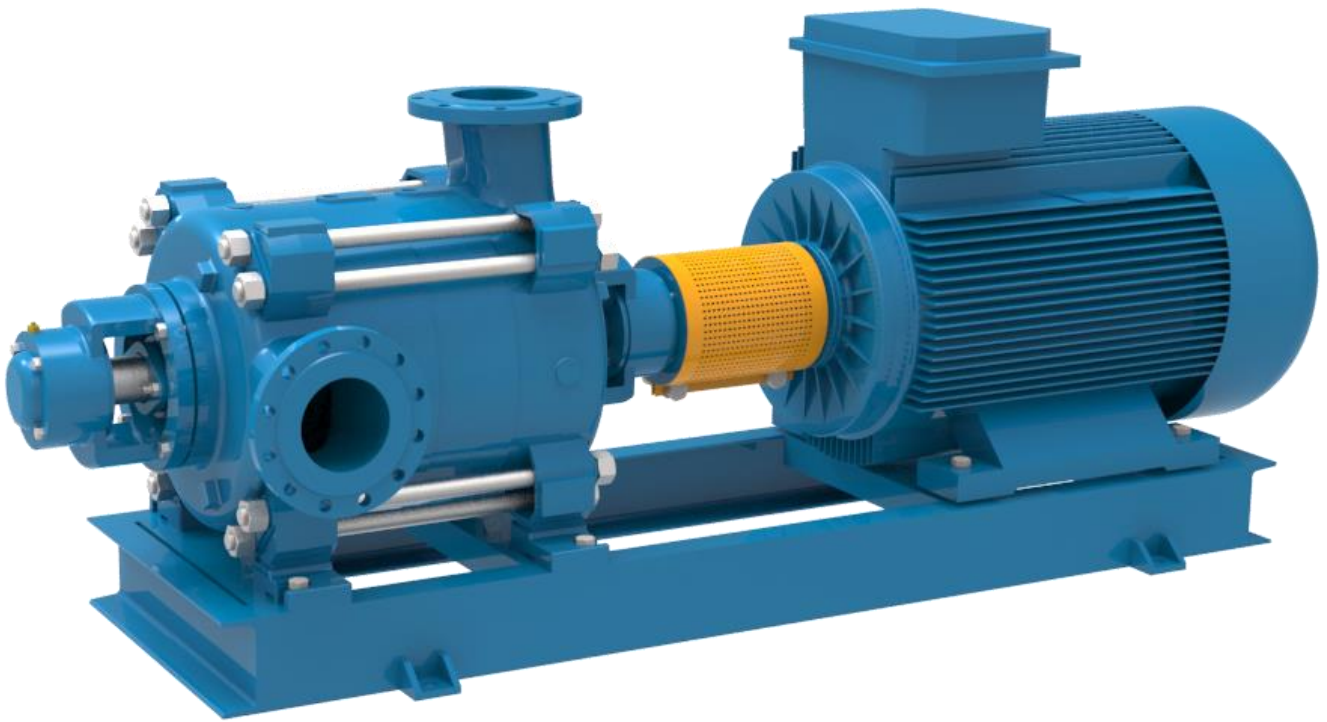


High Pressure Multistage Centrifugal Pumps



## **KME SERIES (50 Hz)**



# TECHNICAL MANUAL



**Mas Grup**



# KME Series

## High Pressure Multistage Centrifugal Pumps

### General Specifications



Mas Grup

### Fields of Application

For pumping of clear and slightly contaminated liquids in:

- Water supply systems,
- Booster sets in high rise buildings and industry,
- Water treatment,
- Industrial washdown systems,
- Fire extinguishing plants,
- Boiler feed and condensate transfer,
- Sanitary and cleaning installations,
- For industrial applications and public services,
- Water distribution services,
- Industrial applications,
- Shipbuilding, Mining, Power Stations, Filter Units,
- Irrigation plants,
- Central heating systems.

### Pumped Liquids

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

- Fresh water, potable water, boiler feed water, industrial water, sea and brackish water, hot water, condensate, lyes, etc.

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

### Design

- The KME Pump is a horizontal axis, radially split, ring section design multistage centrifugal pump of non-self priming type.
- Impellers are between bearings, single entry, closed type and dynamically balanced. Impeller diameter will be corrected for optimal adherence to the required duty point.
- For balancing the axial thrust, all impellers have back wear rings. For high pressure, balance disc application is used.
- The pump series consists of 5 sizes. KME 80, 100, 125, 150 and 200. Stages are from 2 up to max. 15 stages.
- Pump and motor are fitted on a common base plate and connected to each other via flexible coupling.
- Normally, discharge part is at motor side on the top and suction part is at dead end side on the left viewed from driver.
- Suction and discharge nozzles may be a choice of three 90° positions. By special request, it is possible to put the suction nozzle at the motor side. In this arrangement pump and motor rotation must be counter clockwise.

Please see the possible arrangements at "Different Mounting Arrangements" section.

### Shaft

Chromium steel (AISI 420) fine grained shafts are used on KME pumps. There is no big diameter difference along the shaft and it is possible and very easy to dismantling the pump beginning from suction or discharge ends.

### Bearings

- On both ends, bearing houses equipped with grease lubricated anti-friction bearings.
- On the suction side, double row angular contact ball bearings are used (3300 Series).
- At the discharge side, there are cylindrical roller bearings (NU 300 Series).
- Deflectors and lip seals on the shaft prevent leakage fluid from getting into bracket.

### Shaft Seal

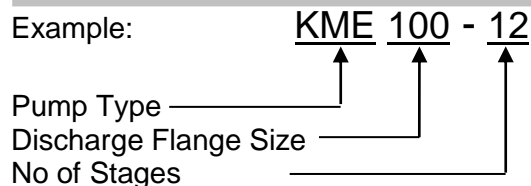
- Pumps are supplied as standard, conventional packed glands.
- Lantern rings are used on both sides for water sealing.
- At the sealing section of the pump, shaft is protected by hard chromium plated sleeves.
- On the discharge side, special high pressure packing and bushes for dropping pressure are used.
- Uncooled stuffing box is standard (Up to 90 °C).
- Uncooled mechanical seal is optional (Up to 90 °C).
- Water cooled stuffing box or mechanical seal is optional (90 °C - 140 °C).
- Double-acting and cartridge seals are upon request.

### Technical Data

Suction Flange	.....	: DN 100...DN 250 (PN 16)
Discharge Flange	.....	: DN 80...DN 200 (PN 40)
Operating Pressure	.....	: 40 Bar (Maksimum)
Speed	.....	: 1450 -1750 rpm
		For KME 80 -3600 rpm
No of Stages	.....	: 2 - 15
Capacity Range	.....	: 30 - 800 m³ / h
Head Range	.....	: 30 - 500 m

Please consult to MAS DAF MAKİNA SAN. A.Ş. for the range of 300-500 m.

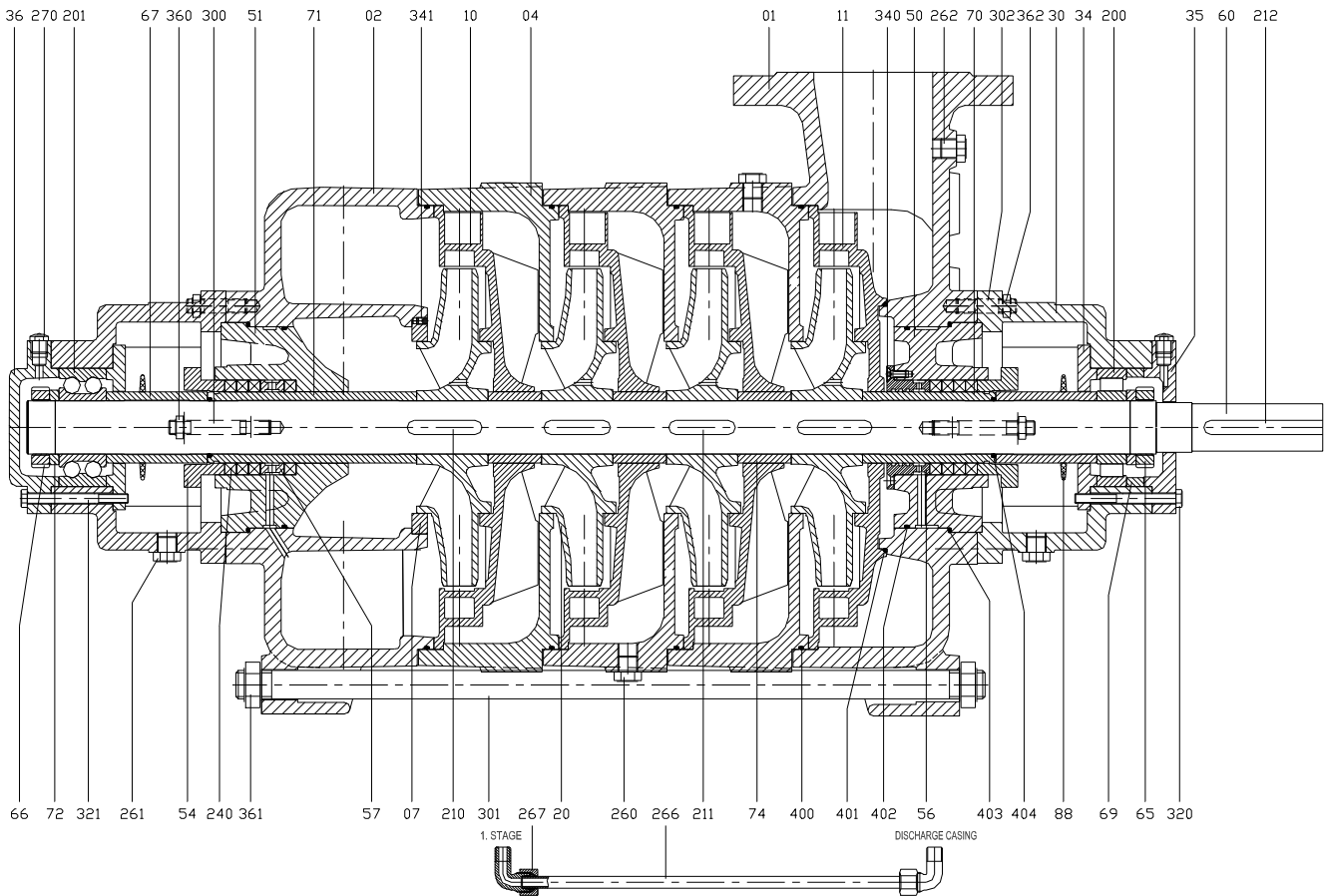
### Identification Code for Pump



**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
**Cross-Sectional Drawing For KME**



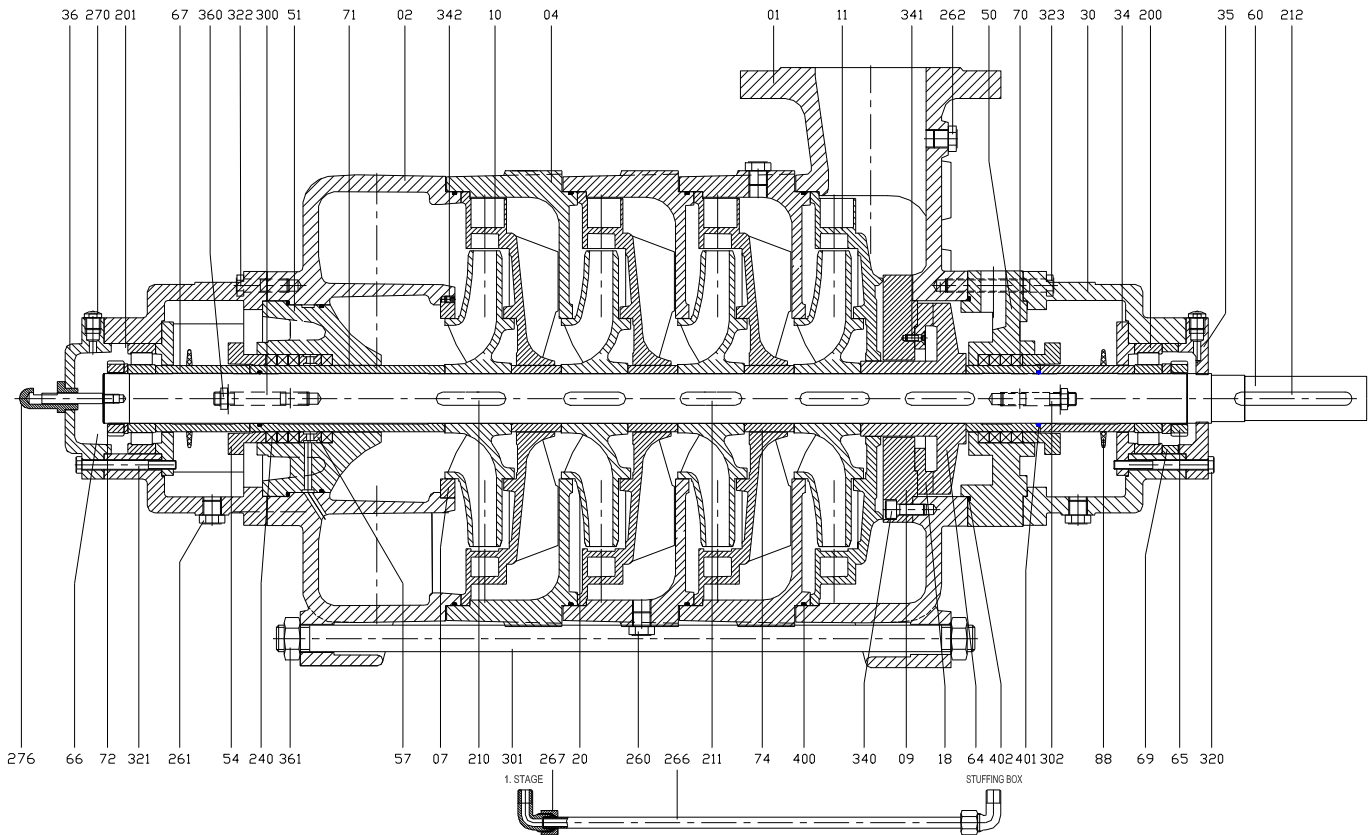
**Mas Grup**



**PART LIST**

Part No	Part Name	Part No	Part Name
01	Discharge Casing	201	Double Row Ball Bearing
02	Suction Casing	210	Impeller Key
04	Stage Casing	211	Impeller Key
07	Wear Ring	212	Coupling Key
10	Diffuser	240	Soft Packing
11	Last Stage Diffuser	260	Plug
20	Impeller	261	Bearing Housing Plug
30	Bearing Housing	262	Casing Plug
34	Bearing Cover (Inside)	266	Watering Pipe (Disc.)
35	Bearing Cover (Disc.)	267	Pipe Union
36	Bearing Cover (Suc.)	270	Greaser
50	Stuffing Box (Disc.)	300	Gland Stud
51	Stuffing Box (Suc.)	301	Stud
54	Gland	302	Casing Stud
56	Lantern Ring (Disc.)	320	Hexagonal Bolt
57	Lantern Ring (Suc.)	321	Hexagonal Bolt
60	Shaft	340	Bolt
65	Bearing Nut (Left)	341	Set-Screw
66	Bearing Nut (Right)	360	Gland Nut
67	Space Sleeve	361	Nut
69	Bearing Press Sleeve	362	Casing Nut
70	Seal Sleeve (Disc.)	400	O-Ring
71	Seal Sleeve (Suc.)	401	O-Ring
72	Bearing Sleeve	402	O-Ring
74	Impeller Space Sleeve	403	O-Ring
88	Thrower	404	O-Ring
200	Cylindrical Roller Bearing		

**Balancing Disc Applications**



**PART LIST**

Part No	Part Name	Part No	Part Name
01	Discharge Casing	200	Cylindrical Roller Bearing
02	Suction Casing	201	Double Row Ball Bearing
04	Stage Casing	210	Impeller Key
07	Wear Ring	211	Impeller Key
09	Discharge Casing Cover	212	Coupling Key
10	Diffuser	240	Soft Packing
11	Last Stage Diffuser	260	Plug
18	Balancing Disc Ring	261	Bearing Housing Plug
20	Impeller	262	Casing Plug
30	Bearing Housing	266	Watering Pipe (Disc.)
34	Bearing Cover (Inside)	267	Pipe Union
35	Bearing Cover (Disc.)	270	Greaser
36	Bearing Cover (Suc.)	276	Wearing Gauge
50	Stuffing Box (Disc.)	300	Gland Stud
51	Stuffing Box (Suc.)	301	Stud
54	Gland	302	Casing Stud
57	Lantern Ring (Suc.)	320	Hexagonal Bolt
60	Shaft	321	Hexagonal Bolt
64	Balancing Disc	322	Hexagonal Bolt
65	Bearing Nut (Left)	323	Hexagonal Bolt
66	Bearing Nut (Right)	340	Bolt
67	Space Sleeve	341	Bolt
69	Bearing Press Sleeve	342	Set-Screw
70	Seal Sleeve (Disc.)	360	Gland Nut
71	Seal Sleeve (Suc.)	361	Nut
72	Bearing Sleeve	400	O-Ring
74	Impeller Space Sleeve	401	O-Ring
88	Thrower	402	O-Ring

## KME Series

High Pressure Multistage Centrifugal Pumps

### Technical Data



Mas Grup

### Material Options

Components	Material. No						
		0.6025 GG 25	0.7040 GG 40	2.1050.01 Bronze	1.4021 AISI 420	1.4301 AISI 304	1.4401 AISI 316
Suction & Discharge Casing		●	○	○		○	○
Stage Casing		●	○	○		○	○
Impeller		●	○	○		○	○
Diffuser		●	○	○		○	○
Gland			○	●		○	○
Pump Shaft					●	○	○
Shaft Sleeve					●	○	○
Stuffing Box		●	○	○		○	○
Bearing Housing		●	○				
Bearing Cover		●	○				

- - Standart Teslimat
- - Opsiyonel

### 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

### Discharge, Suction and Stage Casing Materials Classification for Stage Number

Model Designation	Cast Iron GG 25		Spheroidal Iron GGG 40	
	Min.	Max.	Min.	Max.
KME 80	2	10	11	15
KME 100	2	8	9	14
KME 125	2	5	6	13
KME 150	2	5	6	8
KME 200	2	3	4	6

### Number of Stages

Model Designation	Min. Number of Stages	Max. Number of Stages of Speed r.p.m.	
		1450	2900
KME 80	2	15	4
KME 100	2	14	-
KME 125	2	13	-
KME 150	2	8	-
KME 200	2	6	-

### Flange Dimensions

- Discharge Flanges : DIN 2533 – PN 40
- Suction Flanges : DIN 2533 – PN 16

# KME Series

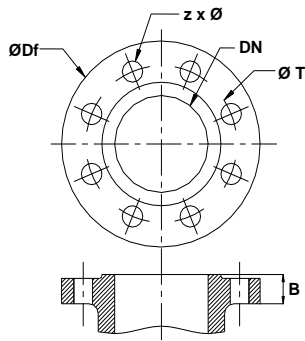
High Pressure Multistage Centrifugal Pumps

## Technical Data



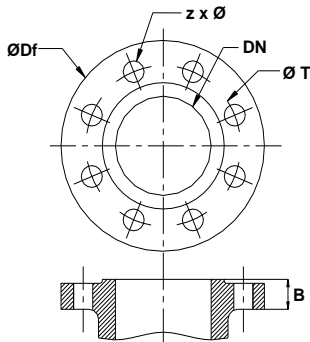
Mas Grup

### PN 40 Flange Dimensions



DN mm ø	Df mm ø	T mm ø	Z EACH	ø mm ø	B mm
DN 80	200	160	8	18	26
DN 100	235	190	8	22	28
DN 125	270	220	8	26	30
DN 150	300	250	8	26	34
DN 200	375	320	12	30	40

### PN 16 Flange Dimensions

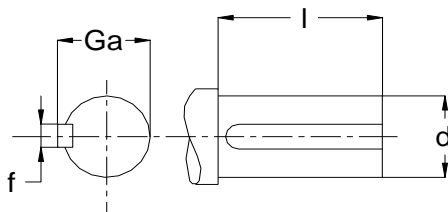


DN mm ø	Df mm ø	T mm ø	Z EACH	ø mm ø	B mm
DN 100	220	180	8	18	24
DN 125	250	210	8	18	26
DN 150	285	240	8	22	26
DN 200	340	295	12	22	30
DN 250	405	355	12	26	32

### Pump Flange Classification

Pump Type	Flanges			
	DNs (mm) (Suction)		DNd (mm) (Discharge)	
KME 80	100	PN 16	80	PN 40
KME 100	125		100	
KME 125	150		125	
KME 150	200		150	
KME 200	250		200	

### Shaft End & Key Way Dimensions

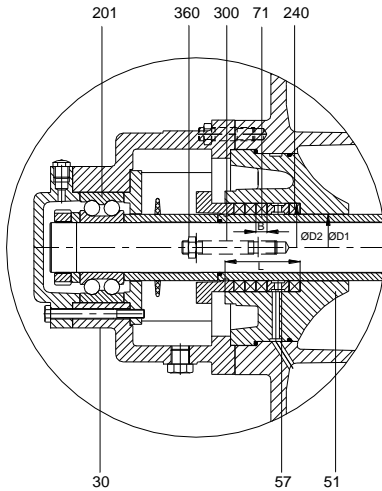


Pump Type	d mm ø	l mm	f mm	Ga mm
KME 80	35	80	10	38
KME 100	40	110	12	43
KME 125	45	110	14	48.5
KME 150	55	110	16	59
KME 200	65	140	18	69

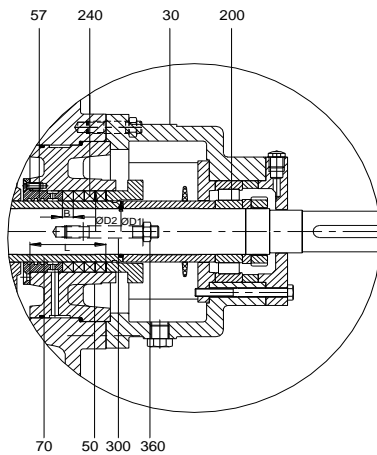
### Casing Stud Dimensions

Pump Size	Qty.	Dimension
KME 80	8	M20
KME 100	8	M24
KME 125	8	M27
KME 150	8	M30
KME 200	8	M36

**Bearings, Stuffing-Box for KME (Soft Packing Design)**



PART LIST	
30	Bearing Housing
51	Stuffing Box
57	Lantern Ring
71	Seal Sleeve
201	Double Row Ball Bearing
240	Soft Packing
300	Gland Stud
360	Gland Nut



PART LIST	
30	Bearing Housing
50	Stuffing Box
57	Lantern Ring
70	Seal Sleeve
200	Cylindrical Roller Bearing
240	Soft Packing
300	Gland Stud
360	Gland Nut

Pump Type	Bearing (Motor Side)	Bearing (Dead Side)	Soft Packing for Suction Side (ØD1xØD2xBxL) (mm)	Soft Packing for Discharge Side (ØD1xØD2xBxL) (mm)	Shaft Diameter (mm)
KME 80	NU 308 40 X 90 X 23	3308 40 X 90 X 36.5	3 Soft Packing x 1 Lantern Ring 50 x 70 x 10 x 65	3 Soft Packing x 1 Lantern Ring 50 x 70 x 10 x 76	Ø35
KME 100	NU 309 45 X 100 X 25	3309 45 X 100 X 39.7	4 Soft Packing x 1 Lantern Ring 80 x 60 x 10 x 68	4 Soft Packing x 1 Lantern Ring 80 x 60 x 10 x 70	Ø40
KME 125	NU 310 50 X 110 X 27	3310 50 X 110 X 44.4	4 Soft Packing x 1 Lantern Ring 89 x 65 x 12 x 79	3 Soft Packing x 1 Lantern Ring 89 x 65 x 12 x 64	Ø45
KME 150	NU 312 60 X 130 X 31	3312 60 X 130 X 54	4 Soft Packing x 1 Lantern Ring 106 x 78 x 14 x 90	4 Soft Packing x 1 Lantern Ring 106 x 78 x 14 x 68	Ø55
KME 200	NU 314 70 X 150 X 35	3314 70 X 150 X 63.5	4 Soft Packing x 1 Lantern Ring 118 x 86 x 16 x 110	4 Soft Packing x 1 Lantern Ring 118 x 86 x 16 x 114	Ø65

**Mechanical Seal Applications**

Pump Type	For Hm<100 mwc		For Hm>100mwc	
	Mech. Seal Dia. Suction	Mech. Seal Dia. Discharge	Mech. Seal Dia. Suction	Mech. Seal Dia. Discharge
KME 80	Ø50	Ø50	Ø50	Ø45
KME 100	Ø60	Ø60	Ø60	Ø60
KME 125	Ø65	Ø65	Ø65	Ø60
KME 150	Ø75	Ø75	Ø75	Ø70
KME 200	Ø85	Ø85	Ø85	Ø80

# KME Series

High Pressure Multistage Centrifugal Pumps

## Mechanical Seal Applications

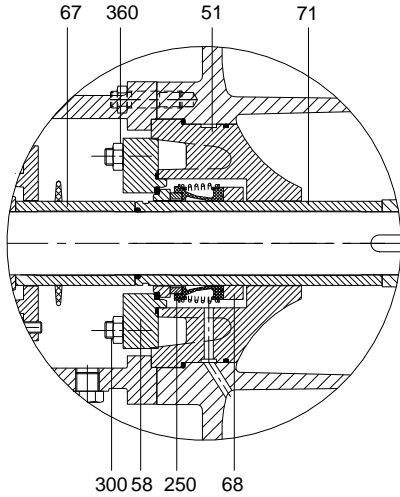


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### BURGMANN MG1

- Single Seal
- Unbalanced
- Elastomer Bellows
- Independent on direction of rotation

p <sub>1</sub>	: 12 Bar
t	: -20...120 °C
V <sub>g</sub>	: 10 m/s



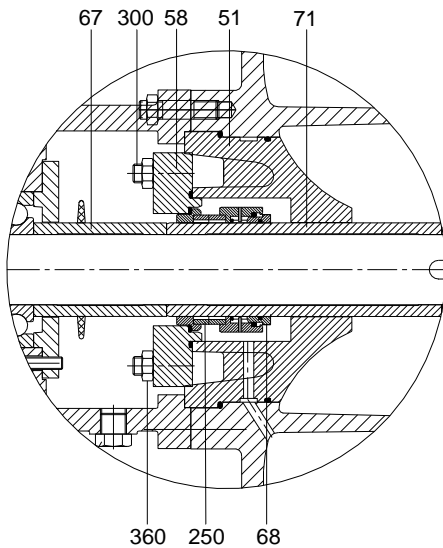
#### Part List

51	Stuffing Box
58	Mech. Seal Cover
67	Space Sleeve
68	Mech. Seal Front Sleeve
71	Seal Sleeve
250	Mechanical Seal
300	Mech. Seal Cover Stud
360	Mech. Seal Cover Nut

### BURGMANN HJ977GN

- Single Seal
- Balanced
- Spring, product protected
- Independent on direction of rotation

p <sub>1</sub>	: 25 Bar
t	: -20...180 °C
V <sub>g</sub>	: 10 m/s



#### Part List

51	Stuffing Box
58	Mech. Seal Cover
67	Space Sleeve
68	Mech. Seal Front Sleeve
71	Seal Sleeve
250	Mechanical Seal
300	Mech. Seal Cover Stud
360	Mech. Seal Cover Nut



# KME Series

High Pressure Multistage Centrifugal Pumps

## Mechanical Seal Applications

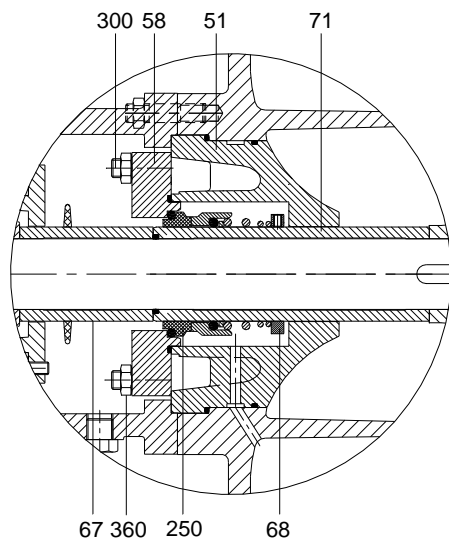


Mas Grup

### BURGMANN M3N

- Single Seal
- Unbalanced
- Conical Spring
- Dependent on direction of rotation

$p_1$	: 10 Bar
$t$	: -20...180 °C
$V_g$	: 10 m/s



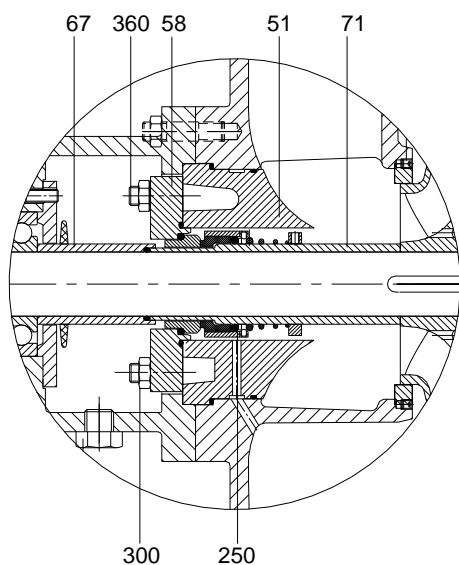
#### Part List

51	Stuffing Box
67	Space Sleeve
68	Mech. Seal Front Sleeve
71	Seal Sleeve
250	Mechanical Seal
300	Mech. Seal Cover Stud
360	Mech. Seal Cover Nut

### BURGMANN H12N

- Single Seal
- Balanced
- Conical Spring
- Dependent on direction of rotation

$p_1$	: 25 Bar
$t$	: -20...220 °C
$V_g$	: 15 m/s



#### Part List

51	Stuffing Box
67	Space Sleeve
68	Mech. Seal Front Sleeve
71	Seal Sleeve
250	Mechanical Seal
300	Mech. Seal Cover Stud
360	Mech. Seal Cover Nut

# KME Series

High Pressure Multistage Centrifugal Pumps

Balancing Disc Applications



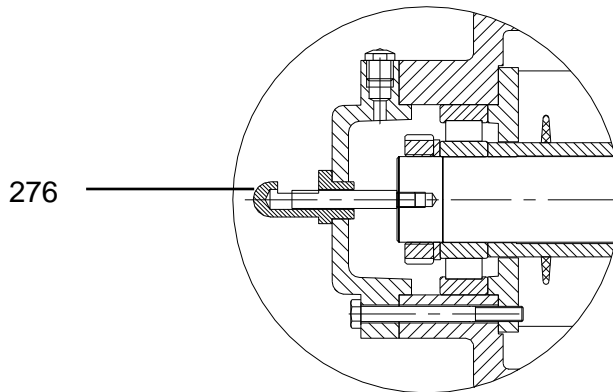
Mas Grup

## Stage Number and Bearing Properties for Balance Disc Applications

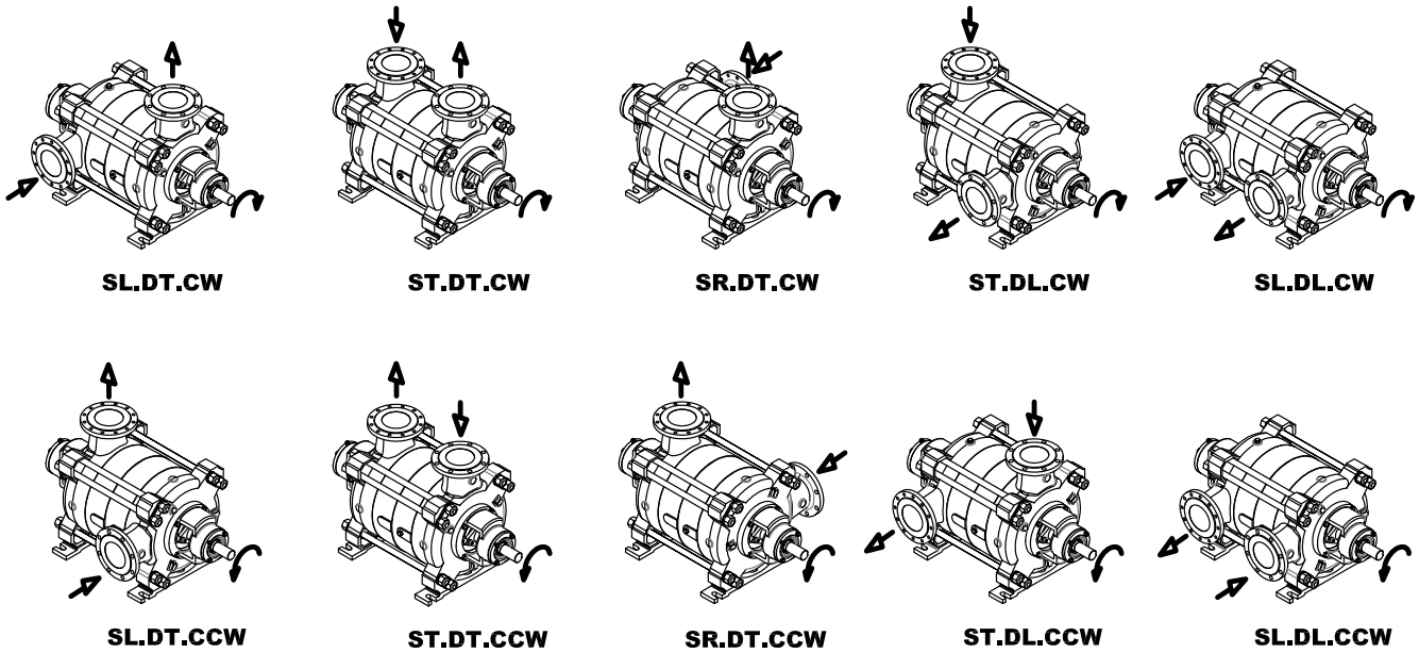
Pump Type	Stage Number		Bearing (Motor Side)	Bearing (Dead Side)
	Min.	Max.		
KME 80	11	15	NU 308 40 X 90 X 23	NU 308 40 X 90 X 23
KME 100	9	14	NU 309 45 X 100 X 25	NU 309 45 X 100 X 25
KME 125	6	13	NU 311 50 X 110 X 27	NU 311 50 X 110 X 27
KME 150	6	8	NU 313 60 X 130 X 31	NU 313 60 X 130 X 31
KME 200	4	6	NU 314 70 X 150 X 35	NU 314 70 X 150 X 35

### \*\*\* Wearing Gauge

Showing how much the balance disc is worn.



## Different Mounting Arrangements for KME



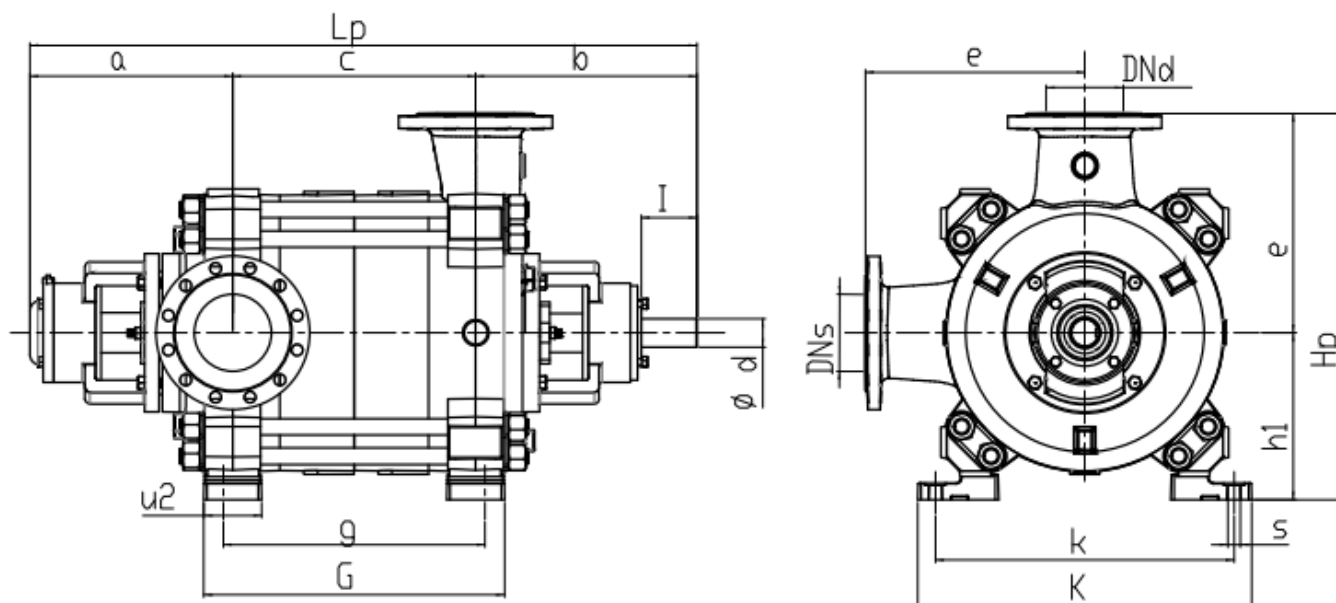
Example: SL-DT-CW

(SL: Suction Left - DT: Discharge Top - CW: Rotation Clock Wise)

**KME Series**  
High Pressure Multistage Centrifugal Pumps  
**Pump Dimensions**



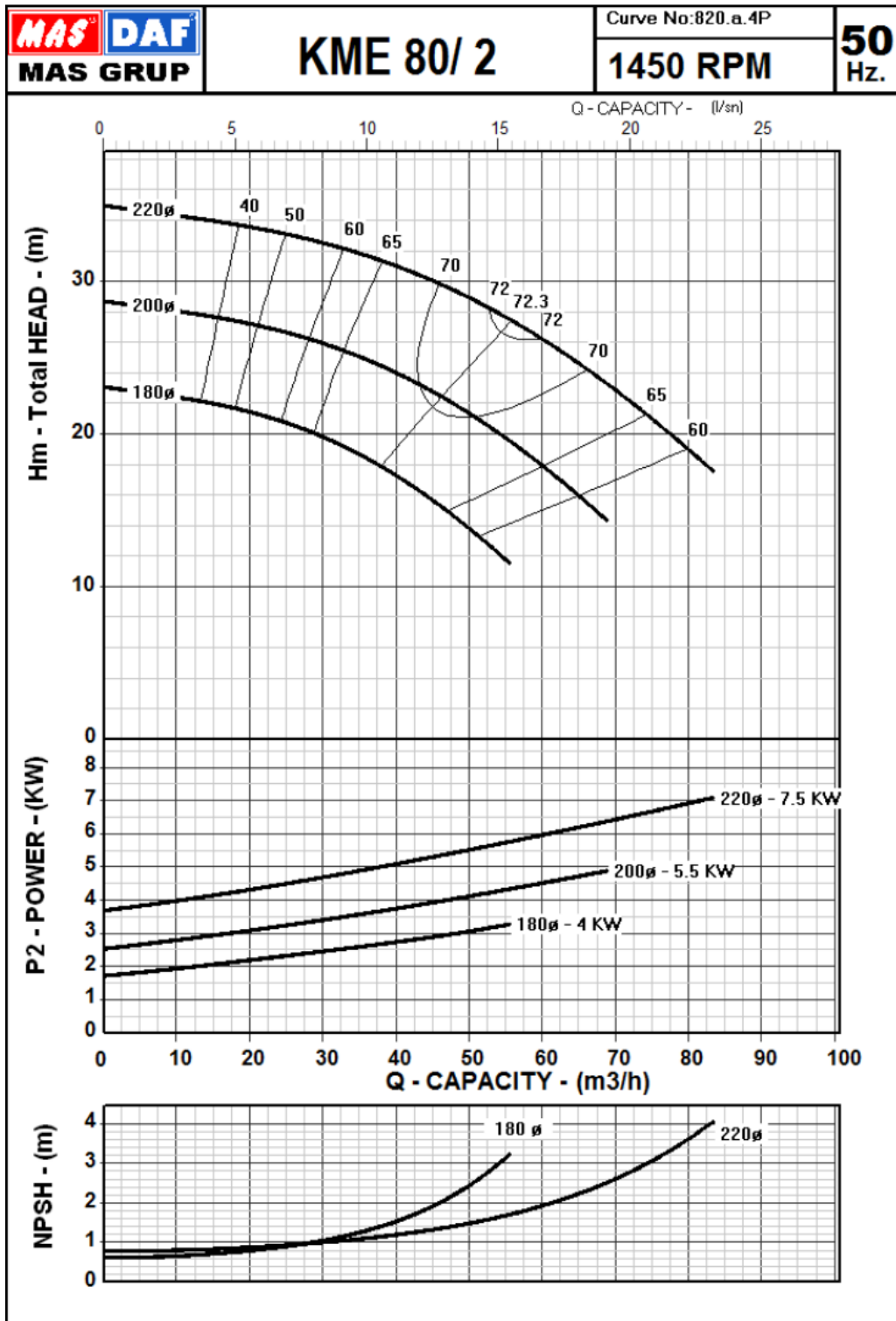
**Mas Grup**

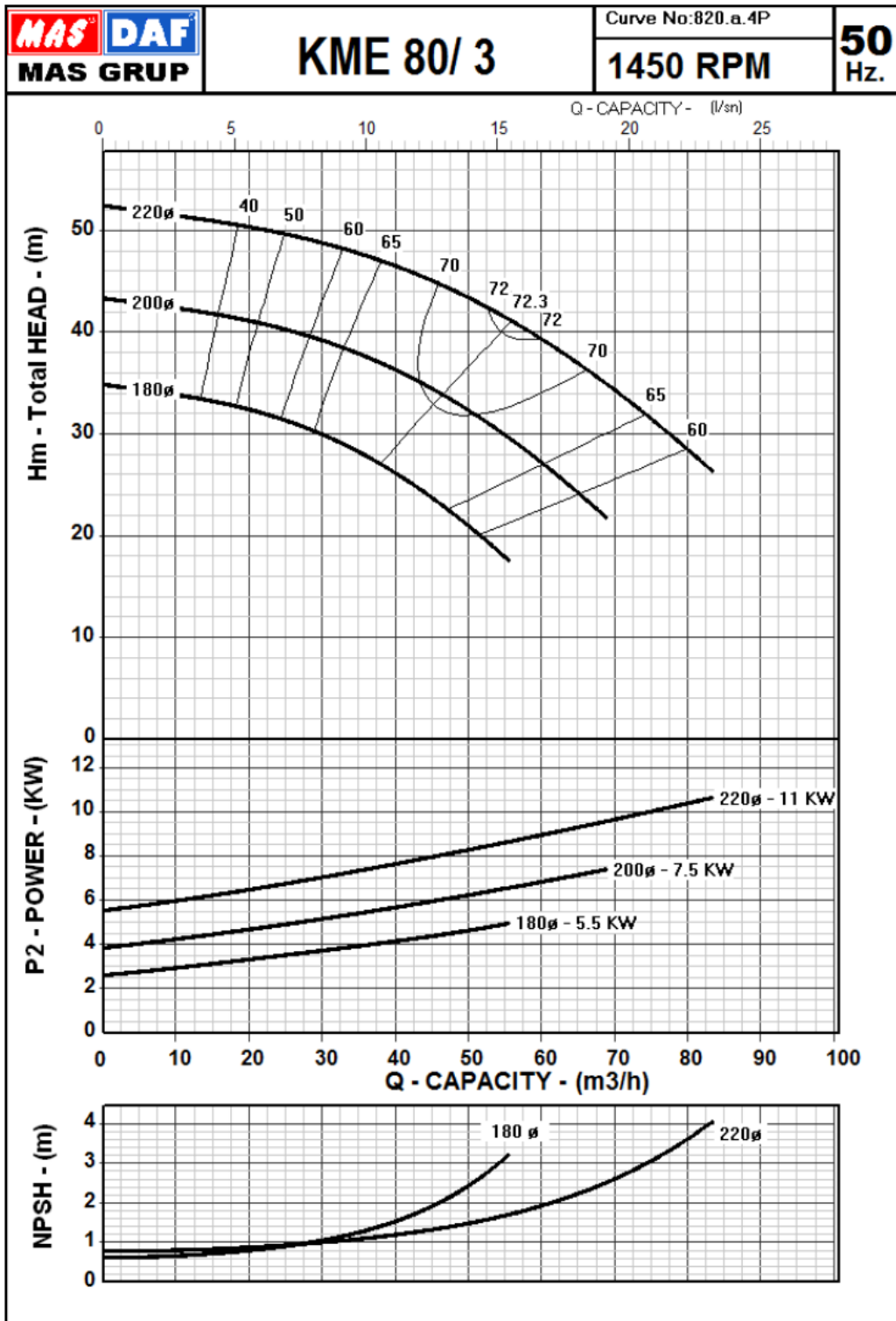


Pump Type	Dn s mm ø	Dn d mm ø	a	b	Lp	g	G	u2	h1	e	hp	d	l	k	K	s
KME 80	100	80	243	324	C+567	C+67	C+113	70	205	265	470	35	80	366	418	18
KME 100	125	100	281	378	C+659	C+83	C+134	82	245	300	545	40	110	440	502	20
KME 125	150	125	346	398	C+744	C+110	C+176	97	285	375	660	45	110	520	592	24
KME 150	200	150	393	438	C+832	C+133	C+196	113	320	425	745	55	120	589	658	24
KME 200	250	200	467	564	C+1033	C+153	C+228	115	372,5	500	872,5	65	140	690	795	26

**Dimension "C" according to the number of stages**

Pump Type	2	3	4	5	6	7	8	9	10	11	12	13	14	15
KME 80	191	274	357	440	523	606	689	772	855	938	1021	1104	1187	1270
KME 100	236	343	446	551	656	761	866	971	1076	1181	1286	1391	1496	
KME 125	282	410	538	666	794	922	1050	1178	1306	1434	1562	1690		
KME 150	320	465	610	755	900	1045	1190							
KME 200	404	574	744	914	1084									



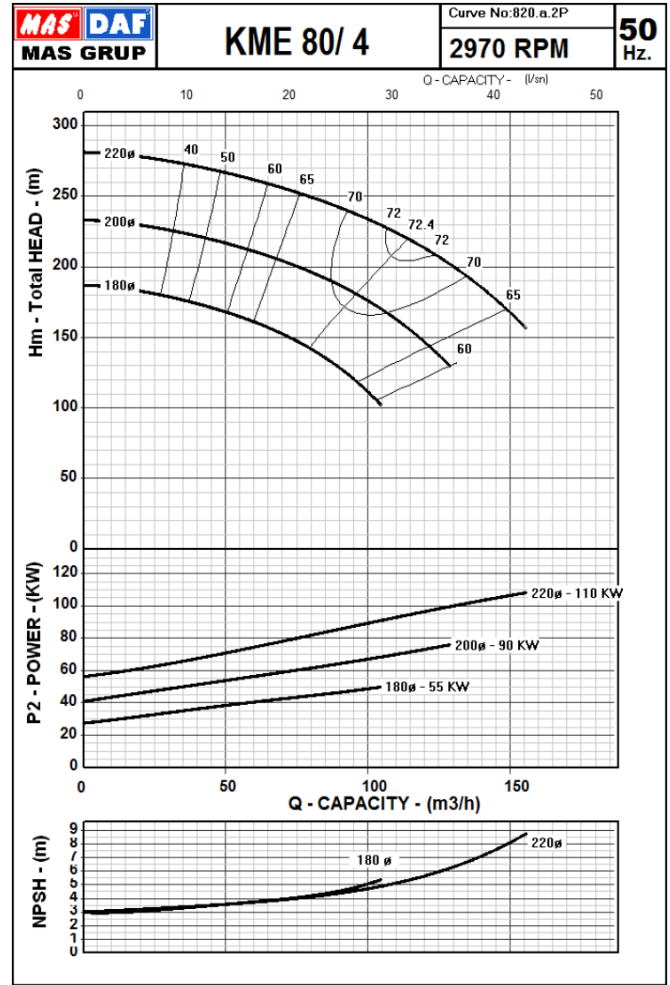
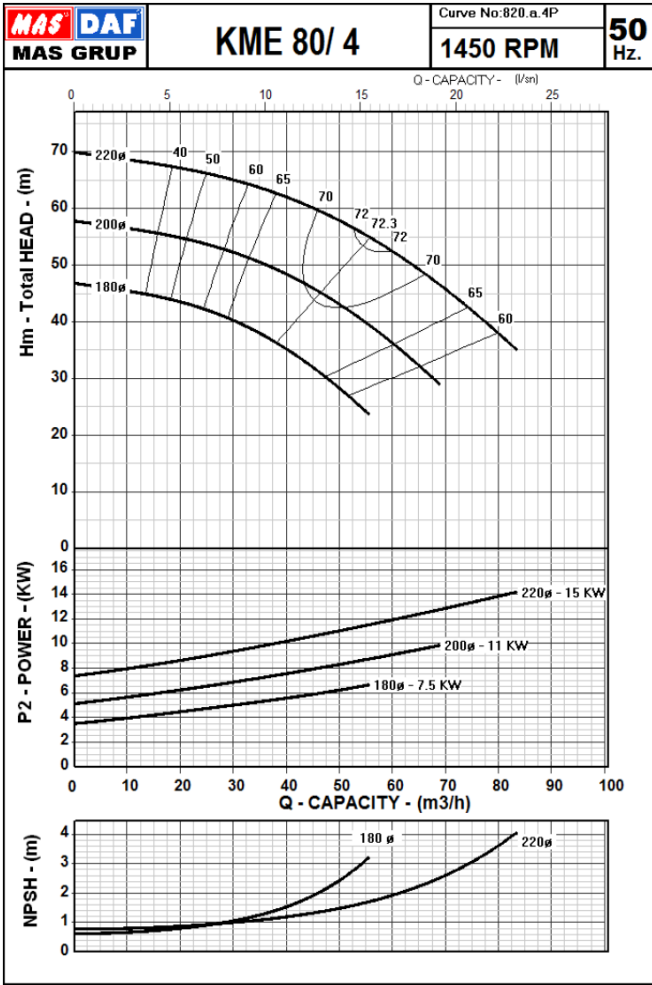


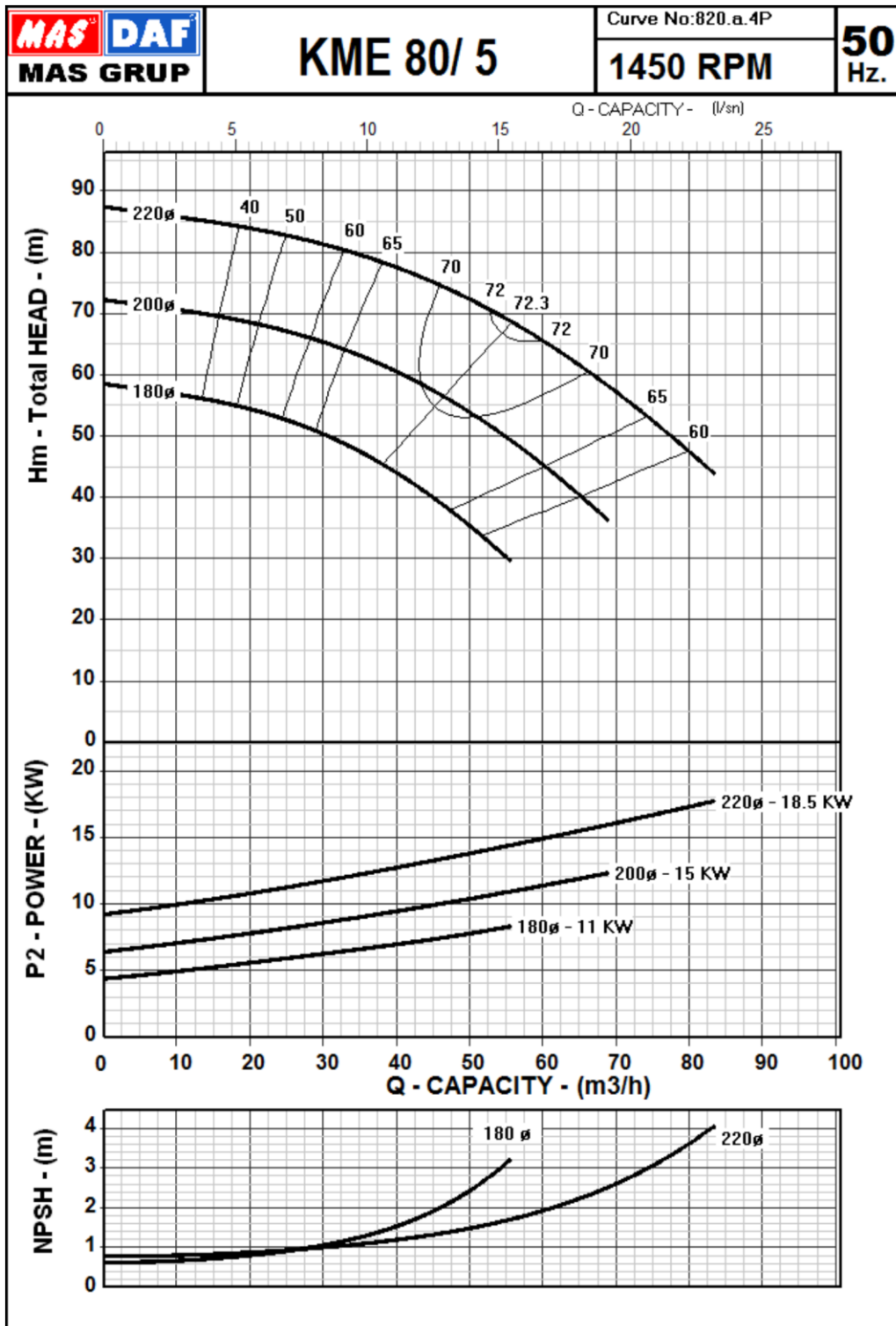
**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

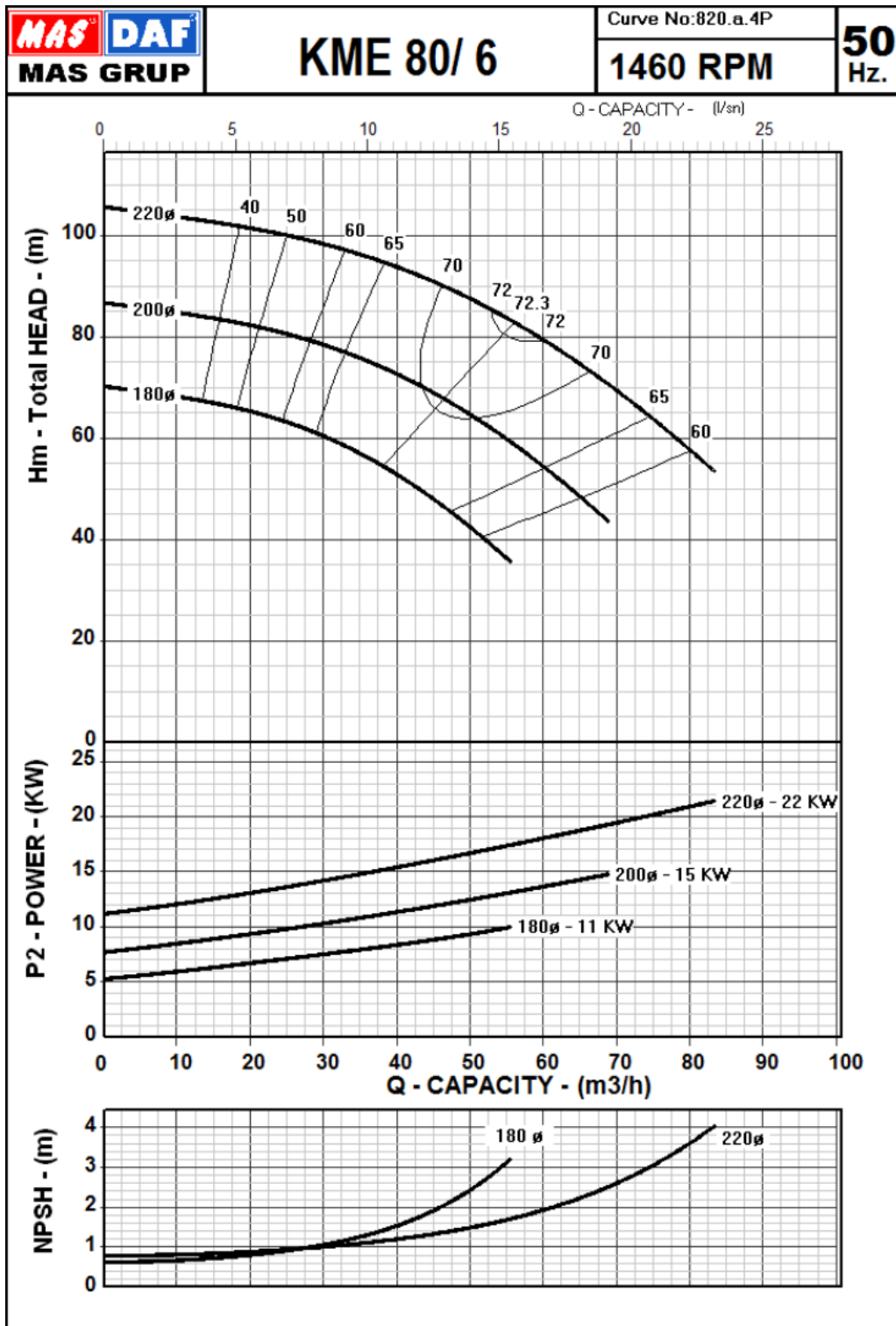


**KME 80 / 4**

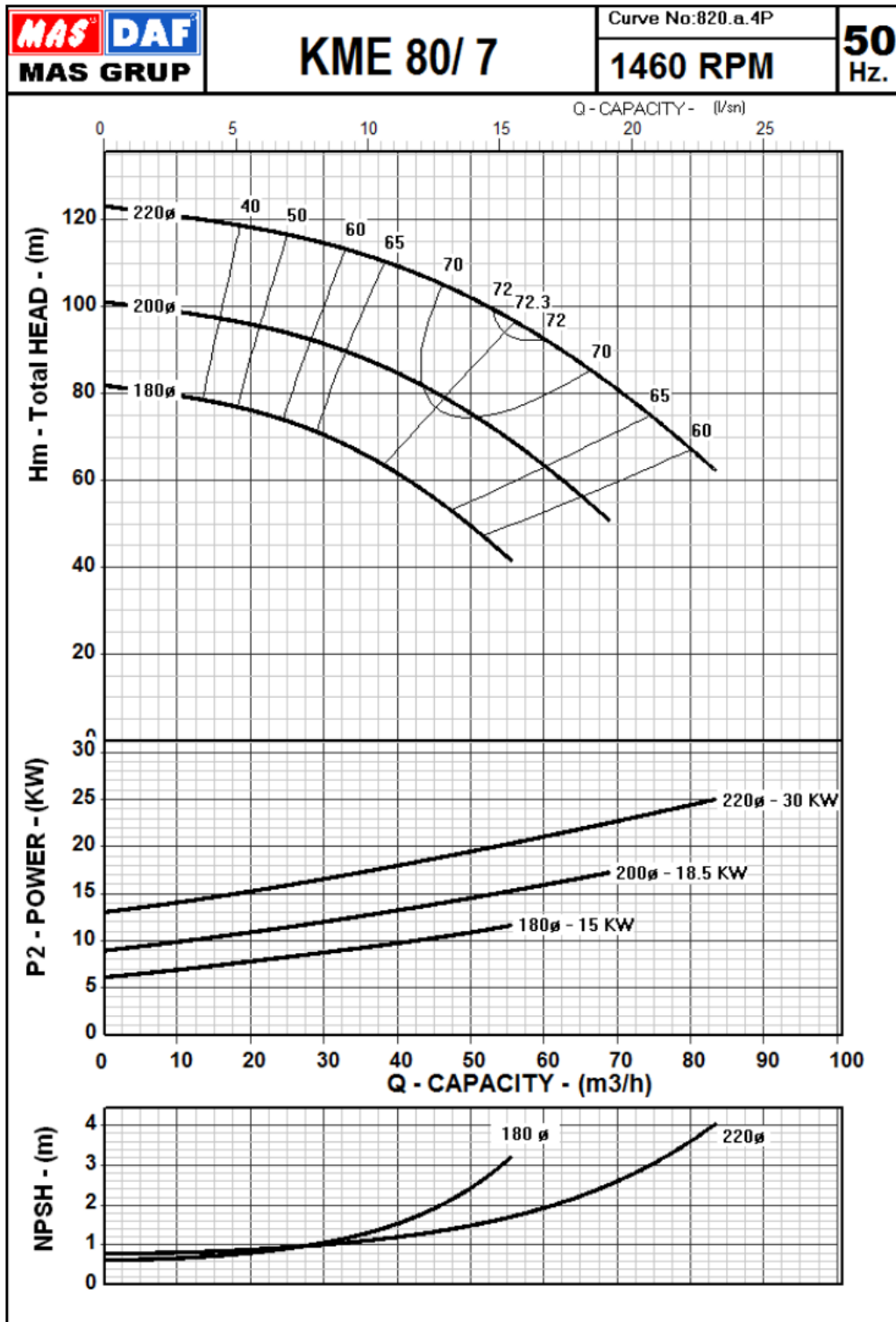
**Mas Grup**

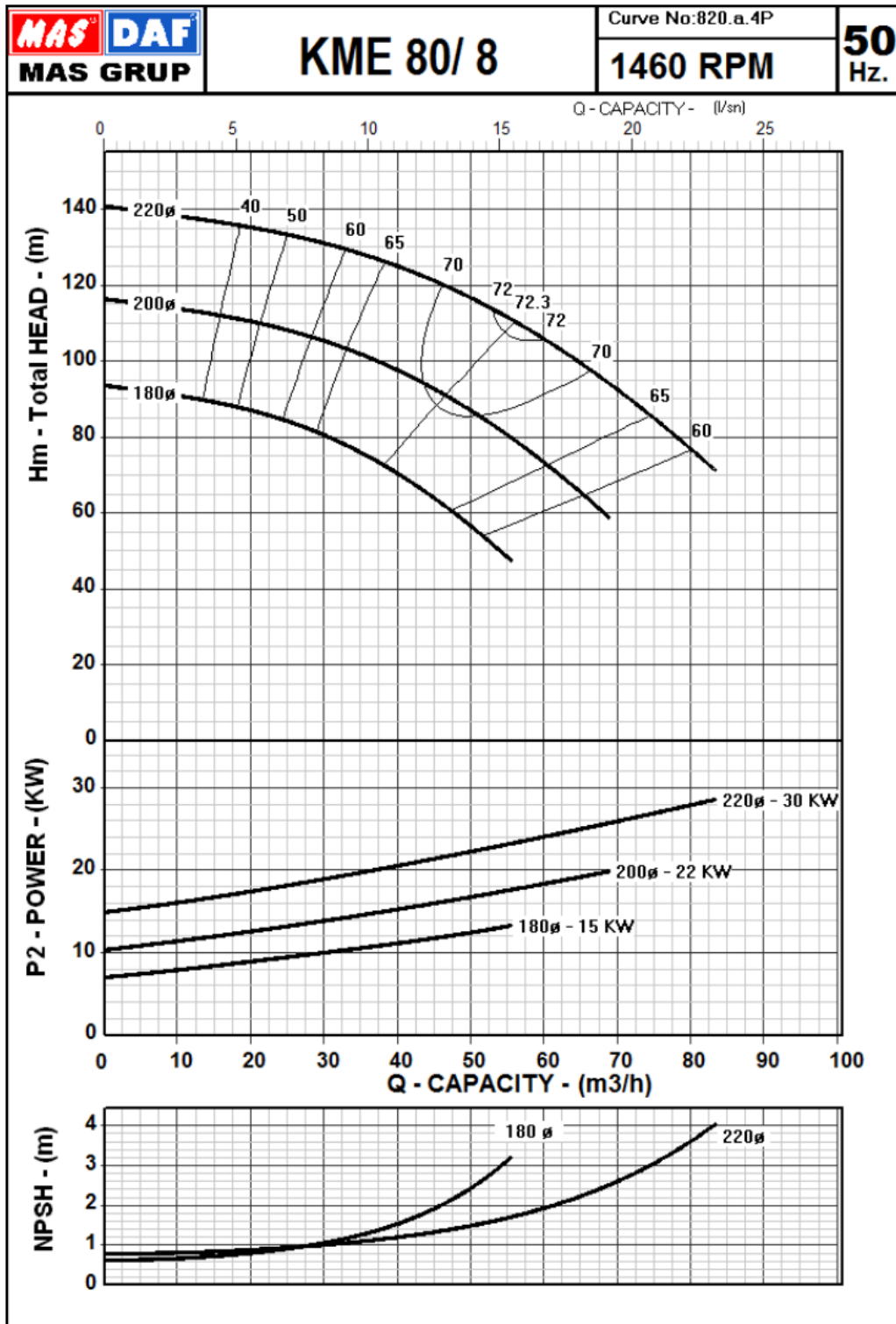


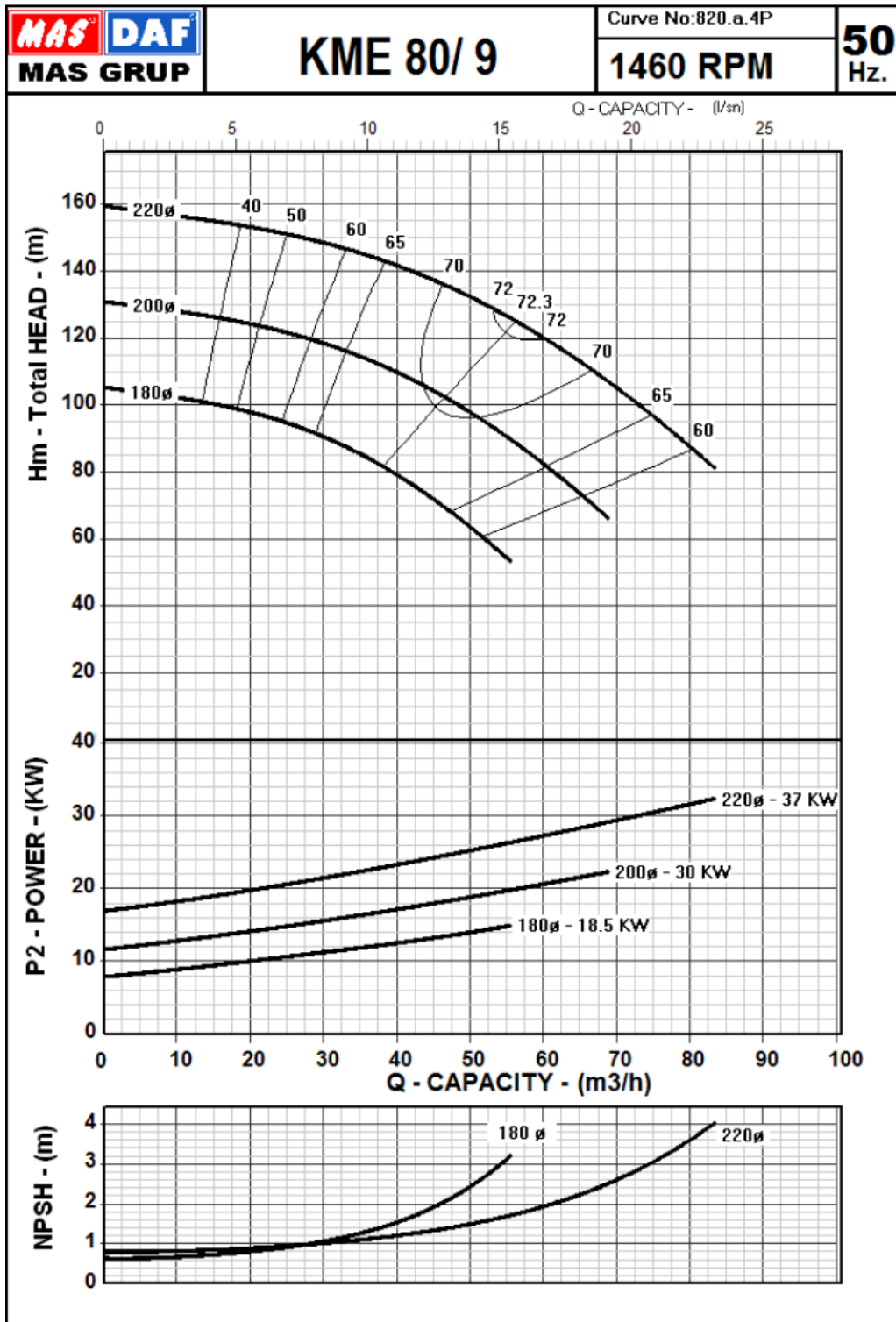


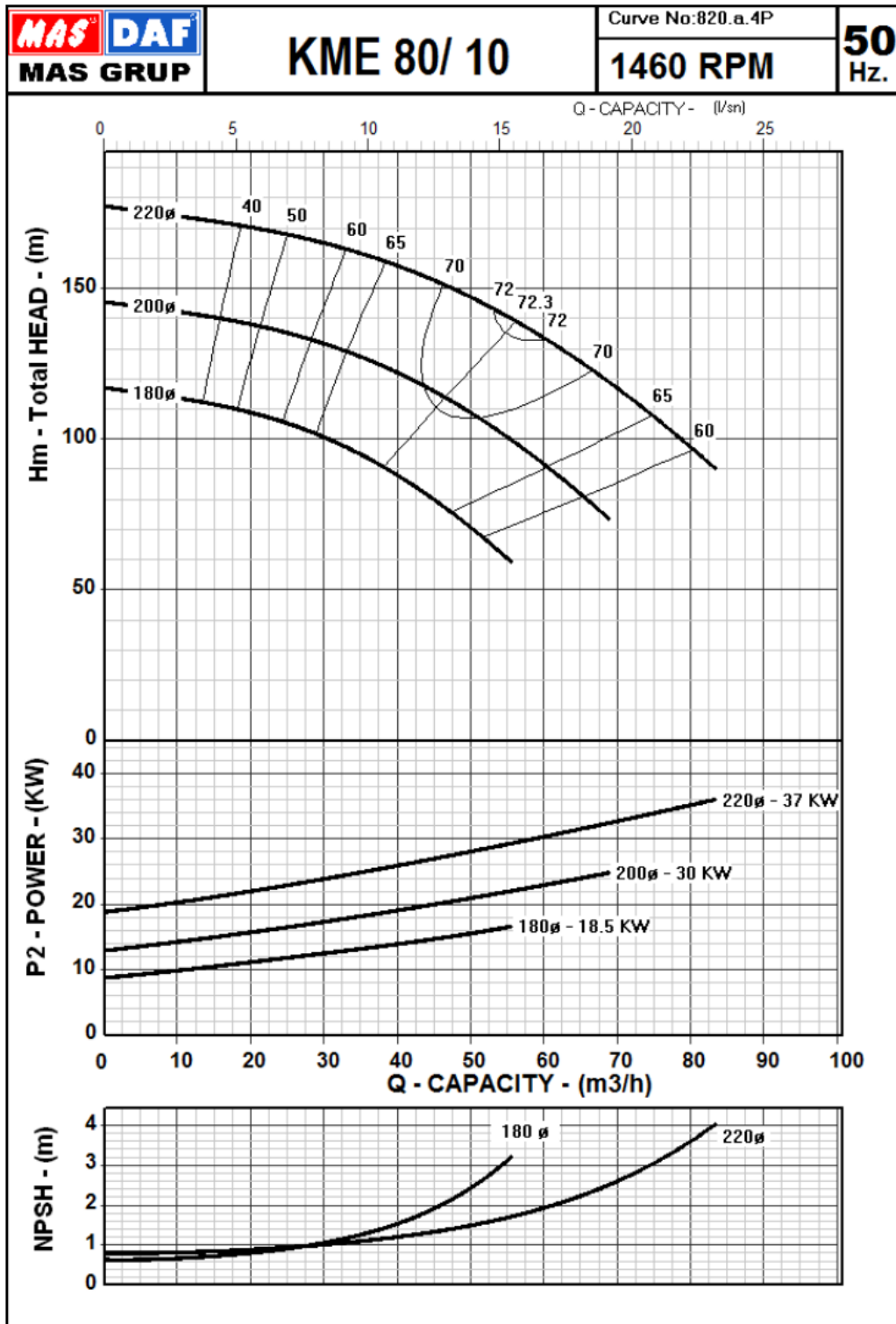


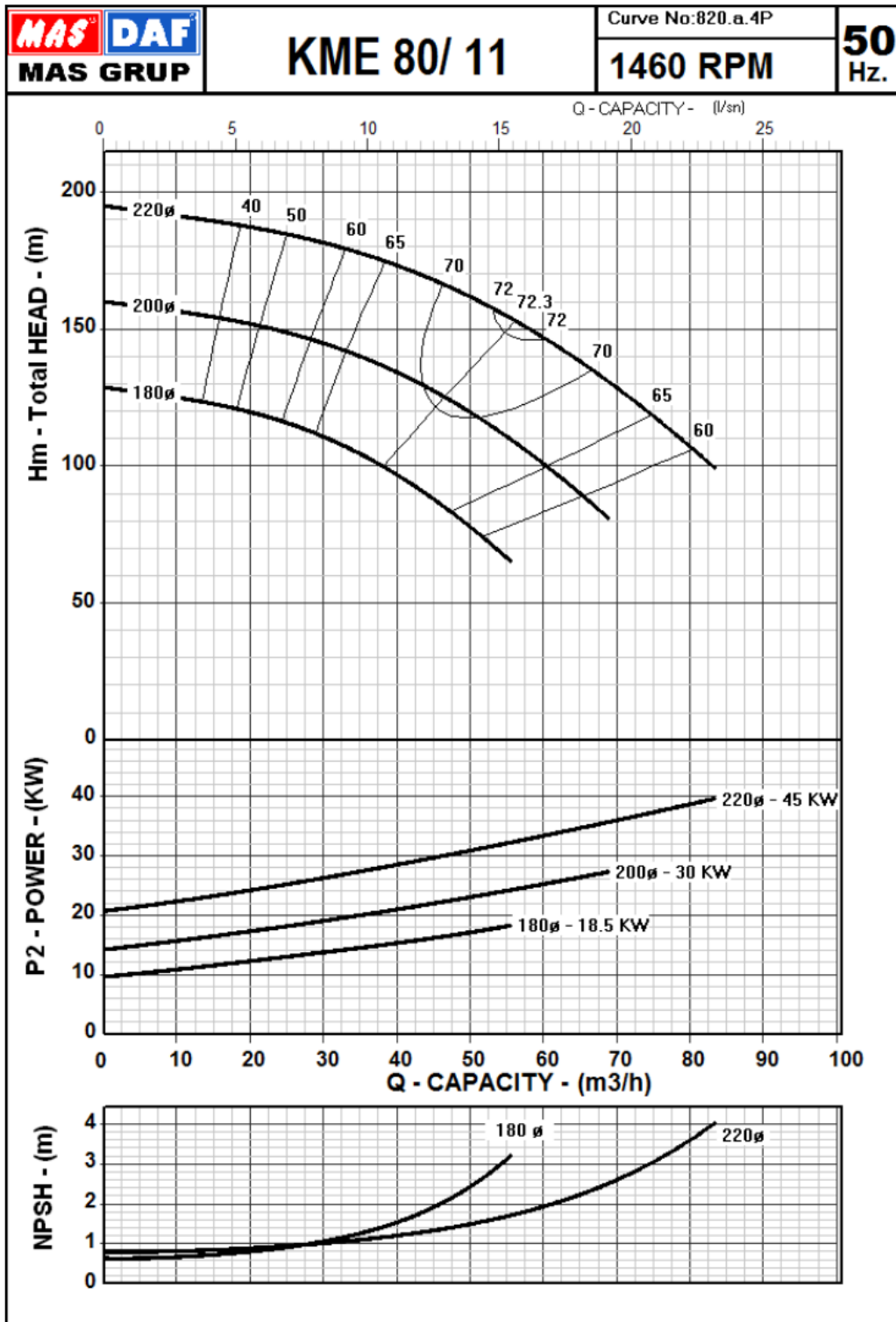


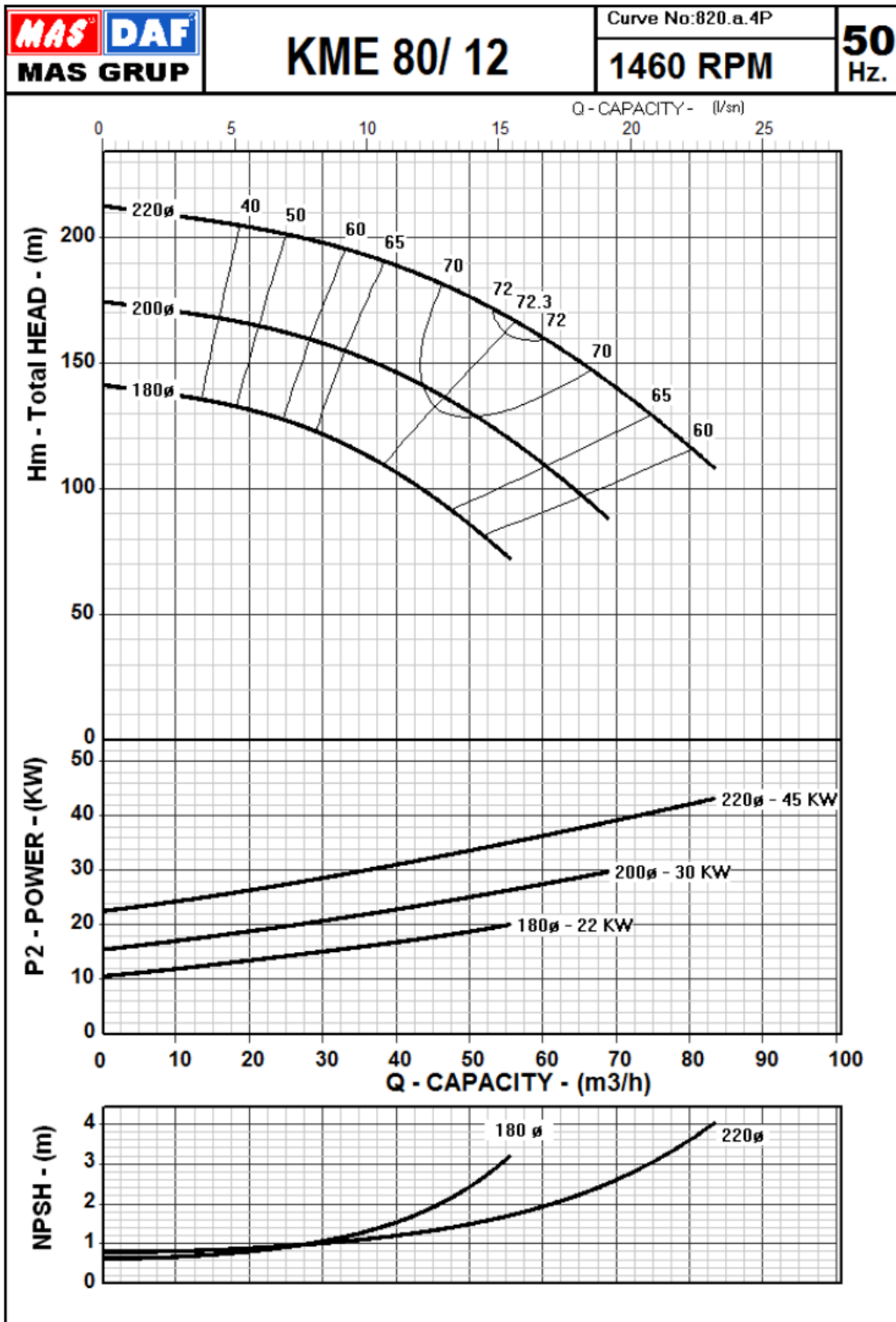


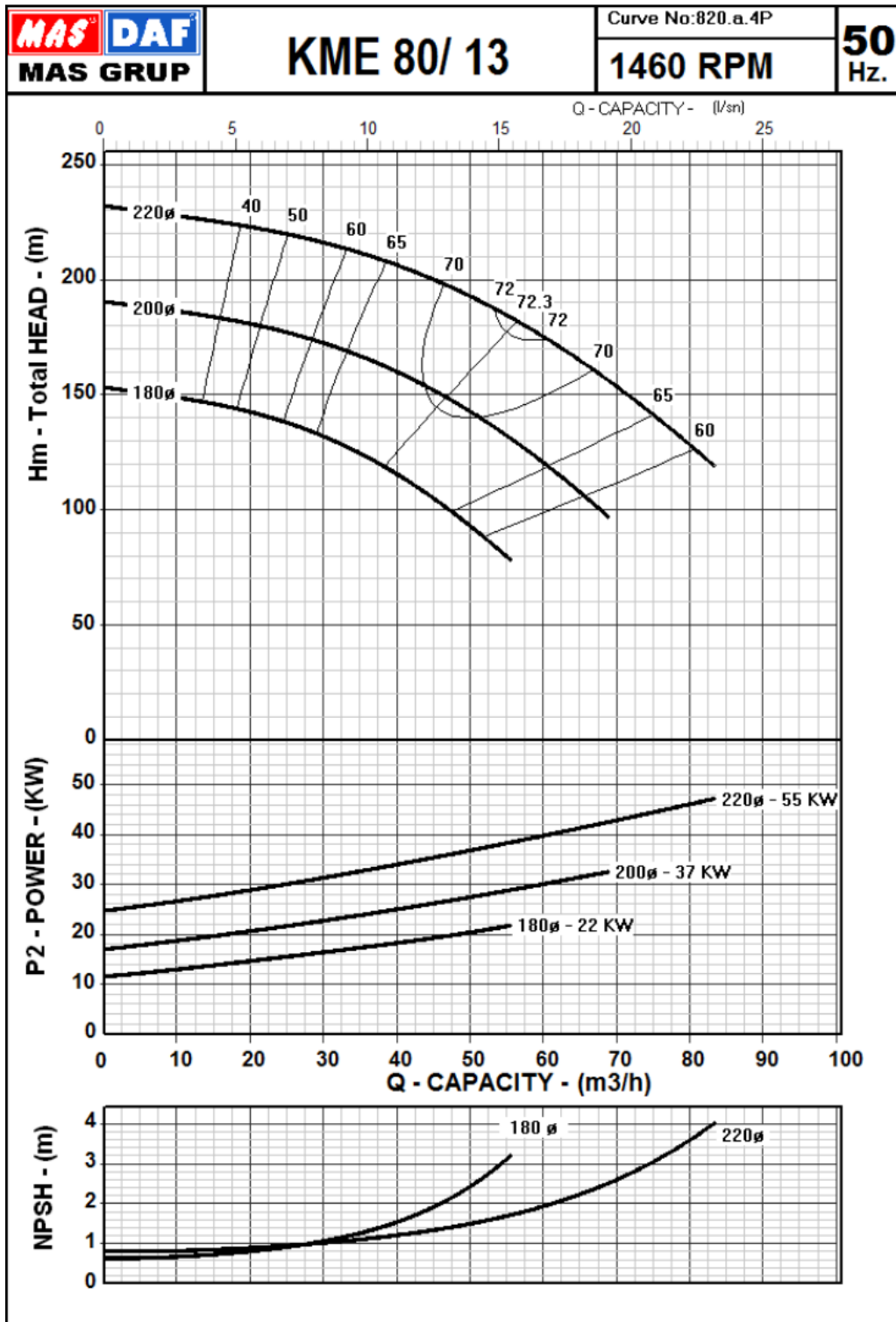


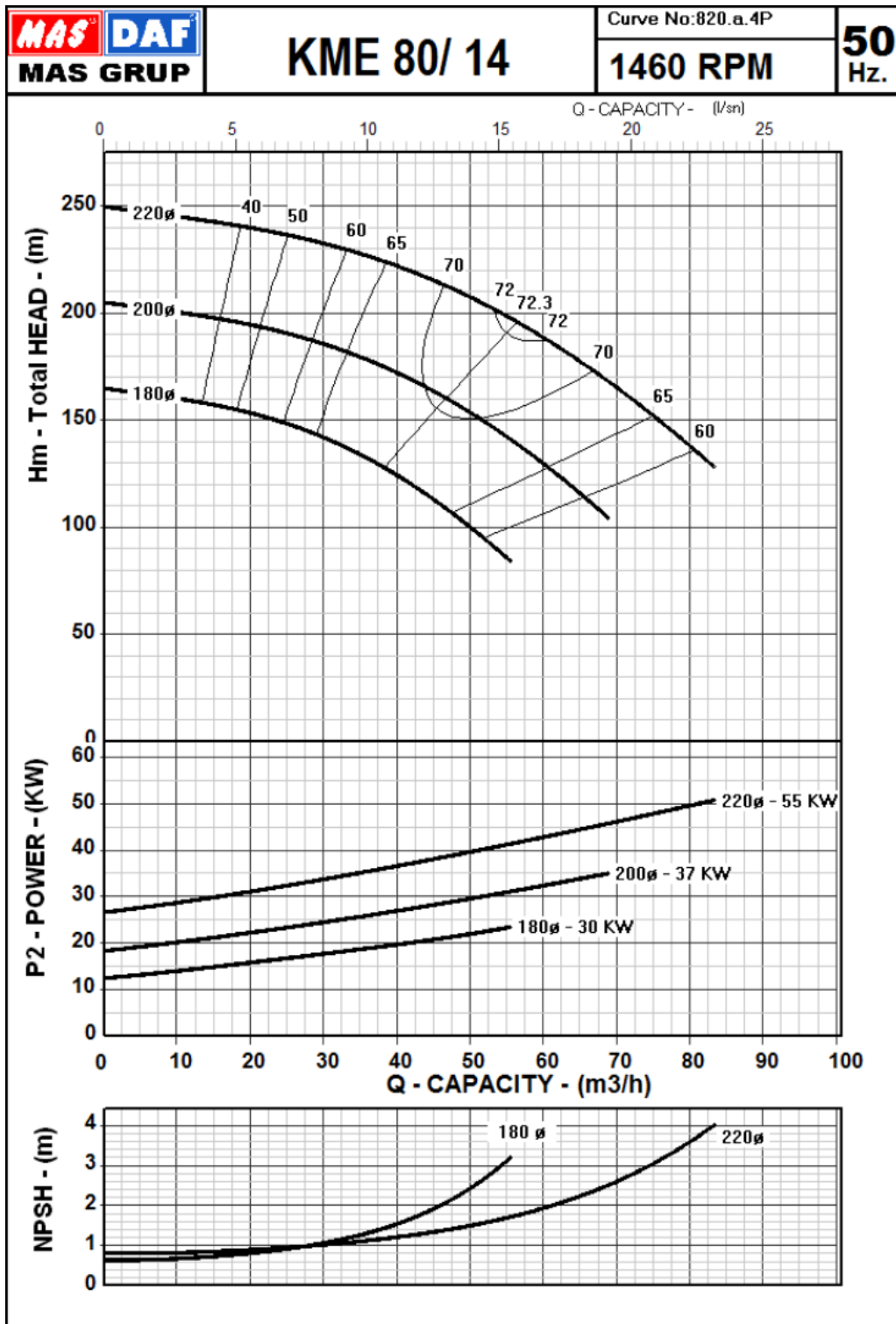












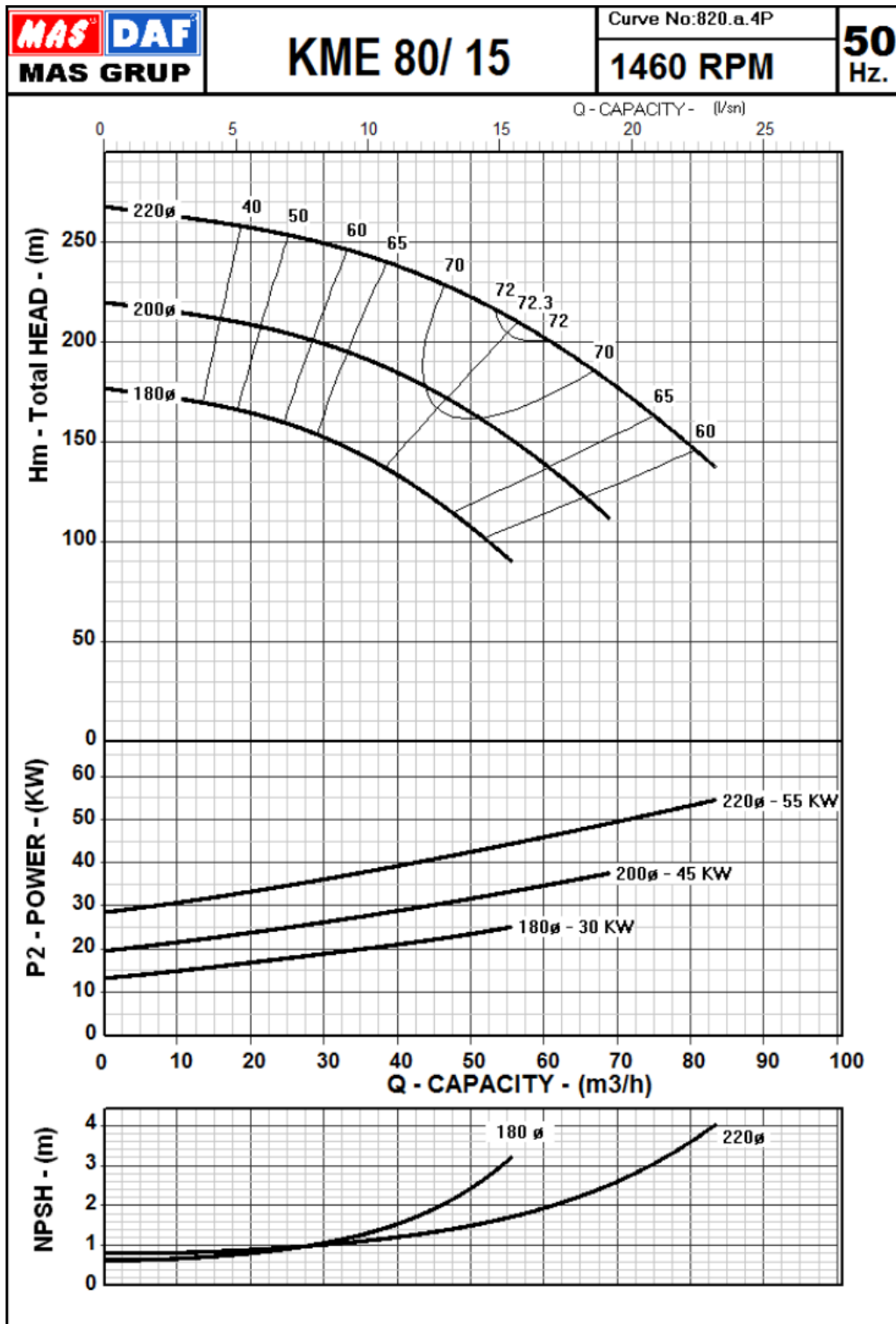


**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

**KME 80 / 15**



**Mas Grup**

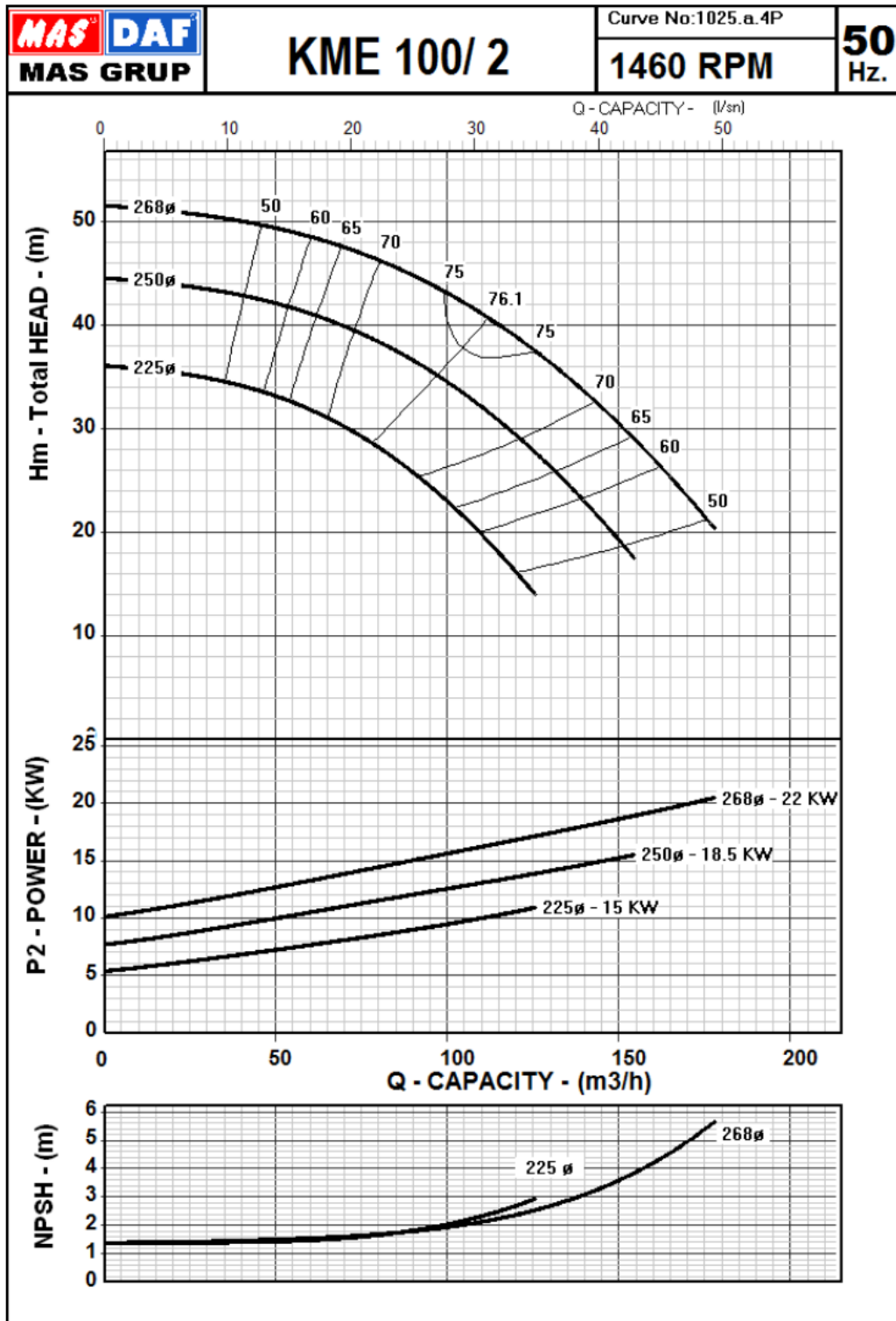


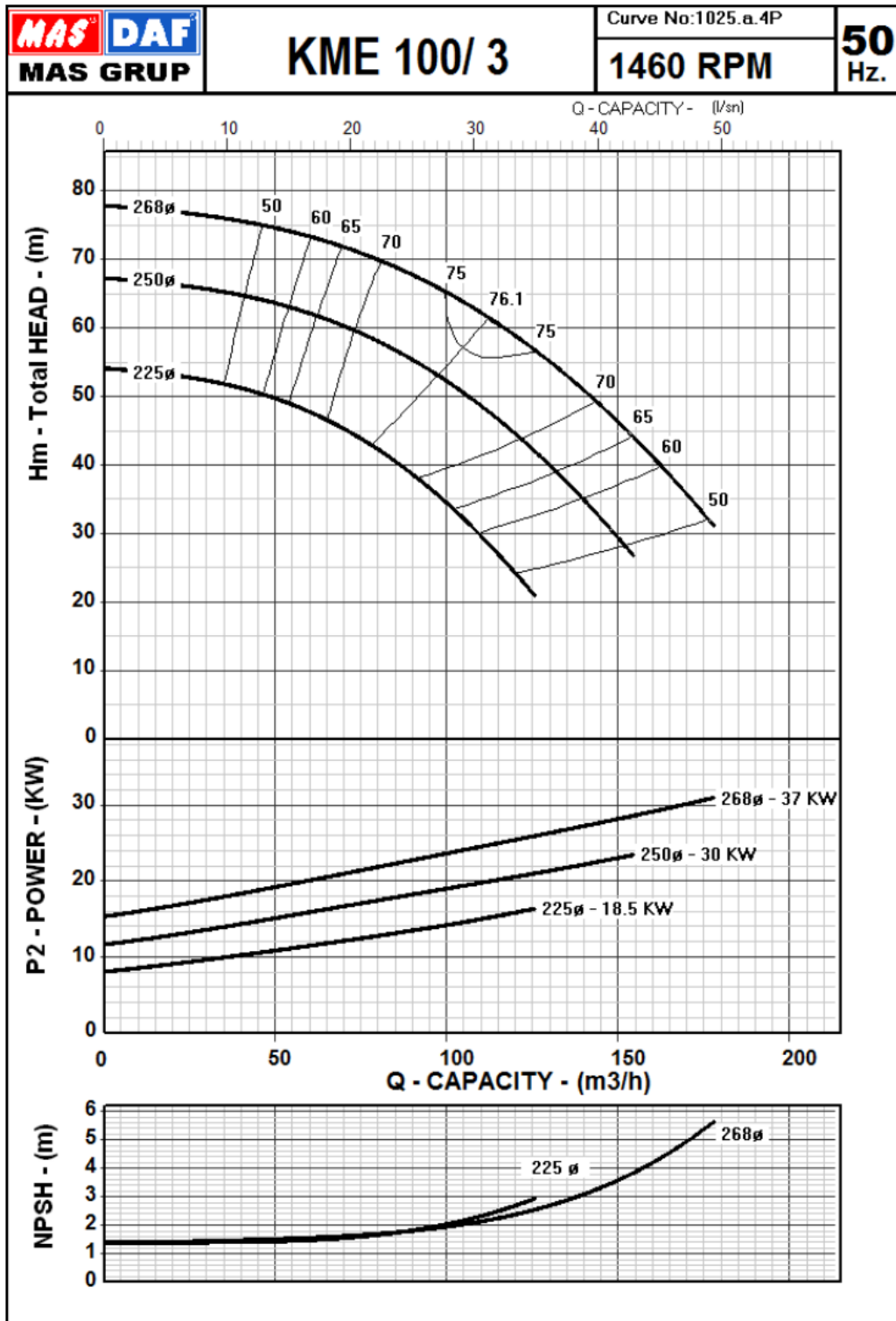
**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

**KME 100 / 2**



**Mas Grup**



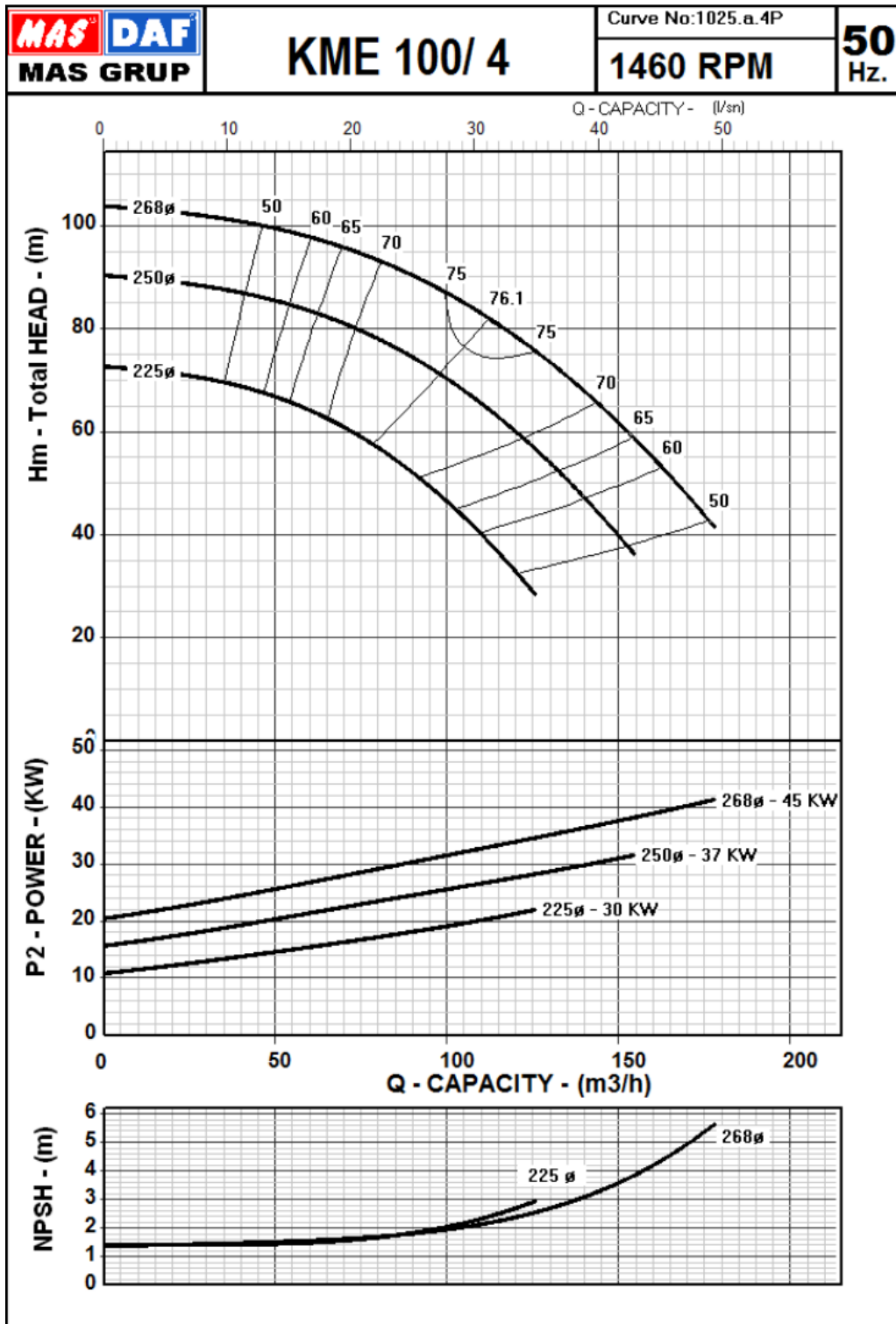


**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

**KME 100 / 4**



**Mas Grup**

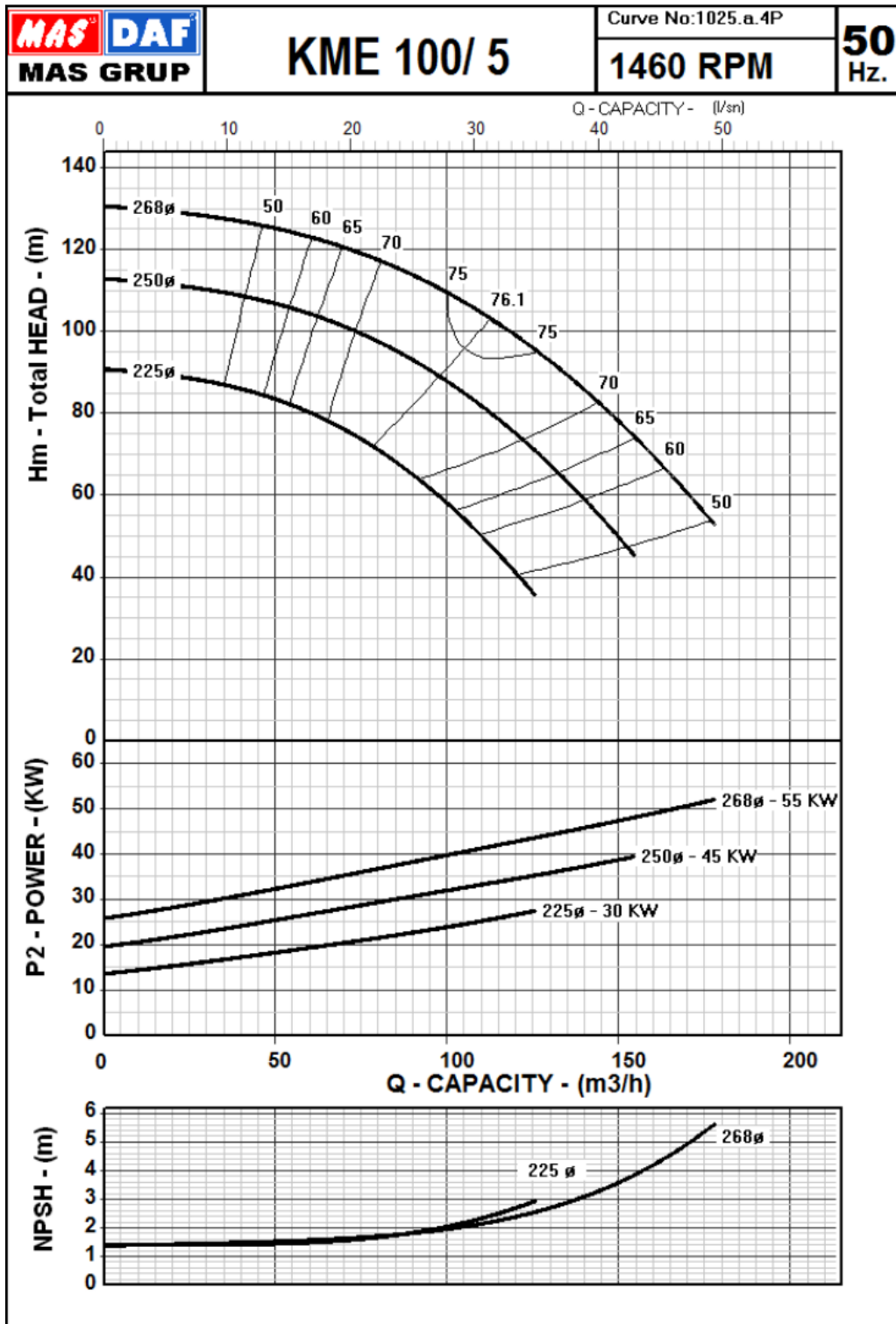


**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

**KME 100 / 5**



**Mas Grup**

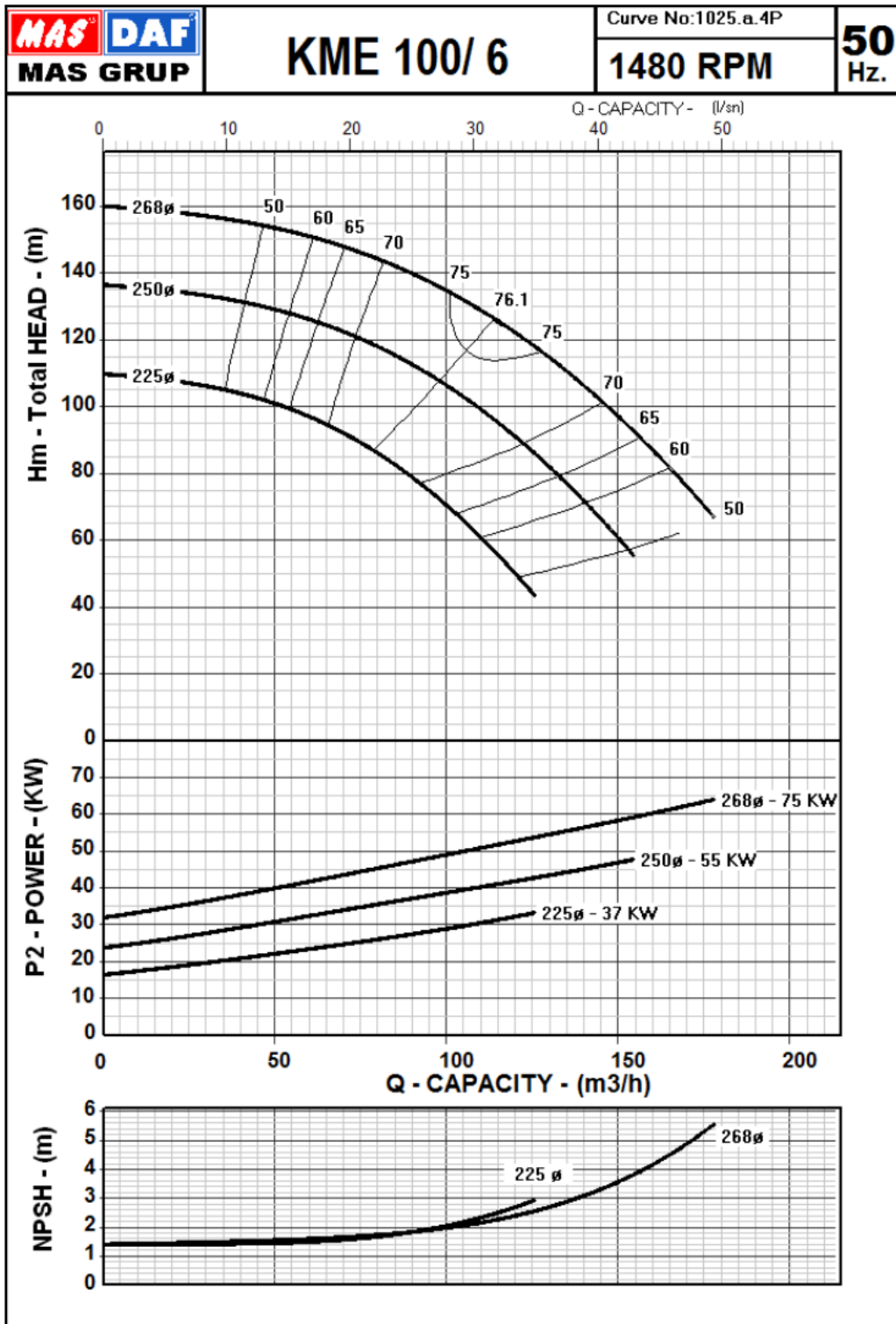


**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

**KME 100 / 6**



**Mas Grup**

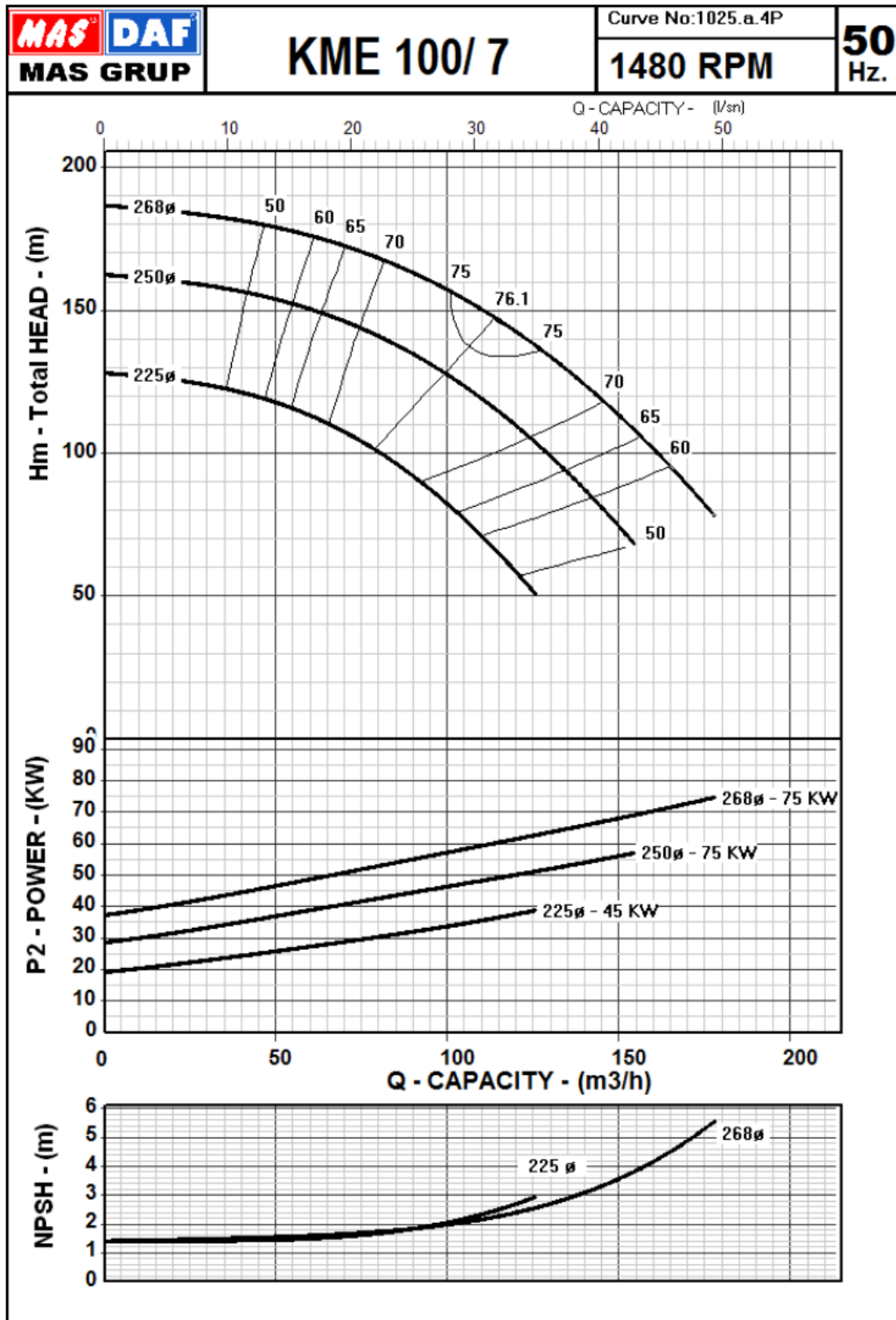


**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

**KME 100 / 7**



**Mas Grup**

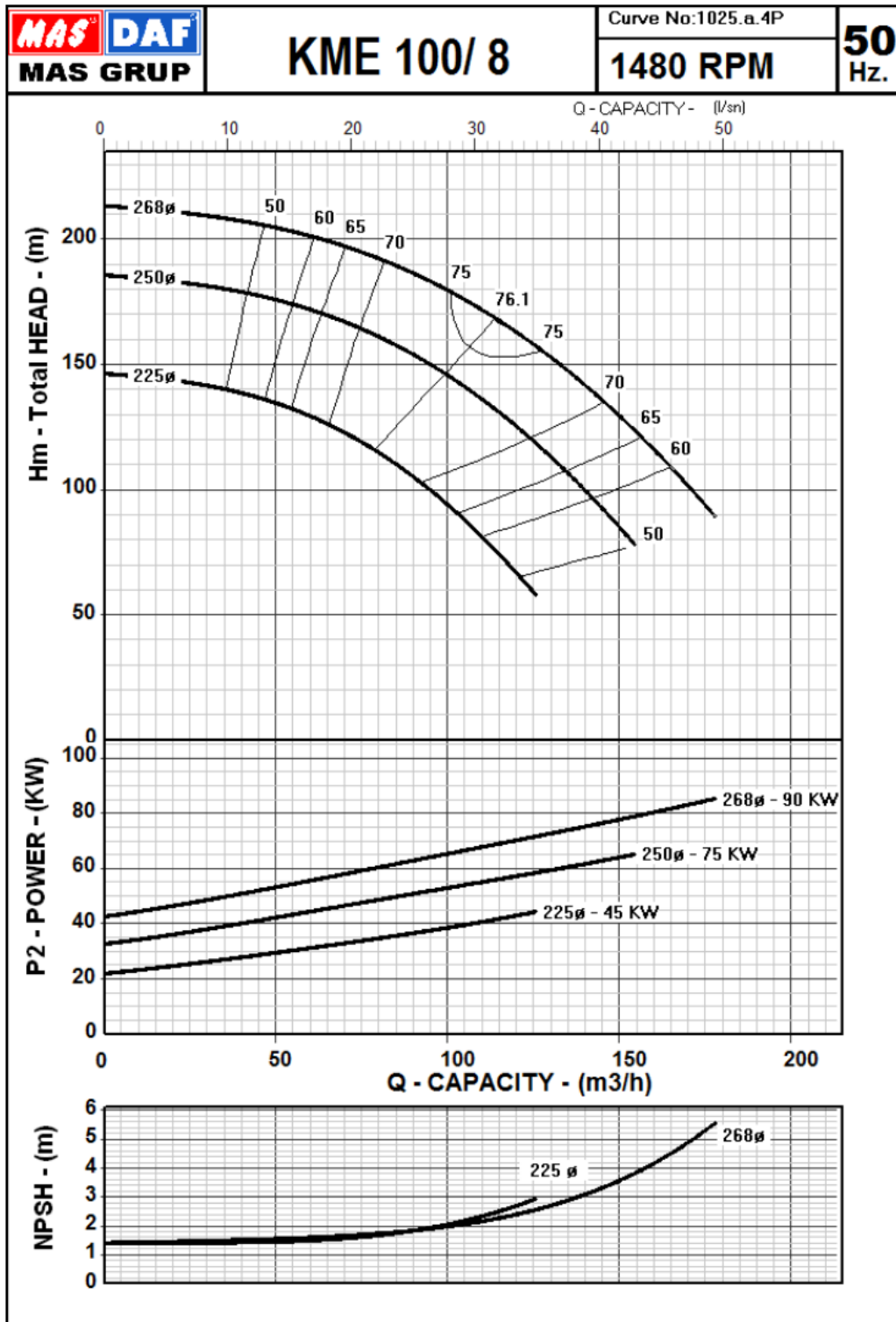


**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

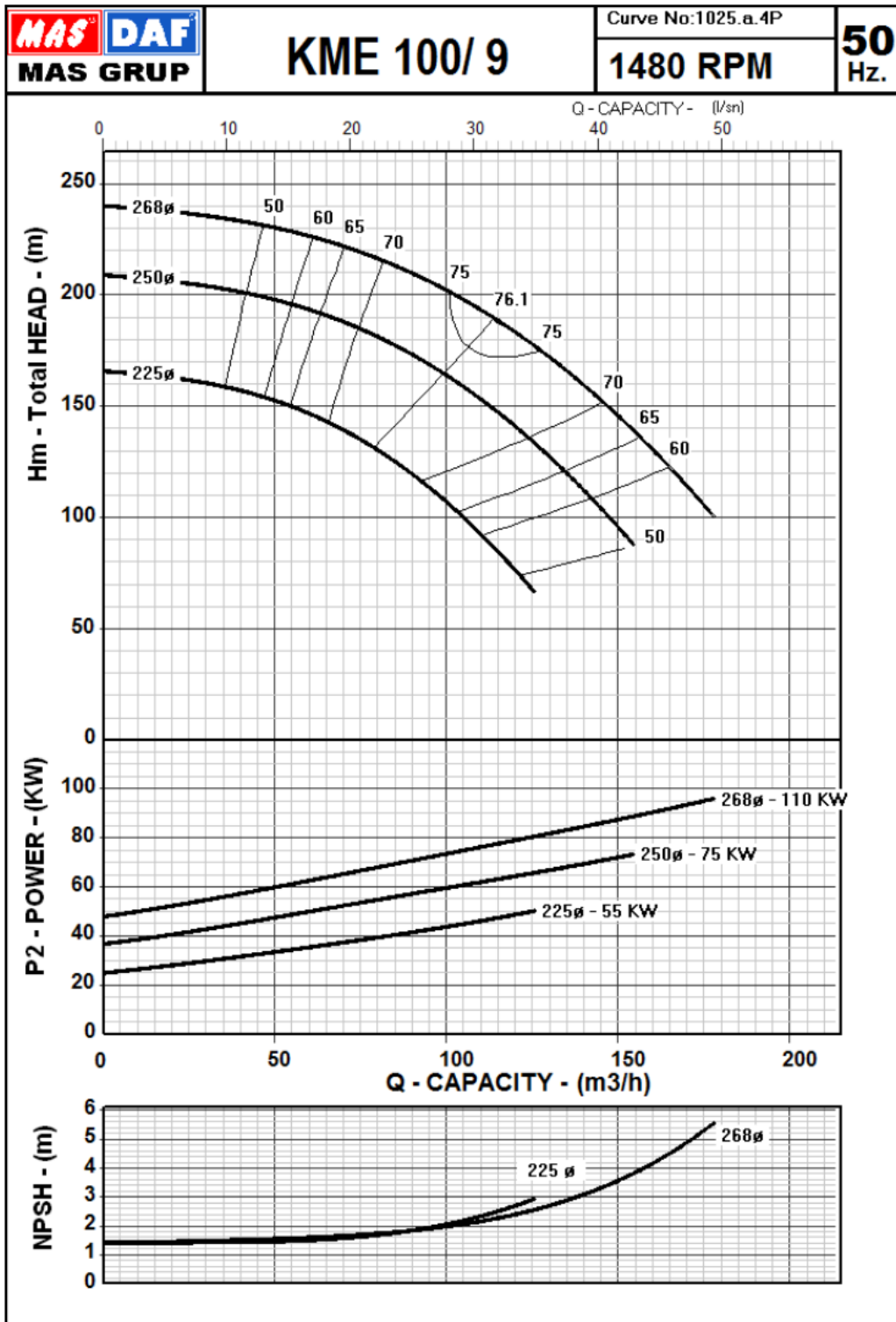


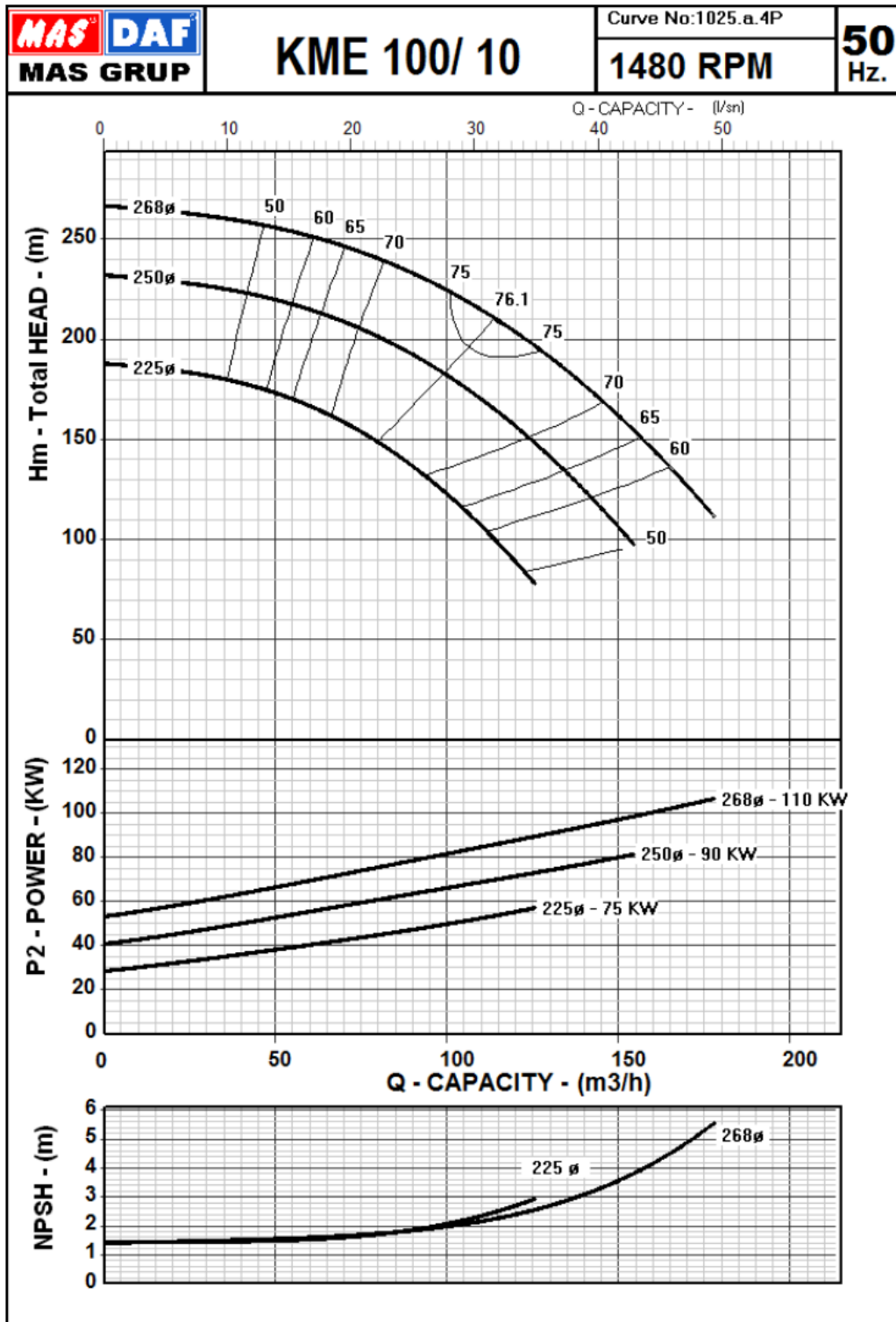
**KME 100 / 8**

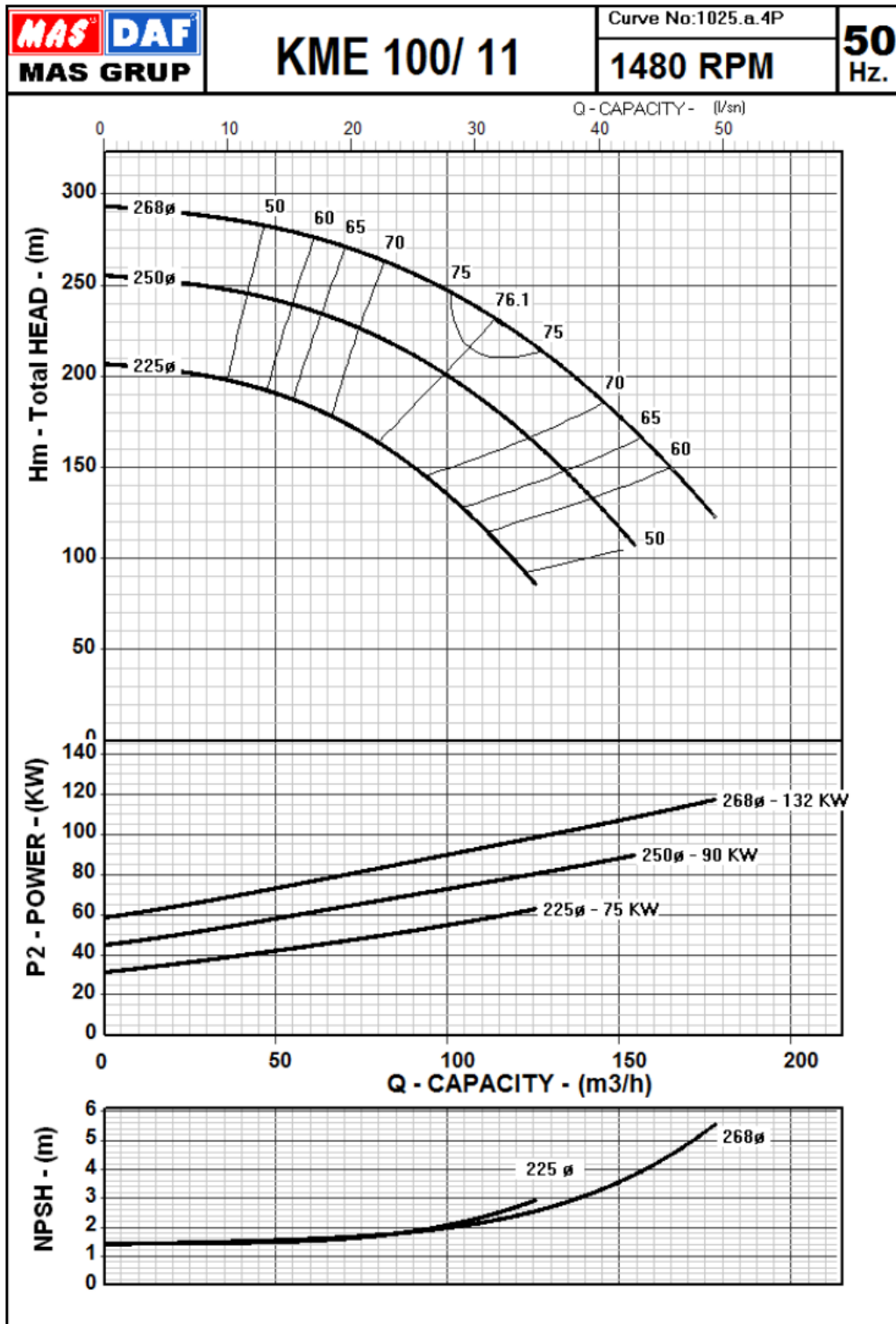
**Mas Grup**









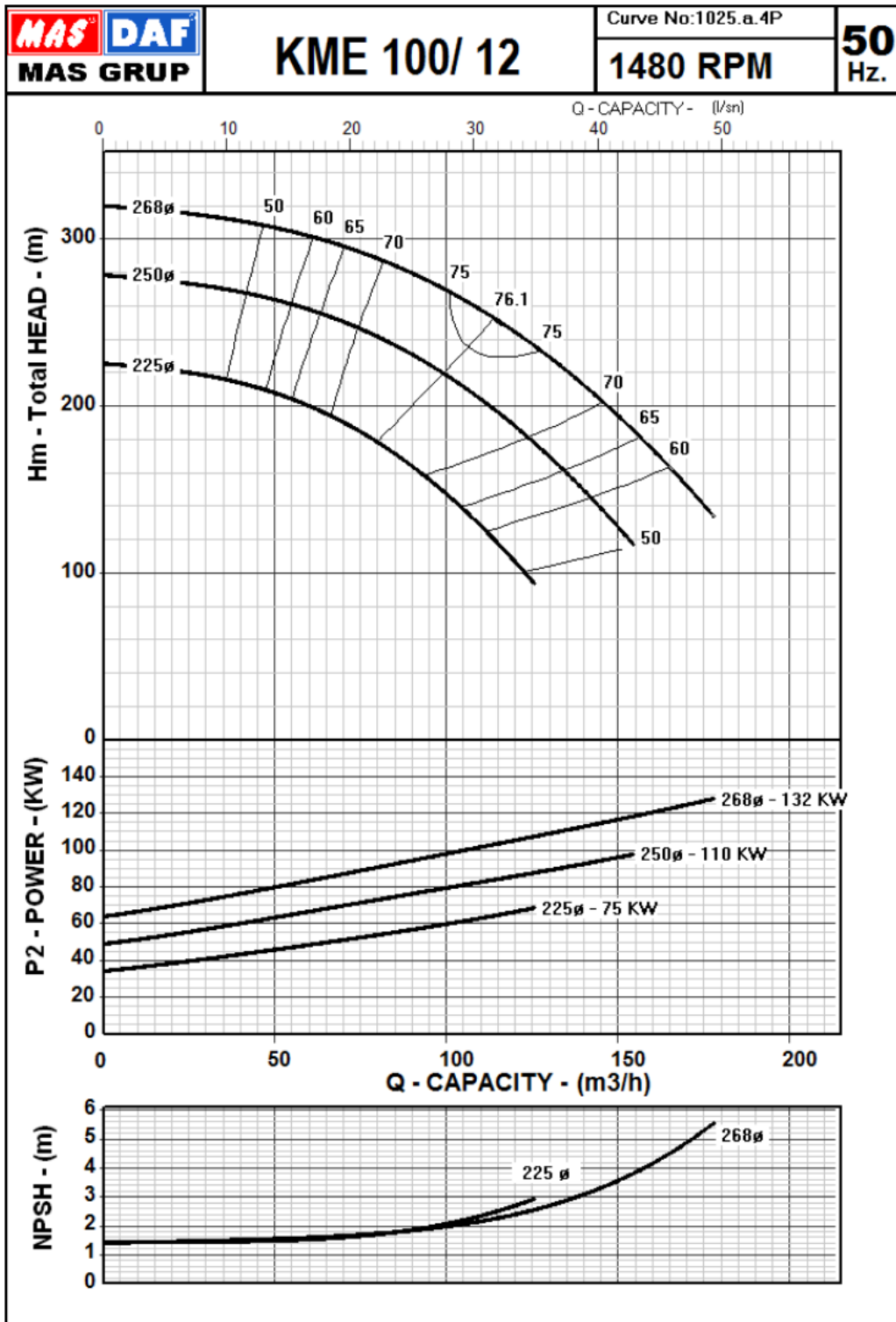


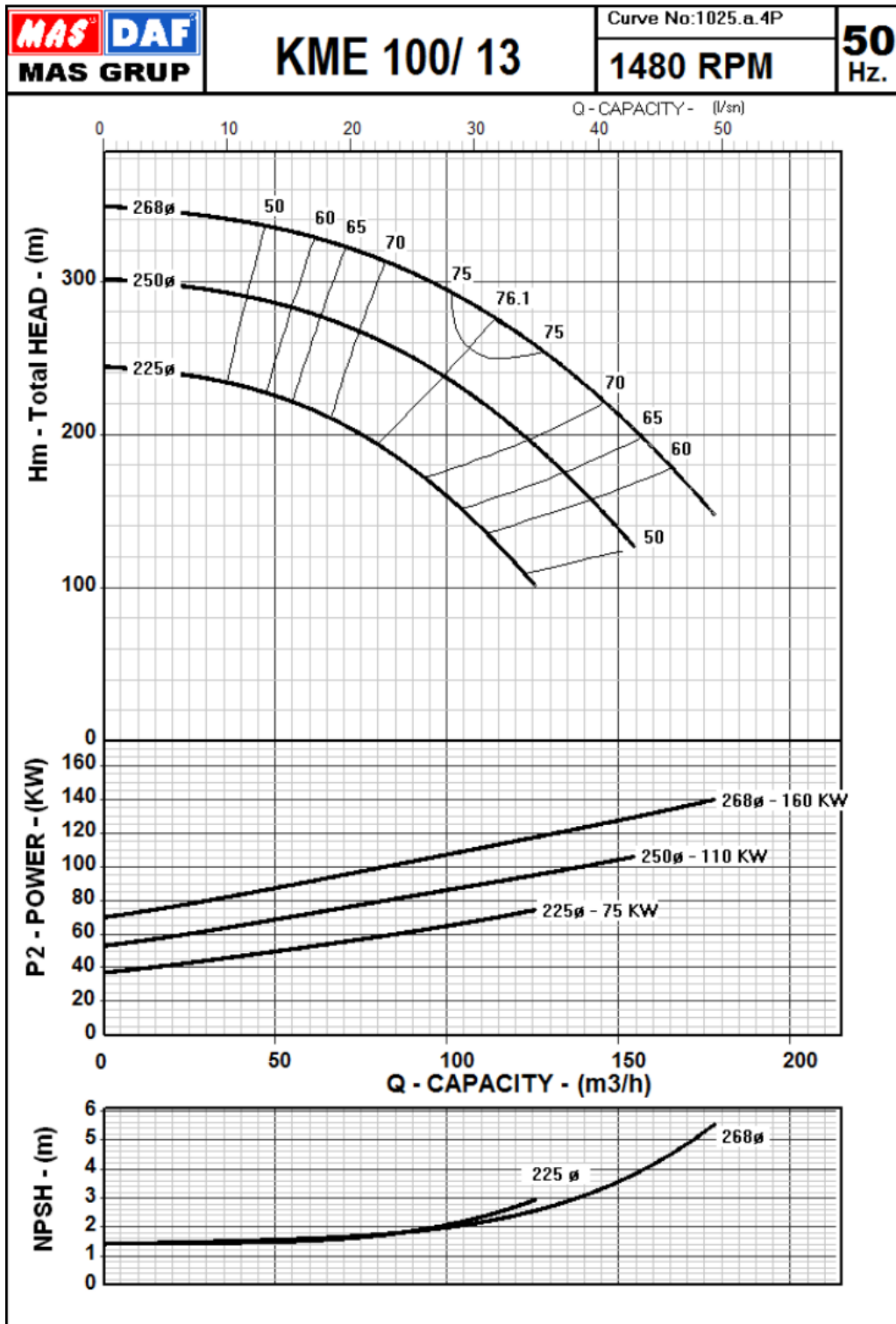
**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

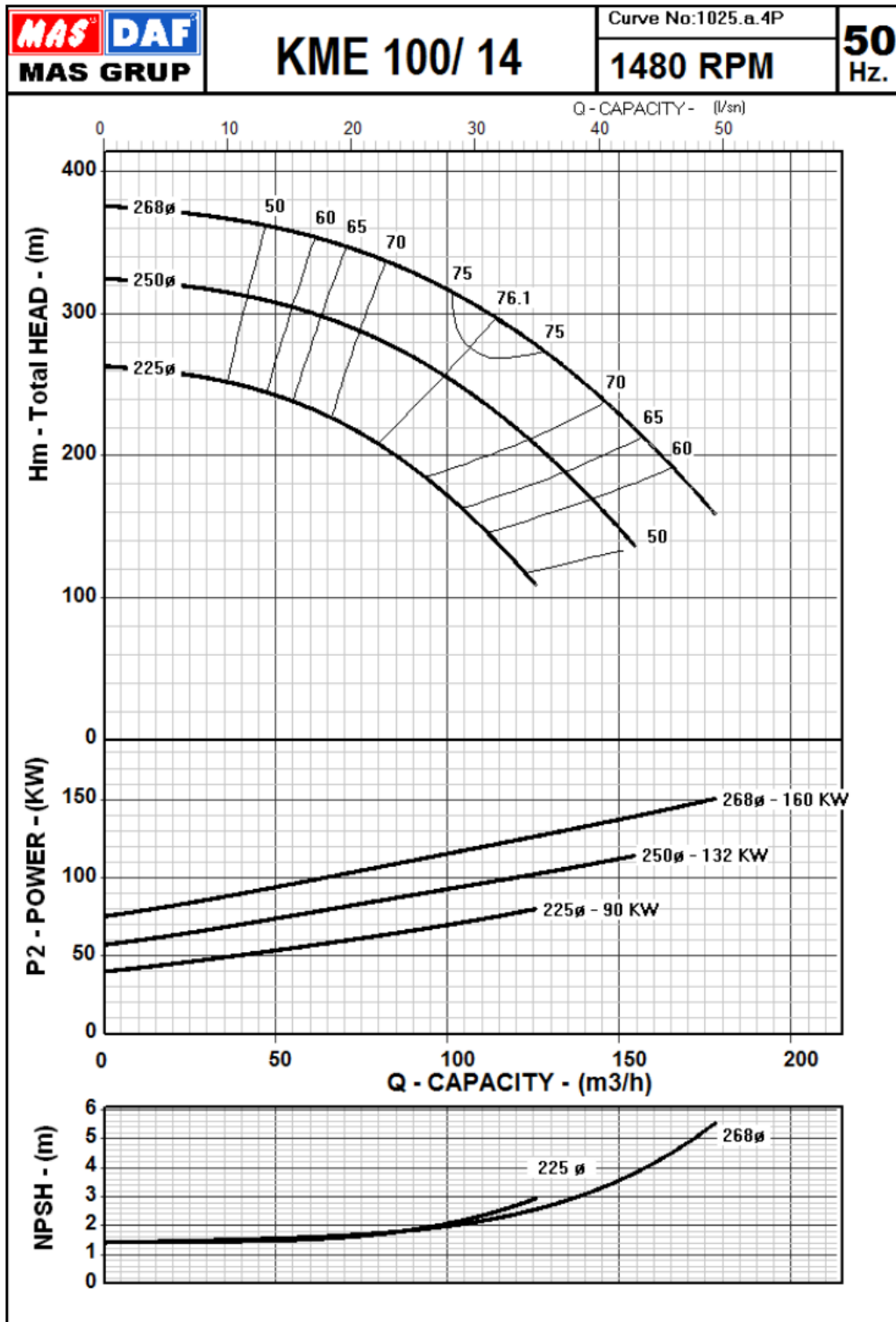
**KME 100 / 12**

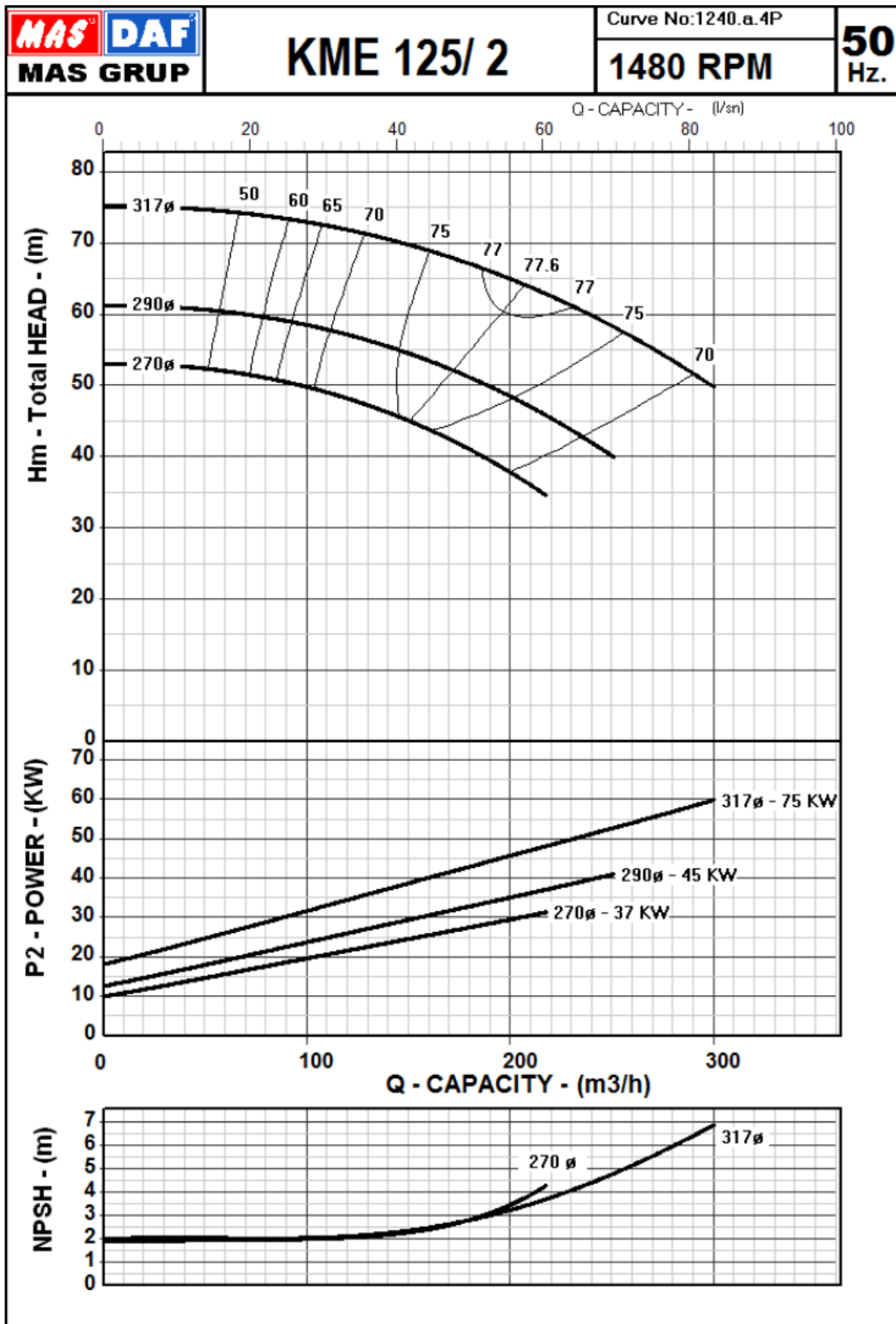


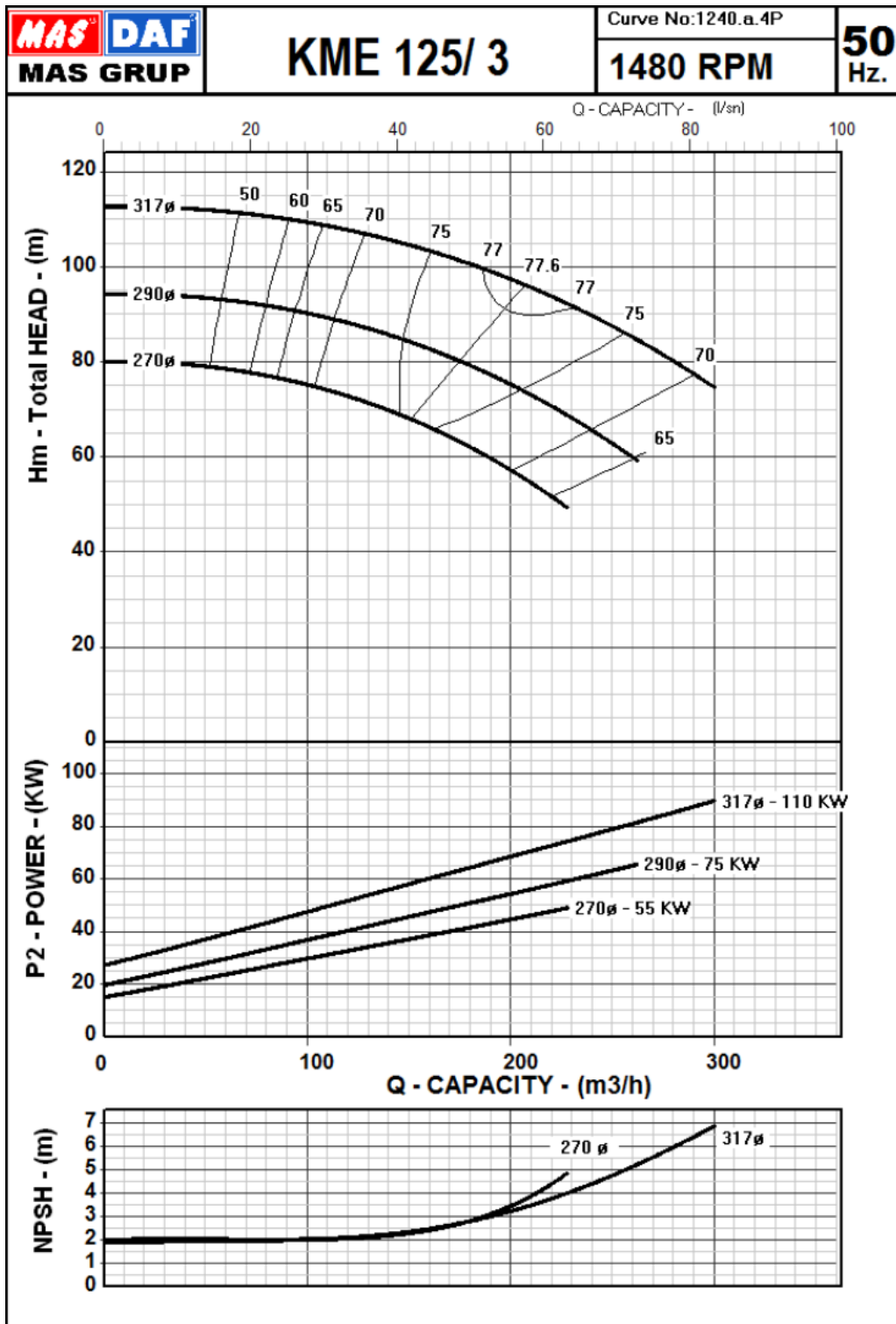
**Mas Grup**



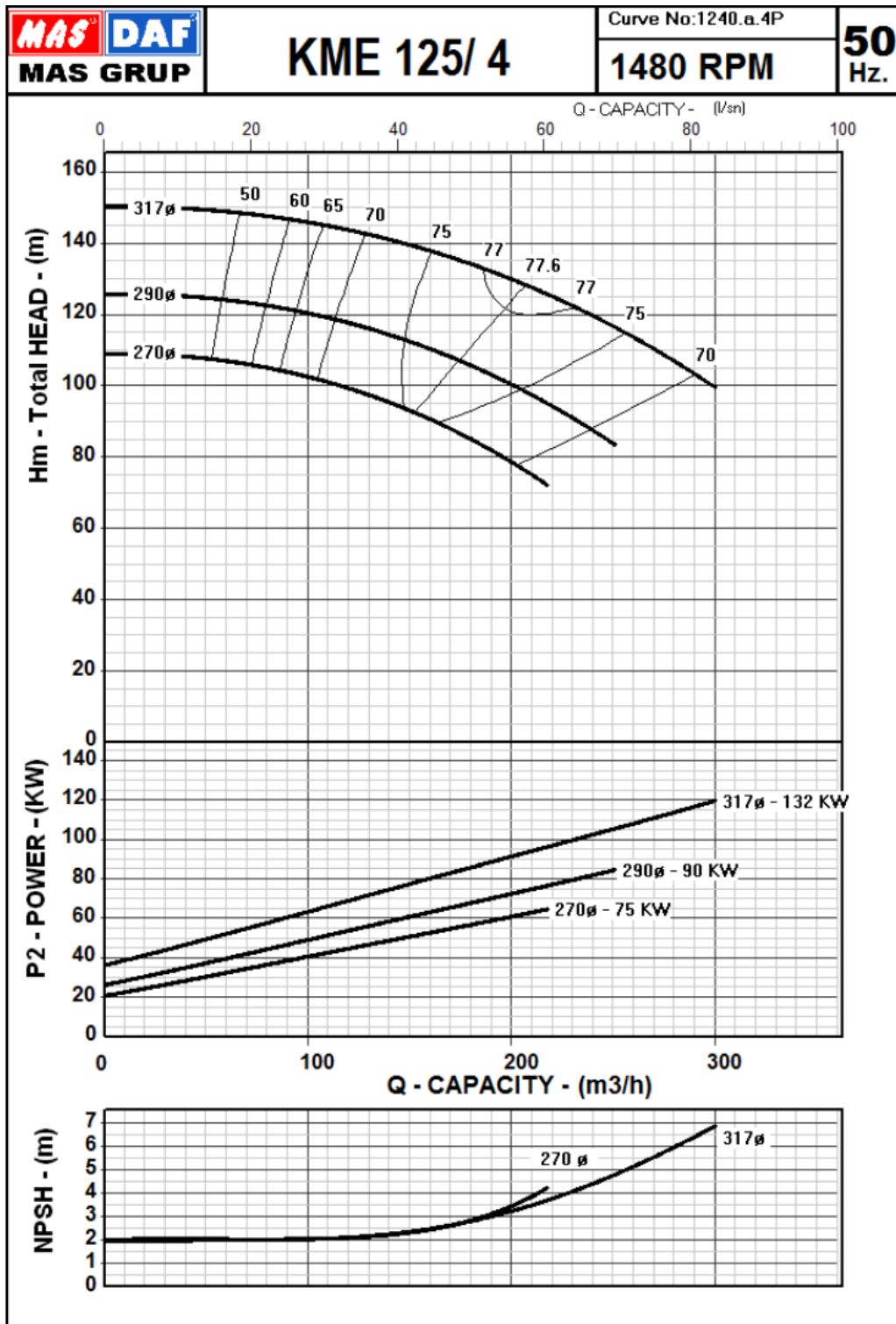


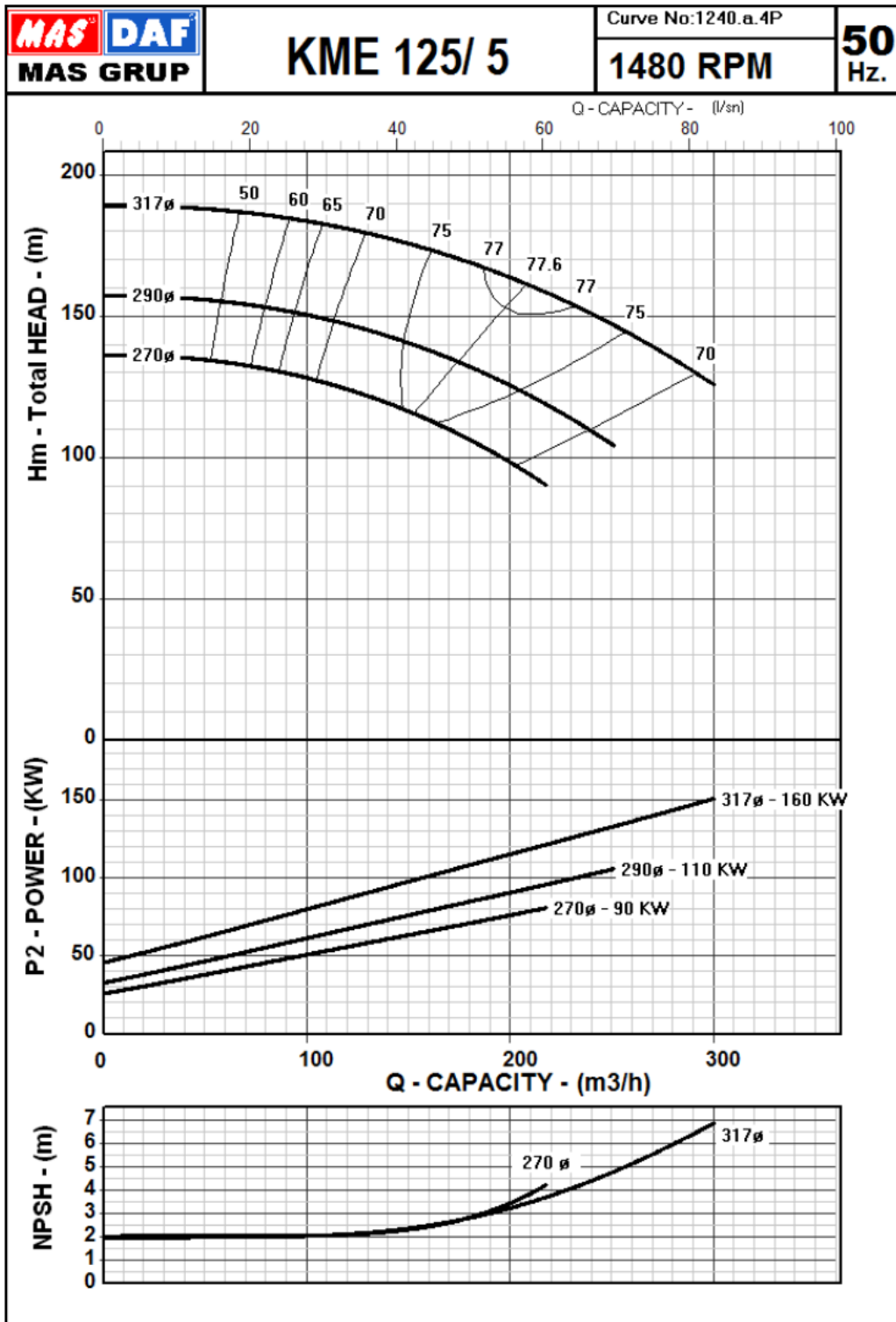


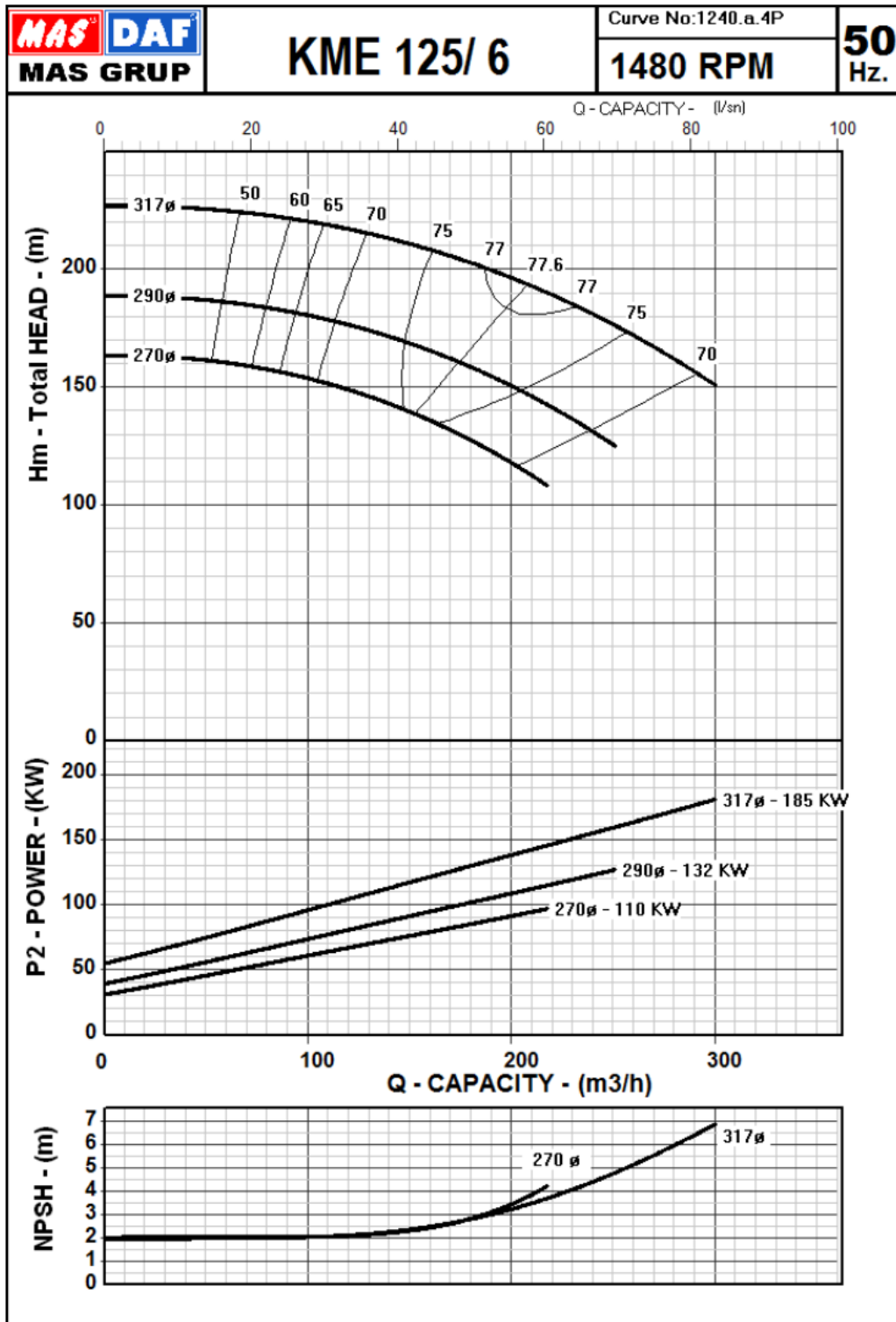


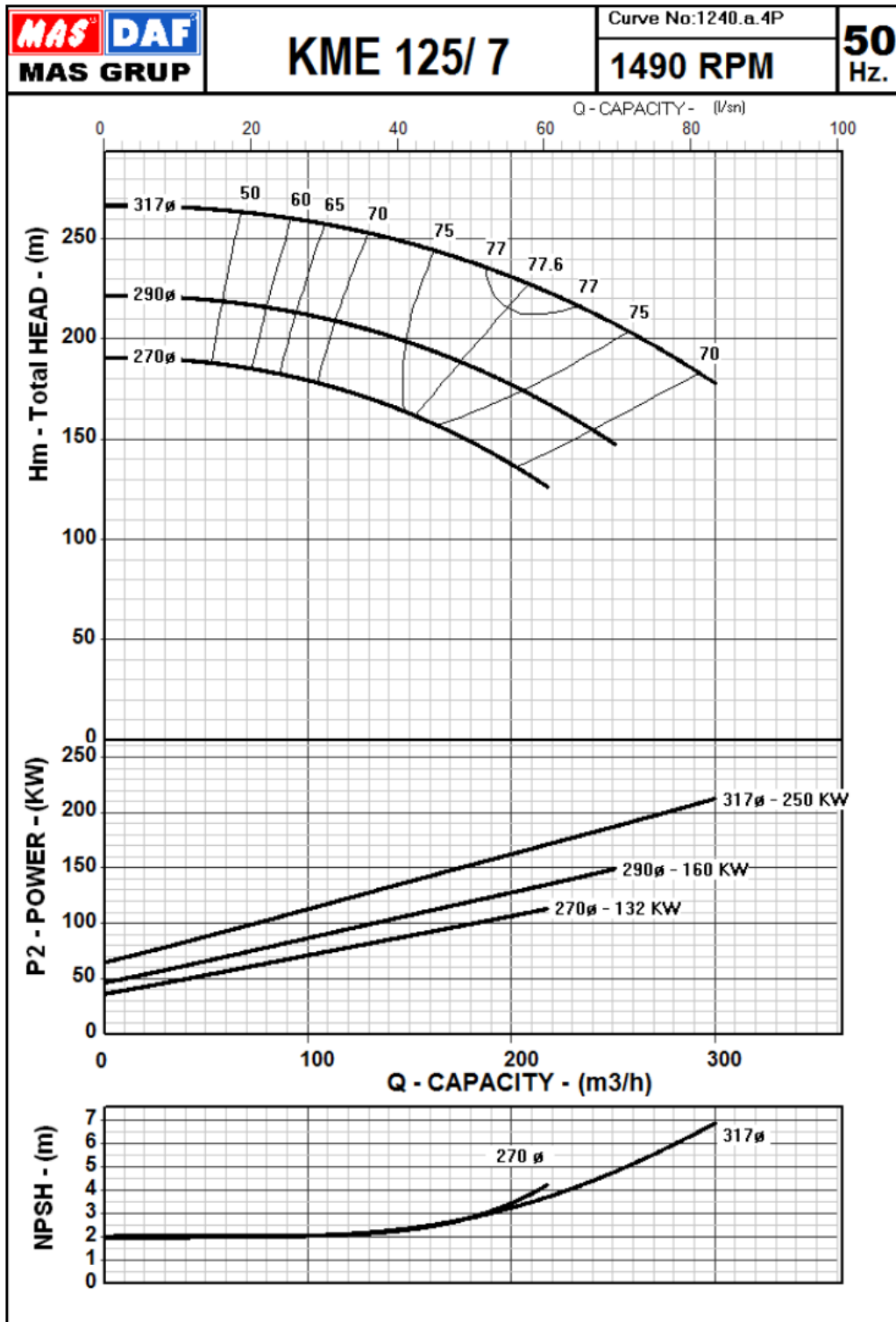










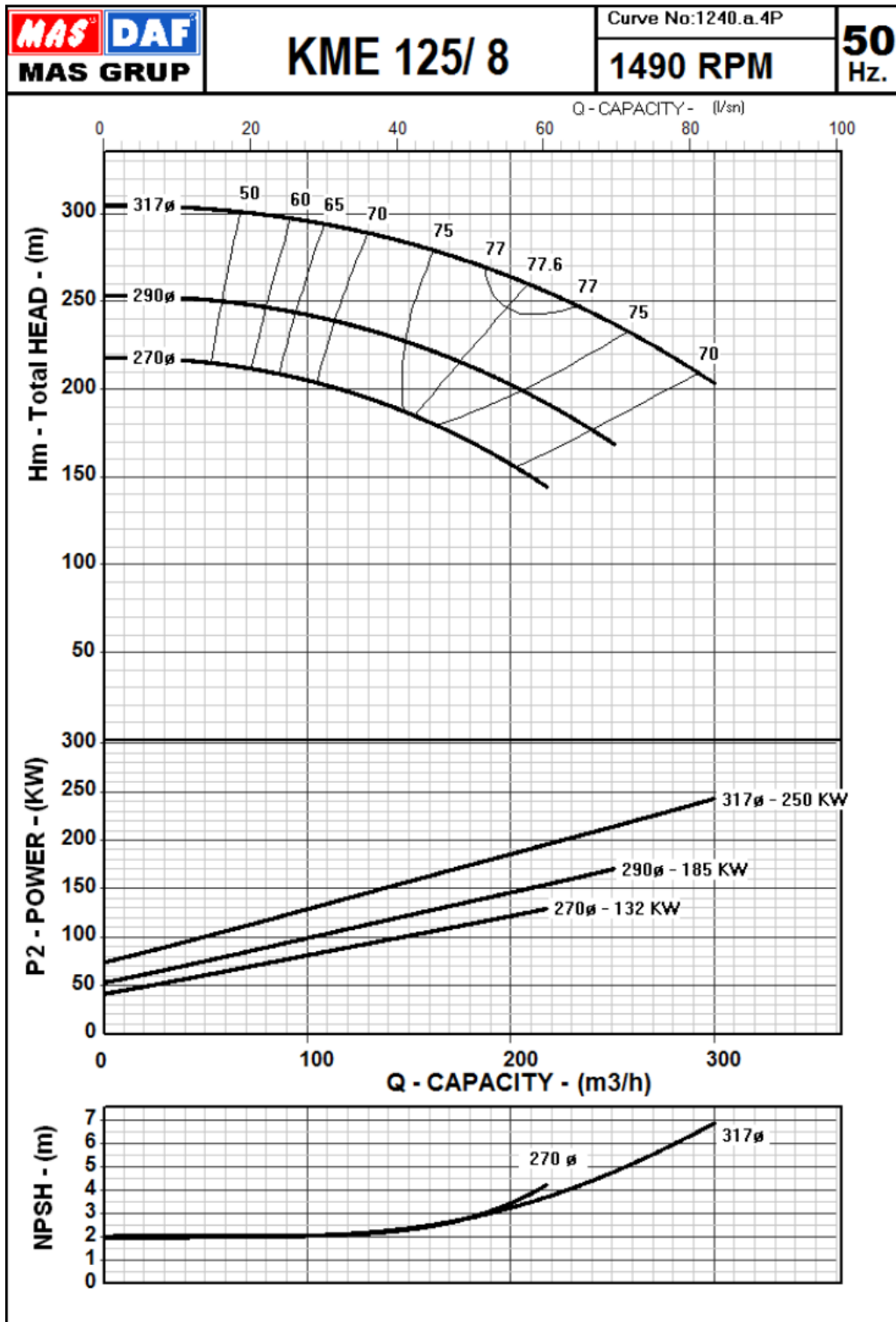


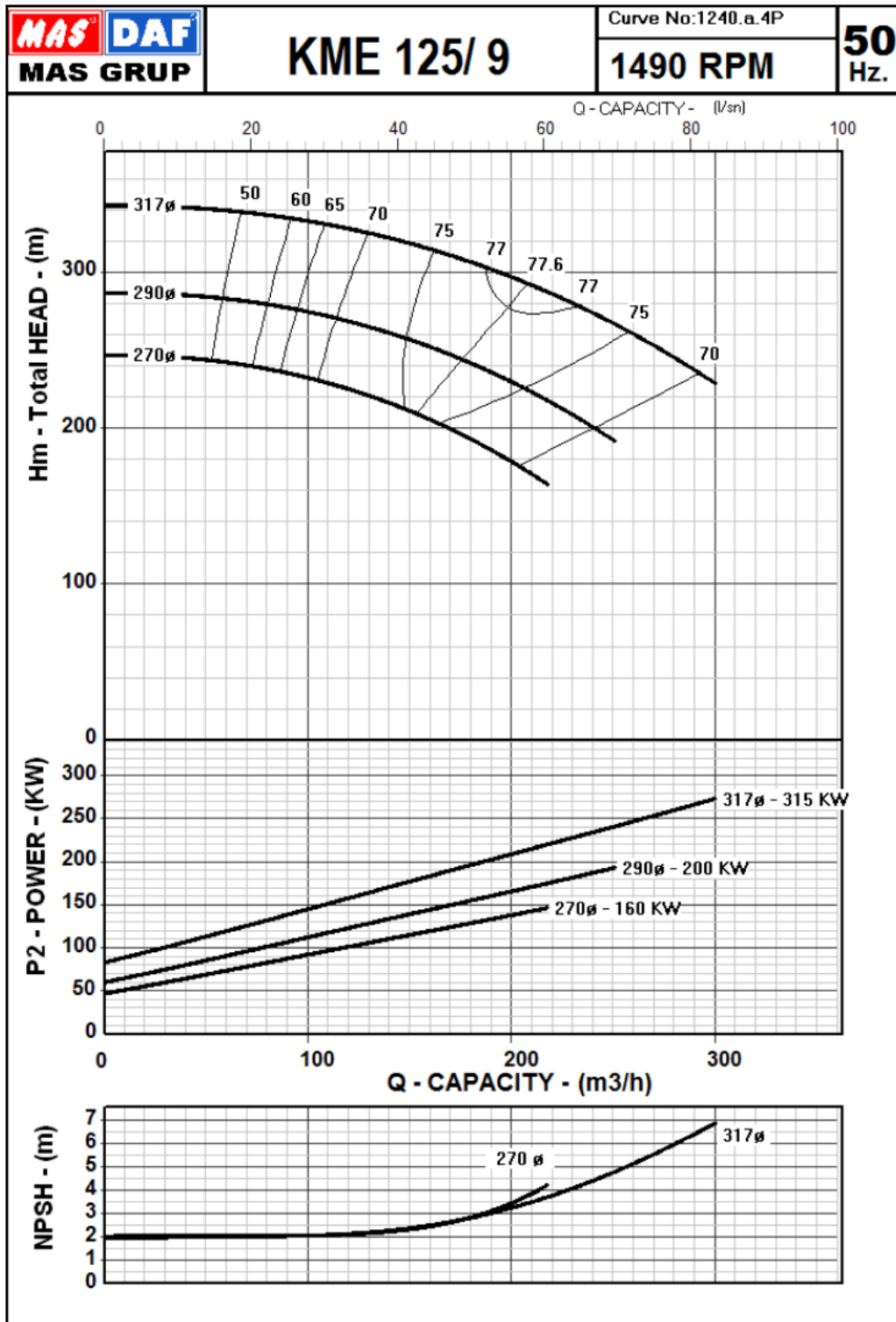
**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves



**KME 125 / 8**

**Mas Grup**



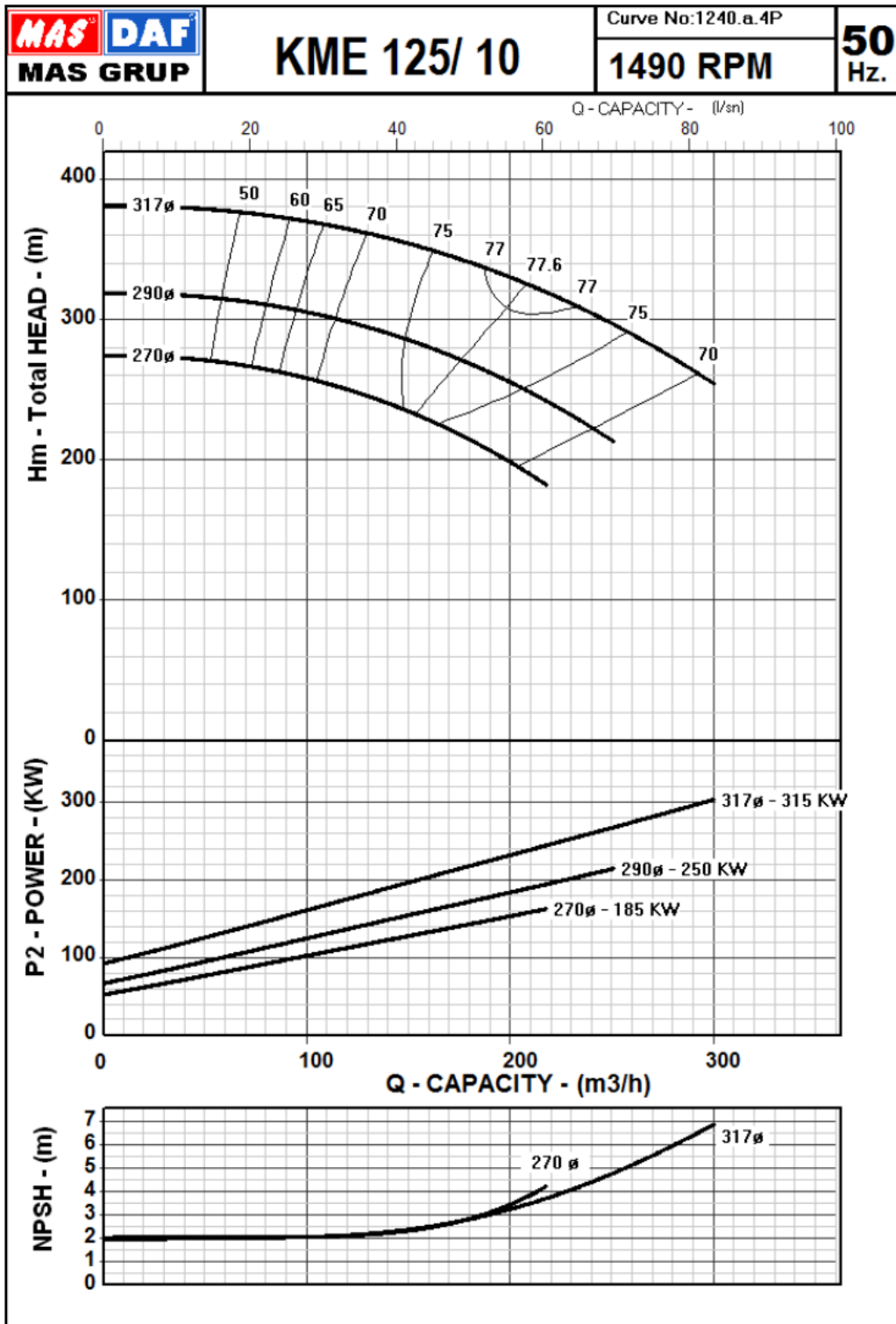


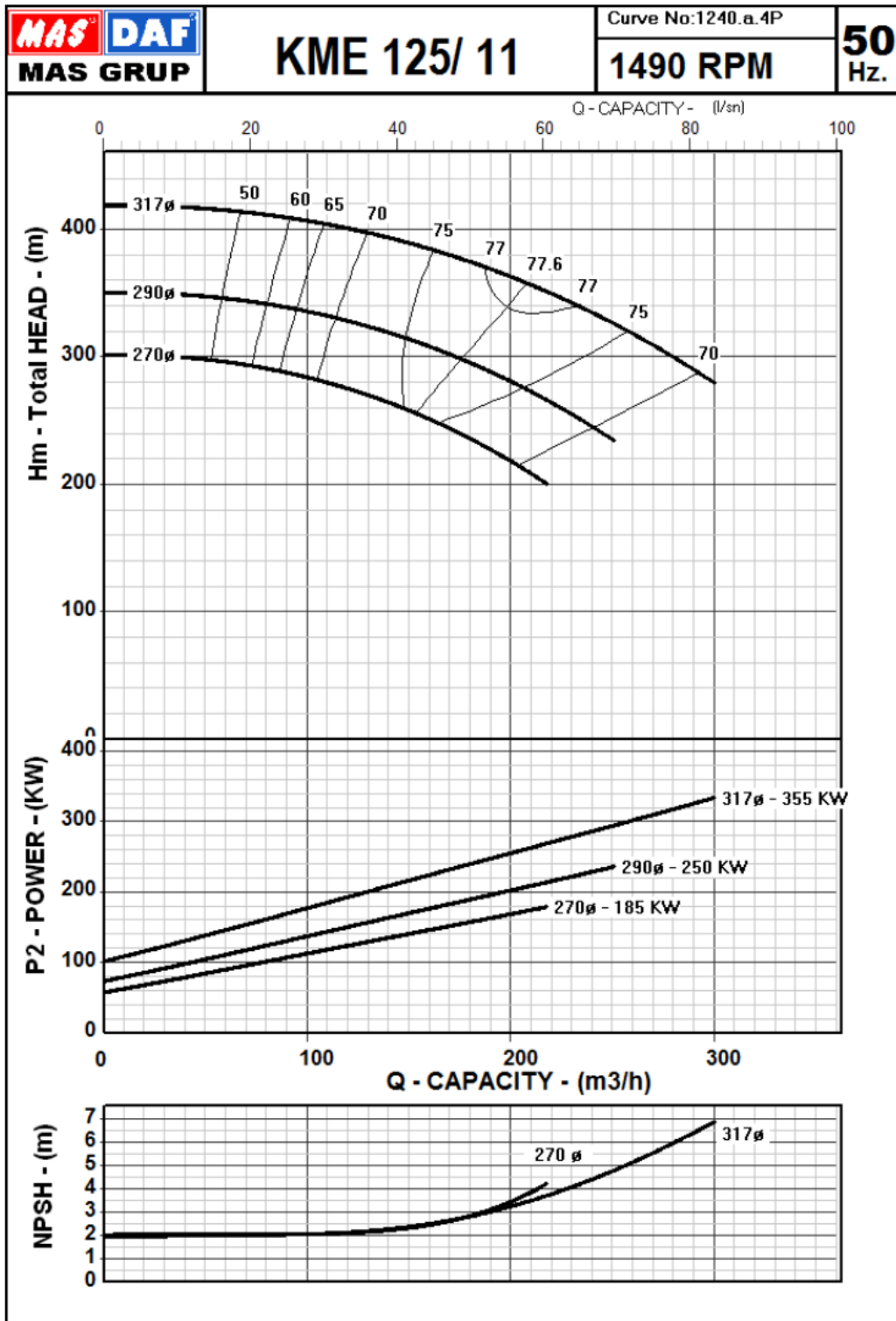
**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

**KME 125 / 10**

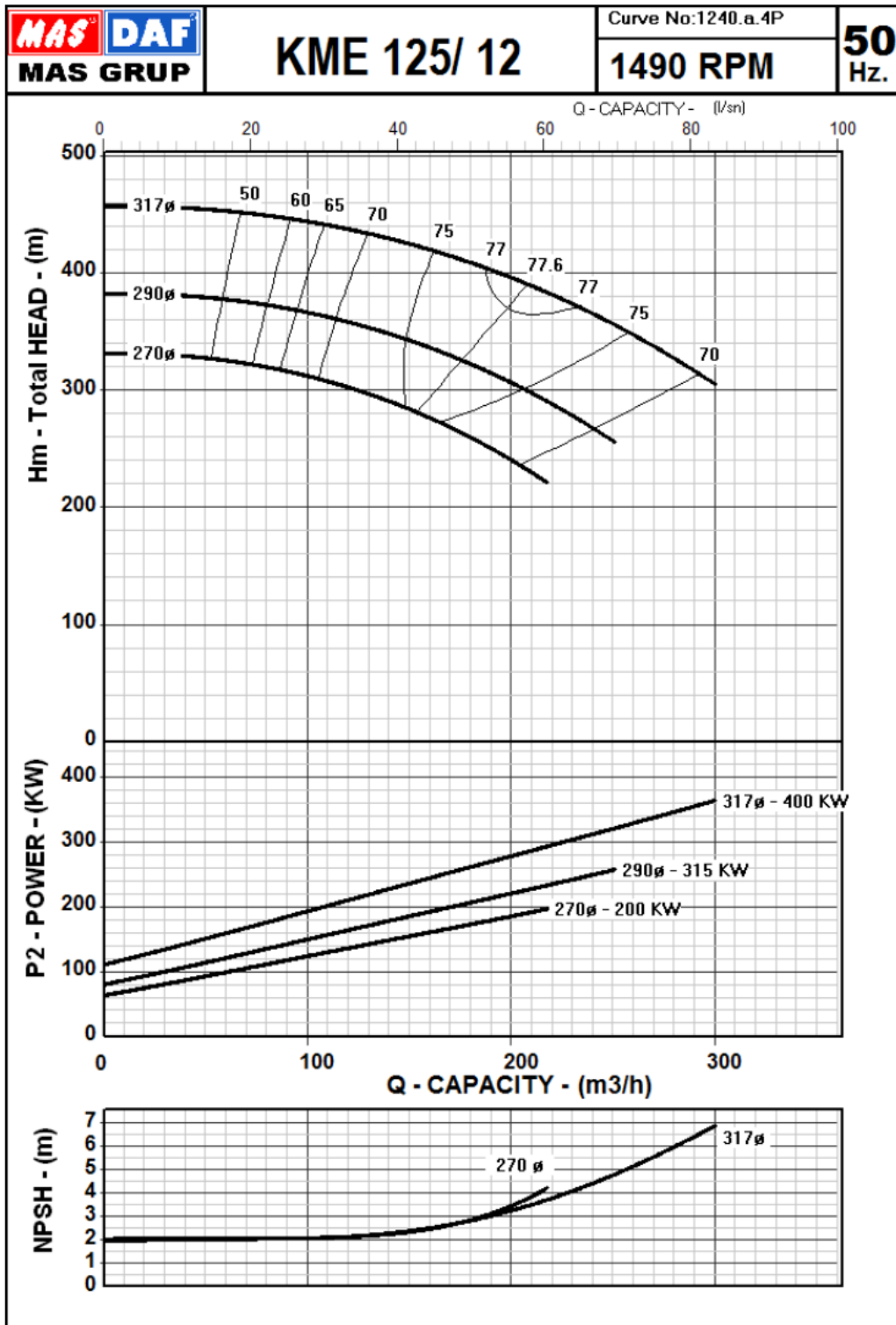


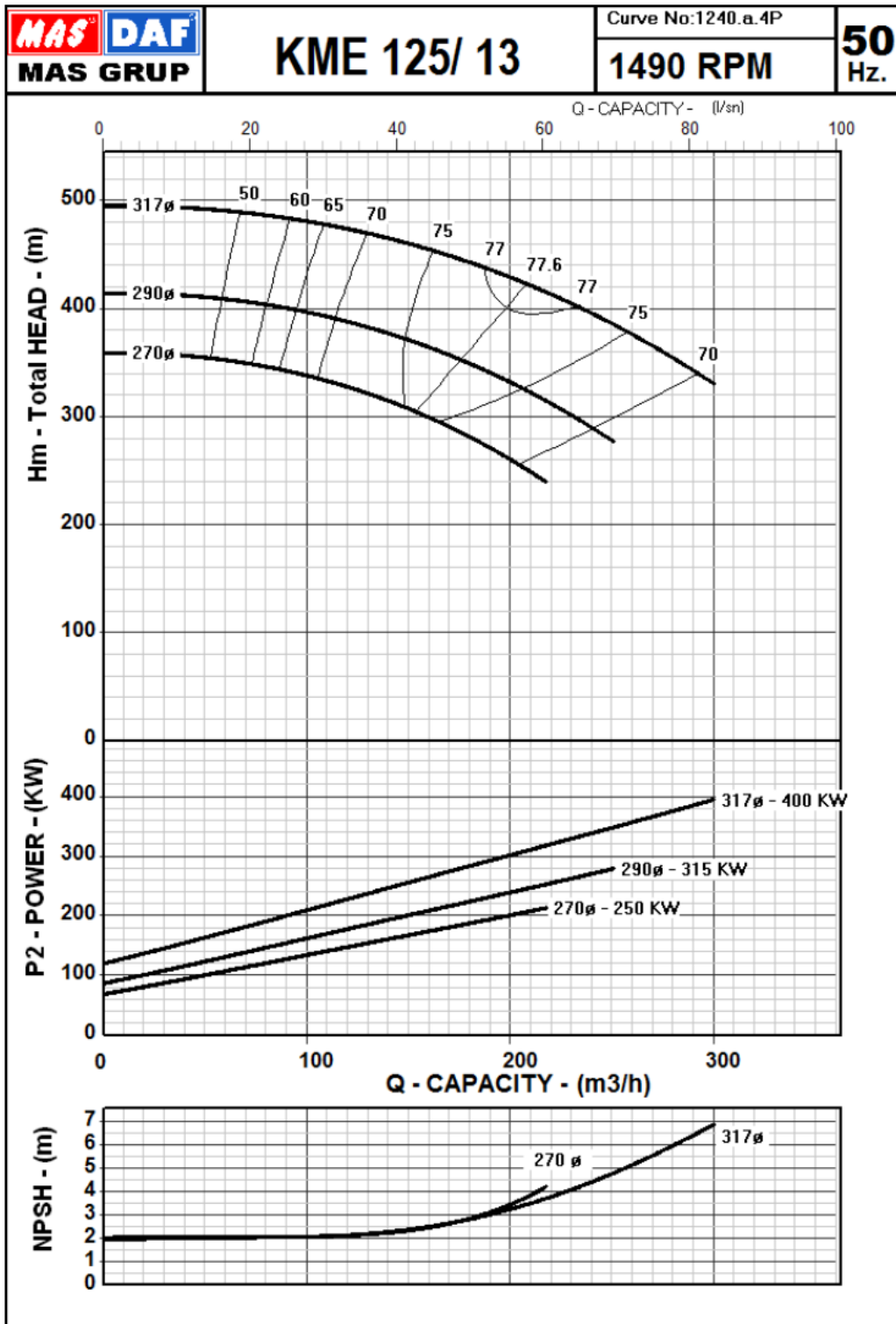
**Mas Grup**









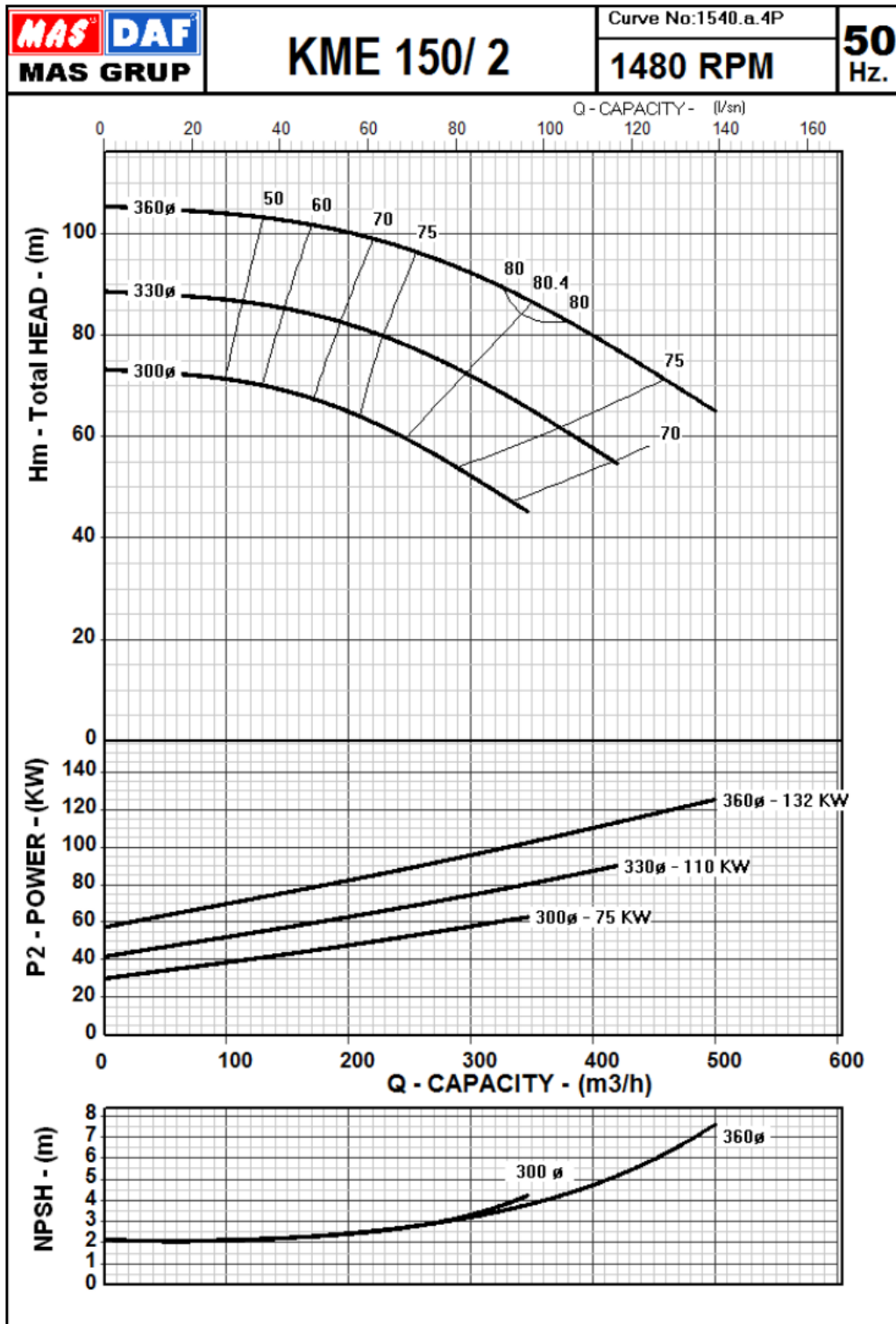


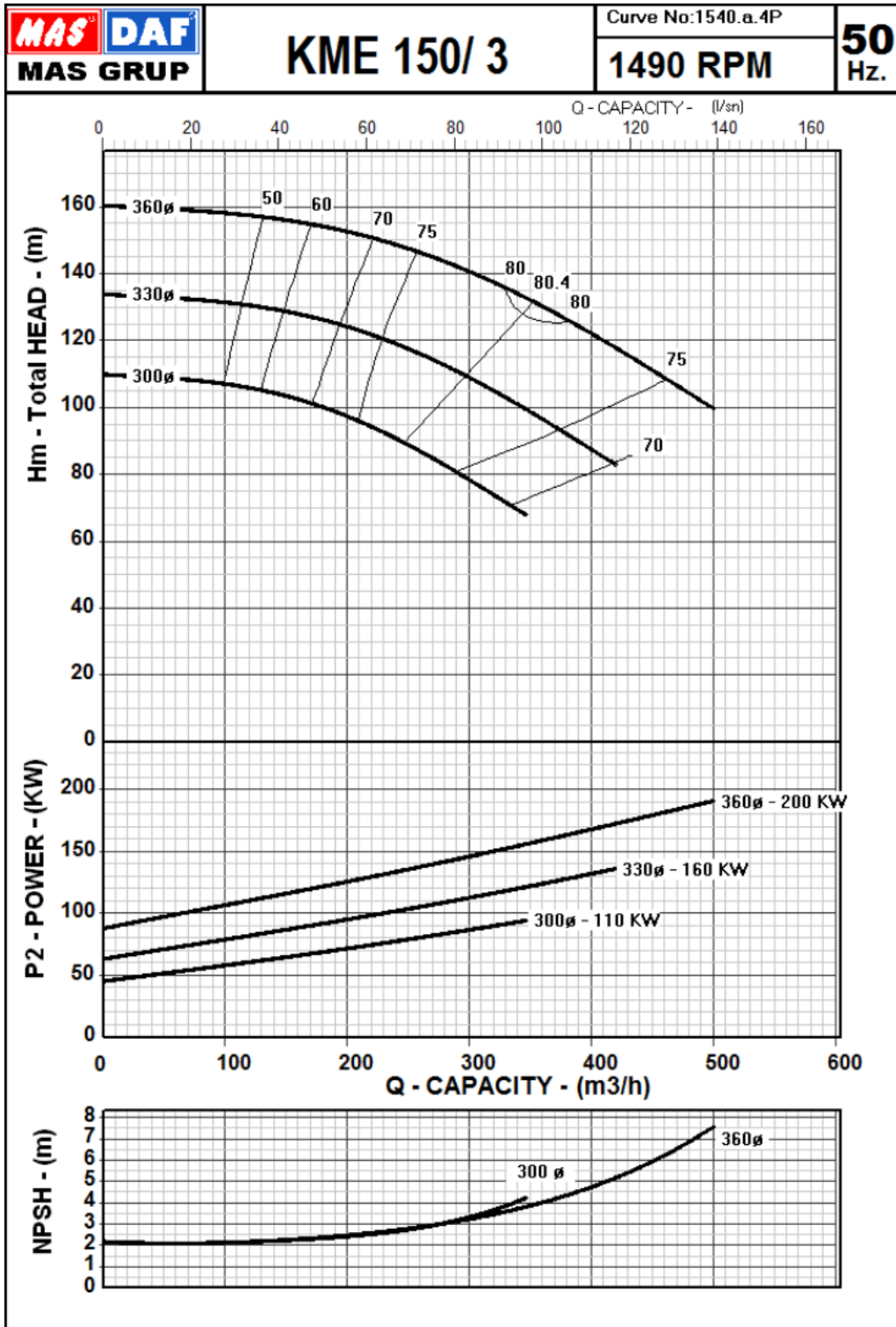
**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves



**KME 150 / 2**

**Mas Grup**



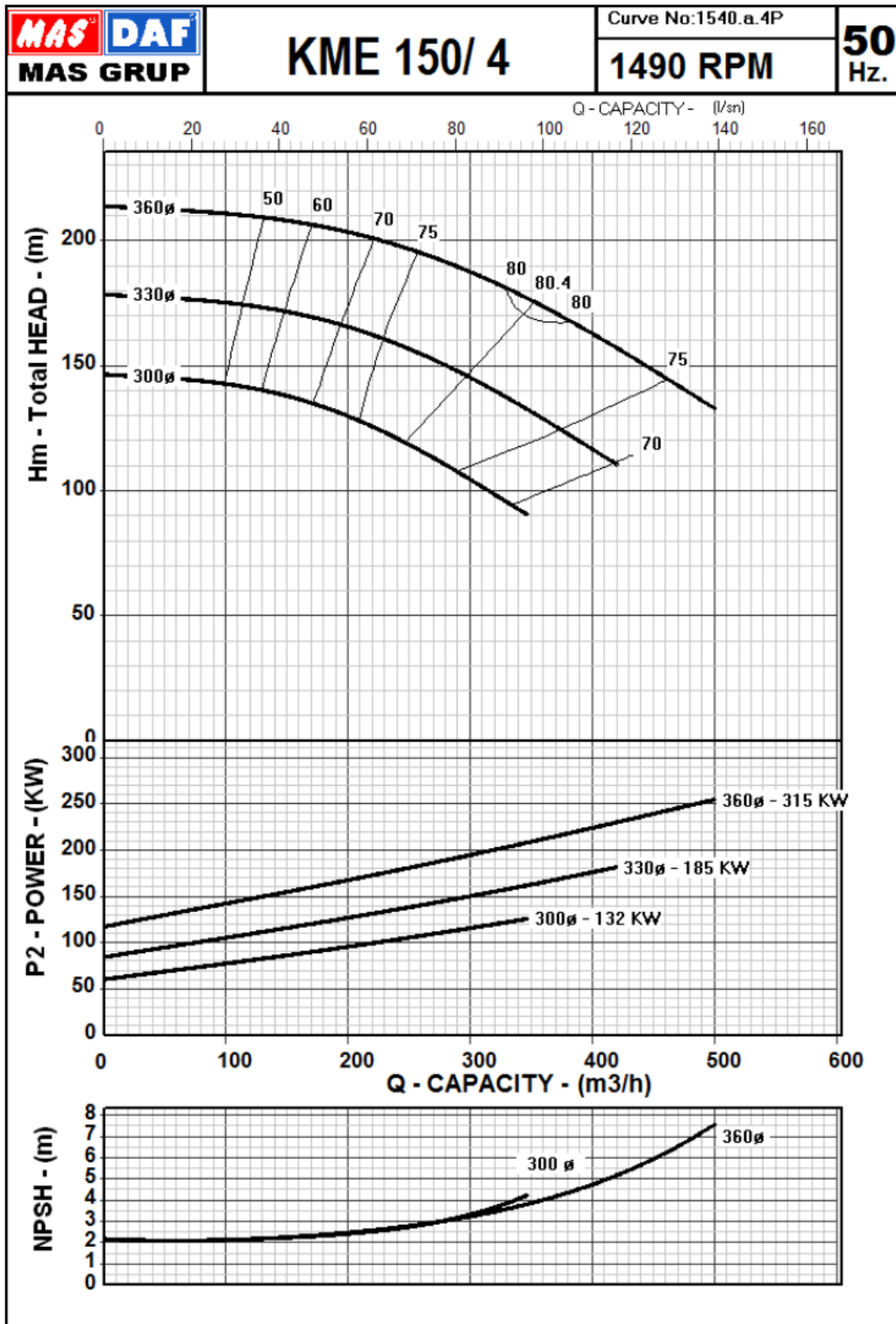


**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

**KME 150 / 4**



**Mas Grup**

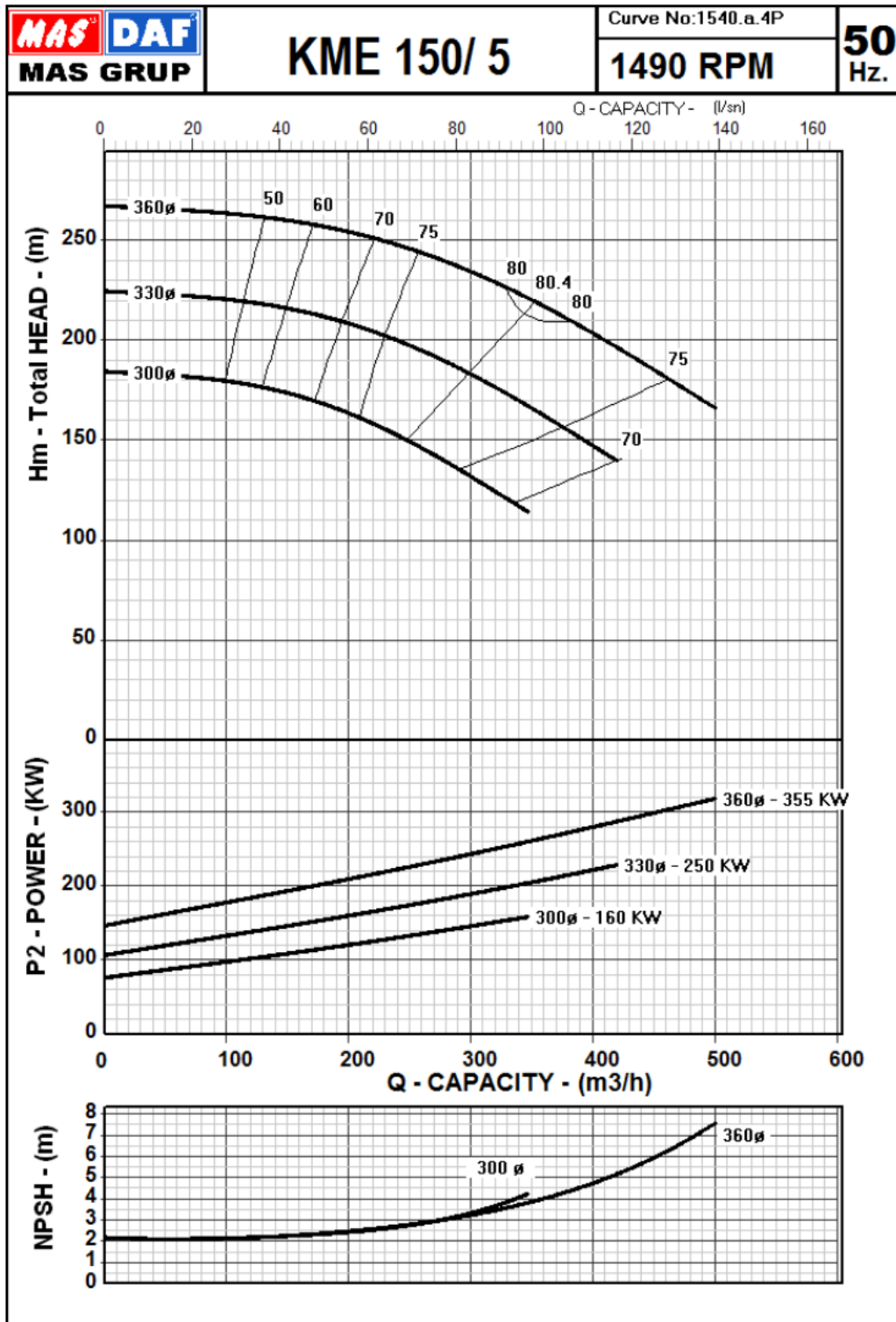


**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

**KME 150 / 5**



**Mas Grup**

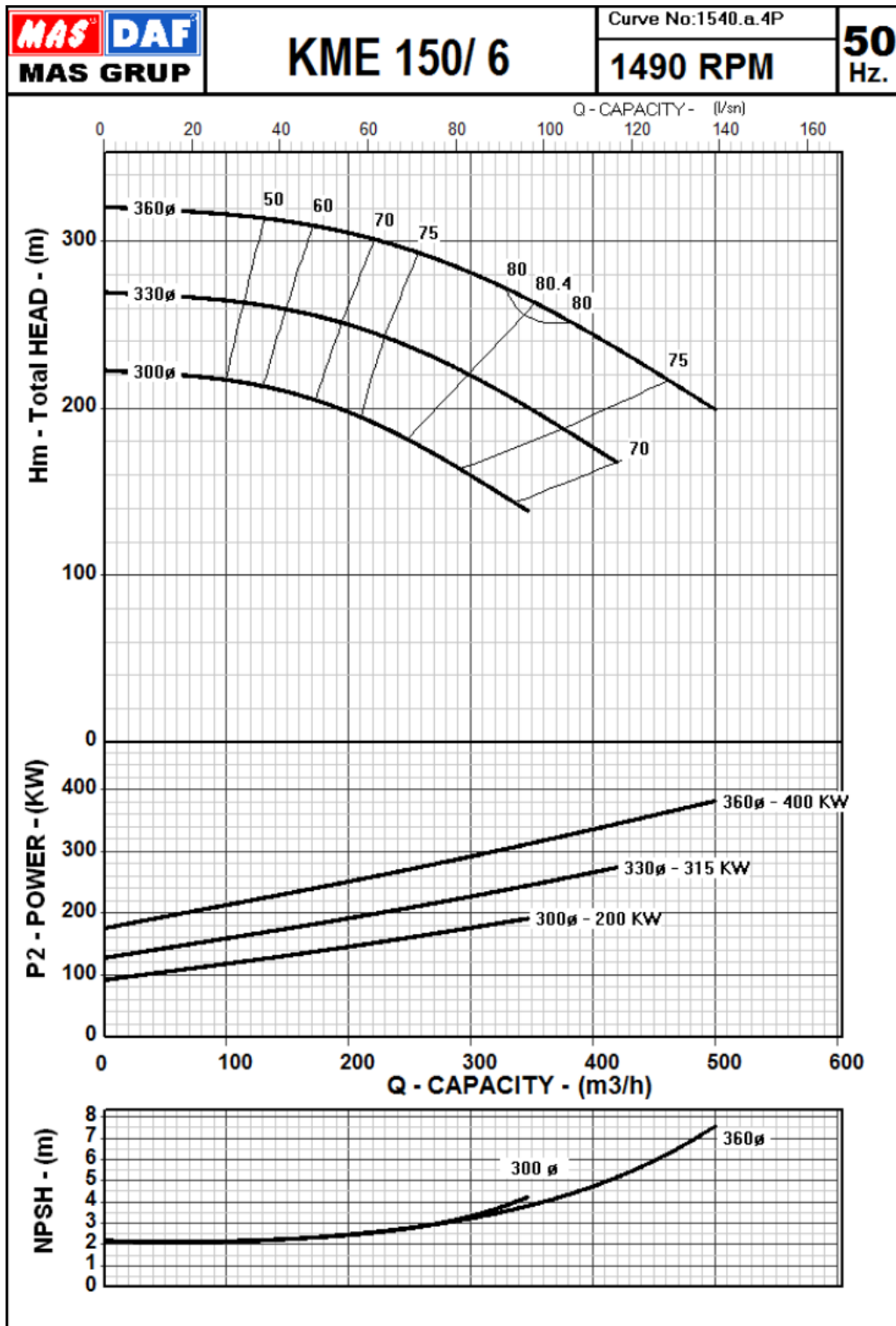


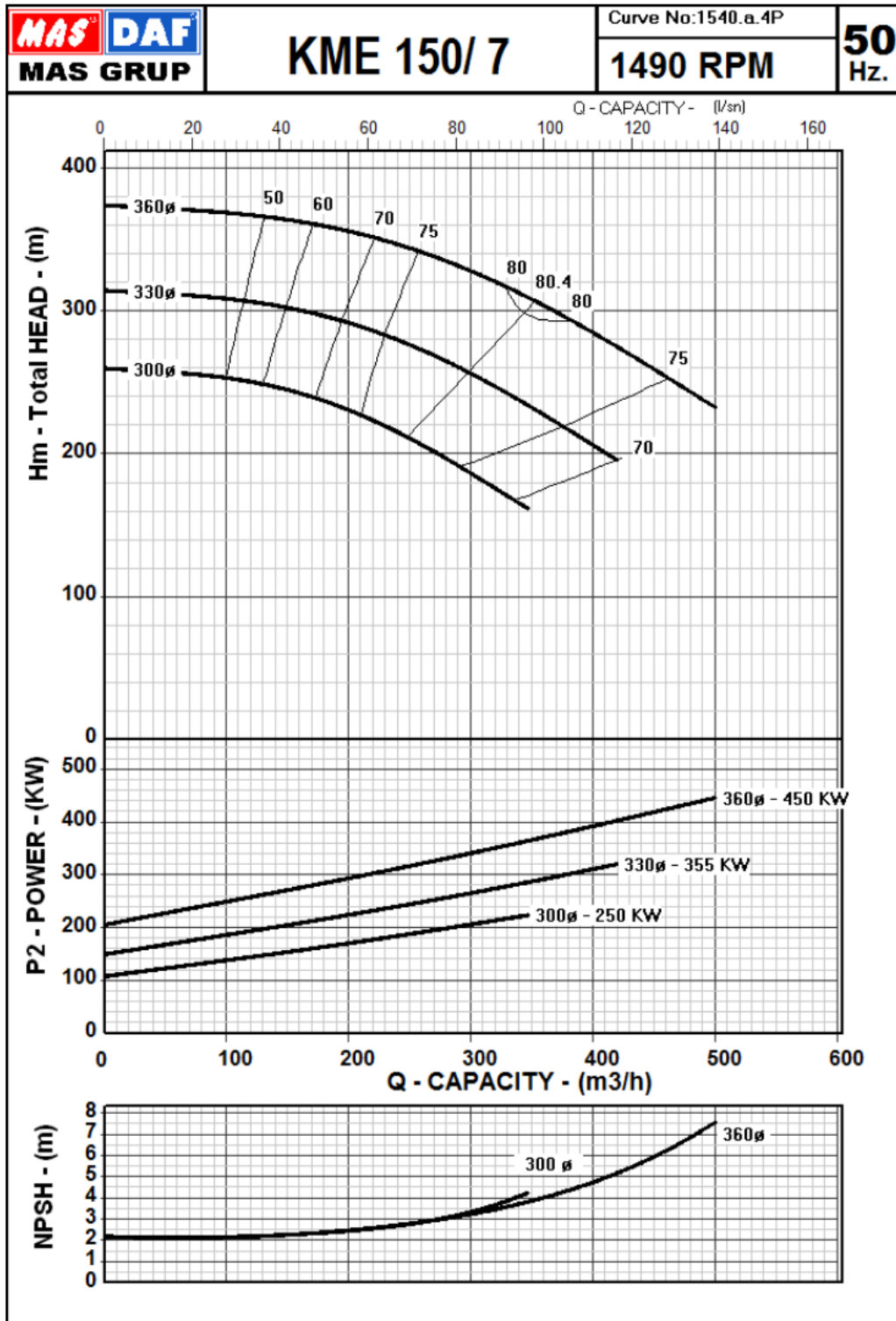
**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

**KME 150 / 6**



**Mas Grup**





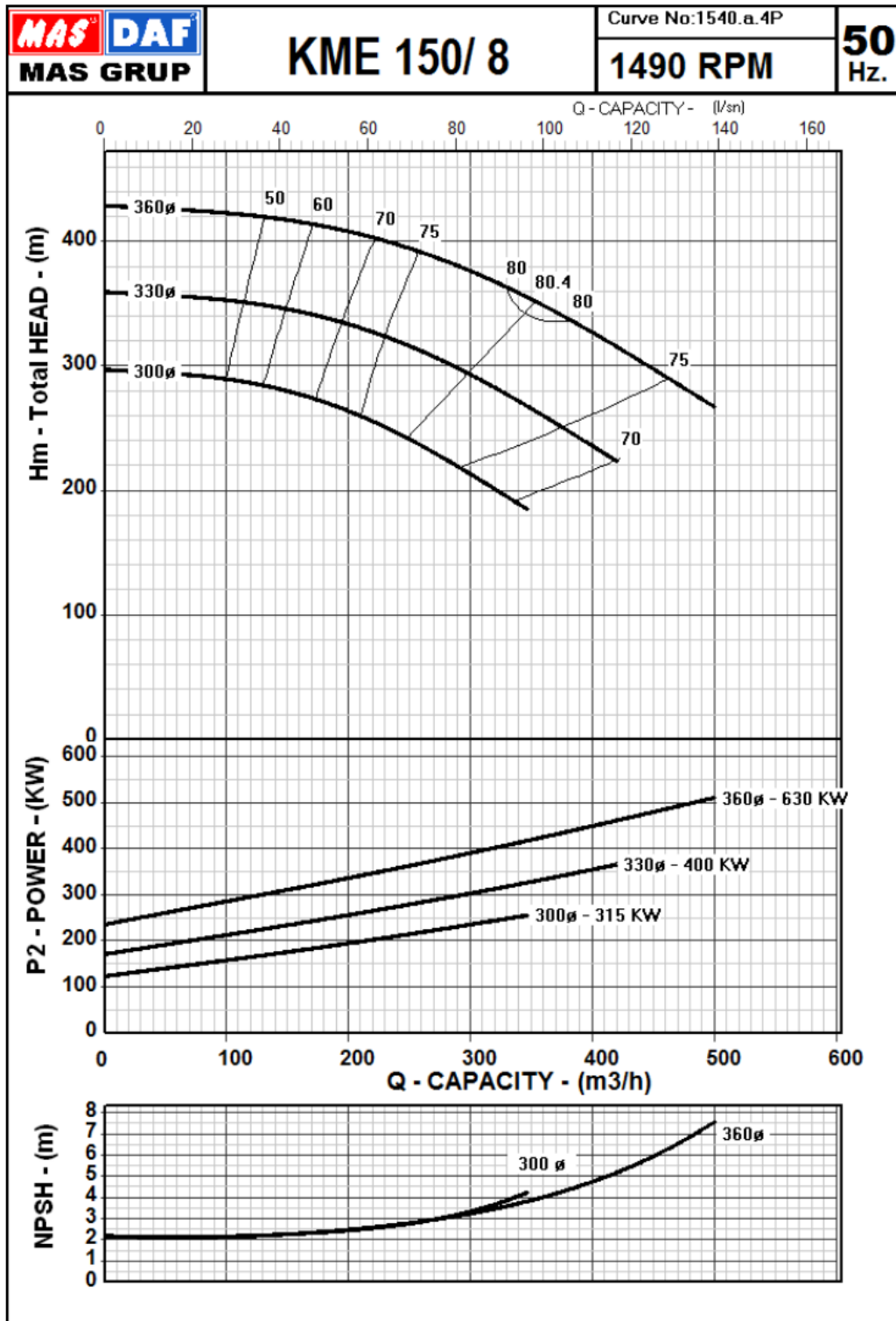


**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

**KME 150 / 8**



**Mas Grup**

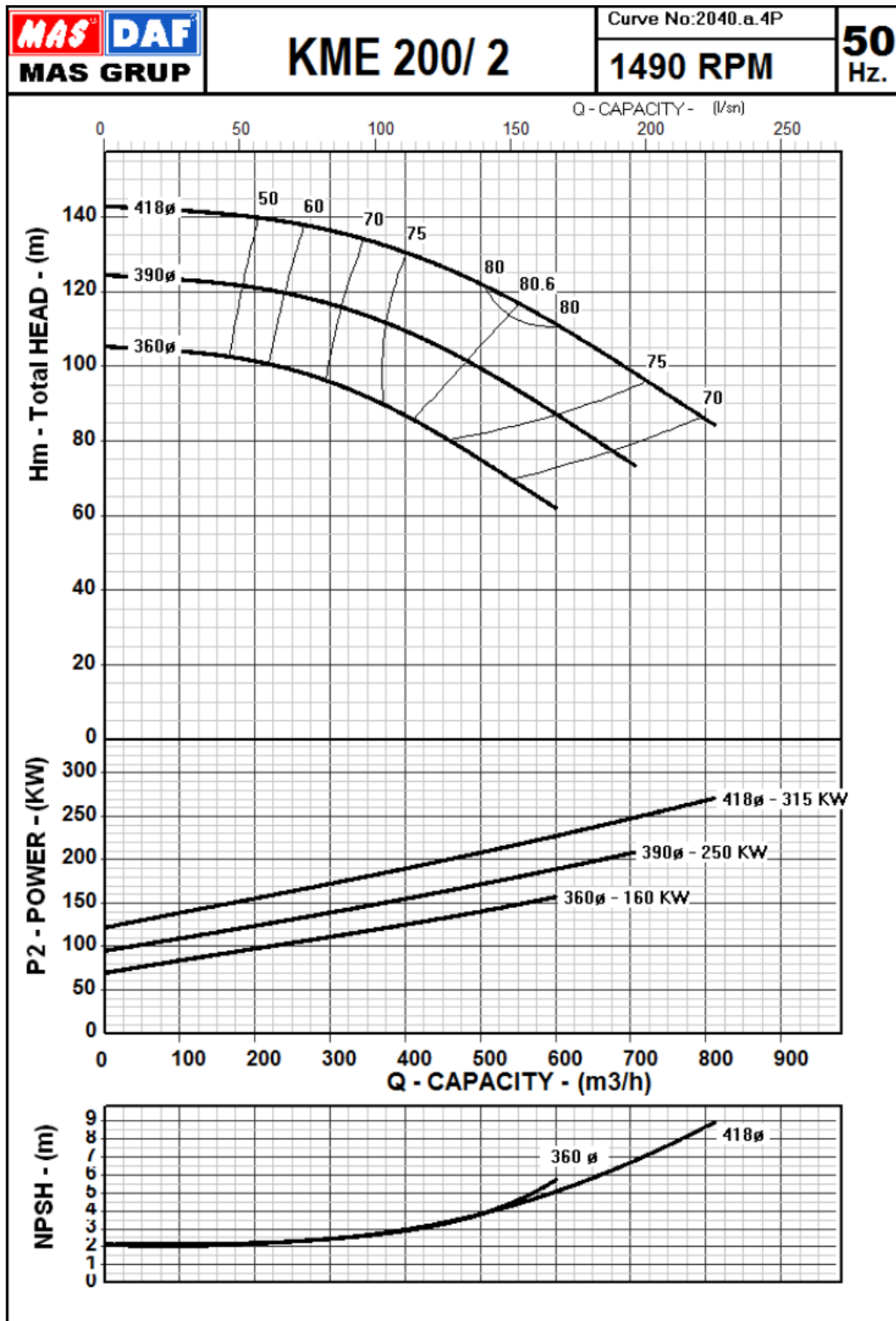


**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

**KME 200 / 2**



**Mas Grup**

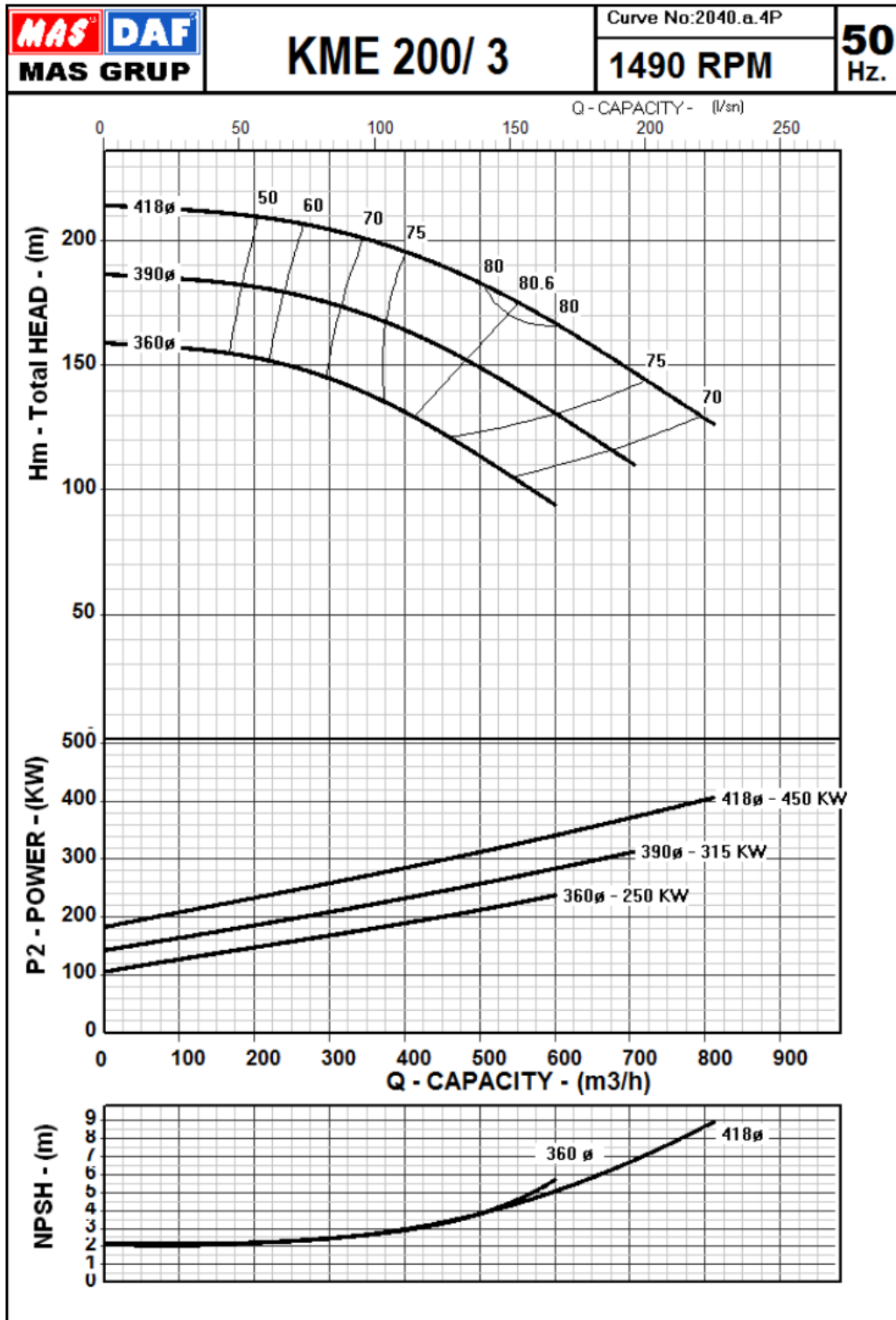


**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

**KME 200 / 3**



**Mas Grup**

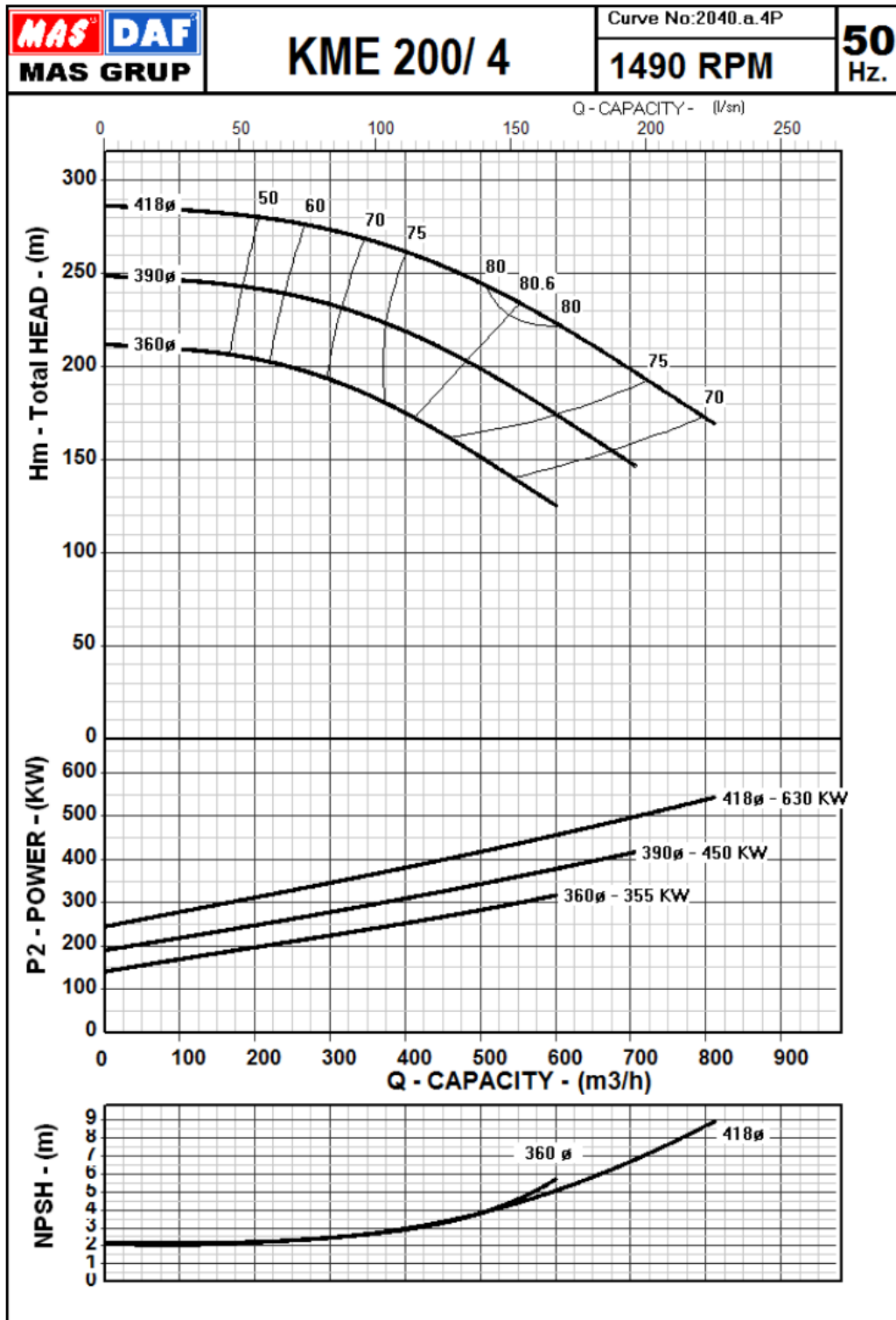


**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

**KME 200 / 4**



**Mas Grup**

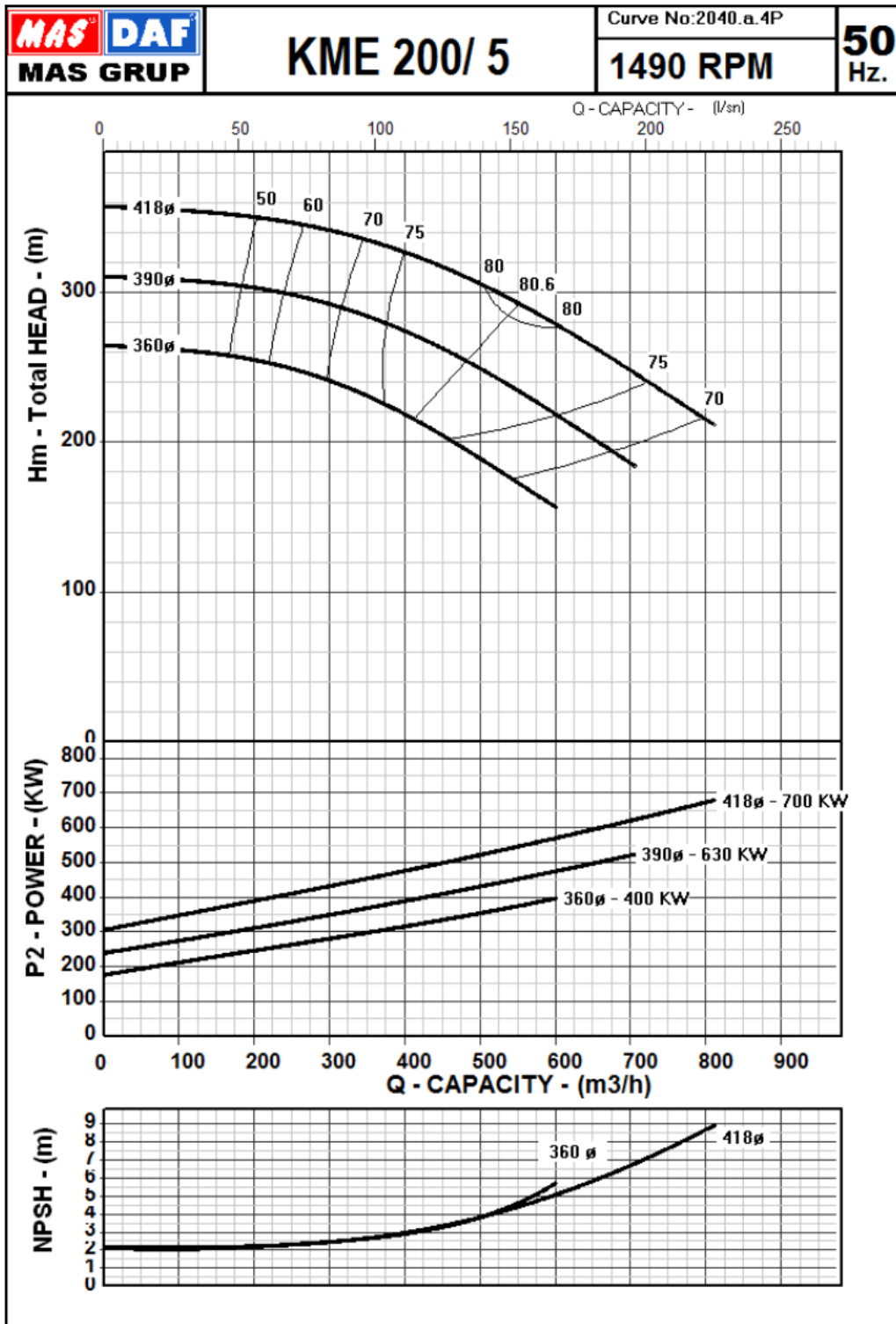


**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

**KME 200 / 5**



**Mas Grup**

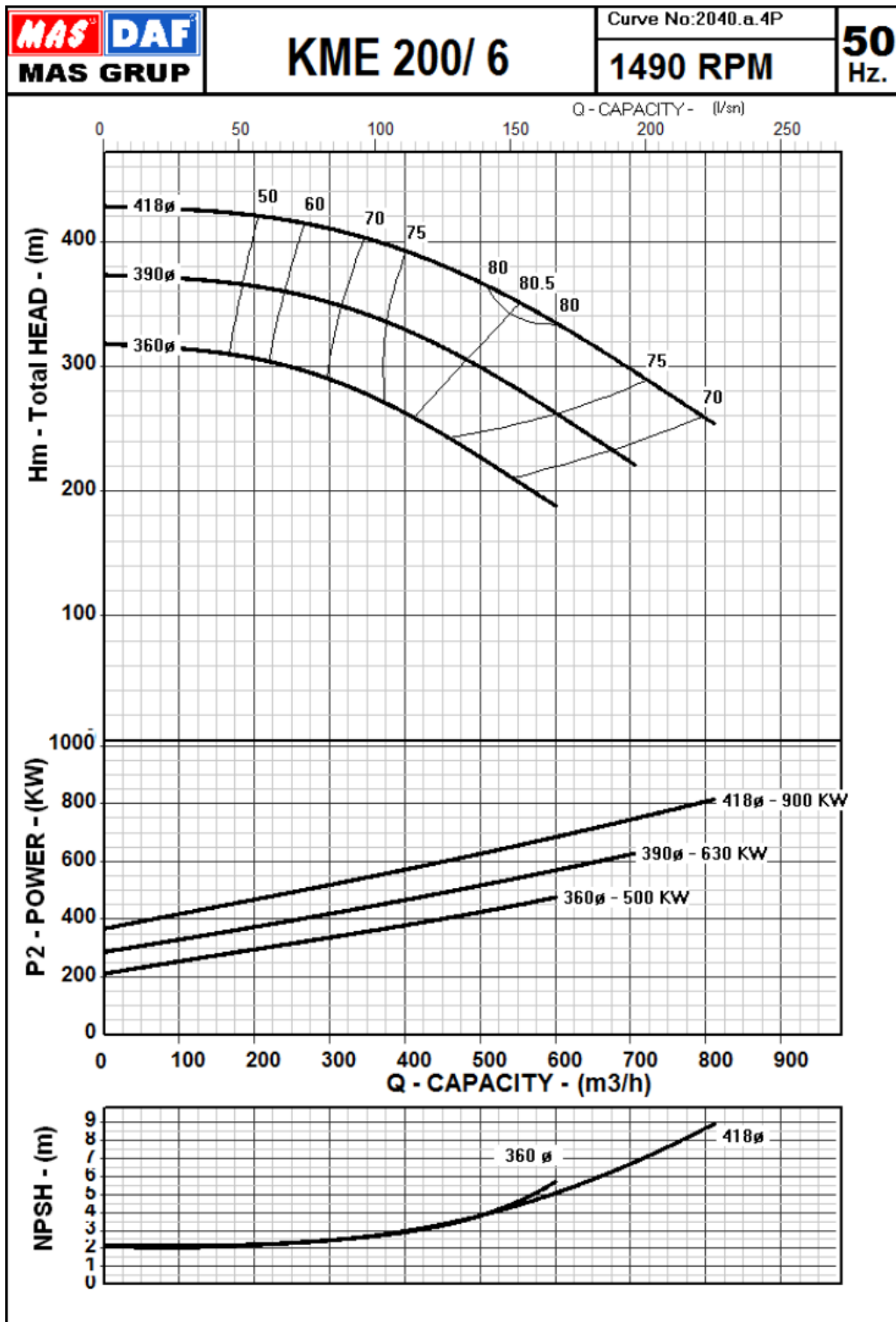


**KME Series**  
 High Pressure Multistage Centrifugal Pumps  
 Performance Curves

**KME 200 / 6**



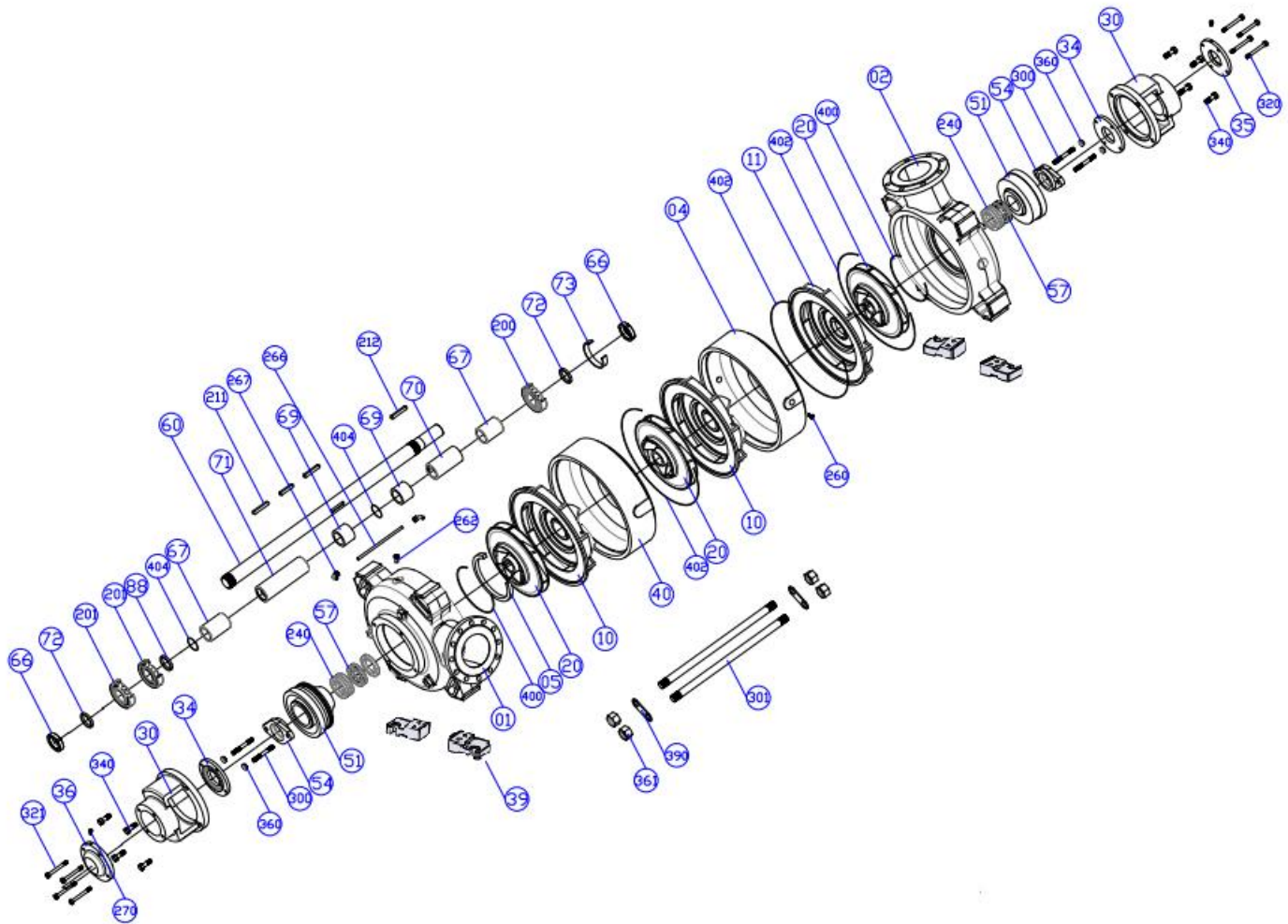
**Mas Grup**



**KME Series**  
High Pressure Multistage Centrifugal Pumps  
**Exploded View**



**Mas Grup**



Part No	Part Name	Part No	Part Name
01	Suction Casing	73	Bearing Sleeve
02	Discharge Casing	88	Thrower
04	Stage Casing	200	Cylindrical Roller Bearing
05	Wearing Ring	201	Double Row Ball Bearing
10	Diffuser	211	Impeller Key
11	Last Stage Diffuser	212	Coupling Key
20	Impeller	240	Soft Packing
30	Bearing Housing	260	Plug
34	Bearing Cover (Inside)	262	Casing Plug
35	Bearing Cover (Disc.)	266	Watering Pipe (Disc.)
36	Bearing Cover (Suc.)	267	Pipe Union
39	Demountable Foot	270	Greaser
51	Stuffing Box (Suc.)	300	Gland Stud
54	Gland	301	Casing Stud
56	Lantern Ring (Disc.)	320	Hexagonal Bolt
57	Lantern Ring (Suc.)	321	Hexagonal Bolt
60	Shaft	340	Bolt
66	Bearing Nut (Right)	360	Gland Nut
67	Space Sleeve	361	Nut
69	Impeller Space Sleeve	390	Washer for Stud
70	Seal Sleeve (Disc.)	400	O-Ring
71	Seal Sleeve (Suc.)	402	O-Ring
72	Bearing Washer	404	O-Ring



## **Mas Grup**

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