

Oswal Pumps Ltd.



ISI · ISO 9001:2015 · BEE · CE



PUMPS & MOTORS

True Partner!

Oswal Vertical Inline Pumps

OCR vertical multistage centrifugal pumps · OCR 1, 2, 3, 4, 5, 10 & 15 · performance, dimensions, curves & parts



Energy-efficient range

In-line suction & discharge for compact pressure boosting, filtration, process & boiler-feed duty



0.8–24 m³/h
flow range

up to 25 bar
max. pressure

0.37–15 kW
motor power

–30 to +120 °C
liquid temperature

www.oswalpumps.com



CONTENTS

Oswal Vertical Inline Pumps

About Oswal

P. 3

Company profile · quality · standards 3

Product data

P. 4

Introduction · applications 4

Product range · family curve · technical data 5

Materials of construction · sectional drawing · type key 6

Operating data

P. 7

Maximum inlet pressure · motor · ambient de-rating 7

NPSHR curves 8

Selection and sizing

P. 9

Minimum inlet pressure · dimensional sketch 9

OCR 1

P. 10

Performance table 10

Dimensions & weights 11

Performance & power curves 12

OCR 2

P. 13

Performance table 13

Dimensions · performance & power curves 14

OCR 3

P. 15

Performance table 15

Dimensions & weights 16

Performance & power curves 17

OCR 4

P. 18

Performance table 18

Dimensions · performance & power curves 19

OCR 5

P. 20

Performance table 20

Dimensions & weights 21

Performance & power curves 22

OCR 10

P. 23

Performance table 23

Dimensions · performance & power curves 24

OCR 15

P. 25

Performance table 25

Dimensions · performance & power curves 26

Service

P. 27

Exploded view 27

Parts list · tools · torques 28

Conversion table 29

Oswal worldwide

P. 30

Pan-India & global presence · contact 30

COMPANY PROFILE

An integrated pump & motor manufacturer since 2000

Oswal Pumps Limited, started in the year 2000, has become India's first unique integrated plant of its kind — a world-class manufacturing facility backed by seasoned engineers and technicians.

Oswal manufactures submersible pumps, monoblock and surface pumps and electric motors for the domestic, agricultural and industrial markets. The OCR series in this catalogue are vertical multistage in-line centrifugal pumps for water supply, pressure boosting, industrial process water, liquid transfer, water treatment and irrigation.

Quality checks



Every pump is tested on in-house test benches before dispatch.

Standards

ISO 9906 Annex A
performance-curve tolerances

IS 9034
energy-efficient pump sets

CE
marked products



ISO 9001:2015 certified company

Our campus — Oswal Estate, NH-1, Karnal



OCR · vertical in-line

Vertical Multistage Centrifugal Pumps

Non-self-priming, in-line multistage pumps — suction and discharge in the same horizontal plane

SIZES
OCR 1 – OCR 15

FLOW
0.8–24 m³/h

PRESSURE
up to 25 bar

MOTOR
0.37–15 kW



Description

The OCR pump is a non-self-priming, vertical multistage centrifugal pump. The in-line design enables the pump to be installed in a horizontal one-pipe system where the suction and discharge ports are in the same horizontal plane and have the same pipe dimensions. This gives a more compact pump design and pipe work.

Oswal OCR pumps come in various pump sizes and numbers of stages to provide the flow and pressure required. They are suitable for a variety of applications, from pumping potable water to pumping chemicals, and are therefore used in a wide diversity of pumping systems where the performance and material of the pump must meet specific demands.

The pump unit consists of optimised hydraulics, various types of connections, an outer sleeve, a top and various other parts. OCR pumps are available in various material versions according to the pumped liquid.

Features & benefits

- ✓ High efficiency
- ✓ Reliability
- ✓ User-friendly
- ✓ Space-saving in-line design
- ✓ Suitable for slightly aggressive liquids



OCR 15, OCR 10, OCR 5, OCR 3 and OCR 1 (left to right).

Applications

WATER SUPPLY

- Filtration and transfer at waterworks
- Distribution from waterworks
- Pressure boosting in mains
- Pressure boosting in high-rise buildings & hotels

INDUSTRY

- Pressure-boosting systems
- Process water systems
- Washing and cleaning systems
- Vehicle-washing tunnels
- Fire-fighting systems

LIQUID TRANSFER

- Cooling and air-conditioning systems
- Boiler feed and condensate systems
- Machine tools (cooling lubricants)
- Aquafarming

WATER TREATMENT

- Ultra-filtration systems
- Reverse-osmosis systems
- Softening, ionising, demineralising
- Distillation systems
- Separators

IRRIGATION

- Field irrigation (flooding)
- Sprinkler irrigation
- Drip-feed irrigation

PRODUCT DETAIL · 50 HZ

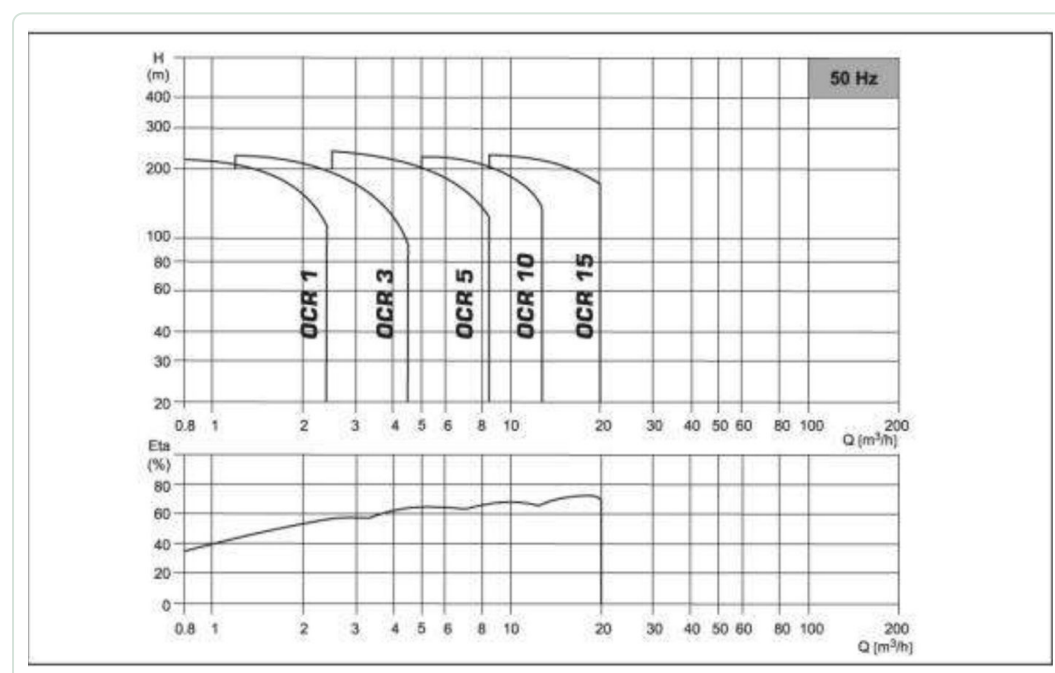
OCR product range

Range	OCR 1	OCR 2	OCR 3	OCR 4	OCR 5	OCR 10	OCR 15
Nominal flow rate (m ³ /h)	1	2	3	4	5	10	15
Flow rate (m ³ /h)	0.8–2.4	1.0–4.0	1.2–4.4	2.0–8.0	2.0–8.5	6–13	10–24
Max. pressure (bar)	22	25	24	22	24	22	23
Motor power (kW)	0.37–2.2	0.37–3.0	0.37–3.0	0.37–4.5	0.37–5.5	0.37–7.5	1.1–15.0
Max. pump efficiency (%)	48	48	58	58	66	70	72
Flange	DN 25/32	DN 25/32	DN 25/32	DN 25/32	DN 25/32	DN 40	DN 50

Liquid temperature (°C) –30 to +120 · all sizes

Rows spanning all columns apply to every size. Pressure in bar ($\approx$ kg/cm²).

Family curve — OCR, 50 Hz



Head H (m) and efficiency η (%) against flow Q (m³/h), logarithmic scales — original chart. OCR 2 and OCR 4 are not drawn in the source family curve; see their own curve pages.

Technical data

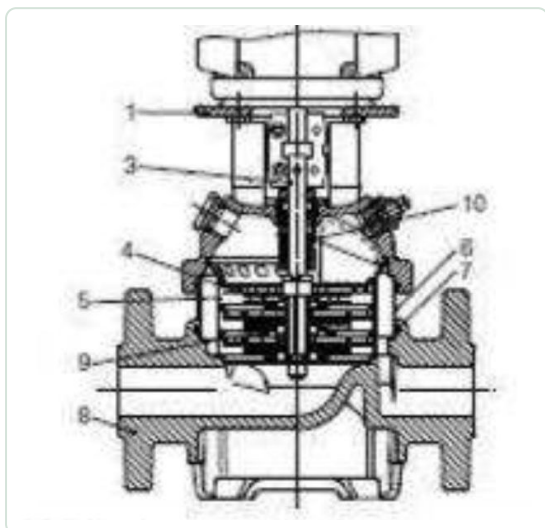
Flow	up to 24 m ³ /h ¹	Frequency	50 Hz
Head	up to 250 m ¹	Curve tolerances	ISO 9906 Annex A
Liquid temperature	–30 °C to +120 °C	Max. pump efficiency	72 % (OCR 15)

¹ The source summary states “max. 20 m³/h” and “max. 220 m”, but its own tables list flows to 24 m³/h (OCR 15) and shut-off heads to 250 m (OCR 2–26) — values here follow the tables.

MATERIAL OF CONSTRUCTION · TYPE KEY

OCR — construction and materials

Sectional drawing — OCR



Original drawing; numbers refer to the positions in the table.

Materials

Pos.	Component	Material	Grade
1	Pump head	Cast iron	FG 260
3	Shaft	Stainless steel	SS 431
4	Impeller	Stainless steel	SS 304
5	Chamber	Stainless steel	SS 304
6	Outer sleeve	Stainless steel	SS 304
7	O-ring for outer sleeve	EPDM	
8	Base	Cast iron	FG 260
9	Necking	PTFE	
10	Shaft seal	Cartridge type	
11	Bearing rings	Silicon carbide	
12	Flange	Cast iron	FG 260

Position 11 (bearing rings) and 12 (flange) are not called out on the sectional drawing. "FJG flange" in the source read as flange.

Type key

OCR - 5 - 3

OCR	Type — vertical multistage in-line centrifugal pump
5	Nominal flow rate, m ³ /h (1, 2, 3, 4, 5, 10, 15)
3	Number of impellers (stages)

Example: OCR 5-3 = OCR pump, nominal flow 5 m³/h, 3 stages. In the tables of this catalogue each model is written as size-stages, e.g. OCR 5-3.

OPERATING AND INLET PRESSURE

Inlet pressure, motor & ambient temperature

Maximum inlet pressure

The table shows 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. If the maximum permissible operating pressure is exceeded, the conical bearing in the motor may be damaged and the life of the shaft seal reduced.

Pump	No. of stages	Max. inlet pressure (kg/cm ²)
OCR 1	2 to 36	10
OCR 2	2 to 26	10
OCR 3	2 to 29	10
	31 to 36	15
OCR 4	1 to 22	10
OCR 5	2 to 16	10
	18 to 36	15
OCR 10	1 to 6	8
	7 to 22	10
OCR 15	1 to 3	8
	4 to 17	10

Stage ranges as printed in the source (e.g. OCR 3: 2–29 and 31–36 stages).

Electric motor

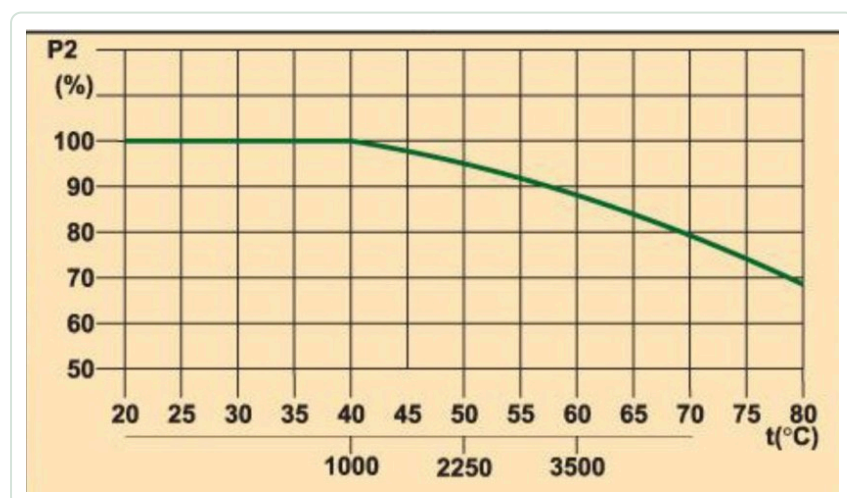
Type	Totally enclosed, fan-cooled 2-pole standard motor
Mounting	up to 4 kW: face mounting ¹ from 5.5 kW: flange mounting
Insulation	Class F
Enclosure	IP55
Voltages, 50 Hz	1 × 220–230 / 240 V 3 × 380–415 V

¹ Printed "phase mounting" in the source — read as face mounting; please confirm.

Ambient temperature

Maximum ambient temperature: **+40 °C**. If the ambient temperature exceeds +40 °C, or the motor is located more than 1,000 m above sea level, the motor output (P2) must be reduced because of the lower cooling effect of the air. In such cases it may be necessary to use a motor with a higher output.

Motor de-rating — output P2 vs ambient temperature and altitude



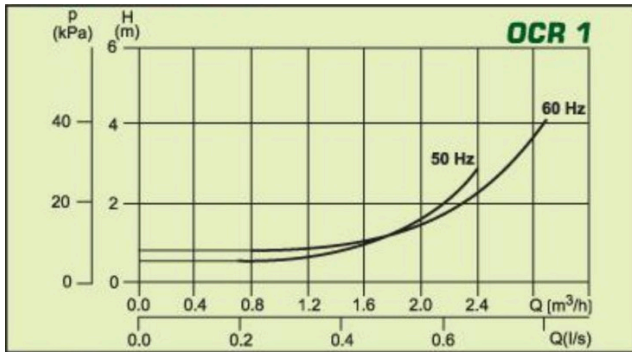
Motor output P2 (%) against ambient temperature t (°C, upper scale) and altitude (m above sea level, lower scale) — original chart.

NPSHR CURVES · 50 HZ AND 60 HZ

OCR — net positive suction head required

NPSHR in metres (and kPa) against flow rate Q in m^3/h (lower scale l/s), for 50 Hz and 60 Hz operation. Original curves reproduced from the source catalogue.

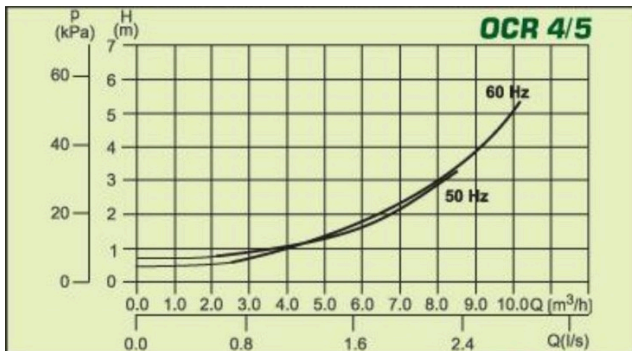
OCR 1



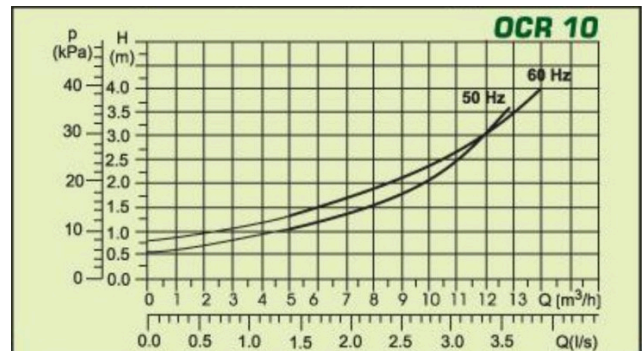
OCR 2 / OCR 3



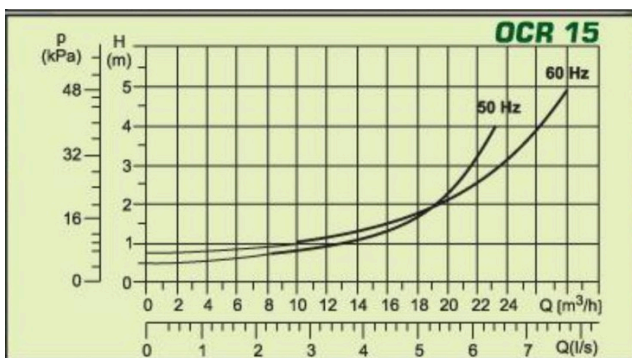
OCR 4 / OCR 5



OCR 10



OCR 15



Reading the curves. Always check the NPSH value of the pump at the highest possible flow, and never select a pump whose duty point lies too far to the right on the NPSH curve. Curves for OCR 2 / 3 and OCR 4 / 5 are shared.

SELECTION AND SIZING

Minimum inlet pressure & dimensions

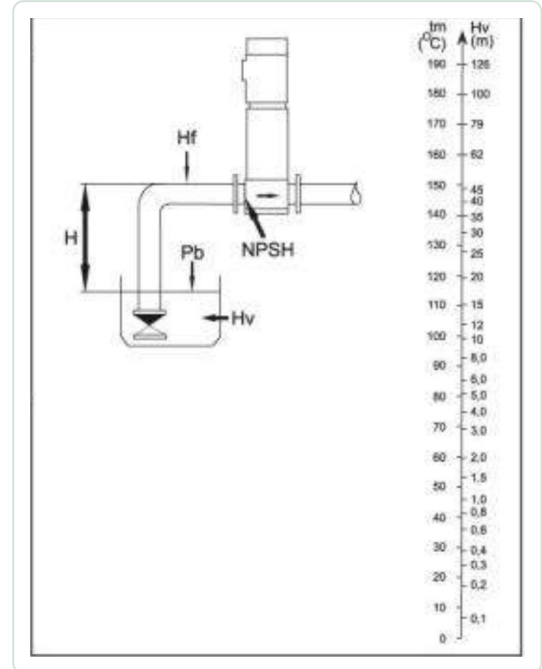
Calculation of the inlet pressure H is recommended when the liquid temperature is high, the flow is significantly higher than the rated flow, water is drawn from depth or through long pipes, or inlet conditions are poor. To avoid cavitation, make sure there is a minimum pressure on the suction side of the pump. The maximum suction lift H in metres head is:

$$H = p_b \times 10.2 - \text{NPSH} - H_f - H_v - H_s$$

p_b	Barometric pressure in bar (can be set to 1 bar). In closed systems, p_b is the system pressure in bar.
NPSH	Net positive suction head required, in metres — read from the NPSH curve at the highest flow the pump will deliver.
H_f	Friction loss in the suction pipe, in metres, at the highest flow the pump will deliver. ¹
H_v	Vapour pressure in metres — read from the vapour-pressure scale; depends on the liquid temperature T_m .
H_s	Safety margin — minimum 0.5 m.

If H is **positive**, the pump can operate at a suction lift of at most H metres. If H is **negative**, an inlet pressure of at least H metres head is required.

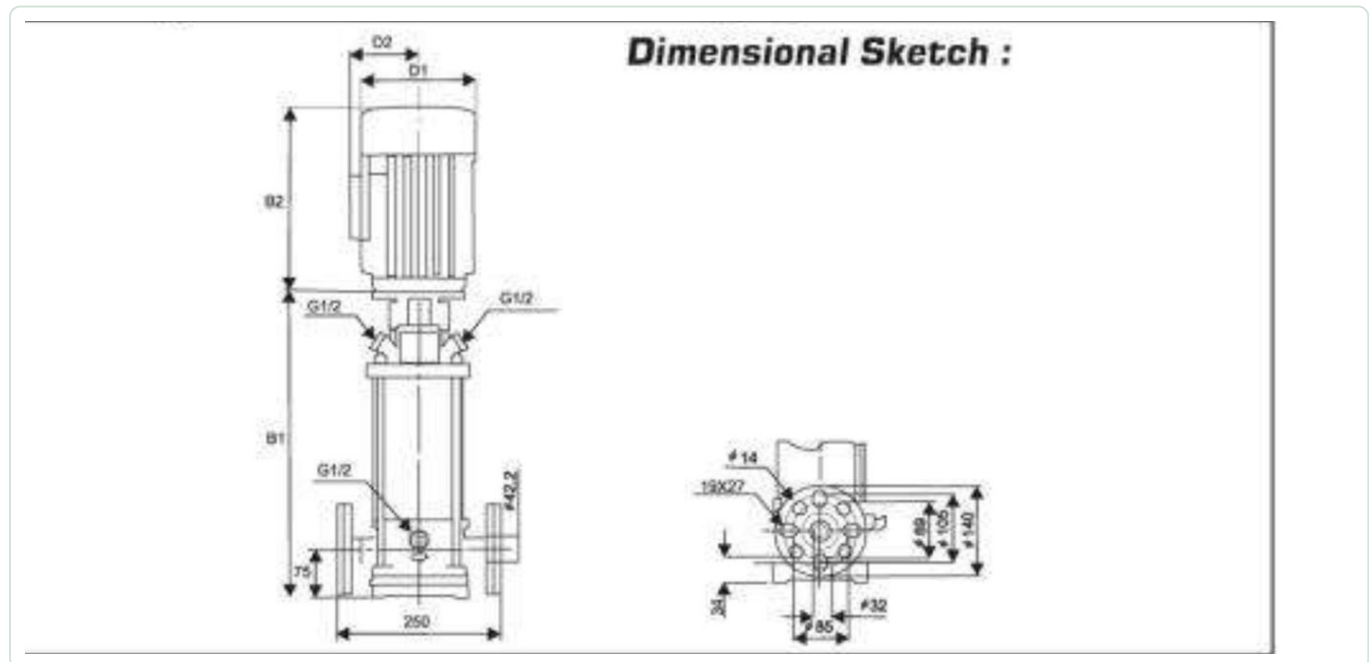
¹ Printed as "H = friction loss" in the source; corrected to H_f .



Suction arrangement and vapour-pressure scale: liquid temperature T_m (°C) against H_v (m) — original chart.

To avoid cavitation, never select a pump whose duty point lies too far to the right on the NPSH curve.

Dimensional sketch



B_1 = pump height to motor flange, B_2 = motor height, D_1/D_2 = motor diameters, D_3 = motor flange (7.5 kW and larger). Values per model on the dimension pages. Base and flange dimensions as drawn for OCR 1–5.

OCR 1 · 50 Hz · 2-pole

OCR 1 Vertical Multistage Pump

Nominal flow 1 m³/h · 22 models from 2 to 36 stagesFLOW
0.8–2.4 m³/hMAX. PRESSURE
22 barMOTOR
0.37–2.2 kWFLANGE
DN 25/32

PERFORMANCE TABLE — HEAD (M) AT FLOW

Model	Stages	kW	HP	Amp. 3-ph	m ³ /h L/min	0	0.8	1	1.2	1.4	1.6	1.8	2
						0	13	17	20	23	27	30	33
OCR 1-2	2	0.37	0.5	1	HEAD (m)	12	12	12	11	11	10	9	8
OCR 1-3	3	0.37	0.5	1		19	18	17	17	16	15	14	12
OCR 1-4	4	0.37	0.5	1		25	24	23	22	21	20	18	16
OCR 1-5	5	0.37	0.5	1		31	30	29	28	27	25	23	21
OCR 1-6	6	0.37	0.5	1		37	35	35	34	32	30	28	25
OCR 1-7	7	0.37	0.5	1		43	41	41	39	37	35	32	29
OCR 1-8	8	0.55	0.75	1.5		50	47	46	45	42	40	37	33
OCR 1-9	9	0.55	0.75	1.5		56	53	52	50	48	45	41	37
OCR 1-10	10	0.55	0.75	1.5		62	59	58	56	53	50	46	41
OCR 1-11	11	0.55	0.75	1.5		68	65	64	62	58	55	51	45
OCR 1-12	12	0.75	1	1.9		74	71	70	67	64	60	55	49
OCR 1-13	13	0.75	1	1.9		81	77	75	73	69	65	60	53
OCR 1-15	15	0.75	1	1.9		93	89	87	84	80	75	69	62
OCR 1-17	17	1.1	1.5	2.7		105	100	99	95	90	85	78	70
OCR 1-19	19	1.1	1.5	2.7		118	112	110	106	101	95	87	78
OCR 1-21	21	1.1	1.5	2.7		130	124	122	118	111	105	97	86
OCR 1-23	23	1.1	1.5	2.7		143	136	133	129	122	115	106	94
OCR 1-25	25	1.5	2	3.4		155	148	145	140	133	125	115	103
OCR 1-27	27	1.5	2	3.4		167	159	157	151	143	135	124	111
OCR 1-30	30	1.5	2	3.4		186	177	174	168	159	150	138	123
OCR 1-33	33	2.2	3	4.8		205	195	191	185	175	165	152	135
OCR 1-36	36	2.2	3	4.8		223	212	209	202	191	180	166	148

Highlighted columns (1.2, 1.4, 1.6 m³/h): recommended operating range, as shaded in the source. Amp. = rated current, three-phase 380–415 V. Curves to ISO 9906 Annex A.

MAX. PUMP
EFFICIENCY
48 %

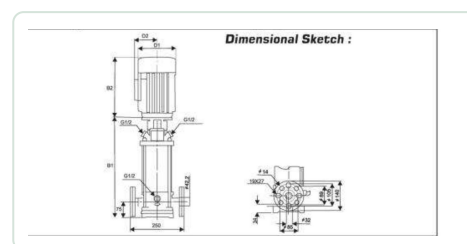
MAX. INLET PRESSURE
2–36 stages: **10 kg/cm²**

NPSHR CURVE
page 8

OCR 1 · DIMENSIONS AND WEIGHTS

OCR 1 — dimensions & weights

Model	Stages	HP	Dimensions (mm)					Weight kg
			B1	B2	D1	D2	D3	
OCR 1-2	2	0.5	279	219	134	103	—	28.6
OCR 1-3	3	0.5	279	219	134	103	—	29
OCR 1-4	4	0.5	297	219	134	103	—	29.5
OCR 1-5	5	0.5	315	219	134	103	—	30.0
OCR 1-6	6	0.5	333	219	134	103	—	30.4
OCR 1-7	7	0.5	351	219	134	103	—	30.9
OCR 1-8	8	0.75	369	239	134	103	—	32.3
OCR 1-9	9	0.75	387	239	134	103	—	32.8
OCR 1-10	10	0.75	405	239	134	103	—	33.2
OCR 1-11	11	0.75	423	239	134	103	—	33.7
OCR 1-12	12	1	447	255	138	115	—	41.2
OCR 1-13	13	1	465	255	138	115	—	41.7
OCR 1-15	15	1	501	255	138	115	—	42.6
OCR 1-17	17	1.5	537	255	138	115	—	47
OCR 1-19	19	1.5	573	255	138	115	—	48
OCR 1-21	21	1.5	609	255	138	115	—	48.9
OCR 1-23	23	1.5	645	255	138	115	—	49.8
OCR 1-25	25	2	697	300	156	124	—	53
OCR 1-27	27	2	733	300	156	124	—	53.9
OCR 1-30	30	2	787	300	156	124	—	55.2
OCR 1-33	33	3	841	335	156	124	—	64.3
OCR 1-36	36	3	895	335	156	124	—	65.6



Dimensional sketch (original).

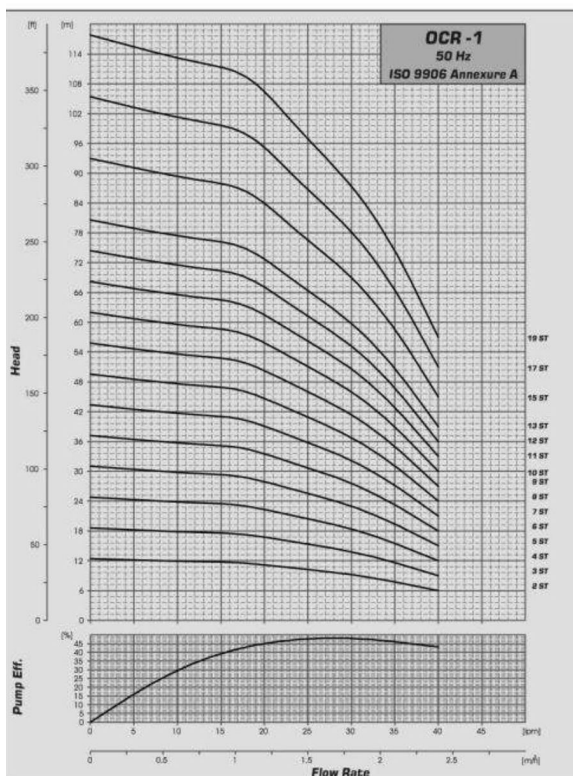
Selecting a model. Read the duty point on the performance table or curves, choose the smallest number of stages that reaches the required head, then check NPSHR (page 8) and inlet pressure (page 7).

n/p = not printed in the source. D3 applies to motors of 7.5 HP and larger.

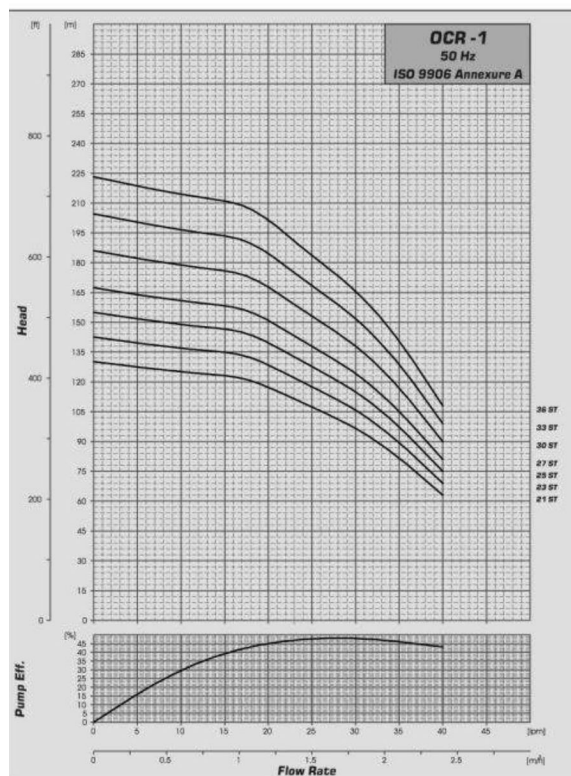
OCR 1 · PERFORMANCE & POWER CURVES · 50 HZ

OCR 1 — curves

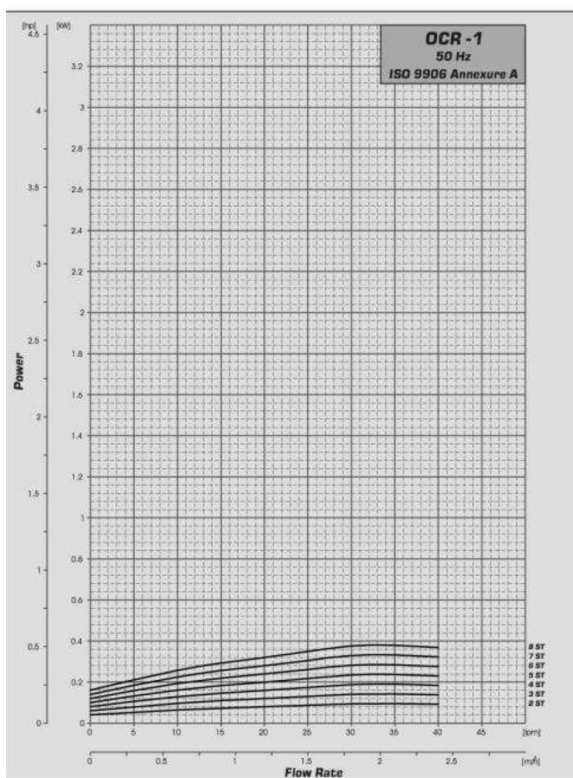
OCR 1 · 50 Hz Head & efficiency · 2-19 stages



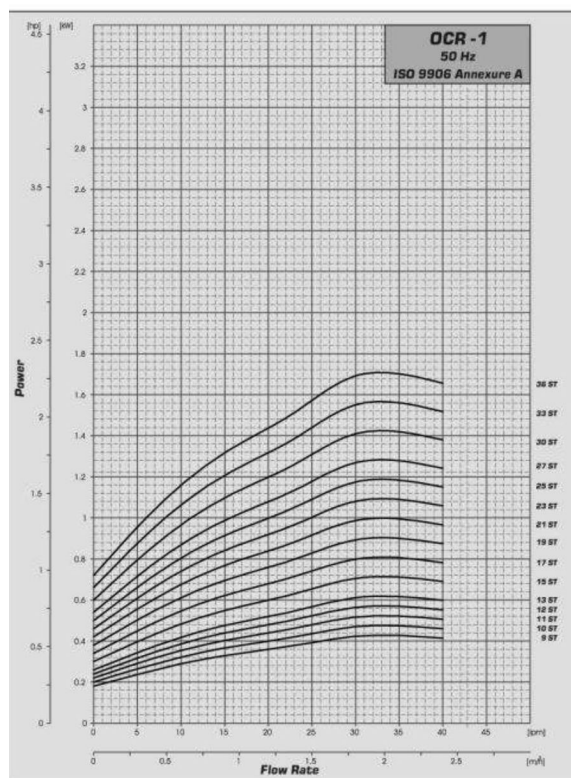
OCR 1 · 50 Hz Head & efficiency · 21-36 stages



OCR 1 · 50 Hz Power · 2-8 stages



OCR 1 · 50 Hz Power · 9-36 stages



Original curves (ISO 9906 Annex A). Head in m (left) and ft; pump efficiency (%) in the lower panel; power in kW and hp.

OCR 2 · 50 Hz · 2-pole

OCR 2 Vertical Multistage Pump

Nominal flow 2 m³/h · 13 models from 2 to 26 stagesFLOW
1.0–4.0 m³/hMAX. PRESSURE
25 barMOTOR
0.37–3.0 kWFLANGE
DN 25/32

PERFORMANCE TABLE — HEAD (M) AT FLOW

Model	Stages	kW	HP	Amp. 3-ph	m ³ /h L/min	0	1	1.5	2	2.5	3	3.5	4
						0	17	25	33	42	50	58	67
OCR 2-2	2	0.37	0.5	1	HEAD (m)	19	17	16	15	13	11	10	6
OCR 2-3	3	0.37	0.5	1		29	26	25	23	21	18	14	10
OCR 2-4	4	0.55	0.75	1.5		38	35	33	31	29	25	18	14
OCR 2-5	5	0.55	0.75	1.5		48	44	41	38	35	30	23	17
OCR 2-6	6	0.75	1	1.9		58	52	49	46	42	36	27	20
OCR 2-7	7	0.75	1	1.9		67	61	57	54	49	40	32	24
OCR 2-9	9	1.1	1.5	2.7		86	78	74	69	61	51	41	31
OCR 2-11	11	1.1	1.5	2.7		106	96	90	84	73	62	50	37
OCR 2-13	13	1.5	2	3.4		125	113	107	99	87	74	59	44
OCR 2-15	15	1.5	2	3.4		144	131	123	115	100	85	68	51
OCR 2-18	18	2.2	3	4.8		173	157	148	138	120	102	82	61
OCR 2-22	22	2.2	3	4.8		211	191	180	168	147	125	100	75
OCR 2-26	26	3	4	6.4		250	226	213	199	174	148	118	88

Highlighted columns (2, 2.5 m³/h): recommended operating range, as shaded in the source. Amp. = rated current, three-phase 380–415 V. Curves to ISO 9906 Annex A.

MAX. PUMP
EFFICIENCY
48 %

MAX. INLET PRESSURE
2–26 stages: **10 kg/cm²**

NPSHR CURVE
page 8

OCR 2 · DIMENSIONS, WEIGHTS AND CURVES

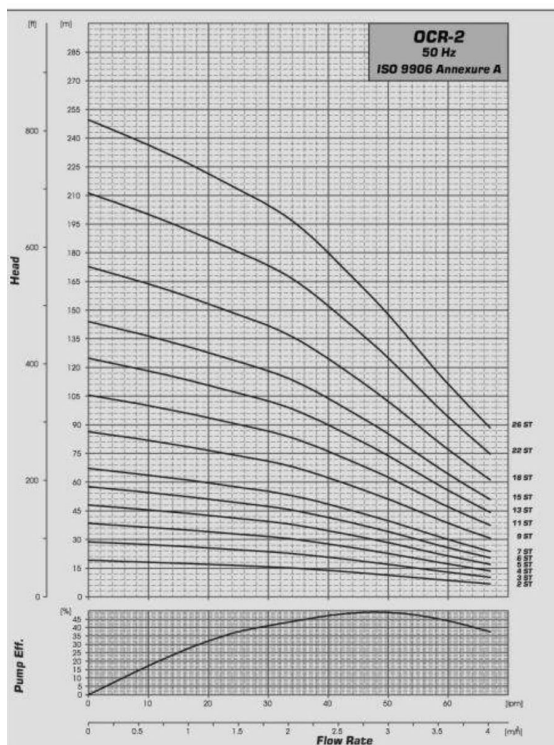
OCR 2 — dimensions & curves

DIMENSIONS AND WEIGHT

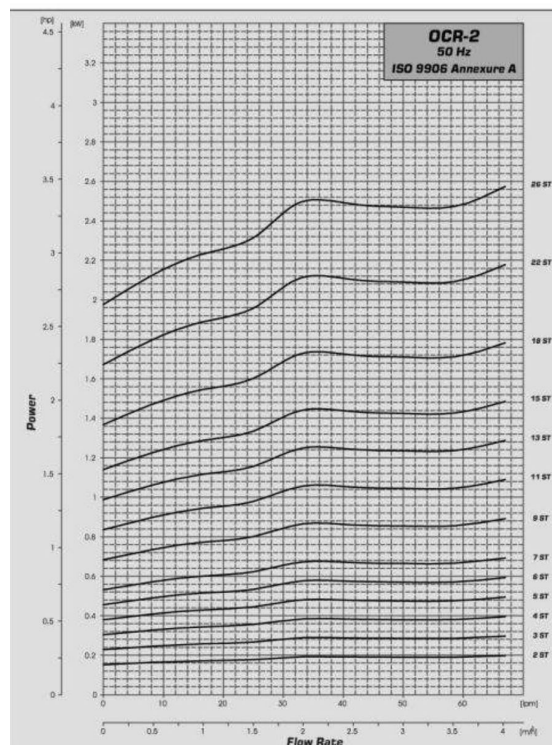
Model	Stages	HP	Dimensions (mm)					Weight kg
			B1	B2	D1	D2	D3	
OCR 2-2	2	0.5	279	219	134	103	—	28.6
OCR 2-3	3	0.5	279	219	134	103	—	29
OCR 2-4	4	0.75	297	239	134	103	—	30.5
OCR 2-5	5	0.75	315	239	134	103	—	31
OCR 2-6	6	1	333	255	138	115	—	38.5
OCR 2-7	7	1	351	255	138	115	—	39
OCR 2-9	9	1.5	393	255	138	115	—	43.5
OCR 2-11	11	1.5	429	255	138	115	—	44.5
OCR 2-13	13	2	465	300	156	124	—	47.5
OCR 2-15	15	2	501	300	156	124	—	48.5
OCR 2-18	18	3	571	335	156	124	—	57.5
OCR 2-22	22	3	643	335	156	124	—	59.5
OCR 2-26	26	4	715	315	194	143	—	62.5

See the dimensional sketch on page 9. n/p = not printed in the source.

OCR 2 · 50 Hz Head & efficiency



OCR 2 · 50 Hz Power



OCR 3 · 50 Hz · 2-pole

OCR 3 Vertical Multistage Pump

Nominal flow 3 m³/h · 23 models from 2 to 36 stagesFLOW
1.2–4.4 m³/hMAX. PRESSURE
24 barMOTOR
0.37–3.0 kWFLANGE
DN 25/32

PERFORMANCE TABLE — HEAD (M) AT FLOW

Model	Stages	kW	HP	Amp. 3-ph	m ³ /h L/min	0	1.6	2	2.4	2.8	3.2	3.6	4
						0	27	33	40	47	53	60	67
OCR 3-2	2	0.37	0.5	1	HEAD (m)	14	13	13	12	11	10	8	7
OCR 3-3	3	0.37	0.5	1		20	19	19	17	16	14	12	10
OCR 3-4	4	0.37	0.5	1		27	26	25	23	22	19	16	14
OCR 3-5	5	0.37	0.5	1		34	33	32	29	27	24	21	17
OCR 3-6	6	0.55	0.75	1.5		41	39	38	35	32	29	25	20
OCR 3-7	7	0.55	0.75	1.5		48	46	44	41	38	34	29	24
OCR 3-8	8	0.75	1	1.9		54	52	50	46	43	38	33	27
OCR 3-9	9	0.75	1	1.9		61	59	57	52	49	43	37	31
OCR 3-10	10	0.75	1	1.9		68	65	63	58	54	48	41	34
OCR 3-11	11	1.1	1.5	2.7		75	72	69	64	59	53	45	37
OCR 3-12	12	1.1	1.5	2.7		82	78	76	70	65	58	49	41
OCR 3-13	13	1.1	1.5	2.7		88	85	82	75	70	62	53	44
OCR 3-15	15	1.1	1.5	2.7		102	98	95	87	81	72	62	51
OCR 3-17	17	1.5	2	3.4		116	111	107	99	92	82	70	58
OCR 3-19	19	1.5	2	3.4		129	124	120	110	103	91	78	65
OCR 3-21	21	2.2	3	4.8		143	137	132	122	113	101	86	71
OCR 3-23	23	2.2	3	4.8		156	150	145	133	124	110	94	78
OCR 3-25	25	2.2	3	4.8		170	163	158	145	135	120	103	85
OCR 3-27	27	2.2	3	4.8		184	176	170	157	146	130	111	92
OCR 3-29	29	2.2	3	4.8		197	189	183	168	157	139	119	99
OCR 3-31	31	3	4	6.4		211	202	195	180	167	149	127	105
OCR 3-33	33	3	4	6.4		224	215	208	191	178	158	135	112
OCR 3-36	36	3	4	6.4		245	234	227	209	194	173	148	122

Highlighted columns (2.8, 3.2 m³/h): recommended operating range, as shaded in the source. Amp. = rated current, three-phase 380–415 V. Curves to ISO 9906 Annex A.

MAX. PUMP
EFFICIENCY
58 %

MAX. INLET PRESSURE

2–29 stages: **10 kg/cm²** · 31–36 stages: **15 kg/cm²**

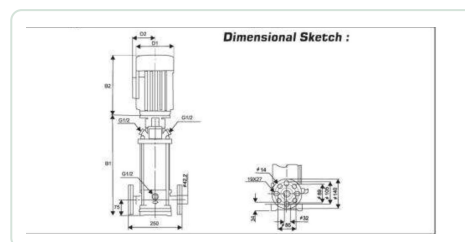
NPSHR CURVE
page 8

OCR 3 · DIMENSIONS AND WEIGHTS

OCR 3 — dimensions & weights

Model	Stages	HP	Dimensions (mm)					Weight kg
			B1	B2	D1	D2	D3	
OCR 3-2	2	0.5	279	219	134	103	—	28.6
OCR 3-3	3	0.5	279	219	134	103	—	29.1
OCR 3-4	4	0.5	297	219	134	103	—	29.5
OCR 3-5	5	0.5	315	219	134	103	—	30.0
OCR 3-6	6	0.75	333	239	134	103	—	31.5
OCR 3-7	7	0.75	351	239	134	103	—	31.9
OCR 3-8	8	1	375	255	138	115	—	39.4
OCR 3-9	9	1	393	255	138	115	—	39.9
OCR 3-10	10	1	411	255	138	115	—	40.3
OCR 3-11	11	1.5	429	255	138	115	—	44.4
OCR 3-12	12	1.5	447	255	138	115	—	44.8
OCR 3-13	13	1.5	465	255	138	115	—	45.3
OCR 3-15	15	1.5	501	255	138	115	—	46.2
OCR 3-17	17	2	553	300	156	124	—	49.4
OCR 3-19	19	2	589	300	156	124	—	50.3
OCR 3-21	21	3	625	335	156	124	—	58.9
OCR 3-23	23	3	661	335	156	124	—	59.8
OCR 3-25	25	3	697	335	156	124	—	60.7
OCR 3-27	27	3	733	335	156	124	—	61.6
OCR 3-29	29	3	769	335	156	124	—	62.5
OCR 3-31	31	4	809	315	194	143	—	64.4
OCR 3-33	33	4	845	315	194	143	—	65.3
OCR 3-36	36	4	899	315	194	143	—	66.6

n/p = not printed in the source. D3 applies to motors of 7.5 HP and larger.



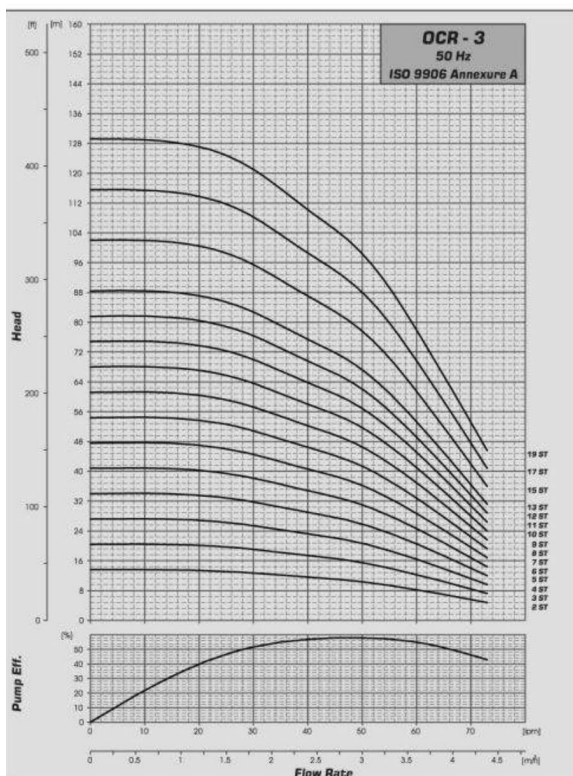
Dimensional sketch (original).

Selecting a model. Read the duty point on the performance table or curves, choose the smallest number of stages that reaches the required head, then check NPSHR (page 8) and inlet pressure (page 7).

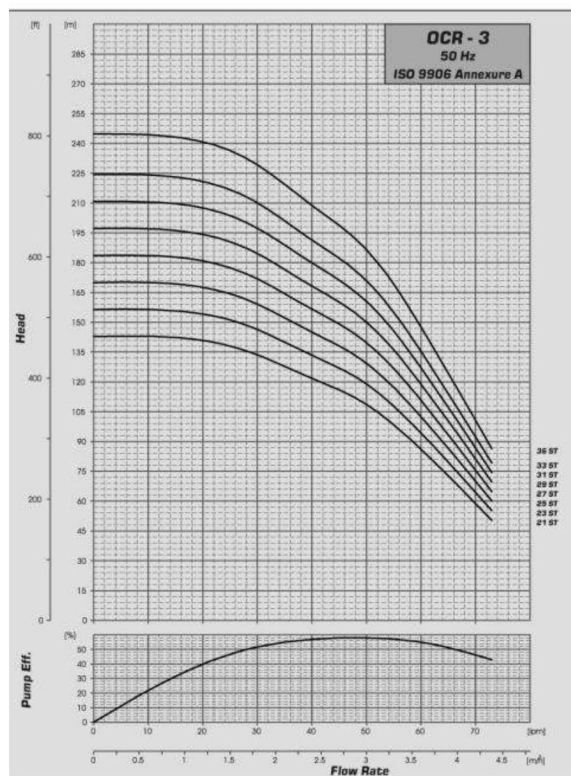
OCR 3 · PERFORMANCE & POWER CURVES · 50 HZ

OCR 3 — curves

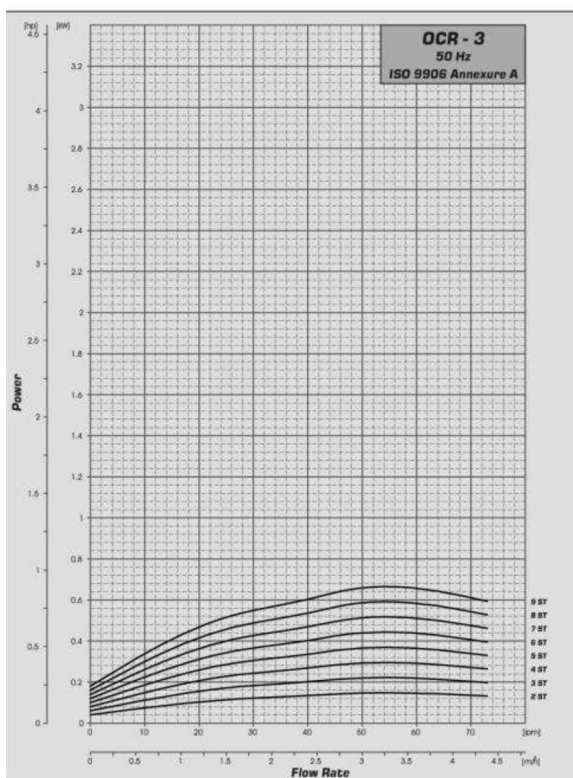
OCR 3 · 50 Hz Head & efficiency · 2-19 stages



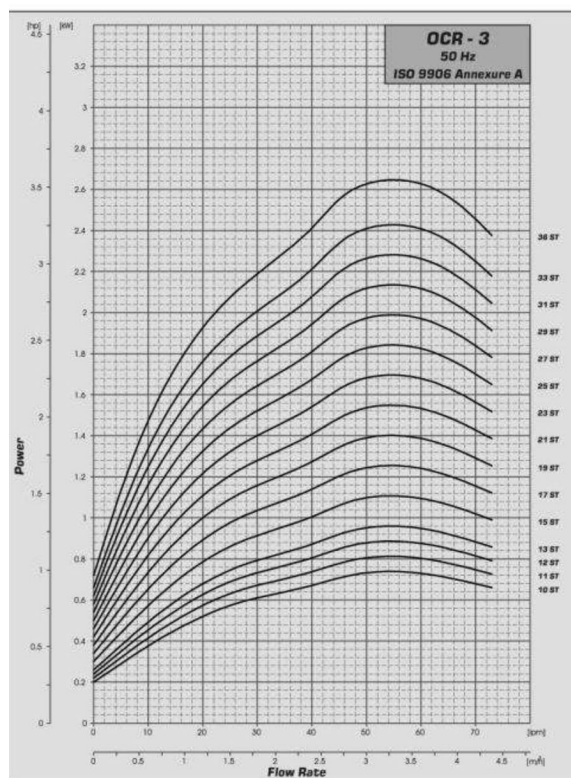
OCR 3 · 50 Hz Head & efficiency · 21-36 stages



OCR 3 · 50 Hz Power · 2-9 stages



OCR 3 · 50 Hz Power · 10-36 stages



Original curves (ISO 9906 Annex A). Head in m (left) and ft; pump efficiency (%) in the lower panel; power in kW and hp.

OCR 4 · 50 Hz · 2-pole

OCR 4 Vertical Multistage Pump

Nominal flow 4 m³/h · 14 models from 1 to 22 stagesFLOW
2.0–8.0 m³/hMAX. PRESSURE
22 barMOTOR
0.37–4.5 kWFLANGE
DN 25/32

PERFORMANCE TABLE — HEAD (M) AT FLOW

Model	Stages	kW	HP	Amp. 3-ph	m ³ /h L/min	0	2	3	4	5	6	7	8
						0	33	50	67	83	100	117	133
OCR 4-1	1	0.37	0.5	1	HEAD (m)	10	9	8	7.5	7	6	4	3
OCR 4-2	2	0.37	0.5	1		20	18	17	16	14	12	9	6
OCR 4-3	3	0.55	0.75	1.5		30	28	26	25	23	19	14	9
OCR 4-4	4	0.75	1	1.9		40	37	35	33	30	26	20	10
OCR 4-5	5	1.1	1.5	2.7		50	46	44	41	38	32	26	17
OCR 4-6	6	1.1	1.5	2.7		60	55	52	49	46	38	31	21
OCR 4-7	7	1.5	2	3.4		70	64	61	57	53	45	36	24
OCR 4-8	8	1.5	2	3.4		80	74	70	66	61	51	41	28
OCR 4-10	10	2.2	3	4.8		100	92	87	82	76	64	51	35
OCR 4-12	12	2.2	3	4.8		120	110	104	98	91	77	61	41
OCR 4-14	14	3	4	6.4		140	129	122	115	106	90	71	48
OCR 4-16	16	3	4	6.4		160	147	139	131	122	102	82	55
OCR 4-19	19	3.7	5	8		190	175	165	156	144	122	97	66
OCR 4-22	22	4.5	6	9		220	202	191	180	167	141	112	76

Highlighted columns (4, 5 m³/h): recommended operating range, as shaded in the source. Amp. = rated current, three-phase 380–415 V. Curves to ISO 9906 Annex A.

MAX. PUMP
EFFICIENCY
58 %

MAX. INLET PRESSURE
1–22 stages: **10 kg/cm²**

NPSHR CURVE
page 8

OCR 4 · DIMENSIONS, WEIGHTS AND CURVES

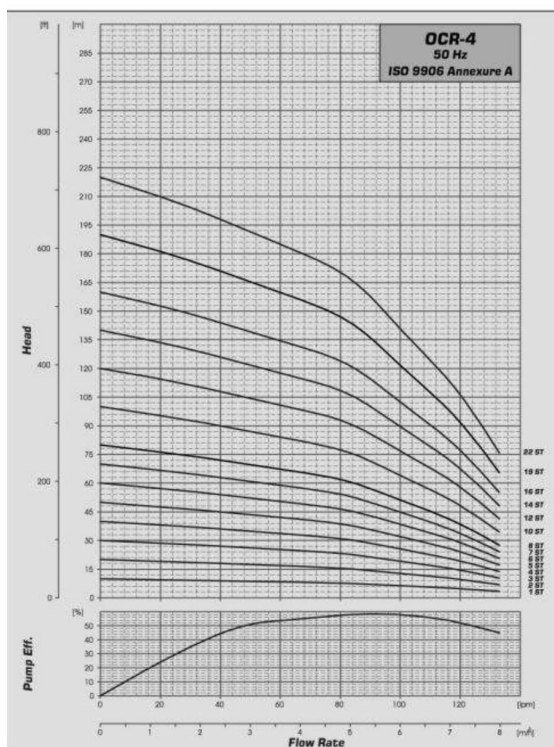
OCR 4 — dimensions & curves

DIMENSIONS AND WEIGHT

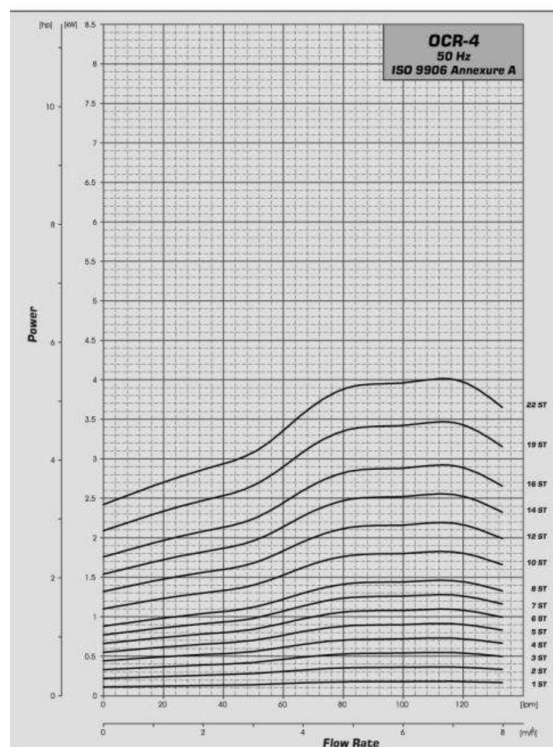
Model	Stages	HP	Dimensions (mm)					Weight kg
			B1	B2	D1	D2	D3	
OCR 4-1	1	0.5	270	219	134	103	—	28.5
OCR 4-2	2	0.5	279	219	134	103	—	29
OCR 4-3	3	0.75	306	239	134	103	—	30.5
OCR 4-4	4	1	333	255	138	115	—	38.5
OCR 4-5	5	1.5	366	255	138	115	—	42.5
OCR 4-6	6	1.5	393	255	138	115	—	43.5
OCR 4-7	7	2	420	255	138	115	—	46
OCR 4-8	8	2	447	255	138	115	—	47
OCR 4-10	10	3	517	300	156	124	—	55.6
OCR 4-12	12	3	571	300	156	124	—	57
OCR 4-14	14	4	625	315	194	143	—	59
OCR 4-16	16	4	679	315	194	143	—	60.5
OCR 4-19	19	5	764	315	194	143	—	63.5
OCR 4-22	22	6	845	n/p	n/p	n/p	—	65

See the dimensional sketch on page 9. n/p = not printed in the source.

OCR 4 · 50 Hz Head & efficiency



OCR 4 · 50 Hz Power



OCR 5 · 50 Hz · 2-pole

OCR 5 Vertical Multistage Pump

Nominal flow 5 m³/h · 23 models from 2 to 36 stagesFLOW
2.0–8.5 m³/hMAX. PRESSURE
24 barMOTOR
0.37–5.5 kWFLANGE
DN 25/32

PERFORMANCE TABLE — HEAD (M) AT FLOW

Model	Stages	kW	HP	Amp. 3-ph	m ³ /h L/min	0	2	3	4	5	6	7	8
						0	33	50	67	84	100	117	134
OCR 5-2	2	0.37	0.5	1	HEAD (m)	14	13	13	12	11	10	8	7
OCR 5-3	3	0.55	0.75	1.5		20	20	19	17	16	14	12	10
OCR 5-4	4	0.55	0.75	1.5		27	26	25	23	22	19	16	14
OCR 5-5	5	0.75	1	1.9		34	33	32	29	27	24	21	17
OCR 5-6	6	1.1	1.5	2.7		41	39	38	35	32	29	25	20
OCR 5-7	7	1.1	1.5	2.7		48	46	44	41	38	34	29	24
OCR 5-8	8	1.1	1.5	2.7		54	52	50	46	43	38	33	27
OCR 5-9	9	1.5	2	3.4		61	59	57	52	49	43	37	31
OCR 5-10	10	1.5	2	3.4		68	65	63	58	54	48	41	34
OCR 5-11	11	2.2	3	4.8		75	72	69	64	59	53	45	37
OCR 5-12	12	2.2	3	4.8		82	78	76	70	65	58	49	41
OCR 5-13	13	2.2	3	4.8		88	85	82	75	70	62	53	44
OCR 5-14	14	2.2	3	4.8		95	91	88	81	76	67	57	48
OCR 5-15	15	2.2	3	4.8		102	98	95	87	81	72	62	51
OCR 5-16	16	2.2	3	4.8		109	104	101	93	86	77	66	54
OCR 5-18	18	3	4	6.4		122	117	113	104	97	86	74	61
OCR 5-20	20	3	4	6.4		136	130	126	116	108	96	82	68
OCR 5-22	22	3.7	5	8		150	143	139	128	119	106	90	75
OCR 5-24	24	3.7	5	8		163	156	151	139	130	115	98	82
OCR 5-26	26	3.7	5	8		177	169	164	151	140	125	107	88
OCR 5-29	29	3.7	5	8		197	189	183	168	157	139	119	99
OCR 5-32	32	5.5	7.5	11		218	208	202	186	173	154	131	109
OCR 5-36	36	5.5	7.5	11		245	234	227	209	194	173	148	122

Highlighted columns (4, 5, 6 m³/h): recommended operating range, as shaded in the source. Amp. = rated current, three-phase 380–415 V. Curves to ISO 9906 Annex A. **Please verify: every OCR 5 head value in the source equals the OCR 3 value for the same stage count, although the flow columns differ — reproduced as printed.**

MAX. PUMP
EFFICIENCY
66 %

MAX. INLET PRESSURE

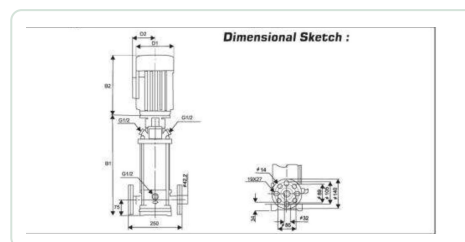
2–16 stages: **10 kg/cm²** · 18–36 stages: **15 kg/cm²**

NPSHR CURVE
page 8

OCR 5 · DIMENSIONS AND WEIGHTS

OCR 5 — dimensions & weights

Model	Stages	HP	Dimensions (mm)					Weight kg
			B1	B2	D1	D2	D3	
OCR 5-2	2	0.5	279	219	134	103	—	29
OCR 5-3	3	0.75	306	239	134	103	—	30.6
OCR 5-4	4	0.75	333	239	134	103	—	31.2
OCR 5-5	5	1	366	255	138	115	—	38.9
OCR 5-6	6	1.5	393	255	138	115	—	43.2
OCR 5-7	7	1.5	420	255	138	115	—	43.8
OCR 5-8	8	1.5	447	255	138	115	—	44.4
OCR 5-9	9	2	490	300	156	124	—	47.3
OCR 5-10	10	2	517	300	156	124	—	47.9
OCR 5-11	11	3	544	335	156	124	—	56.3
OCR 5-12	12	3	571	335	156	124	—	56.9
OCR 5-13	13	3	598	335	156	124	—	57.5
OCR 5-14	14	3	625	335	156	124	—	58.1
OCR 5-15	15	3	652	335	156	124	—	58.7
OCR 5-16	16	3	679	335	156	124	—	59.3
OCR 5-18	18	4	737	315	194	143	—	61.6
OCR 5-20	20	4	791	315	194	143	—	62.8
OCR 5-22	22	5	845	315	194	143	—	65.0
OCR 5-24	24	5	899	315	194	143	—	66.3
OCR 5-26	26	5	953	315	194	143	—	67.5
OCR 5-29	29	5	1034	315	194	143	—	69.4
OCR 5-32	32	7.5	1145	415	260	166	300	99.3
OCR 5-36	36	7.5	1253	415	260	166	300	101.8



Dimensional sketch (original).

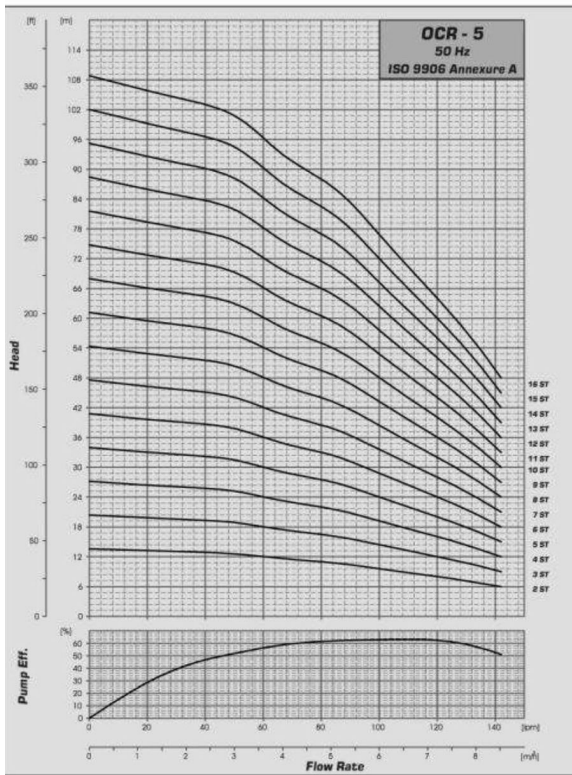
Selecting a model. Read the duty point on the performance table or curves, choose the smallest number of stages that reaches the required head, then check NPSHR (page 8) and inlet pressure (page 7).

n/p = not printed in the source. D3 applies to motors of 7.5 HP and larger.

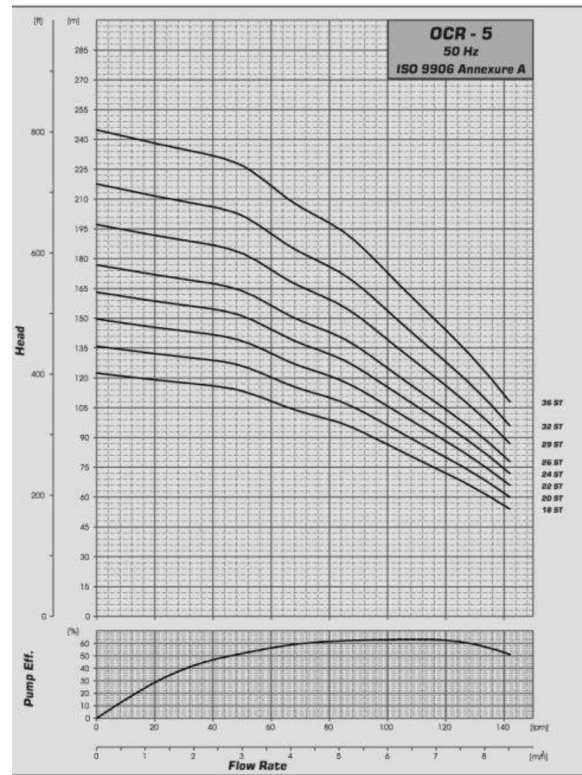
OCR 5 · PERFORMANCE & POWER CURVES · 50 HZ

OCR 5 — curves

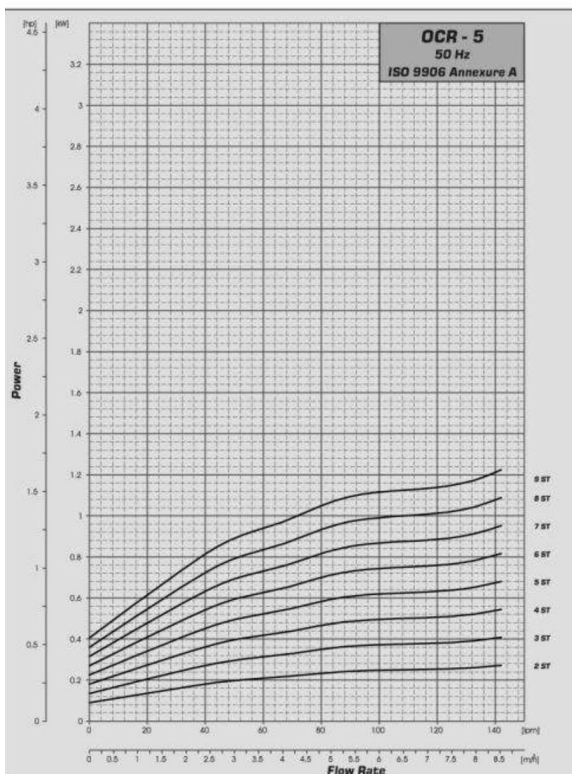
OCR 5 · 50 Hz Head & efficiency · 2-16 stages



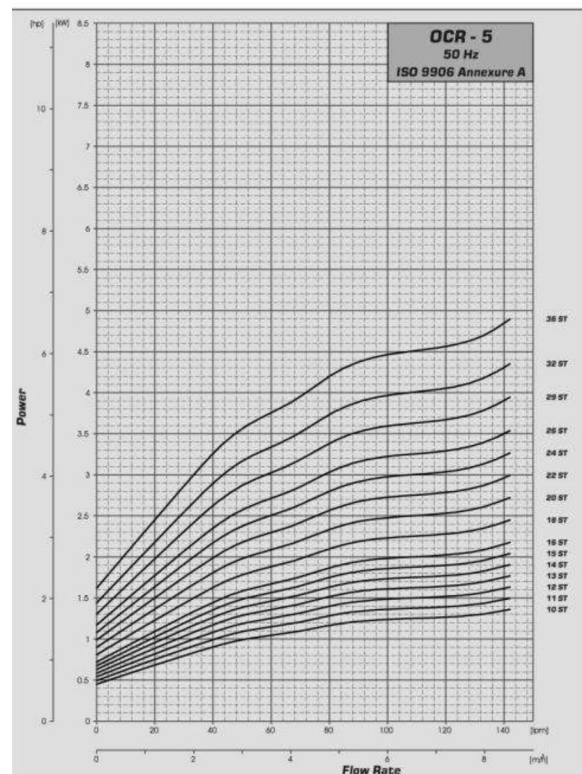
OCR 5 · 50 Hz Head & efficiency · 18-36 stages



OCR 5 · 50 Hz Power · 2-9 stages



OCR 5 · 50 Hz Power · 10-36 stages



Original curves (ISO 9906 Annex A). Head in m (left) and ft; pump efficiency (%) in the lower panel; power in kW and hp.

OCR 10 · 50 Hz · 2-pole

OCR 10 Vertical Multistage Pump

Nominal flow 10 m³/h · 16 models from 1 to 22 stagesFLOW
6–13 m³/hMAX. PRESSURE
22 barMOTOR
0.37–7.5 kWFLANGE
DN 40

PERFORMANCE TABLE — HEAD (M) AT FLOW

Model	Stages	kW	HP	Amp. 3-ph	m ³ /h L/min	0	6	7	8	9	10	11	12
						0	100	117	134	150	167	184	200
OCR 10-1	1	0.37	0.5	1	HEAD (m)	10	10	10	9	9	8	7	7
OCR 10-2	2	0.75	1	1.9		20	20	19	19	18	16	15	13
OCR 10-3	3	1.1	1.5	2.7		31	30	29	28	26	25	23	20
OCR 10-4	4	1.5	2	3.4		41	40	39	37	35	33	30	27
OCR 10-5	5	2.2	3	4.8		51	50	49	47	44	41	38	34
OCR 10-6	6	2.2	3	4.8		61	60	58	56	53	49	45	40
OCR 10-7	7	3	4	6.4		71	70	68	65	62	57	53	47
OCR 10-8	8	3	4	6.4		82	80	78	74	70	66	60	54
OCR 10-9	9	3	4	6.4		92	90	87	84	79	74	68	60
OCR 10-10	10	3.7	5	8		102	100	97	93	88	82	75	67
OCR 10-12	12	4.5	6	9		122	120	116	112	106	98	90	80
OCR 10-14	14	5.5	7.5	11		143	140	136	130	123	115	105	94
OCR 10-16	16	5.5	7.5	11		163	160	155	149	141	131	120	107
OCR 10-18	18	7.5	10	15.2		184	180	175	167	158	148	135	121
OCR 10-20	20	7.5	10	15.2		204	200	194	186	176	164	150	134
OCR 10-22	22	7.5	10	15.2		224	220	213	205	194	180	165	147

Highlighted columns (9, 10, 11 m³/h): recommended operating range, as shaded in the source. Amp. = rated current, three-phase 380–415 V. Curves to ISO 9906 Annex A.

MAX. PUMP
EFFICIENCY
70 %

MAX. INLET PRESSURE

1–6 stages: **8 kg/cm²** · 7–22 stages: **10 kg/cm²**

NPSHR CURVE
page 8

OCR 10 · DIMENSIONS, WEIGHTS AND CURVES

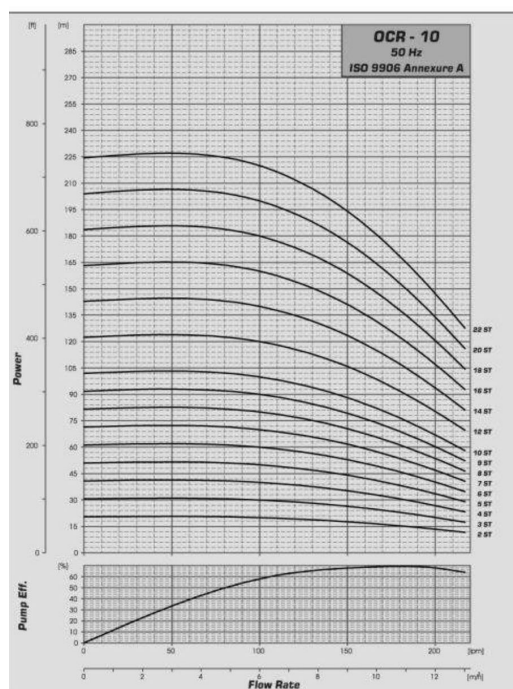
OCR 10 — dimensions & curves

DIMENSIONS AND WEIGHT

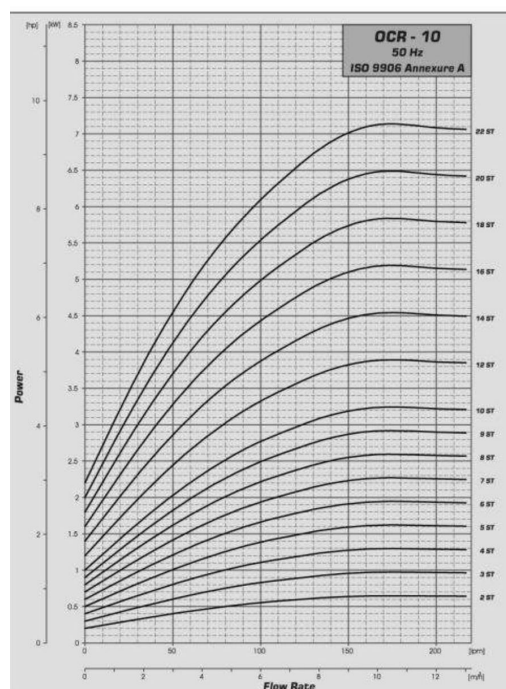
Model	Stages	HP	Dimensions (mm)					Weight kg
			B1	B2	D1	D2	D3	
OCR 10-1	1	0.5	343	219	134	103	—	39
OCR 10-2	2	1	347	255	138	115	—	43
OCR 10-3	3	1.5	377	255	138	115	—	46
OCR 10-4	4	2	423	300	156	124	—	56
OCR 10-5	5	3	453	335	156	124	—	60
OCR 10-6	6	3	483	335	156	124	—	63
OCR 10-7	7	4	518	315	194	143	—	66
OCR 10-8	8	4	548	315	194	143	—	68
OCR 10-9	9	4	578	315	194	143	—	70
OCR 10-10	10	5	608	315	194	143	—	75
OCR 10-12	12	6	668	n/p	n/p	n/p	—	81
OCR 10-14	14	7.5	760	415	260	166	300	100
OCR 10-16	16	7.5	820	415	260	166	300	105
OCR 10-18	18	10	880	440	260	166	300	112
OCR 10-20	20	10	940	440	260	166	300	114
OCR 10-22	22	10	1000	440	260	166	300	116

See the dimensional sketch on page 9. n/p = not printed in the source.

OCR 10 · 50 Hz Head & efficiency



OCR 10 · 50 Hz Power



OCR 15 · 50 Hz · 2-pole

OCR 15 Vertical Multistage Pump

Nominal flow 15 m³/h · 13 models from 1 to 17 stagesFLOW
10–24 m³/hMAX. PRESSURE
23 barMOTOR
1.1–15.0 kWFLANGE
DN 50

PERFORMANCE TABLE — HEAD (M) AT FLOW

Model	Stages	kW	HP	Amp. 3-ph	m ³ /h L/min	0	10	12	14	16	18	20	22
						0	167	200	234	267	300	334	367
OCR 15-1	1	1.1	1.5	2.7	HEAD (m)	14	13	13	12	12	11	10	9
OCR 15-2	2	2.2	3	4.8		28	27	26	25	23	22	20	18
OCR 15-3	3	3	4	6.4		42	40	39	37	35	33	30	27
OCR 15-4	4	3.7	5	8		56	54	52	50	47	44	40	36
OCR 15-5	5	3.7	5	8		70	67	65	62	59	55	50	45
OCR 15-6	6	5.5	7.5	11		84	80	78	74	70	65	60	53
OCR 15-7	7	5.5	7.5	11		98	94	91	87	82	76	70	62
OCR 15-8	8	7.5	10	15.2		112	107	104	99	94	87	80	71
OCR 15-9	9	7.5	10	15.2		126	121	117	112	105	98	90	80
OCR 15-10	10	11	15	21.5		140	134	130	124	117	109	100	89
OCR 15-12	12	11	15	21.5		168	161	156	149	140	131	120	107
OCR 15-14	14	11	15	21.5		196	188	182	174	164	153	140	125
OCR 15-17	17	15	20	28.7		238	228	221	211	199	185	170	151

Highlighted columns (14, 16, 18 m³/h): recommended operating range, as shaded in the source. Amp. = rated current, three-phase 380–415 V. Curves to ISO 9906 Annex A.

MAX. PUMP
EFFICIENCY
72 %

MAX. INLET PRESSURE

1–3 stages: **8 kg/cm²** · 4–17 stages: **10 kg/cm²**

NPSHR CURVE
page 8

OCR 15 · DIMENSIONS, WEIGHTS AND CURVES

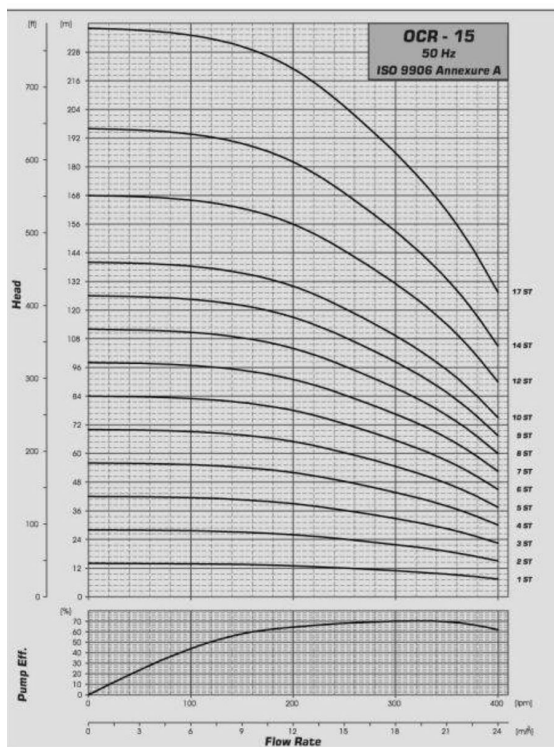
OCR 15 — dimensions & curves

DIMENSIONS AND WEIGHT

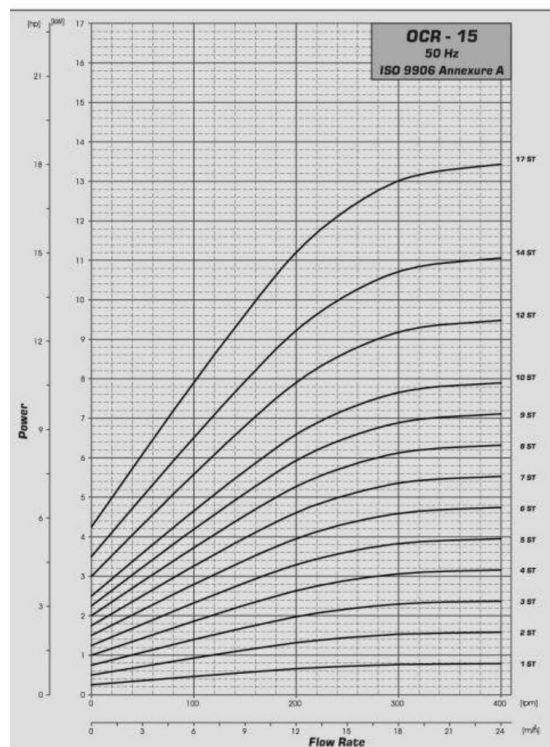
Model	Stages	HP	Dimensions (mm)					Weight kg
			B1	B2	D1	D2	D3	
OCR 15-1	1	1.5	400	255	138	115	—	49
OCR 15-2	2	3	415	335	156	124	—	64
OCR 15-3	3	4	465	315	194	143	—	69
OCR 15-4	4	5	510	315	194	143	—	80
OCR 15-5	5	5	555	315	194	143	—	83
OCR 15-6	6	7.5	632	415	260	166	300	100
OCR 15-7	7	7.5	677	415	260	166	300	104
OCR 15-8	8	10	722	440	260	166	300	110
OCR 15-9	9	10	767	440	260	166	300	115
OCR 15-10	10	15	889	870	290	215	350	190
OCR 15-12	12	15	979	870	290	215	350	195
OCR 15-14	14	15	1069	870	290	215	350	208
OCR 15-17	17	20	1204	870	290	215	350	228

See the dimensional sketch on page 9. n/p = not printed in the source.

OCR 15 · 50 Hz Head & efficiency

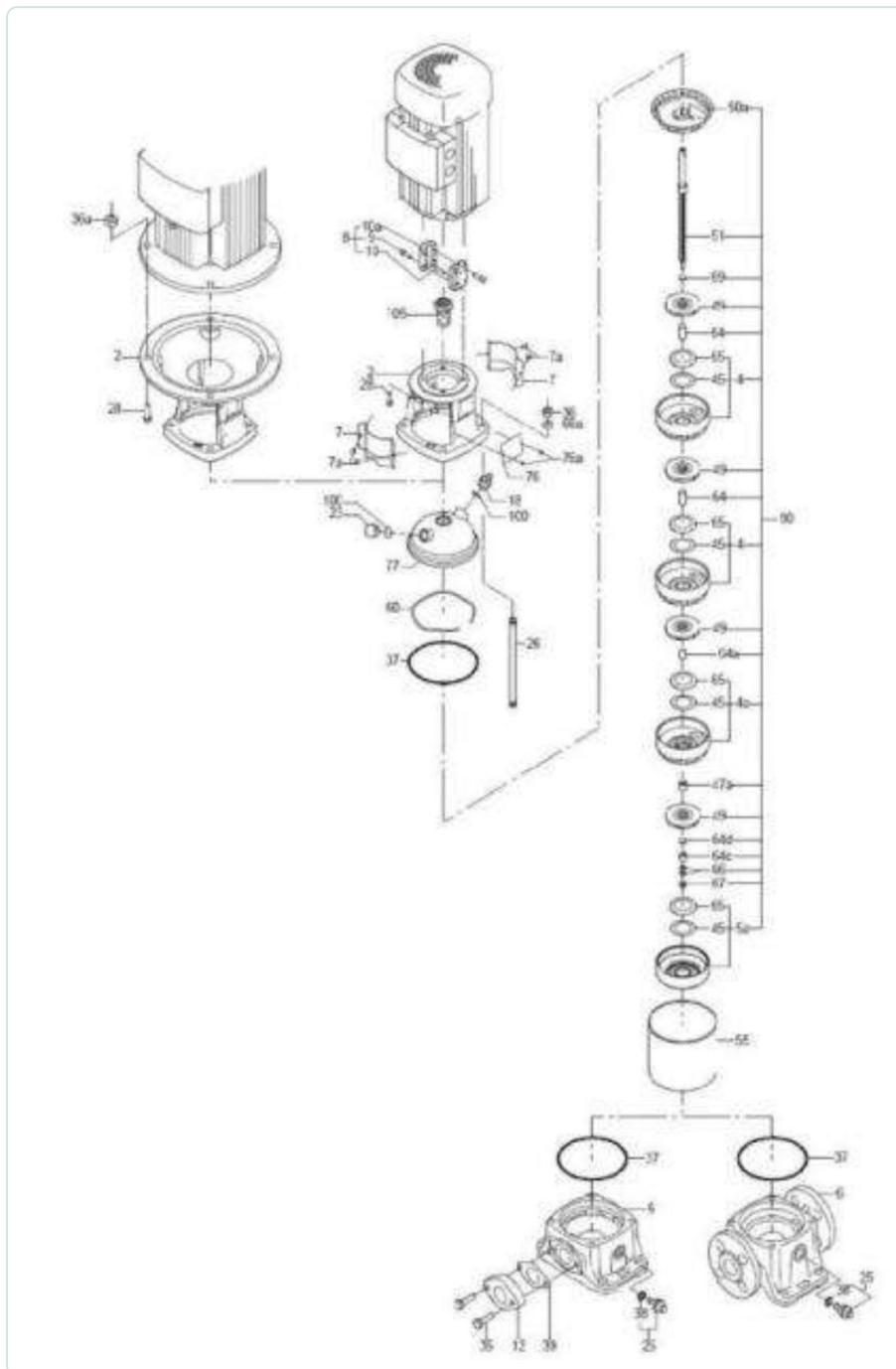


OCR 15 · 50 Hz Power



SERVICE · EXPLODED VIEW

OCR — exploded view



Original exploded view (OCR 1, 3, 5). Position numbers refer to the parts list on the next page. Positions 12, 36a, 39 and 90 appear on the drawing but are not in the parts list.



SERVICE · PARTS LIST

OCR — parts, tools & tightening torques

Pos.	Description	Tool	Tool description	Torque (Nm)	Qty.
109	O-ring Ø 22 × 2.75				3
105	Shaft seal M28			35	1
100	O-ring Ø 16.3 × 2.4				3
77	Pump head cover				1
76a	Screw, coupling guard				4
76	Nameplate set				1
69	Spacing pipe				–
67	Lock nut M8	K	Ring spanner M8 – 13 mm	18	1
66a	Lock washer				4
66	Washer				2
65	Neckring retainer	C	Puller		4
64d	Spacing pipe				1
64c	Clamp, splined (L = 10)				1
64a	Spacing pipe				1
64	Spacing pipe				1
60	Corrugated spring	F	Tool for corrugated spring		1
56	Base plate				1
55	Outer sleeve	E	Tool for outer sleeve		1
51	Pump shaft Ø 12.0	A	Shaft holder for assembly		1
50a	Pump head cover, diff. assy.				1
49	Impeller				–
47	Bearing				1
45	Neckring				1
38	O-ring Ø 16.3 × 2.4				–
37	O-ring Ø 137.5 × 3.5	G	Tool for O-rings		4
36	Nut M12	K	Ring spanner M12 – 19 mm	50	4
35	Screw M10	K	Ring spanner M10 – 17 mm	23	4
28	Screw M6	K	Ring spanner M6 – 10 mm	10	4
26	Staybolt M12				4
25	Drain plug ½" (M10)	K	Ring spanner M16 – 24 mm	35 (5)	1
23	Plug	K	Ring spanner M16 – 24 mm	35	1
18	Air vent, complete (M8)	K	Ring spanner M16 – 24 mm	35 (3)	1
10a	Coupling				2
10	Shaft pin				1
9	Screw M6			13	4
8	Coupling, complete	H, I, J	Bit kit M10 – 8 mm ¼"		1
7a	Screw M4			2	4
7	Coupling guard				2
6	Base	H, I	Bit kit M8 – 6 mm ¼"		1
5a	Chamber, complete				1
4a	Chamber with bearing ring				1
4	Chamber, complete	B	Tubular box spanner		–
2	Pump head				–

Part numbers are blank in the source and are therefore omitted. Torque values in brackets as printed (e.g. 35 (5)). Tool letters refer to the Oswal service tool kit.

USEFUL DATA

Conversion table

VOLUME

1 imperial gallon (UK)	4.546 litres
1 US gallon	3.785 litres
1 cubic foot	28.32 litres (62.4 lb of water)

PRESSURE

1 standard atmosphere	1.033 kg/cm ² = 14.7 psi = 33.9 ft of water
1 kg/cm ²	10 m water column = 14.22 psi ≈ 0.98 bar ¹

LENGTH & AREA

1 inch	25.4 mm = 2.54 cm
1 metre	39.37 in = 3.281 ft = 1,000 mm ³
1 foot	304.8 mm = 12 in
1 acre	0.405 hectare
1 hectare	2.47 acres

FLOW

1 imperial gallon / min	4.546 L/min (10 lb of water)
1 US gallon / min	3.785 L/min
1 m ³ /h	1,000 L/h = 16.67 L/min
1 litre / second	60 L/min

POWER

1 HP (imperial)	0.746 kW = 746 W
1 HP (metric)	0.736 kW = 736 W
1 kW	1,000 W
1 unit (electricity)	1 kWh ²

TEMPERATURE

°C → °F	°F = (9 × °C / 5) + 32
°F → °C	°C = (°F - 32) × 5 / 9 ⁴

¹ Source gives 1 kg/cm² = 1 bar (approximation; exact 0.981 bar) and repeats 1 atm = 1.03 kg/cm². ² Source: "1 unit = 1 kW or 1,000 W – 1 bar"; a unit of electricity is 1 kWh. ³ Source: 39.36 in. ⁴ Source formula "C = F – 32 (5/9)" corrected for operator precedence.

Need help choosing?

Send us the duty point, liquid and installation — we will recommend the right OCR pump and number of stages.

1800-120-1882

info@oswalpumps.com · WhatsApp +91-98962-66691



True Partner!

Oswal Pumps Limited

Pumps & Motors · Solar | Domestic | Agriculture | Industrial

PAN-INDIA PRESENCE



GLOBAL PRESENCE



ADDRESS

Oswal Estate, NH-1, Kutail Road,
P.O. Kutail, District Karnal – 132037
(Haryana) India

SALES / WHATSAPP

+91 - 98962 - 66691

TOLL - FREE

1800 - 120 - 1882

EMAIL

info@oswalpumps.com

WEB

www.oswalpumps.com

NSE: **OSWALPUMPS**

BSE: **544418**



ISO 9001:2015 certified company