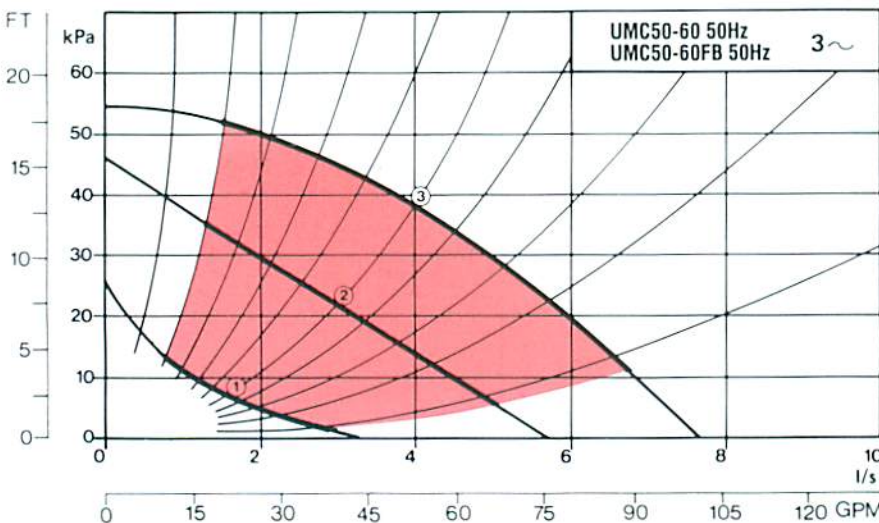
ELECTRICAL DATA

Speed	R.P.M.	Input Power Watts	Full Load Current Amps 3 x 415V
③	2730	545	1.03
②	2070	330	0.56
①	1270	145	0.25

Maximum permissible power consumption:
All models are suitable for the values shown plus 10% overload.

This model is available in bronze for HWS applications

Pump selection should be within the shaded area for optimum performance.



ELECTRICAL DATA

Speed	R.P.M.	Input Power Watts	Full Load Current Amps 3 x 415V
③	1380	435	1.02
②	1040	255	0.44
①	580	110	0.19

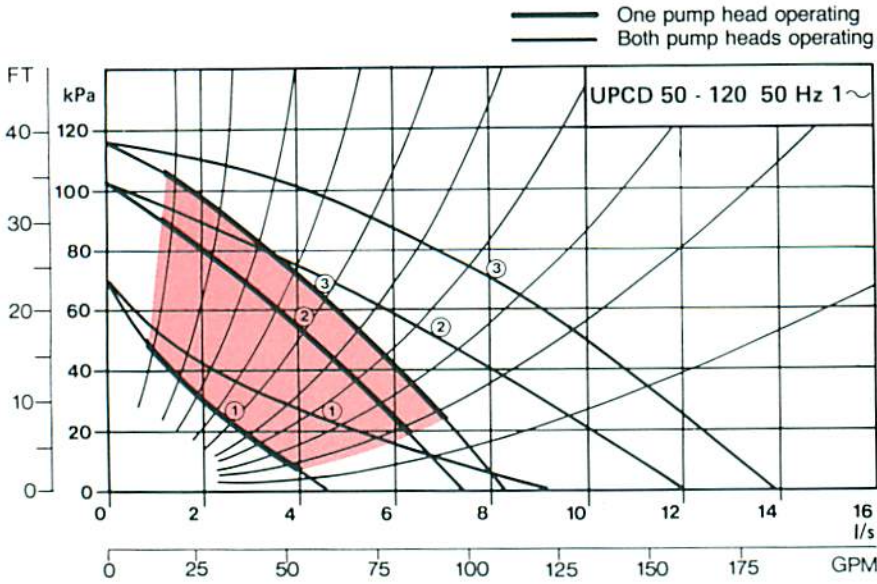
Maximum permissible power consumption:
All models are suitable for the values shown plus 10% overload.

This model is available in bronze for HWS applications

Pump selection should be within the shaded area for optimum performance.

TWIN HEAD MODELS

1 × 240V 50Hz

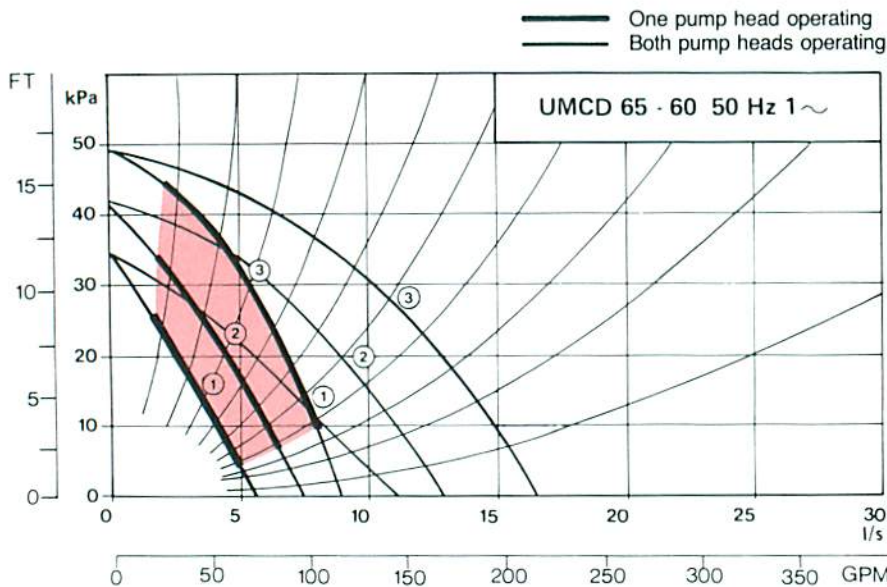


ELECTRICAL DATA

Speed	R.P.M.	Input Power Watts	Full Load Current Amps 1 x 240V	Capacitor Rating
③	2580	850	3.62	20 μ F
②	2210	775	3.48	20 μ F
①	1800	670	3.06	20 μ F

Maximum permissible power consumption: All models are suitable for the values shown plus 10% overload.

Pump selection should be within the shaded area for optimum performance.

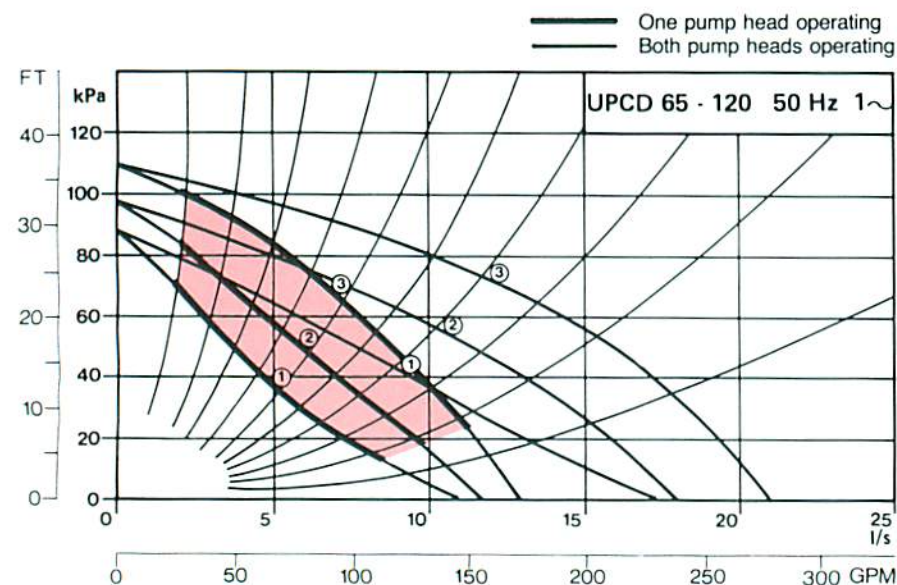


ELECTRICAL DATA

Speed	R.P.M.	Input Power Watts	Full Load Current Amps 1 x 240V	Capacitor Rating
③	1310	570	2.48	20 μ F
②	1110	430	2.19	20 μ F
①	920	335	1.68	20 μ F

Maximum permissible power consumption: All models are suitable for the values shown plus 10% overload.

Pump selection should be within the shaded area for optimum performance.



ELECTRICAL DATA

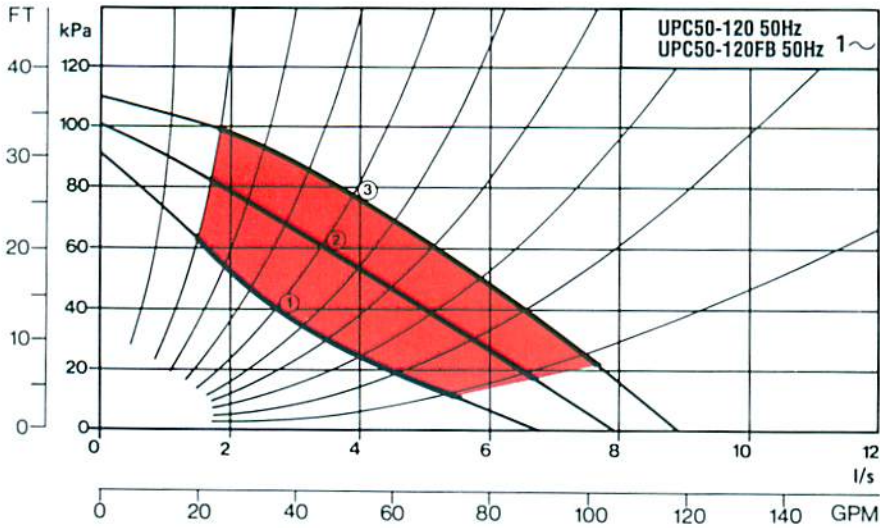
Speed	R.P.M.	Input Power Watts	Full Load Current Amps 1 x 240V	Capacitor Rating
③	2570	1190	5.14	25 μ F
②	2230	1120	5.03	25 μ F
①	1820	990	4.48	25 μ F

Maximum permissible power consumption: All models are suitable for the values shown plus 10% overload.

Pump selection should be within the shaded area for optimum performance.

SINGLE HEAD MODELS

1 × 240V 50Hz



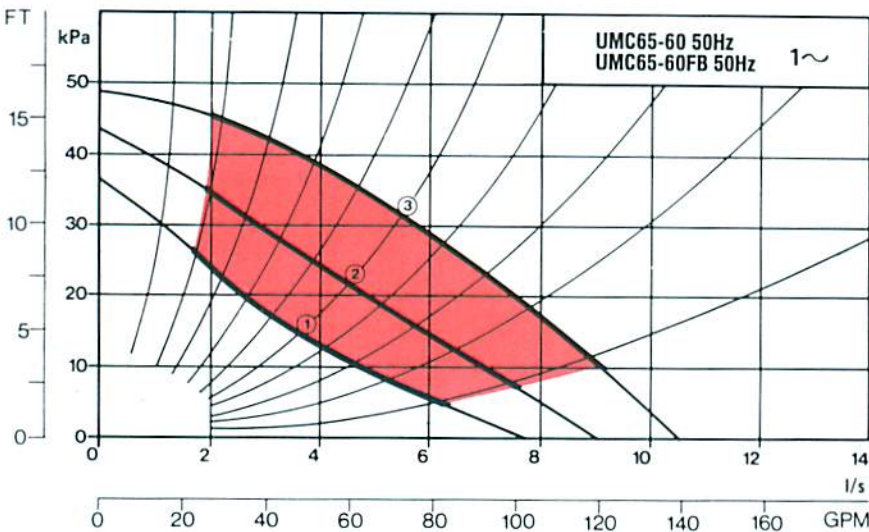
ELECTRICAL DATA

Speed	R.P.M.	Input Power Watts	Full Load Current Amps 1 x 240V	Capacitor Rating
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Maximum permissible power consumption:
All models are suitable for the values shown plus 10% overload.

This model is available in bronze for HWS applications

Pump selection should be within the shaded area for optimum performance.



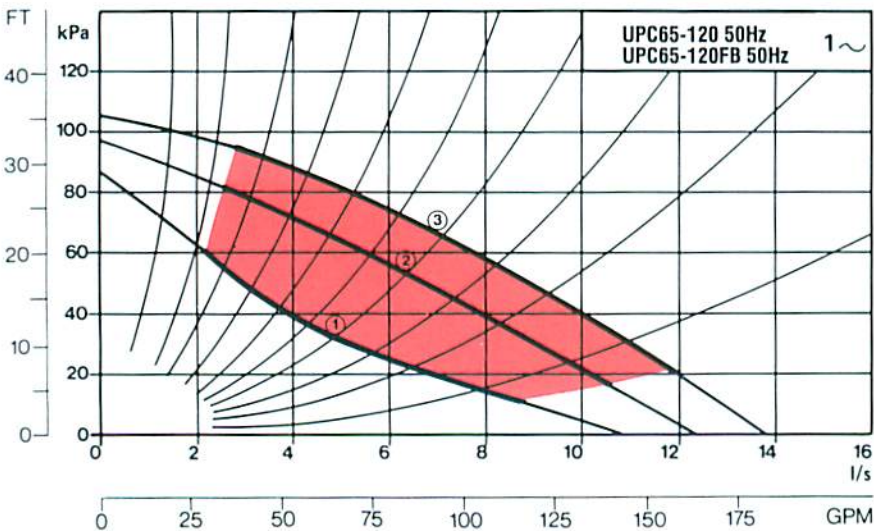
ELECTRICAL DATA

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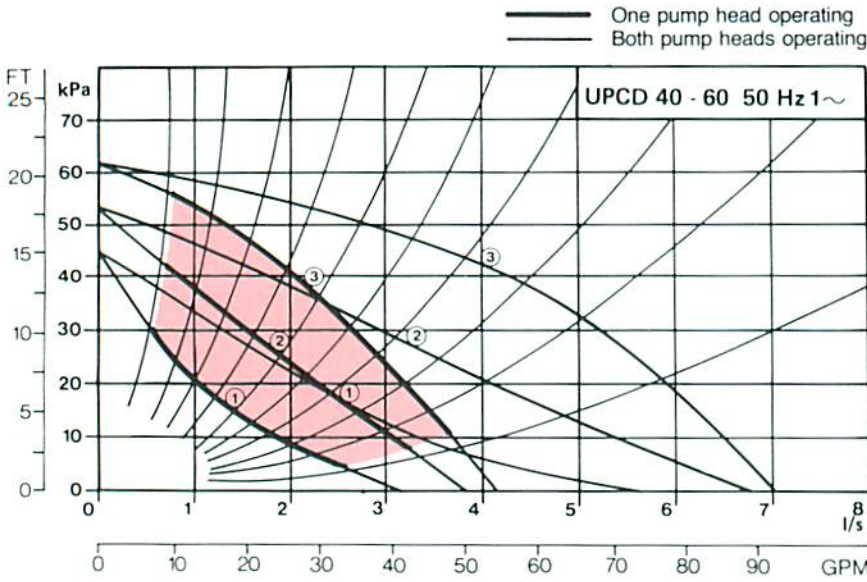
Maximum permissible power consumption:
All models are suitable for the values shown plus 10% overload.

This model is available in bronze for HWS applications

Pump selection should be within the shaded area for optimum performance.

TWIN HEAD MODELS

1 × 240V 50Hz

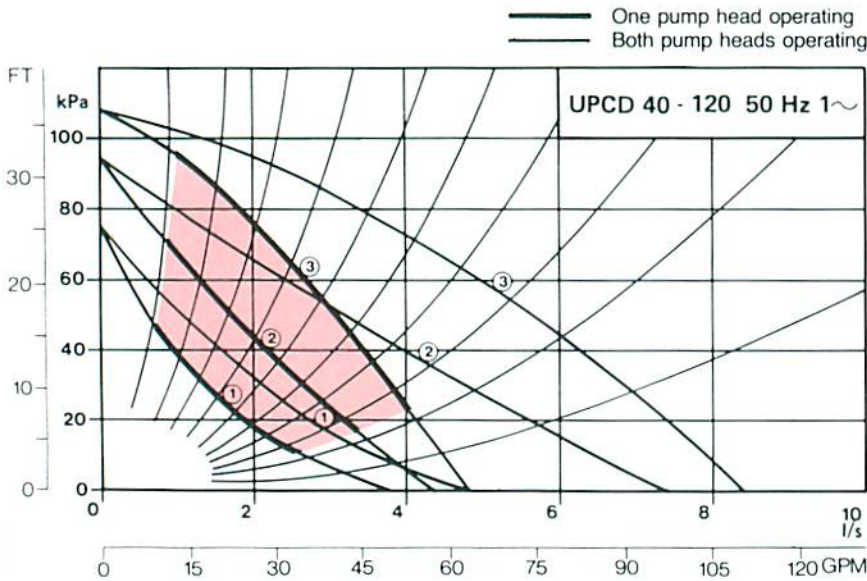


ELECTRICAL DATA

Speed	R.P.M.	Input Power Watts	Full Load Current Amps 1 x 240V	Capacitor Rating
③	2730	265	1.13	6 μ F
②	2360	265	1.23	6 μ F
①	1930	245	1.16	6 μ F

Maximum permissible power consumption:
All models are suitable for the values shown plus 10% overload.

Pump selection should be within the shaded area for optimum performance.

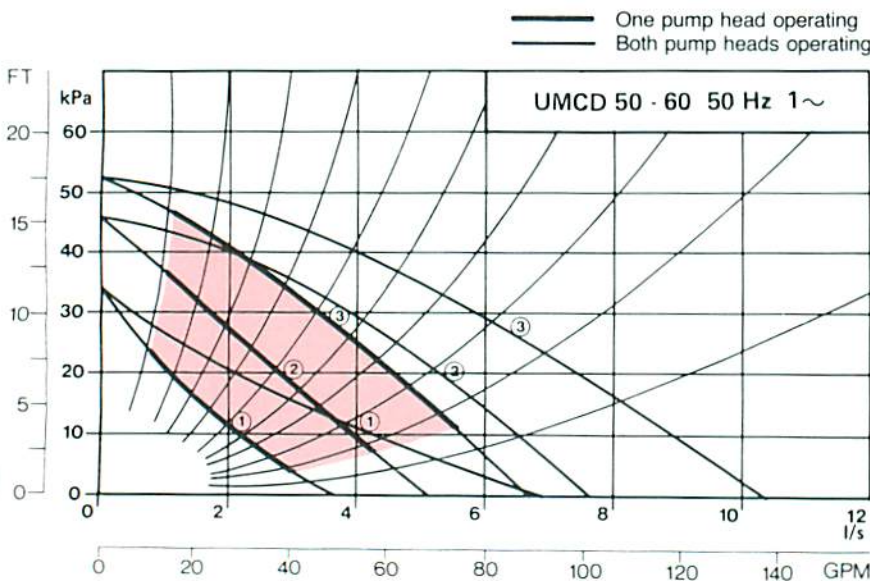


ELECTRICAL DATA

Speed	R.P.M.	Input Power Watts	Full Load Current Amps 1 x 240V	Capacitor Rating
③	2740	535	2.29	10 μ F
②	2380	555	2.60	10 μ F
①	1910	520	2.50	10 μ F

Maximum permissible power consumption:
All models are suitable for the values shown plus 10% overload.

Pump selection should be within the shaded area for optimum performance.



ELECTRICAL DATA

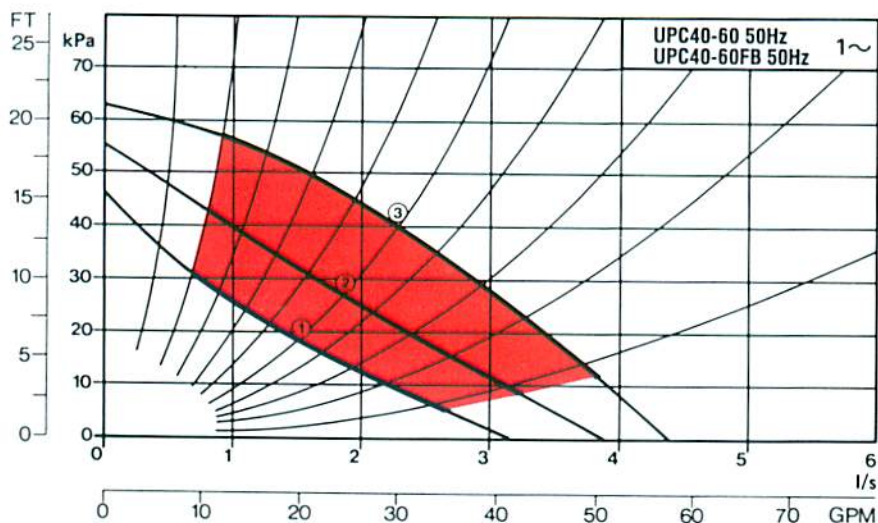
Speed	R.P.M.	Input Power Watts	Full Load Current Amps 1 x 240V	Capacitor Rating
③	1290	430	1.91	14 μ F
②	1090	325	1.65	14 μ F
①	850	240	1.18	14 μ F

Maximum permissible power consumption:
All models are suitable for the values shown plus 10% overload.

Pump selection should be within the shaded area for optimum performance.

SINGLE HEAD MODELS

1 × 240V 50Hz



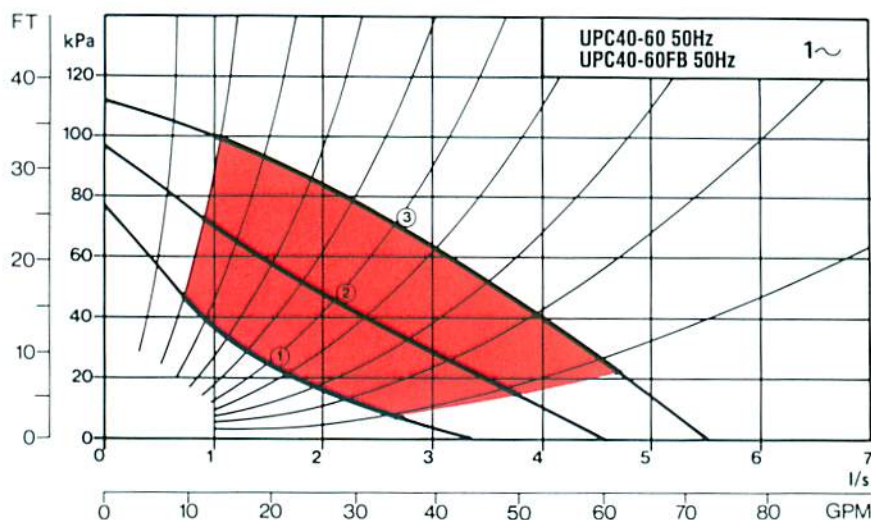
ELECTRICAL DATA

Speed	R.P.M.	Input Power Watts	Full Load Current Amps 1 x 240V	Capacitor Rating
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Maximum permissible power consumption:
All models are suitable for the values shown plus 10% overload.

This model is available in bronze for HWS applications

Pump selection should be within the shaded area for optimum performance.



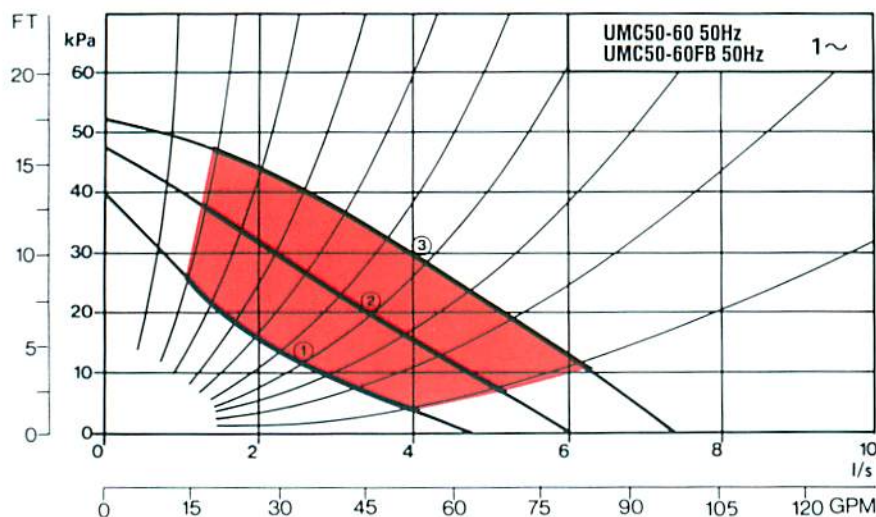
ELECTRICAL DATA

Speed	R.P.M.	Input Power Watts	Full Load Current Amps 1 x 240V	Capacitor Rating
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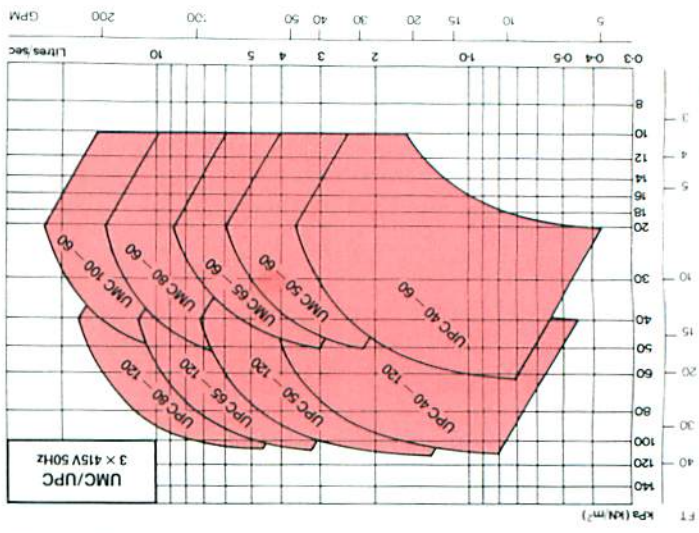
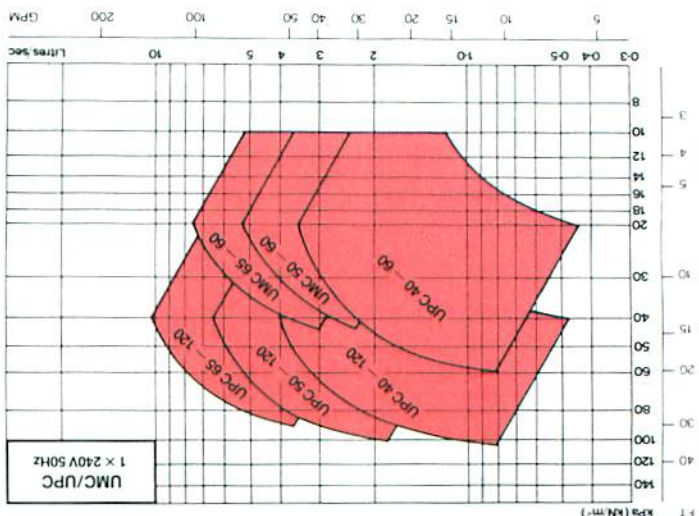
TOTAL CONTROL WITH ENERGY SAVING
 Grundfos Multispeed commercial heating circulators have now been further developed to simplify installation and operation. The pump terminal box incorporates significant advances in electronic control to make this range not only energy efficient, but even easier to install and to operate.

THREE SPEED MOTOR WITH INSTANT SWITCHING

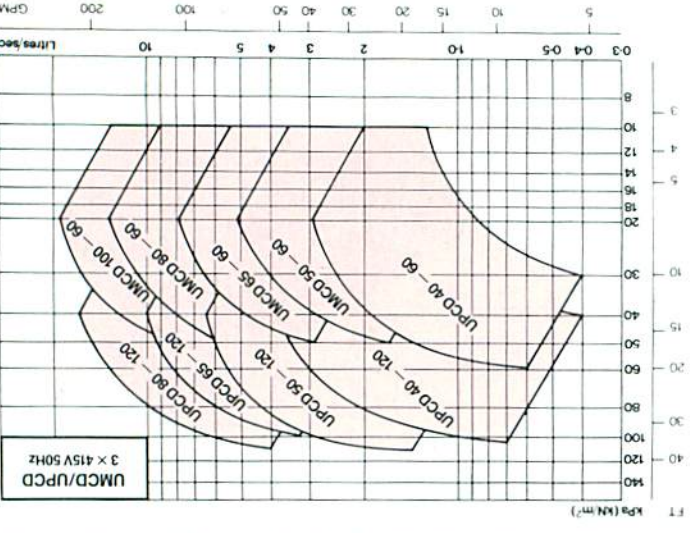
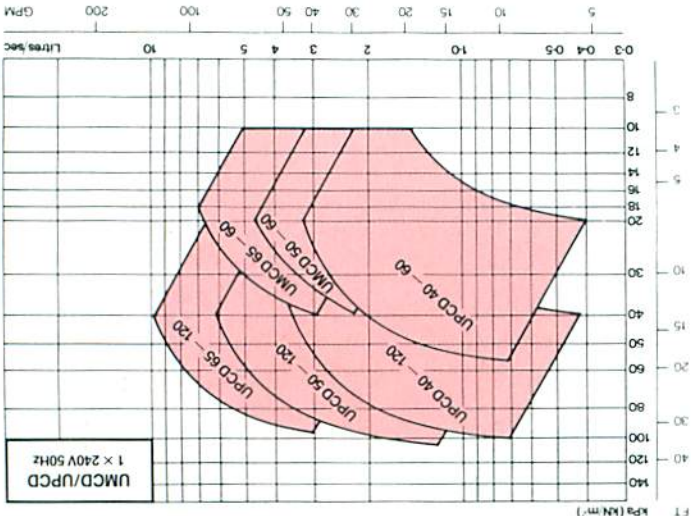
Every Multispeed circulator incorporates three duty ranges and these can be changed manually by lifting and rotating the speed selector switch; or automatically when controlled remotely. When used in conjunction with appropriate controls, Multispeed saves energy by tailoring motor speed to system requirements. Fluctuations in ambient temperature can account for increasingly high running costs in heating systems. This is where Multispeed's three speed duty range really saves energy. For example model UPC80-120 requires 2020 watts input at speed 3, 1385 watts at speed 2 and only 665 watts on speed 1 - a reduction in power consumption of over 65%.

PERFORMANCE RANGES 50HZ

SINGLE HEAD MODELS



TWIN HEAD MODELS (ONE HEAD OPERATING)

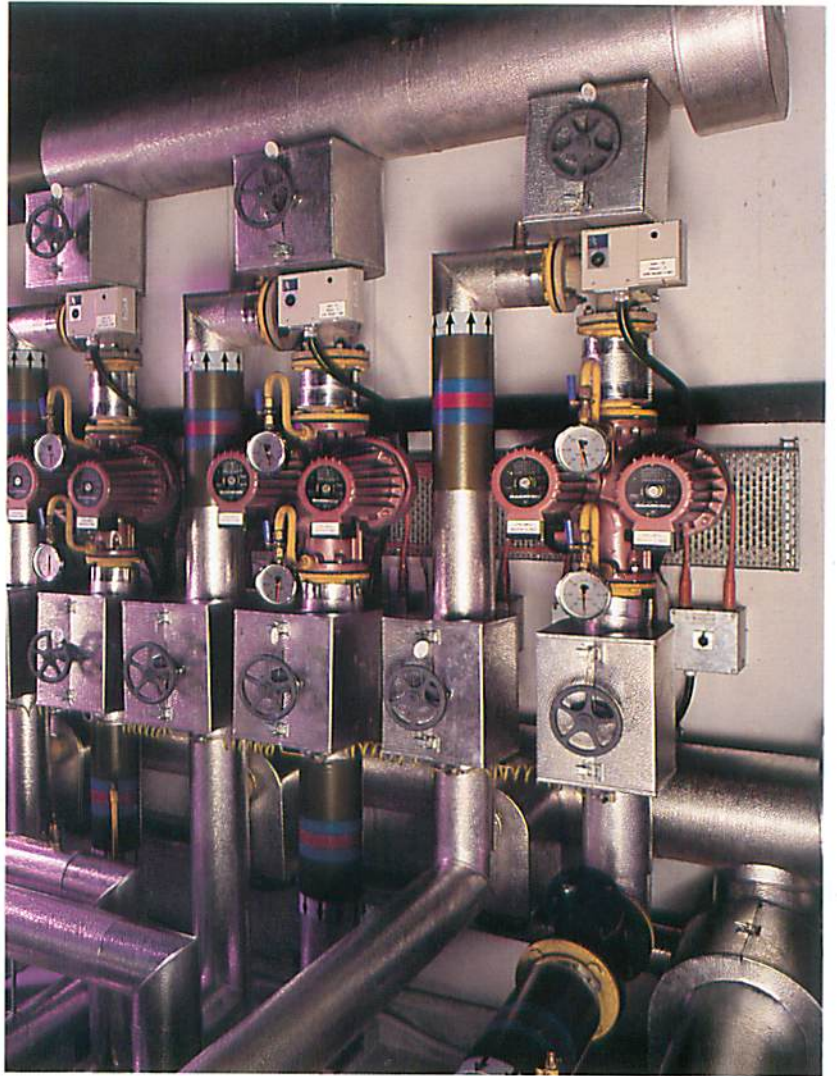


BUILT-IN MOTOR PROTECTION
 On single phase models, a heat sensitive switch is imbedded in the motor stator which will detect a build-up of heat from the motor windings. This switch is mounted in series with a relay in the terminal box which controls the supply voltage to the motor windings, thus protecting the motor from overheating. The heat sensitive switch will reset automatically upon cooling.

SUPERB STAINLESS STEEL COMPONENTS
 As you would expect, Grundfos use only the best materials for vital pump components, like corrosion resistant stainless steel for impeller, rotor can and rotor cladding, hard wearing ceramics for pump bearings. Every pump is tested for smooth quiet operation under simulated working conditions at 90°C water temperature.

HOT WATER SERVICE CIRCULATORS

The majority of UMC/UPC (single head) heating circulators are also available in bronze construction for larger HWS systems. These are flanged in accordance with PN10 and are supplied without counter flanges.



- ENERGY SAVING THREE SPEED MOTOR
- SUPERB MATERIAL SPECIFICATION
- GLANDLESS HEATING CIRCULATORS
- FOR PIPELINE MOUNTING
- FLOWS UP TO 25 L/SEC
- PRESSURES UP TO 105kPA
- MAXIMUM SYSTEM PRESSURE 6 BARS
- WATER TEMPERATURES UP TO 120°C
- PUMP HOUSING FLANGED TO BS4504
- 1969 TABLE 6/11
- BRONZE VERSIONS AVAILABLE FOR HWS
- APPLICATIONS UP TO 80MM
- COUNTER FLANGES SUPPLIED WITH
- ALL HEATING MODELS
- NINE SINGLE AND TWIN HEAD MODELS
- FOR THREE PHASE OPERATION
- SIX SINGLE AND TWIN HEAD MODELS
- FOR SINGLE PHASE OPERATION

**SERIES 200 MULTI-SPEED
NOW EVEN EASIER TO INSTALL
AND EASIER TO CONTROL**



GRUNDFOS®



For water circulation in commercial heating applications.

UMC/UPC
MULTI-SPEED
GLANDLESS
IN-LINE
CIRCULATORS