

End Suction Centrifugal Pumps

NM SERIES (With 50 Hz Curves)



TECHNICAL MANUAL



NM Series

End Suction Centrifugal Pumps

General Information



Mas Grup

Fields of Application

- Water supply and booster stations.
- Irrigation, overhead irrigation and draining.
- Filling and emptying of tanks and containers.
- Circulating of hot and cold water in central heating and air-conditioning installations.
- Pumping of condensate.
- Water circulating for swimming pools.
- Sanitary and cleaning installations.
- For industrial applications and public services.
- Fresh water supply on ships.

Pumped Liquids

Thin, clean, non-aggressive and non-explosive liquids free from large solid particles or fibres.

For special applications, please consult to MAS DAF MAKINA SAN. A.Ş.

Design

- Single-stage, end suction, centrifugal volute pump.
 - Main dimensions according to EN 733.
 - In addition to 25 basic sizes conforming to norms, we have developed 20 additional sizes. So we have 45 sizes of pumps.
 - Single entry, closed impeller is hydraulically thrust compensated and dynamically balanced.
 - Pump and motor are separate components, connected to each other via a flexible coupling and mounted on a common base plate.
 - Maintenance is very much easier, the impeller shaft and other rotating parts being removable with no need to disconnect the suction and delivery pipes.
 - In fact the use of one extension coupling enables a pump to be dismantled without moving either the driver or the pump casing.
- Maximum interchangeability of components, identical parts can be used with various sizes of a pump, which greatly simplifies and reduces stock of spare parts.

Bearings

The pump has sturdy maintenance-free antifriction bearings, which are greased for life with high-temperature grease. A deflector on the shaft prevents leakage fluid from getting into bracket.

Shaft Seal

Pumps are supplied as standard a conventional packet gland, lantern ring for water sealing and lubricating of packing.

- Uncooled stuffing box without shaft sleeve is standard. (Up to 90 °C)
- Uncooled mechanical seal with or without shaft sleeve is optional. (Up To 90 °C)
- Water cooled stuffing box or mechanical seal is optional. (90 – 140 °C)

For a medium different than water, please consult to MAS DAF MAKINA SANAYI A.Ş. for selection of appropriate O-Ring and Mechanical Seal type.

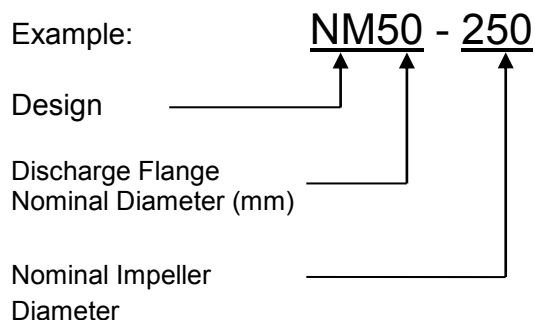
Technical Data

- Suction Flange..... : DN 50 ...DN 400
- Discharge Flange..... : DN 32....DN 350
- Operating Pressure..... : 10 Bar
- Casing Test Pressure..... : 13 Bar
- Operating Temperature.. : -25 – 130 °C
- Impeller Diameter mm ø.. : 160...500 mm ø
- Speed Range..... : 1000 – 3600 RPM
- Capacity Range..... : 5 – 3500 m³ / h
- Head Range..... : 4 - 105 m

Pump Flanges

- Discharge Flanges : DIN 2533 – PN 16
- Suction Flanges : 32-200 DIN 2533 PN 16
250, 350, 400DIN 2532 PN 10

Identification Code



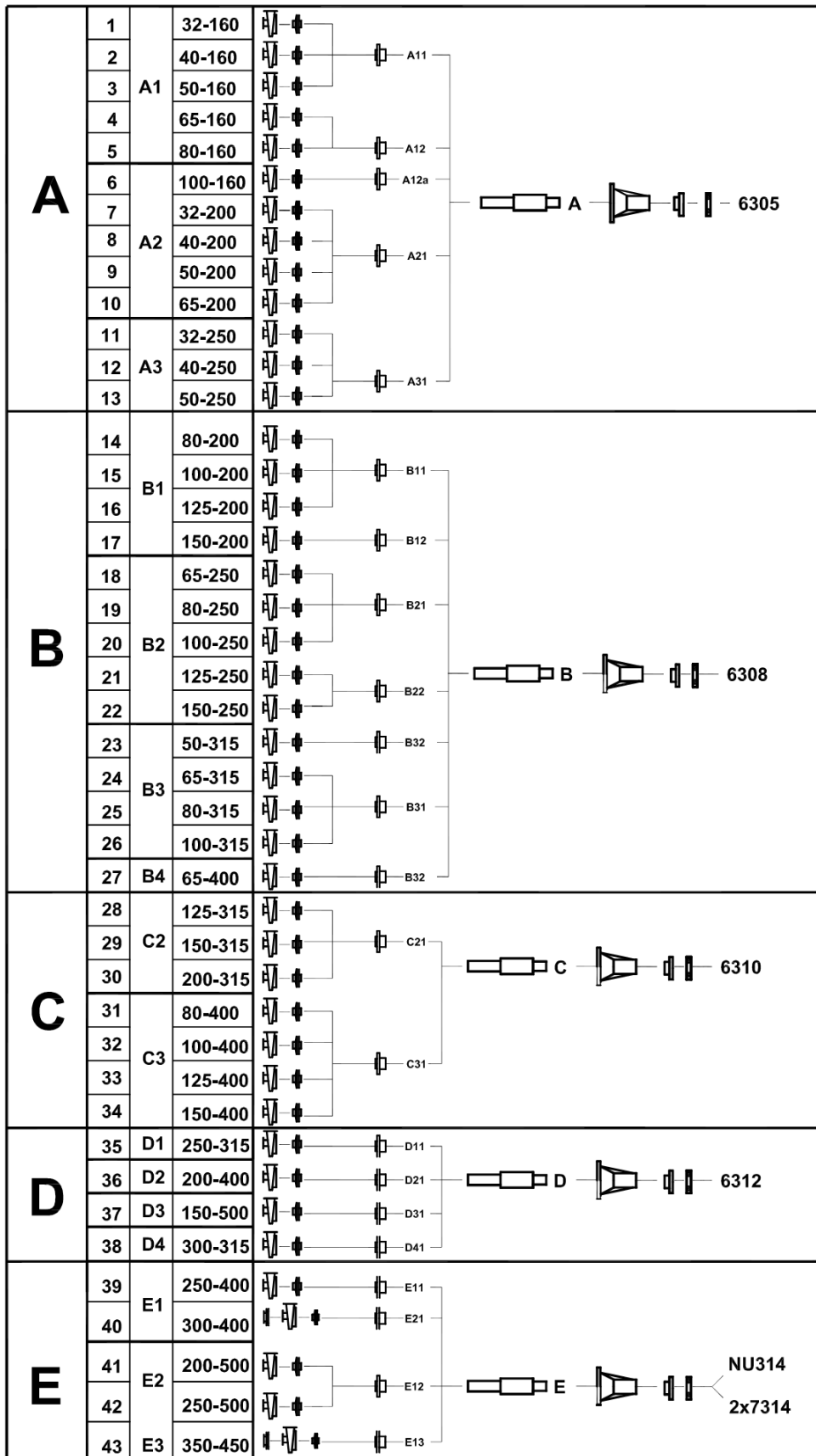
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Interchangeability for Pumps



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Casing Impeller Stuffing Box Shaft Bearing

Bearing Housing Suction Cover Bearing Cover

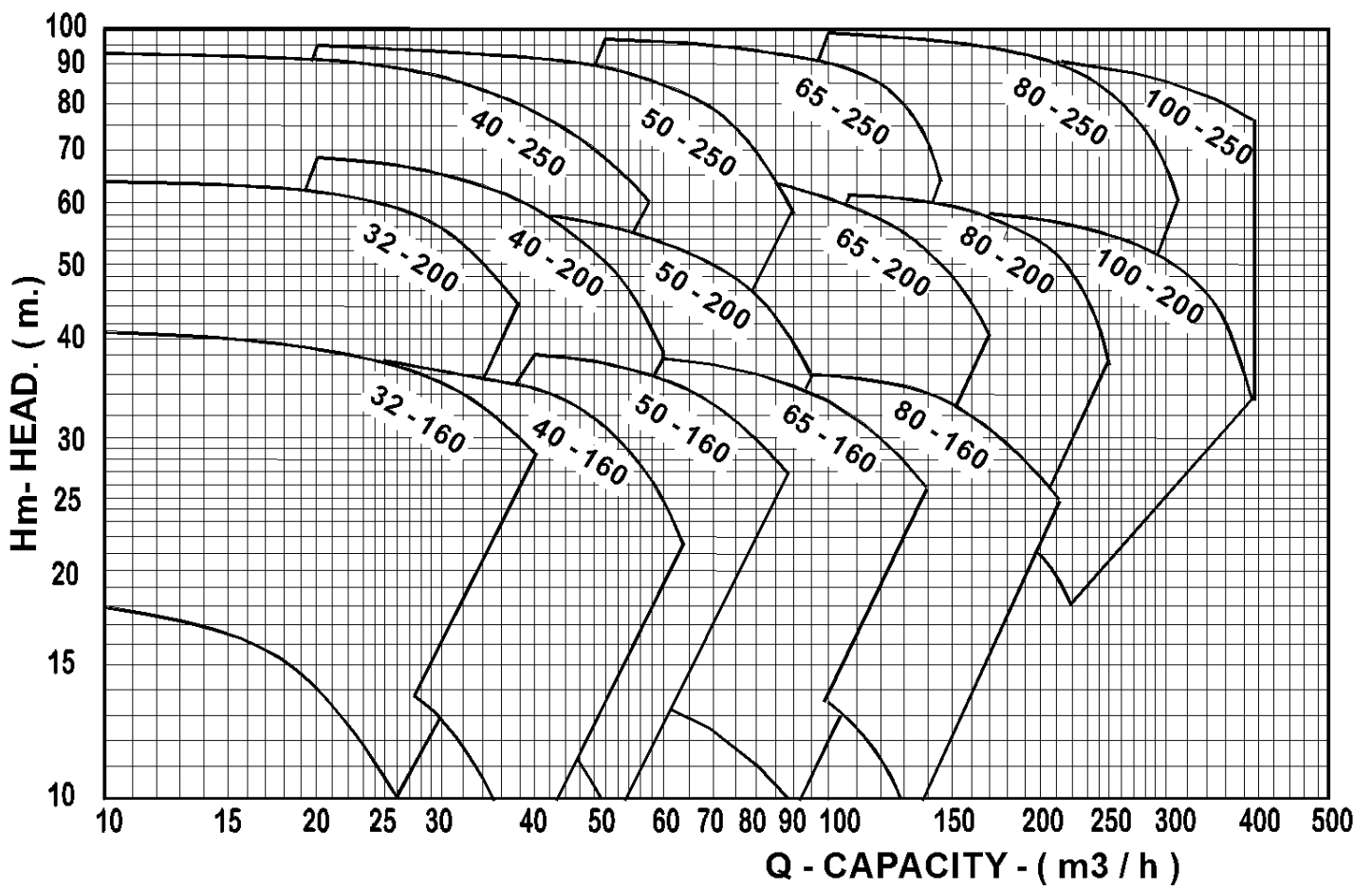
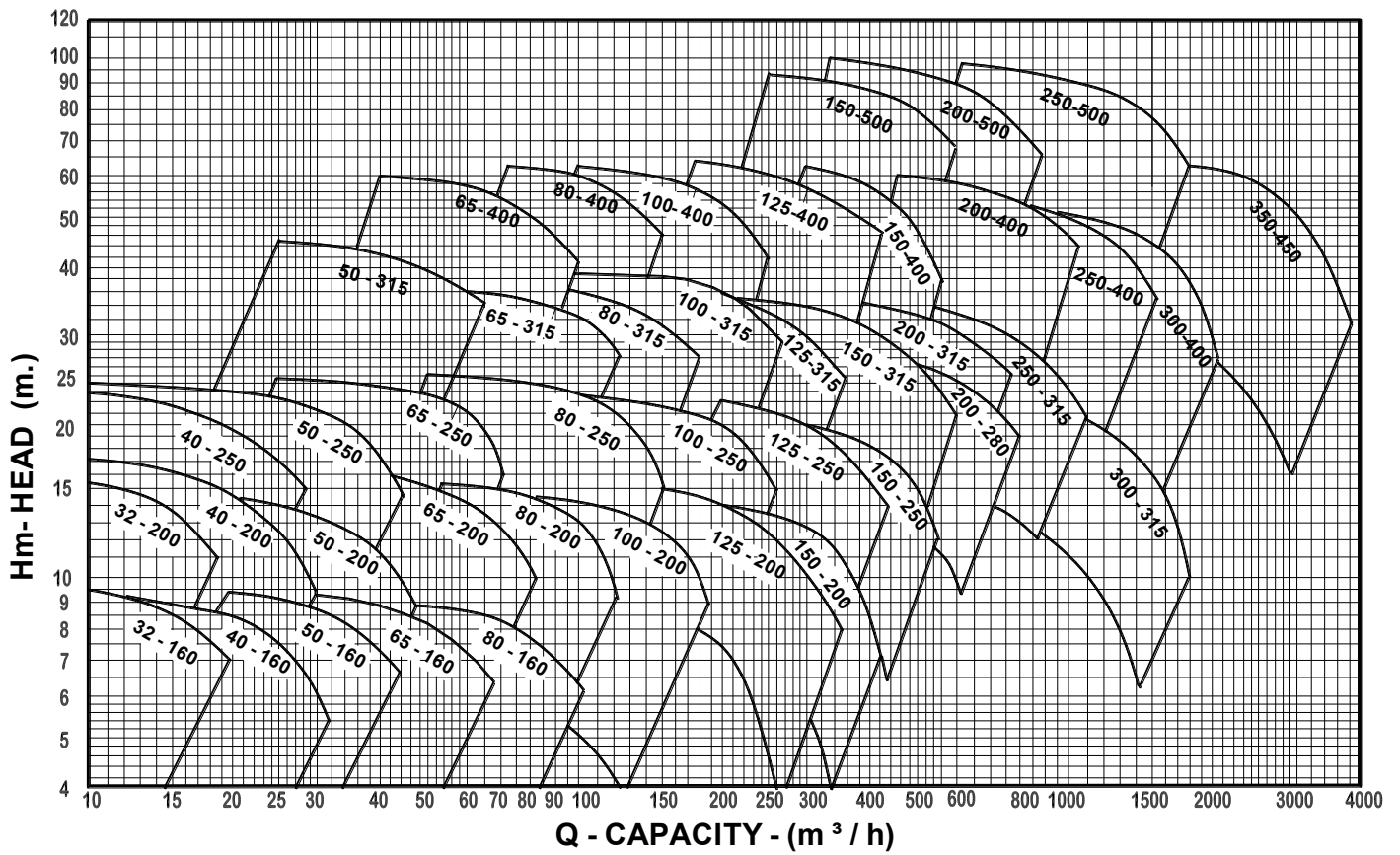
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Performance Range



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End Suction Centrifugal Pumps
ATEX Description



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ATEX Codification

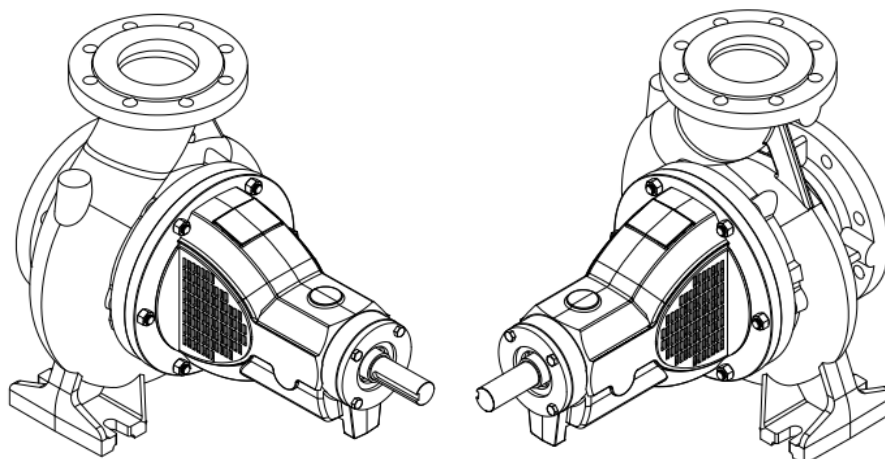
ATEX -95

 D c Tx (85 °C – 200 °C)

Equipment Groups (Annex I of Directive 94/9/EC)							
Group I (mines, mine gas and dust)		Group II (other explosive atmospheres gas/dust)					
Category M 1	Category M 2	Category 1		Category 2		Category 3	
		G (gas) (Zone 0)	D (dust) (Zone 20)	G (gas) (Zone 1)	D (dust) (Zone 21)	G (gas) (Zone 2)	D (dust) (Zone 22)
For equipment providing a very high level of protection when endangered by an explosive atmosphere	For equipment providing a high level of protection when likely to be endangered by an explosive atmosphere	For equipment providing a very high level of protection when used in areas where an explosive atmosphere is very likely to occur		For equipment providing a high level of protection when used in areas where an explosive atmosphere is likely to occur		For equipment providing a normal level of protection when used in areas where an explosive atmosphere is less likely to occur	

TEMPERATURE CLASS		
Temperature class required by the area classification	Ignition temperature of gas or vapor	Allowable temperature classes of equipment
T1	> 450 °C	T1 - T6
T2	> 300 °C	T2 - T6
T3	> 200 °C	T3 - T6
T4	> 135 °C	T4 - T6
T5	> 100 °C	T5 - T6
T6	> 85 °C	T6

Code	Description
II	The Usage in other non-mining explosive atmospheres
2	2. Category: High level of protection
G	For potentially explosive environments due to gases or vapors
T	Temperature class
X	ATEX Marking of the motor manufacturer



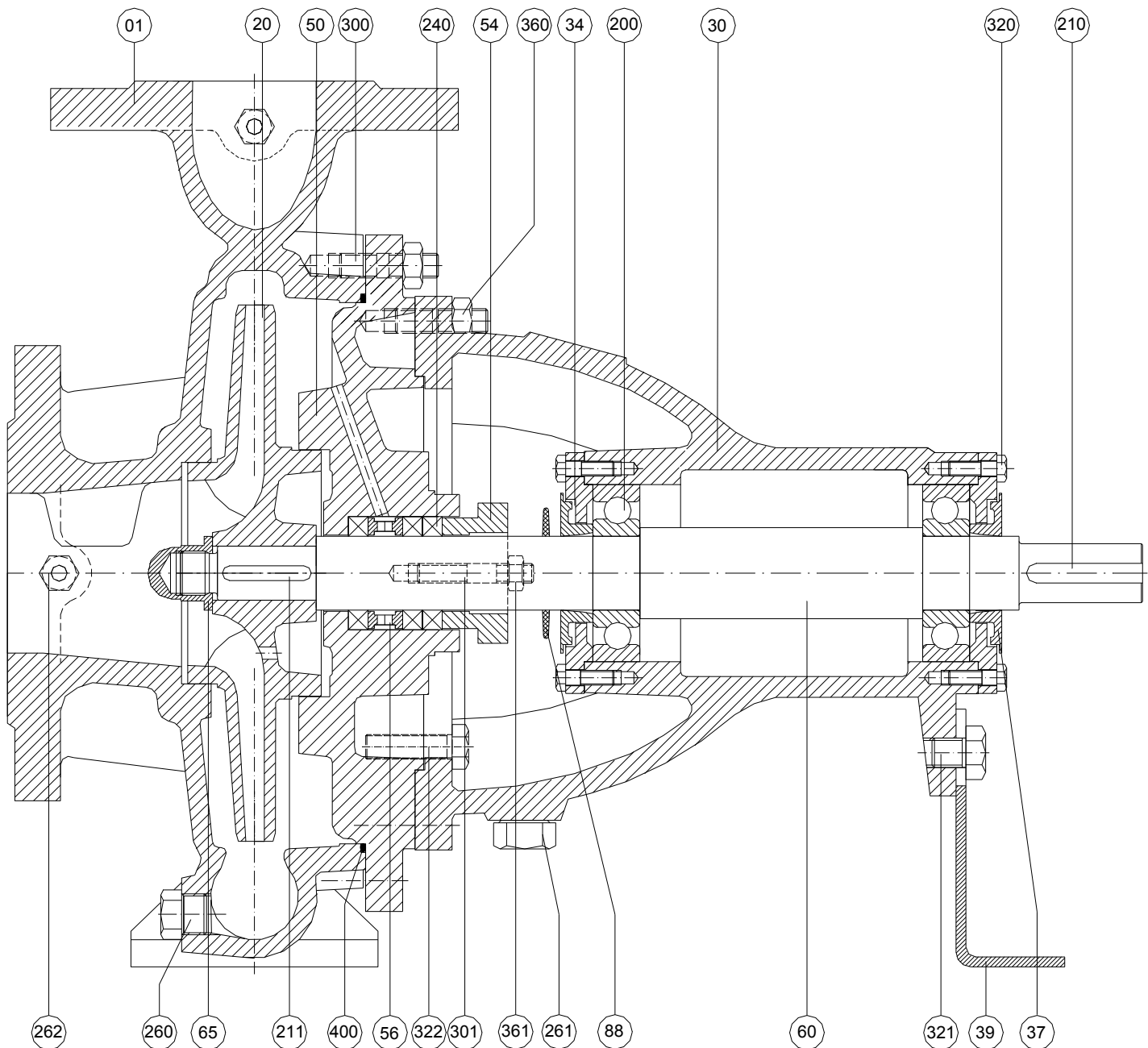
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End Suction Centrifugal Pumps

Cross-Sectional View of End Suction Centrifugal Pump (Group A, B, C, D)



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PART NO	PART NAME	PART NO	PART NAME
01	Pump Casing	211	Impeller Key
20	Impeller	240	Gland Packing
30	Bearing Housing	260	Drain Plug
34	Bearing Housing Cover	261	Plug
37	Lip Seal	262	Plug
39	Supporting Part	300	Stud
50	Stuffing Box	301	Stud for Gland
54	Gland	320	Hexagonal Bolt
56	Lantern Ring	321	Hexagonal Bolt
60	Pump Shaft	322	Hexagonal Bolt
65	Impeller Nut	360	Hexagonal Nut
88	Water Thrower	361	Hexagonal Nut for Gland
200	Ball Bearing	400	O-Ring
210	Coupling Key		

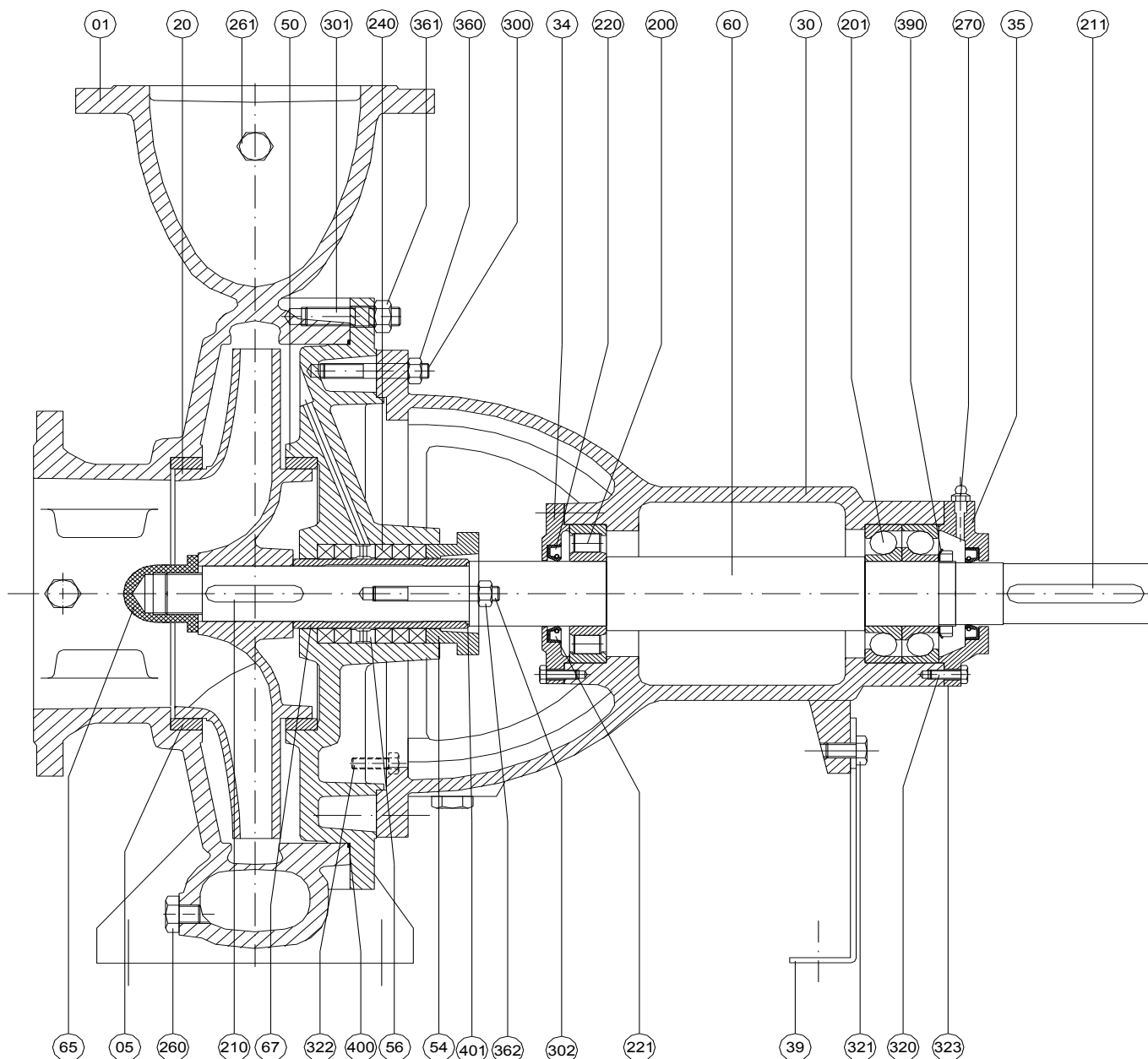
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End Suction Centrifugal Pumps

Cross-Sectional View of End Suction Centrifugal Pump (Group E)



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PART NO	PART NAME	PART NO	PART NAME
01	Pump Casing	221	Oil Seal
05	Wearing Ring	240	Gland Packing
20	Impeller	260	Drain Plug
30	Bearing Housing	261	Plug
34	Bearing Housing Cover	270	Greaser
35	Bearing Cover (Outside)	300	Stud
39	Supporting Foot	301	Stud
50	Stuffing Box	301	Stud for Gland
54	Gland	320	Hexagonal Bolt
56	Lantern Ring	321	Hexagonal Bolt
60	Pump Shaft	322	Hexagonal Bolt
65	Impeller Nut	323	Hexagonal Bolt
67	Sealing Sleeve	360	Hexagonal Nut
200	Bearing	361	Hexagonal Nut
201	Bearing	362	Nut for Gland
210	Impeller Key	390	Safety Ring

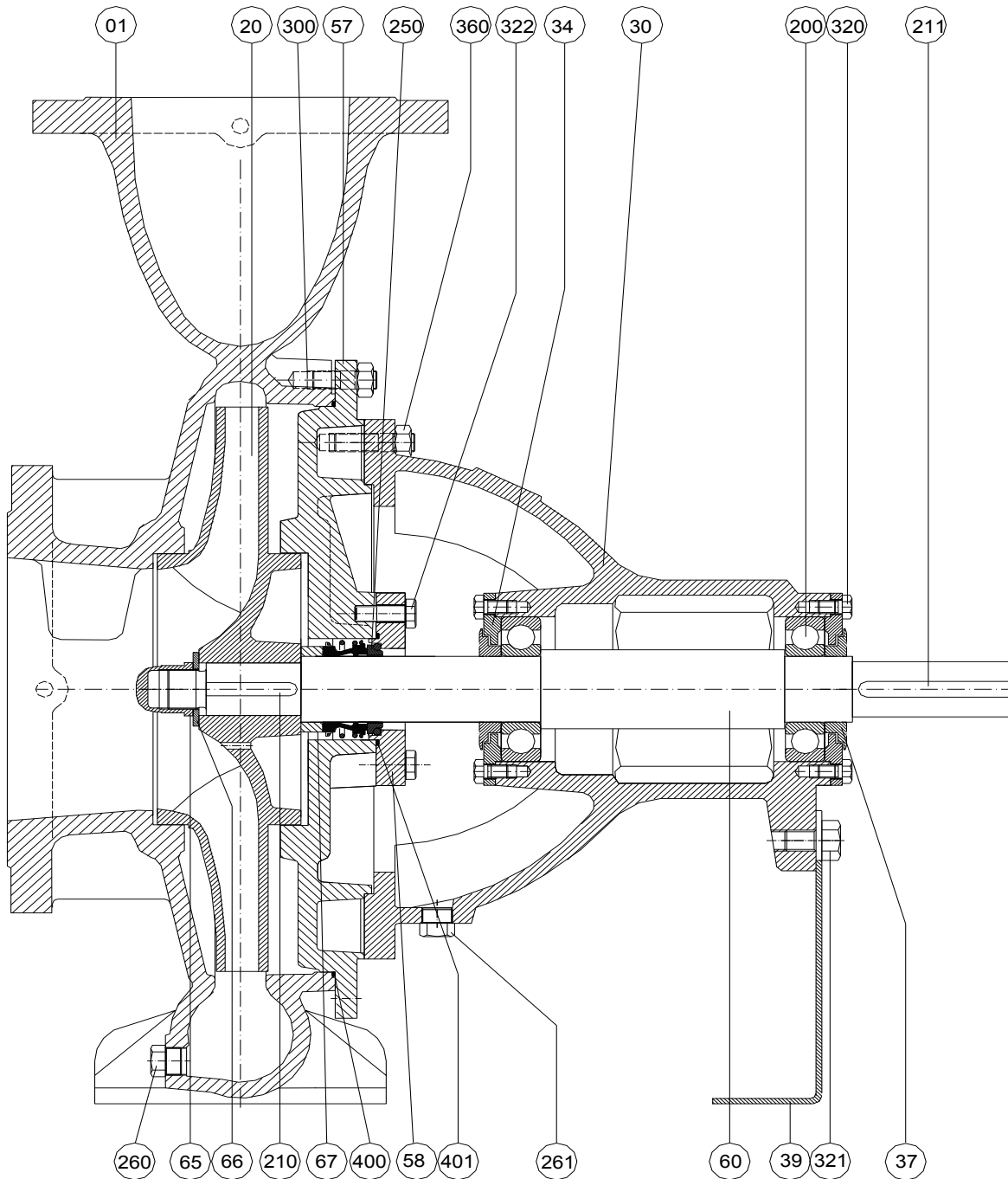
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End Suction Centrifugal Pumps

Cross-Sectional View of End Suction Centrifugal Pump (With Mechanical Seal)



Mas Grup



PART NO	PART NAME	PART NO	PART NAME
01	Pump Casing	210	Impeller Key
20	Impeller	211	Coupling Key
30	Bearing Housing	250	Mechanical Seal
34	Bearing Housing Cover	260	Drain Plug
39	Supporting Foot	261	Plug
37	Bearing Cover	300	Stud
57	Stuffing Box	320	Hexagonal Bolt
58	Mech. Seal Cover	321	Hexagonal Bolt
60	Pump Shaft	322	Hexagonal Bolt
65	Impeller Nut	360	Hexagonal Nut
66	Ring	400	O-Ring
67	Mech. Seal Front Ring	401	O-Ring
200	Ball Bearing		

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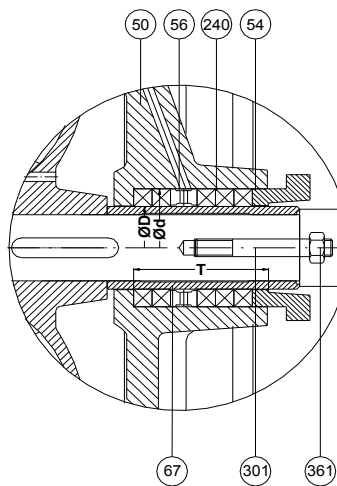
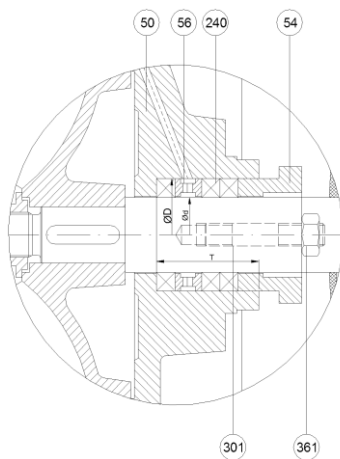
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Bearings, Stuffing-Box, Mechanical Seal



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Group	Bearing System	Stuffing Box			Mechanical Seal Diameter	Pump Size
	Type of Bearing	Shaft Ød ₁	Packing Ring Size ØD x Ød x T	Quantity		
A	2 x 6306 2RS-C3	Ø30	Ø46 x Ø30 x 45	3 Soft Packing + 1 Lantern Ring	Ø30	32-160, 40-160, 50-160, 65-160, 80-160, 100-160, 32-200, 40-200, 50-200, 65-200, 32-250, 40-250, 50-250
B	2 x 6308 2RS-C3	Ø40	Ø60 x Ø40 x 55,5	3 Soft Packing + 1 Lantern Ring	Ø40	80-200, 100-200, 125-200, 150-200, 65-250, 80-250, 100-250, 125-250, 150-250, 50-315, 65-315, 80-315, 100-315, 65-400
C	2 x 6310 2RS-C3	Ø50	Ø70 x Ø50 x 55	3 Soft Packing + 1 Lantern Ring	Ø50	200-280, 125-315, 150-315, 200-315, 80-400, 100-400, 125-400, 150-400
D	2 x 6312 2RS-C3	Ø60	Ø85 x Ø60 x 82	3 Soft Packing + 1 Lantern Ring	Ø60	250-315, 200-400, 150-500, 300, 315
E	NU 314 2 x 7314	Ø75	Ø107,5 x Ø75 x 115,5	5 Soft Packing + 1 Lantern Ring	Ø75	250-400, 300-400, 200-500, 250-500, 350-450



Stuffing Box Detail for Group A, B, C, D	
Part No	Part Name
50	Stuffing Box
54	Glen
56	Lantern Ring
240	Gland
301	Stud for Gland
361	Nut for Gland

Stuffing Box Detail for Group E	
Part No	Part Name
50	Stuffing Box
54	Glen
56	Lantern Ring
67	Seal Sleeve
240	Gland
301	Stud for Gland
361	Nut for Gland

NM Series
End Suction Centrifugal Pumps
Mechanical Seal Applications



Mas Grup

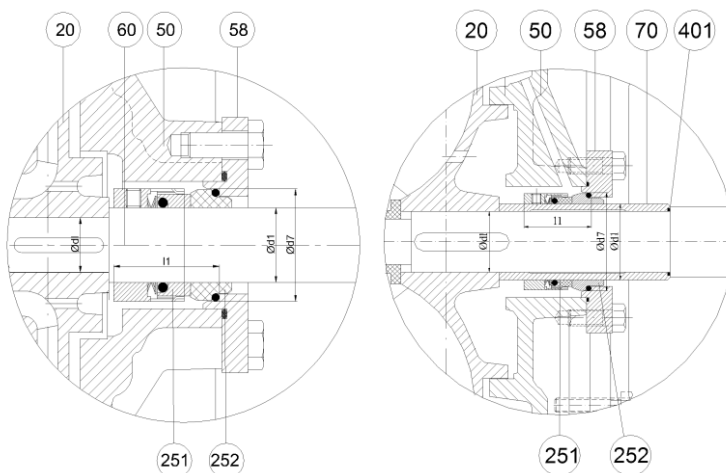
BURGMAN M7N-M74N-M78N

- Single Seal
- Unbalanced
- Independent of direction of rotation
- To EN 12756

p ₁	: 16 Bar
t	: -50...220 °C
V _g	: 20 m/s

Axial Movement

d ₁ ≤ 25	: ±1,0 mm
28 ≤ d ₁ ≤ 63	: ±1,5 mm
D ₁ ≥ 65	: ± 2,0 mm



Part No	Part Name for A, B, C, D
20	Impeller
50	Mechanical Seal Box
58	Mechanical Seal Box Cover
251	Rotating Part of Mechanical Seal
252	Stationary Part of Mechanical Seal

Part No	Part Name for E
20	Impeller
50	Mechanical Seal Box
58	Mechanical Seal Box Cover
70	Seal Sleeve
251	Rotating Part of Mechanical Seal
252	Rotating Part of Mechanical Seal
401	Seal Sleeve O-Ring

Group	Pump Size	Ø d ₁	Ø d ₇	Ø d _l	l ₁ =l _{1k}
A	32-160, 40-160, 50-160, 65-160, 80-160, 100-160, 32-200, 40-200, 50-200, 65-200, 32-250, 40-250, 50-250	Ø 30	Ø 45	Ø 22	42,5
B	80-200, 100-200, 125-200, 150-200, 65-250, 80-250, 100-250, 125-250, 150-250, 50-315, 65-315, 80-315, 100-315, 65-400	Ø 40	Ø 58	Ø 30	45
C	200-280, 125-315, 150-315, 200-315, 80-400, 100-400, 125-400, 150-400	Ø 50	Ø 70	Ø 40	47,5
D	250-315, 200-400, 150-500, 300-315	Ø 60	Ø 80	Ø 50	52,5
E	250-400, 300-400, 200-500, 250-500, 350-450	Ø 75	Ø 97	Ø 60	60

NM Series
End Suction Centrifugal Pumps
Mechanical Seal Applications

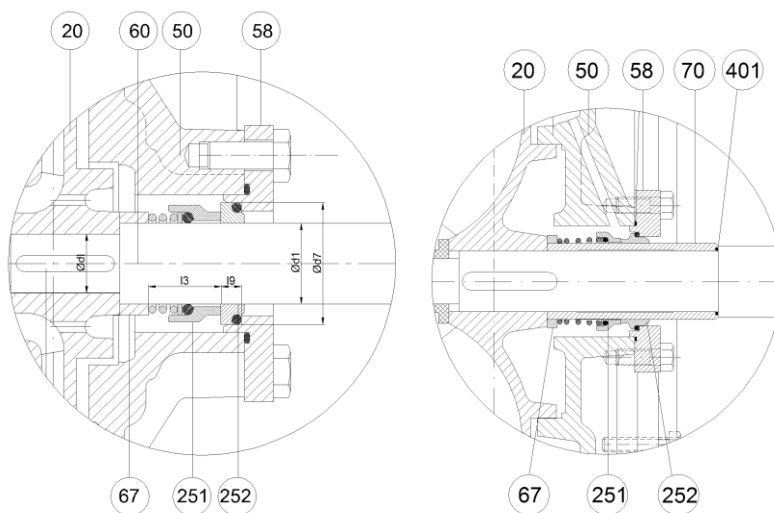


Mas Grup

BURGMAN M3N-M32N-M37N-M37GN

- Single Seal
- Unbalanced
- Conical Spring
- Dependent on direction of rotation
- To EN 12756

p ₁	: 10 Bar
t	: -20...180 °C
V _g	: 10 m/s
Axial Movement	: ±1,0 mm



Part No	Part Name for A, B, C, D
20	Impeller
50	Mechanical Seal Box
58	Mechanical Seal Box Cover
67	Adjusting Ring
251	Rotating Part of Mechanical Seal
252	Stationary Part of Mechanical Seal

Part No	Part Name for E
20	Impeller
50	Mechanical Seal Box
58	Mechanical Seal Box Cover
67	Adjusting Ring
70	Seal Sleeve
251	Rotating Part of Mechanical Seal
252	Rotating Part of Mechanical Seal
401	Seal Sleeve O-Ring

Group	Pump Size	Ø d1	Ø d7	Ø dI	l3	l9
A	32-160, 40-160, 50-160, 65-160, 80-160, 100-160, 32-200, 40-200, 50-200, 65-200, 32-250, 40-250, 50-250	Ø 30	Ø 45	Ø 22	26,5	11,5
B	80-200, 100-200, 125-200, 150-200, 65-250, 80-250, 100-250, 125-250, 150-250, 50-315, 65-315, 80-315, 100-315, 65-400	Ø 40	Ø 58	Ø 30	36	14
C	200-280, 125-315, 150-315, 200-315, 80-400, 100-400, 125-400, 150-400	Ø 50	Ø 70	Ø 40	47,5	47,5
D	250-315, 200-400, 150-500, 300-315	Ø 60	Ø 80	Ø 50	45	15
E	250-400, 300-400, 200-500, 250-500, 350-450	Ø 75	Ø 97	Ø 60	62	18

NM Series
End Suction Centrifugal Pumps
Mechanical Seal Applications

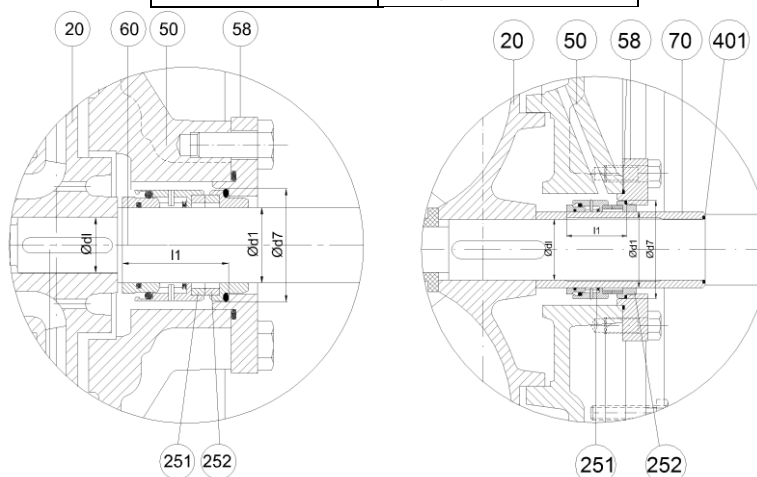


Mas Grup

BURGMAN HJ92N-HJ977N-SHJ97G

- Single Seal
- Unbalanced
- Product Protected Spring
- Independent on Direction of Rotation
- To EN 12756

p ₁	: 0.8...25 Bar
t (HJ92N)	: -50...220 °C
t (HJ977N)	: -20...180 °C
V _g	: 10 m/s
Axial Movement	: ± 0,5 mm



Part No	Part Name for A, B, C, D
20	Impeller
50	Mechanical Seal Box
58	Mechanical Seal Box Cover
251	Rotating Part of Mechanical Seal
252	Stationary Part of Mechanical Seal

Part No	Part Name for E
20	Impeller
50	Mechanical Seal Box
58	Mechanical Seal Box Cover
67	Adjusting Ring
70	Seal Sleeve
251	Rotating Part of Mechanical Seal
252	Rotating Part of Mechanical Seal
401	Seal Sleeve O-Ring

Group	Pump Size	Ø d1	Ø d7	Ø dl	l1
A	32-160, 40-160, 50-160, 65-160, 80-160, 100-160, 32-200, 40-200, 50-200, 65-200, 32-250, 40-250, 50-250	Ø 30	Ø 45	Ø 22	42,5
B	80-200, 100-200, 125-200, 150-200, 65-250, 80-250, 100-250, 125-250, 150-250, 50-315, 65-315, 80-315, 100-315, 65-400	Ø 40	Ø 58	Ø 30	45
C	200-280, 125-315, 150-315, 200-315, 80-400, 100-400, 125-400, 150-400	Ø 50	Ø 70	Ø 40	47,5
D	250-315, 200-400, 150-500, 300-315	Ø 60	Ø 80	Ø 50	52,5
E	250-400, 300-400, 200-500, 250-500, 350-450	Ø 75	Ø 97	Ø 60	60

NM Series
End Suction Centrifugal Pumps
Mechanical Seal Applications

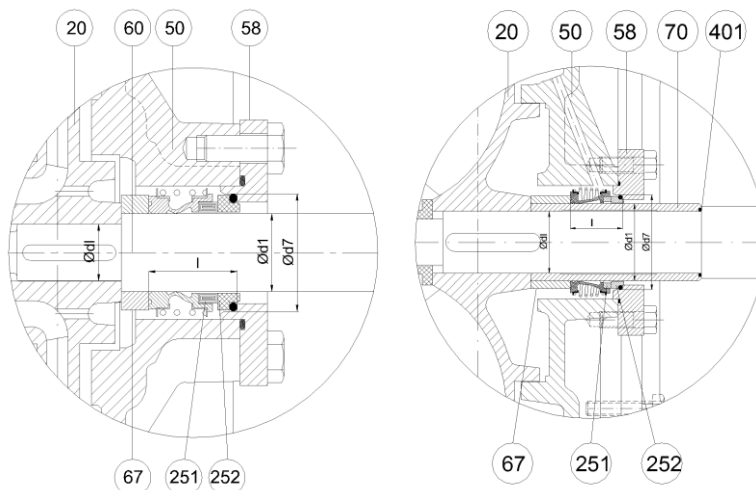


Mas Grup

BURGMAN MG1

- Single Seal
- Unbalanced
- Elastomer Bellows
- Independent on Direction of Rotation

p ₁	: 12 Bar
t	: -20...120 °C
V _g	: 10 m/s



Part No	Part Name for A, B, C, D
20	Impeller
50	Mechanical Seal Box
58	Mechanical Seal Box Cover
67	Adjusting Ring
251	Rotating Part of Mechanical Seal
252	Stationary Part of Mechanical Seal

Part No	Part Name for E
20	Impeller
50	Mechanical Seal Box
58	Mechanical Seal Box Cover
67	Adjusting Ring
70	Seal Sleeve
251	Rotating Part of Mechanical Seal
252	Rotating Part of Mechanical Seal
401	Seal Sleeve O-Ring

Group	Pump Size	Ø d1	Ø d7	Ø dl	l
A	32-160, 40-160, 50-160, 65-160, 80-160, 100-160, 32-200, 40-200, 50-200, 65-200, 32-250, 40-250, 50-250	Ø 30	Ø 45	Ø 22	34
B	80-200, 100-200, 125-200, 150-200, 65-250, 80-250, 100-250, 125-250, 150-250, 50-315, 65-315, 80-315, 100-315, 65-400	Ø 40	Ø 58	Ø 30	39
C	200-280, 125-315, 150-315, 200-315, 80-400, 100-400, 125-400, 150-400	Ø 50	Ø 70	Ø 40	40
D	250-315, 200-400, 150-500, 300-315	Ø 60	Ø 80	Ø 50	49
E	250-400, 300-400, 200-500, 250-500, 350-450	Ø 75	Ø 97	Ø 60	51,3

NM Series
End Suction Centrifugal Pumps
Mechanical Seal Applications

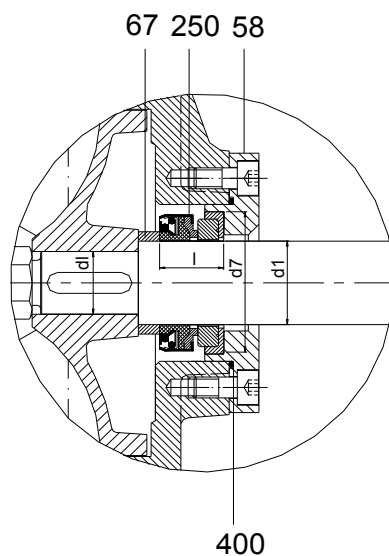


Mas Grup

BURGMANN BT-AR

- Single Seal
- Unbalanced
- Rubber Bellows
- Independent on Direction of Rotation

p ₁	: 6 Bar
t	: -20...120 °C
V _g	: 10 m/s



Part No	Part Name for A, B, C, D
58	Mechanical Seal Box Cover
67	Adjusting Ring
251	Mechanical Seal
400	O-Ring for Cover

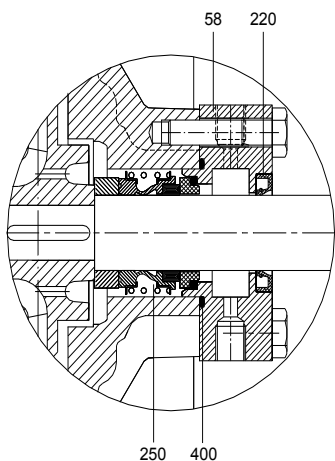
Group	Pump Size	Ø d1	Ø d7	Ø d1	l
A	32-160, 40-160, 50-160, 65-160, 80-160, 100-160, 32-200, 40-200, 50-200, 65-200, 32-250, 40-250, 50-250	Ø 30	Ø 57	Ø 22	25
B	80-200, 100-200, 125-200, 150-200, 65-250, 80-250, 100-250, 125-250, 150-250, 50-315, 65-315, 80-315, 100-315, 65-400	Ø 40	Ø 68	Ø 30	30
C	200-280, 125-315, 150-315, 200-315, 80-400, 100-400, 125-400, 150-400	Ø 50	Ø 88	Ø 40	38
D	250-315, 200-400, 150-500, 300-315	Ø 60	Ø 110	Ø 50	45

QUENCHING

A quench is used on the one hand when a single mechanical seal does not function at all or only within certain limits without auxiliary measures or when a double mechanical seal with pressurized buffer medium is unnecessary. When an integral stationary seat stop is fitted, the quench pressure should not exceed 1 Bar.

- ❖ Absorption or removal of leakage by quench medium.
- ❖ Monitoring of the mechanical seal's leakage rate by periodic measurement of the level of the quench medium in the circulation vessel or thermosyphon vessel.
- ❖ Lubrication and cooling of the stand-by mechanical seal.

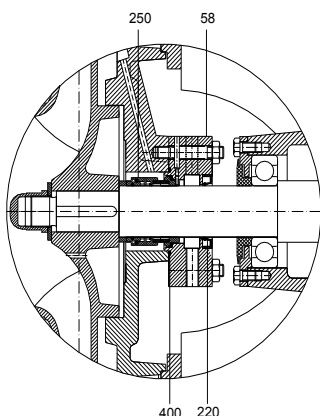
Exclusion of the air: For media reacting with atmospheric oxygen the quenching medium stops the leakage making contact with air.



58	Mechanical Seal Cover for Quenching
220	Oil Seal
250	Mechanical Seal
400	O-Ring For the Cover

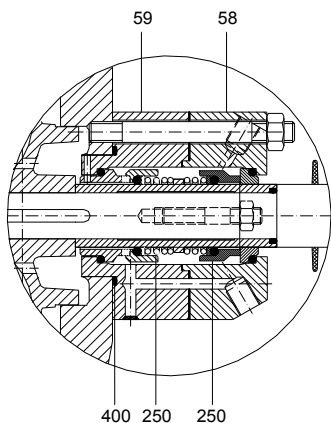
QUENCH WITH AN INTERNAL CIRCULATION

A pumped medium is injected into the area of the sliding faces from the discharge of the pumps.



58	Mechanical Seal Cover
220	Oil Seal
250	Mechanical Seal
400	O-Ring For the Cover

DOUBLE MECHANICAL SEAL APPLICATION



58	Mechanical Seal Cover
59	Mechanical Seal Cover
250	Mechanical Seal
400	O-Ring For the Cover

**For these applications please consult to MAS DAF MAKİNA SAN. A.Ş. representative.*

NM Series

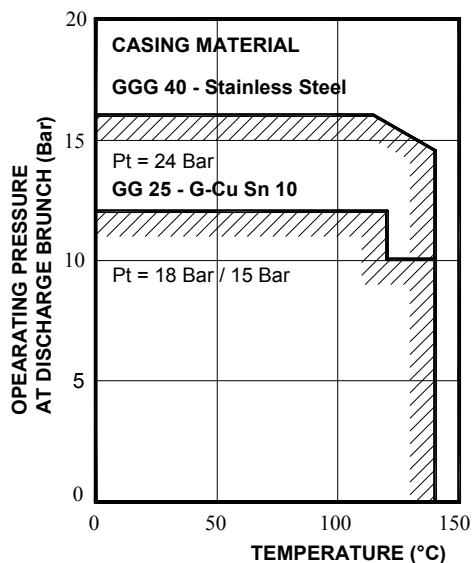
End Suction Centrifugal Pumps

Technical Data



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Temperature and Pressure Limits



Pt: Test Pressure

Casing Material	Max. Temperature of Liquid	Max. Permissible Casing Pressure
Cast Iron GG 25 and Bronze G-CuSn 10	120 °C	12 Bar
	140 °C	10 Bar
Spheroidal Cast Iron GGG 40 and Stainless Steel AISI 304-316	120 °C	16 Bar
	140 °C	14 Bar

Material Options

Components	Material. No						
		0.6025	0.7040	2.1050.01	1.4021	1.4301	1.4401
Pump Casing		●	○	○		○	○
Back Cover		●	○	○		○	○
Impeller		●	○	○		○	○
Gland		○	●	○		○	○
Wearing Ring*		○	○	●		○	○
Shaft					●	○	○
Shaft Sleeve					●	○	○
Bearing Housing		●					
Bearing Cover		●					

- - Standard Manufacturing
- - Optional

Material Equivalent

Description	DIN 17007	EN-DIN	ASTM
Cast Iron	0.6025	GJL-250 (GG25)	A 48 Class 40-B
Nodular Cast Iron	0.7040	GJS-400-15 (GGG40)	A 536 Gr.60-40-18
Cast Bronze	2.1050.01	G-Cu Sn 10	B 584 C 90700
Chrome Steel	1.4021	X20 Cr 13	A 276 Type 420
Chrome Nickel Steel	1.4301	X5 Cr Ni 18.9	A 276 Type 304
Chrome Nickel Molybdenum Steel	1.4401	X5 Cr Ni Mo 18.10	A 276 Type 316

*Wearing Rings and Shaft Sleeves are upon request.

NM Series

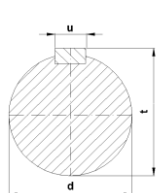
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Technical Data

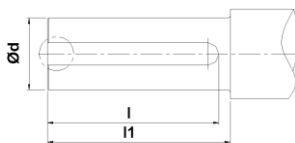


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Key-Way and Shaft Dimensions for Motor Side

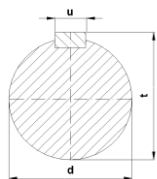


Group	d	t	u
A	24	28	8
B	32	37	10
C	42	47	12
D	55	61	16
E	65	72	18



l	l1
50	47
75	80
106	110
100	110
125	140

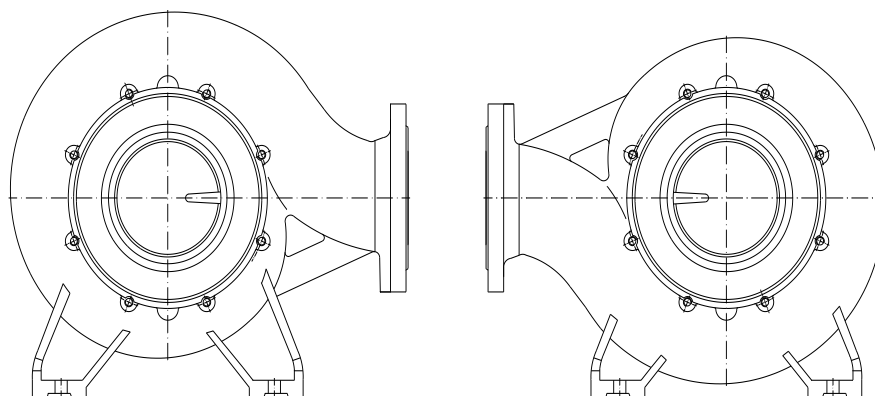
Key-Way and Shaft Dimensions for Impeller Side



Group	d	t	u
A	22	26	6
B	30	34	8
C	40	45	10
D	50	55,5	14
E	60	67	18

NM-Cr

In this application, both Stuffing Box (Back Cover) and Pump Casing are stainless steel. Also, pump discharge flange can be rotated by 90° to other positions by the help of modular pump model.



Components No	Material.						
		0.6025	0.7040	2.1050.01	1.4021	1.4301	1.4401
Pump Casing						o	•
Back Cover						o	•
Impeller						o	•
Gland			•	o		o	o
Wearing Ring*				•		o	o
Shaft					•	o	o
Shaft Sleeve					•	o	o
Bearing Housing		•					
Bearing Cover		•					

NM-CR	NM-CR	NM-CR
NM-CR 32-200	NM-CR 50-250	NM-CR 150-315
NM-CR 40-200	NM-CR 80-250	
NM-CR 50-200	NM-CR 100-250	
NM-CR 65-200	NM-CR 125-250	
NM-CR 80-200	NM-CR 150-250	
NM-CR 100-200		
NM-CR 125-200		

- - Standard Manufacturing
- o - Optional

NM Series

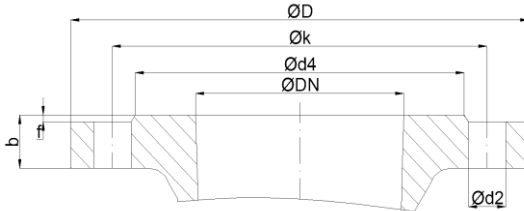
End Suction Centrifugal Pumps

Flange Dimensions



Mas Grup

Pump Suction And Discharge Flange Dimensions								
DNs	PN	ØD	Øk	Ød4	Ød2	b	f	Hole
DNd								Quantity
32	16	140	100	78	18	18	2	4
40		150	110	88	18	18	3	4
50		165	125	102	18	20	3	4
65		185	145	122	18	20	3	4
80		200	160	138	18	22	3	8
100		220	180	158	18	24	3	8
125		250	210	188	18	26	3	8
150		285	240	212	22	26	3	8
200		340	295	268	22	30	3	12
250	10	395	350	320	22	28	3	12
300		445	400	370	22	28	4	12
350		505	460	430	22	34	4	16
400		565	515	482	26	34	4	16



No	Pump Type	Flanges			
		DNs (mm) Suction		DNd (MM) Discharge	
1	32-160	50	PN 16	32	PN 16
2	32-200				
3	32-250				
4	40-160	65		40	
5	40-200				
6	40-250	65		50	
7	50-160				
8	50-200				
9	50-250				
10	50-315				
11	65-160	80	65		
12	65-200				
13	65-250				
14	65-315				
15	65-400				
16	80-160	100	80		
17	80-200				
18	80-250				
19	80-315				
20	80-400				

No	Pump Type	Flanges			
		DNs (mm) Suction		DNd (MM) Discharge	
21	100-160	125	PN 16	100	PN 16
22	100-200				
23	100-250				
24	100-315				
25	100-400				
26	125-200	150	PN 16	125	PN 16
27	125-250				
28	125-315				
29	125-400				
30	150-200	200	PN 16	150	PN 16
31	150-250				
32	150-315				
33	150-400				
34	150-500				
35	200-315	250	PN 10	200	PN 10
36	200-400				
37	200-500				
38	250-315	300	PN 10	250	PN 10
39	250-400				
40	250-500				
41	250-500A				
42	300-315A	300	PN 10	300	PN 10
43	300-315				
44	300-400				
45	350-450	350	PN 10	350	PN 10
		400	PN 10		PN 10

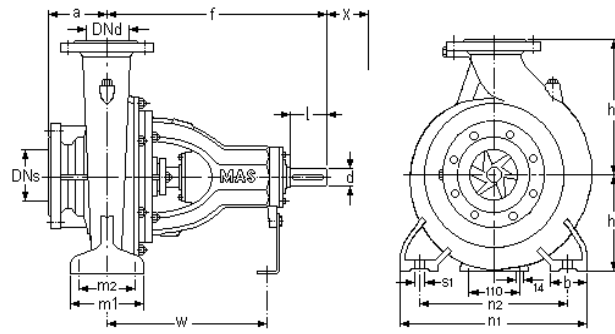
NM Series

End Suction Centrifugal Pumps

Overall Dimensions



Mas Grup



No	Pump Type		Flanges		Length		Height		Pump Feet Fixing Details						Shaft End			Weight kg	
	EN 733	Added	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		X mm
1	32-160		50	32	80	360	132	160	50	100	70	240	190	M12	260	24	50	65	37
2	32-200		50	32	80	360	160	180	50	100	70	240	190	M12	260	24	50	65	40
3		32-250	50	32	100	360	180	225	50	125	95	320	250	M12	260	24	50	80	45
4	40-160		65	40	80	360	132	160	50	100	70	240	190	M12	260	24	50	75	38
5	40-200		65	40	100	360	160	180	50	100	70	265	212	M12	260	24	50	75	44.5
6	40-250		65	40	100	360	180	225	65	125	95	320	250	M12	260	24	50	75	54
7	50-160		65	50	100	360	160	180	50	100	70	265	212	M12	260	24	50	80	41.5
8	50-200		65	50	100	360	160	200	50	125	95	265	212	M12	260	24	50	85	46.5
9	50-250		65	50	100	360	180	225	65	125	95	320	250	M12	260	24	50	85	54.5
10		50-315	80	50	100	470	225	280	80	160	120	360	280	M16	330	32	80	100	103
11	65-160		80	65	100	360	160	200	65	125	95	280	212	M12	260	24	50	100	44
12	65-200		80	65	100	360	180	225	65	125	95	320	250	M12	260	24	50	100	47.5
13	65-250		80	65	100	470	200	250	80	160	120	360	280	M16	340	32	80	100	77.5
14	65-315		80	65	125	470	225	280	80	160	120	400	315	M16	340	32	80	110	92
15		65-400	100	65	125	470	250	355	80	160	120	400	315	M16	340	32	80	110	125
16	80-160		100	80	125	360	180	225	65	125	95	320	250	M12	260	24	50	110	51
17	80-200		100	80	125	470	180	250	65	125	95	345	280	M12	340	32	80	110	75.5
18	80-250		100	80	125	470	200	280	80	160	120	400	315	M16	340	32	80	115	93
19	80-315		100	80	125	470	250	315	80	160	120	400	315	M16	340	32	80	120	107
20		80-400	100	80	125	530	280	355	100	200	150	500	400	M20	370	42	110	120	162
21		100-160	125	100	125	360	200	280	80	160	120	360	280	M16	260	24	50	120	-
22	100-200		125	100	125	470	200	280	80	160	120	360	280	M16	340	32	80	120	83
23	100-250		125	100	140	470	225	280	80	160	120	400	315	M16	340	32	80	130	95
24	100-315		125	100	140	470	250	315	80	160	120	400	315	M16	340	32	80	130	110
25	100-400		125	100	140	530	280	355	100	200	150	500	400	M20	370	42	110	130	168
26		125-200	150	125	140	470	250	315	80	160	120	400	315	M16	340	32	80	130	106.5
27	125-250		150	125	140	470	250	355	80	160	120	400	315	M16	340	32	80	140	105.5
28	125-315		150	125	140	530	280	355	100	200	150	500	400	M20	370	42	110	140	166.5
29	125-400		150	125	140	530	315	400	100	200	150	500	400	M20	370	42	110	140	189
30		150-200	200	150	160	470	280	355	100	200	150	500	400	M16	340	32	80	170	137.5
31		150-250	200	150	160	470	280	375	100	200	150	500	400	M16	340	32	80	140	137.5
32	150-315		200	150	160	530	280	400	100	200	150	550	450	M20	370	42	110	140	182.5
33	150-400		200	150	160	530	315	450	100	200	150	550	450	M20	370	42	110	140	210.5
34		150-500	200	150	180	700	400	525	110	250	200	620	500	M20	500	55	110	140	197
36		200-315	250	200	180	535	355	450	110	250	200	620	500	M20	410	42	110	160	201
36		200-400	250	200	180	710	400	500	110	250	200	620	500	M20	500	55	110	160	354
37		200-500	300	250	280	875	500	700	150	360	250	900	750	M28	560	65	140	320	615
38		250-315	300	250	240	725	400	525	140	300	240	620	500	M24	500	55	110	200	419
39		250-400	300	250	225	865	400	550	140	300	240	620	500	M24	600	65	140	200	510
40		250-500	300	250	280	875	500	700	150	360	290	900	750	M28	560	65	140	320	615
41		250-500A	300	250	280	875	500	700	150	360	290	900	750	M28	560	65	140	320	615
42		300-315A	300	300	275	810	425	600	140	300	240	620	500	M24	550	55	140	270	516
43		300-315	300	300	275	810	425	600	140	300	240	620	500	M24	550	55	140	270	516
44		300-400	350	300	275	865	450	630	150	360	290	800	650	M24	550	65	140	300	636
45		350-450	400	350	280	875	500	700	150	360	290	900	750	M24	560	65	140	300	755

NM Series

End Suction Centrifugal Pumps

General Information About Minimum Efficiency Index Implementing



Mas Grup

Product Information as per Regulation No. 547/2012 (for Water Pumps with a Maximum Shaft Power of 150 kW) Implementing "Ecodesign" Directive 2009/125/EC

Minimum Efficiency Index for MAS NM Pump Series is shown on the pump label.

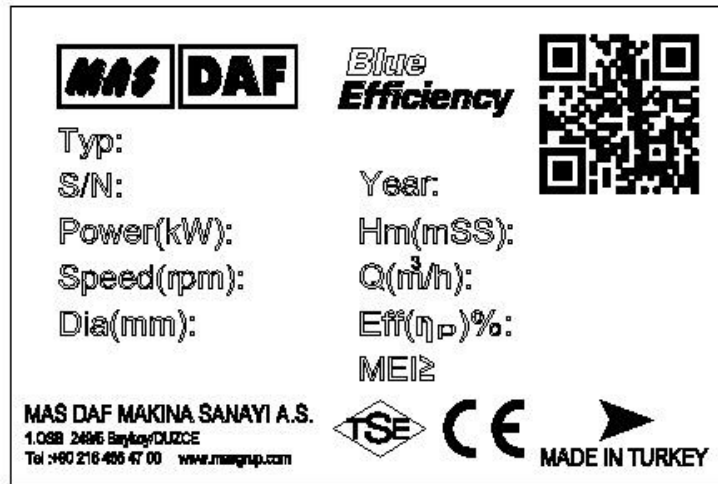
MEI values of MAS NM Pump Series are shown on the pump characteristic curves.

Minimum Efficiency Index for MAS NM Pump Series; Minimum 0.4. ($MEI \geq 0,4$)

Efficiency values of the pump characteristic curves, which are cut diameter, are expressed in %.

NM Series water pumps, the pump efficiency can be achieved more than fix speed in case of variable speed control.

More information about the Ecodesign can be reached at www.europump.org



Pump Label

NM Series

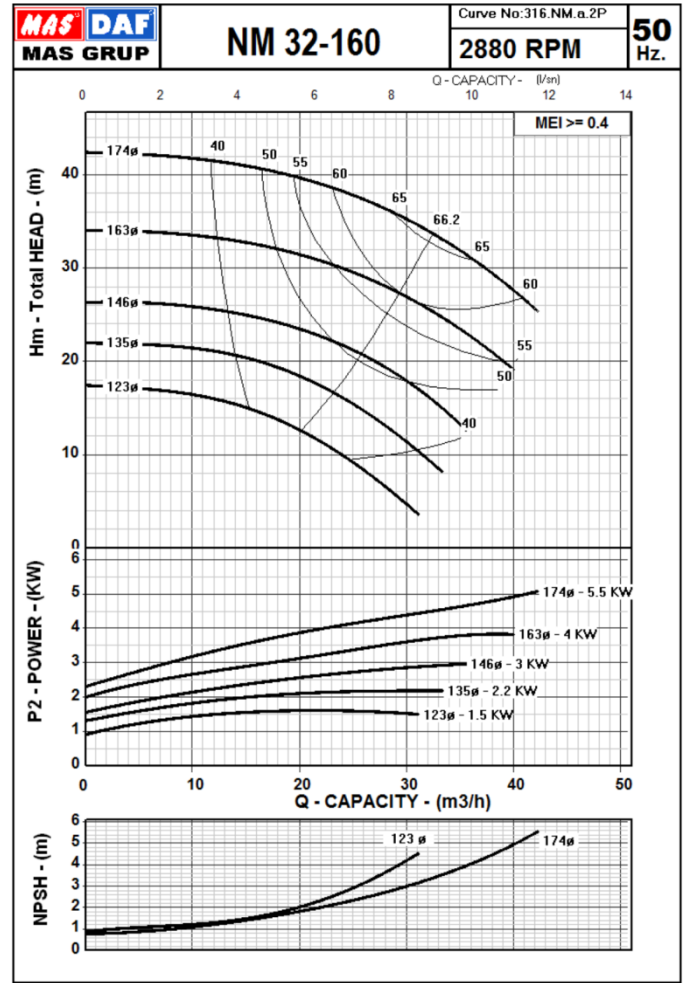
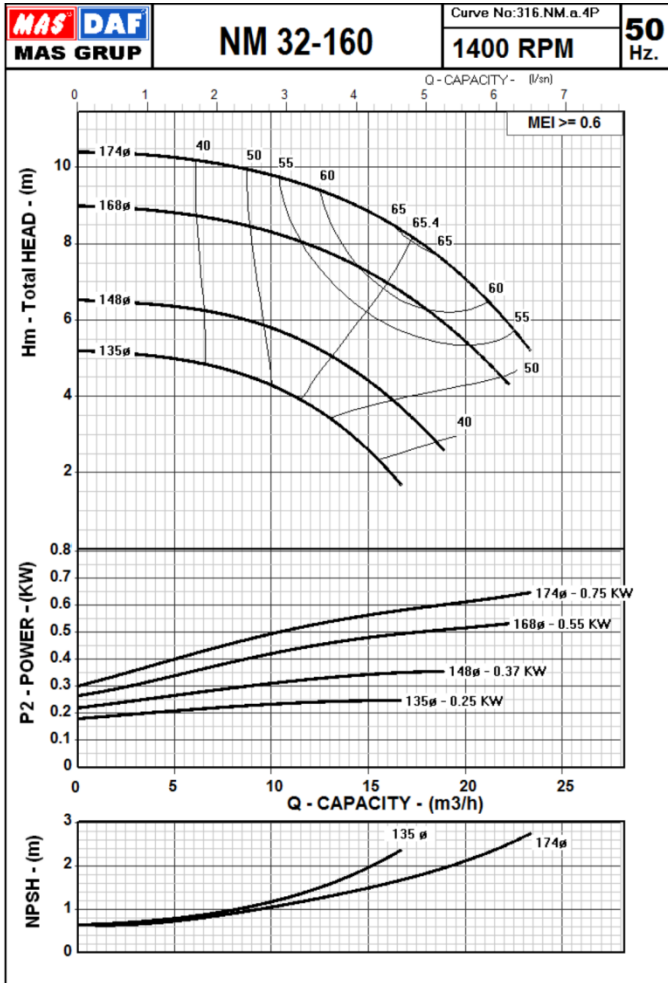
End Suction Centrifugal Pumps

Performance Curves

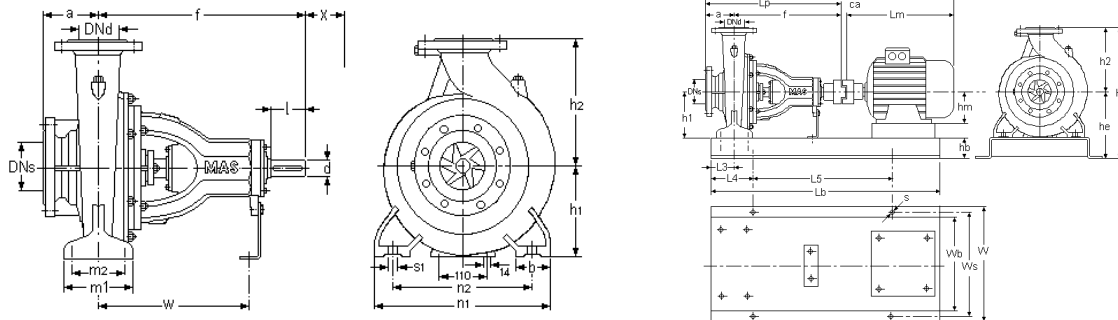


NM 32-160

Mas Grup



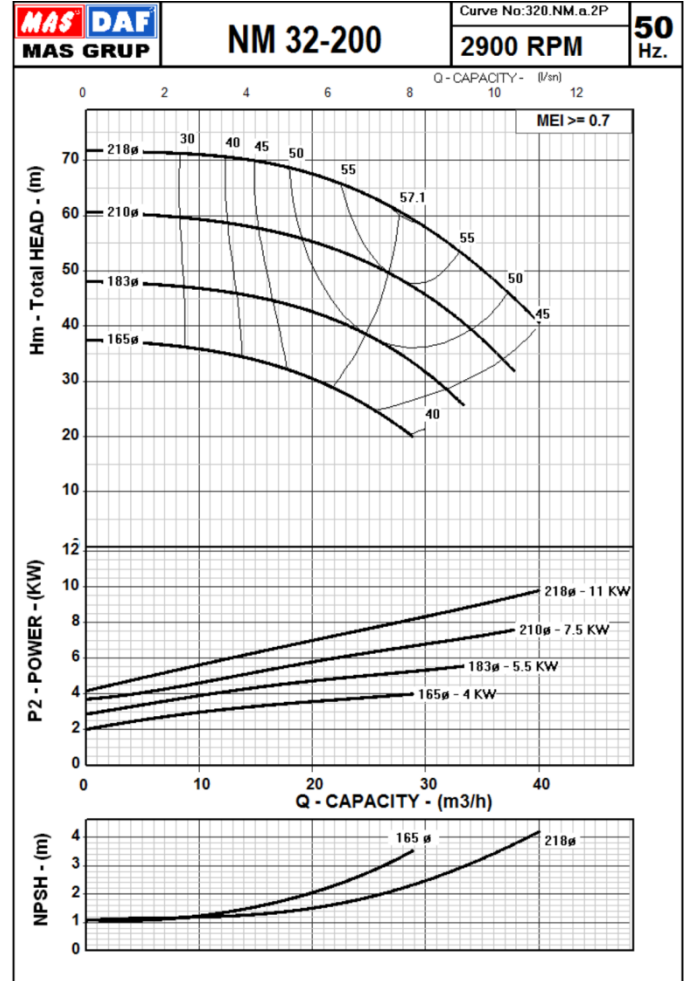
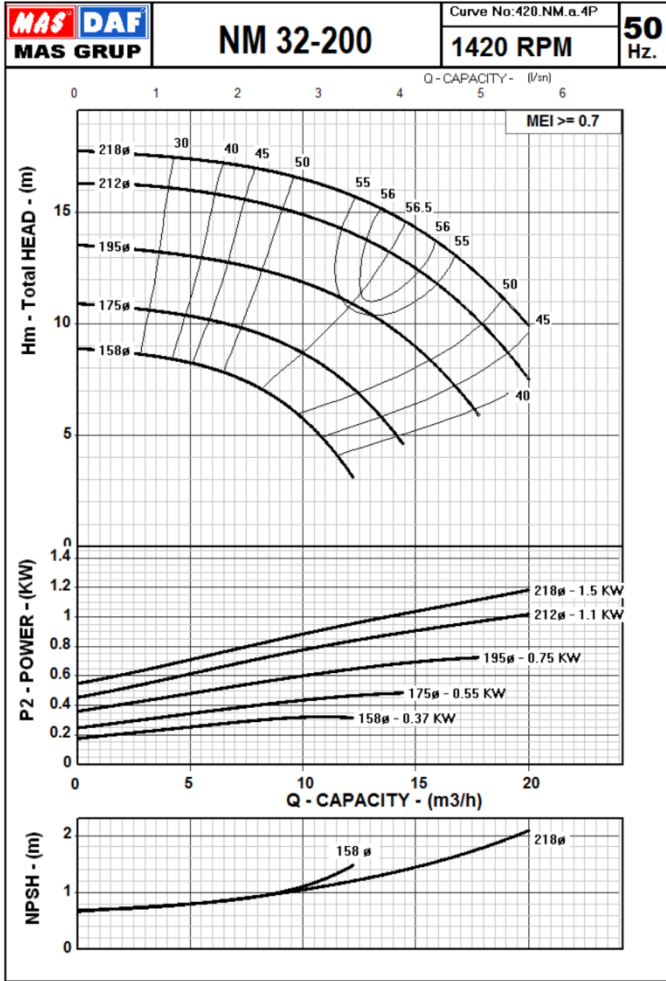
The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



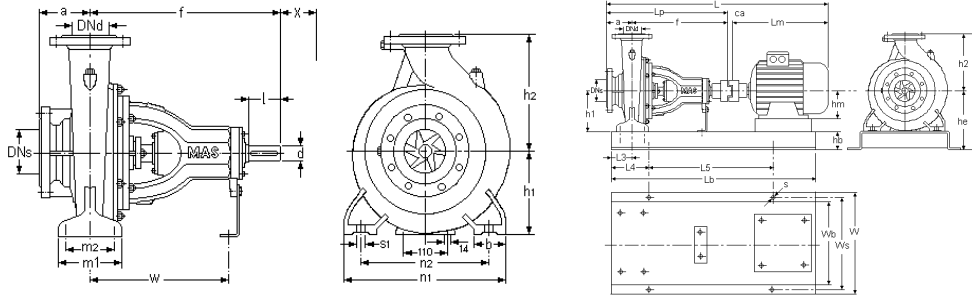
Pump Size	Flanges		Length		Height		Mounting Details						ShaftEnd		(*) X	Weight kg	
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm			l mm
32-160	50	32	80	360	132	160	50	100	70	240	190	M12	260	24	50	65	37

		MOTOR		PUMP		GENERAL			BASE PLATE										
		KW	IEC	Lm mm	Hm mm	Lp mm	Ca mm	L mm	W mm	H mm	Lb mm	Wb mm	Hb mm	He mm	L3 mm	L4 mm	L5 mm	Ws mm	S mm
32-160	4 poles	0.25	71	252.5	71	440	16	708.5	360	357	700	260	65	197	50	100	500	310	19
		0.37	71	252.5	71	440	16	708.5	360	357	700	260	65	197	50	100	500	310	19
		0.55	80	283.5	80	440	16	739.5	360	357	700	260	65	197	50	100	500	310	19
		0.75	80	283.5	80	440	16	739.5	360	357	700	260	65	197	50	100	500	310	19
	2 poles	1.1	80	283.5	80	440	16	739.5	360	357	700	260	65	197	50	100	500	310	19
		1.5	90L	316.5	90	440	16	772.5	360	357	750	260	65	197	50	100	550	310	19
		2.2	90L	316.5	90	440	16	772.5	360	357	750	260	65	197	50	100	550	310	19
		3	100L	352	100	440	16	808	360	357	800	260	65	197	50	100	600	310	19
	4	112M	395.5	112	440	19	854.5	360	357	800	260	65	197	50	100	600	310	19	
	5.5	132S	440.5	132	440	19	899.5	380	357	850	280	65	197	50	150	550	330	19	

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The Performance Curves 50 Hz are based on the kinematic viscosity $1 \text{ mm}^2/\text{s}$ and density 1 g/cm^3 . Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X mm	Weight kg
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		
32-200	50	32	80	360	160	180	50	100	70	240	190	M12	260	24	50	65	40

	KW	IEC	MOTOR				PUMP				GENERAL				BASE PLATE							
			Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S				
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm			
32-200	4 poles	0.37	71	252.5	71	440	16	708.5	360	405	700	260	65	225	50	100	500	310	19			
		0.55	80	283.5	80	440	16	739.5	360	405	700	260	65	225	50	100	500	310	19			
		0.75	80	283.5	80	440	16	739.5	360	405	700	260	65	225	50	100	500	310	19			
		1.1	90L	316.5	90	440	16	772.5	360	405	750	260	65	225	50	100	550	310	19			
		1.5	90L	316.5	90	440	16	772.5	360	405	750	260	65	225	50	100	550	310	19			
	2 poles	3	100L	352	100	440	16	808	360	405	800	260	65	225	50	100	600	310	19			
		4	112M	395.5	112	440	19	854.5	360	405	800	260	65	225	50	100	600	310	19			
		5.5	132S	440.5	132	440	19	899.5	380	405	850	280	65	225	50	150	550	330	19			
		7.5	132M	475.5	132	440	19	934.5	380	405	850	280	65	225	50	150	550	330	19			
		11	160M	576	160	440	19	1035	440	420	950	340	80	240	50	150	650	390	19			

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NM Series

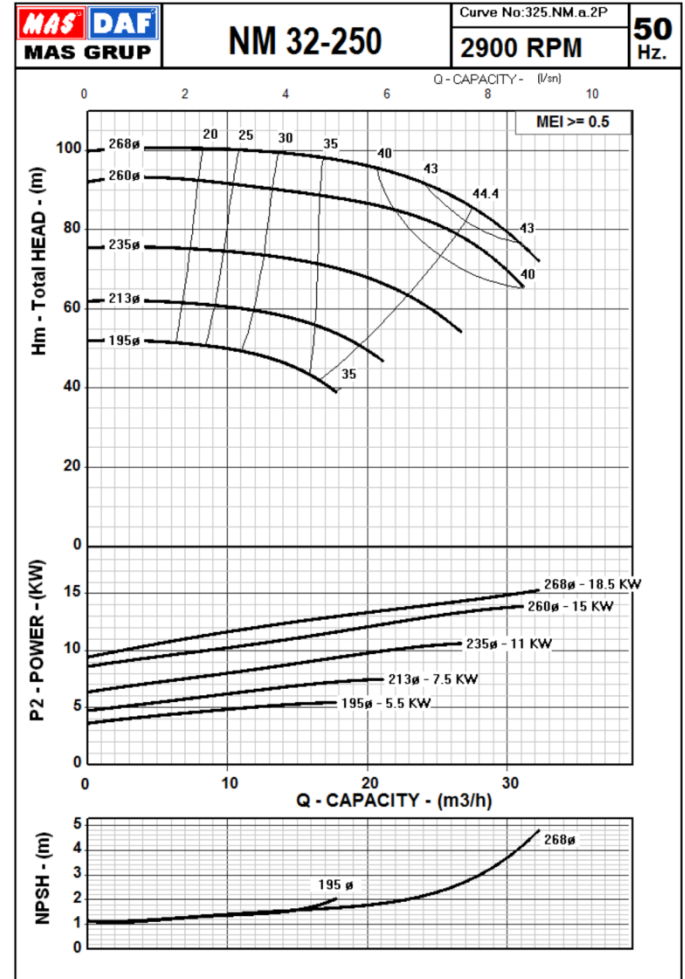
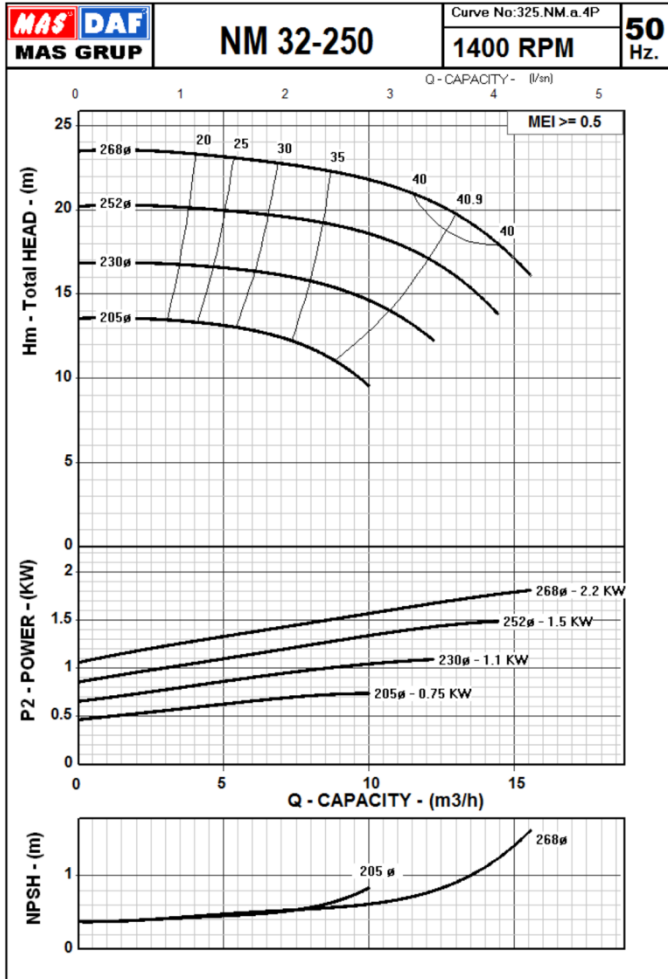
End Suction Centrifugal Pumps

Performance Curves

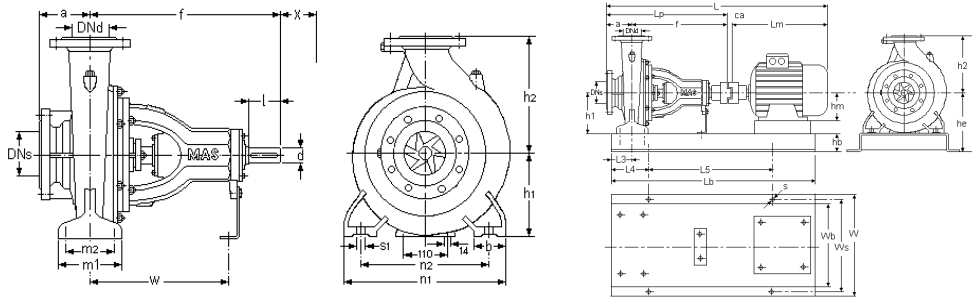


NM 32-250

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity $1 \text{ mm}^2/\text{s}$ and density 1 g/cm^3 . Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details						Shaft End		(*) X mm	Weight kg	
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm			l mm
32-250	50	32	100	360	180	225	50	125	95	320	250	12	260	24	50	80	45

		MOTOR		PUMP				GENERAL				BASE PLATE							
		KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
				mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
32-250	4 poles	0.55	80	283.5	80	460	16	759.5	440	485	700	340	80	260	63	100	500	390	19
		0.75	80	283.5	80	460	16	759.5	440	485	700	340	80	260	63	100	500	390	19
		1.1	90L	316.5	90	460	17	793.5	440	485	750	340	80	260	63	100	550	390	19
		1.5	90L	316.5	90	460	17	793.5	440	485	750	340	80	260	63	100	550	390	19
	2.2	100L	352	100	460	19	831	440	485	800	340	80	260	63	100	600	390	19	
	2 poles	5.5	132S	440.5	132	460	19	919.5	440	485	850	340	80	260	63	150	550	390	19
		7.5	132M	475.5	132	460	19	954.5	440	485	850	340	80	260	63	150	550	390	19
		11	160M	576	160	460	19	1055	440	485	1000	340	80	260	63	150	700	390	19
15		160L	576	160	460	27	1063	440	485	1000	340	80	260	63	150	700	390	19	
		18.5	160L	576	160	460	27	1063	440	485	1050	340	80	260	63	150	750	390	19

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NM Series

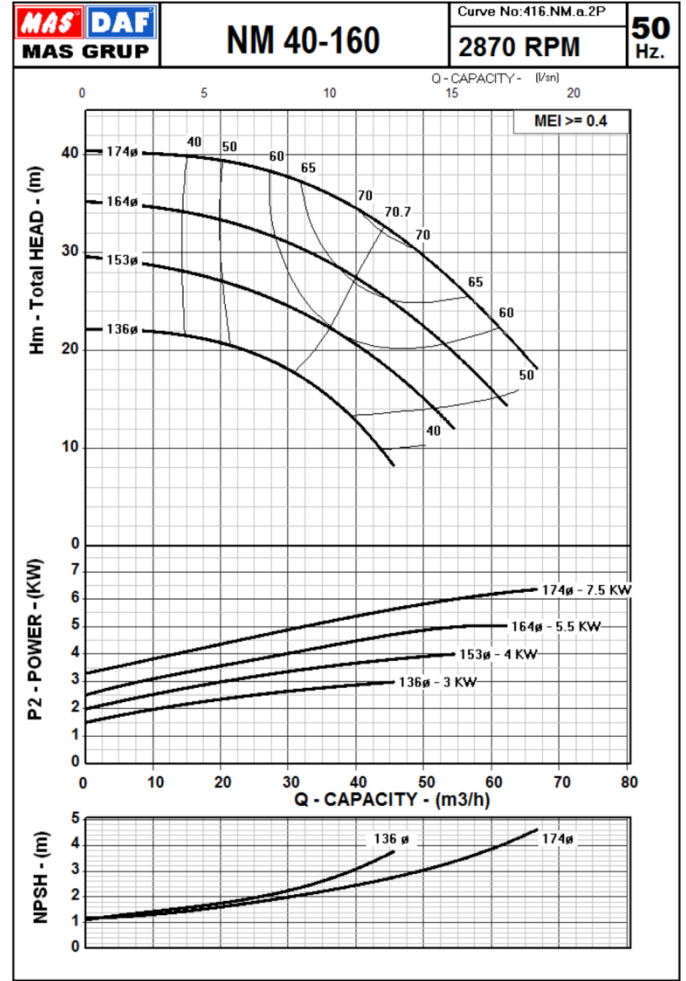
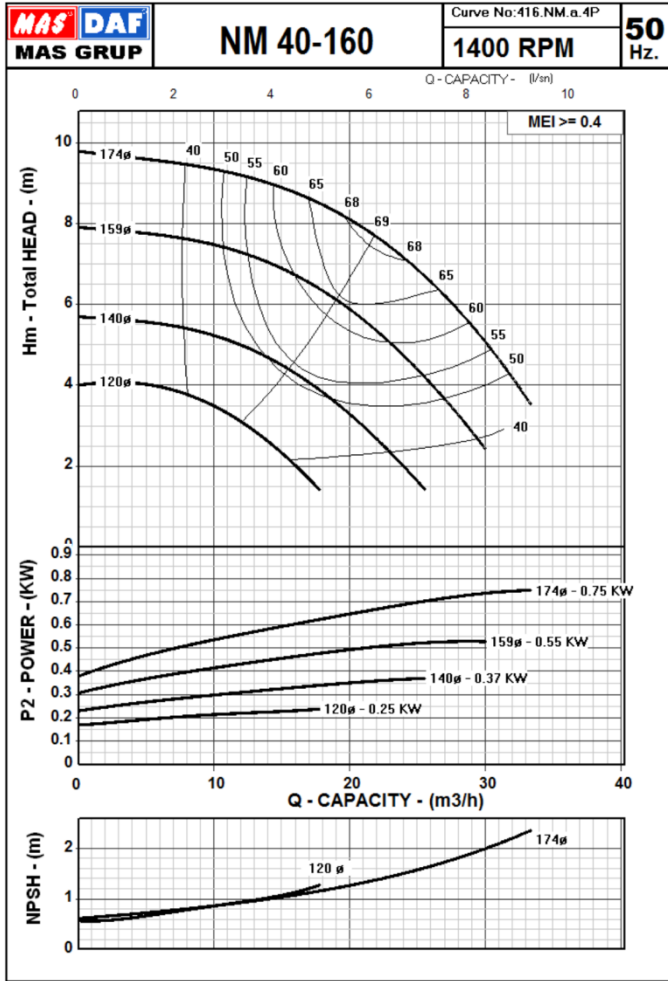
End Suction Centrifugal Pumps

Performance Curves

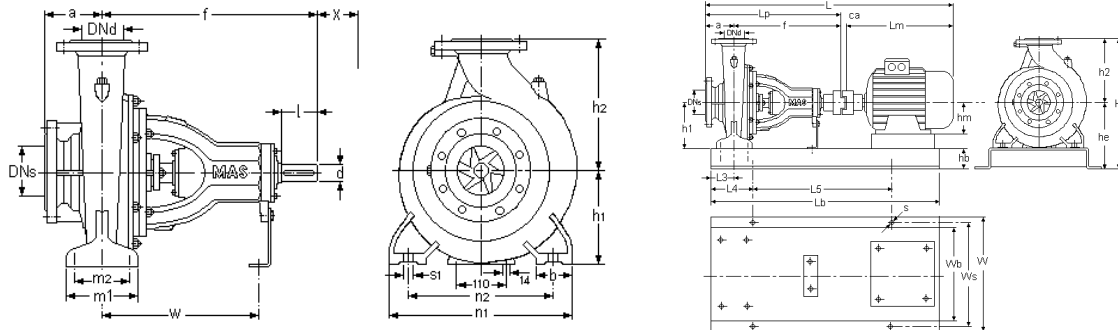


NM 40-160

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity $1 \text{ mm}^2/\text{s}$ and density $1\text{g}/\text{cm}^3$. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X	Weight kg
	DNs	DNd	a	f	h1	h2	b	m1	m2	n1	n2	s1	W	d	l		
40-160	65	40	80	360	132	160	50	100	70	240	190	M12	260	24	50	75	38

40-160	MOTOR		PUMP		GENERAL					BASE PLATE								
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4 poles	0.25	71	252.5	71	440	16	708.5	360	357	700	260	65	197	50	100	500	310	19
	0.37	71	252.5	71	440	16	708.5	360	357	700	260	65	197	50	100	500	310	19
	0.55	80	283.5	80	440	16	739.5	360	357	700	260	65	197	50	100	500	310	19
	0.75	80	283.5	80	440	16	739.5	360	357	700	260	65	197	50	100	500	310	19
2 poles	3	100L	352	100	440	17	809	360	357	800	260	65	197	50	100	600	310	19
	4	112M	395.5	112	440	19	854.5	360	357	800	260	65	197	50	100	600	310	19
	5.5	132S	440.5	132	440	19	899.5	380	357	850	280	65	197	50	150	550	330	19
	7.5	132M	475.5	132	440	19	934.5	380	357	850	280	65	197	50	150	550	330	19

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NM Series

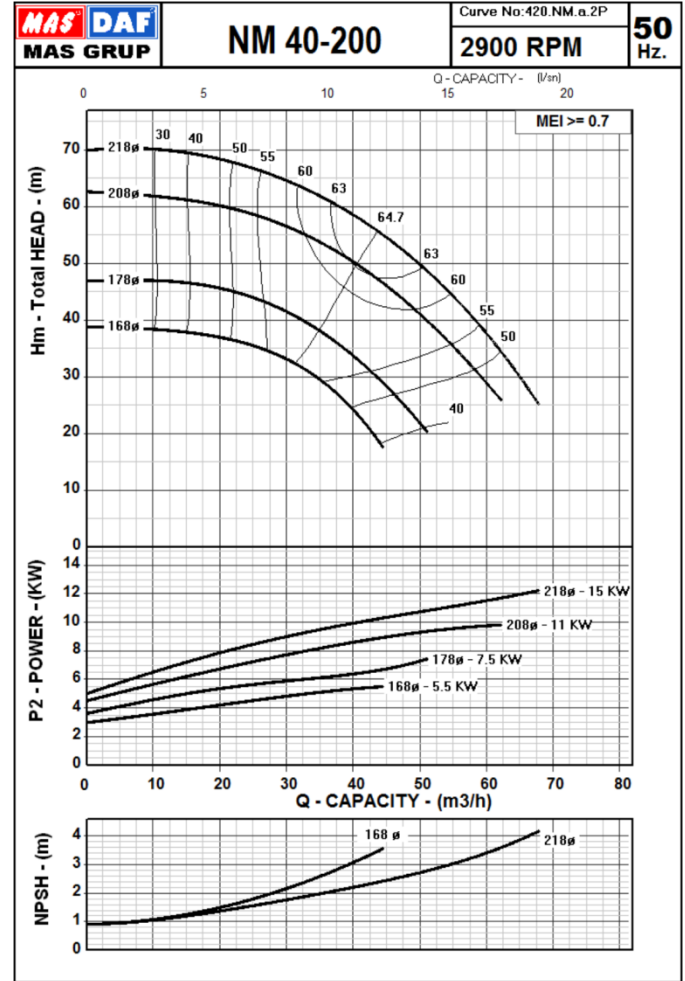
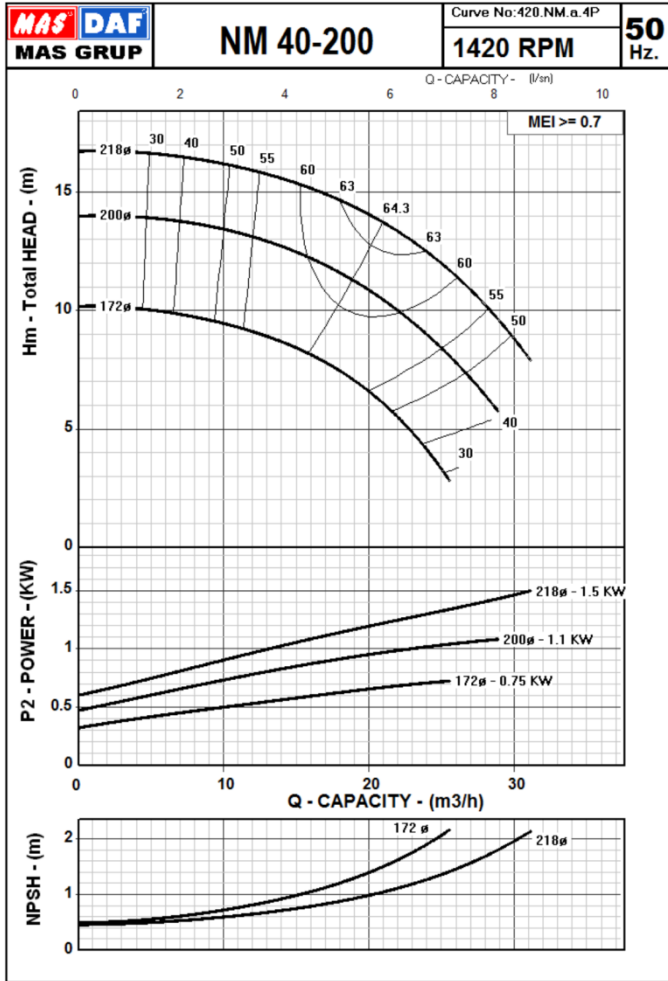
End Suction Centrifugal Pumps

Performance Curves

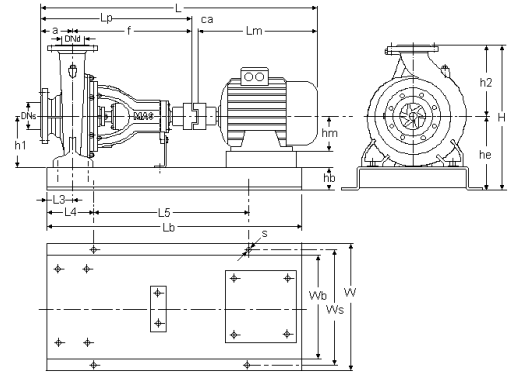
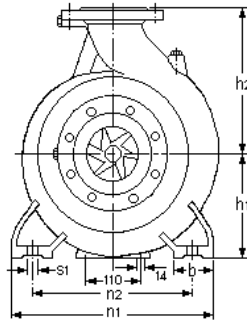
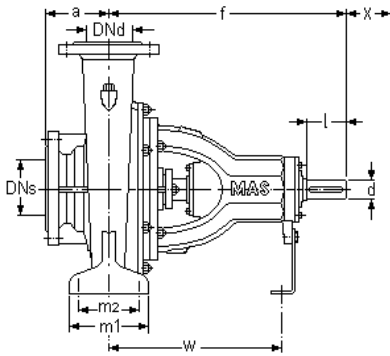


NM 40-200

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity $1 \text{ mm}^2/\text{s}$ and density 1 g/cm^3 . Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X	Weight kg
	DNs	DNd	a	f	h1	h2	b	m1	m2	n1	n2	s1	W	d	l		
40-200	65	40	100	360	160	180	50	100	70	265	212	M12	260	24	50	75	44.5

40-200	MOTOR		PUMP				GENERAL			BASE PLATE								
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4 poles	0.75	80	283.5	80	460	16	759.5	380	405	700	280	65	225	50	100	500	330	19
	1.1	90L	316.5	90	460	17	793.5	380	405	750	280	65	225	50	100	550	330	19
	1.5	90L	316.5	90	460	17	793.5	380	405	750	280	65	225	50	100	550	330	19
2 poles	5.5	132S	440.5	132	460	19	919.5	380	405	850	280	65	225	50	150	550	330	19
	7.5	132M	475.5	132	460	19	954.5	380	405	850	280	65	225	50	150	550	330	19
	11	160M	576	160	460	19	1055	440	420	950	340	80	240	50	150	650	390	19
	15	160L	576	160	460	27	1063	440	420	1000	340	80	240	50	150	700	390	19

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NM Series

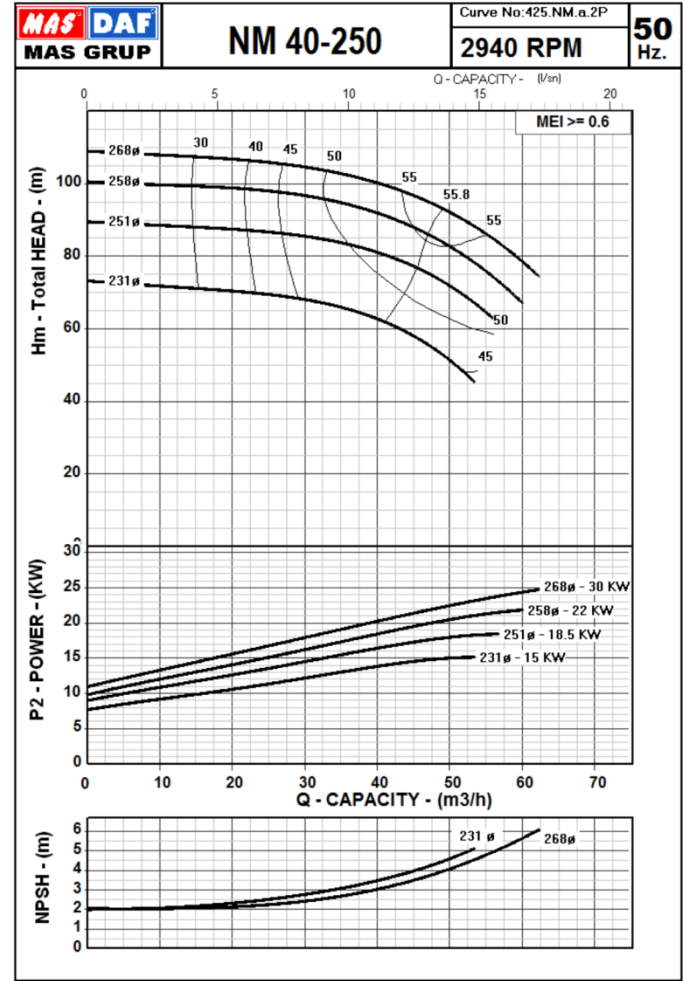
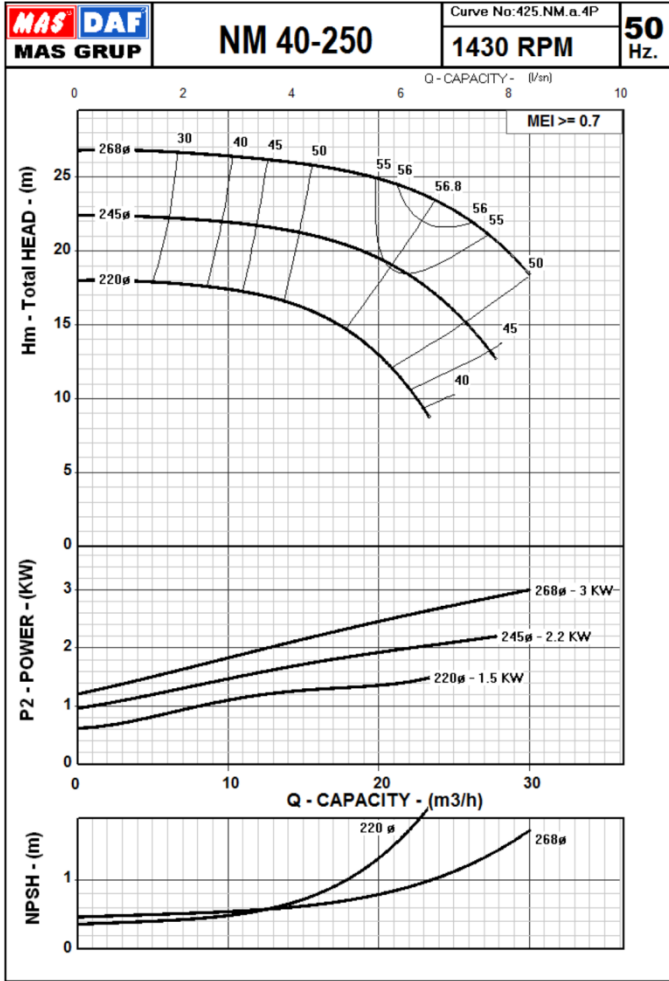
End Suction Centrifugal Pumps

Performance Curves

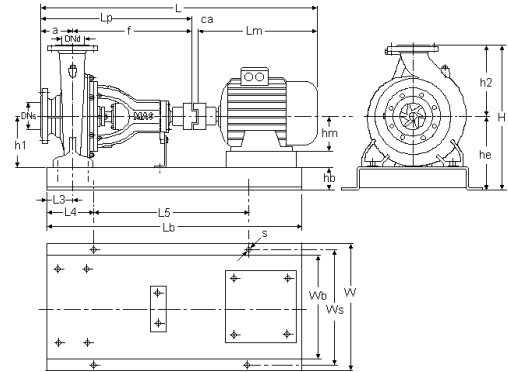
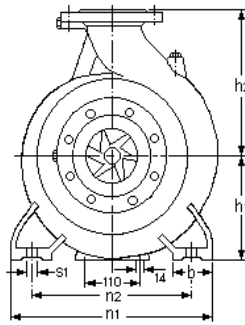
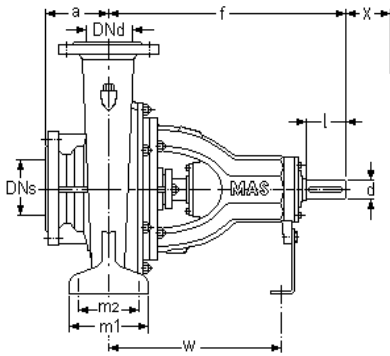


Mas Grup

NM 40-250



The Performance Curves 50 Hz are based on the kinematic viscosity $1 \text{ mm}^2/\text{s}$ and density $1 \text{ g}/\text{cm}^3$. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*)	Weight kg
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		
40-250	65	40	100	360	180	225	65	125	95	320	250	M12	260	24	50	75	54

40-250	MOTOR		PUMP		GENERAL				BASE PLATE									
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4 poles	1.5	90L	316.5	90	460	17	793.5	440	485	750	340	80	260	63	100	550	390	19
	2.2	100L	352	100	460	19	831	440	485	800	340	80	260	63	100	600	390	19
	3	100L	352	100	460	19	831	440	485	800	340	80	260	63	100	600	390	19
2 poles	15	160L	576	160	460	27	1063	440	485	1000	340	80	260	63	150	700	390	19
	18.5	160L	576	160	460	27	1063	440	485	1050	340	80	260	63	150	750	390	19
	22	180M	629	180	460	27	1116	480	505	1050	380	100	280	63	150	750	430	19
	30	200L	665	200	460	32	1157	520	525	1100	420	100	300	63	150	800	470	19

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NM Series

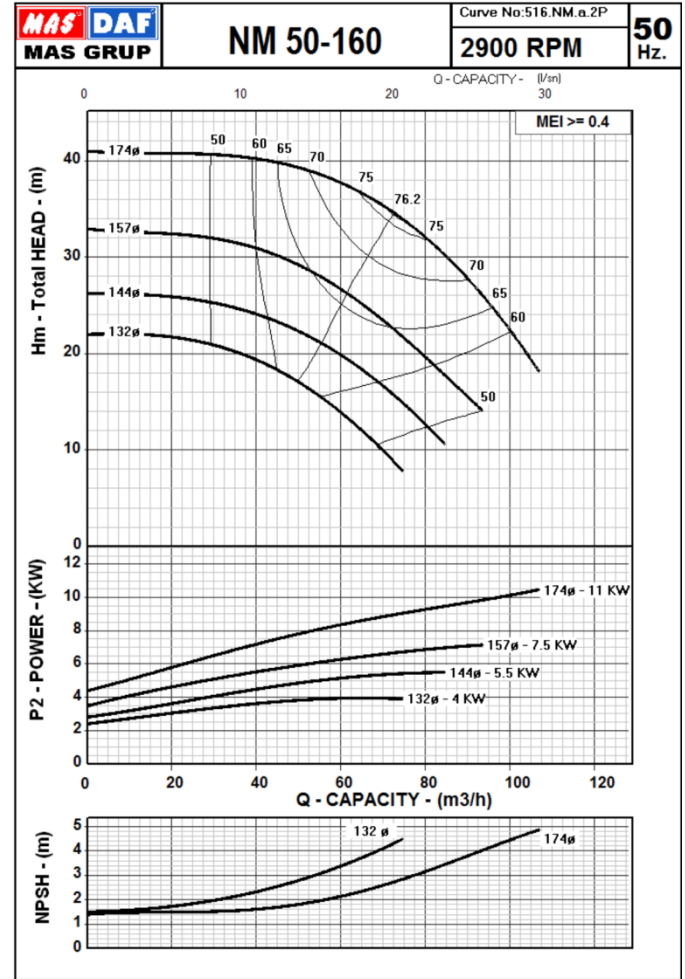
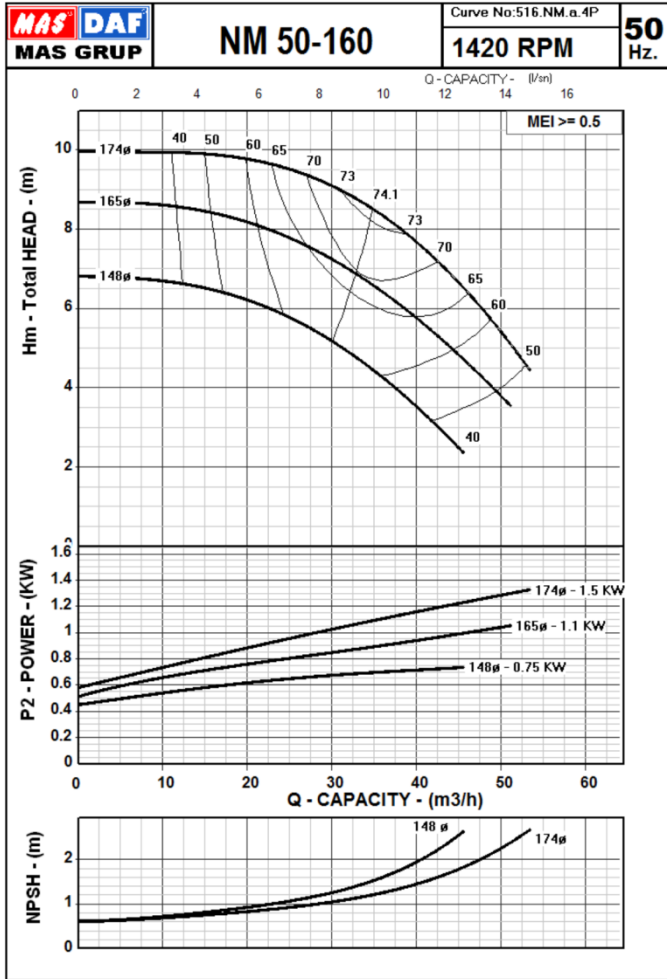
End Suction Centrifugal Pumps

Performance Curves

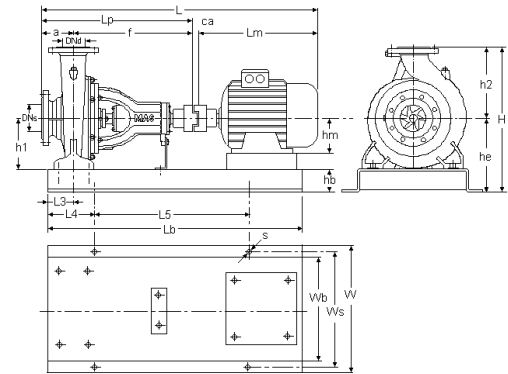
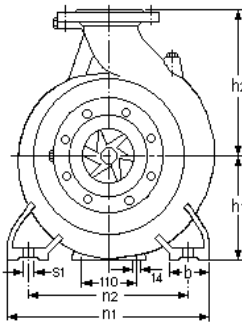
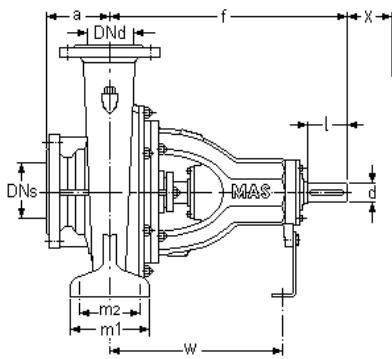


NM 50-160

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity $1 \text{ mm}^2/\text{s}$ and density $1\text{g}/\text{cm}^3$. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details										Shaft End		(*)	Weight kg
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm	X mm				
50-160	65	50	100	360	160	180	50	100	70	265	212	M12	260	24	50	80	41.5			

50-160	Poles	MOTOR		PUMP		GENERAL			BASE PLATE										
		KW	IEC	Lm mm	Hm mm	Lp mm	Ca mm	L mm	W mm	H mm	Lb mm	Wb mm	Hb mm	He mm	L3 mm	L4 mm	L5 mm	Ws mm	S mm
50-160	4 poles	0.75	80	283.5	80	460	16	759.5	380	405	700	280	65	225	50	100	500	330	19
		1.1	90L	316.5	90	460	17	793.5	380	405	750	280	65	225	50	100	550	330	19
		1.5	90L	316.5	90	460	17	793.5	380	405	750	280	65	225	50	100	550	330	19
	2 poles	4	112M	395.5	112	460	19	874.5	380	405	800	280	65	225	50	100	700	330	19
		5.5	132S	440.5	132	460	19	919.5	380	405	850	280	65	225	50	150	550	330	19
		7.5	132M	475.5	132	460	19	954.5	380	405	850	280	65	225	50	150	550	330	19
		11	160M	576	160	460	19	1055	440	420	950	340	80	240	50	150	650	390	19

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NM Series

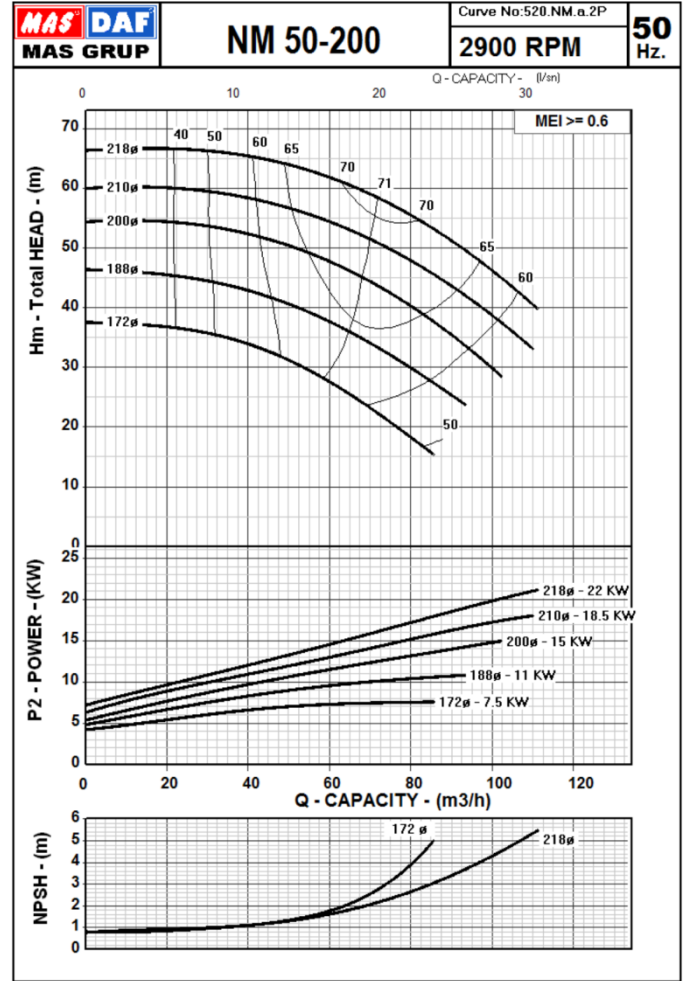
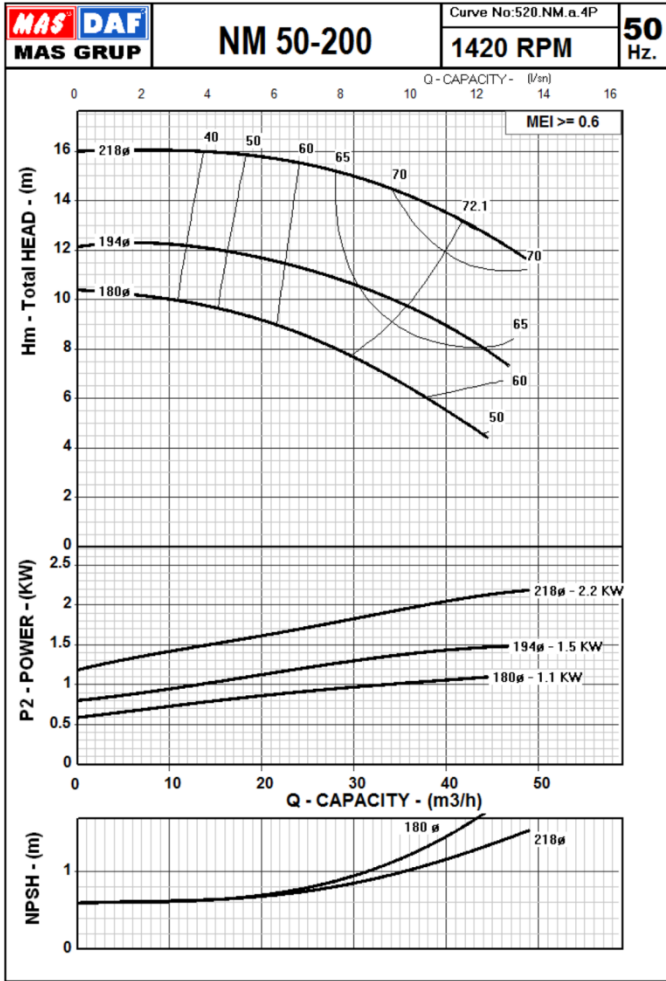
End Suction Centrifugal Pumps

Performance Curves

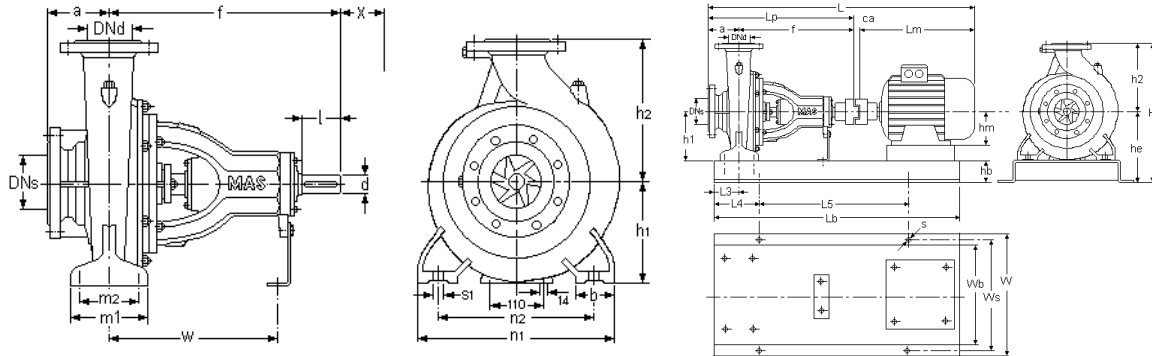


NM 50-200

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity $1 \text{ mm}^2/\text{s}$ and density 1 g/cm^3 . Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details						Shaft End (*)		Weight kg		
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm		l mm	X mm
50-200	65	50	100	360	160	200	50	125	95	265	212	M12	260	24	50	85	46.5

	MOTOR		PUMP		GENERAL					BASE PLATE									
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S	
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
50-200	4 poles	1.1	90L	316.5	90	460	17	793.5	380	425	750	280	65	225	50	100	550	330	19
		1.5	90L	316.5	90	460	17	793.5	380	425	750	280	65	225	50	100	550	330	19
		2.2	100L	352	100	460	19	831	380	425	800	280	65	225	50	100	600	330	19
	2 poles	7.5	132M	475.5	132	460	19	954.5	380	425	850	280	65	225	50	150	550	330	19
		11	160M	576	160	460	19	1055	440	440	950	340	80	240	50	150	650	390	19
		15	160L	576	160	460	27	1063	440	440	1000	340	80	240	50	150	700	390	19
		18.5	160L	576	160	460	27	1063	440	440	1000	340	80	240	50	150	700	390	19
		22	180M	629	180	460	27	1116	480	480	1000	380	100	280	50	150	700	430	19

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NM Series

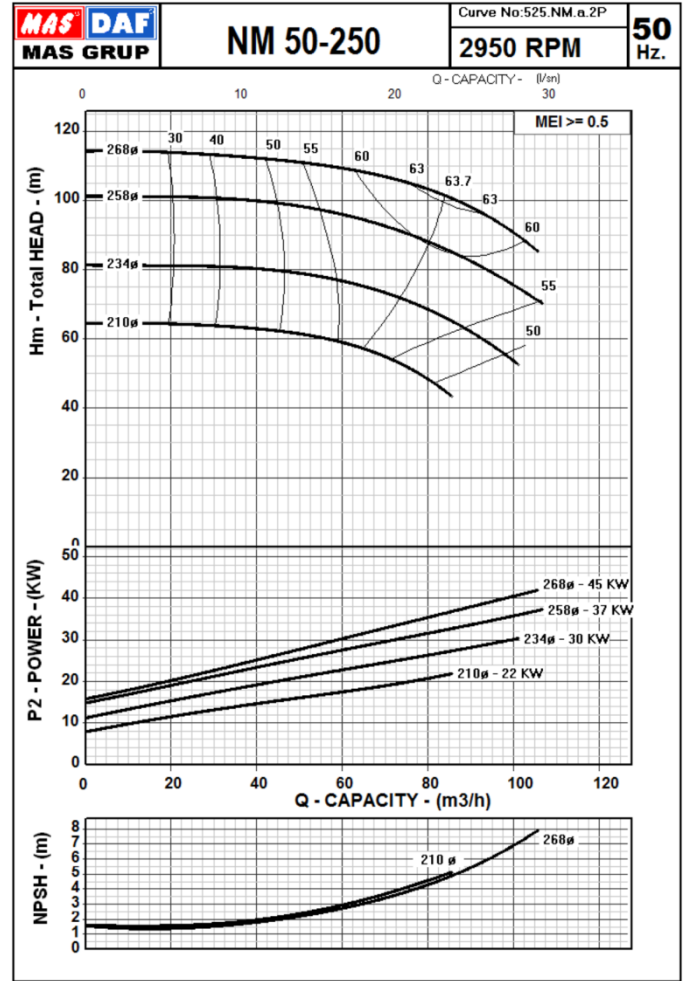
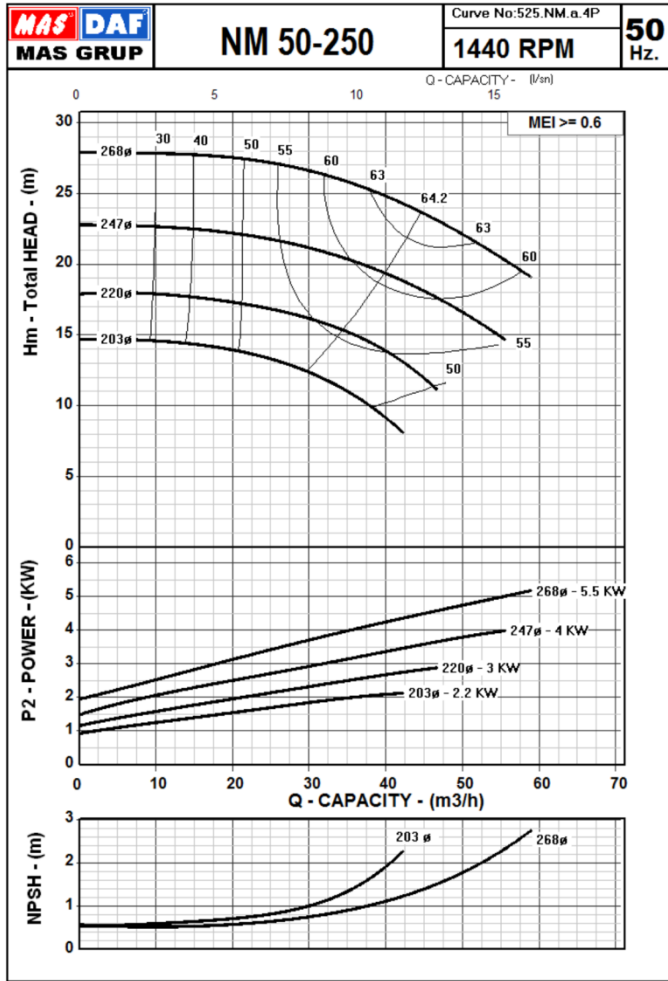
End Suction Centrifugal Pumps

Performance Curves

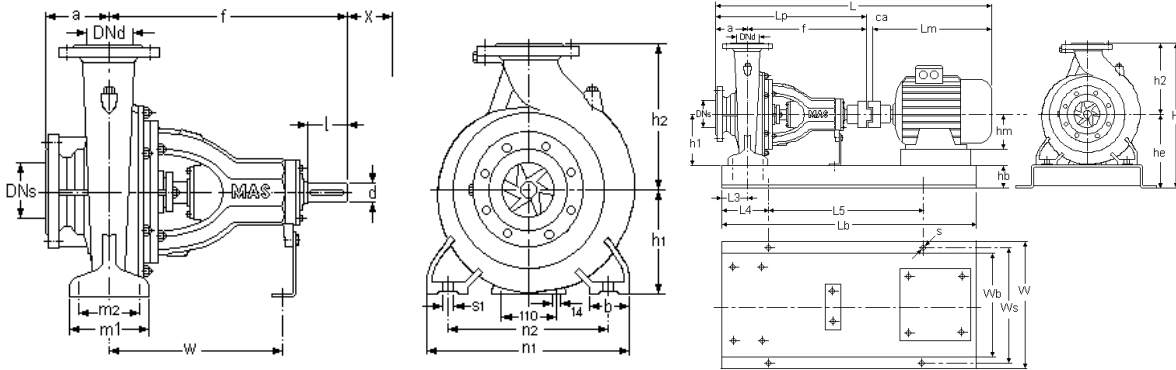


NM 50-250

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity $1 \text{ mm}^2/\text{s}$ and density $1\text{g}/\text{cm}^3$. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*)	Weight kg
	DNs	DNd	a	f	h1	h2	b	m1	m2	n1	n2	s1	W	d	l		
50-250	65	50	100	360	180	225	65	125	95	320	250	M12	260	24	50	85	54.5

50-250	MOTOR		PUMP				GENERAL			BASE PLATE								
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4 poles	2.2	100L	352	100	460	19	831	440	485	800	340	80	260	63	100	600	390	19
	3	100L	352	100	460	19	831	440	485	800	340	80	260	63	100	600	390	19
	4	112M	395.5	112	460	19	874.5	440	485	800	340	80	260	63	100	600	390	19
	5.5	132M	475.5	132	460	19	954.5	440	485	850	340	80	260	63	150	550	390	19
2 poles	22	180M	629	180	460	27	1116	480	505	1050	380	100	280	63	150	850	430	19
	30	200L	665	200	460	32	1157	520	525	1150	420	100	300	63	150	800	470	19
	37	200L	665	200	460	32	1157	520	525	1150	420	100	300	63	150	800	470	19
	45	225M	735	225	460	34	1229	550	550	1150	450	100	325	63	150	850	500	19

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NM Series

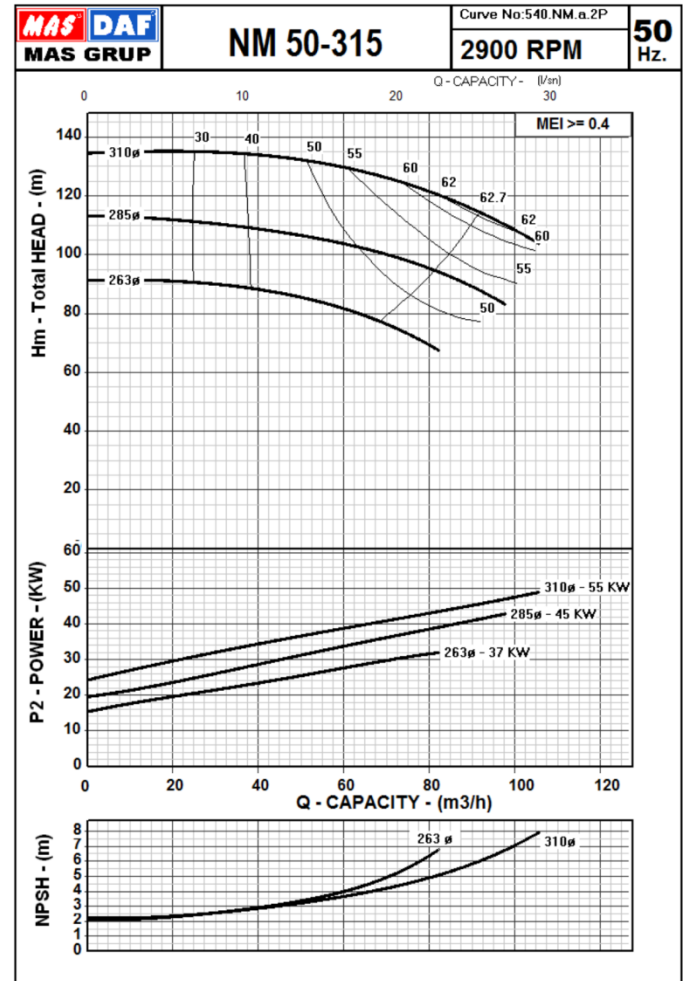
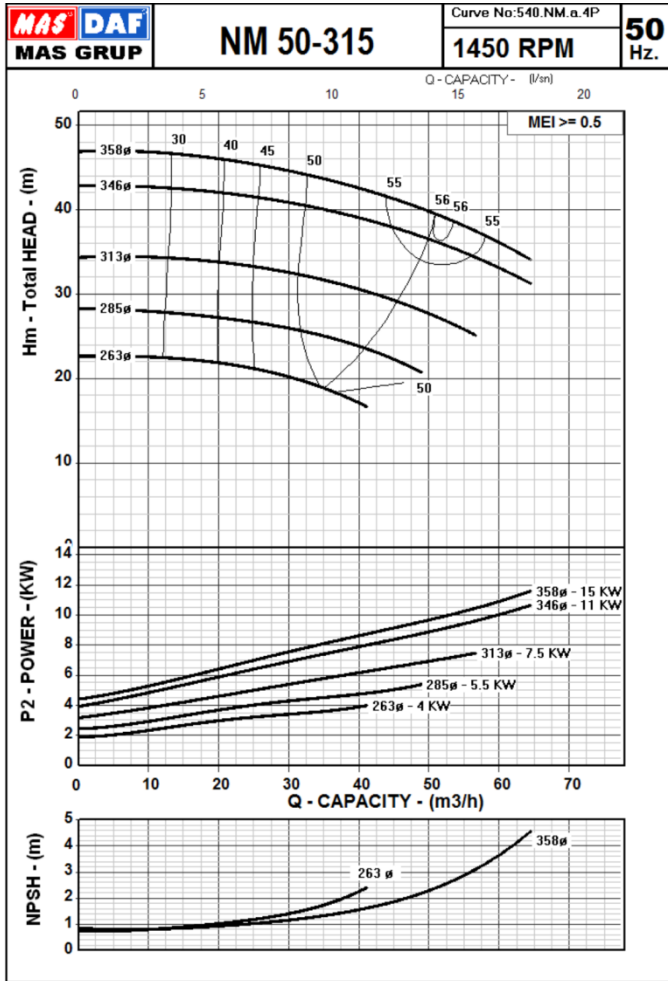
End Suction Centrifugal Pumps

Performance Curves

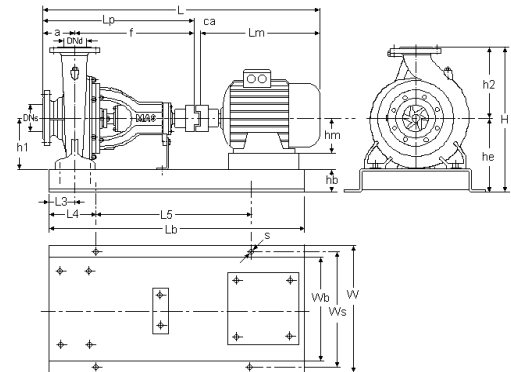
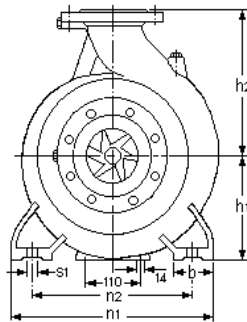
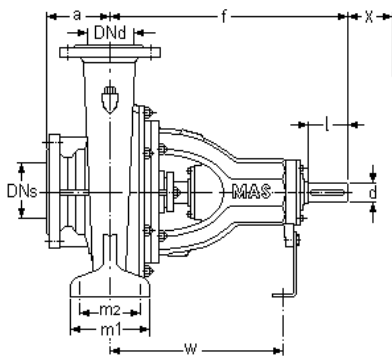


NM 50-315

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity $1 \text{ mm}^2/\text{s}$ and density 1 g/cm^3 . Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*)	Weight kg
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		
50-315	80	50	100	470	225	280	80	160	120	360	280	M16	330	32	80	100	103

50-315	poles	MOTOR		PUMP		GENERAL			BASE PLATE										
		KW	IEC	Lm mm	Hm mm	Lp mm	Ca mm	L mm	W mm	H mm	Lb mm	Wb mm	Hb mm	He mm	L3 mm	L4 mm	L5 mm	Ws mm	S mm
4	4	112M	395.5	112	570	19	984.5	480	605	950	380	100	325	80	150	650	430	19	
	5.5	132M	475.5	132	570	19	1064.5	480	605	1000	380	100	325	80	150	700	430	19	
	7.5	132M	475.5	132	570	27	1072.5	480	605	1050	380	100	325	80	150	750	430	19	
	11	160M	576	160	570	27	1173	480	605	1100	380	100	325	80	150	800	430	19	
2	37	200L	665	200	570	27	1262	520	605	1250	420	100	325	80	150	950	430	19	
	45	225M	735	225	570	32	1337	600	625	1300	480	120	345	80	200	900	540	24	
	55	250M	886	250	570	34	1490	620	650	1370	500	120	370	80	200	950	560	24	

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NM Series

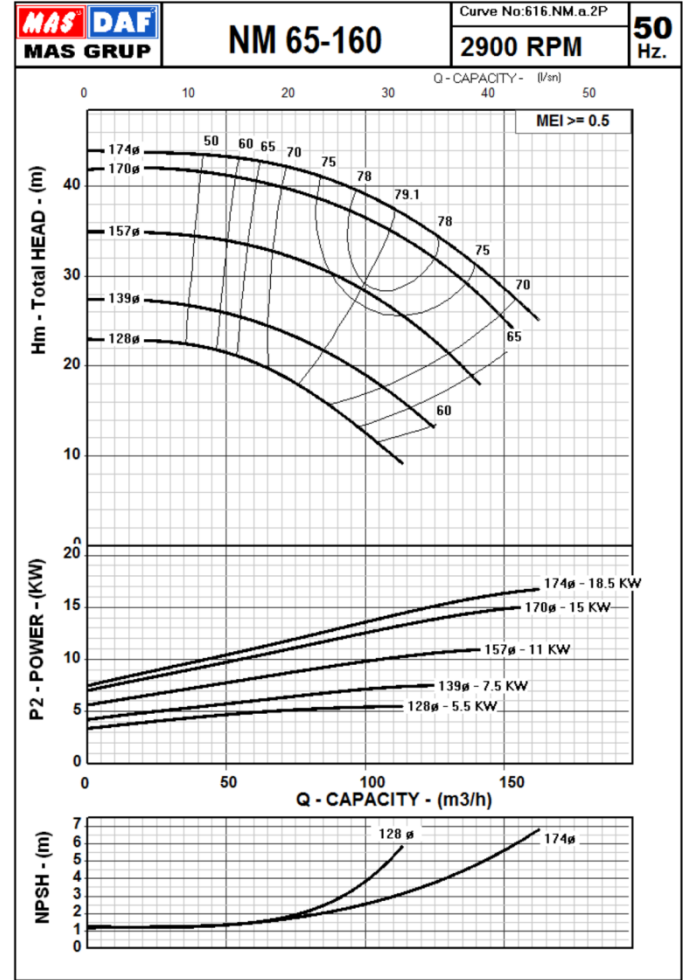
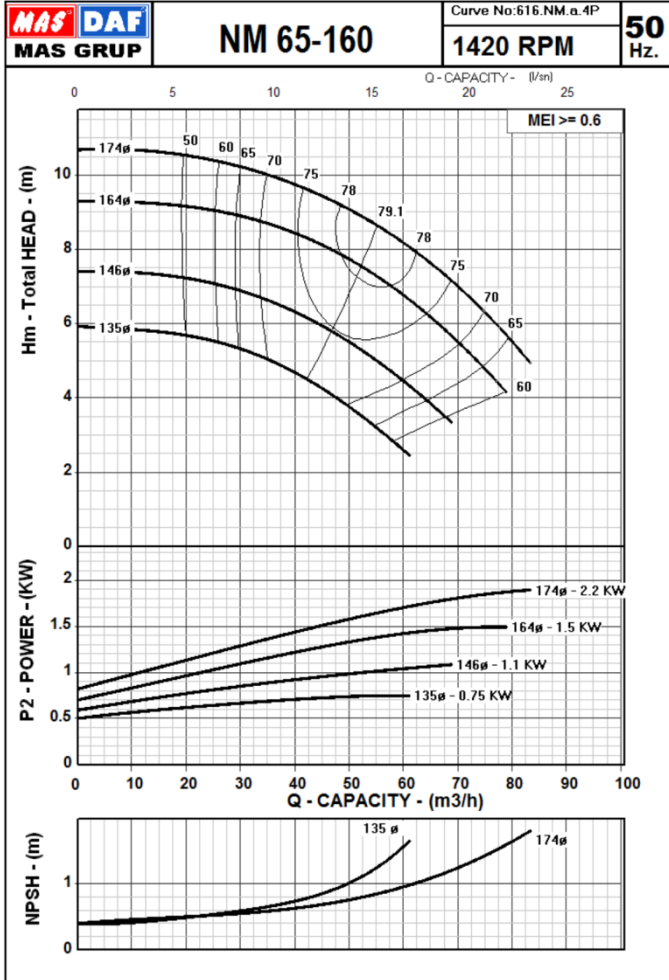
End Suction Centrifugal Pumps

Performance Curves

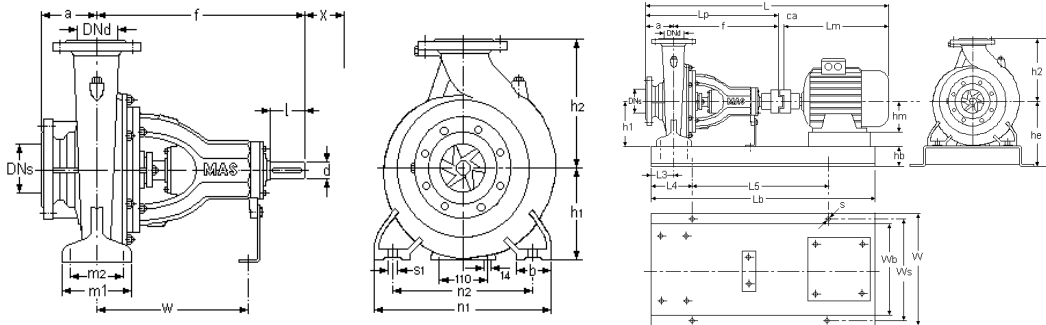


Mas Grup

NM 65-160



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details								Shaft End		(*) X	Weight kg
	DNs	DNd	a	f	h1	h2	b	m1	m2	n1	n2	s1	W	d	l			
65-160	80	65	100	360	160	200	65	125	95	280	212	M12	260	24	50	100	44	

		MOTOR		PUMP		GENERAL			BASE PLATE										
		KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
65-160	4 poles	0.75	80	283.5	80	460	16	759.5	400	425	700	300	65	225	63	100	500	350	19
		1.1	90L	316.5	90	460	17	793.5	400	425	750	300	65	225	63	100	550	350	19
		1.5	90L	316.5	90	460	17	793.5	400	425	750	300	65	225	63	100	550	350	19
		2.2	100L	352	100	460	19	831	400	425	800	300	65	225	63	100	600	350	19
	2 poles	5.5	132S	440.5	132	460	19	919.5	400	425	850	300	65	225	63	150	550	350	19
		7.5	132M	475.5	132	460	19	954.5	400	425	850	300	65	225	63	150	550	350	19
		11	160M	576	160	460	19	1055	440	440	1000	340	80	240	63	150	700	390	19
		15	160L	576	160	460	27	1063	440	440	1000	340	80	240	63	150	700	390	19
		18.5	160L	576	160	460	27	1063	440	440	1050	340	80	240	63	150	750	390	19

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NM Series

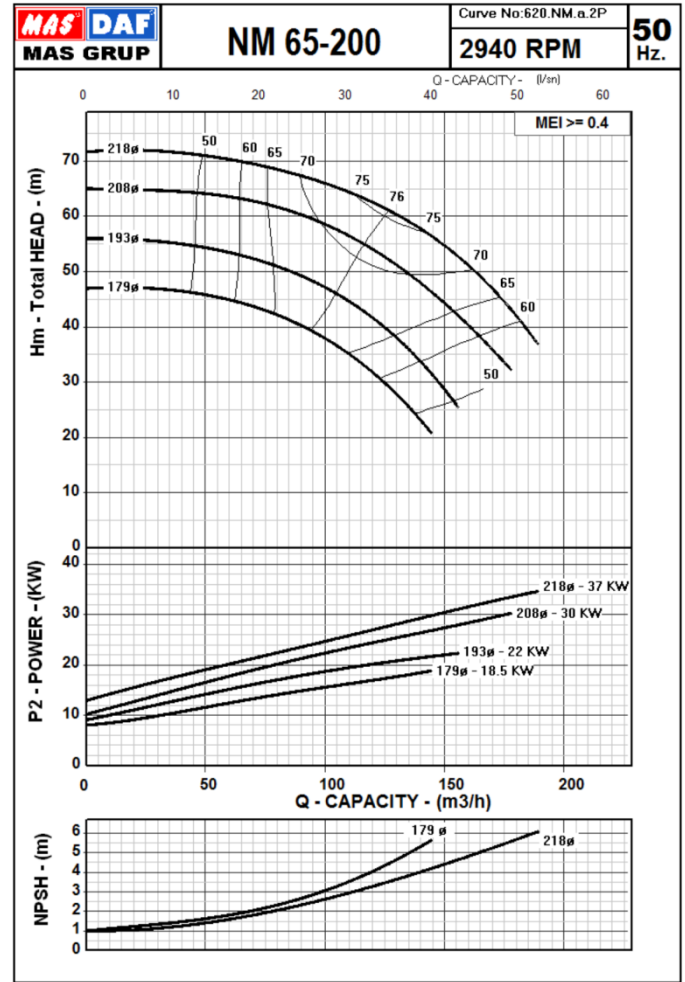
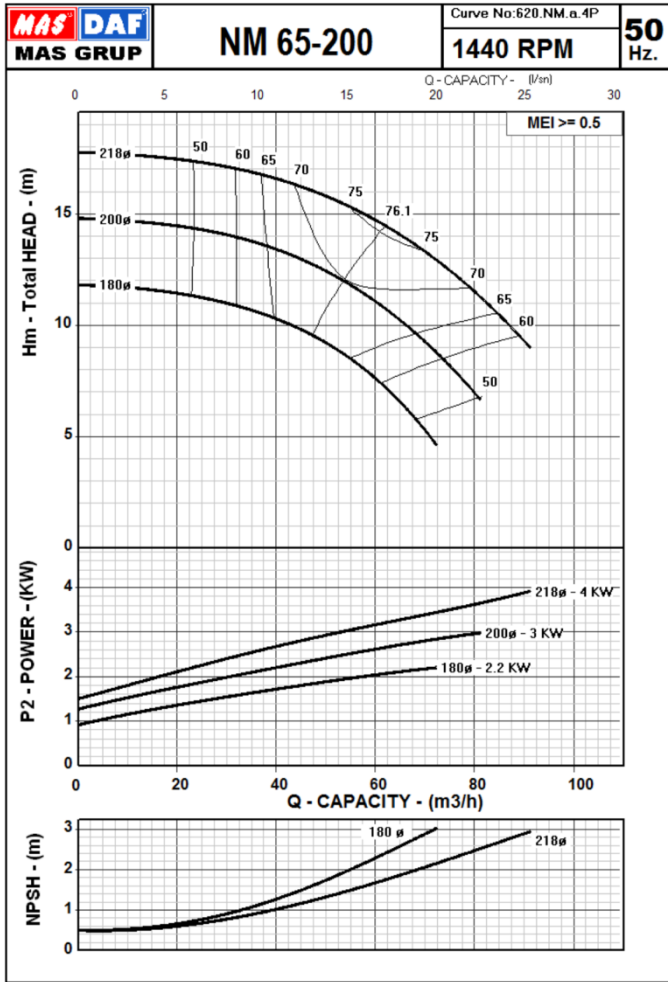
End Suction Centrifugal Pumps

Performance Curves

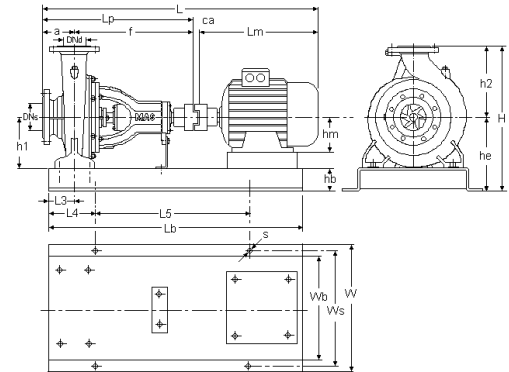
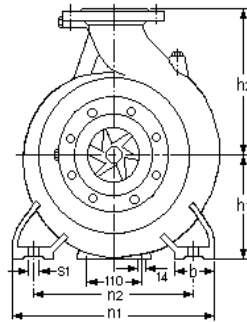
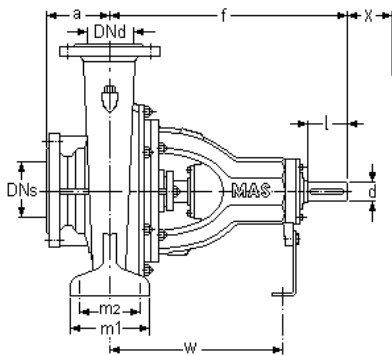


NM 65-200

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X	Weight kg
	DNs	DNd	a	f	h1	h2	b	m1	m2	n1	n2	s1	W	d	l		
65-200	80	65	100	360	180	225	65	125	95	320	250	M12	260	24	50	100	47.5

65-200	MOTOR		PUMP		GENERAL			BASE PLATE										
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4 poles	2.2	100L	352	100	460	19	831	440	485	800	340	80	260	63	100	600	390	19
	3	100L	352	100	460	19	831	440	485	800	340	80	260	63	100	600	390	19
	4	112M	395.5	112	460	19	874.5	440	485	800	340	80	260	63	100	600	390	19
2 poles	18.5	160L	576	160	460	27	1063	440	485	1050	340	80	260	63	150	750	390	19
	22	180M	629	180	460	27	1116	480	505	1050	380	100	280	63	150	750	430	19
	30	200L	665	200	460	32	1157	520	525	1100	420	100	300	63	150	800	470	19
	37	200L	665	200	460	32	1157	520	525	1100	420	100	300	63	150	800	470	19

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NM Series

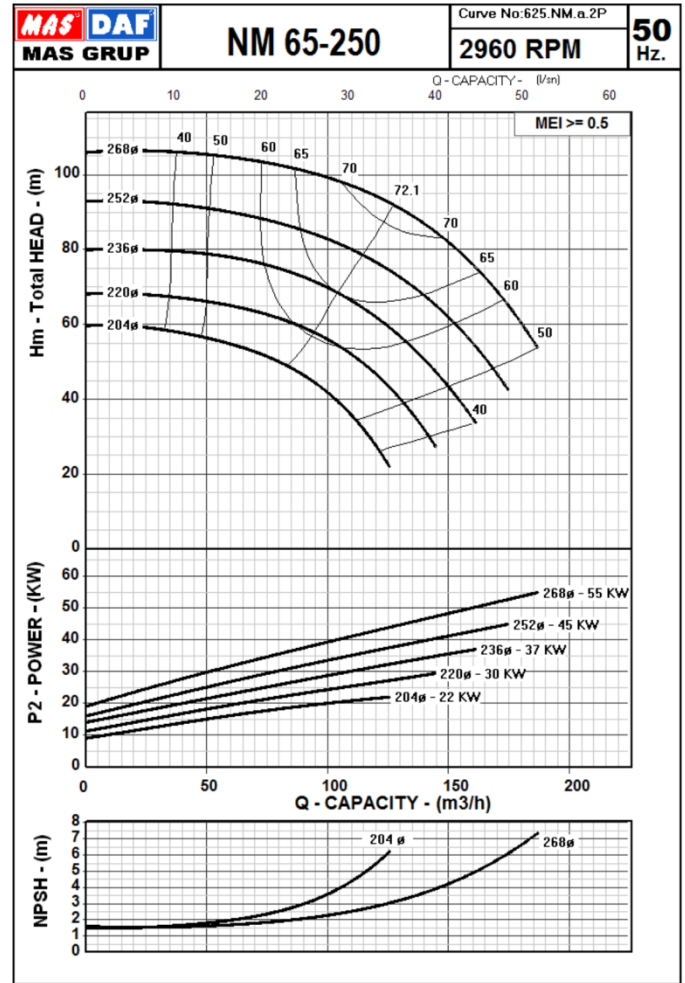
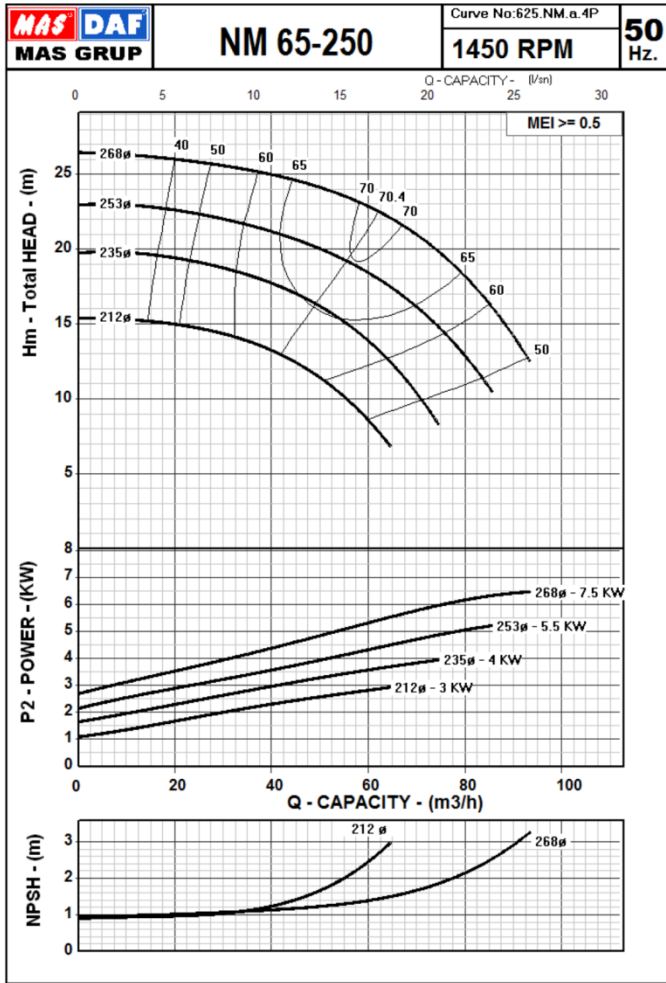
End Suction Centrifugal Pumps

Performance Curves

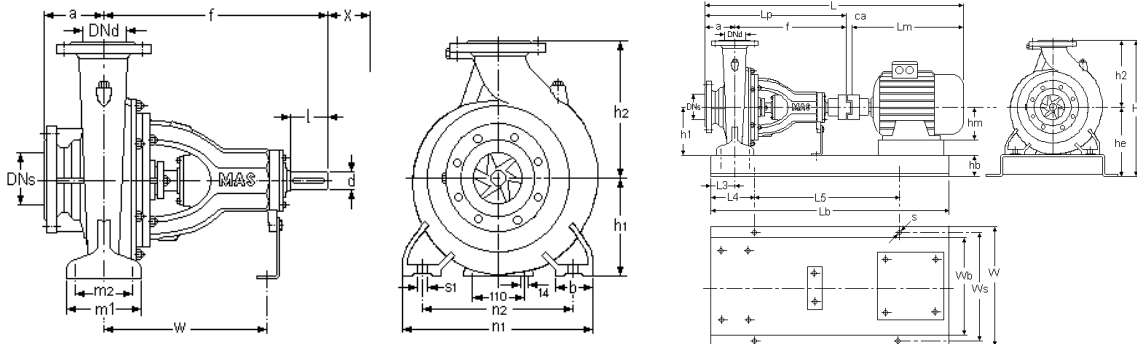


NM 65-250

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End			Weight kg
	DNs	DNd	a	f	h1	h2	b	m1	m2	n1	n2	s1	W	d	l	X	
65-250	80	65	100	470	200	250	80	160	120	360	280	M16	340	32	80	100	77.5

	MOTOR		PUMP				GENERAL			BASE PLATE									
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S	
65-250	4 poles	3	100L	352	100	570	19	941	480	550	950	380	100	300	80	150	650	430	19
		4	112M	395.5	112	570	19	984.5	480	550	950	380	100	300	80	150	650	430	19
		5.5	132M	475.5	132	570	19	1064.5	480	550	1000	380	100	300	80	150	700	430	19
		7.5	132M	475.5	132	570	27	1072.5	480	550	1050	380	100	300	80	150	750	430	19
65-250	2 poles	22	180M	629	180	570	27	1226	480	550	1150	380	100	300	80	150	850	430	19
		30	200L	665	200	570	32	1267	520	550	1250	420	100	300	80	200	850	470	19
		37	200L	665	200	570	32	1267	520	550	1250	420	100	300	80	200	850	470	19
		45	225M	735	225	570	34	1339	600	595	1300	480	120	345	80	200	900	540	24
		55	250M	886	250	570	34	1490	620	620	1400	500	120	370	80	200	1000	560	24

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NM Series

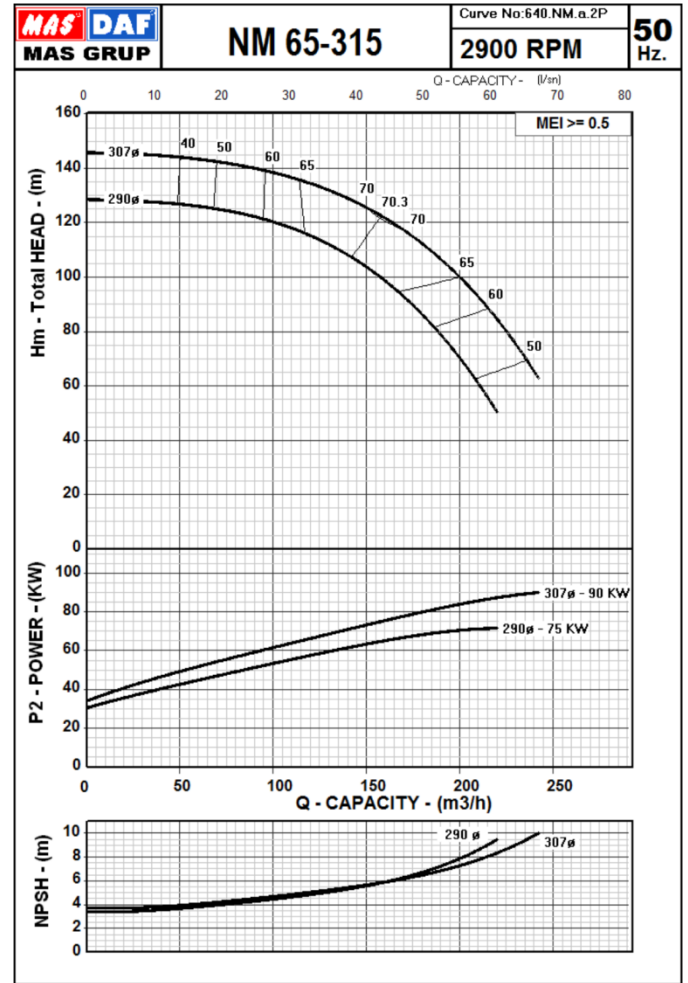
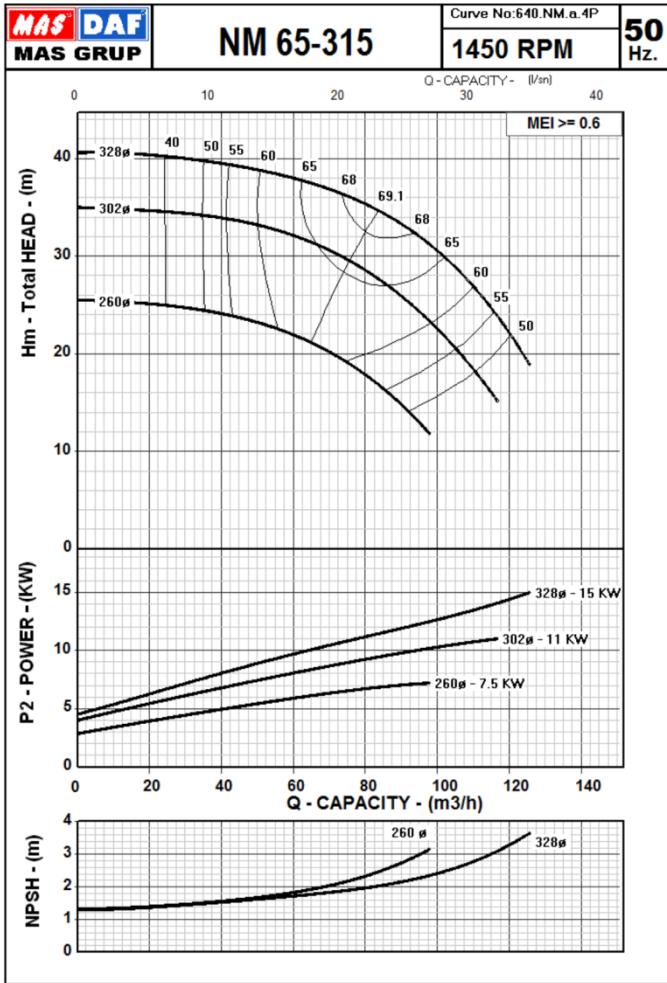
End Suction Centrifugal Pumps

Performance Curves

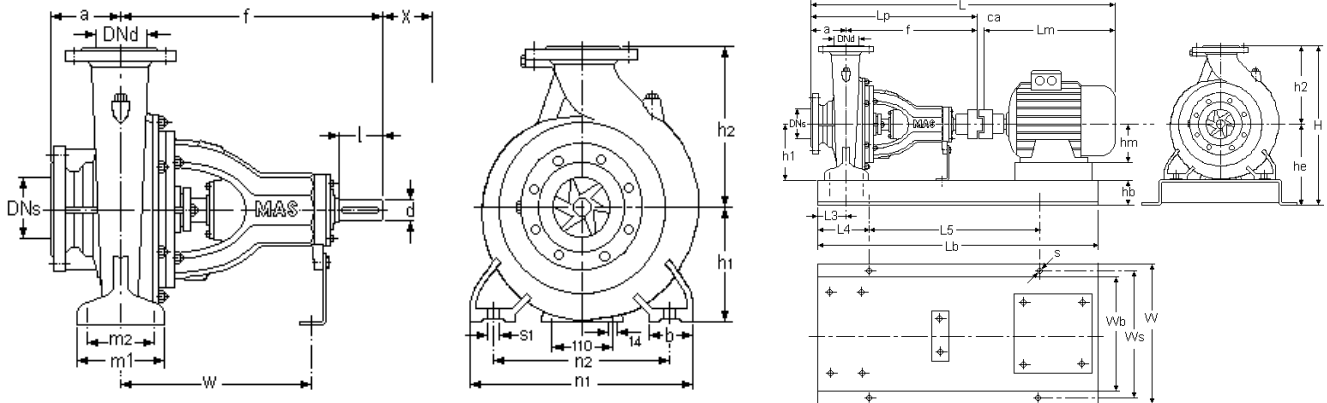


Mas Grup

NM 65-315



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.

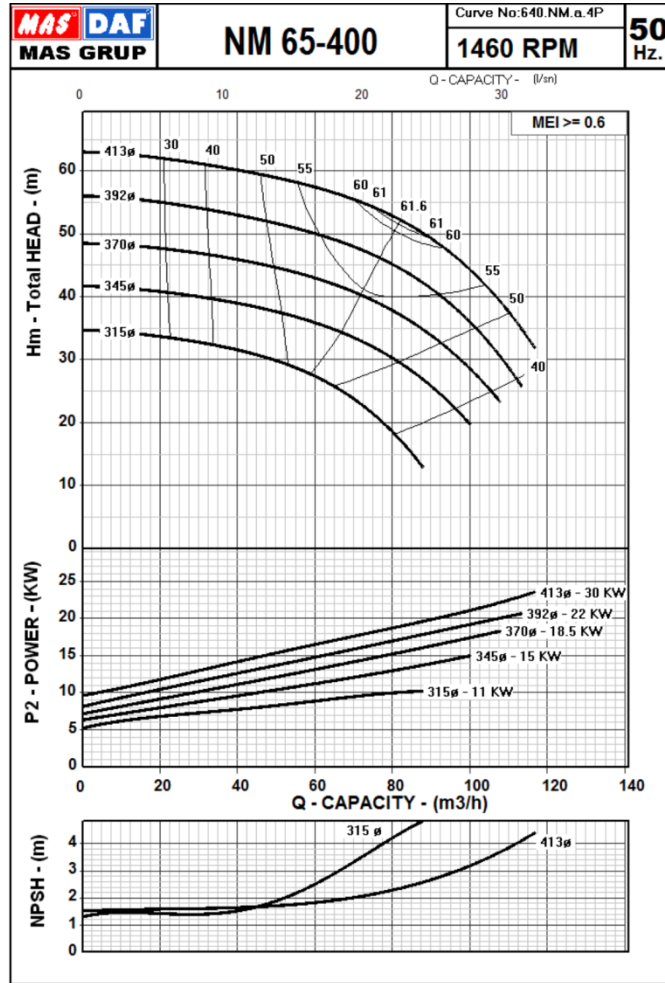


Pump Size	Flanges		Length		Height		Mounting Details							Shaft End			(*)	Weight kg
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm	X mm		
65-315	80	65	125	470	225	280	80	160	120	400	315	M16	340	32	80	110	92	

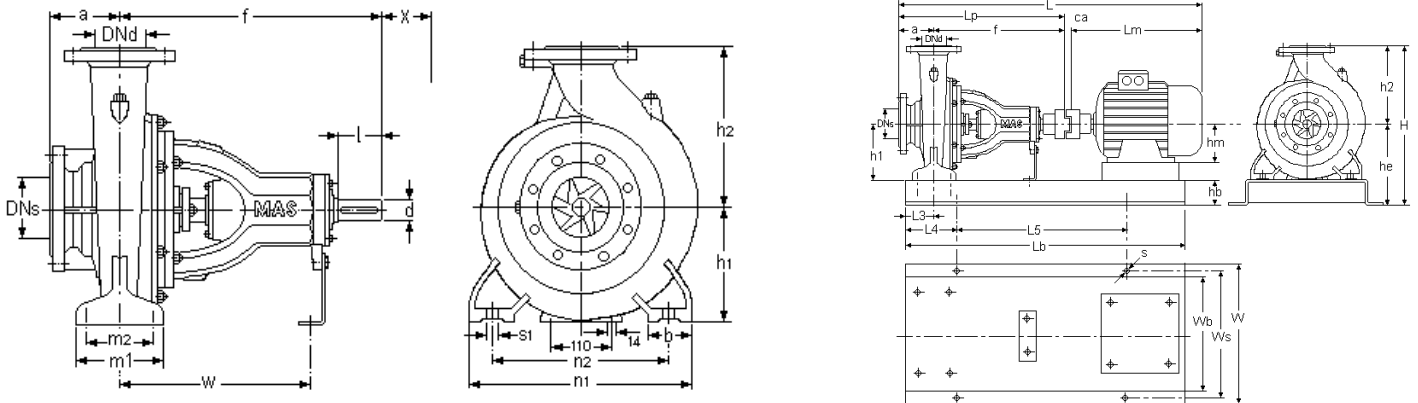
65-315	MOTOR		PUMP		GENERAL			BASE PLATE										
	KW	IEC	Lm mm	Hm mm	Lp mm	Ca mm	L mm	W mm	H mm	Lb mm	Wb mm	Hb mm	He mm	L3 mm	L4 mm	L5 mm	Ws mm	S mm
	4 poles	7.5	132M	475.5	132	595	27	1097.5	520	605	1050	420	100	325	80	150	750	470
	11	160M	576	160	595	27	1198	520	605	1100	420	100	325	80	150	800	470	19
	15	160L	576	160	595	32	1203	520	605	1150	420	100	325	80	150	850	470	19
2 poles	55	250M	886	250	595	34	1515	620	650	1350	500	120	370	80	200	950	560	24
	75	280S	907	280	595	43	1545	720	700	1450	600	140	420	80	200	1050	660	24
	90	280M	958	280	595	43	1596	720	700	1500	600	140	420	80	200	1050	660	24

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NM 65-400



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*)	Weight kg
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		
65-400	100	65	125	470	250	355	80	160	120	400	315	M16	340	32	80	110	125

65-400	4 poles	MOTOR		PUMP		GENERAL			BASE PLATE										
		KW	IEC	Lm mm	Hm mm	Lp mm	Ca mm	L mm	W mm	H mm	Lb mm	Wb mm	Hb mm	He mm	L3 mm	L4 mm	L5 mm	Ws mm	S mm
		11	160M	576	160	595	19	1190	520	705	1150	420	100	350	80	150	850	470	19
15	160L	576	160	595	32	1203	520	705	1150	420	100	350	80	150	850	470	19		
18.5	180M	629	180	595	32	1256	520	705	1150	420	100	350	80	150	850	470	19		
22	180L	629	180	595	34	1258	520	705	1200	420	100	350	80	200	800	470	19		
30	200L	665	200	595	34	1294	520	705	1250	420	100	350	80	200	850	470	19		

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NM Series

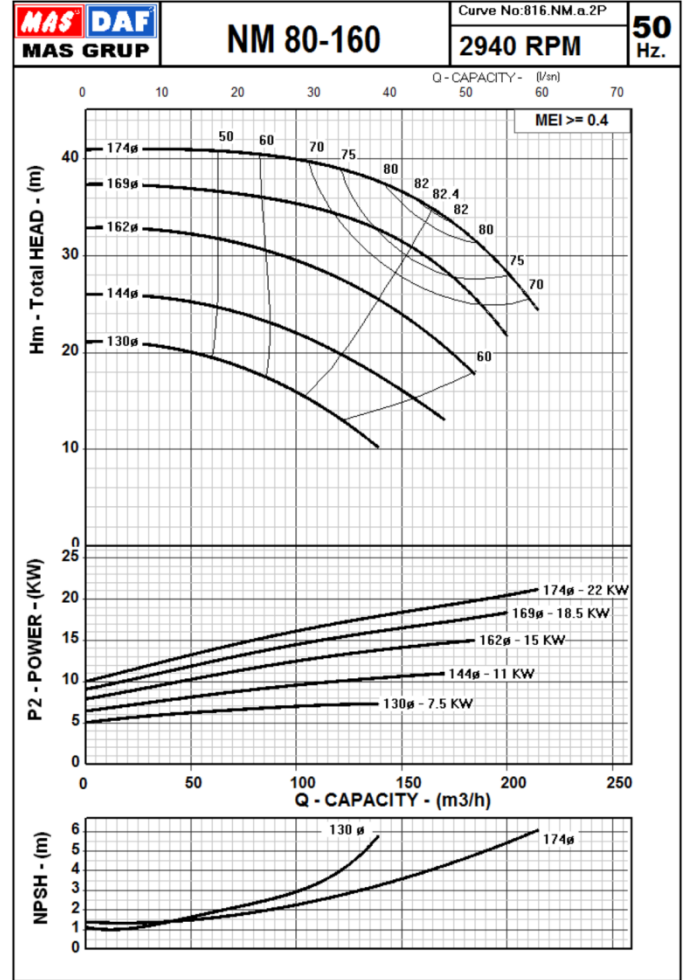
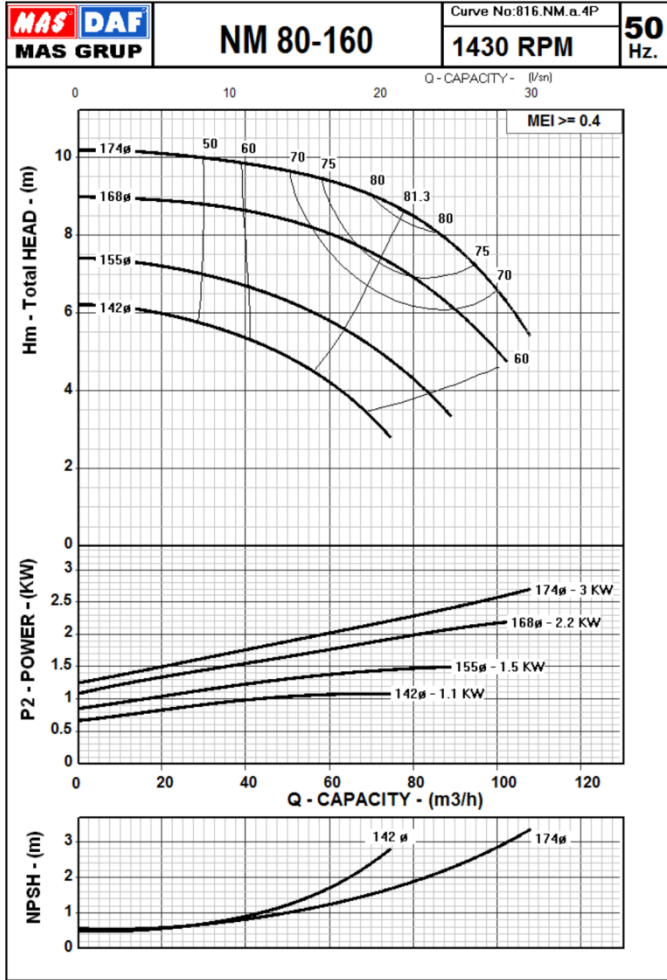
End Suction Centrifugal Pumps

Performance Curves

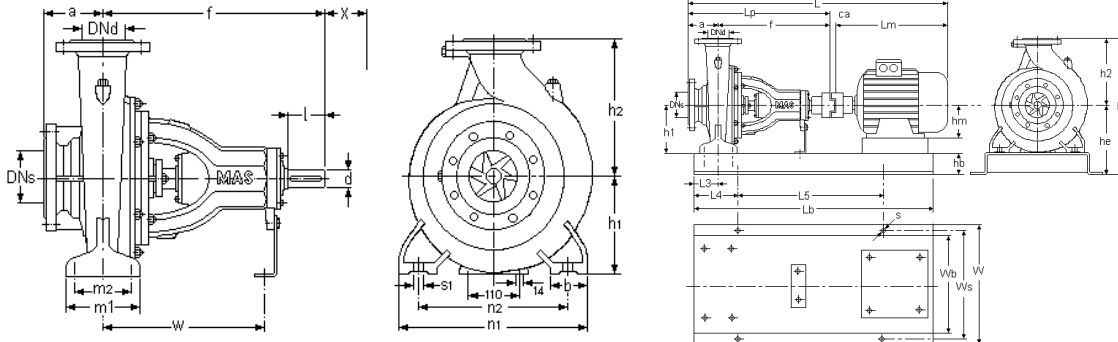


NM 80-160

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(°)	Weight kg
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		
80-160	100	80	125	360	180	225	65	125	95	320	250	M12	260	24	50	110	51

80-160	MOTOR		PUMP		GENERAL				BASE PLATE									
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4 poles	1.1	90L	316.5	90	485	17	818.5	440	485	750	340	80	260	63	100	550	390	19
	1.5	90L	316.5	90	485	17	818.5	440	485	750	340	80	260	63	100	550	390	19
	2.2	100L	352	100	485	19	856	440	485	800	340	80	260	63	100	600	390	19
	3	100L	352	100	485	19	856	440	485	800	340	80	260	63	100	600	390	19
2 poles	7.5	132M	475.5	132	485	19	979.5	440	485	850	340	80	260	63	100	650	390	19
	11	160M	576	160	485	19	1080	440	485	1000	340	80	260	63	150	700	390	19
	15	160L	576	160	485	27	1088	440	485	1000	340	80	260	63	150	700	390	19
	18.5	160L	576	160	485	27	1088	440	485	1050	340	80	260	63	150	750	390	19
	22	180M	629	180	485	27	1141	480	505	1050	380	100	280	63	150	750	430	19

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NM Series

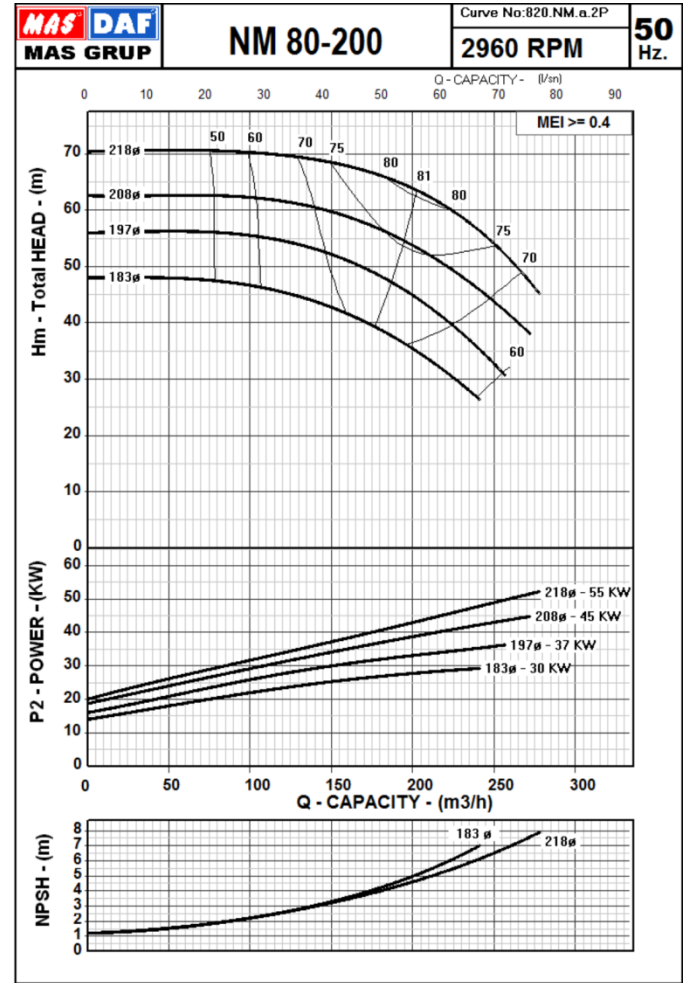
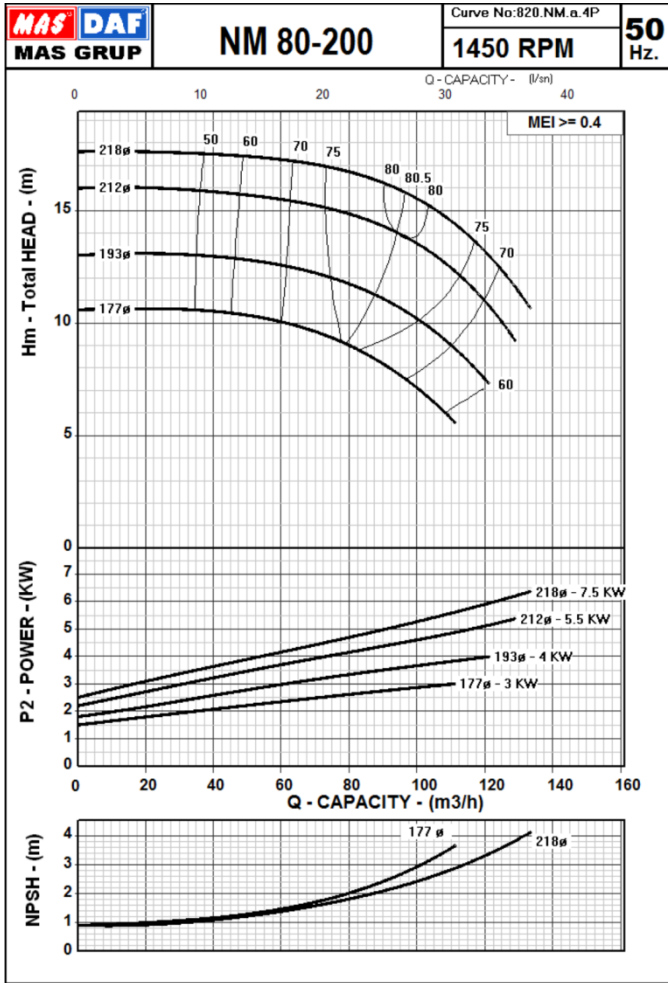
End Suction Centrifugal Pumps

Performance Curves

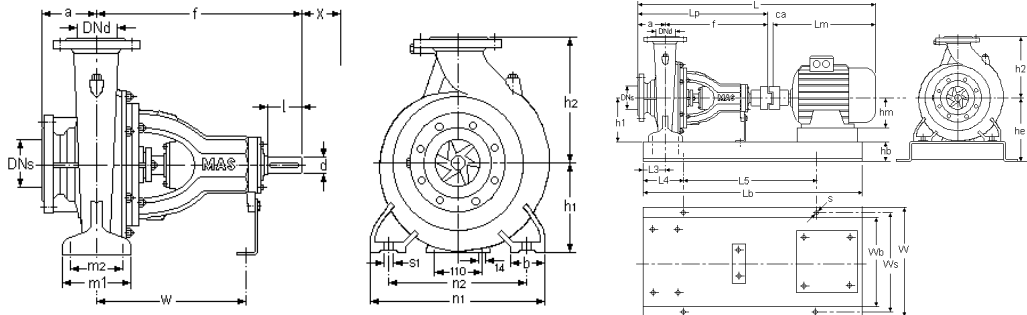


NM 80-200

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X	Weight kg
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		
80-200	100	80	125	470	180	250	65	125	95	345	280	M12	340	32	80	110	75.5

		MOTOR		PUMP			GENERAL			BASE PLATE									
		KW	IEC	Lm mm	Hm mm	Lp mm	Ca mm	L mm	W mm	H mm	Lb mm	Wb mm	Hb mm	He mm	L3 mm	L4 mm	L5 mm	Ws mm	S mm
80-200	4 poles	2.2	100L	352	100	595	19	966	460	510	900	360	80	260	63	150	600	410	19
		3	100L	352	100	595	19	966	460	510	900	360	80	260	63	150	600	410	19
		4	112M	395.5	112	595	19	1009.5	460	510	950	360	80	260	63	150	650	410	19
		5.5	132M	475.5	132	595	19	1089.5	460	510	950	360	80	260	63	150	650	410	19
		7.5	132M	475.5	132	595	27	1097.5	460	510	1000	360	80	260	63	150	700	410	19
	2 poles	22	180M	629	180	595	27	1251	480	530	1150	380	100	280	63	150	850	430	19
		30	200L	665	200	595	32	1292	520	550	1250	420	100	300	63	200	850	470	19
		37	200L	665	200	595	32	1292	520	550	1250	420	100	300	63	200	850	470	19
		45	225M	735	225	595	34	1364	580	595	1250	480	120	345	63	200	850	530	24
		55	250M	886	250	595	34	1515	600	620	1350	500	120	370	63	200	950	550	24

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NM Series

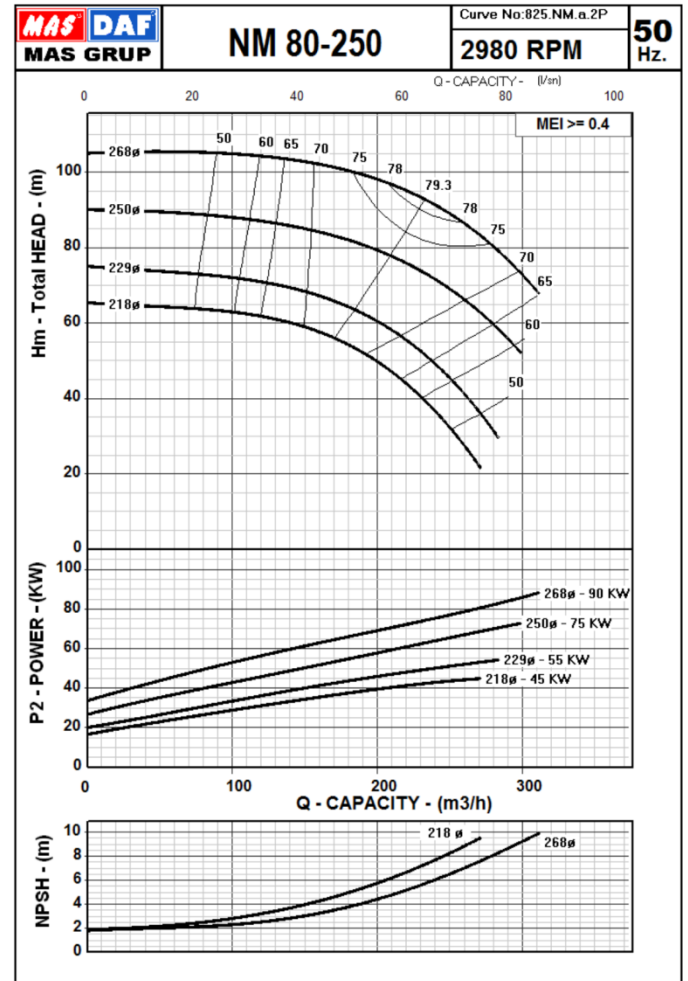
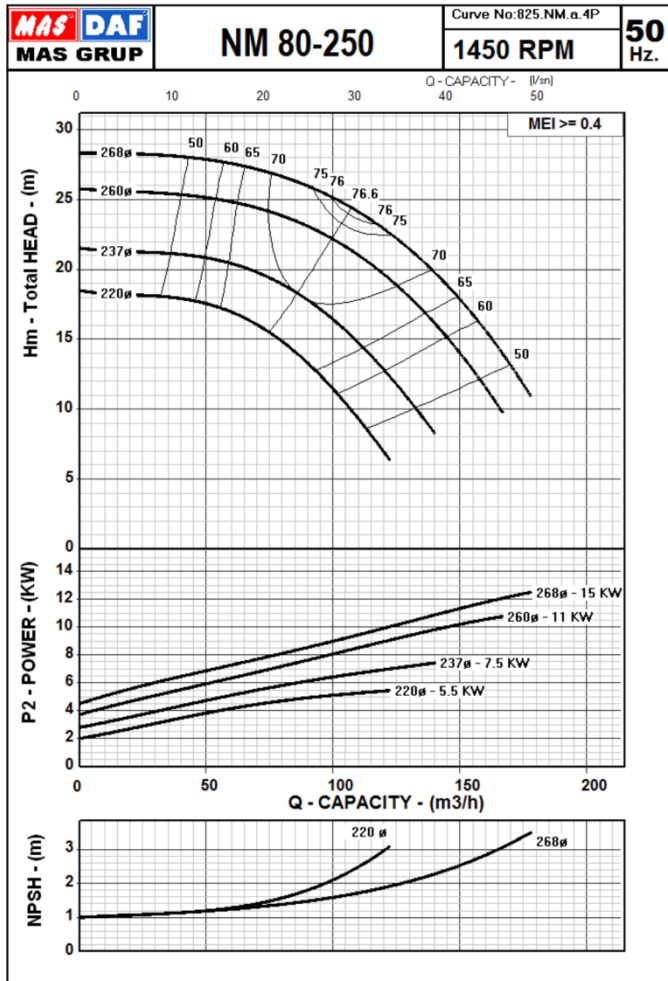
End Suction Centrifugal Pumps

Performance Curves

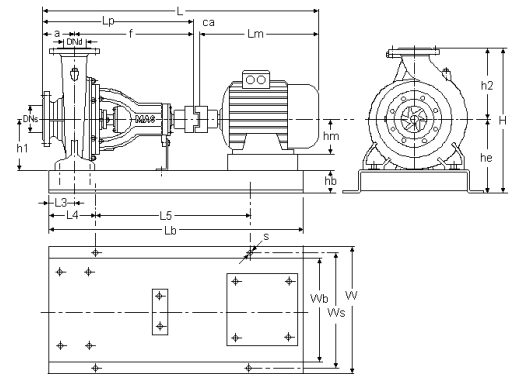
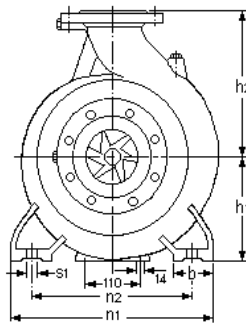
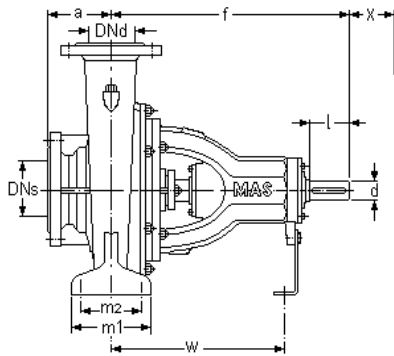


NM 80-250

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X	Weight kg
	DNs	DNd	a	f	h1	h2	b	m1	m2	n1	n2	s1	W	d	l		
80-250	100	80	125	470	200	280	80	160	120	400	315	M16	340	32	80	115	93

80-250	MOTOR		PUMP				GENERAL			BASE PLATE								
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4 poles	5.5	132M	475.5	132	595	19	1089.5	520	580	1000	420	100	300	80	150	700	470	19
	7.5	132M	475.5	132	595	27	1097.5	520	580	1050	420	100	300	80	150	750	470	19
	11	160M	576	160	595	27	1198	520	580	1100	420	100	300	80	150	800	470	19
	15	160L	576	160	595	32	1203	520	580	1150	420	100	300	80	150	850	470	19
2 poles	45	225M	735	225	595	34	1364	580	625	1300	480	120	345	80	200	900	530	24
	55	250M	886	250	595	34	1515	600	650	1400	500	120	370	80	200	1000	550	24
	75	280S	907	280	595	43	1545	700	700	1450	600	140	420	80	200	1050	650	24
	90	280M	958	280	595	43	1596	700	700	1500	600	140	420	80	200	1100	650	24

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NM Series

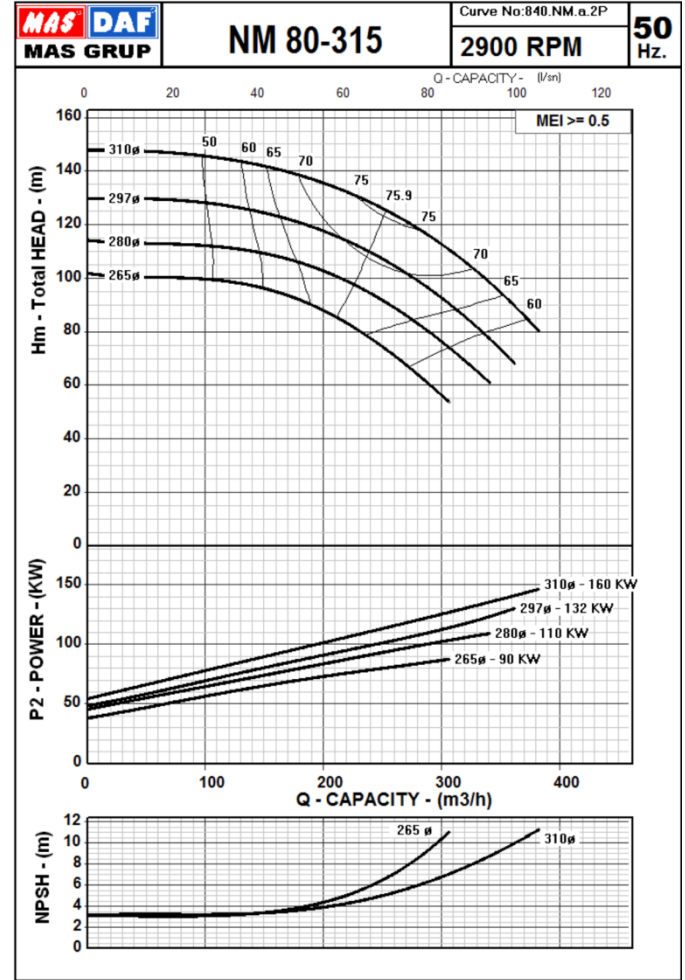
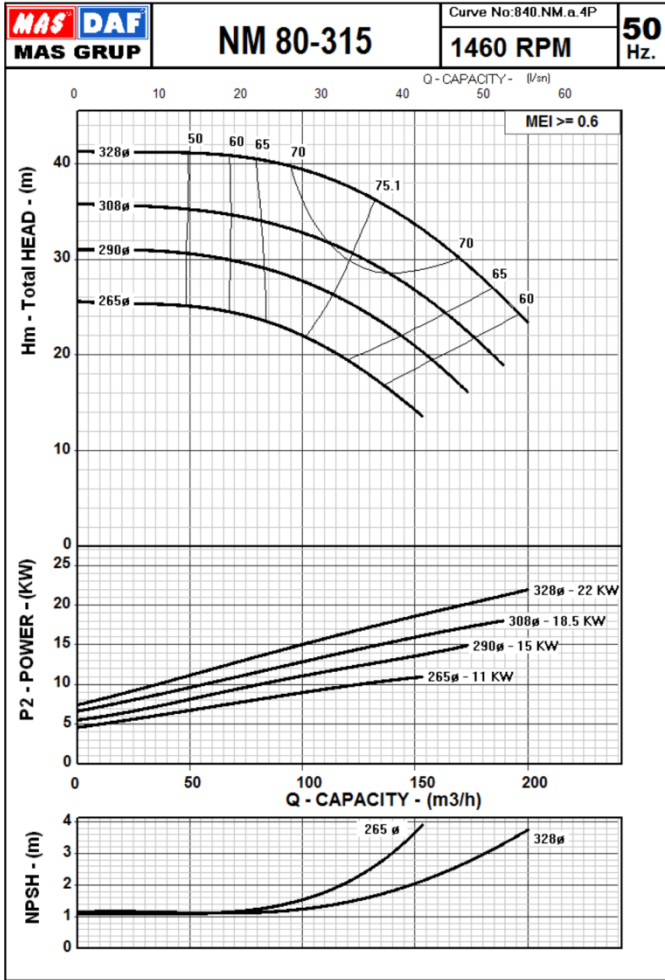
End Suction Centrifugal Pumps

Performance Curves

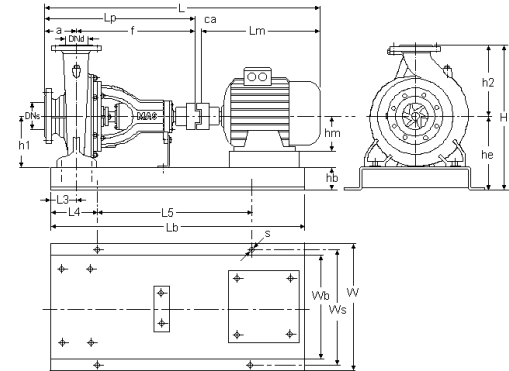
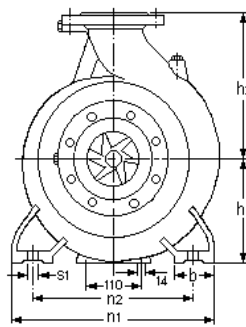
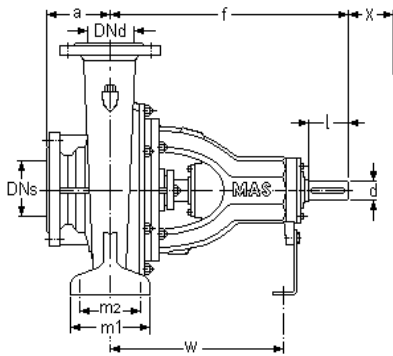


NM 80-315

Mas Grup



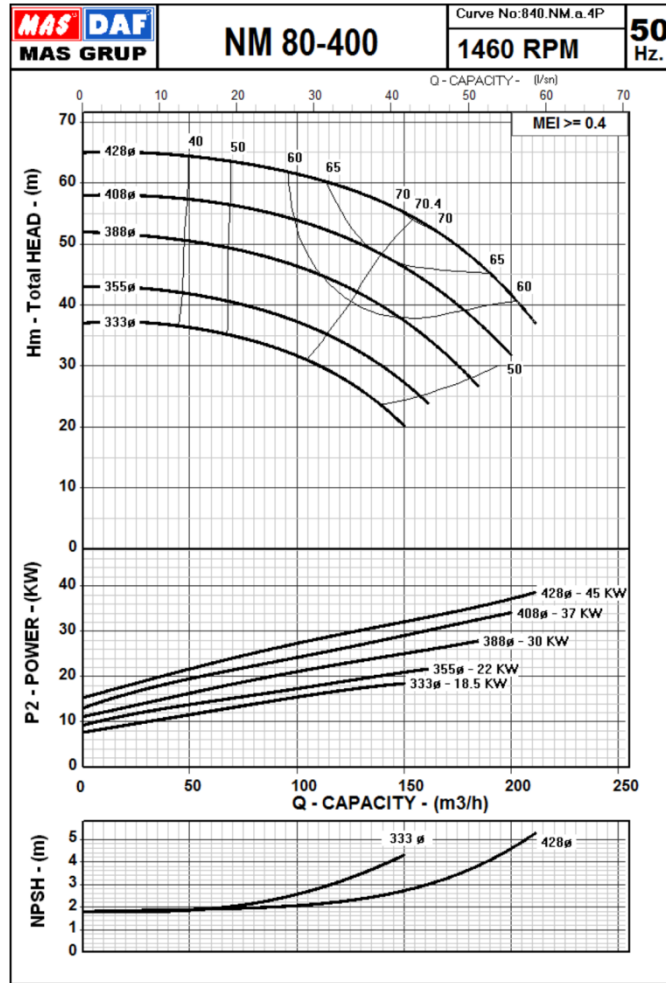
The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



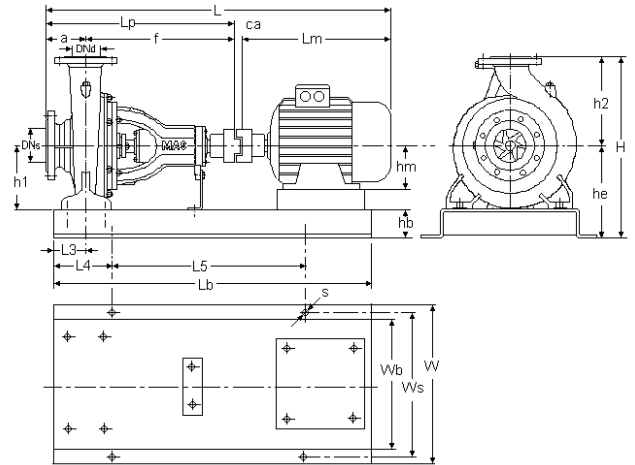
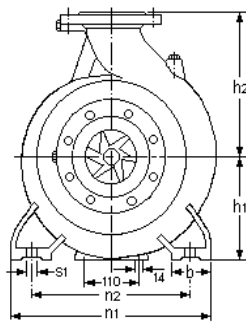
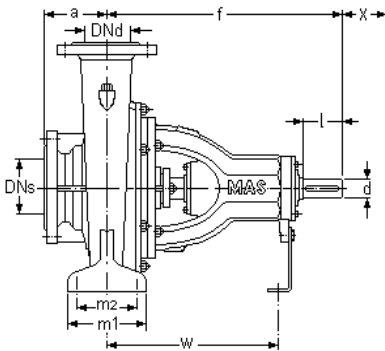
Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X	Weight kg
	DNs	DNd	a	f	h1	h2	b	m1	m2	n1	n2	s1	W	d	l		
80-315	100	80	125	470	250	315	80	160	120	400	315	M16	340	32	80	120	107

80-315	MOTOR		PUMP				GENERAL				BASE PLATE							
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4 poles	11	160M	576	160	595	27	1198	520	665	1100	420	100	350	80	150	800	470	19
	15	160L	576	160	595	32	1203	520	665	1200	420	100	350	80	200	800	470	19
	18.5	180M	629	180	595	32	1256	520	665	1150	420	100	350	80	150	850	470	19
	22	180L	629	180	595	34	1258	520	665	1200	420	100	350	80	200	800	470	19
2 poles	90	280M	958	280	595	43	1596	720	735	1500	600	140	420	80	200	1100	660	24
	110	315S	1068	315	595	43	1706	770	790	1450	650	160	475	80	200	1050	650	24
	132	315M	1120	315	595	43	1758	770	790	1550	650	160	475	80	200	1150	710	24
	160	315M	1120	315	595	43	1758	770	790	1550	650	160	475	80	200	1150	710	24

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The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details						Shaft End		(*)	Weight kg	
	DNs	DNd	a	f	h1	h2	b	m1	m2	n1	n2	s1	W	d			l
80-400	100	80	125	530	280	355	100	200	150	500	400	M20	370	42	110	120	162

80-400	4 poles	MOTOR		PUMP		GENERAL				BASE PLATE									
		KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
	18.5	180M	629	180	655	32	1316	640	775	1300	520	140	420	100	200	900	580	24	
	22	180L	629	180	655	34	1318	640	775	1300	520	140	420	100	200	900	580	24	
	30	200L	665	200	655	34	1354	640	775	1350	520	140	420	100	200	950	580	24	
	37	225M	765	225	655	43	1463	640	775	1350	520	140	420	100	200	950	580	24	
	45	225M	765	225	655	43	1463	640	775	1450	520	140	420	100	200	1050	580	24	

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NM Series

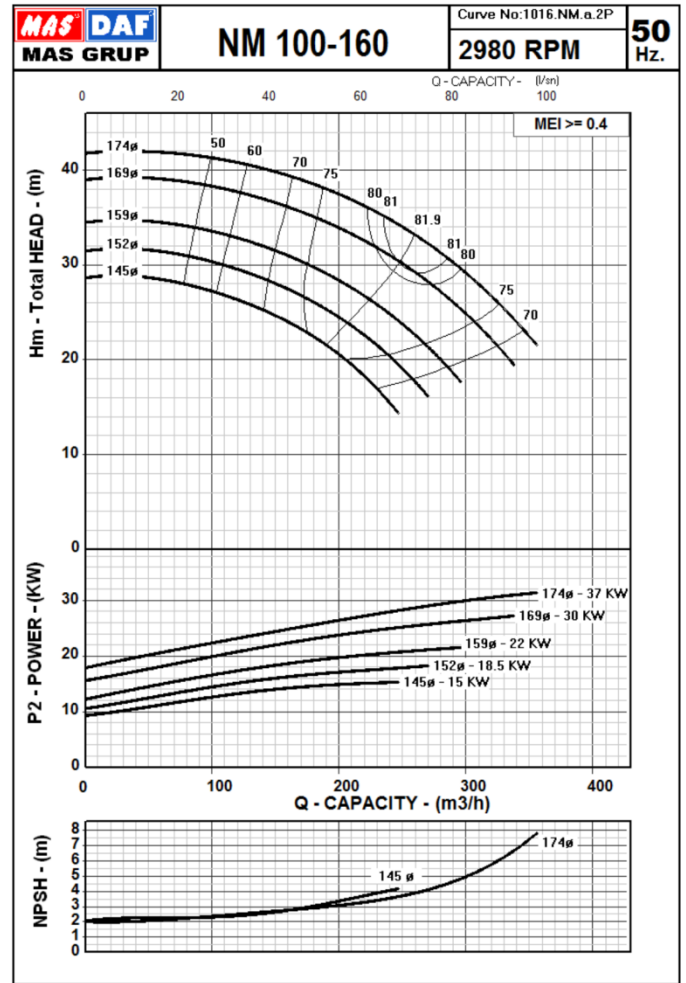
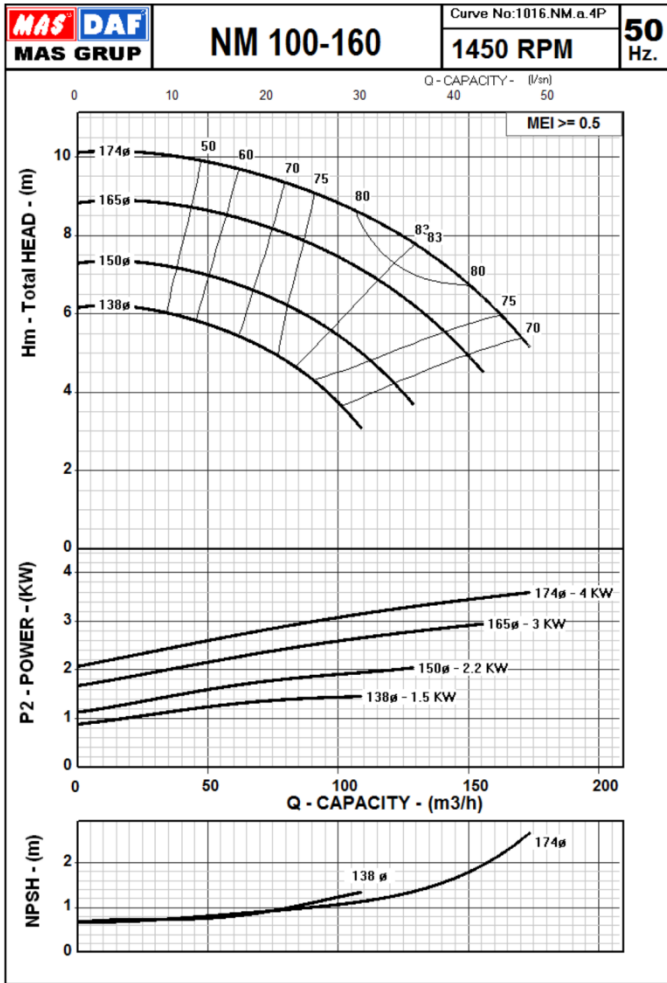
End Suction Centrifugal Pumps

Performance Curves

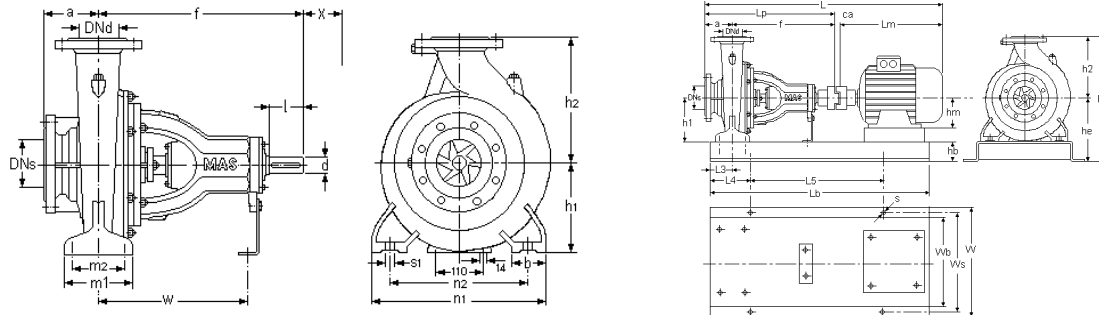


NM 100-160

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X	Weight kg
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		
100-160	125	100	125	360	200	280	80	160	120	360	280	M16	260	24	50	120	-

100-160	MOTOR		PUMP				GENERAL			BASE PLATE								
	KW	IEC	Lm mm	Hm mm	Lp mm	Ca mm	L mm	W mm	H mm	Lb mm	Wb mm	Hb mm	He mm	L3 mm	L4 mm	L5 mm	Ws mm	S mm
	4 poles	1.1	90L	316.5	90	485	19	820.5	480	580	750	380	100	300	80	100	550	430
	1.5	90L	316.5	90	485	19	820.5	480	580	800	380	100	300	80	100	600	430	19
	2.2	100L	352	100	485	19	856	480	580	850	380	100	300	80	150	550	430	19
	3	100L	352	100	485	19	856	480	580	850	380	100	300	80	150	550	430	19
	4	112M	395.5	112	485	19	899.5	480	580	850	380	100	300	80	150	550	430	19
2 poles	11	160M	576	160	485	19	1080	480	580	1000	380	100	300	80	150	700	430	19
	15	160L	576	160	485	27	1088	480	580	1000	380	100	300	80	150	700	430	19
	22	180M	629	180	485	27	1141	480	580	1050	380	100	300	80	150	750	430	19
	30	200L	665	200	485	32	1182	520	580	1150	420	100	300	80	150	850	470	19
	37	200L	665	200	485	32	1182	520	580	1150	420	100	300	80	150	850	470	19

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NM Series

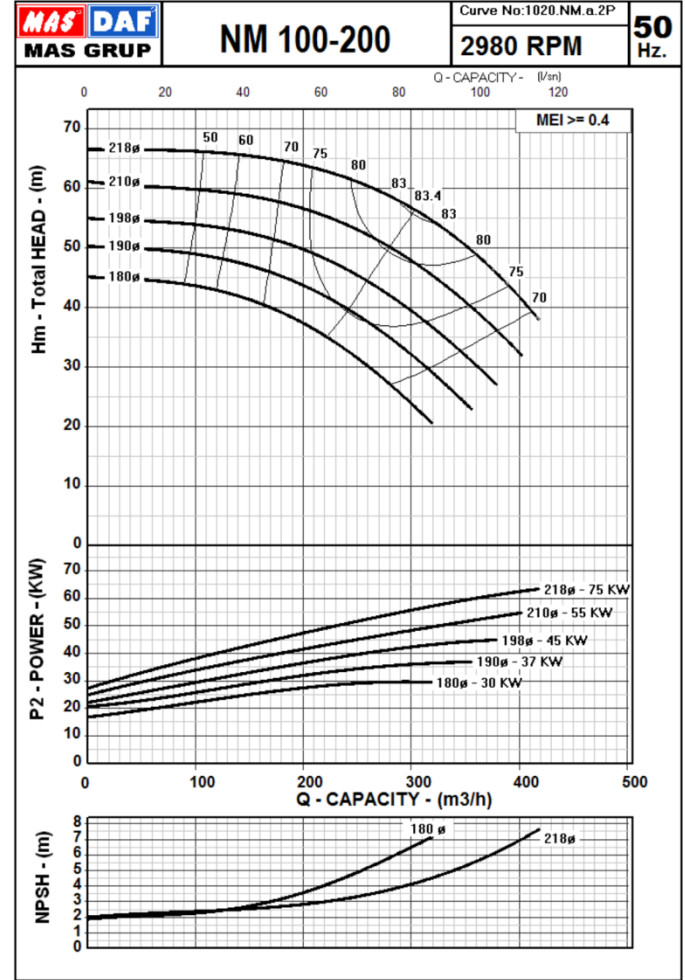
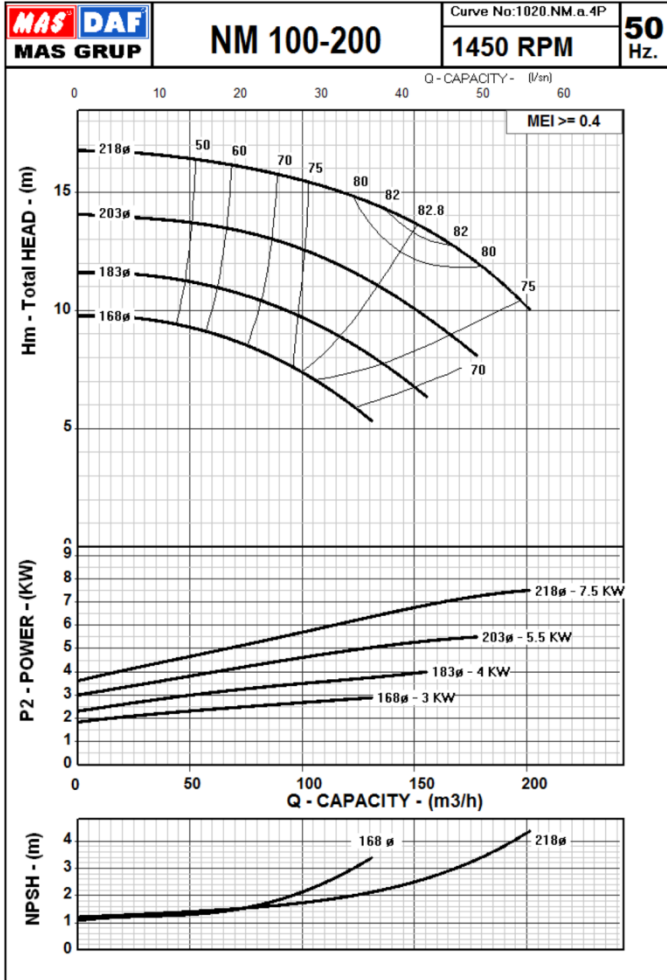
End Suction Centrifugal Pumps

Performance Curves

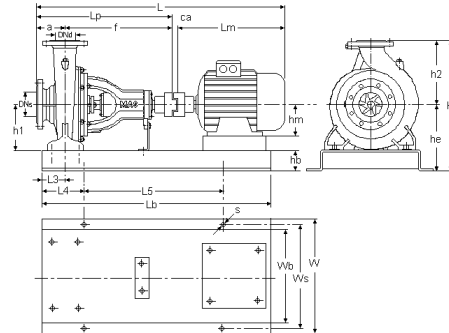
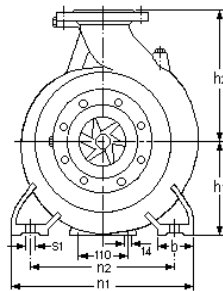
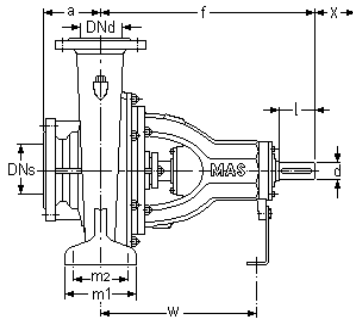


NM 100-200

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details						Shaft End		(*) X	Weight kg	
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm			l mm
100-200	125	100	125	470	200	280	80	160	120	360	280	M16	340	32	80	120	83

	MOTOR		PUMP				GENERAL				BASE PLATE								
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S	
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
100-200	4 poles	3	100L	352	100	595	19	966	480	580	950	380	100	300	80	150	650	430	19
		4	112M	395.5	112	595	19	1009.5	480	580	950	380	100	300	80	150	650	430	19
		5.5	132M	475.5	132	595	19	1089.5	480	580	1000	380	100	300	80	150	700	430	19
		7.5	132M	475.5	132	595	27	1097.5	480	580	1050	380	100	300	80	150	750	430	19
100-200	2 poles	30	200L	665	200	595	27	1287	520	580	1250	420	100	300	80	200	850	430	19
		37	200L	665	200	595	27	1287	520	580	1250	420	100	300	80	200	850	430	19
		45	225M	735	225	595	34	1364	600	625	1300	480	120	345	80	200	900	540	24
		55	250M	886	250	595	34	1515	620	650	1400	500	120	370	80	200	1000	560	24
		75	280S	907	280	595	43	1545	720	700	1450	600	140	420	80	200	1050	660	24

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NM Series

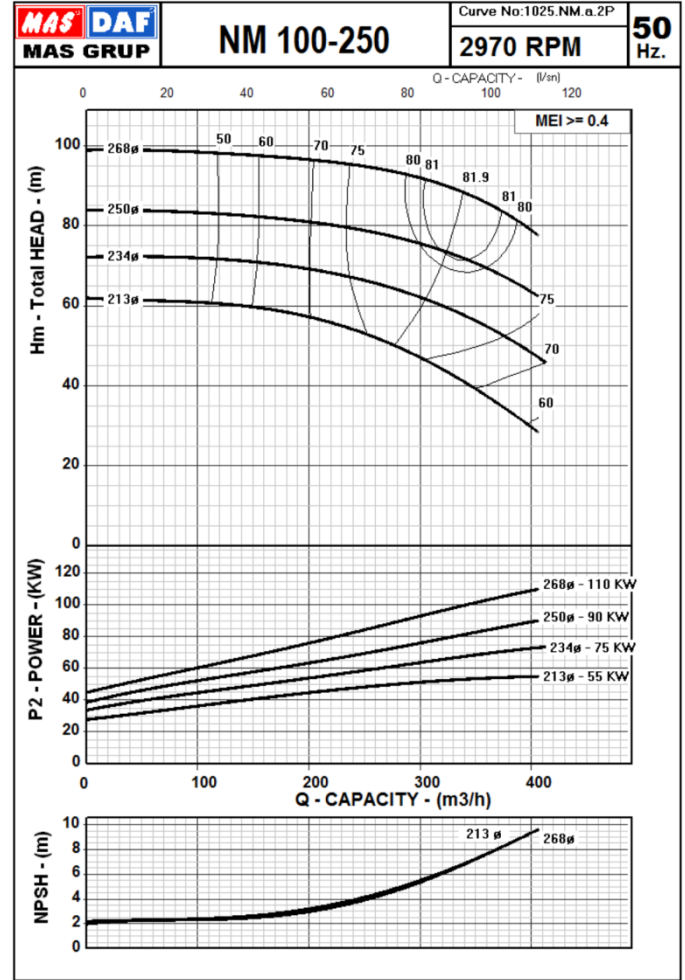
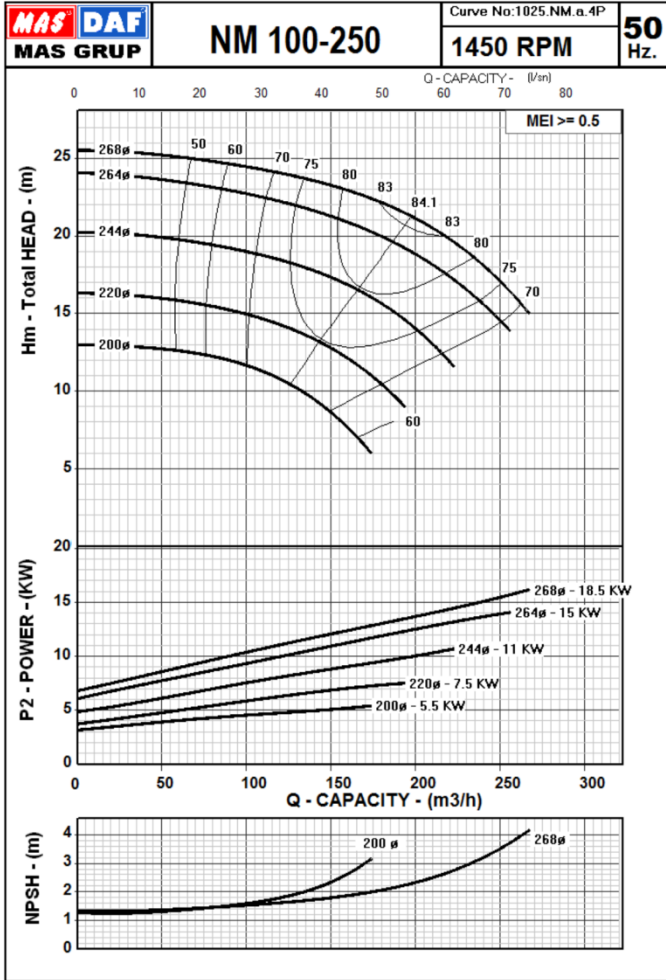
End Suction Centrifugal Pumps

Performance Curves

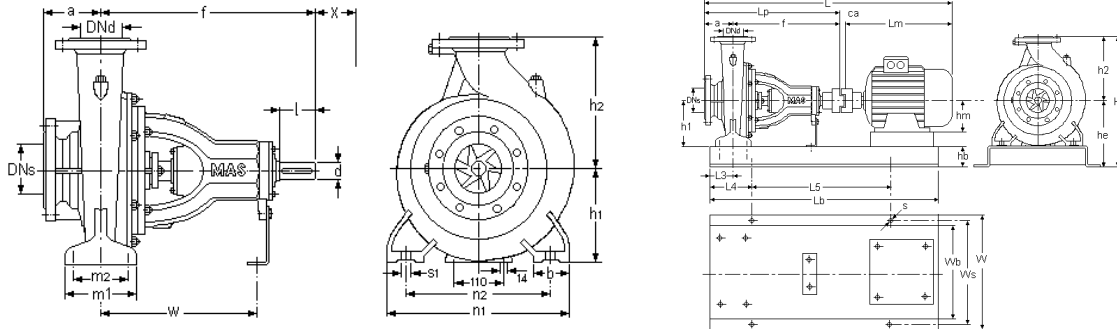


NM 100-250

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details						Shaft End		(*) X mm	Weight kg	
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm			l mm
100-250	125	100	140	470	225	280	80	160	120	400	315	M16	340	32	80	130	95

	MOTOR		PUMP				GENERAL				BASE PLATE								
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S	
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
100-250	4 poles	5.5	132M	475.5	132	610	19	1104.5	520	605	1000	420	100	325	80	150	700	470	19
		7.5	132M	475.5	132	610	27	1112.5	520	605	1050	420	100	325	80	150	750	470	19
		11	160M	576	160	610	27	1213	520	605	1100	420	100	325	80	150	800	470	19
		15	160L	576	160	610	32	1218	520	605	1150	420	100	325	80	150	850	470	19
		18.5	180M	629	180	610	32	1271	520	605	1170	420	100	325	80	150	850	470	19
100-250	2 poles	55	250M	886	250	610	34	1530	620	650	1400	500	120	370	80	200	1000	560	24
		75	280S	907	280	610	43	1560	720	700	1450	600	140	420	80	200	1050	660	24
		90	280M	958	280	610	43	1611	720	700	1500	600	140	420	80	200	1100	660	24
		110	315S	1068	315	610	43	1721	770	755	1500	650	160	475	80	200	1100	710	24

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NM Series

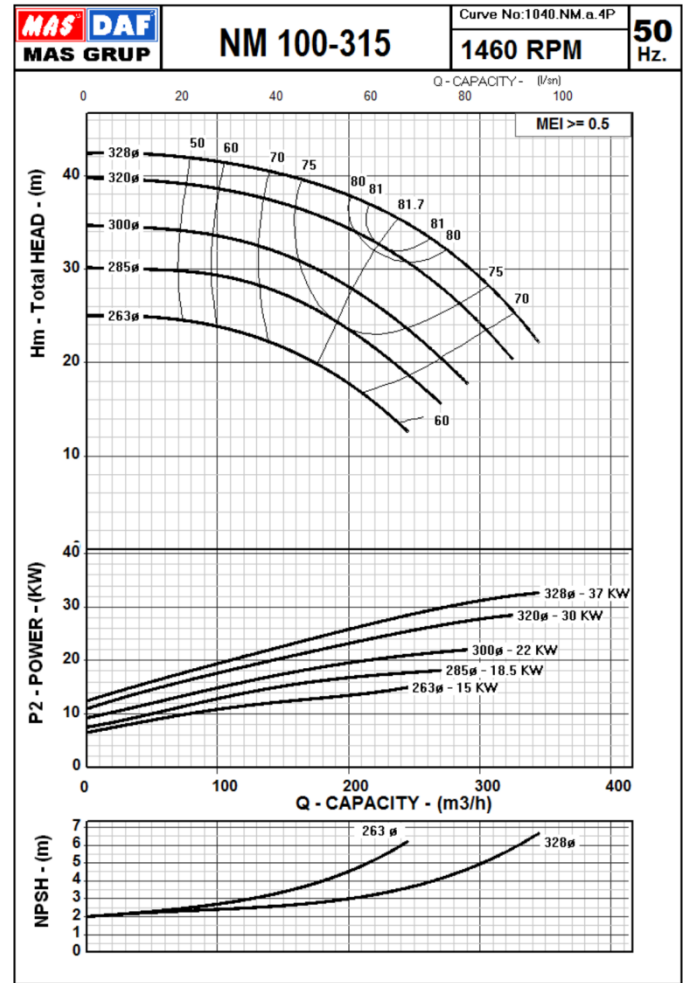
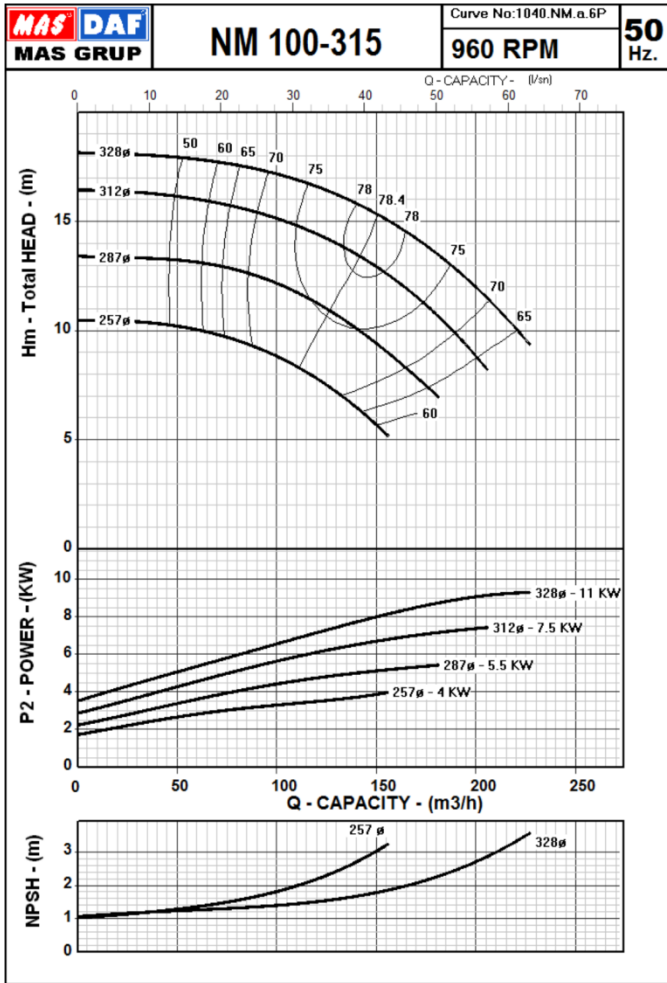
End Suction Centrifugal Pumps

Performance Curves

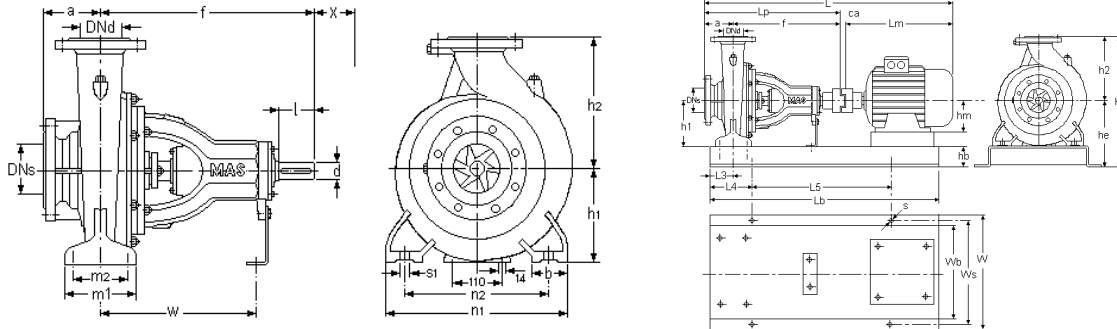


NM 100-315

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details						Shaft End		(*) X mm	Weight kg	
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm			l mm
100-315	125	100	140	470	250	315	80	160	120	400	315	M16	340	32	80	130	110

	MOTOR		PUMP				GENERAL				BASE PLATE								
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S	
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
100-315	6 poles	4	132M	475.5	132	610	19	1104.5	520	665	1050	420	100	350	80	150	750	470	19
		5.5	132M	475.5	132	610	19	1104.5	520	665	1050	420	100	350	80	150	750	470	19
		7.5	132M	475.5	132	610	27	1112.5	520	665	1150	420	100	350	80	150	850	470	19
		11	160L	576	160	610	27	1213	520	665	1150	420	100	350	80	150	850	470	19
100-315	4 poles	15	160L	576	160	610	32	1218	520	665	1150	420	100	350	80	150	850	470	19
		18.5	180M	629	180	610	32	1271	520	665	1150	420	100	350	80	150	850	470	19
		22	180L	629	180	610	34	1273	520	665	1200	420	100	350	80	150	900	470	19
		30	200L	665	200	610	34	1309	520	665	1250	420	100	350	80	200	850	470	19
		37	225M	765	225	610	43	1418	600	685	1300	480	120	370	80	200	900	540	24

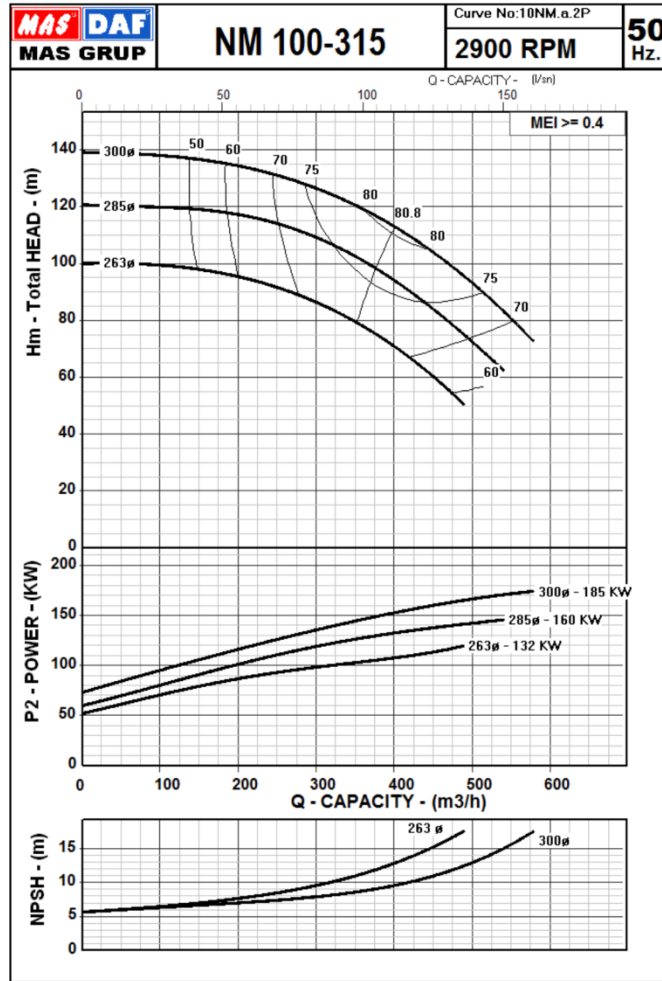
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NM Series
End Suction Centrifugal Pumps
Performance Curves

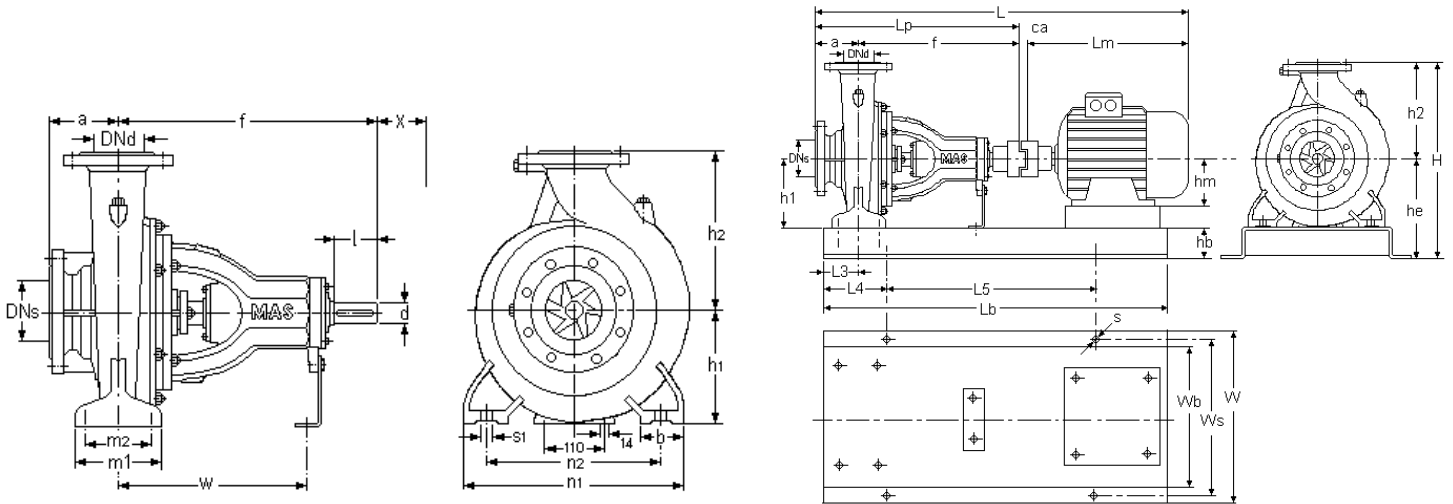


Mas Grup

NM 100-315



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X	Weight kg
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		
100-315	125	100	140	470	250	315	80	160	120	400	315	M16	340	32	80	130	110

100-315	2 poles	MOTOR		PUMP			GENERAL				BASE PLATE								
		KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
		132	315M	1120	315	610	43	1773	770	790	1550	650	160	475	80	200	1150	710	24
		160	315M	1120	315	610	43	1773	770	790	1550	650	160	475	80	200	1150	710	24
		185	315L	1190	315	610	43	1843	770	790	1600	650	160	475	80	200	1200	710	24

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NM Series

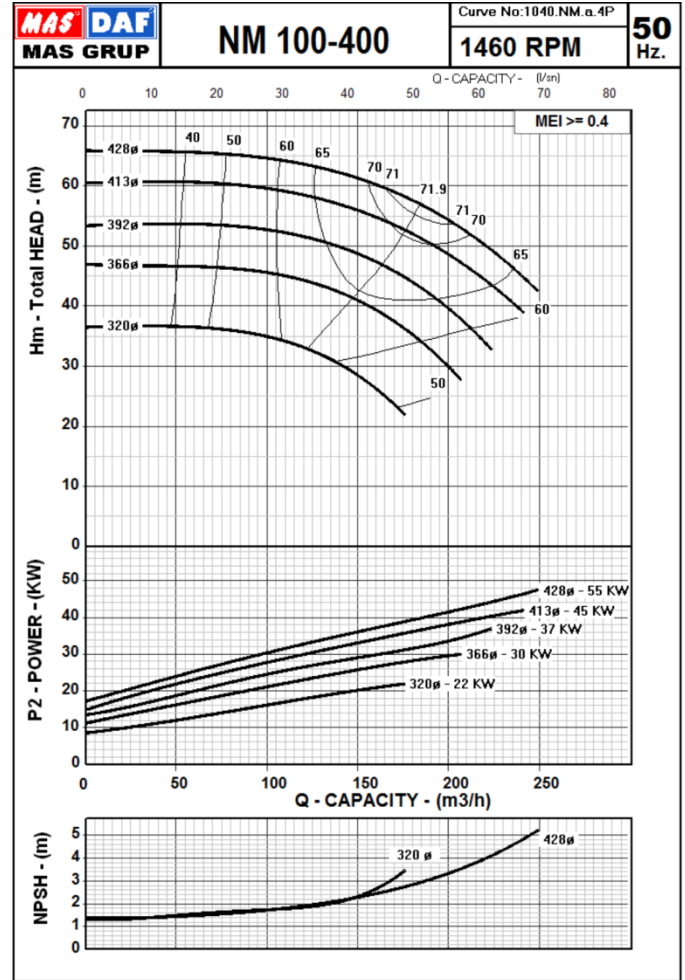
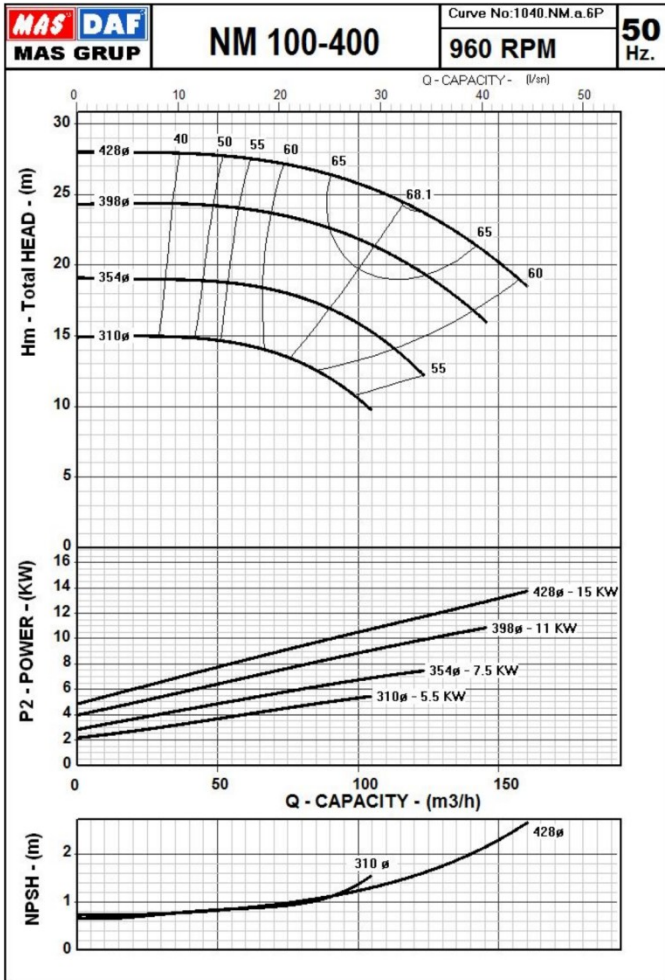
End Suction Centrifugal Pumps

Performance Curves

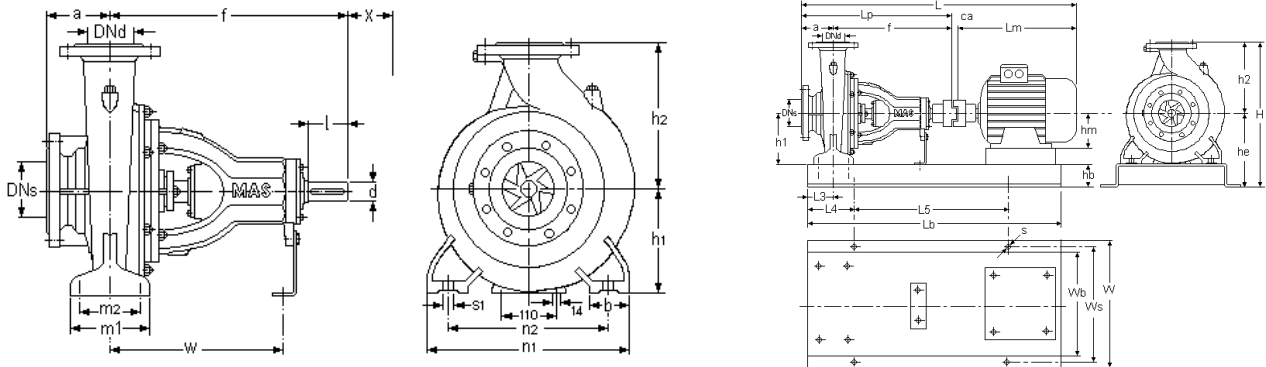


Mas Grup

NM 100-400



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details						Shaft End		(*) X	Weight kg	
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm			l mm
100-400	125	100	140	530	280	355	100	200	150	500	400	M20	370	42	110	130	168

100-400	MOTOR		PUMP				GENERAL			BASE PLATE								
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6 poles	5.5	132M	475.5	132	670	19	1164.5	640	775	1100	520	140	420	100	150	800	580	24
	7.5	132M	475.5	132	670	27	1172.5	640	775	1250	520	140	420	100	200	850	580	24
	11	160L	576	160	670	27	1273	640	775	1250	520	140	420	100	200	850	580	24
	15	180L	629	180	670	32	1331	640	775	1300	520	140	420	100	200	900	580	24
4 poles	22	180L	629	180	670	34	1333	640	775	1300	520	140	420	100	200	900	580	24
	30	200L	665	200	670	34	1369	640	775	1350	520	140	420	100	200	950	580	24
	37	225M	765	225	670	43	1478	640	775	1400	520	140	420	100	200	950	580	24
	45	225M	765	225	670	43	1478	640	775	1400	520	140	420	100	200	1000	580	24
	55	250M	886	250	670	43	1599	640	775	1450	520	140	420	100	200	1050	580	24

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NM Series

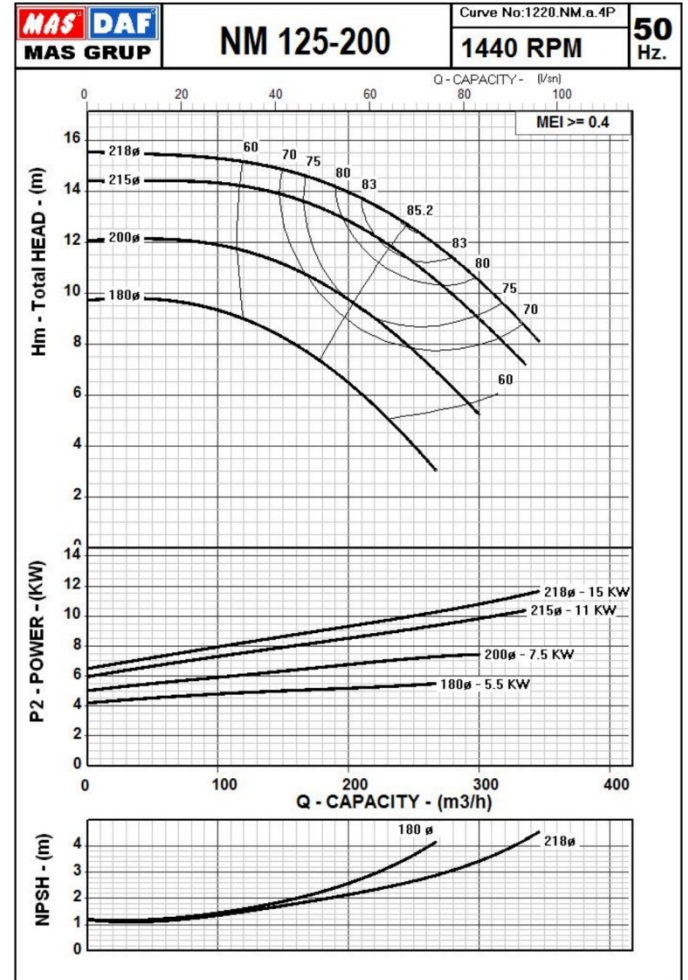
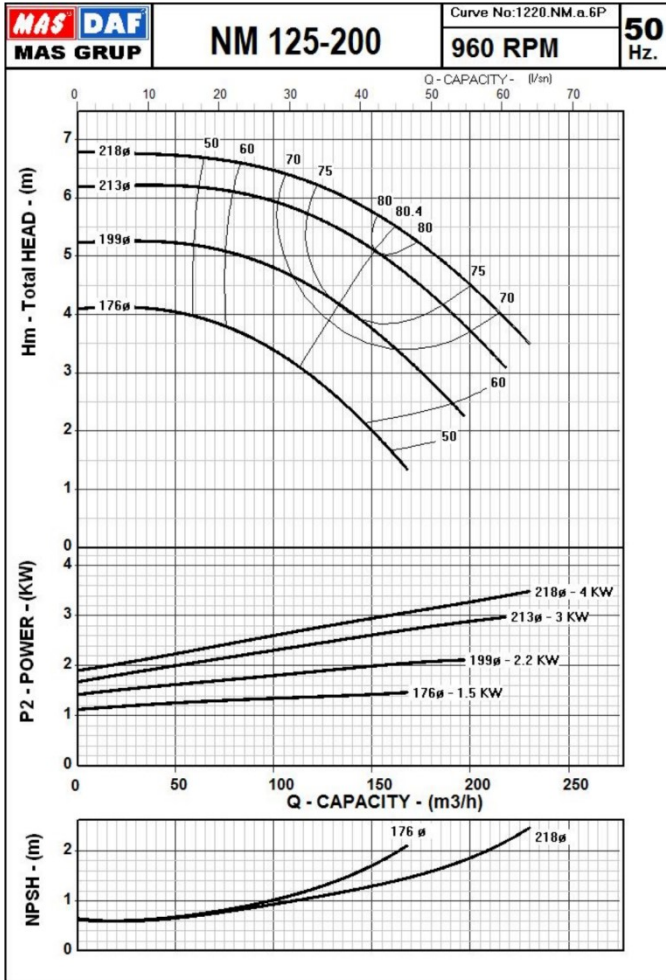
End Suction Centrifugal Pumps

Performance Curves

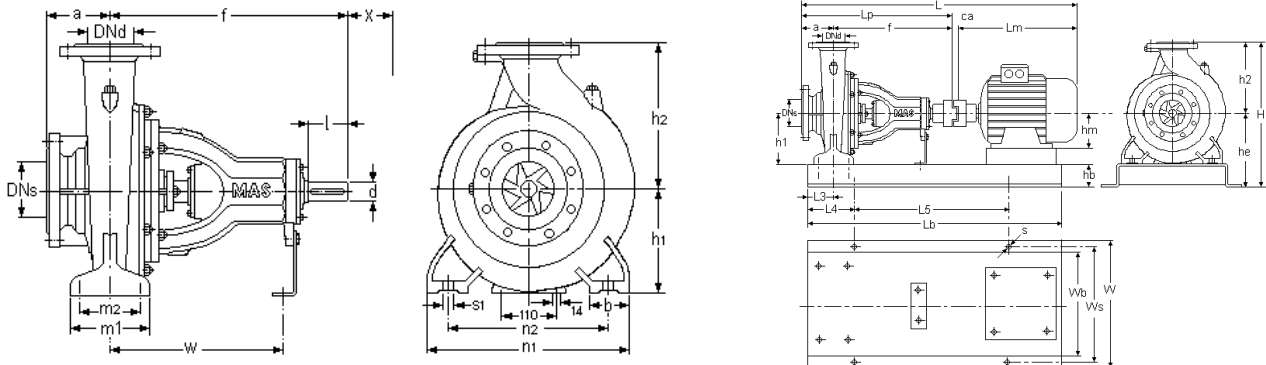


Mas Grup

NM 125-200



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details						Shaft End (*)			Weight kg	
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		X mm
125-200	150	125	140	470	250	315	80	160	120	400	315	M16	340	32	80	130	106.5

125-200	MOTOR		PUMP				GENERAL				BASE PLATE							
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6 poles	1.5	100L	352	100	610	17	979	520	665	950	420	100	350	80	150	650	470	19
	2.2	112M	395.5	112	610	19	1024.5	520	665	950	420	100	350	80	150	650	470	19
	3	132M	475.5	132	610	19	1104.5	520	665	1000	420	100	350	80	150	700	470	19
	4	132M	475.5	132	610	19	1104.5	520	665	1000	420	100	350	80	150	700	470	19
4 poles	5.5	132M	475.5	132	610	19	1104.5	520	665	1000	420	100	350	80	150	700	470	19
	7.5	132M	475.5	132	610	27	1112.5	520	665	1050	420	100	350	80	150	750	470	19
	11	160M	576	160	610	27	1213	520	665	1150	420	100	350	80	150	800	470	19
	15	160L	576	160	610	32	1218	520	665	1150	420	100	350	80	150	850	470	19

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NM Series

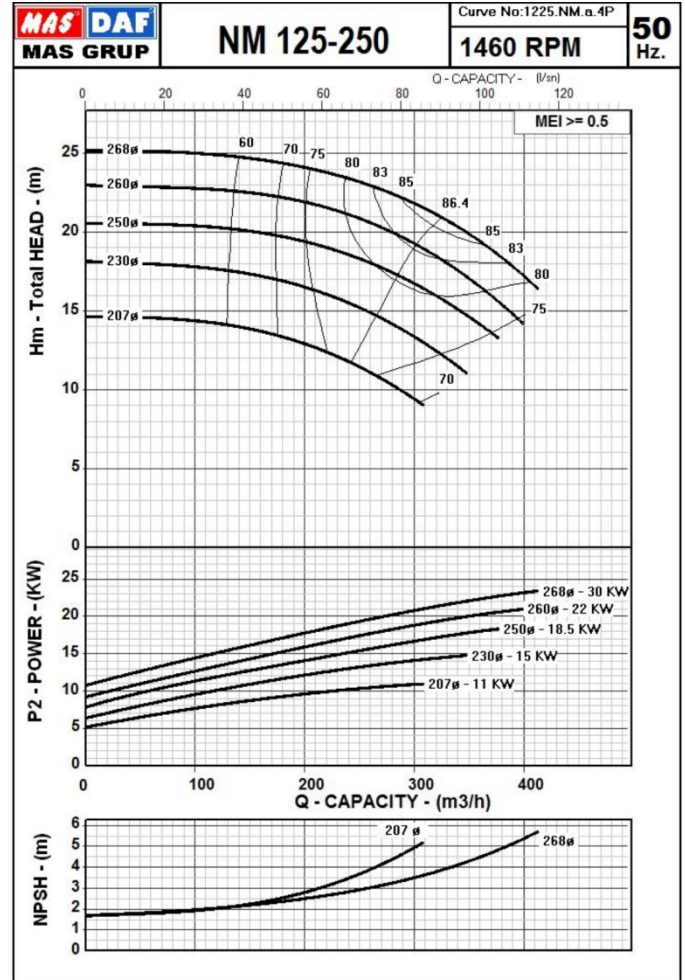
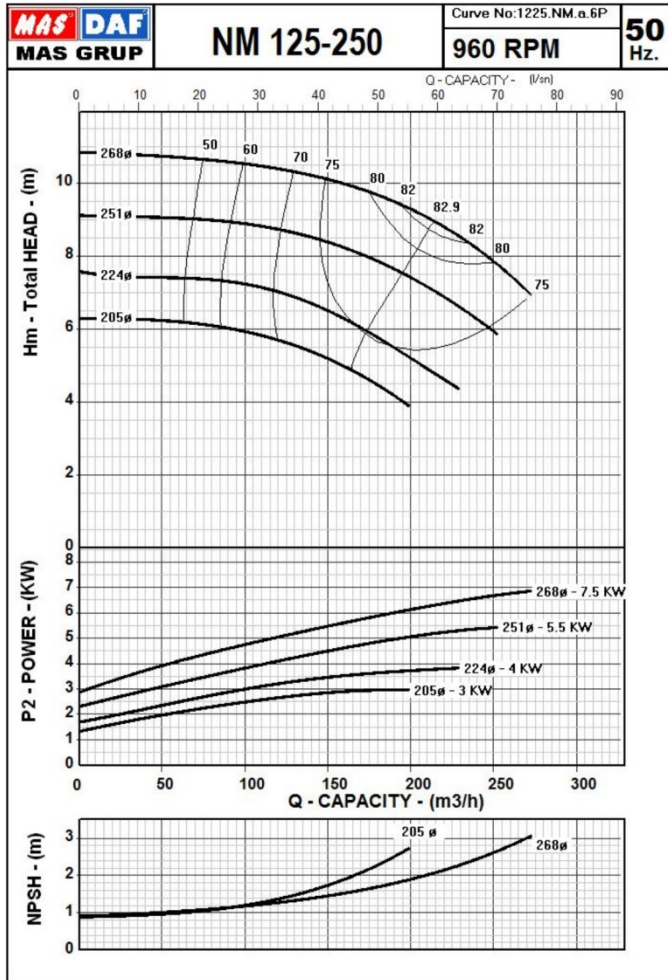
End Suction Centrifugal Pumps

Performance Curves

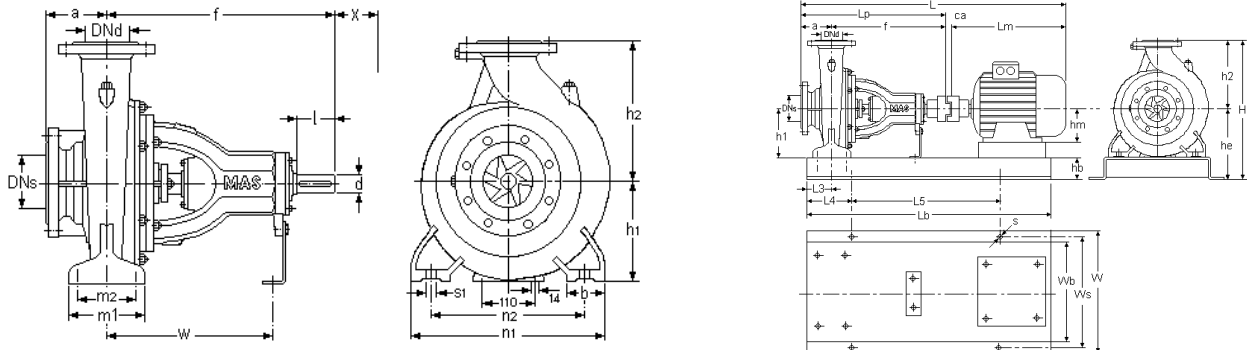


NM 125-250

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X	Weight kg
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		
125-250	150	125	140	470	250	355	80	160	120	400	315	M16	340	32	80	140	105,5

	KW	IEC	MOTOR		PUMP		GENERAL			BASE PLATE									
			Lm mm	Hm mm	Lp mm	Ca mm	L mm	W mm	H mm	Lb mm	Wb mm	Hb mm	He mm	L3 mm	L4 mm	L5 mm	Ws mm	S mm	
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
125-250	6 poles	3	132M	475.5	132	610	19	1104.5	520	705	1000	420	100	350	80	150	700	470	19
		4	132M	475.5	132	610	19	1104.5	520	705	1050	420	100	350	80	150	750	470	19
		5.5	132M	475.5	132	610	19	1104.5	520	705	1050	420	100	350	80	150	750	470	19
		7.5	160M	576	160	610	27	1213	520	705	1150	420	100	350	80	150	850	470	19
125-250	4 poles	11	160M	576	160	610	27	1213	520	705	1150	420	100	350	80	150	850	470	19
		15	160L	576	160	610	32	1218	520	705	1150	420	100	350	80	150	850	470	19
		18.5	180M	629	180	610	32	1271	520	705	1170	420	100	350	80	150	850	470	19
		22	180L	629	180	610	34	1273	520	705	1200	420	100	350	80	150	900	470	19
		30	200L	665	200	610	34	1309	520	705	1250	420	100	350	80	200	850	470	19

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NM Series

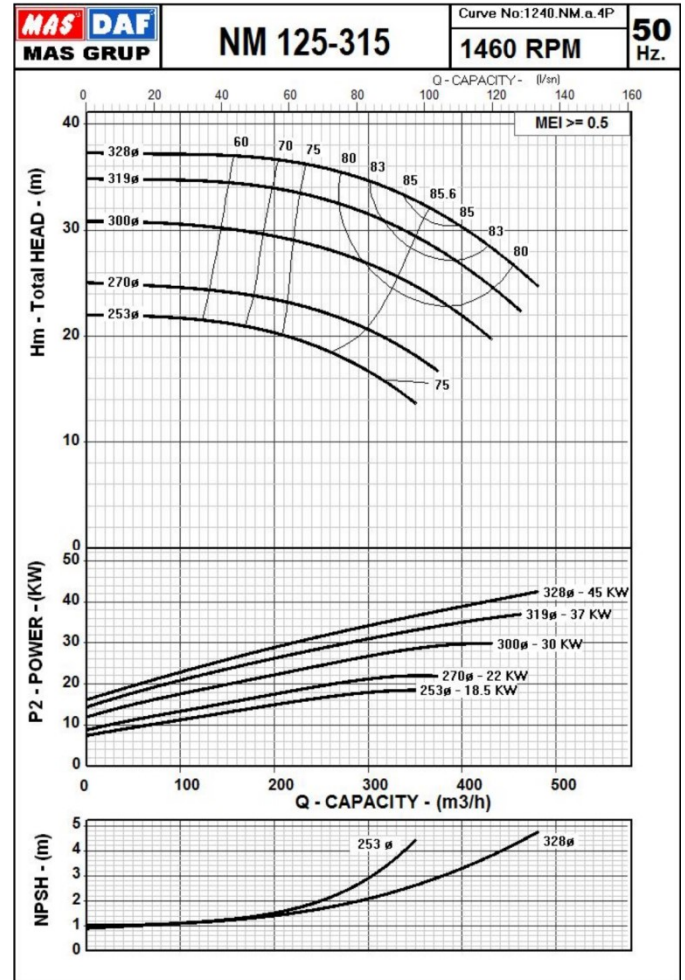
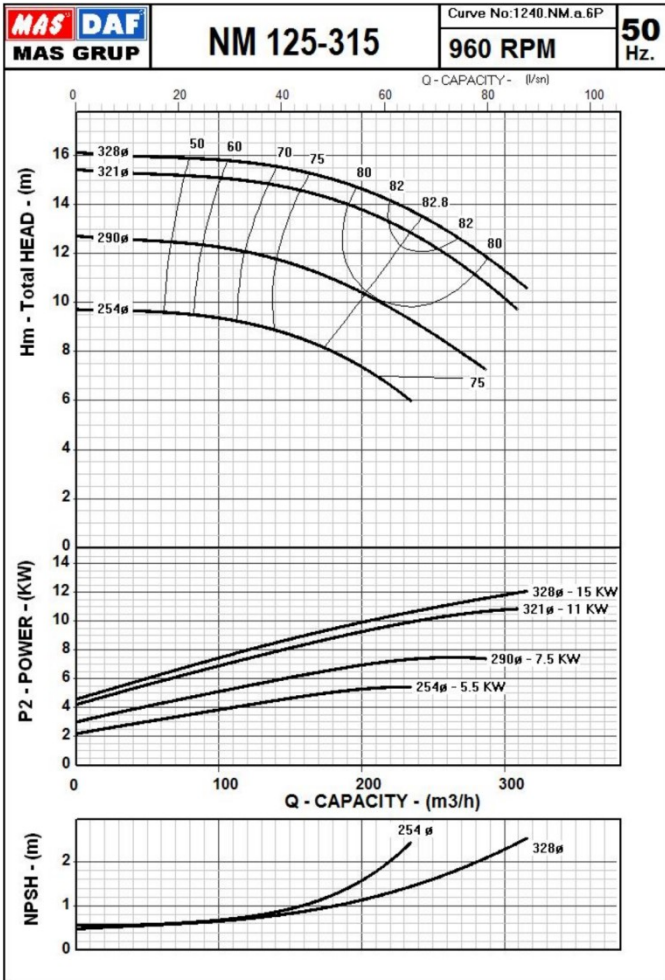
End Suction Centrifugal Pumps

Performance Curves

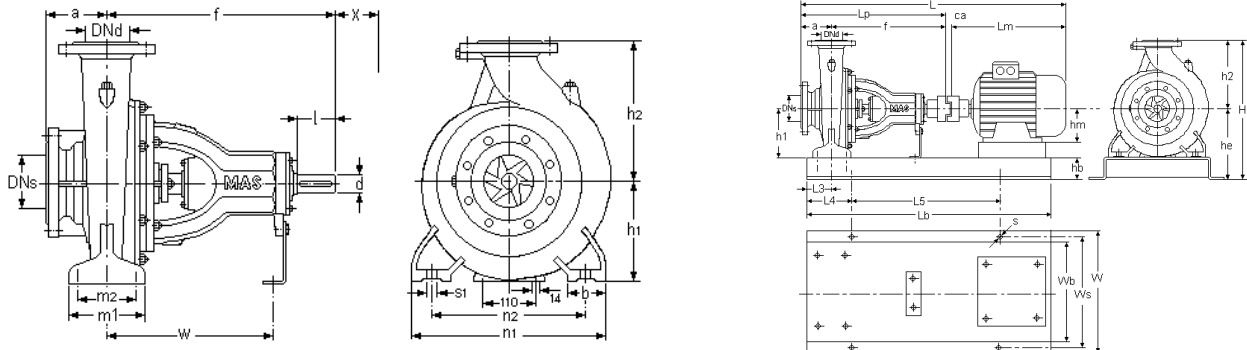


NM 125-315

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X	Weight kg
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		
125-315	150	125	140	530	280	355	100	200	150	500	400	M20	370	42	110	140	166,5

125-315	6 poles	MOTOR		PUMP			GENERAL			BASE PLATE									
		KW	IEC	Lm mm	Hm mm	Lp mm	Ca mm	L mm	W mm	H mm	Lb mm	Wb mm	Hb mm	He mm	L3 mm	L4 mm	L5 mm	Ws mm	S mm
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
	5.5	132M	475.5	132	670	19	1164.5	640	775	1100	520	140	420	100	150	800	580	24	
	7.5	160M	576	160	670	27	1273	640	775	1250	520	140	420	100	200	850	580	24	
	11	160L	576	160	670	27	1273	640	775	1250	520	140	420	100	200	850	580	24	
	15	180L	629	180	670	32	1331	640	775	1300	520	140	420	100	200	900	580	24	
	18.5	180M	629	180	670	32	1331	640	775	1250	520	140	420	100	200	850	580	24	
	22	180L	629	180	670	34	1333	640	775	1300	520	140	420	100	200	850	580	24	
	30	200L	665	200	670	34	1369	640	775	1350	520	140	420	100	200	950	580	24	
	37	225M	765	225	670	43	1478	640	775	1350	520	140	420	100	200	950	580	24	
	45	225M	765	225	670	43	1478	640	775	1400	520	140	420	100	200	1000	580	24	

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NM Series

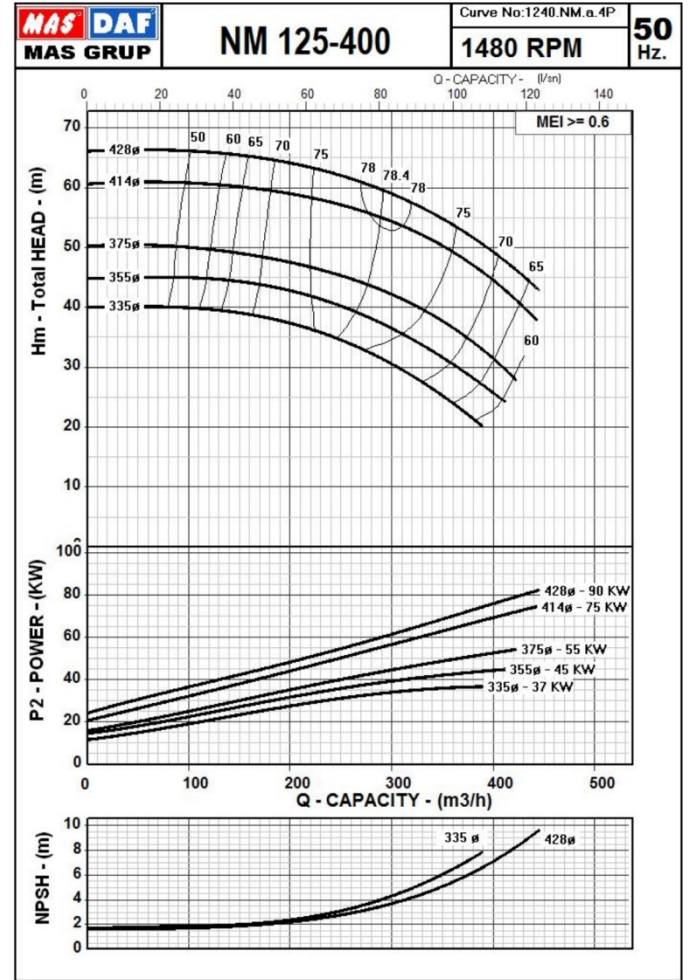
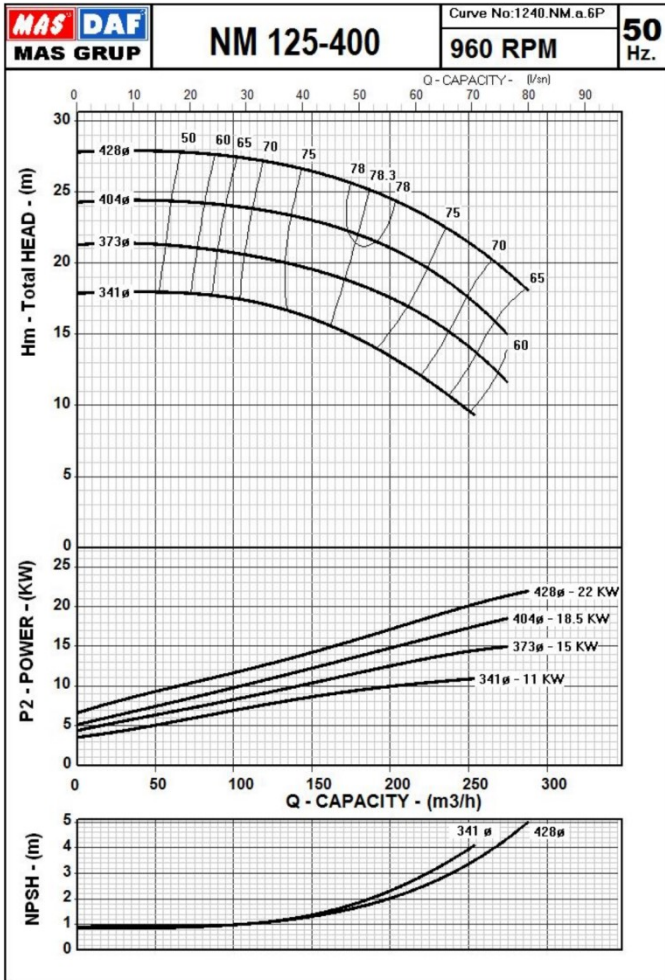
End Suction Centrifugal Pumps

Performance Curves

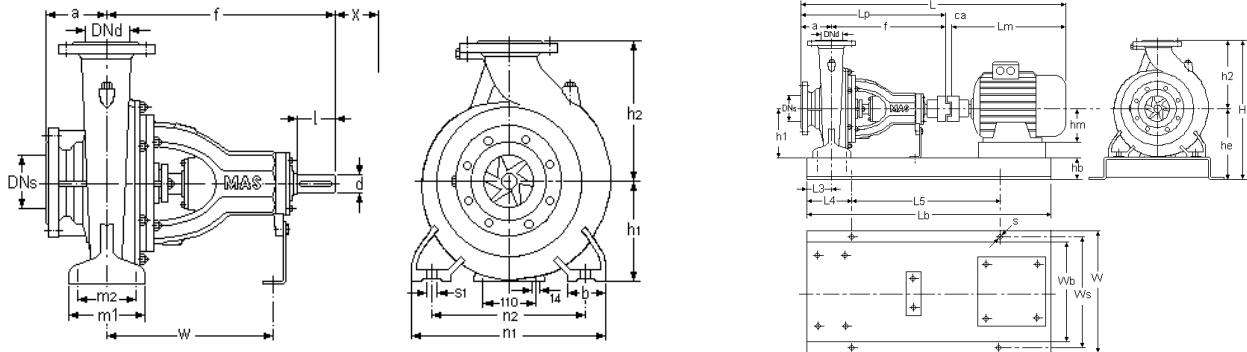


NM 125-400

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X	Weight kg
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		
125-400	150	125	140	530	315	400	100	200	150	500	400	M20	370	42	110	140	189

125-400	MOTOR		PUMP				GENERAL				BASE PLATE							
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6 poles	11	160L	576	160	670	27	1273	640	855	1250	520	140	455	100	200	850	580	24
	15	180L	629	180	670	32	1331	640	855	1300	520	140	455	100	200	900	580	24
	18.5	200L	665	200	670	32	1367	640	855	1350	520	140	455	100	200	950	580	24
	22	200L	665	200	670	34	1369	640	855	1350	520	140	455	100	200	950	580	24
4 poles	37	225M	765	225	670	43	1478	640	855	1350	520	140	455	100	200	950	580	24
	45	225M	765	225	670	43	1478	640	855	1400	520	140	455	100	200	1000	580	24
	55	250M	886	250	670	43	1599	640	855	1450	520	140	455	100	200	1050	580	24
	75	280S	907	280	670	46	1623	720	855	1550	600	140	455	100	200	1100	660	24
	90	280M	958	280	670	46	1674	720	855	1550	600	140	455	100	200	1150	660	24

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NM Series

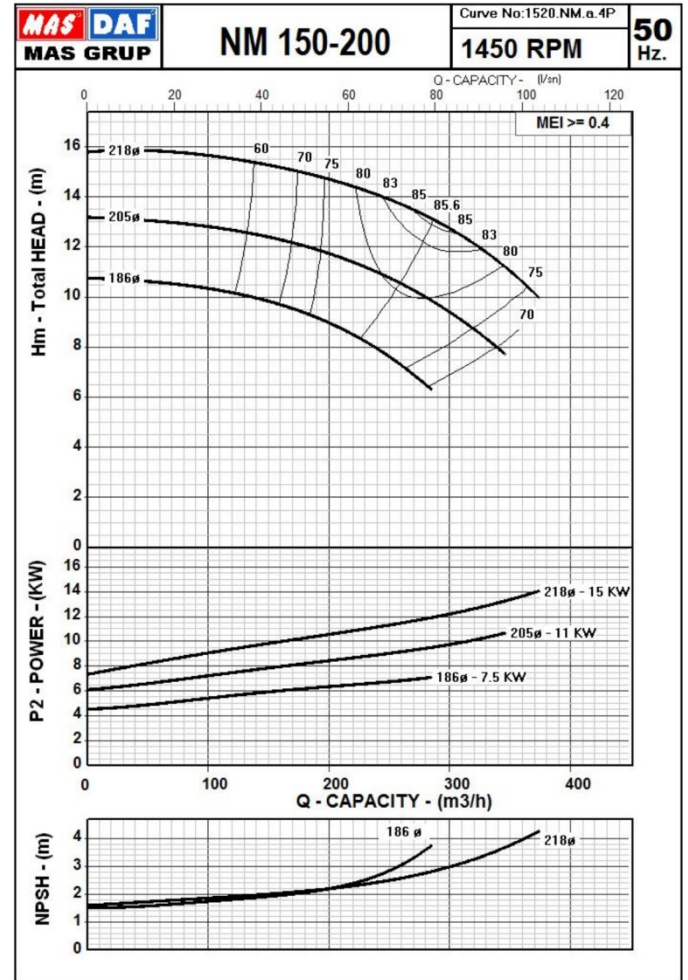
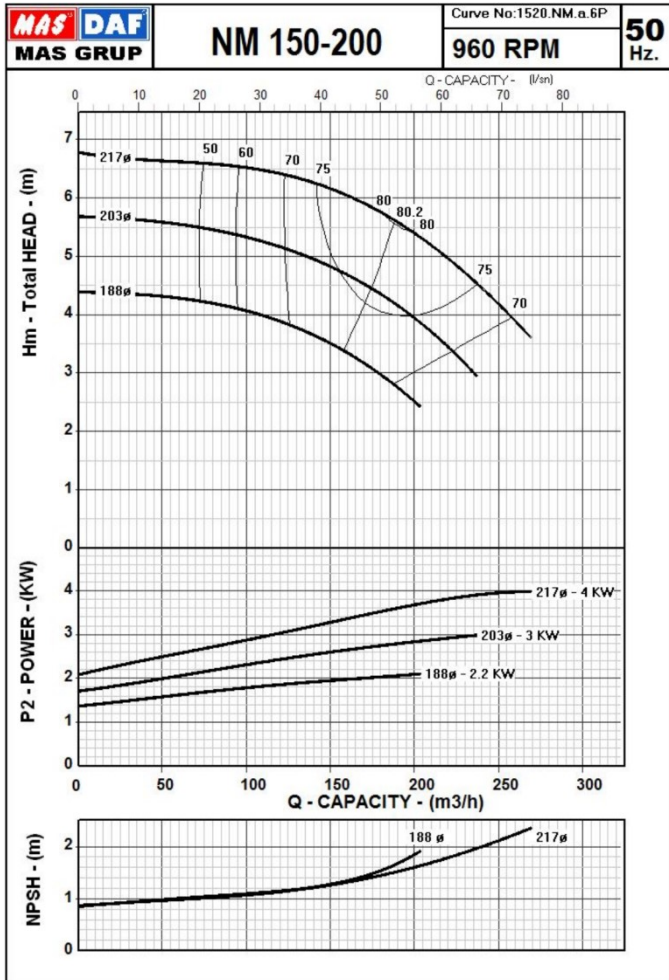
End Suction Centrifugal Pumps

Performance Curves

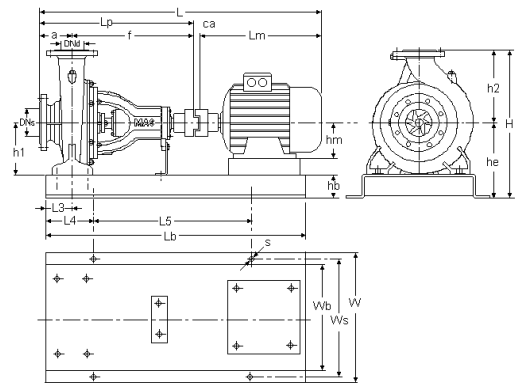
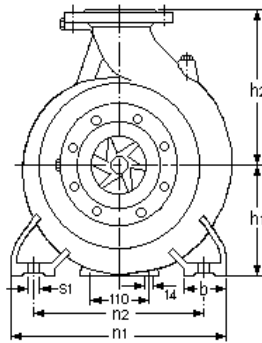
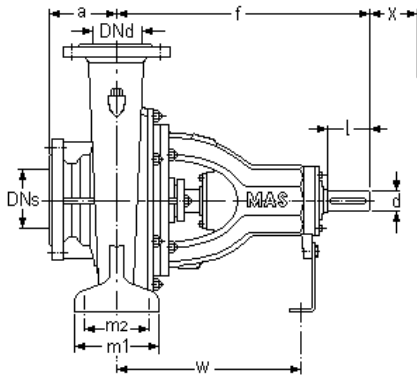


NM 150-200

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X	Weight kg
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		
150-200	200	150	160	470	280	355	100	200	150	500	400	M16	340	32	80	170	137.5

150-200	MOTOR		PUMP		GENERAL			BASE PLATE										
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6 poles	2.2	112M	395.5	112	630	19	1044.5	640	775	950	520	140	420	100	150	650	580	24
	3	132M	475.5	132	630	19	1124.5	640	775	1000	520	140	420	100	150	700	580	24
	4	132M	475.5	132	630	19	1124.5	640	775	1050	520	140	420	100	150	750	580	24
4 poles	7.5	132M	475.5	132	630	27	1132.5	640	775	1050	520	140	420	100	150	750	580	24
	11	160M	576	160	630	27	1233	640	775	1150	520	140	420	100	150	850	580	24
	15	160L	576	160	630	32	1238	640	775	1200	520	140	420	100	150	900	580	24

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NM Series

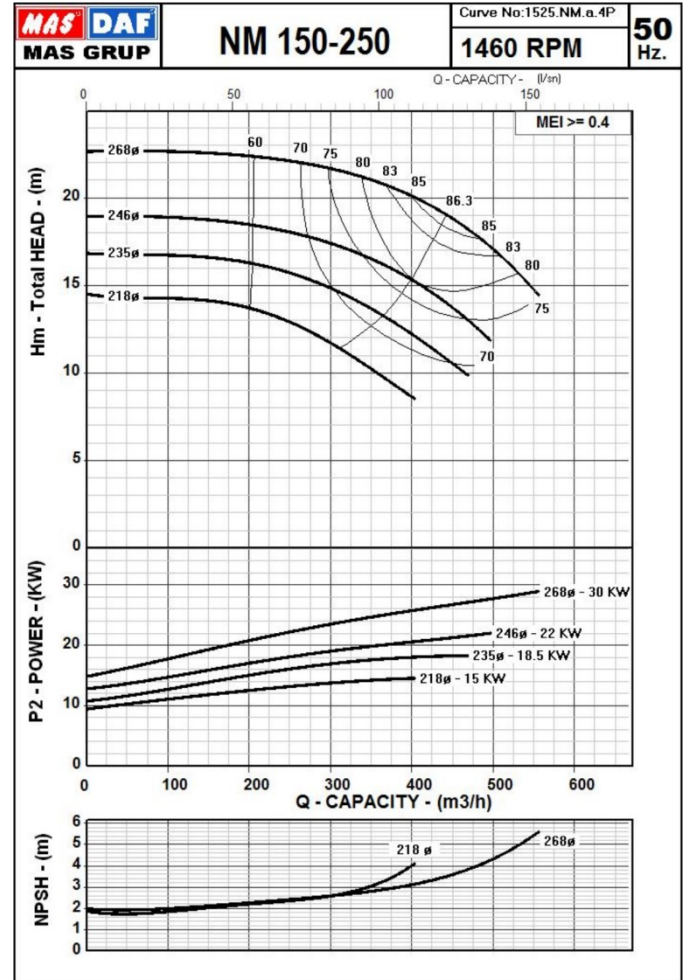
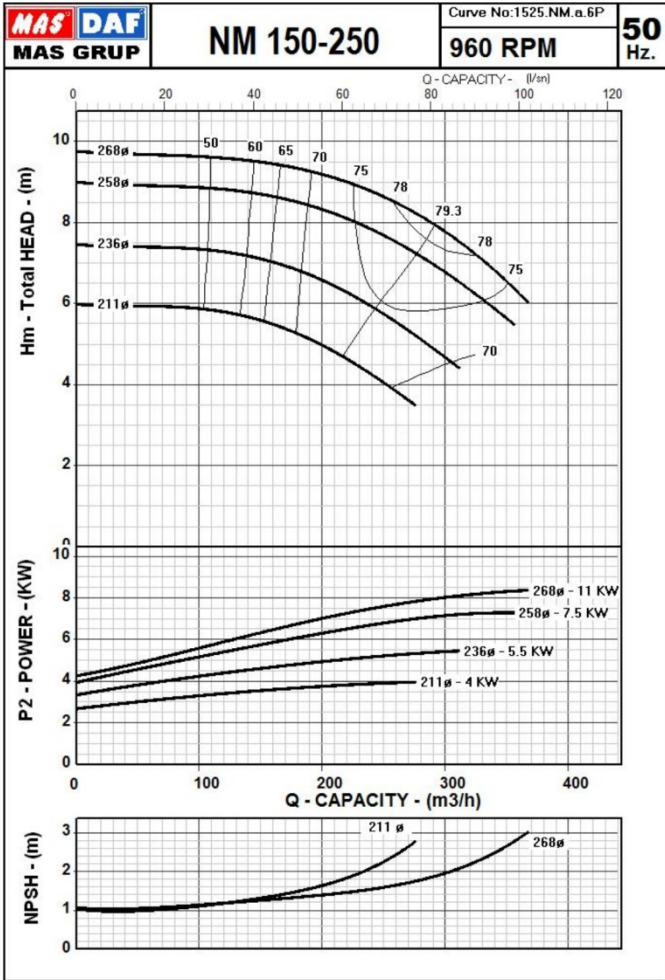
End Suction Centrifugal Pumps

Performance Curves

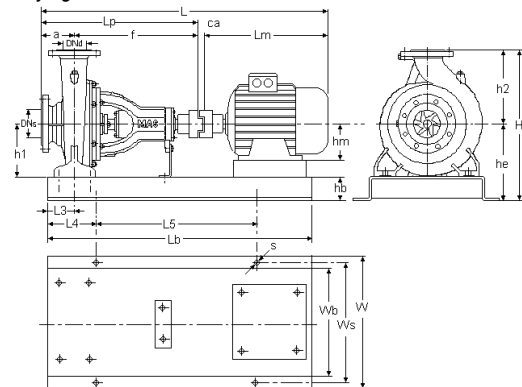
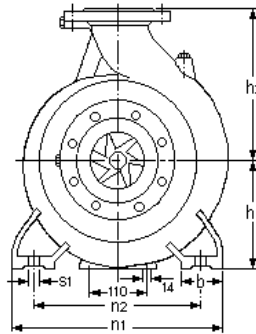
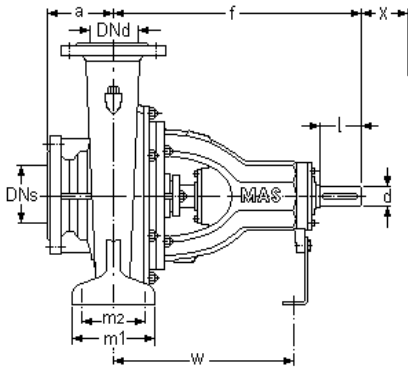


NM 150-250

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X	Weight kg
	DNs	DNd	a	f	h1	h2	b	m1	m2	n1	n2	s1	W	d	l		
150-250	200	150	160	470	280	375	100	200	150	500	400	M16	340	32	80	140	137.5

150-250	MOTOR		PUMP		GENERAL					BASE PLATE								
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6 poles	4	132M	475.5	132	630	19	1124.5	640	795	1050	520	140	420	100	150	750	580	24
	5.5	132M	475.5	132	630	19	1124.5	640	795	1050	520	140	420	100	150	750	580	24
	7.5	160M	576	160	630	27	1233	640	795	1200	520	140	420	100	150	900	580	24
	11	160L	576	160	630	32	1238	640	795	1200	520	140	420	100	150	900	580	24
4 poles	15	160L	576	160	630	32	1238	640	795	1200	520	140	420	100	150	900	580	24
	18.5	180M	629	180	630	32	1291	640	795	1200	520	140	420	100	150	900	580	24
	22	180L	629	180	630	34	1293	640	795	1250	520	140	420	100	200	850	580	24
	30	200L	665	200	630	34	1329	640	795	1300	520	140	420	100	200	900	580	24

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NM Series

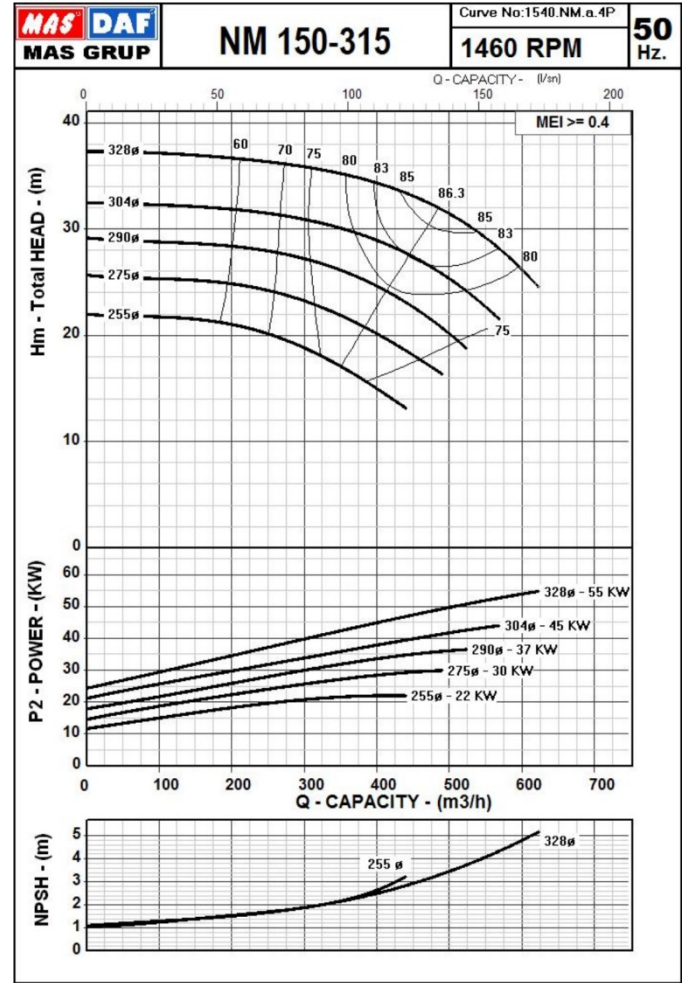
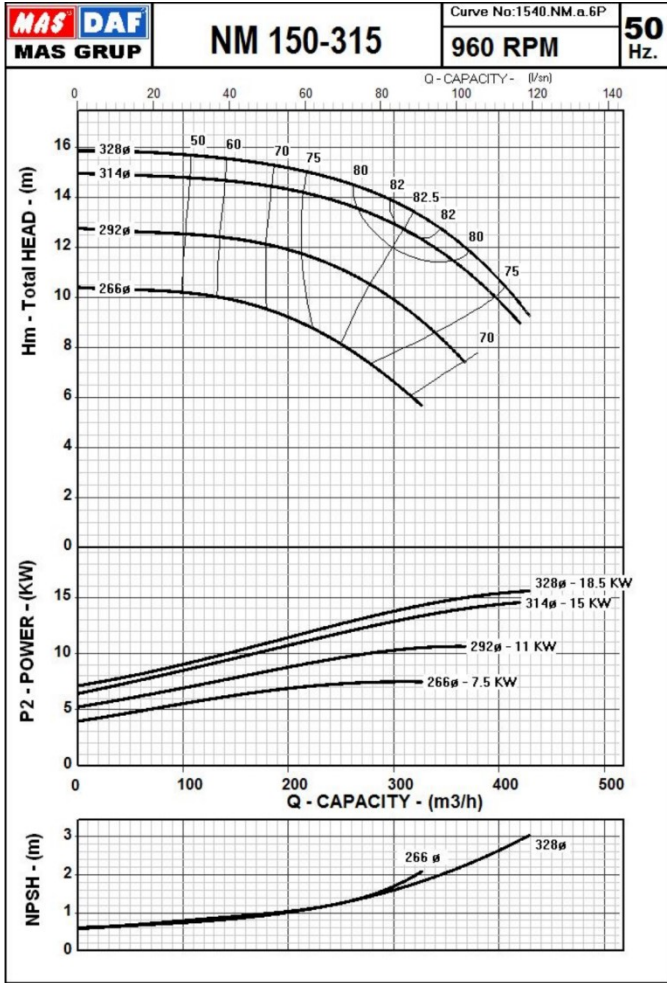
End Suction Centrifugal Pumps

Performance Curves

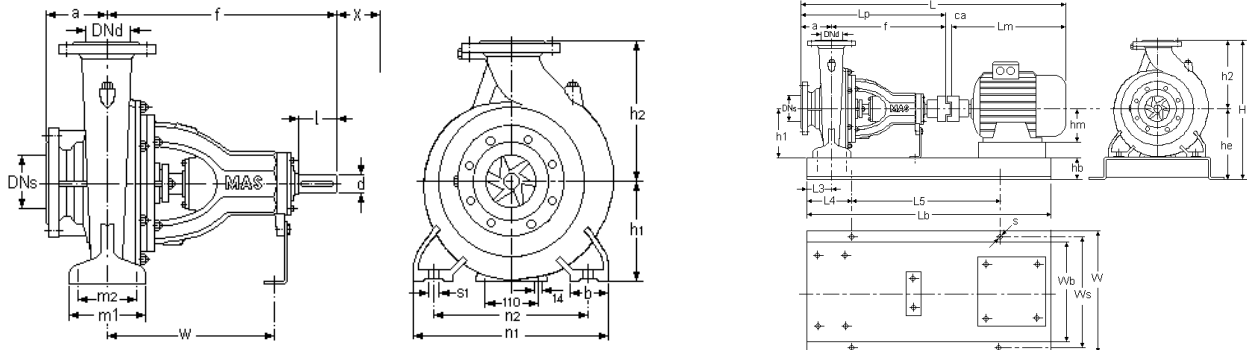


NM 150-400

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End			Weight kg
	DNs	DNd	a	f	h1	h2	b	m1	m2	n1	n2	s1	W	d	l	X	
150-315	200	150	160	530	280	400	100	200	150	550	450	M20	370	42	110	140	182.5

150-315	6 poles	MOTOR		PUMP		GENERAL				BASE PLATE									
		KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
150-315	6 poles	7.5	160M	576	160	690	27	1293	720	820	1250	600	140	420	100	200	850	660	24
		11	160L	576	160	690	27	1293	720	820	1250	600	140	420	100	200	850	660	24
		15	180L	629	180	690	32	1351	720	820	1300	600	140	420	100	200	900	660	24
		18.5	200L	665	200	690	34	1389	720	820	1350	600	140	420	100	200	950	660	24
	4 poles	22	180L	629	180	690	34	1353	720	820	1300	665	140	420	100	200	900	629	24
		30	200L	665	200	690	34	1389	720	820	1350	600	140	420	100	200	950	660	24
		37	225M	765	225	690	43	1498	720	820	1370	600	140	420	100	200	950	660	24
		45	225M	765	225	690	43	1498	720	820	1400	600	140	420	100	200	1000	660	24
		55	250M	886	250	690	43	1619	720	820	1450	600	140	420	100	200	1050	660	24

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NM Series

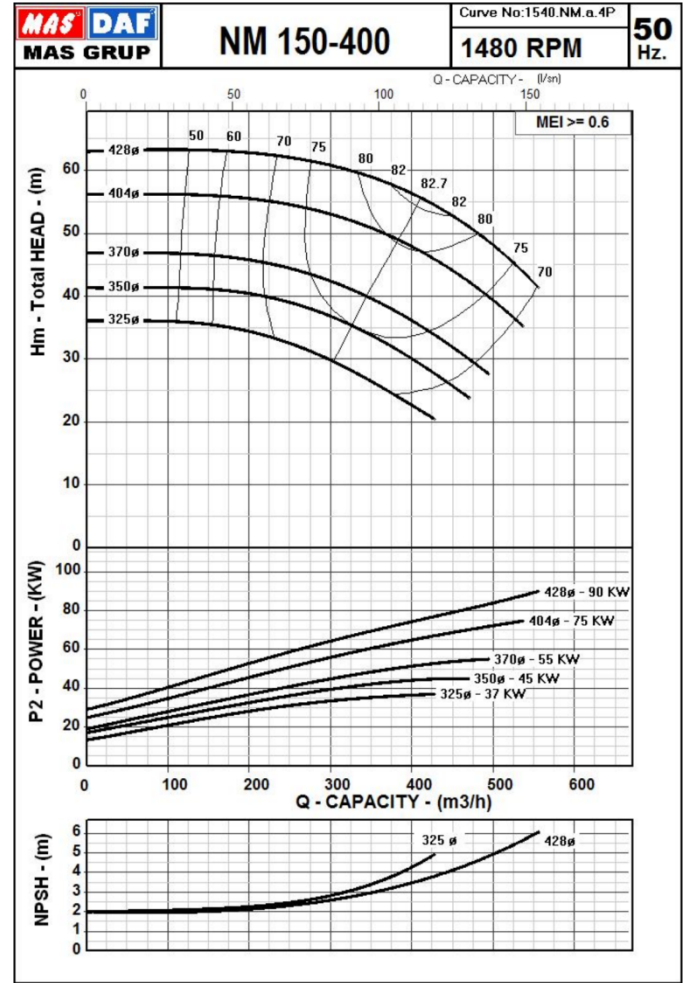
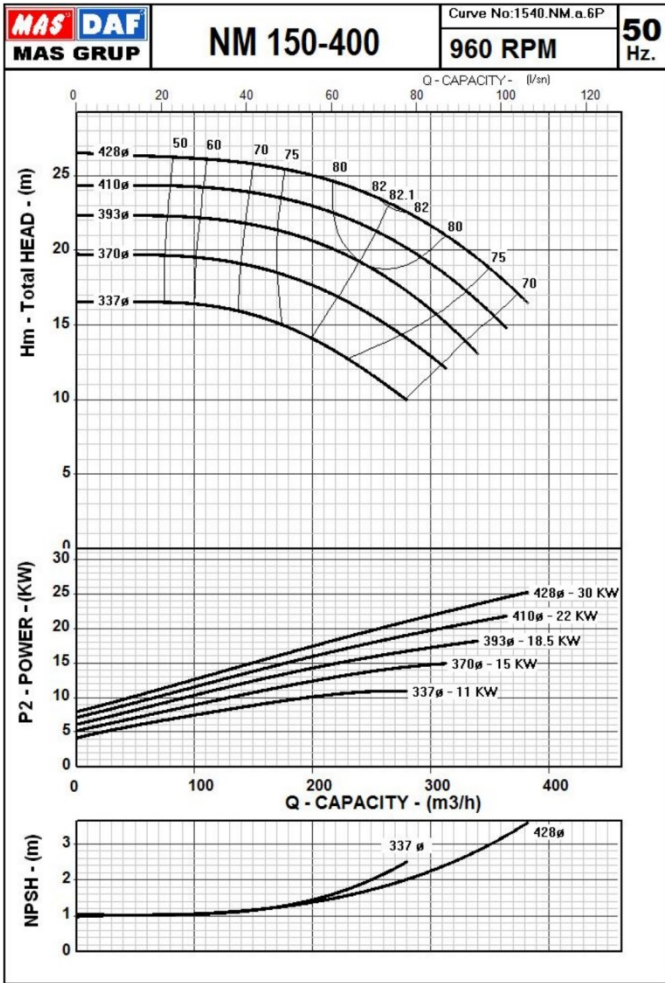
End Suction Centrifugal Pumps

Performance Curves

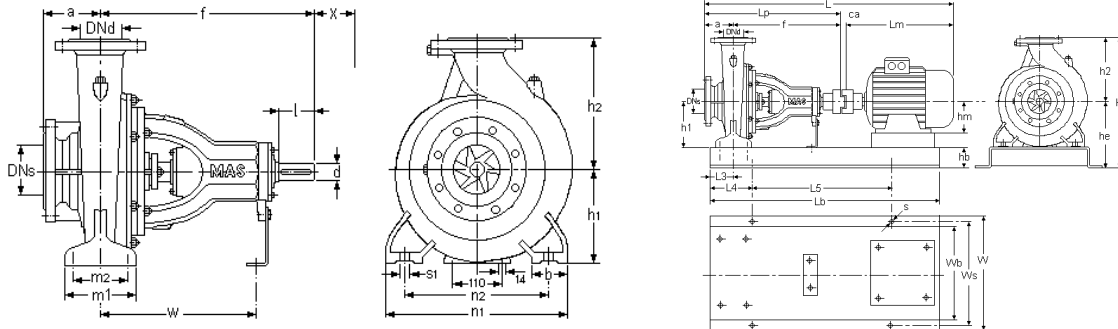


Mas Grup

NM 150-400



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X	Weight kg
	DNs mm	Dnd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		
150-400	200	150	160	530	315	450	100	200	150	550	450	M20	370	42	110	140	210.5

	MOTOR		PUMP				GENERAL			BASE PLATE									
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S	
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
150-400	6 poles	11	160L	576	160	690	27	1293	720	905	1250	600	140	455	100	200	850	660	24
		15	180L	629	180	690	32	1351	720	905	1300	600	140	455	100	200	900	660	24
		18.5	200L	665	200	690	34	1389	720	905	1350	600	140	455	100	200	900	660	24
		22	200L	665	200	690	34	1389	720	905	1350	665	140	455	100	200	900	629	24
	30	225M	765	225	690	43	1498	720	905	1400	600	140	455	100	200	1000	660	24	
4 poles	37	225M	765	225	690	43	1498	720	905	1400	600	140	455	100	200	1000	660	24	
	45	225M	765	225	690	43	1498	720	905	1400	600	140	455	100	200	1000	660	24	
	55	250M	886	250	690	43	1619	720	905	1450	600	140	455	100	200	1050	660	24	
	75	280S	907	280	690	46	1643	720	905	1530	600	140	455	100	200	1100	660	24	
	90	280M	958	280	690	46	1694	720	905	1550	600	140	455	100	200	1150	660	24	

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NM Series

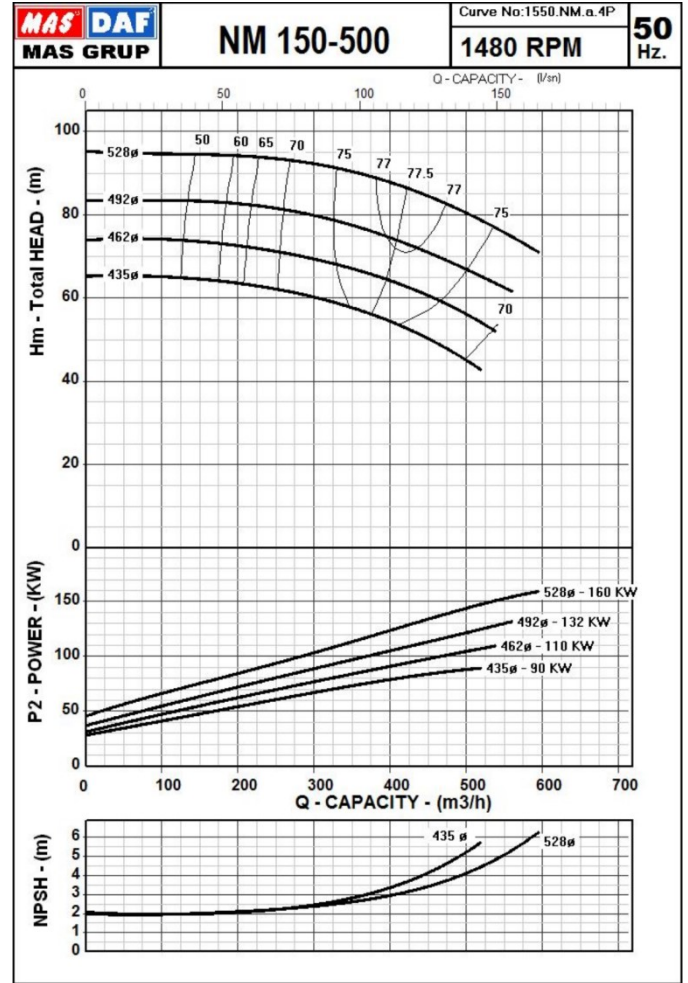
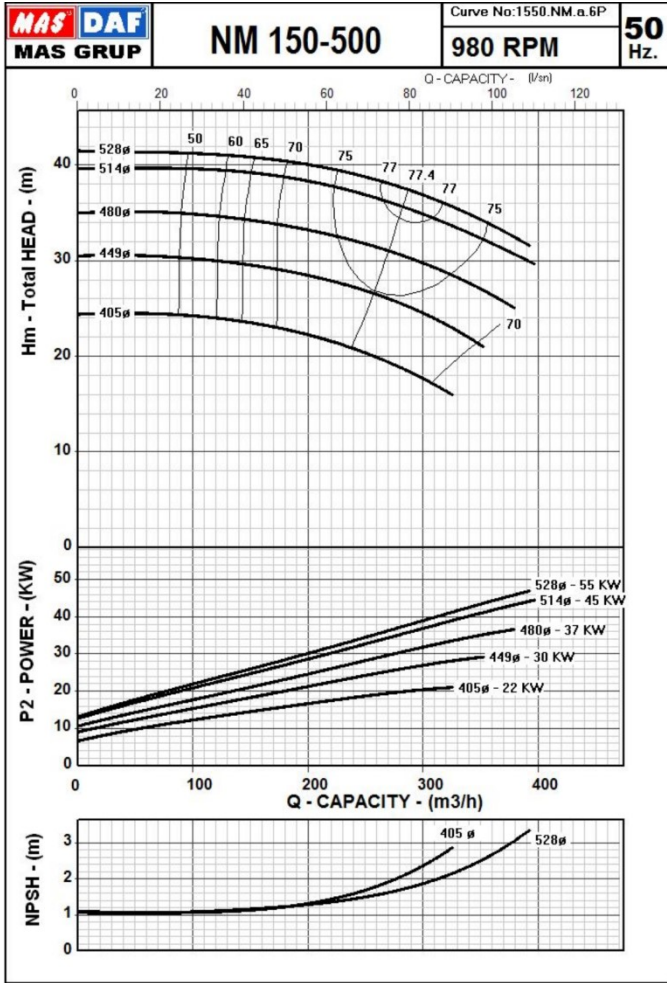
End Suction Centrifugal Pumps

Performance Curves

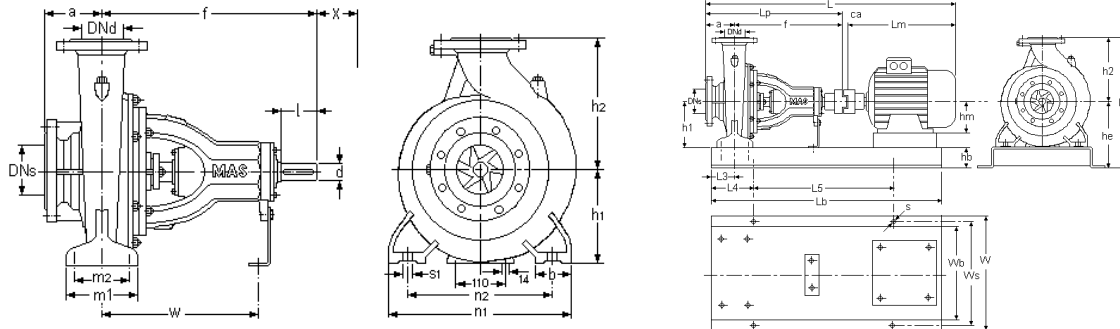


NM 150-500

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End	(*)	Weight kg	
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		X mm
150-500	200	150	180	700	400	525	110	250	200	620	500	M20	500	55	110	140	197

150-500	MOTOR		PUMP				GENERAL				BASE PLATE							
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6 poles	22	200L	665	200	880	34	1579	770	1085	1550	650	160	560	125	200	1150	710	24
	30	225M	765	225	880	43	1688	770	1085	1650	650	160	560	125	300	1050	710	24
	37	250M	895	250	880	43	1818	770	1085	1700	650	160	560	125	300	1100	710	24
	45	280S	907	280	880	46	1833	770	1085	1750	650	160	560	125	300	1150	710	24
	55	280M	958	280	880	46	1884	770	1085	1750	650	160	560	125	300	1200	710	24
4 poles	75	280S	907	280	880	46	1833	770	1085	1800	650	160	560	125	300	1200	710	24
	90	280M	958	280	880	46	1884	770	1085	1800	650	160	560	125	300	1200	710	24
	110	315S	1098	315	880	43	2021	770	1085	1850	650	160	560	125	300	1250	710	24
	132	315M	1150	315	880	43	2073	770	1085	1850	650	160	560	125	300	1300	710	24
	160	315M	1150	315	880	43	2073	770	1085	1850	650	160	560	125	300	1300	710	24

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NM Series

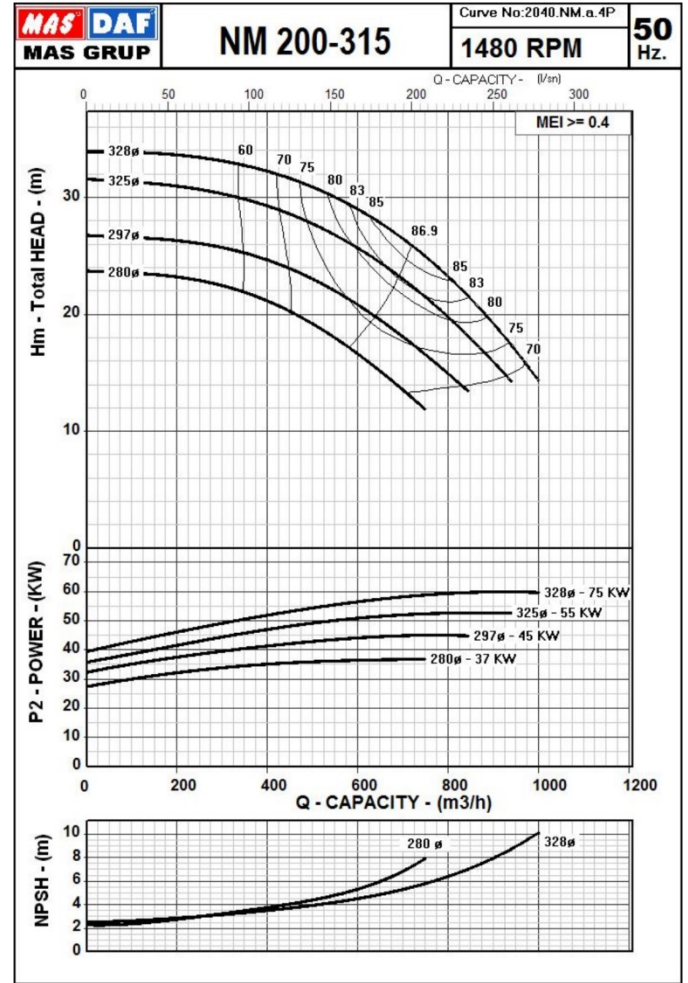
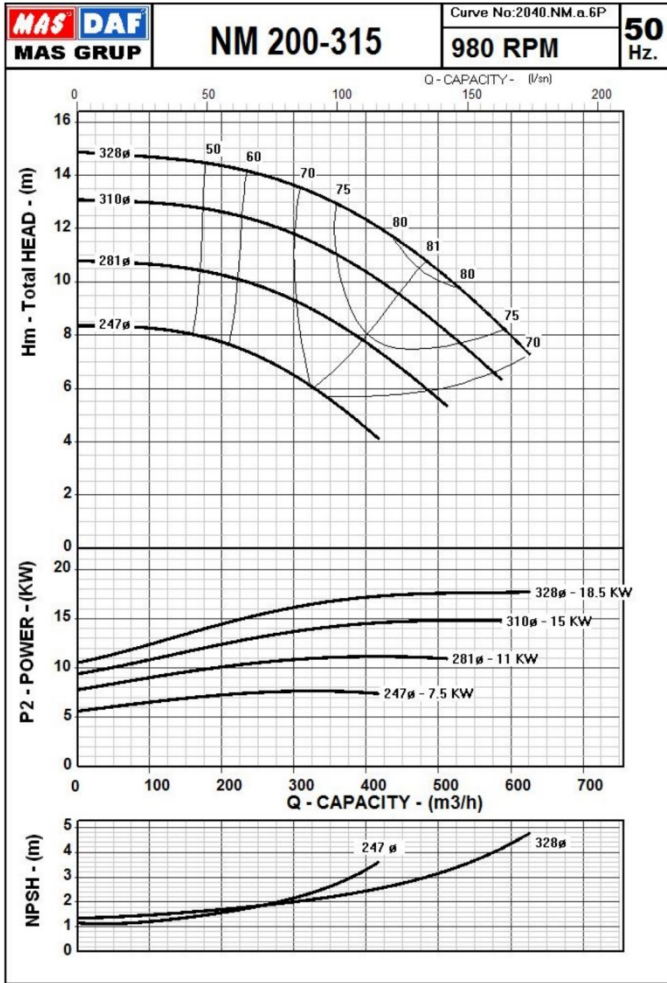
End Suction Centrifugal Pumps

Performance Curves

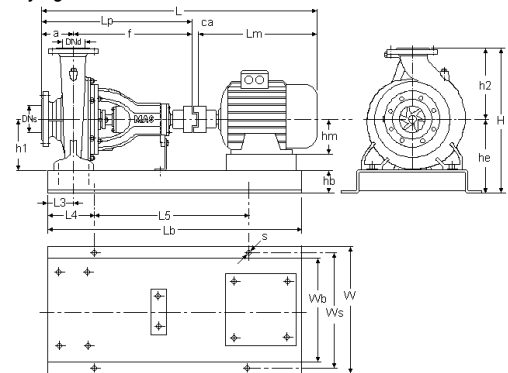
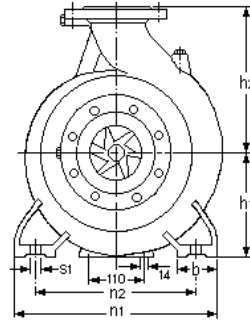
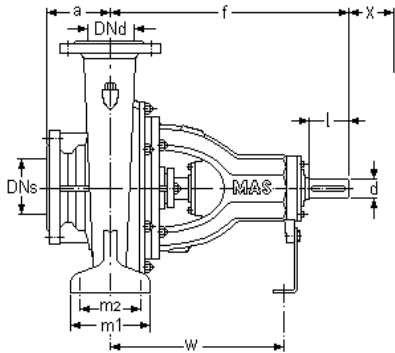


NM 200-315

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity $1 \text{ mm}^2/\text{s}$ and density $1\text{g}/\text{cm}^3$. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details						Shaft End			Weight kg	
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		X mm
200-315	250	200	180	535	355	450	110	250	200	620	500	M20	410	42	110	160	201

	MOTOR		PUMP				GENERAL				BASE PLATE								
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S	
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
200-315	6 poles	7.5	160M	576	160	715	27	1318	770	965	1300	650	160	515	125	200	900	710	24
		11	160L	576	160	715	32	1323	770	965	1300	650	160	515	125	200	900	710	24
		15	180L	629	180	715	34	1378	770	965	1350	650	160	515	125	200	950	710	24
		18.5	200L	665	200	715	34	1414	770	965	1400	650	160	515	125	200	1000	710	24
200-315	4 poles	37	225M	765	225	715	43	1523	770	965	1450	650	160	515	125	200	1050	710	24
		45	225M	765	225	715	43	1523	770	965	1450	650	160	515	125	200	1050	710	24
		55	250M	886	250	715	43	1644	770	965	1500	650	160	515	125	200	1100	710	24
		75	280S	907	280	715	46	1668	770	965	1600	650	160	515	125	200	1200	710	24

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NM Series

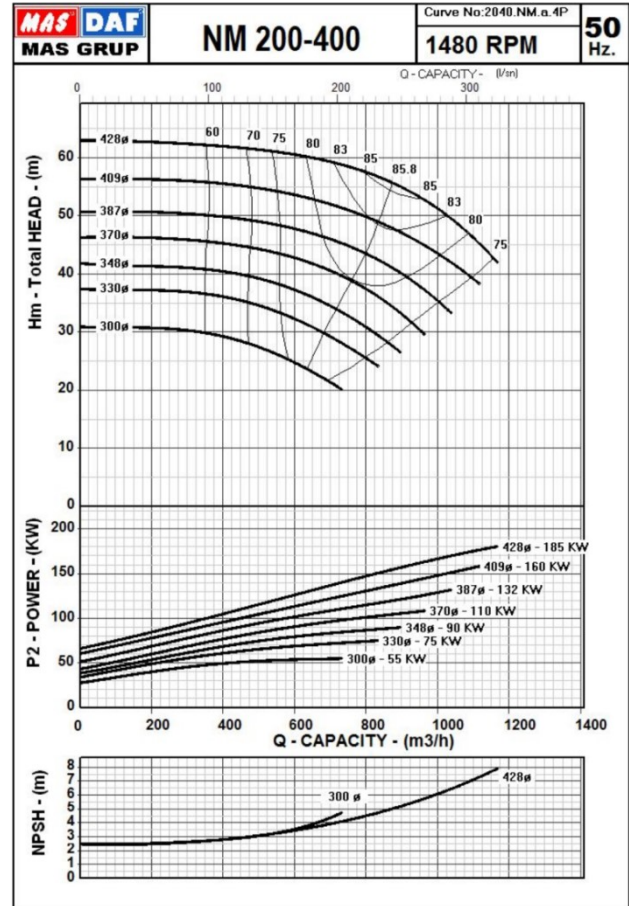
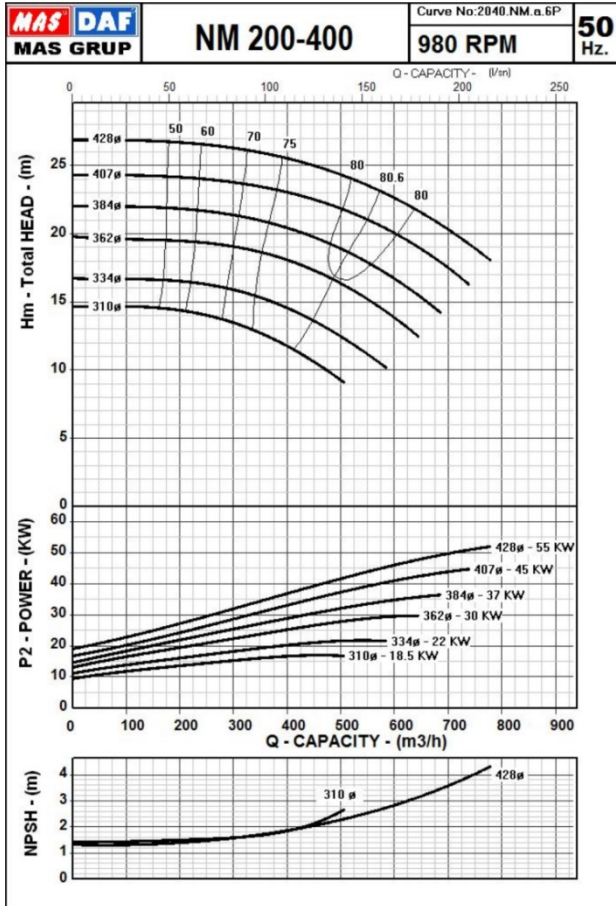
End Suction Centrifugal Pumps

Performance Curves

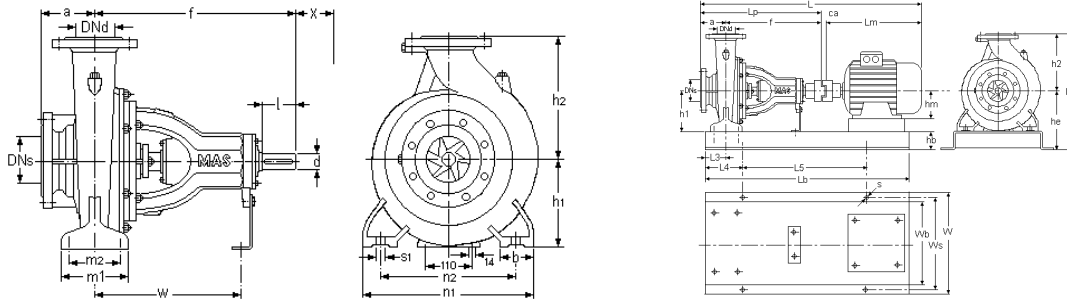


NM 200-400

Mas Grup



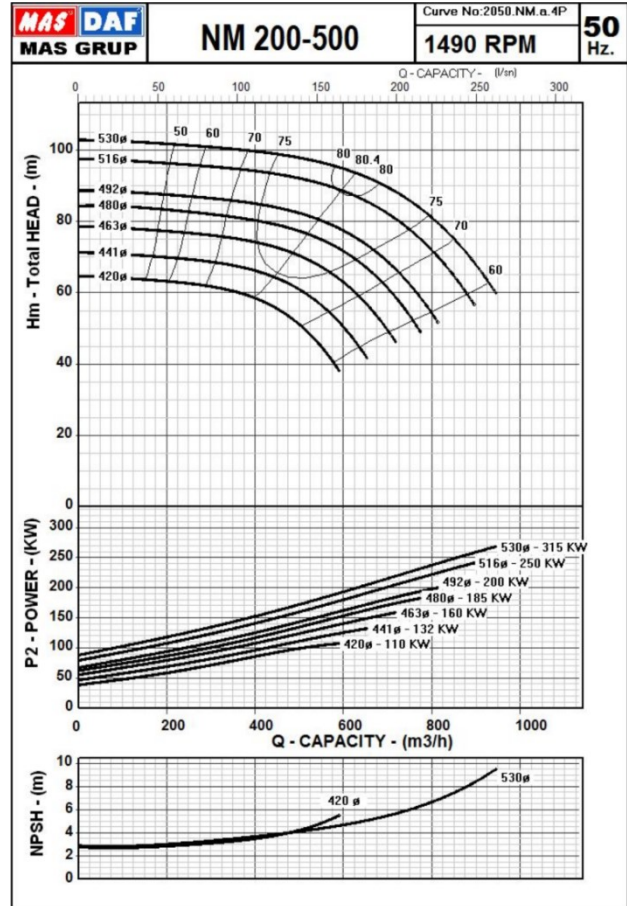
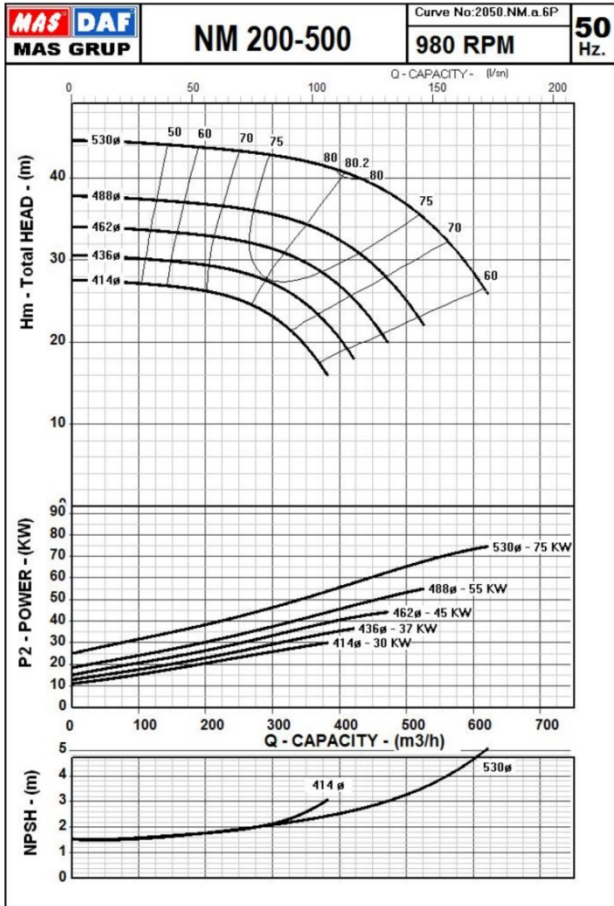
The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



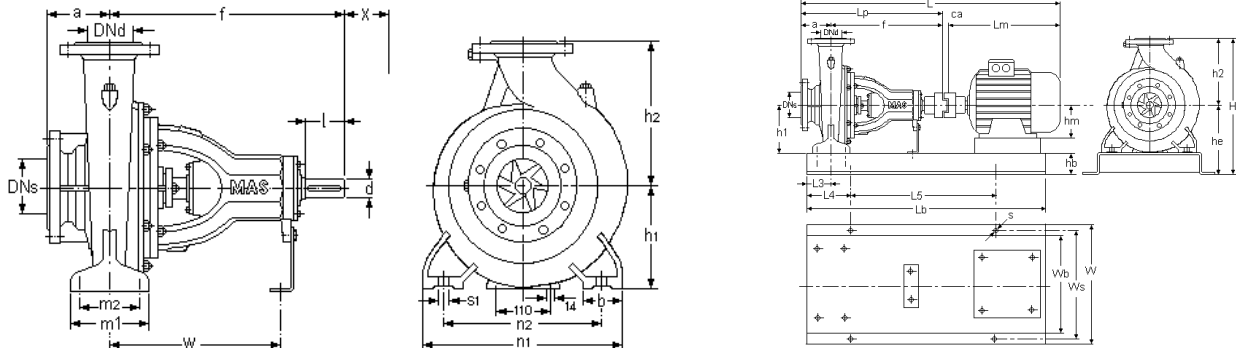
Pump Size	Flanges		Length		Height		Mounting Details						Shaft End		(*) X	Weight kg	
	DNs	DNd	a	f	h1	h2	b	m1	m2	n1	n2	s1	W	d			l
200-400	250	200	180	710	400	500	110	250	200	620	500	M20	500	55	110	160	354

	KW	IEC	MOTOR		PUMP		GENERAL				BASE PLATE								
			Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S	
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
200-400	6 poles	18.5	200L	600	200	890	34	1524	770	1060	1550	650	160	560	125	200	1150	710	24
		22	200L	665	200	890	34	1589	770	1060	1550	650	160	560	125	200	1150	710	24
		30	225M	765	225	890	43	1698	770	1060	1650	650	160	560	125	300	1050	710	24
		37	250M	895	250	890	43	1828	770	1060	1700	650	160	560	125	300	1100	710	24
		45	280S	907	280	890	46	1843	770	1060	1750	650	160	560	125	300	1150	710	24
	55	280M	958	280	890	46	1894	770	1060	1800	650	160	560	125	300	1200	710	24	
	4 poles	55	250M	886	250	890	43	1819	770	1060	1700	650	160	560	125	300	1100	710	24
		75	280S	907	280	890	46	1843	770	1060	1800	650	160	560	125	300	1200	710	24
		90	280M	958	280	890	46	1894	770	1060	1800	650	160	560	125	300	1200	710	24
		110	315S	1098	315	890	43	2031	770	1060	1850	650	160	560	125	300	1250	710	24
132		315M	1150	315	890	43	2083	770	1060	1900	650	160	560	125	300	1300	710	24	
160	315M	1150	315	890	43	2083	770	1060	1900	650	160	560	125	300	1300	710	24		
185	315L	1220	315	890	43	2153	770	1060	1950	650	160	560	125	300	1350	710	24		

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The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X mm	Weight kg
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		
200-500	300	250	280	875	500	700	150	360	290	900	750	M28	560	65	140	320	615

	MOTOR		PUMP				GENERAL			BASE PLATE									
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S	
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
200-500	6 poles	30	225M	765	225	1060	43	1868	870	1110	1800	750	160	560	150	300	1200	810	24
		37	250M	895	250	1060	43	1998	870	1110	1900	750	160	560	150	300	1350	810	24
		45	280S	907	280	1060	46	2013	870	1110	1950	750	160	560	150	300	1400	810	24
		55	280M	958	280	1060	46	2064	870	1110	2000	750	160	560	150	300	1450	810	24
		75	315S	1098	315	1060	43	2201	870	1110	2050	750	160	560	150	300	1500	810	24
	4 poles	110	315S	1098	315	1060	43	2201	870	1110	2050	750	160	560	150	300	1450	810	24
		132	315M	1150	315	1060	43	2253	870	1110	2050	750	160	560	150	300	1450	810	24
		160	315M	1150	315	1060	43	2253	870	1110	2100	750	160	560	150	300	1550	810	24
		185	315L	1220	315	1060	43	2323	870	1110	2150	750	160	560	150	300	1600	810	24
		200	315L	1220	315	1060	43	2323	870	1110	2150	750	160	560	150	300	1600	810	24
	250	355M	1370	355	1060	43	2473	920	1130	2300	800	160x2	580	150	300	1750	860	24	
	315	355M	1370	355	1060	43	2473	920	1130	2300	800	160x2	580	150	300	1750	860	24	

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NM Series

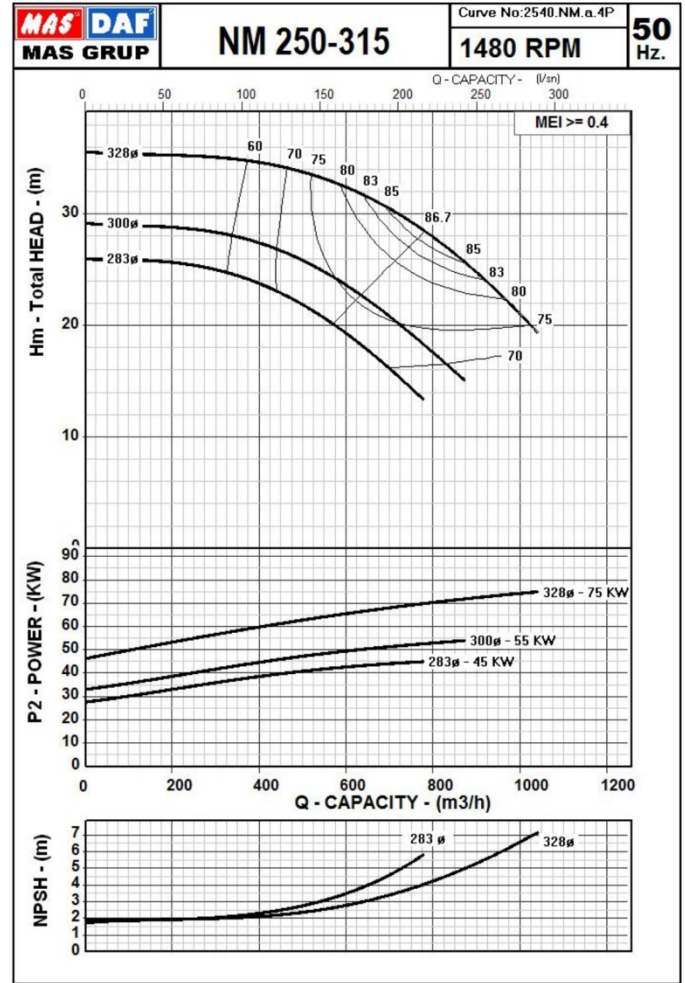
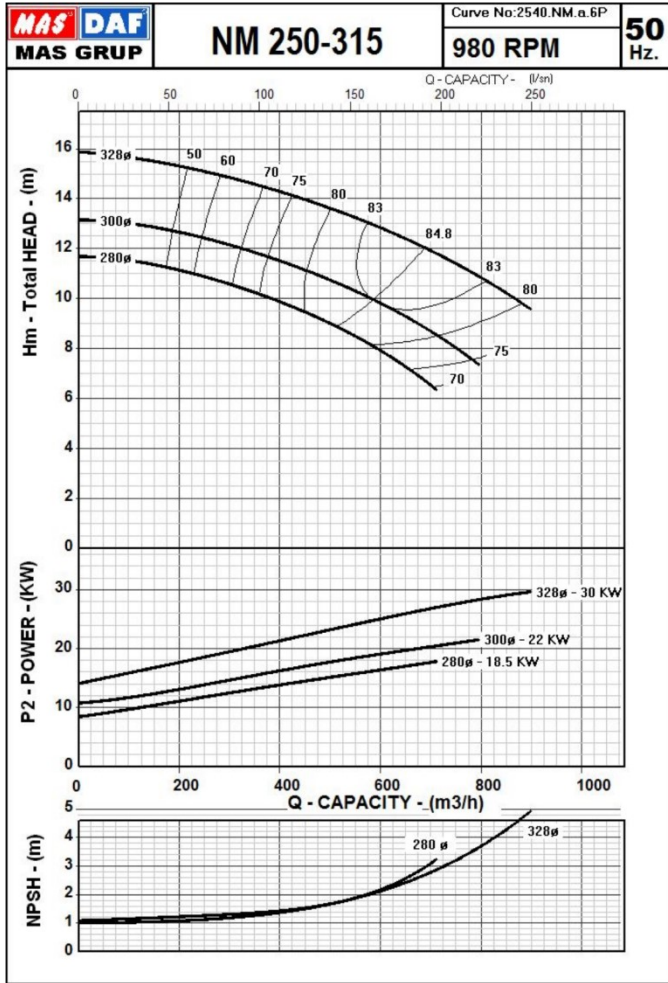
End Suction Centrifugal Pumps

Performance Curves

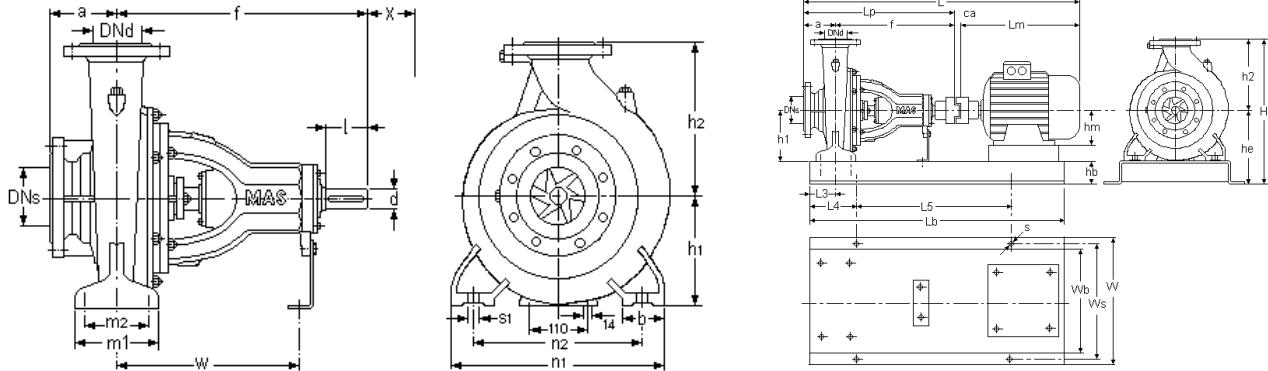


NM 250-315

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity $1 \text{ mm}^2/\text{s}$ and density $1\text{g}/\text{cm}^3$. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details						Shaft End (*)		Weight kg		
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm		l mm	X mm
250-315	300	250	240	725	400	525	140	300	240	620	500	M24	500	55	110	200	419

250-315	MOTOR		PUMP				GENERAL				BASE PLATE							
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6 poles	18.5	200L	600	200	965	34	1599	770	1085	1550	650	160	560	150	200	1150	710	24
	22	200L	665	200	965	34	1664	770	1085	1550	650	160	560	150	200	1150	710	24
	30	225M	765	225	965	43	1773	770	1085	1650	650	160	560	150	300	1050	710	24
4 poles	37	225M	765	225	965	43	1773	770	1085	1650	650	160	560	150	200	1200	710	24
	45	225M	765	225	965	43	1773	770	1085	1650	650	160	560	150	300	1050	710	24
	55	250M	886	250	965	43	1894	770	1085	1700	650	160	560	150	300	1100	710	24
	75	280S	907	280	965	46	1918	770	1085	1800	650	160	560	150	300	1150	710	24

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NM Series

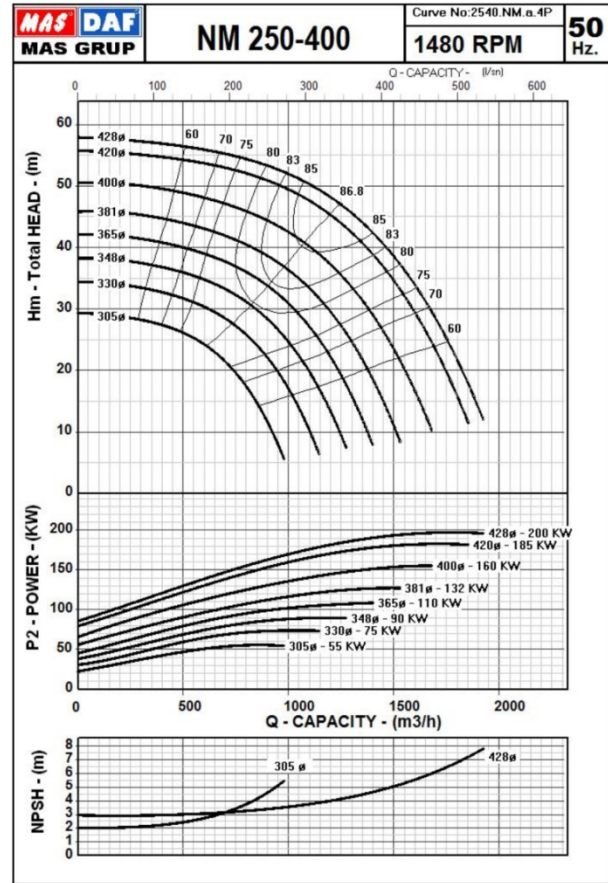
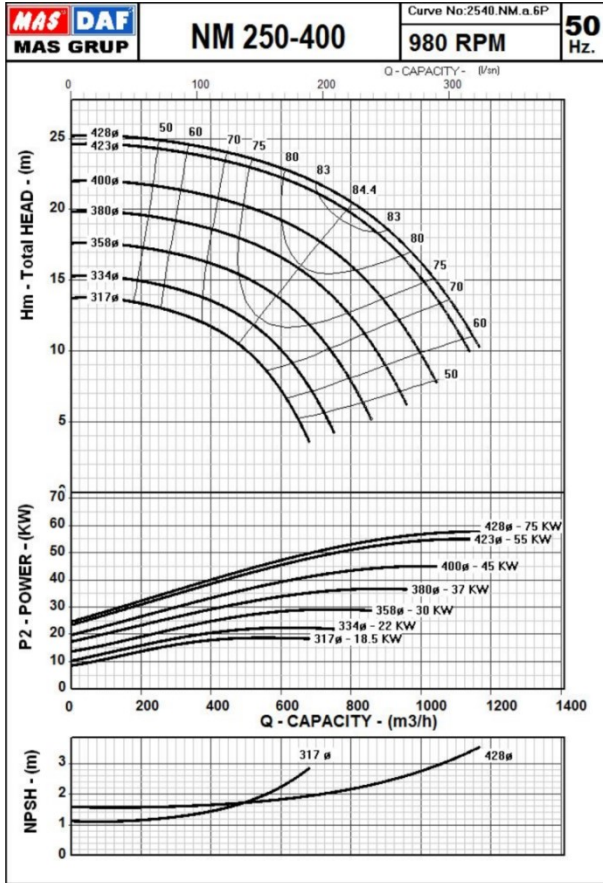
End Suction Centrifugal Pumps

Performance Curves

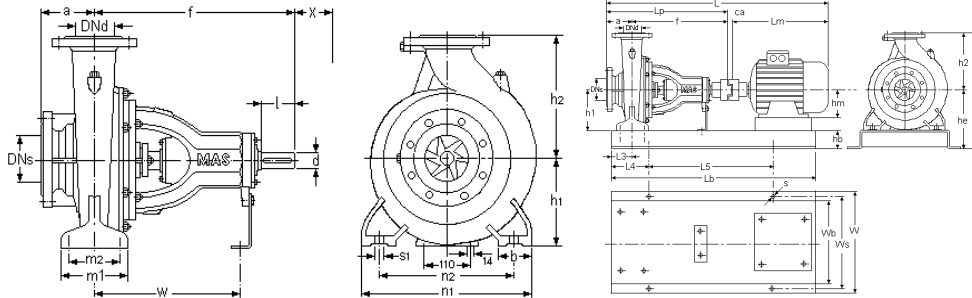


NM 250-500

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details						Shaft End (*)		Weight kg		
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm		l mm	X mm
250-400	300	250	225	865	400	550	140	300	240	620	500	M24	600	65	140	200	510

250-400	6 poles	MOTOR		PUMP			GENERAL			BASE PLATE									
		KW	IEC	Lm mm	Hm mm	Lp mm	Ca mm	L mm	W mm	H mm	Lb mm	Wb mm	Hb mm	He mm	L3 mm	L4 mm	L5 mm	Ws mm	S mm
		18.5	200L	600	200	1090	34	1724	770	1110	1700	650	160	560	150	300	1100	710	24
		22	200L	665	200	1090	34	1789	770	1110	1700	650	160	560	150	300	1100	710	24
		30	225M	765	225	1090	34	1889	770	1110	1800	650	160	560	150	300	1200	710	24
		37	250M	895	250	1090	43	2028	770	1110	1900	650	160	560	150	300	1350	710	24
		45	280S	907	280	1090	46	2043	770	1110	2000	650	160	560	150	300	1400	710	24
		55	280M	958	280	1090	46	2094	770	1110	2000	650	160	560	150	300	1450	710	24
		75	315M	1098	315	1090	43	2231	770	1110	2100	650	160	560	150	300	1500	710	24
	4 poles	75	280S	907	280	1090	46	2043	770	1110	2000	650	160	560	150	300	1400	710	24
		90	280M	958	280	1090	46	2094	770	1110	2000	650	160	560	150	300	1400	710	24
		110	315S	1098	315	1090	43	2231	770	1110	2050	650	160	560	150	300	1450	710	24
		132	315M	1150	315	1090	43	2283	770	1110	2100	650	160	560	150	300	1550	710	24
		160	315M	1150	315	1090	43	2283	770	1110	2100	650	160	560	150	300	1550	710	24
		185	315L	1220	315	1090	43	2353	770	1110	2200	650	160	560	150	300	1650	710	24
		200	315L	1220	315	1090	43	2353	770	1110	2200	650	160	560	150	300	1650	710	24

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NM Series

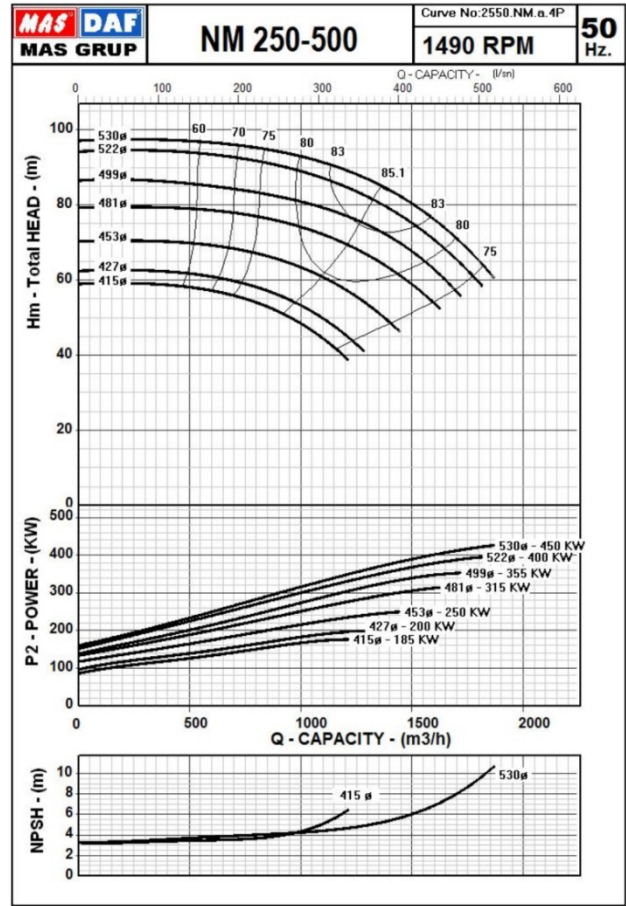
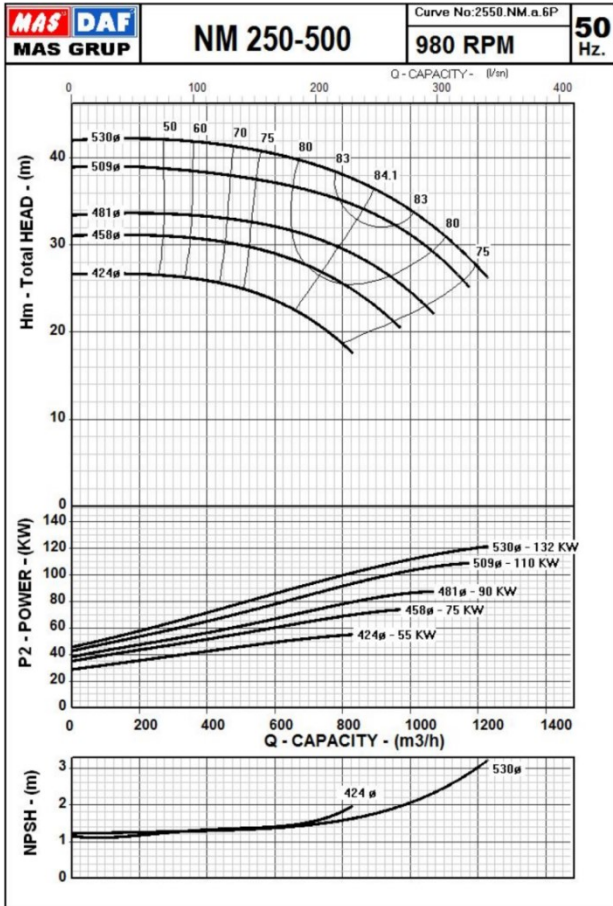
End Suction Centrifugal Pumps

Performance Curves

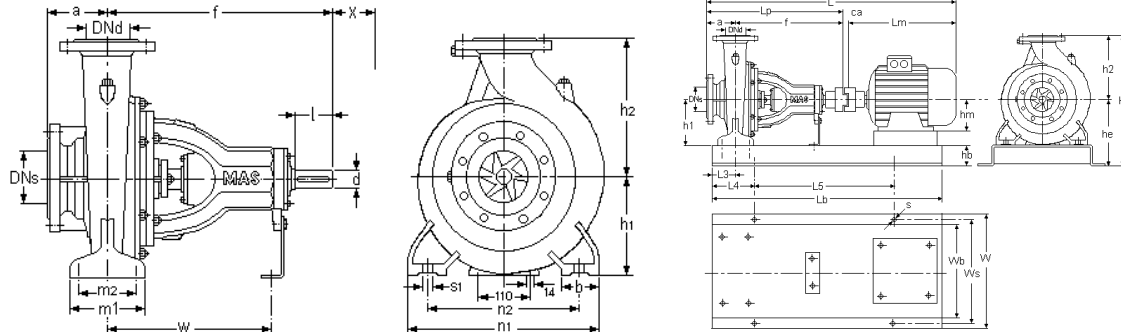


NM 250-500

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X	Weight kg
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		
250-500	300	250	280	875	500	700	150	360	290	900	750	M28	560	65	140	320	615

	MOTOR		PUMP				GENERAL			BASE PLATE									
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S	
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
250-500	6 poles	55	280M	958	280	1090	46	2094	870	1240	2000	750	160	610	150	300	1400	810	24
		75	315S	1098	315	1090	43	2231	870	1240	2100	750	160	610	150	300	1500	810	24
		90	315M	1150	315	1090	43	2283	870	1240	2100	750	160	610	150	300	1500	810	24
		110	315M	1150	315	1090	43	2283	870	1240	2100	750	160	610	150	300	1500	810	24
		132	315L	1220	315	1090	43	2353	870	1240	2200	750	160	610	150	300	1600	810	24
	4 poles	200	315L	1220	315	1090	43	2353	870	1240	2200	750	160	610	150	300	1600	810	24
		250	355M	1370	355	1090	43	2503	920	1260	2350	800	160x2	630	150	300	1750	860	24
		315	355M	1370	355	1090	43	2503	920	1260	2350	800	160x2	630	150	300	1750	860	24
		355	355M	1370	355	1090	43	2503	920	1260	2350	800	160x2	630	150	300	1750	860	24
		400	355L	1440	355	1090	43	2573	920	1260	2350	800	160x2	630	150	300	1750	860	24
		450	400L	1600	400	1090	43	2733	1020	1260	2500	900	160x2	630	150	350	1800	960	24

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NM Series

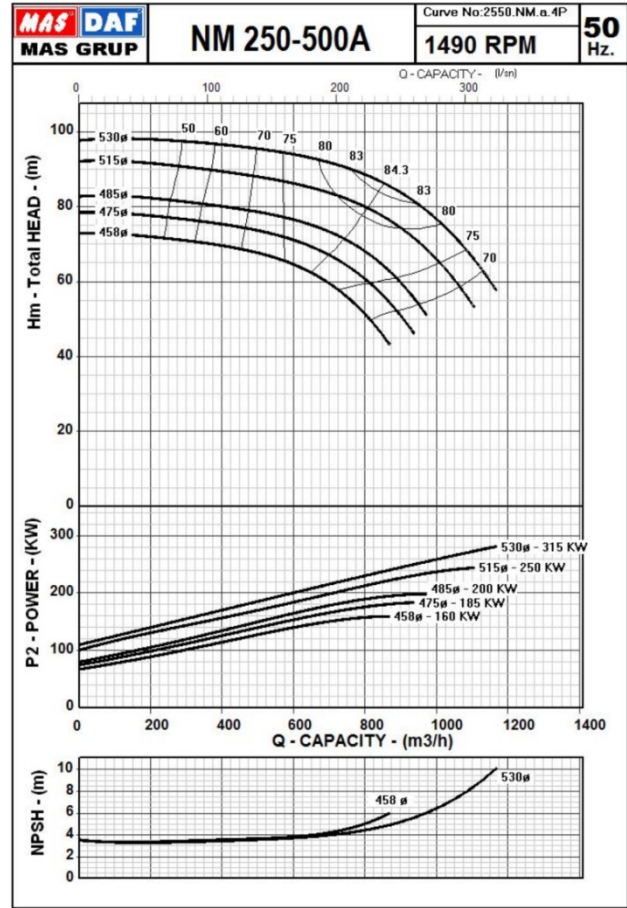
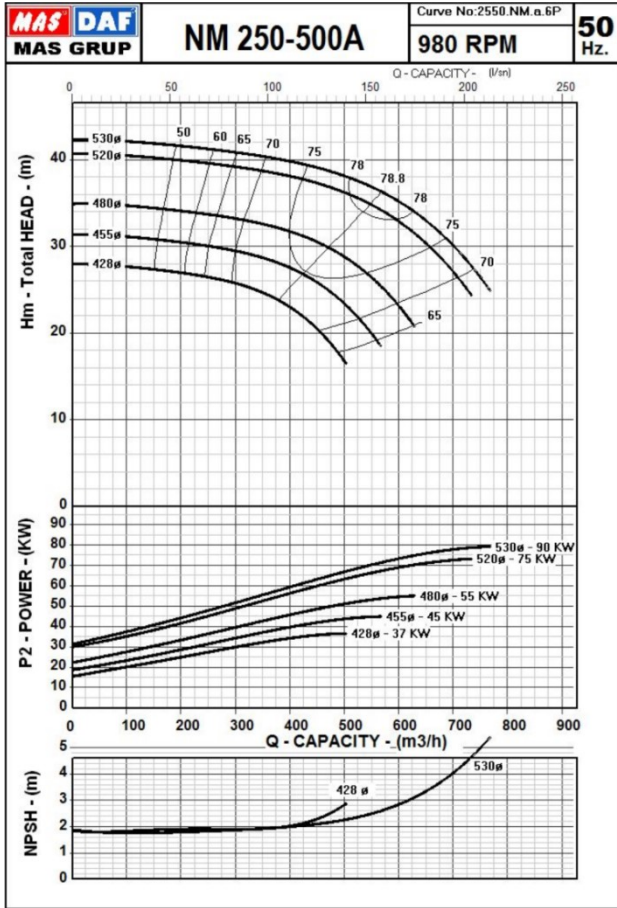
End Suction Centrifugal Pumps

Performance Curves

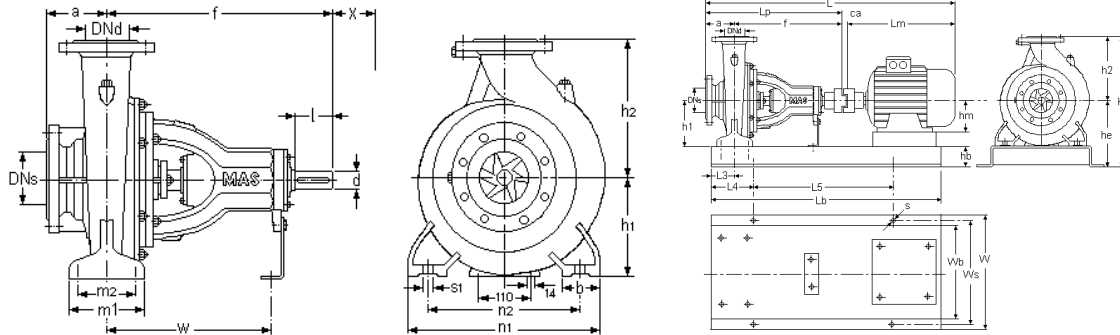


NM 250-500A

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X	Weight kg
	DNs	DNd	a	f	h1	h2	b	m1	m2	n1	n2	s1	W	d	l		
250-500A	300	250	280	875	500	700	150	360	290	900	750	M28	560	65	140	320	615

	MOTOR		PUMP				GENERAL			BASE PLATE									
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S	
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	
250-500A	6 poles	37	250M	895	250	1090	43	2028	870	1240	1900	750	160	610	150	300	1300	960	24
		45	280S	907	280	1090	46	2043	870	1240	2000	750	160	610	150	300	1400	810	24
		55	280M	958	280	1090	46	2094	870	1240	2000	750	160	610	150	300	1400	810	24
		75	315S	1098	315	1090	43	2231	870	1240	2100	750	160	610	150	300	1500	810	24
		90	315M	1150	315	1090	43	2283	870	1240	2100	750	160	610	150	300	1500	810	24
	4 poles	132	315M	1150	315	1090	43	2283	870	1240	2100	750	160	610	150	300	1500	810	24
		160	315M	1150	315	1090	43	2283	870	1240	2100	750	160	610	150	300	1500	810	24
		185	315L	1220	315	1090	43	2353	870	1240	2200	750	160	610	150	300	1600	810	24
		200	315L	1220	315	1090	43	2353	870	1240	2200	750	160	610	150	300	1600	810	24
		250	355M	1370	355	1090	43	2503	920	1260	2350	800	160x2	630	150	300	1750	860	24
		315	355M	1370	355	1090	43	2503	920	1260	2350	800	160x2	630	150	300	1750	860	24

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NM Series

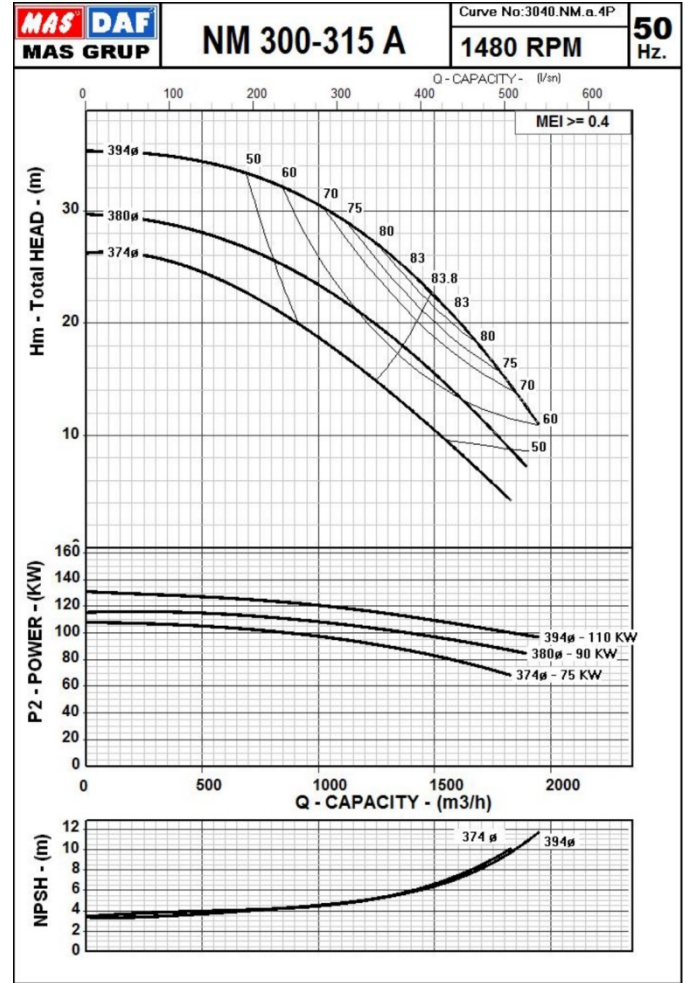
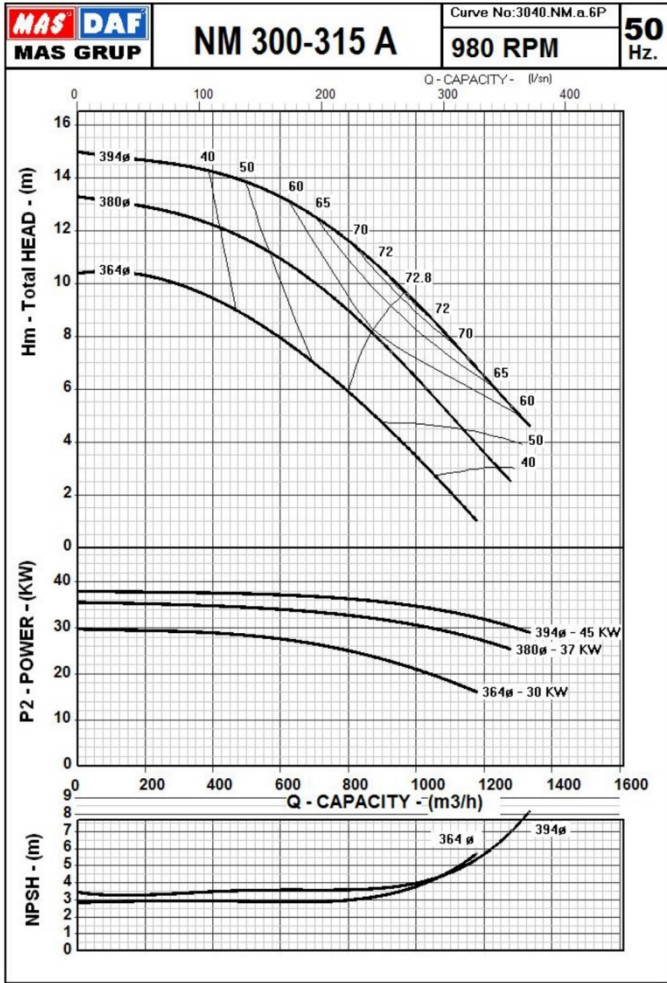
End Suction Centrifugal Pumps

Performance Curves

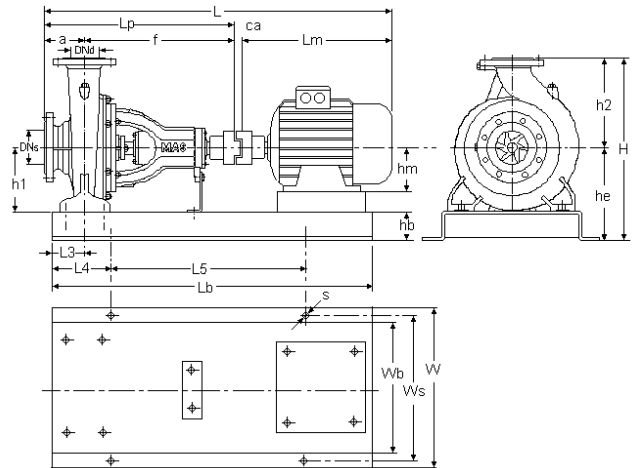
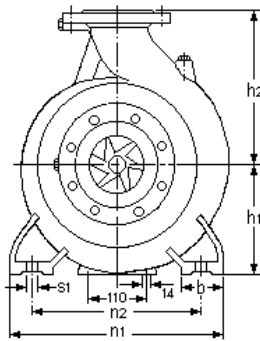
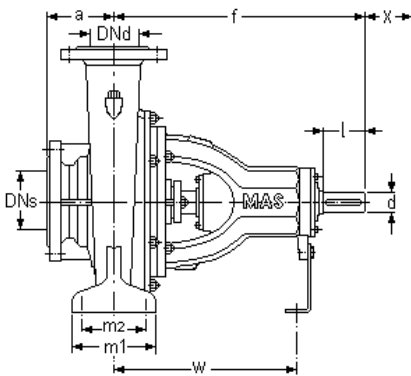


NM 300-315A

Mas Grup



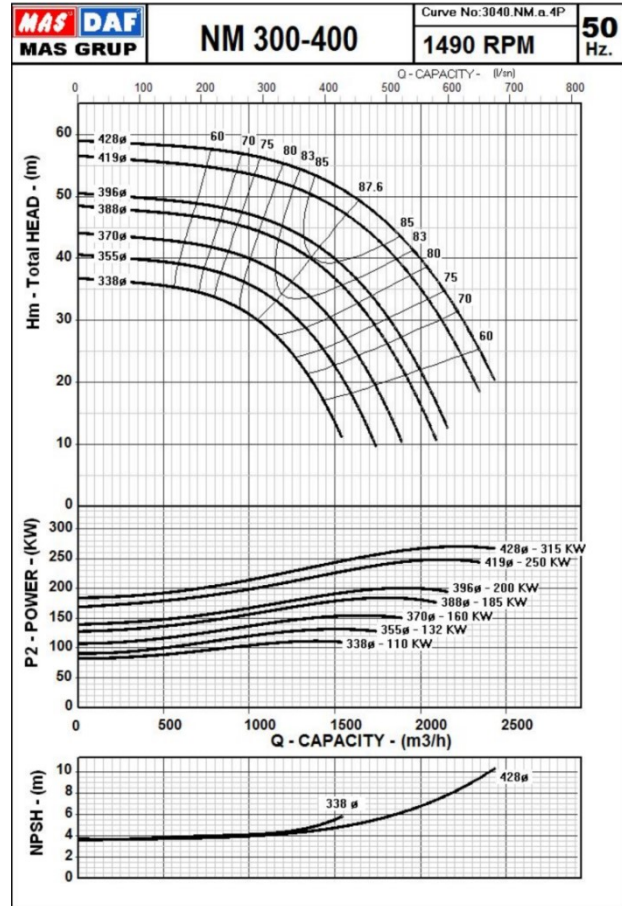
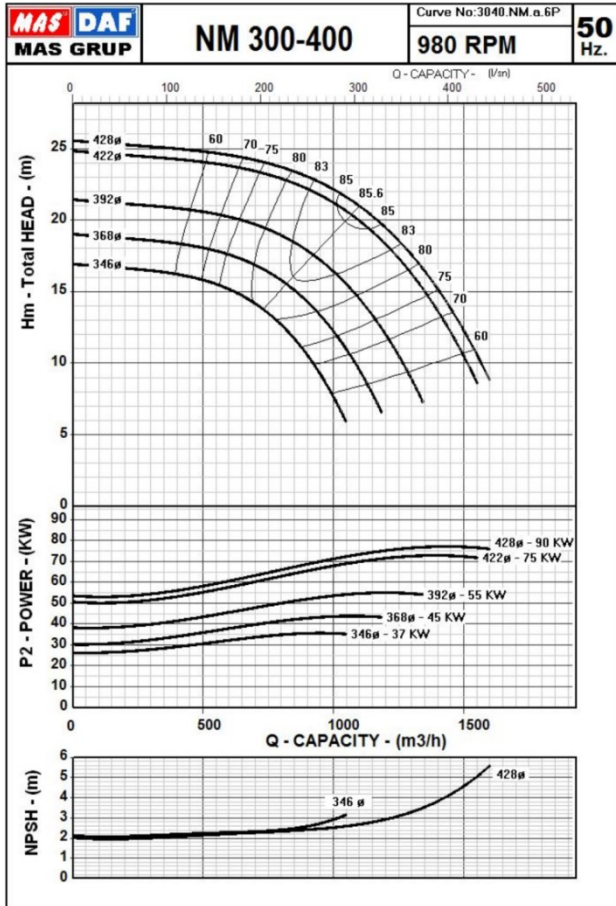
The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



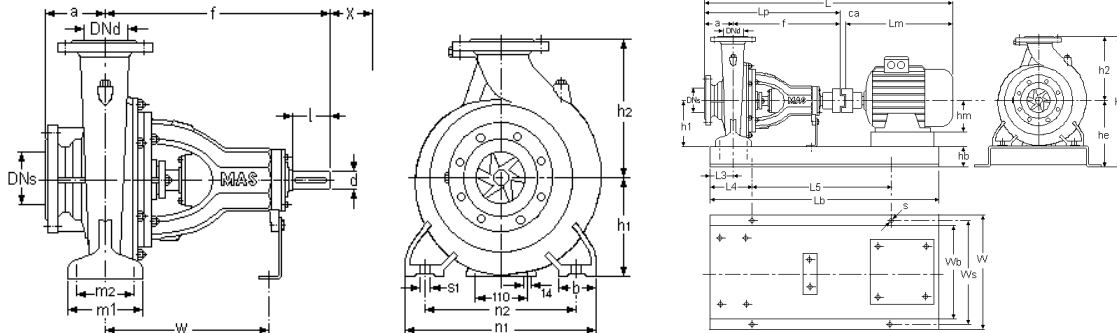
Pump Size	Flanges		Length		Height		Mounting Details						Shaft End (*)		Weight kg		
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm		l mm	X mm
300-315A	300	300	275	810	425	600	140	300	240	620	500	M24	550	55	140	270	516

300-315A	MOTOR		PUMP				GENERAL			BASE PLATE								
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6 poles	30	225M	765	225	1035	43	1843	770	1185	1700	650	160	585	150	300	1100	710	24
	37	250M	895	250	1035	43	1973	770	1185	1750	650	160	585	150	300	1150	710	24
	45	280S	907	280	1035	46	1988	770	1185	1850	650	160	585	150	300	1250	710	24
4 poles	110	315S	1098	315	1085	43	2226	770	1185	2000	650	160	585	150	300	1400	710	24
	132	315M	1150	315	1085	43	2278	770	1185	2000	650	160	585	150	300	1400	710	24

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The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details							Shaft End		(*) X mm	Weight kg
	DNs mm	DNd mm	a mm	f mm	h1 mm	h2 mm	b mm	m1 mm	m2 mm	n1 mm	n2 mm	s1 mm	W mm	d mm	l mm		
300-400	350	300	275	865	450	630	150	360	290	800	650	24	550	65	140	300	636

	MOTOR		PUMP				GENERAL			BASE PLATE									
	KW	IEC	Lm mm	Hm mm	Lp mm	Ca mm	L mm	W mm	H mm	Lb mm	Wb mm	Hb mm	He mm	L3 mm	L4 mm	L5 mm	Ws mm	S mm	
300-400	6 poles	37	250M	895	250	1140	43	2078	970	1260	1900	850	160x2	630	180	300	1300	910	24
		45	280S	907	280	1140	46	2093	970	1260	1950	850	160x2	630	180	300	1350	910	24
		55	280M	958	280	1140	46	2144	970	1260	2000	850	160x2	630	180	300	1400	910	24
		75	315S	1098	315	1140	43	2281	970	1260	2050	850	160x2	630	180	300	1450	910	24
		90	315M	1150	315	1140	43	2333	970	1260	2100	850	160x2	630	180	300	1500	910	24
	4 poles	110	315S	1098	315	1140	43	2281	970	1260	2050	850	160x2	630	180	300	1450	910	24
		132	315M	1150	315	1140	43	2333	970	1260	2100	850	160x2	630	180	300	1500	910	24
		160	315M	1150	315	1140	43	2333	970	1260	2100	850	160x2	630	180	300	1500	910	24
		185	315L	1220	315	1140	43	2403	970	1260	2150	850	160x2	630	180	300	1550	910	24
		200	315L	1220	315	1140	43	2403	970	1260	2150	850	160x2	630	180	300	1550	910	24
		250	355M	1370	355	1140	43	2553	970	1260	2300	850	160x2	630	180	300	1700	910	24
		315	355M	1370	355	1140	43	2553	970	1260	2300	850	160x2	630	180	300	1700	910	24

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NM Series

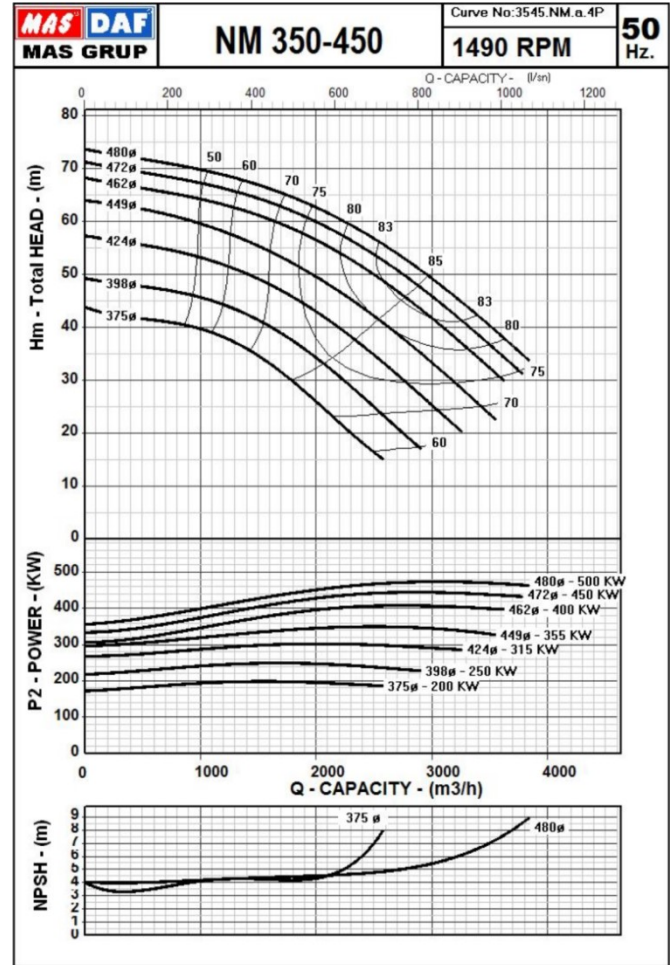
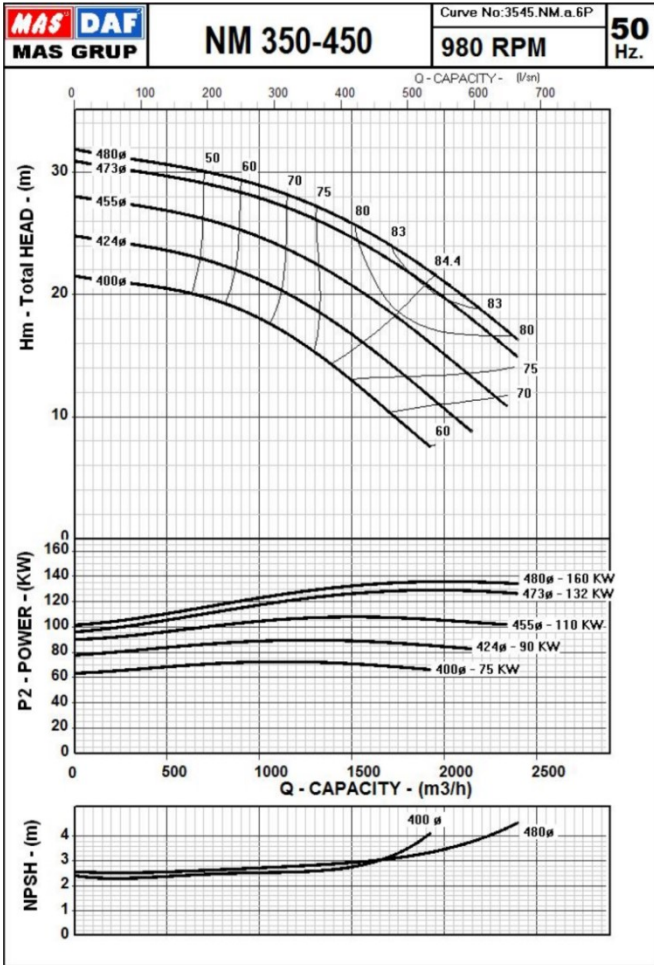
End Suction Centrifugal Pumps

Performance Curves

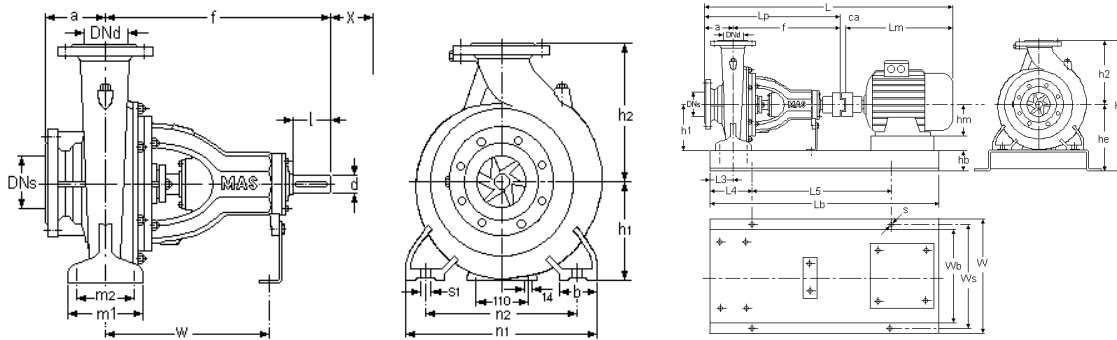


NM 350-450

Mas Grup



The Performance Curves 50 Hz are based on the kinematic viscosity 1 mm²/s and density 1g/cm³. Tolerances are acc. to ISO 9906 Annex A.



Pump Size	Flanges		Length		Height		Mounting Details						Shaft End		(*) X	Weight kg	
	DNs	DNd	a	f	h1	h2	b	m1	m2	n1	n2	s1	W	d			l
350-450	400	350	280	875	500	700	150	360	290	900	750	M24	560	65	140	300	755

	MOTOR		PUMP				GENERAL			BASE PLATE									
	KW	IEC	Lm	Hm	Lp	Ca	L	W	H	Lb	Wb	Hb	He	L3	L4	L5	Ws	S	
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
350-450	6 poles	75	315S	1098	315	1154	43	2295	1070	1380	2100	950	160x2	680	180	300	1500	1010	24
		90	315M	1150	315	1154	43	2347	1070	1380	2100	950	160x2	680	180	300	1500	1010	24
		110	315M	1150	315	1154	43	2347	1070	1380	2100	950	160x2	680	180	300	1500	1010	24
		132	315L	1220	315	1154	43	2417	1070	1380	2150	950	160x2	680	180	300	1550	1010	24
	160	355M	1370	355	1154	43	2567	1070	1380	2300	950	160x2	680	180	300	1700	1010	24	
	4 poles	250	355M	1370	355	1154	43	2567	1070	1380	2300	950	160x2	680	180	300	1700	1010	24
		315	355M	1370	355	1154	43	2567	1070	1380	2300	950	160x2	680	180	300	1700	1010	24
		355	355M	1370	355	1154	43	2567	1070	1380	2300	950	160x2	680	180	300	1700	1010	24
		450	400L	1600	400	1154	43	2797	1070	1380	2350	950	160x2	680	180	300	1750	1010	24
500		400L	1600	400	1154	43	2797	1070	1380	2350	950	160x2	680	180	300	1750	1010	24	

MAS DAF MAKINA SAN. A.Ş. reserves the right to change specifications without prior notice.

NM Series

End Suction Centrifugal Pumps

Permissible Loads and Torques on Pump Flanges



Mas Grup

Load and torque components on discharge flanges : $F_{xD}, F_{yD}, F_{zD}, M_{xD}, M_{yD}, M_{zD}$
 Load and torque components on suction flanges : $F_{xS}, F_{yS}, F_{zS}, M_{xS}, M_{yS}, M_{zS}$
 Dimension for force and torque : N, Nm

$F_{VD} = |F_{yD}|$: Amount of vertical load on discharge flange
 $F_{VS} = |F_{yS}|$: Amount of vertical load on suction flange
 $F_{HD} = (F_{xD}^2 + F_{zD}^2)^{1/2}$: Amount of horizontal load on discharge flange
 $F_{HS} = (F_{xS}^2 + F_{zS}^2)^{1/2}$: Amount of horizontal load on suction flange
 $M_D = (M_{xD}^2 + M_{yD}^2 + M_{zD}^2)^{1/2}$: Amount of torque on discharge flange
 $M_S = (M_{xS}^2 + M_{yS}^2 + M_{zS}^2)^{1/2}$: Amount of torque on suction flange

$\Sigma F_V = 2/3 \times F_{VD} + F_{VS}$: Sum of vertical loads
 $\Sigma F_H = F_{HD} + F_{HS}$: Sum of horizontal loads
 $\Sigma M = M_D + M_S$: Sum of torques

The load on the flange is permissible if the following condition is fulfilled.

$$(\Sigma F_V / \Sigma F_{Vmax})^2 + (\Sigma F_H / \Sigma F_{Hmax})^2 + (\Sigma M / \Sigma M_{max})^2 \leq 1$$

PUMPTYPE	F _{Vmax} [N]	F _{Hmax} [N]	M _{max} [Nm]
NM 32-160	2450	1850	350
NM 32-200			
NM 32-250			

NM 40-160	2550	1900	400
NM 40-200			
NM 40-250			

NM 50-160	2650	1950	450
NM 50-200			
NM 50-250			
NM 50-315	2900	2200	550

NM 65-160	3000	2150	650
NM 65-200			
NM 65-250			
NM 65-315	3250	2250	750
NM 65-400			

NM 80-160	3600	2450	950
NM 80-200			
NM 80-250			
NM 80-315	3850	2600	1050
NM 80-400			

PUMPTYPE	F _{Vmax} [N]	F _{Hmax} [N]	M _{max} [Nm]
NM 100-160	4750	3000	1400
NM 100-250			
NM 100-315	4900	3050	1450
NM 100-400			

NM 125-200	7850	4850	2700
NM 125-250	7050	4300	2300
NM 125-315			
NM 125-400			

NM 150-200	9900	6500	3600
NM 150-250			
NM 150-315	9550	6250	3450
NM 150-400			

NM 200-315	13200	9200	4000
NM 200-400	12750	8350	4600
NM 200-500			

NM 250-315	16500	11500	5000
NM 250-400	15950	10450	5750
NM 250-500			

NM 300-315	19800	13800	6000
NM 300-400			

NM 350-450	23100	16100	7500
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Note: Pumps are mounted on base plate pressed of steel-sheet, filled with grout and discharge branch upward. Pump casing materials are GG 25, Bronze, GGG 40 and GS.

NM Series

End Suction Centrifugal Pumps

Moment of Inertia without Coupling



Mas Grup

PUMP TYPE	MOMENT OF INERTIA I [kgm ²]					
	Impeller GG 25 ($\rho=7,3 \text{ kg/dm}^3$)		Impeller Bronze ($\rho=8,7 \text{ kg/dm}^3$)		Impeller Cast Steel ($\rho=7,8 \text{ kg/dm}^3$)	
	Without Water	With Water	Without Water	With Water	Without Water	With Water
NM 32-160	0,0062	0,0072	0,0074	0,0084	0,0066	0,0076
NM 32-200	0,0123	0,0142	0,0147	0,0166	0,0131	0,0150
NM 32-250	0,0212	0,0272	0,0309	0,0381	0,293	0,345
NM 40-160	0,0065	0,0072	0,0078	0,0085	0,0070	0,0077
NM 40-200	0,0124	0,0145	0,0148	0,0169	0,0132	0,0153
NM 40-250	0,0293	0,0355	0,0349	0,0411	0,0313	0,0375
NM 50-160	0,0075	0,0087	0,0219	0,0231	0,0080	0,0092
NM 50-200	0,0136	0,0160	0,0142	0,0186	0,0125	0,0169
NM 50-250	0,0318	0,0380	0,0379	0,0441	0,0340	0,0402
NM 50-315	0,0645	0,0800	0,0788	0,0943	0,0696	0,0941
NM 65-160	0,0077	0,0100	0,0092	0,0115	0,0082	0,0105
NM 65-200	0,0150	0,0192	0,0179	0,0221	0,0160	0,0202
NM 65-250	0,0375	0,0465	0,0447	0,0537	0,0401	0,0491
NM 65-315	0,0745	0,0900	0,0888	0,1043	0,0796	0,0951
NM 65-400	0,2100	0,2575	0,2522	0,2997	0,2251	0,2726
NM 80-160	0,0098	0,0127	0,0117	0,0146	0,0105	0,0134
NM 80-200	0,0195	0,0255	0,0232	0,0292	0,0208	0,0268
NM 80-250	0,0400	0,0525	0,0477	0,0602	0,0427	0,0552
NM 80-315	0,0845	0,1077	0,1007	0,1239	0,0903	0,1135
NM 80-400	0,2200	0,2675	0,2622	0,3097	0,2351	0,2826
NM 100-160	0,0127	0,0165	0,0145	0,0188	0,0135	0,0175
NM 100-200	0,0253	0,0327	0,0302	0,0376	0,0270	0,0344
NM 100-250	0,0448	0,0625	0,0534	0,0711	0,0479	0,0656
NM 100-315	0,0895	0,1205	0,1067	0,1377	0,0956	0,1266
NM 100-400	0,2108	0,2650	0,2512	0,3054	0,2252	0,2794
NM 125-200	0,0375	0,0545	0,0447	0,0617	0,0401	0,0571
NM 125-250	0,0520	0,0740	0,0556	0,0776	0,0620	0,0840
NM 125-315	0,1058	0,1480	0,1261	0,1683	0,1130	0,1552
NM 125-400	0,2358	0,3098	0,2810	0,3550	0,2520	0,3260
NM 150-200	0,0475	0,0645	0,0547	0,0717	0,0501	0,0671
NM 150-250	0,0675	0,0975	0,0804	0,1104	0,0721	0,1021
NM 150-315	0,1507	0,2123	0,1796	0,2412	0,1610	0,2226
NM 150-400	0,2707	0,3608	0,3226	0,4127	0,2892	0,3793
NM 150-500	0,6760	0,8450	0,8056	0,9746	0,7223	0,8913
NM 200-315	0,3007	0,3908	0,3526	0,4427	0,3192	0,4093
NM 200-400	0,4030	0,5440	0,4803	0,6213	0,4306	0,5716
NM 200-500	0,7728	0,9815	0,9210	1,1297	0,8257	1,0344

NM Series

End Suction Centrifugal Pumps

Moment of Inertia without Coupling



Mas Grup

PUMP TYPE	MOMENT OF INERTIA I [kgm ²]					
	Impeller GG 25 ($\rho=7,3$ kg/dm ³)		Impeller Bronze ($\rho=8,7$ kg/dm ³)		Impeller Cast Steel ($\rho=7,8$ kg/dm ³)	
	Without Water	Without Water	With Water	Without Water	With Water	Without Water
NM 250–315	0,2167	0,3077	0,2583	0,3493	0,2315	0,3225
NM 250–400	0,5595	0,7442	0,6668	0,8515	0,5978	0,7825
NM 250–500	0,9322	1,1932	1,1110	1,3720	0,9961	1,2571
NM 300–315	0,3595	0,4442	0,4668	0,5515	0,3978	0,5825
NM 300–400	0,4400	0,5985	0,5244	0,6829	0,4701	0,6286
NM 350–450	1,2000	1,850	1,4301	2,0801	1,2822	1,9322

For the water filling $\rho=1$ kg/dm³ is used. In case the handled liquid has a different density or the impeller is made of other materials having also a different density, calculate moment of inertia according to the following examples.

Example: Pump Size NM 100-250

Handled liquid density $\rho=1.25$ kg/dm³, impeller cast iron GG $\rho=7.3$ kg/dm³

$$I = (0.0625 - 0.0448) \times 1.25 + 0.0448 = 0.0669 \text{ kgm}^2$$

Handled liquid density $\rho=1$ kg/dm³, impeller $\rho=8$ kg/dm³ (conversion from GG $\rho=7.3$ kg/dm³)

$$I = 0.0448 \times 8 / 7.3 + (0.0625 - 0.0448) = 0.0668 \text{ kgm}^2$$

Handled liquid density $\rho=1.25$ kg/dm³, impeller $\rho=8$ kg/dm³
(Conversion from GG $\rho=7.3$ kg/dm³ and water $\rho=1$ kg/dm³)

$$I = 0.0448 \times 8 / 7.3 + (0.0625 - 0.0448) \times 1.25 = 0.0712 \text{ kgm}^2$$

NM Series

End Suction Centrifugal Pumps

MEI VALUE TABLE



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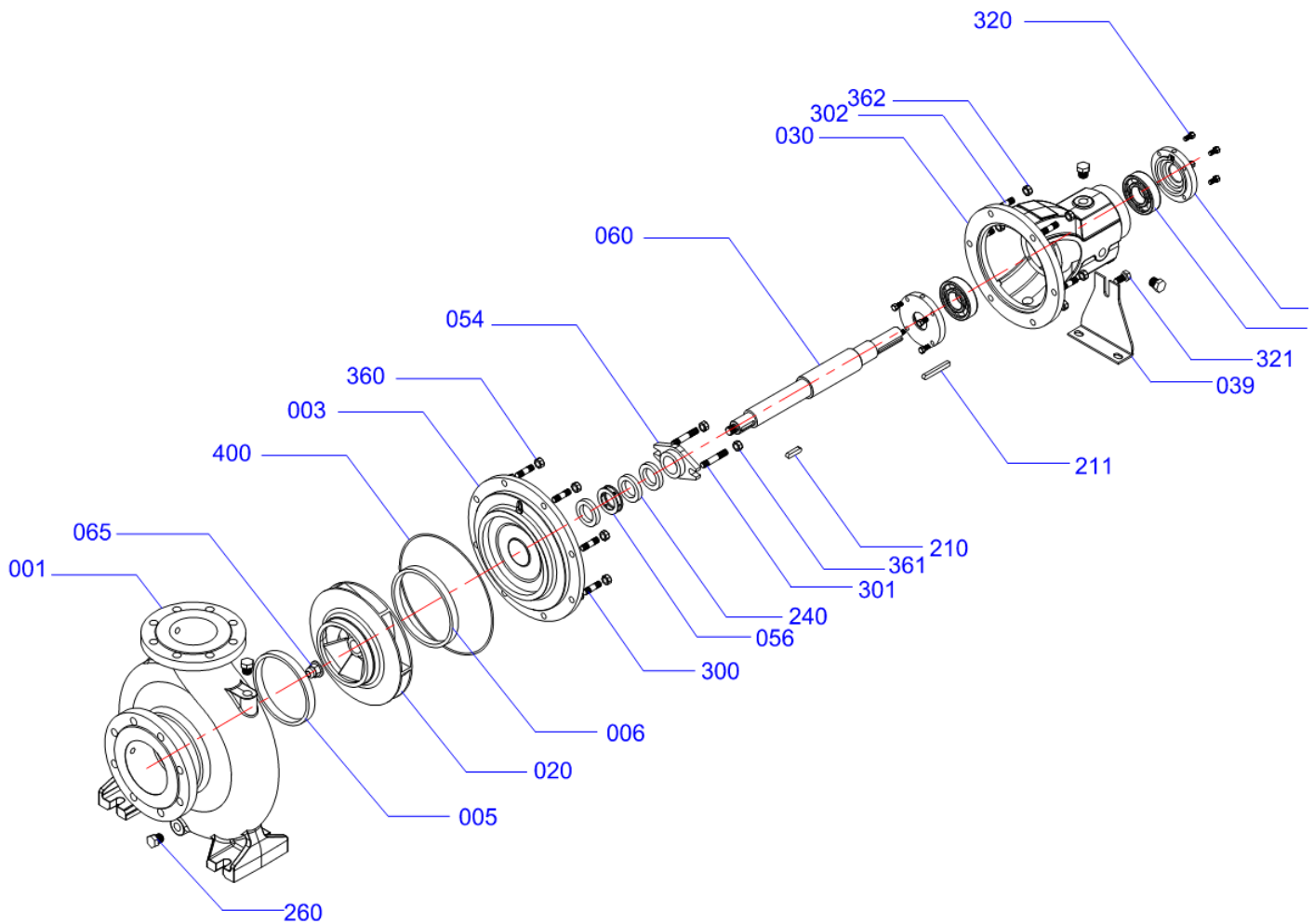
1450 rpm	Speed (rpm)	MEI
NM32-160	1450	0.6
NM 32-200	1450	0.7
NM 32-250	1450	0.5
NM 40-160	1450	0.4
NM 40-200	1450	0.7
NM 40-250	1450	0.7
NM 50-160	1450	0.4
NM 50-200	1450	0.6
NM 50-250	1450	0.6
NM 50-315	1450	0.5
NM 65-160	1450	0.6
NM 65-200	1450	0.5
NM 65-250	1450	0.5
NM 65-315	1450	0.6
NM 65-400	1450	0.6
NM 80-160	1450	0.4
NM 80-200	1450	0.4
NM 80-250	1450	0.4
NM 80-315	1450	0.6
NM 80-400	1450	0.4
NM 100-160	1450	0.5
NM 100-200	1450	0.4
NM 100-250	1450	0.5
NM 100-315	1450	0.5
NM 100-400	1450	0.4
NM 125-200	1450	0.4
NM 125-250	1450	0.5
NM 125-315	1450	0.5
NM 125-400	1450	0.6
NM 150-200	1450	0.4
NM 150-250	1450	0.4
NM 150-315	1450	0.4
NM 150-400	1450	0.6
NM 200-315	1450	0.4
NM 250-315	1450	0.4
NM 300-315	1450	0.4
NM 300-315A	1450	0.4

2900 rpm	Speed (rpm)	MEI
NM 32-160	2900	0.6
NM 32-200	2900	0.7
NM 32-250	2900	0.5
NM 40-160	2900	0.4
NM 40-200	2900	0.7
NM 40-250	2900	0.7
NM 50-160	2900	0.4
NM 50-200	2900	0.6
NM 50-250	2900	0.6
NM 50-315	2900	0.5
NM 65-160	2900	0.6
NM 65-200	2900	0.5
NM 65-250	2900	0.5
NM 65-315	2900	0.6
NM 80-160	2900	0.6
NM 80-200	2900	0.4
NM 80-250	2900	0.4
NM 80-315	2900	0.4
NM 100-160	2900	0.6
NM 100-200	2900	0.4
NM 100-250	2900	0.5
NM 100-315	2900	0.4

NM Series
End Suction Centrifugal Pumps
Exploded View



Mas Grup



PART NO	PARTNAME	PART NO	PARTNAME
01	Pump Casing	211	Coupling Key
03	Stuffing Box	240	Gland Packing
20	Impeller	260	Drain Plug
05	Wear Ring	300	Stud
30	Bearing Housing	301	Stud for Gland
35	Bearing Housing Cover	302	Stud
39	Supporting Foot	320	Hexagonal Bolt
54	Gland	321	Hexagonal Bolt
56	Lantern Ring	360	Hexagonal Nut
60	Pump Shaft	361	Hexagonal Nut for Gland
65	Impeller Nut	362	Hexagonal Nut
200	Ball Bearing	400	O-Ring
210	Impeller Key		



Mas Grup

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