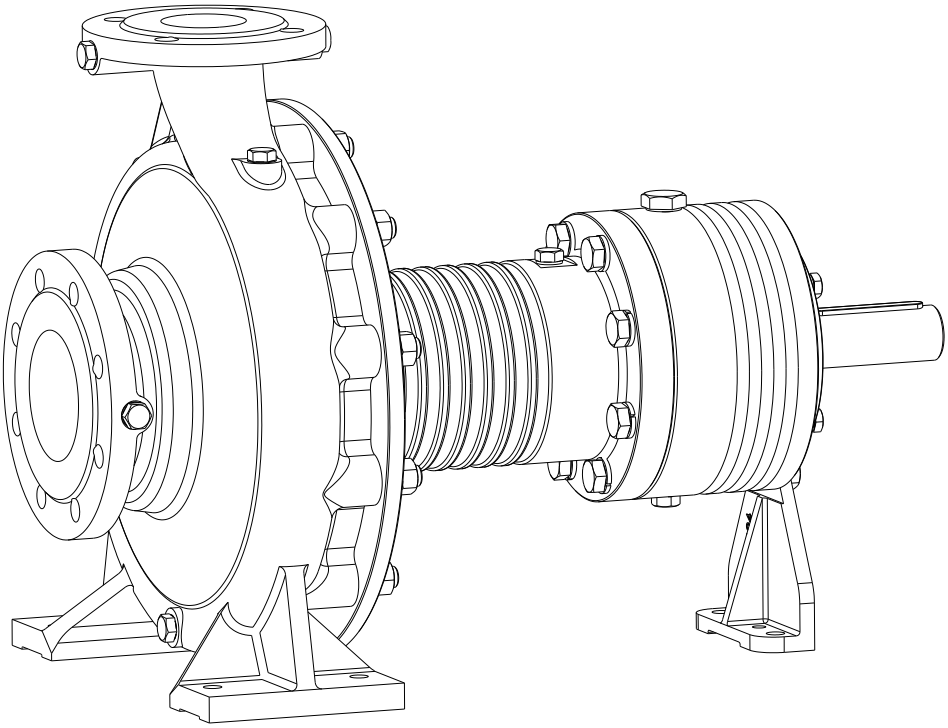
MZT PUMPI

Thermal oil - air cooled pumps series SCPT

Technical catalog



Document No. 4HK.SCPT.R001.EN

CONTENTS:

1. GENERAL INFORMATION 2
1.1. Introduction 2
1.2. Application 2
1.3. Pump type design 2
1.4. Pump type key 2
1.5. Air cooling 2

2. TECHNICAL DETAILS 2
2.1. Materials 2
2.2. Flange connections 2
2.3. Permissible flange forces and moments 3
2.4. Bearings 3
2.5. Shaft sealing 3
2.6. Direction of rotation 3
2.7. Pressure and temperature limits 3

3. DIMENSIONS - PUMP BARE SHAFT-OUTLINE DRAWING 4

4. ASSEMBLY DRAWING WITH PART LIST 5

5. PUMP EXPLODED VIEW 6

6. PERFORMANCE CURVES 7

1. GENERAL INFORMATION

1.1. Introduction

SCPT series pumps are horizontal, single stage, end suction, radially split volute casing, air cooled pumps, designed for transfer of thermal hot oils.

1.2. Application

SCPT series can be applied for transport of low viscosity industrial oil which does not chemically affect the pump material and without abrasive solid particles. General application is for heat-transfer oils at circulating systems (chemical and pharmaceutical industry; food industry; iron and steel industry, rubber and plastics industry, tar and bitumen industry etc).

Capacity:	up to 350 [m^3/h]
Differential head:	up to 130 [m]
Design pressure	up to 16 [bar]
Speed:	up to 3000 [rpm]
Temperature range:	up to 350 [^oC]
Ambient temperature:	up to 45 [^oC]

**Oversize pumps available on request*

1.3. Pump type design

SCPT type of pump is end suction centrifugal type of pump where following design solutions are applied:

- Horizontal design
- Foot mounted
- Not self-priming
- Single volute pump casing
- Closed impeller
- Beck pull out design
- Ratings and volute casing connections according ISO 2858

1.4. Pump type key (Designation)

Example: **SCPT - 50 - 200**

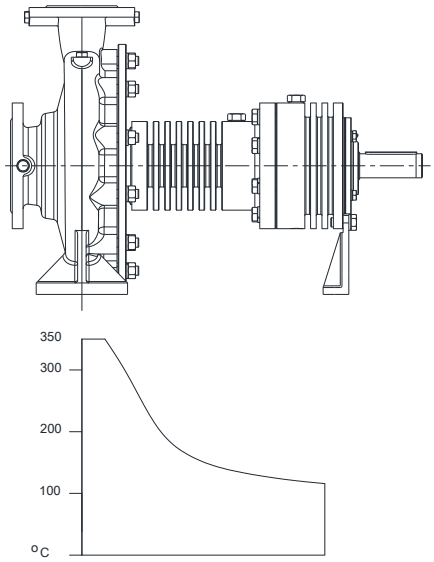
Type series

Discharge flange nominal diameter [mm]

Impeller nominal diameter

1.5. Air cooling

SCPT pumps are designed to prevent heat transfer to the mechanical seal and trust bearing without additional cooling. Diagram bellow shows the temperature drop from the volute case to the thrust bearing.



2. TECHNICAL DETAILS

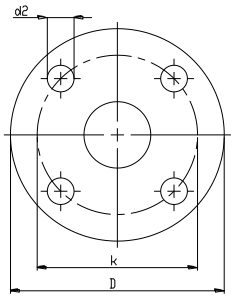
2.1. Materials

	Pump Part	Material	DIN Material Denomination	EN Material Denomination
1	Volute casing	Nodular cast iron	GGG-40.3	EN-GJS-400-18-LT
2	Impeller	Cast iron	GG-25	EN-GJL-250
3	Casing cover	Steel	1.0038	1.0038
4	Shaft	Stainless Steel	1.4021	1.4021
5	Bearing bracket	Steel	1.0038	1.0038
6	Impeller nut	Steel	1.1191	C 45 E
7	Wearing rings	Cast iron	GG-25	EN-GJL-250
8	Foot	Steel	1.0038	1.0038
9	Bearing Cover	Steel	1.0038	1.0038

2.2. Flange connections

Suction (axial) and discharge (top) flanges are in accordance with EN 1092-1 PN16

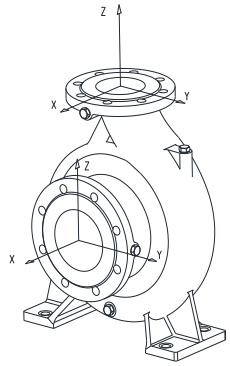
Suction Flange Nominal Diameter DN	Outside Diameter D	Bolt circle K	Bolt Number n	Bolt Holes d_2
32	140	100	4	18
40	150	110	4	18
50	165	125	4	18
65	185	145	8	18
80	200	160	8	18
100	220	180	8	18
125	250	210	8	18
125	250	210	8	18
150	285	240	8	22



Note: Different flange connections than presented can be provided on request.

2.3. Permissible flange forces and moments

Nominal Diameter DN	Force-F XYZ [N]	Torque-M XYZ [Nm]
32	210	420
40	240	465
50	270	725
65	350	1320
80	400	2200
100	520	2650
125	650	3950
150	810	4800



2.4. Bearings & Lubrication

Thrust bearings: ball type, angular contact pair, grease lubricated.
Radial bearing: sleeve type, working medium lubricated.

2.5. Shaft sealing

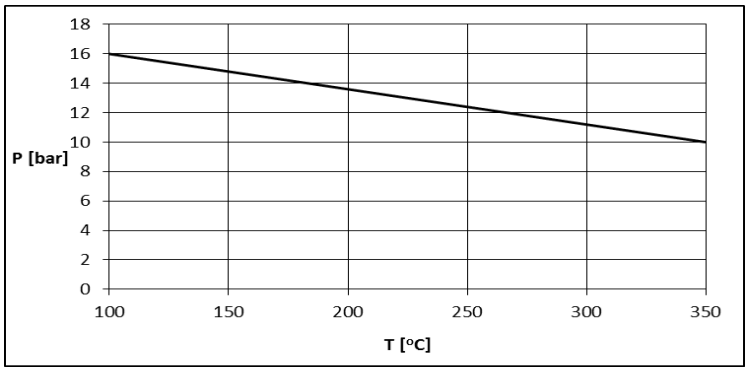
Shaft sealing for pumps series SCPT is performed with single mechanical seal, unbalanced type.
As a standard version, Burgmann M7N is applied with material combination Q1AM1GG.

2.6. Direction of rotation

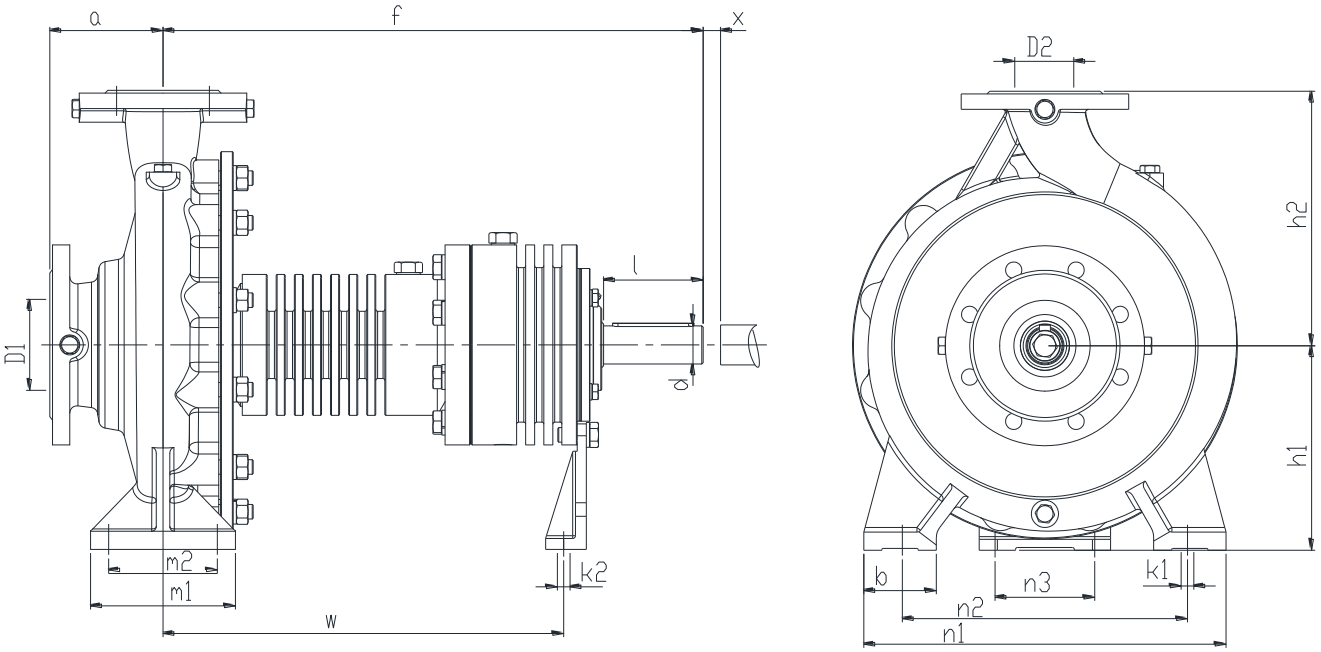
Direction of rotation is clock vice viewed from the motor side.
Direction of air cooling of the electric motor must be toward the pump side.

2.7. Pressure & temperature limits

Pump casing design pressure depends of the working temperature. The chart below shows design pressure vs. working temperature.



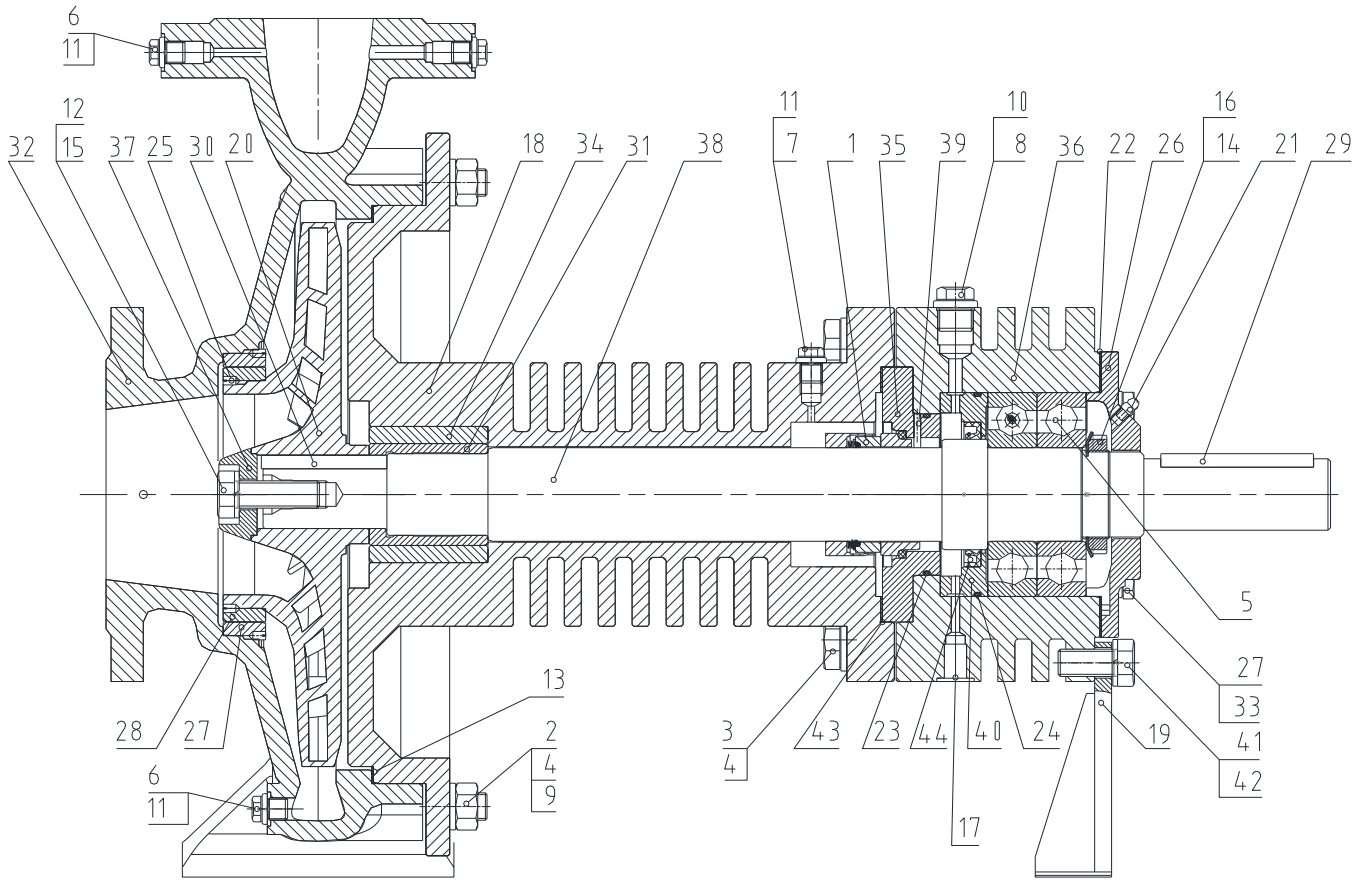
3. DIMENSIONS - PUMP BARE SHAFT OUTLINE DRAWING



SIZE	Dimensions (mm)																	
	D1	D2	a	f	h1	h2	b	m1	m2	n1	n2	n3	w	x	d	l	k1	k2
32-125	50	32	80	485	112	140	50	100	70	190	140	110	285	100	24	50	M12	M12
32-160	50	32	80	485	132	160	50	100	70	240	190	140	285	100	24	50	M12	M12
32-200	50	32	80	485	160	180	50	100	70	240	190	140	285	100	24	50	M12	M12
32-250	50	32	100	600	180	225	65	125	95	320	250	190	370	100	32	80	M12	M12
40-160	65	40	80	485	132	160	50	100	70	240	190	140	285	100	24	50	M12	M12
40-200	65	40	100	485	160	180	50	100	70	265	212	165	285	100	24	50	M12	M12
40-250	65	40	100	600	180	225	65	125	95	320	250	190	370	100	32	80	M12	M12
40-315	65	40	125	600	200	250	65	125	95	345	280	215	370	100	32	80	M12	M12
50-160	80	50	100	485	160	180	50	100	70	265	212	165	285	100	24	50	M12	M12
50-200	80	50	100	485	160	200	50	100	70	265	212	165	285	100	24	50	M12	M12
50-250	80	50	125	600	180	225	65	125	95	320	250	190	370	100	32	80	M12	M12
50-315	80	50	125	600	225	280	65	125	95	345	280	215	370	100	32	80	M12	M12
65-160	100	65	100	600	160	200	65	125	95	280	212	150	370	100	32	80	M12	M12
65-200	100	65	100	600	180	225	65	125	95	320	250	190	370	140	32	80	M12	M12
65-250	100	65	125	600	200	250	80	160	120	360	280	200	370	140	32	80	M16	M12
65-315	100	65	125	630	225	280	80	160	120	400	315	240	370	140	42	110	M16	M12
80-160	125	80	125	600	180	225	65	125	95	320	250	190	370	140	32	80	M12	M12
80-200	125	80	125	600	180	250	65	125	95	345	280	215	370	140	32	80	M16	M12
80-250	125	80	125	600	225	280	80	160	120	400	315	240	370	140	32	80	M16	M12
80-315	125	80	125	630	250	315	80	160	120	400	315	240	370	140	42	110	M16	M12
100-200	125	100	125	600	200	280	80	160	120	360	280	200	370	140	32	80	M16	M12
100-250	125	100	140	630	225	280	80	160	120	400	315	240	370	140	42	110	M16	M12
100-315	125	100	140	630	250	315	80	160	120	400	315	240	370	140	42	110	M16	M12
125-250	150	125	140	630	250	355	80	160	120	400	315	240	370	140	42	110	M16	M12
125-315	150	125	140	630	280	355	100	200	150	500	400	300	370	140	42	110	M20	M12

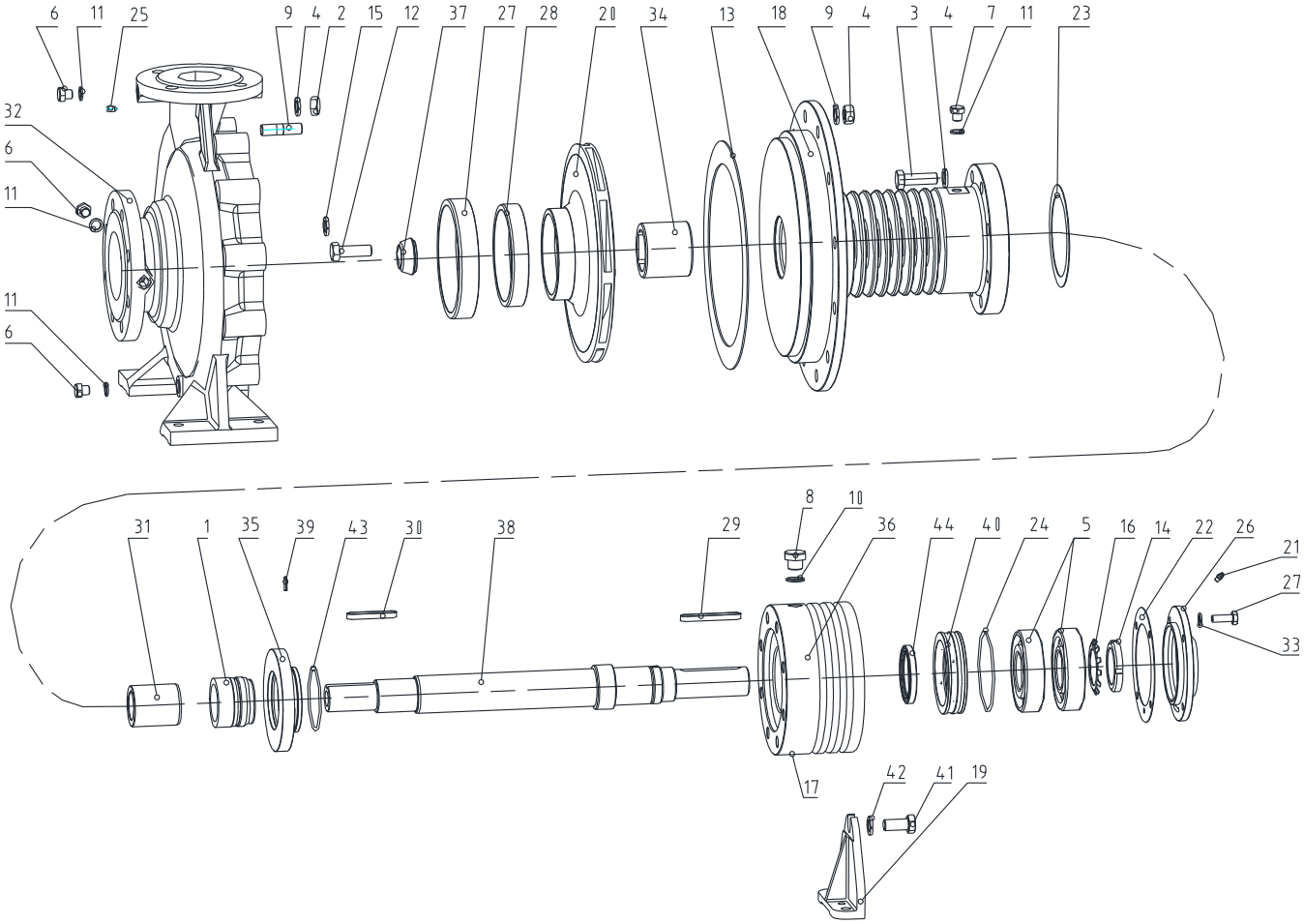
MZT PUMPI reserves the right to make changes without prior notice

4. ASSEMBLY DRAWING WITH PART LIST



1	Mechanical seal	12	Impeller fixing screw	23	O-ring	34	Plate bearing
2	Nut	13	Gasket	24	O-ring	35	Mechanical seal cover
3	Screw	14	Lock nut	25	Screw for wearing rings fixing	36	Bearing bracket
4	Washer	15	Washer	26	Bearing cover	37	Disc
5	Ball bearings	16	Locking washer	27	Casing wearing ring	38	Shaft
6	Screw	17	Leakage connection R1/2”	28	Impeller wearing ring	39	Spring pin
7	Air venting crews	18	Volute casing cover	29	Key	40	Seat ring holder
8	Screw	19	Foot	30	Key	41	Screw
9	Screw	20	Impeller	31	Sleeve	42	Washer
10	Washer	21	Greaser	32	Volute casing	43	Gasket
11	Washer	22	Gasket	33	Washer	44	Lip seal

5. PUMP EXPLODED VIEW



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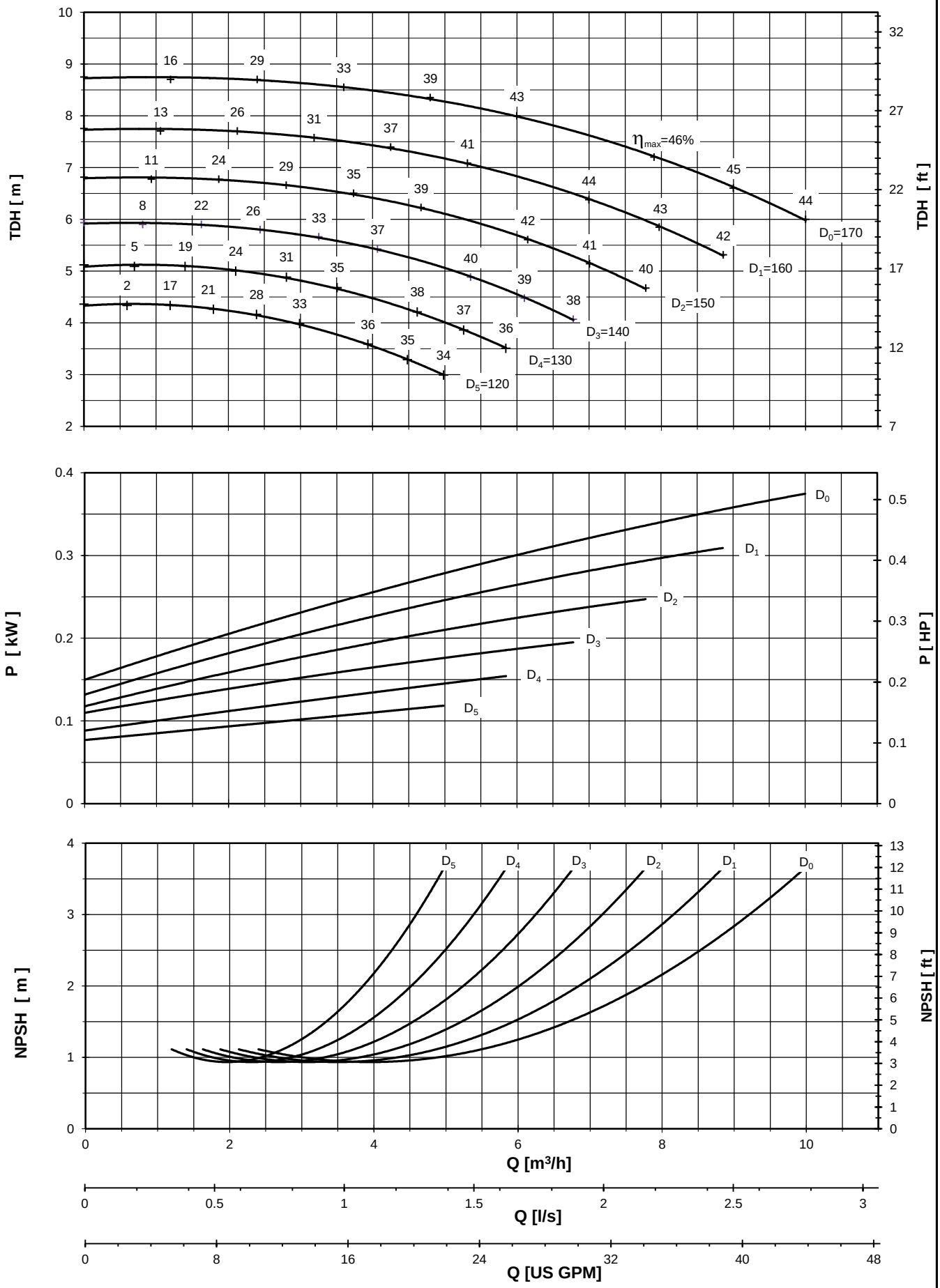
7	Air venting screw	18	Volute casing cover	29	Key	40	Seat ring holder
8	Screw	19	Foot	30	Key	41	Screw
9	Screw	20	Impeller	31	Sleeve	42	Washer
10	Washer	21	Greaser	32	Volute casing	43	Gasket
11	Washer	22	Gasket	33	Washer	44	Lip seal

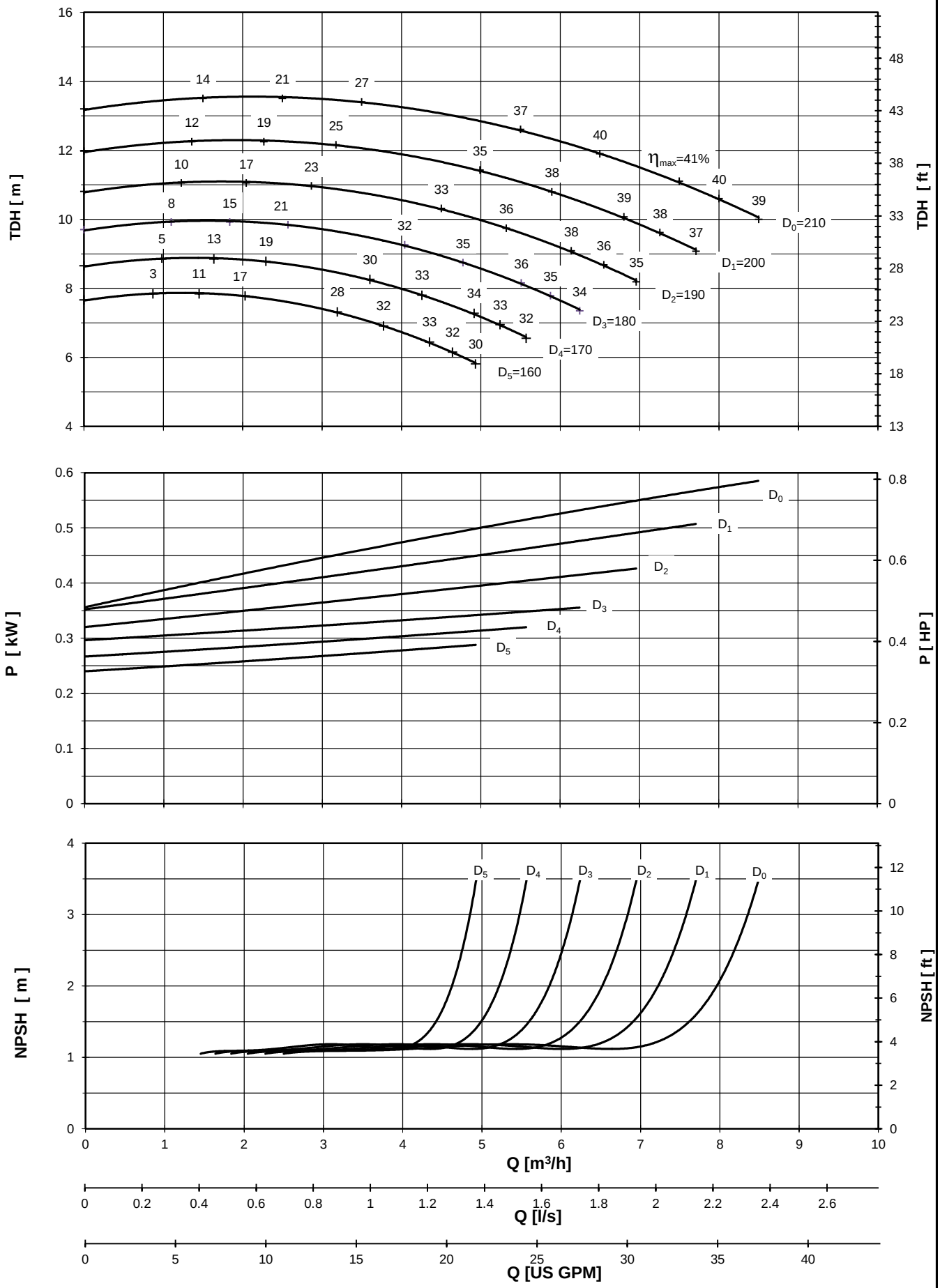
6. PERFORMANCE CURVES

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0142.03	PUMP TYPE SCPT 32 - 160 1450 [rpm]



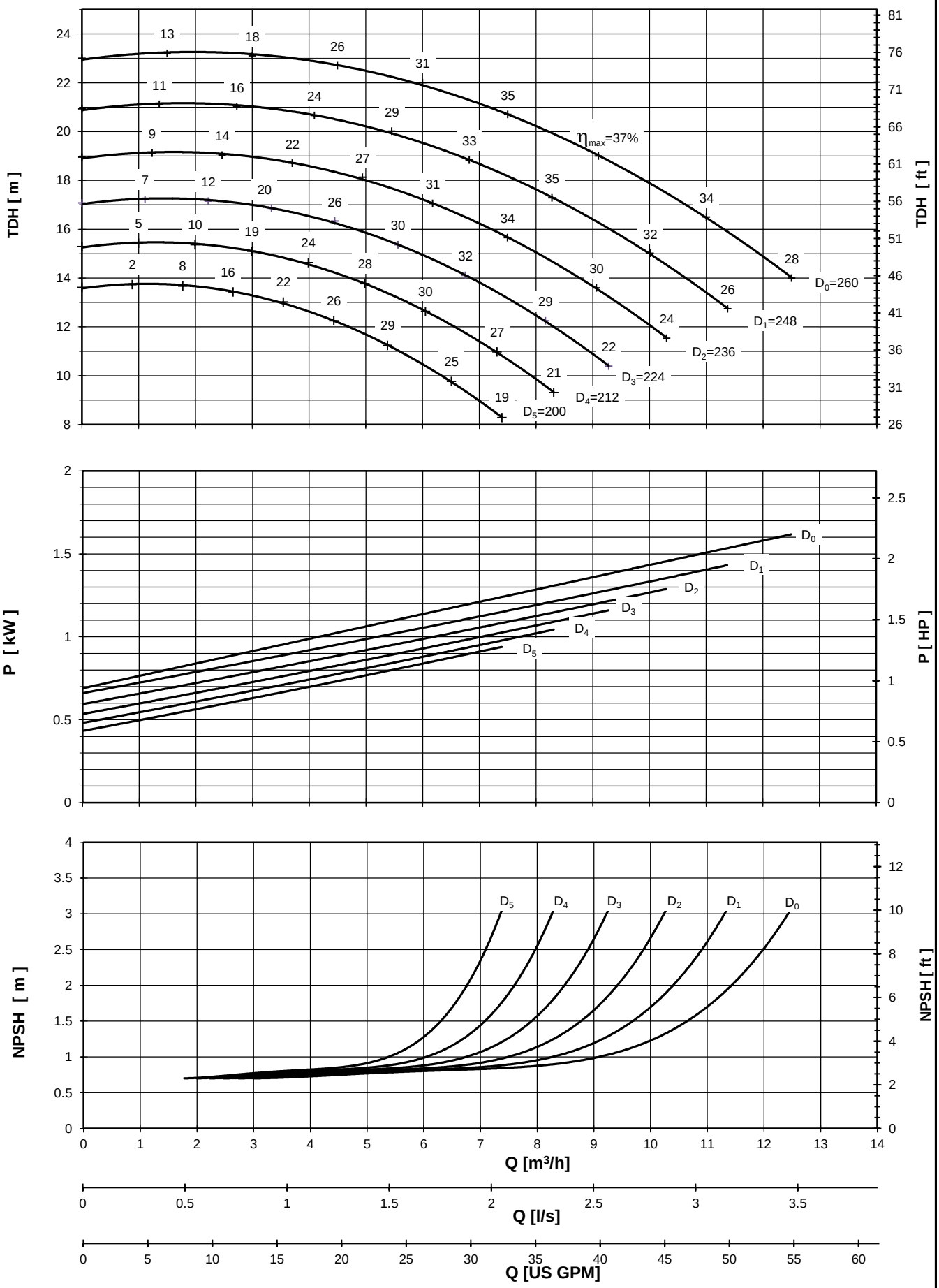
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0143.03	PUMP TYPE SCPT 32 - 200 1450 [rpm]



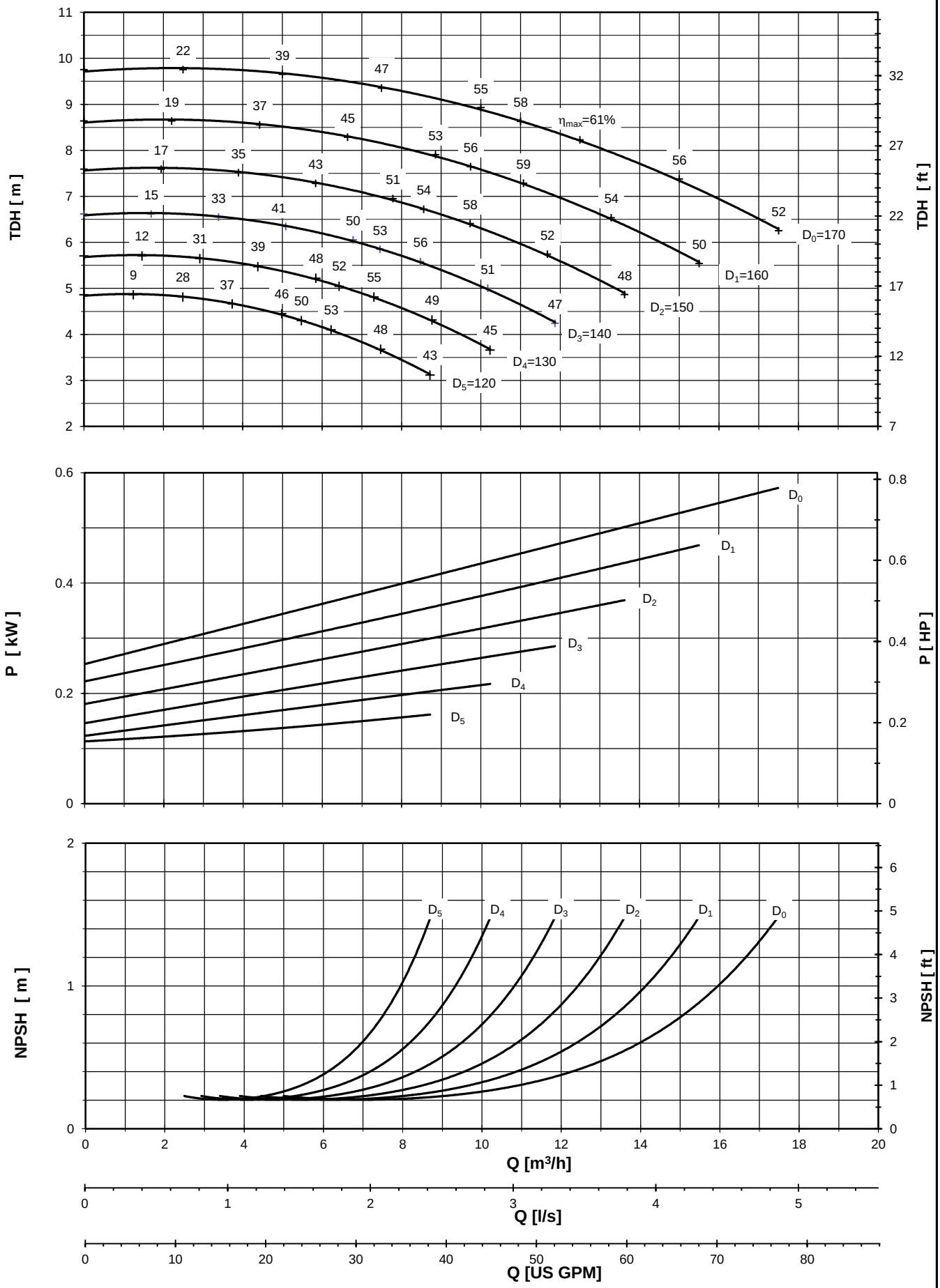
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0144.03	PUMP TYPE SCPT 32 - 250 1450 [rpm]



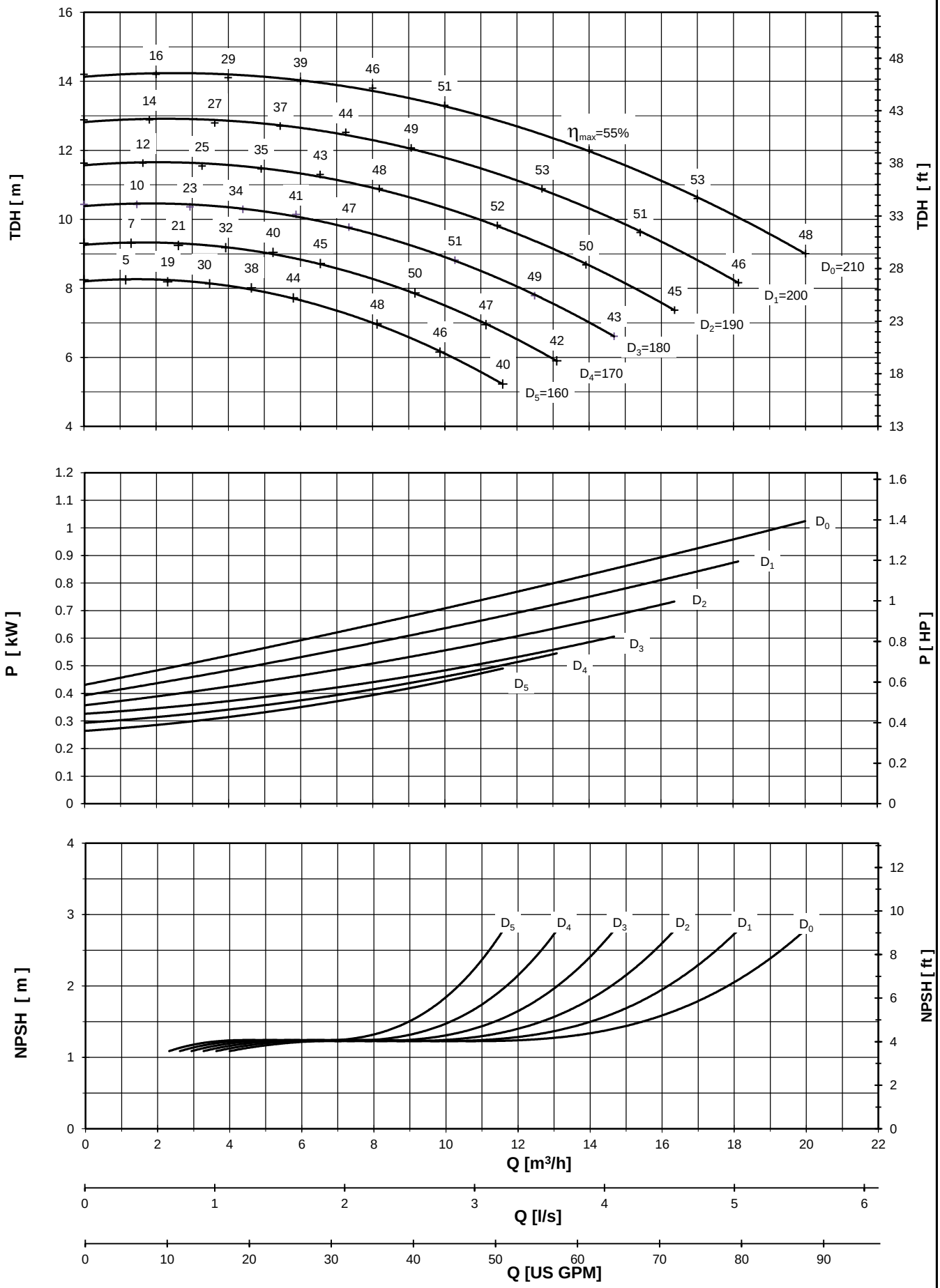
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0146.03	PUMP TYPE SCPT 40 - 160 1450 [rpm]



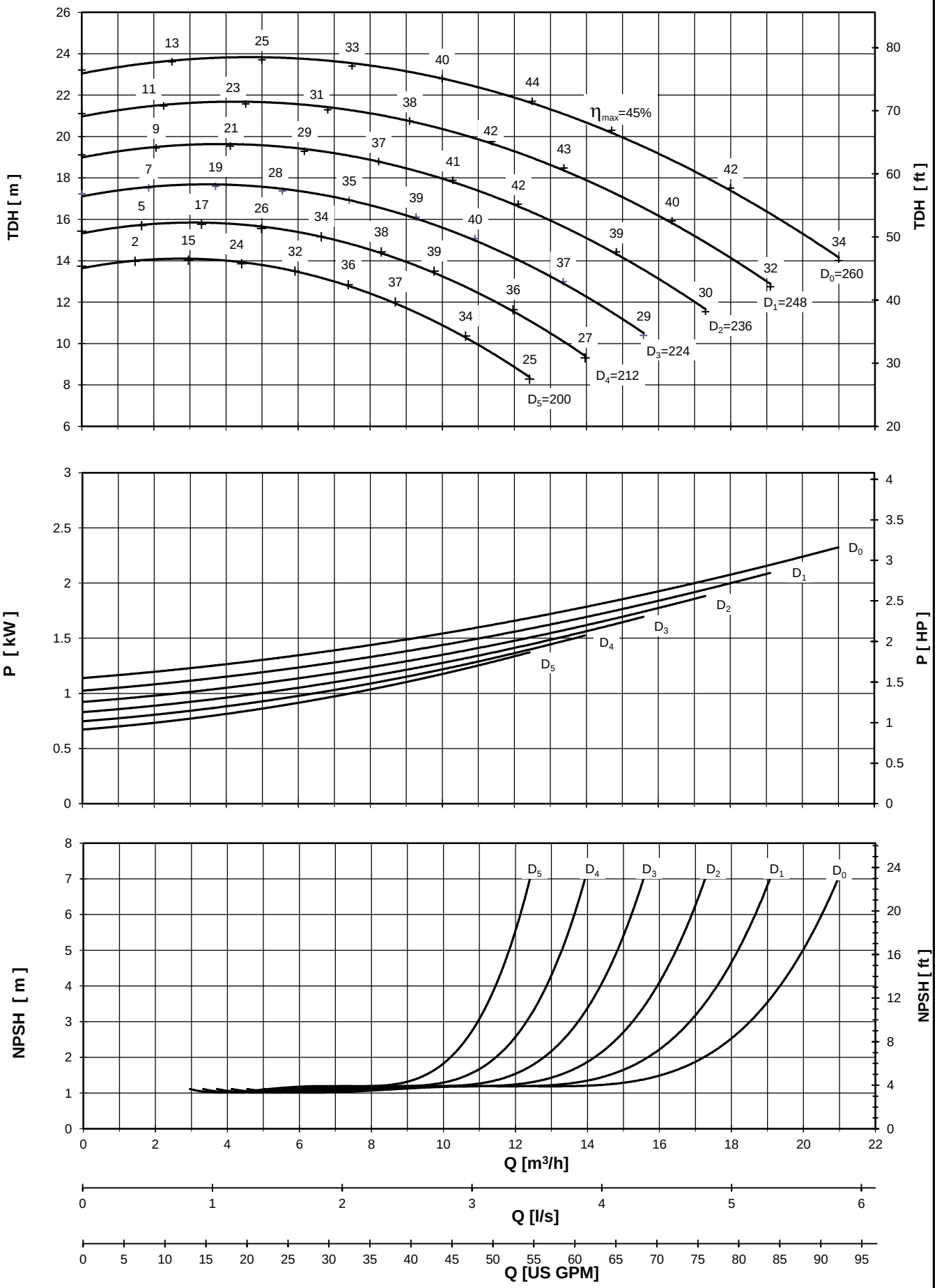
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0147.03	PUMP TYPE SCPT 40 - 200 1450 [rpm]



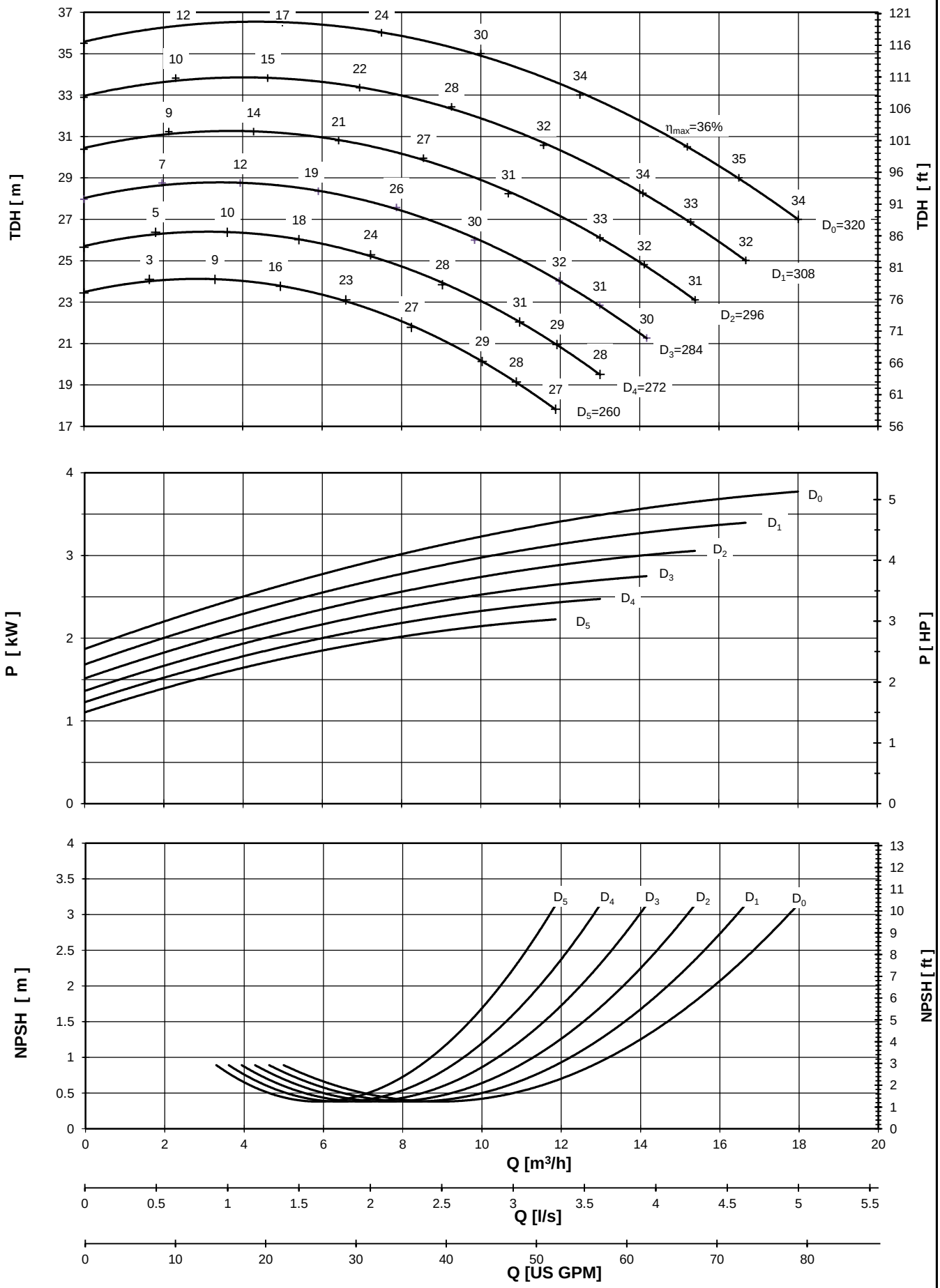
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HS.0148.03	PUMP TYPE SCPT 40 - 250 1450 [rpm]



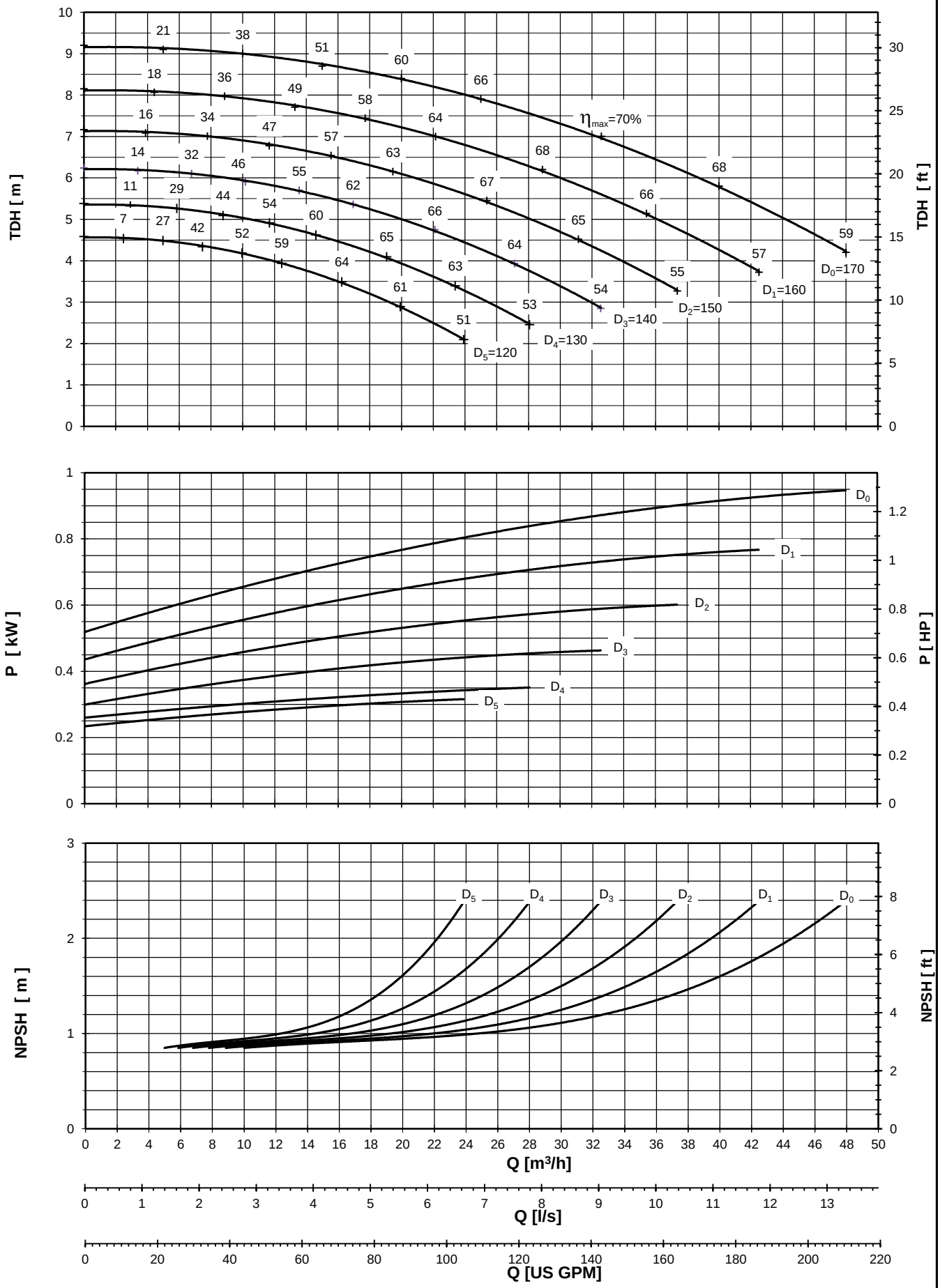
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0149.03	PUMP TYPE SCPT 40 - 315 1450 [rpm]



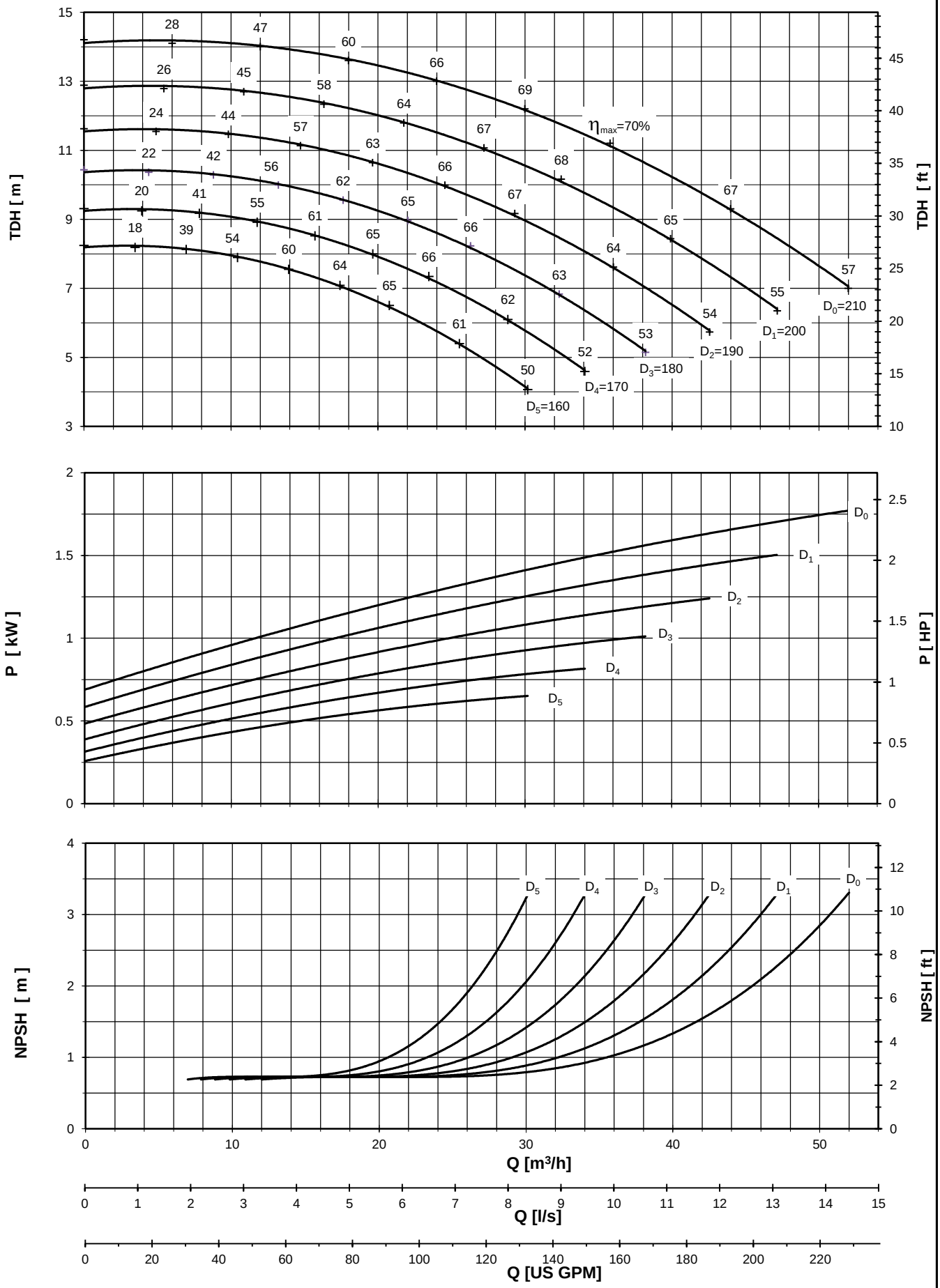
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0181.03	PUMP TYPE SCPT 50 - 160 1450 [rpm]



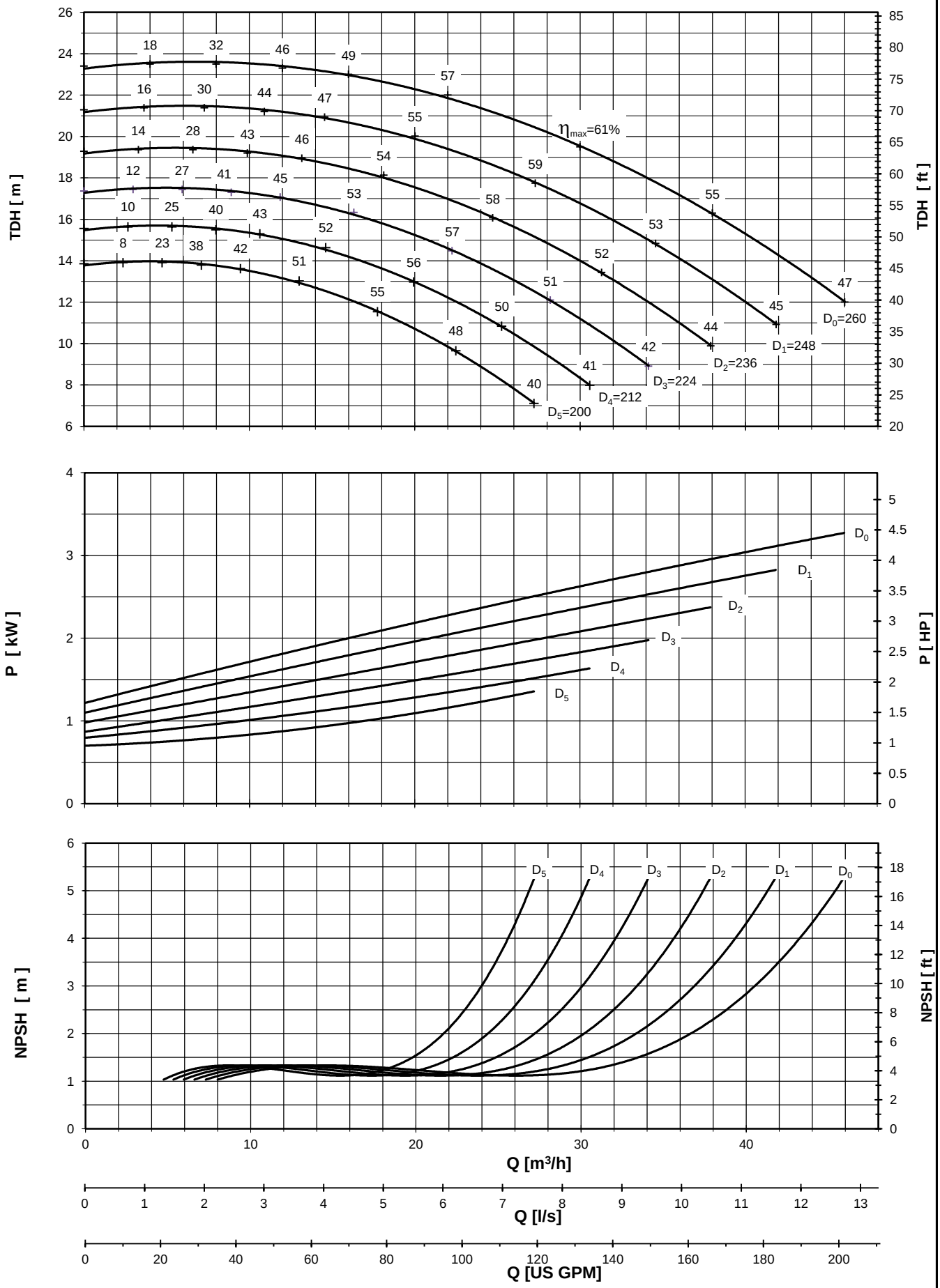
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0152.03	PUMP TYPE SCPT 50 - 200 1450 [rpm]



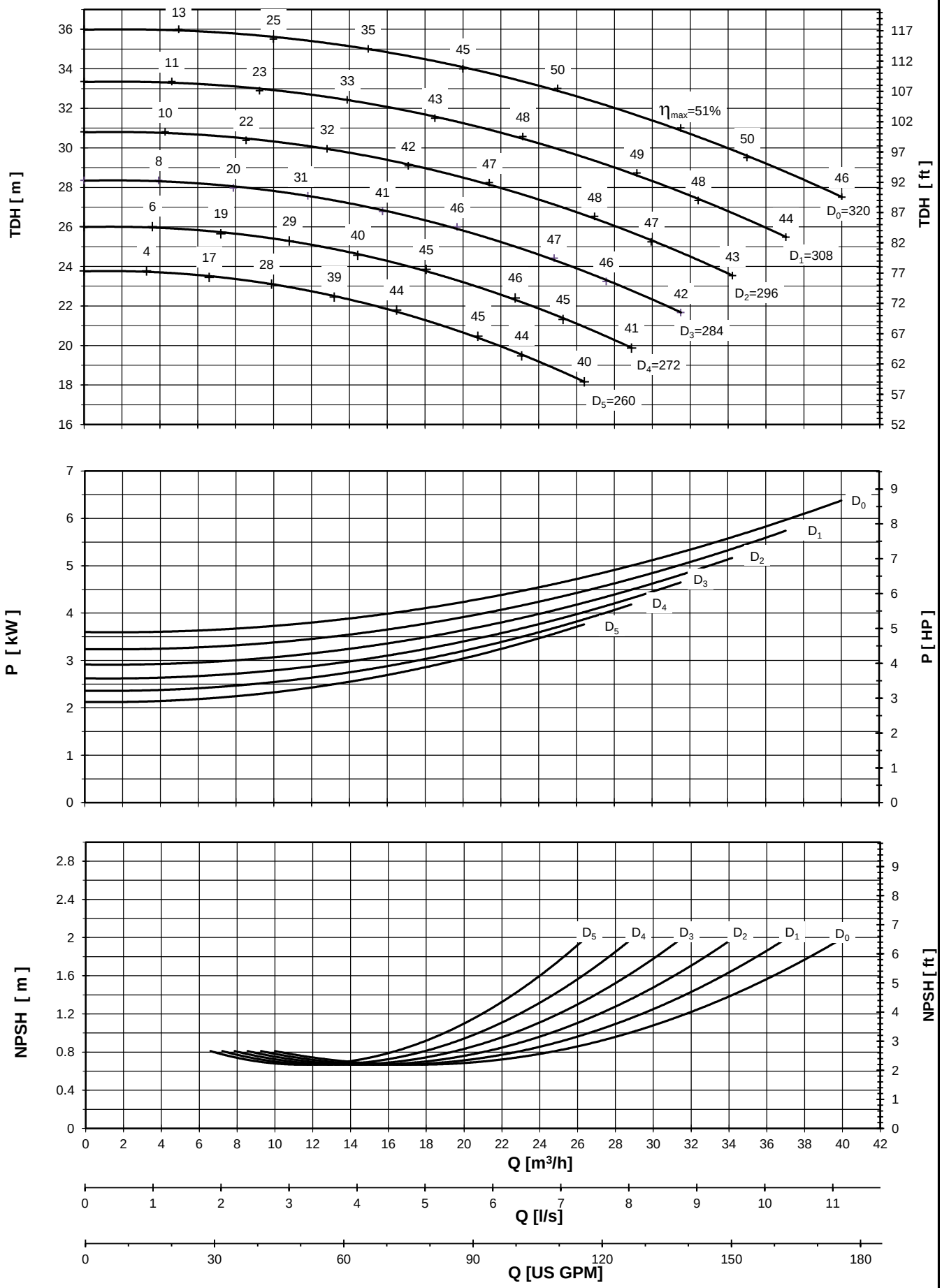
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0153.03	PUMP TYPE SCPT 50 - 250 1450 [rpm]



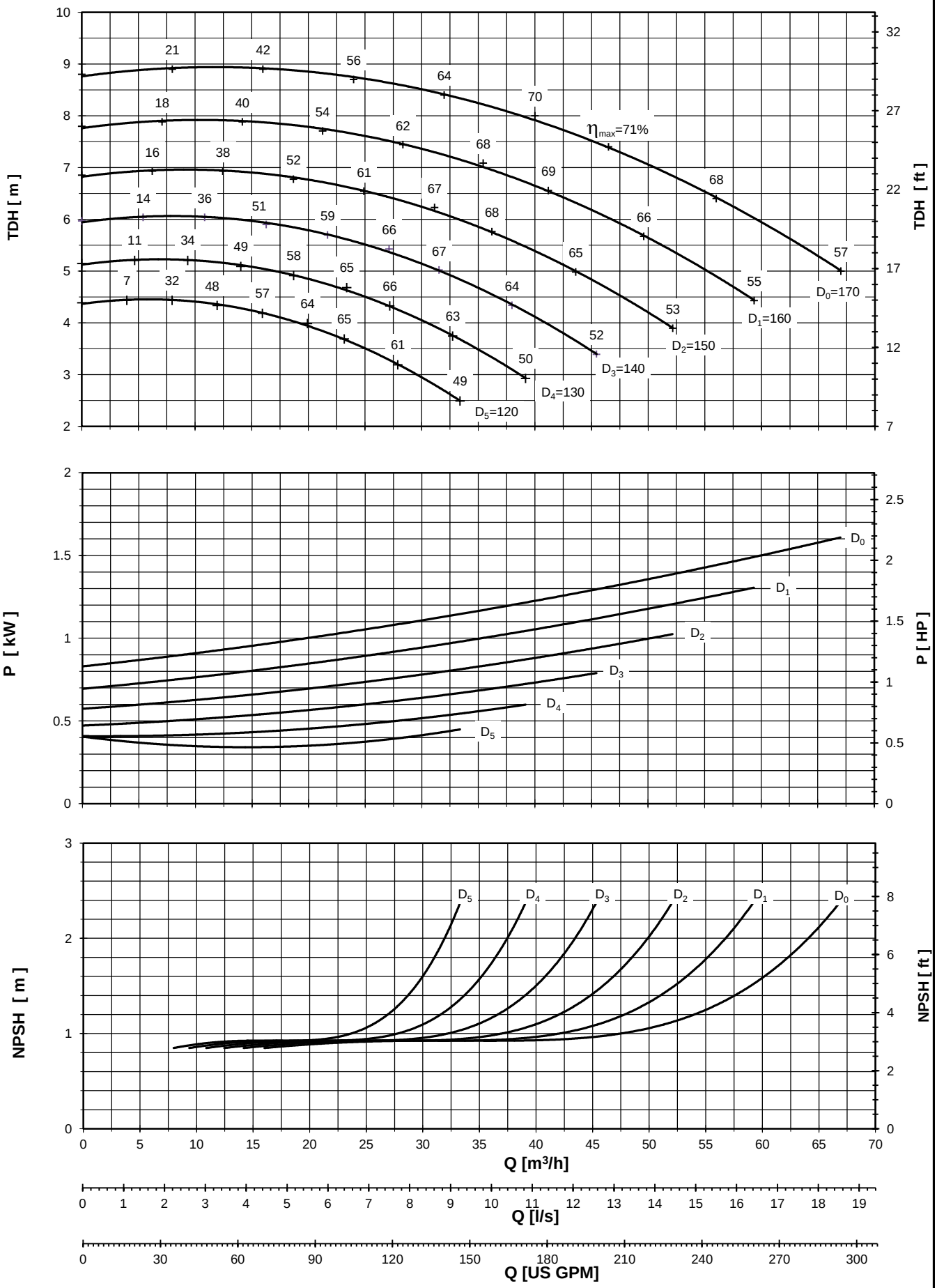
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0154.03	PUMP TYPE SCPT 50 - 315 1450 [rpm]



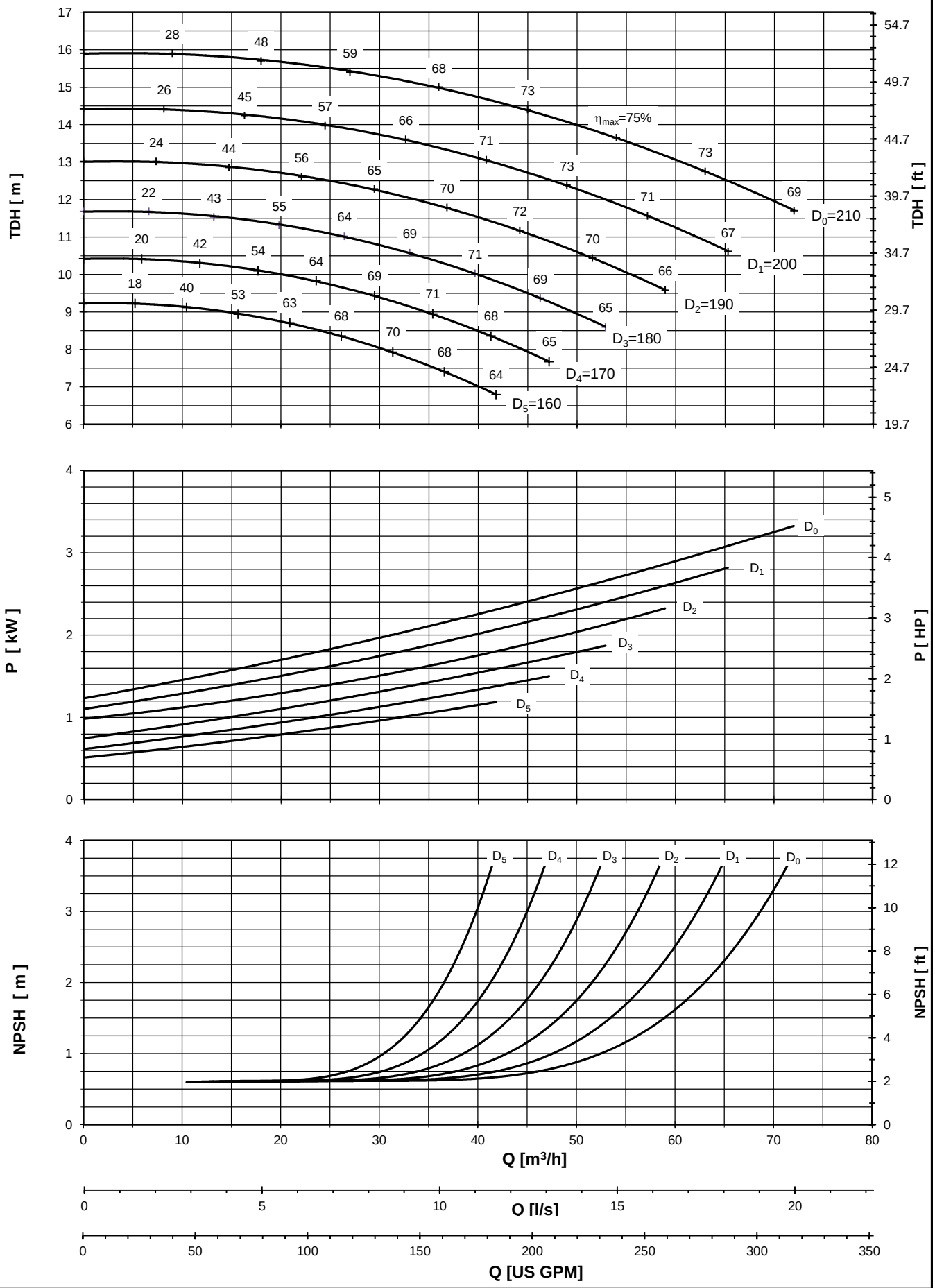
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0151.03	PUMP TYPE SCPT 65 - 160 1450 [rpm]



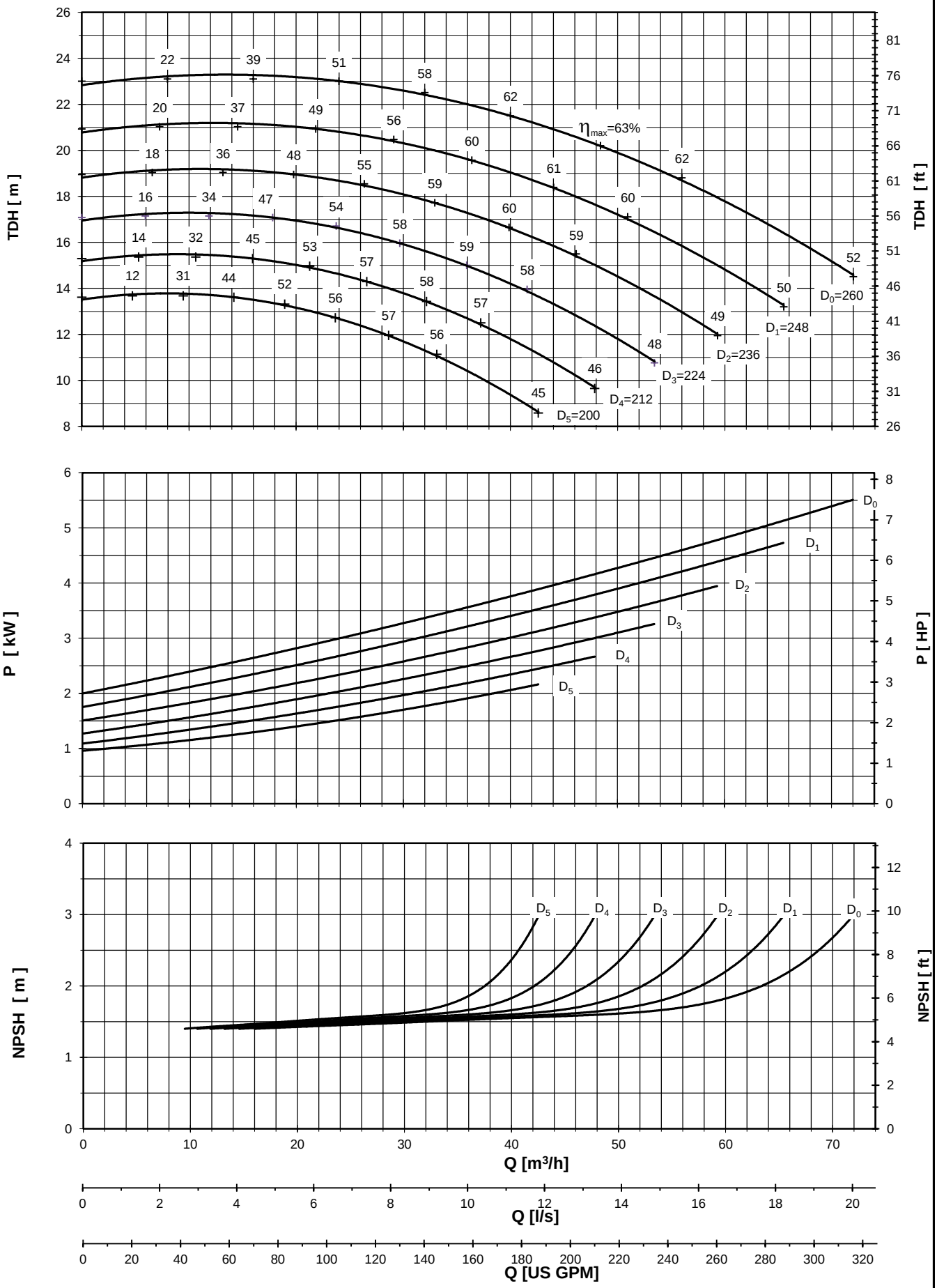
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0157.03	PUMP TYPE SCPT 65 - 200 1450 [rpm]



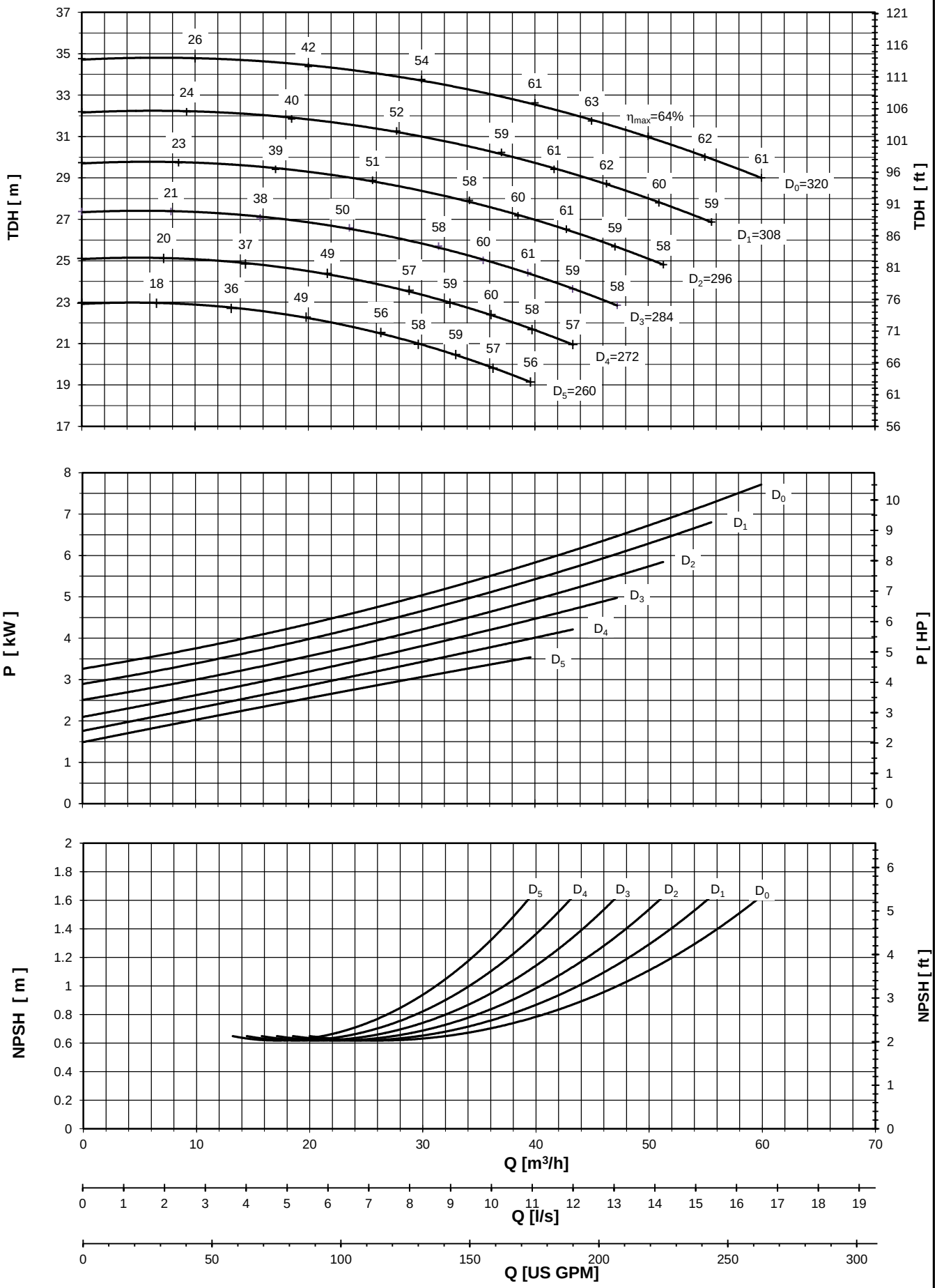
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm2/s], density 1000 [kg/m3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0158.03	PUMP TYPE SCPT 65 - 250 1450 [rpm]



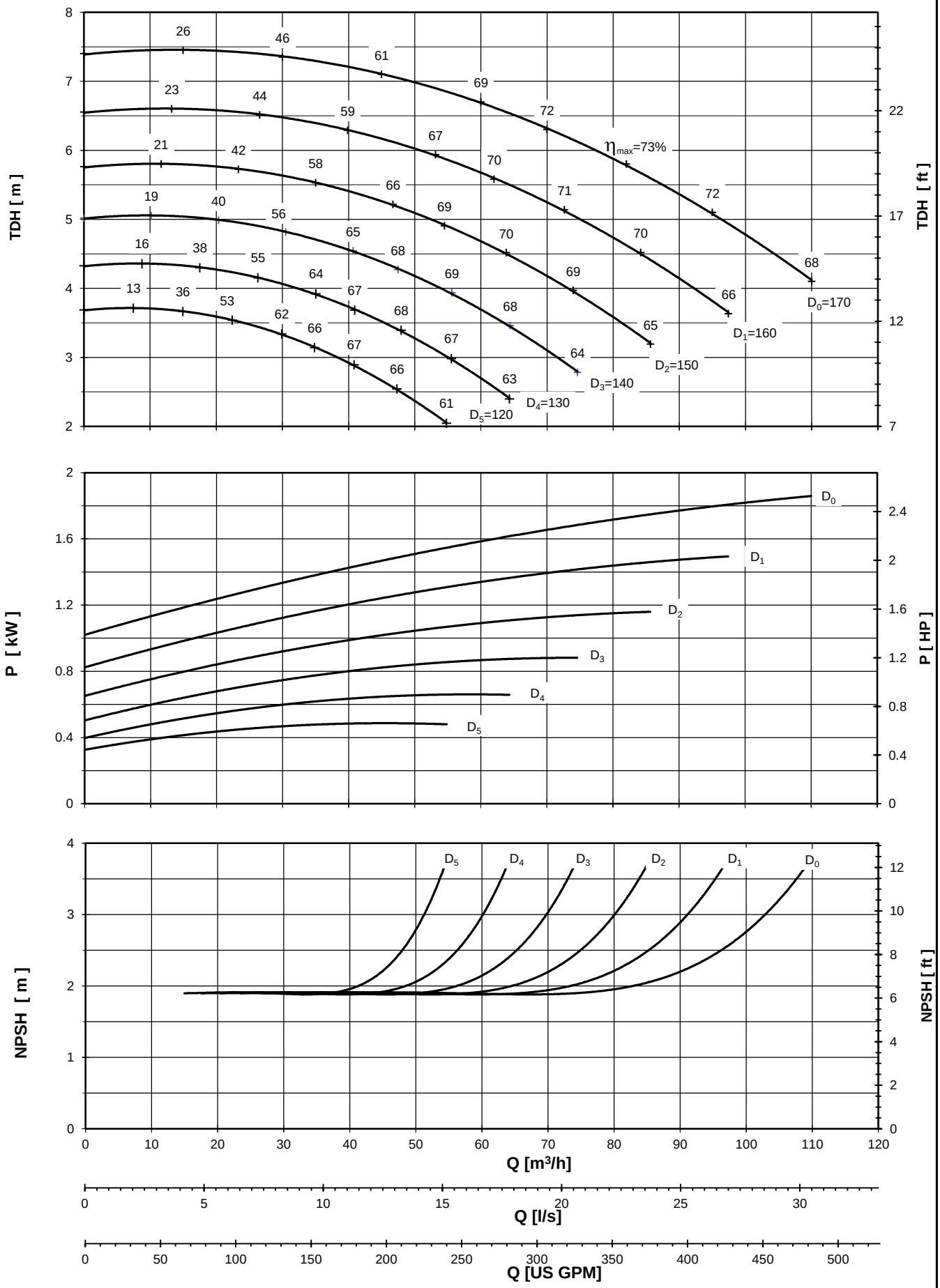
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0159.03	PUMP TYPE SCPT 65 - 315 1450 [rpm]



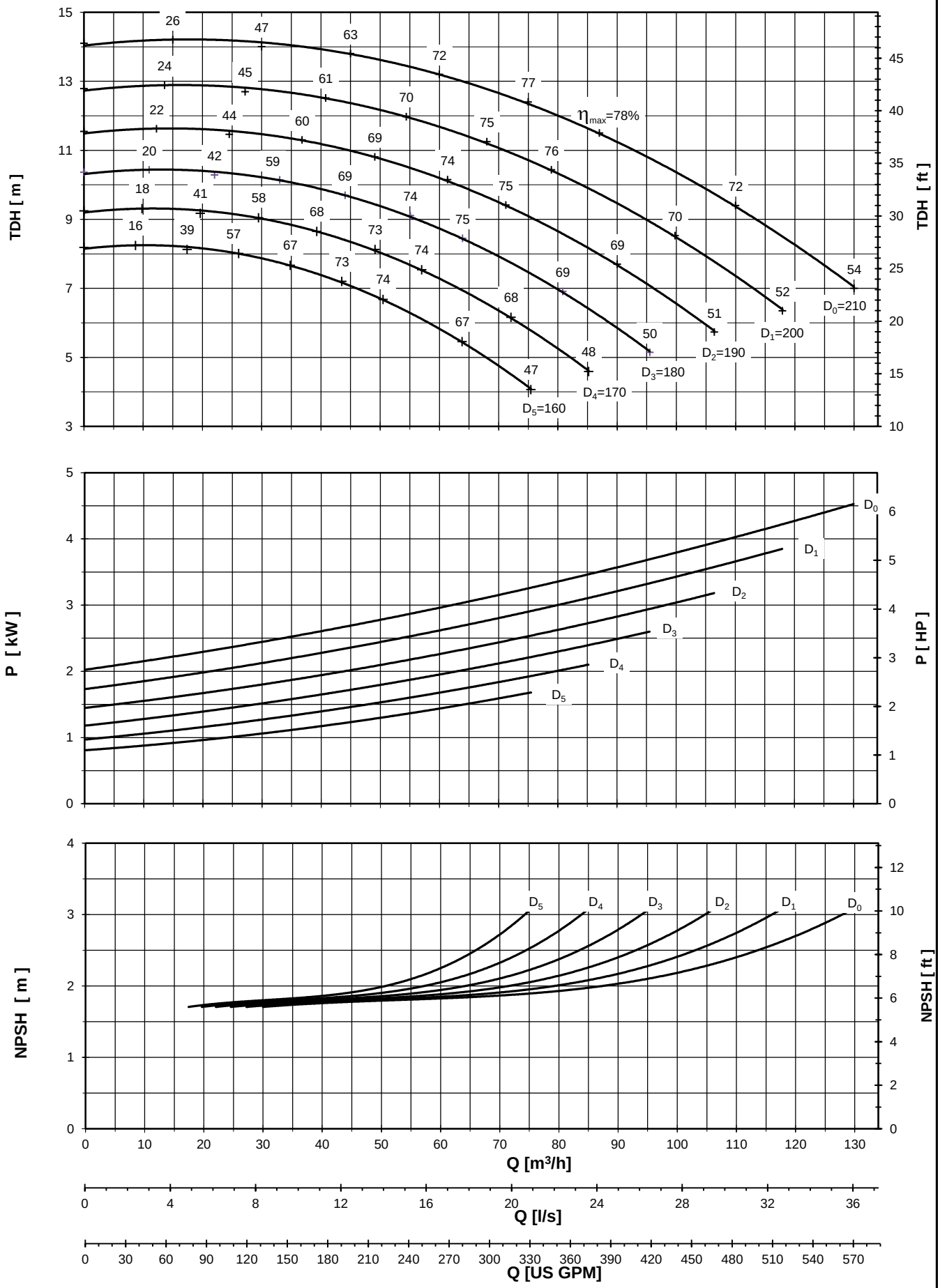
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0160.03	PUMP TYPE SCPT 80 - 160 1450 [rpm]



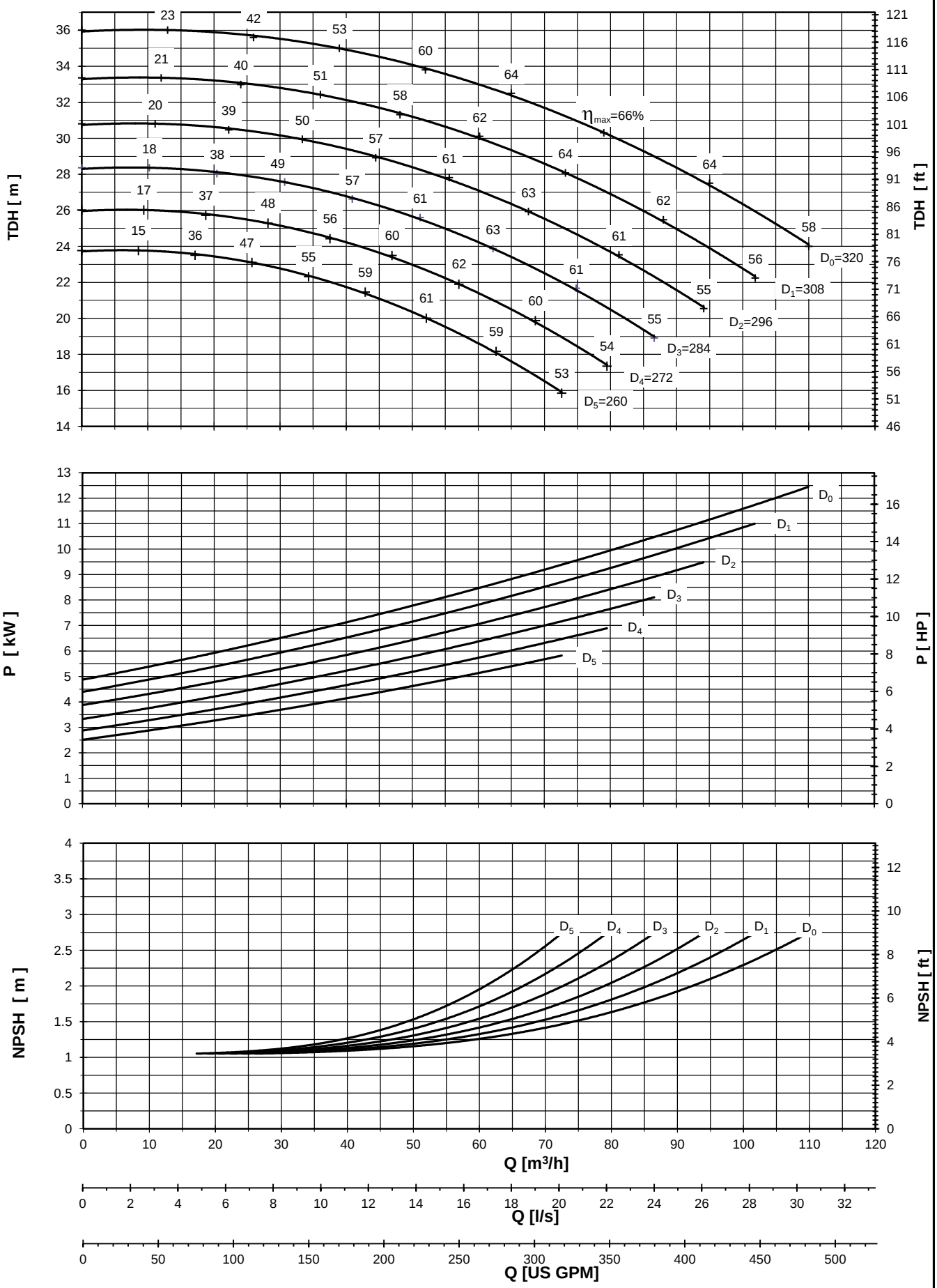
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0161.03	PUMP TYPE SCPT 80 - 200 1450 [rpm]



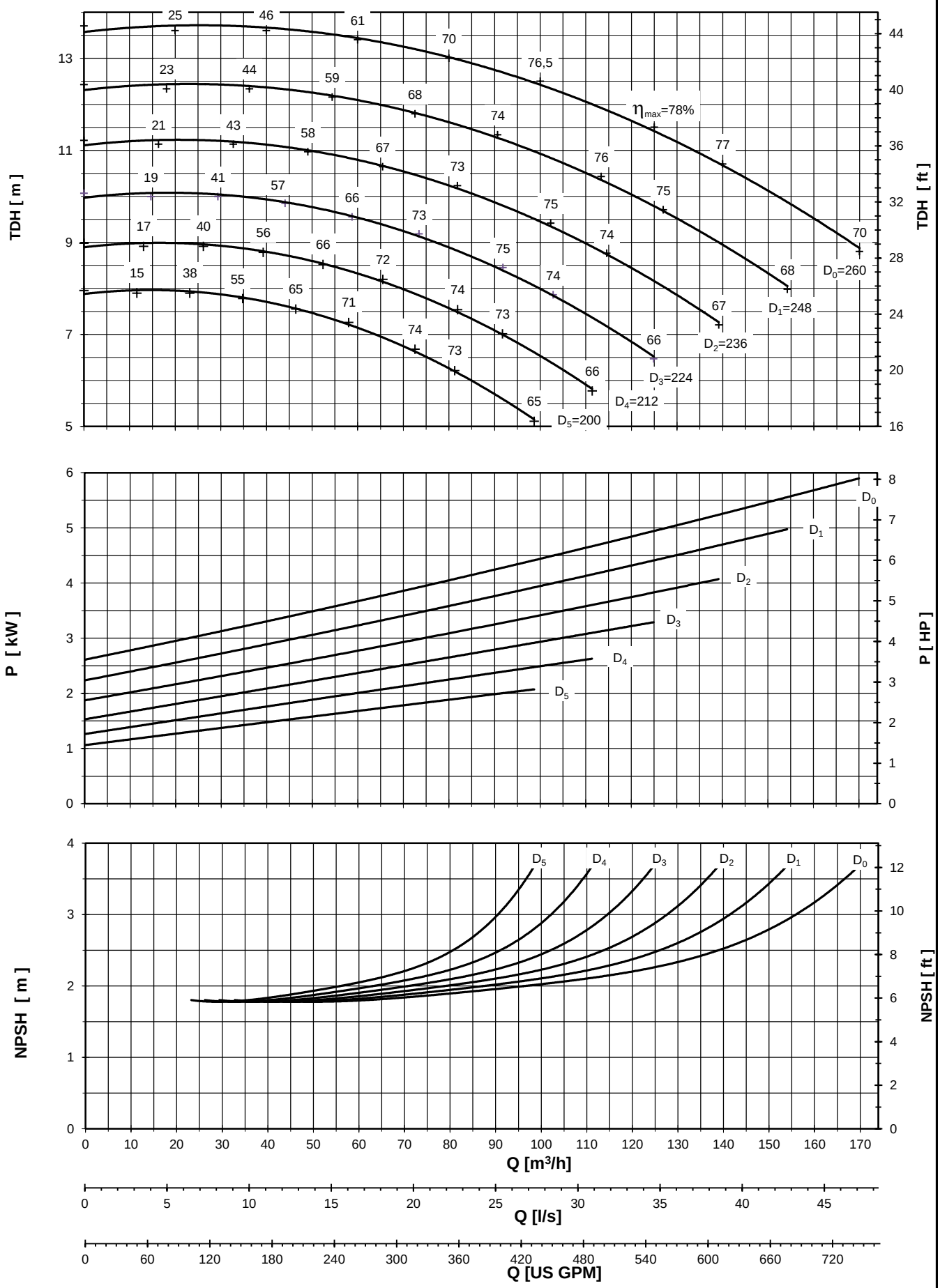
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0163.03	PUMP TYPE SCPT 80 - 315 1450 [rpm]



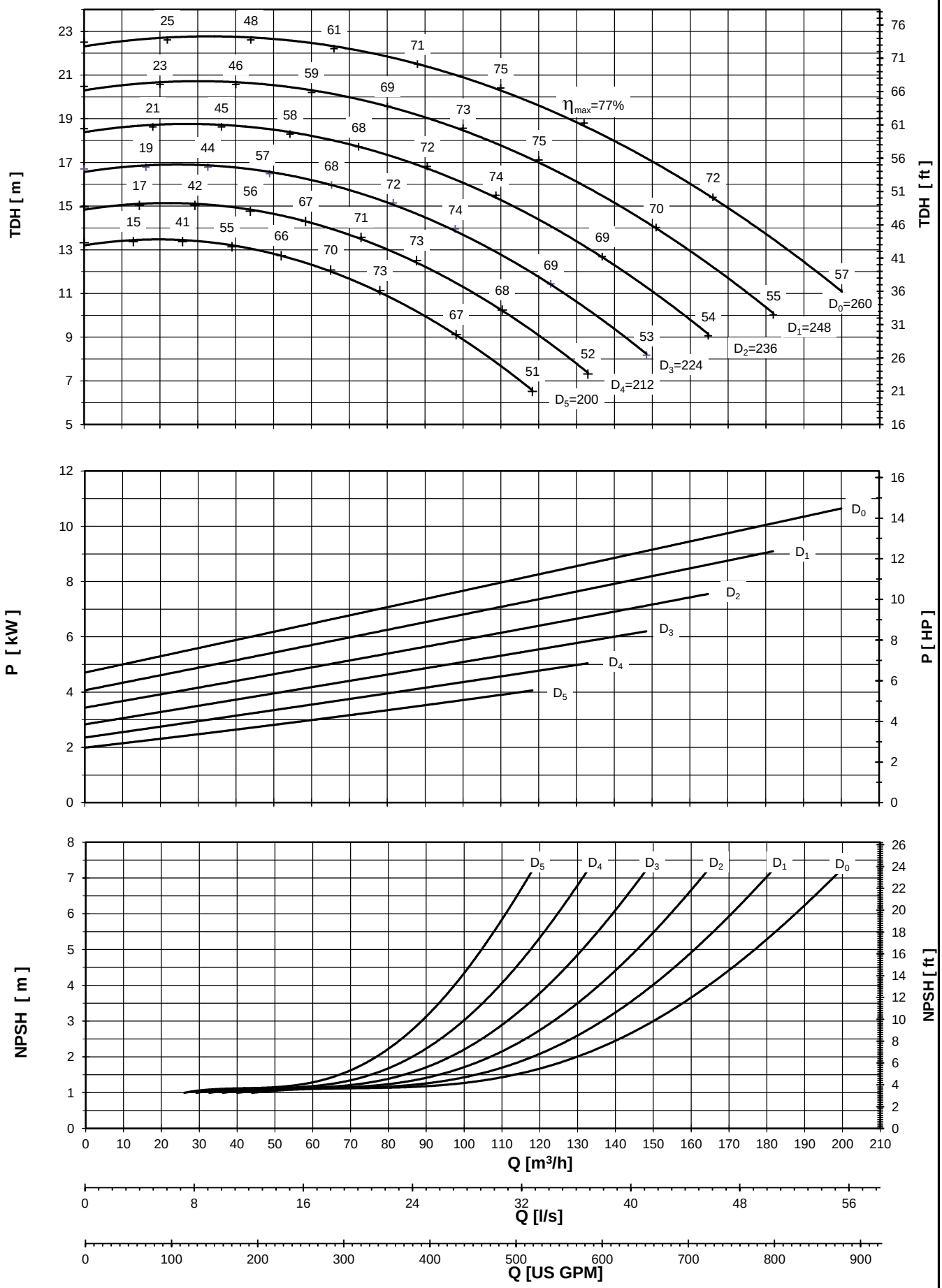
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0165.03	PUMP TYPE SCPT 100 - 200 1450 [rpm]



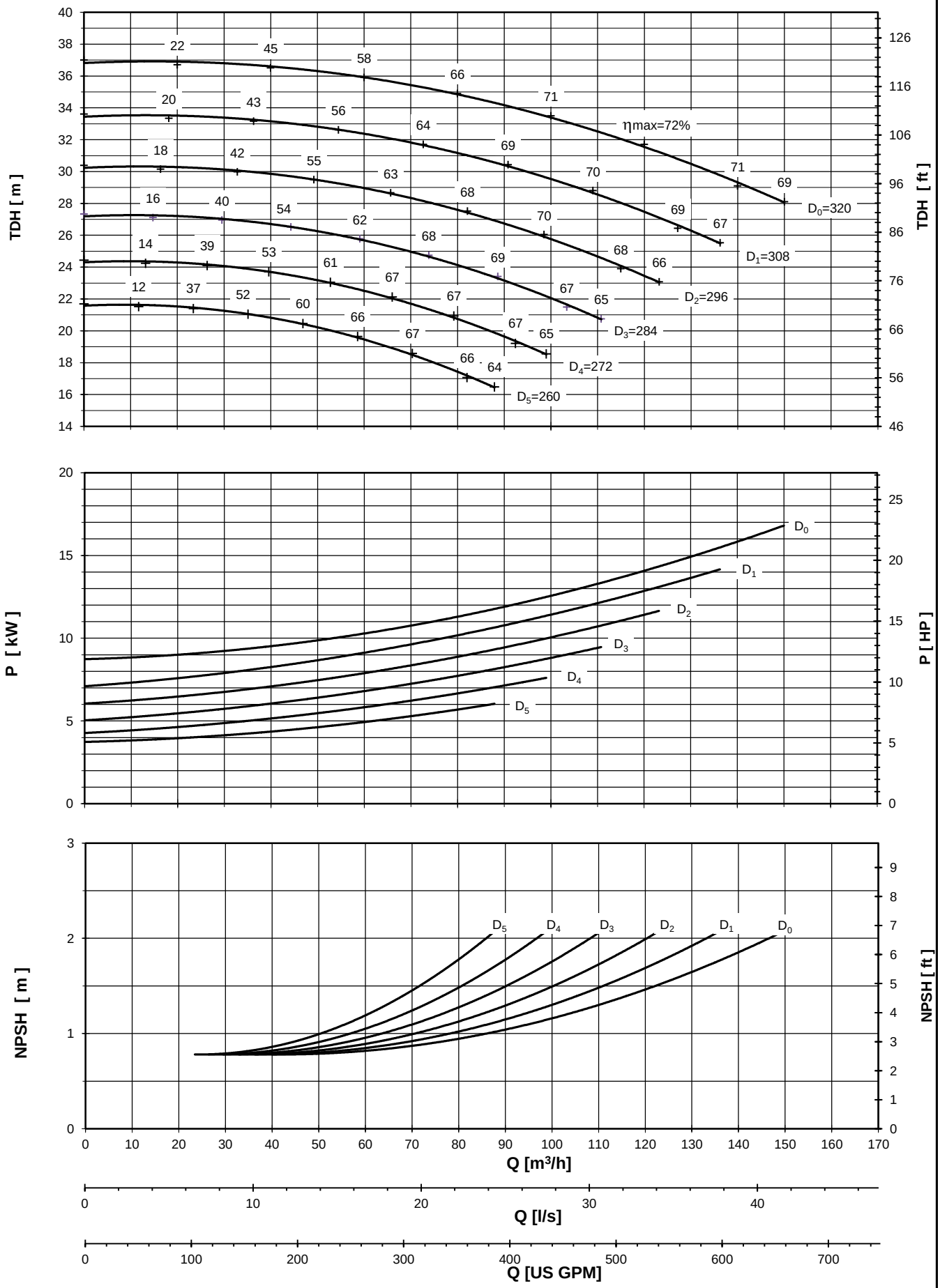
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0166.03	PUMP TYPE SCPT 100 - 250 1450 [rpm]



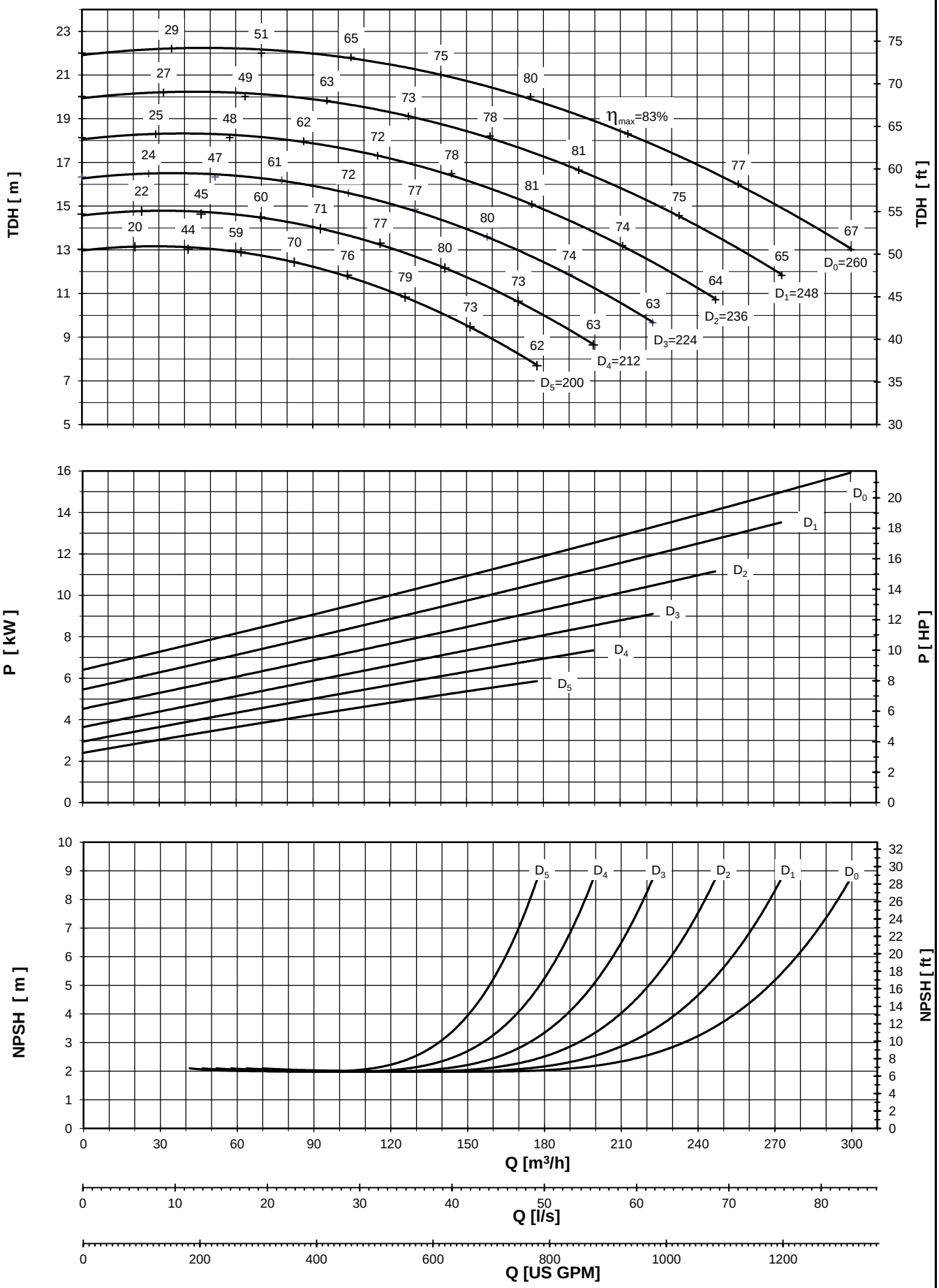
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0167.03	PUMP TYPE SCPT 100 - 315 1450 [rpm]



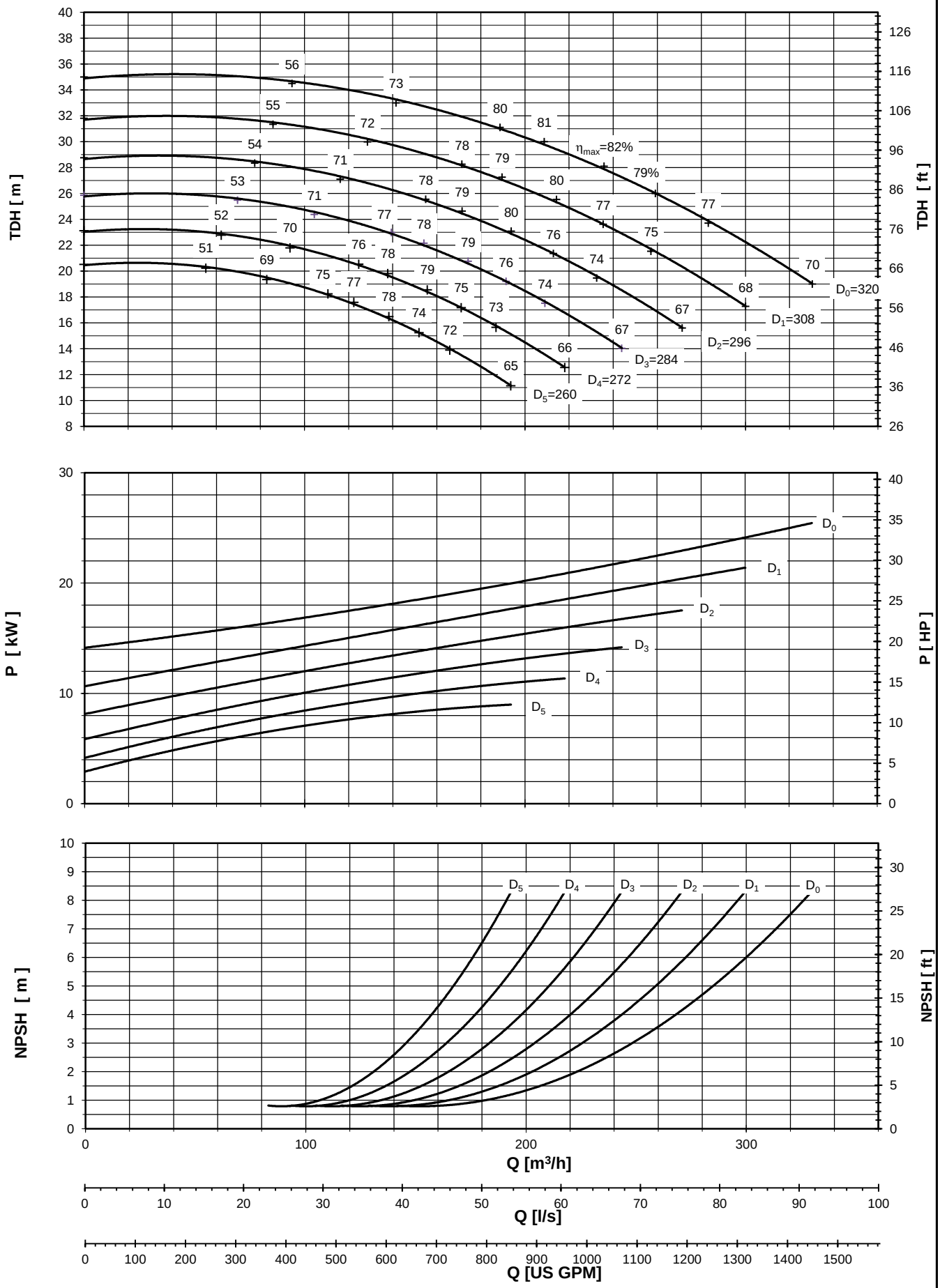
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0169.03	PUMP TYPE SCPT 125 - 250 1450 [rpm]



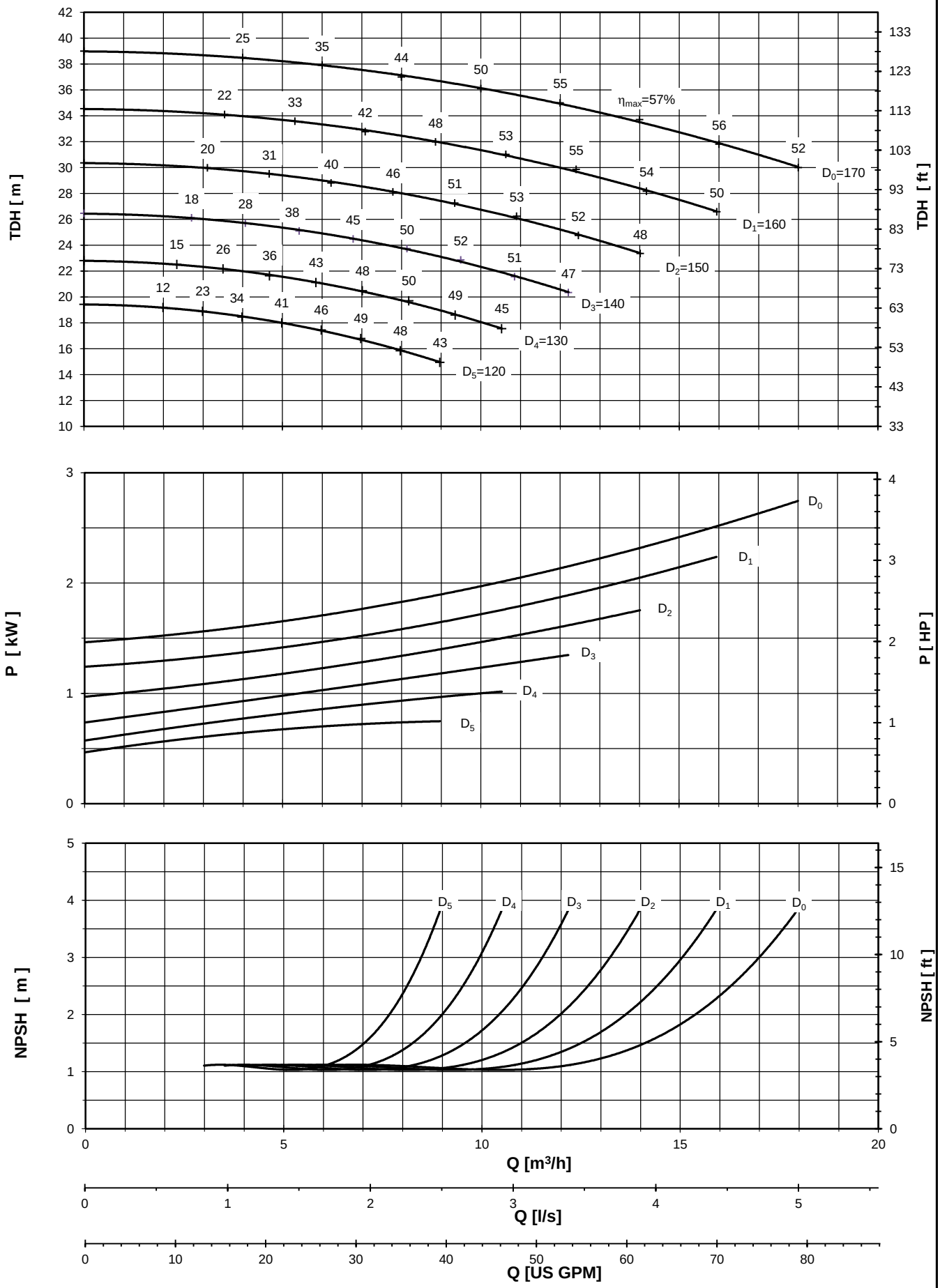
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0170.03	PUMP TYPE SCPT 125 - 315 1450 [rpm]



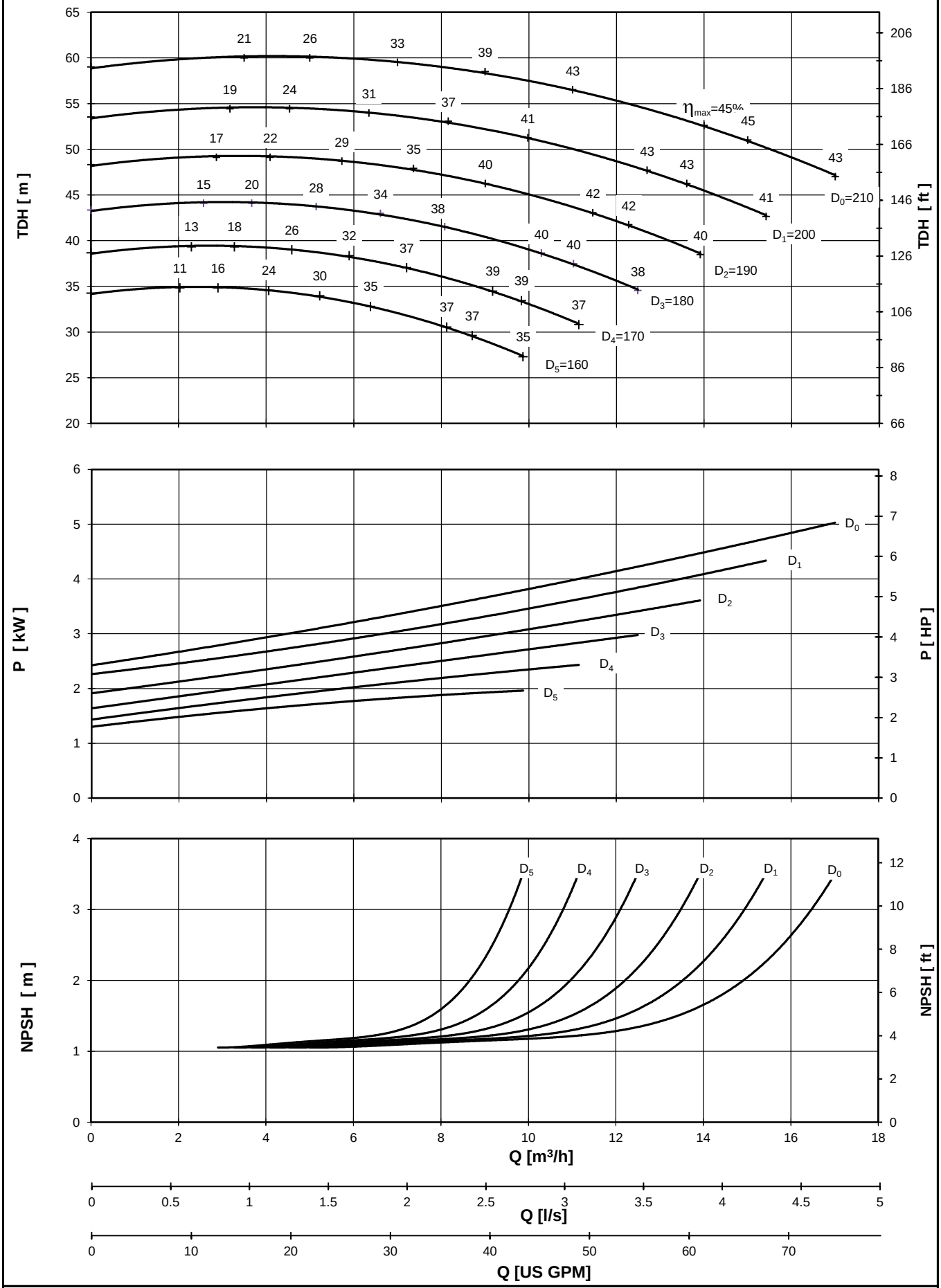
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0142.05	PUMP TYPE SCPT 32 - 160 2900 [rpm]



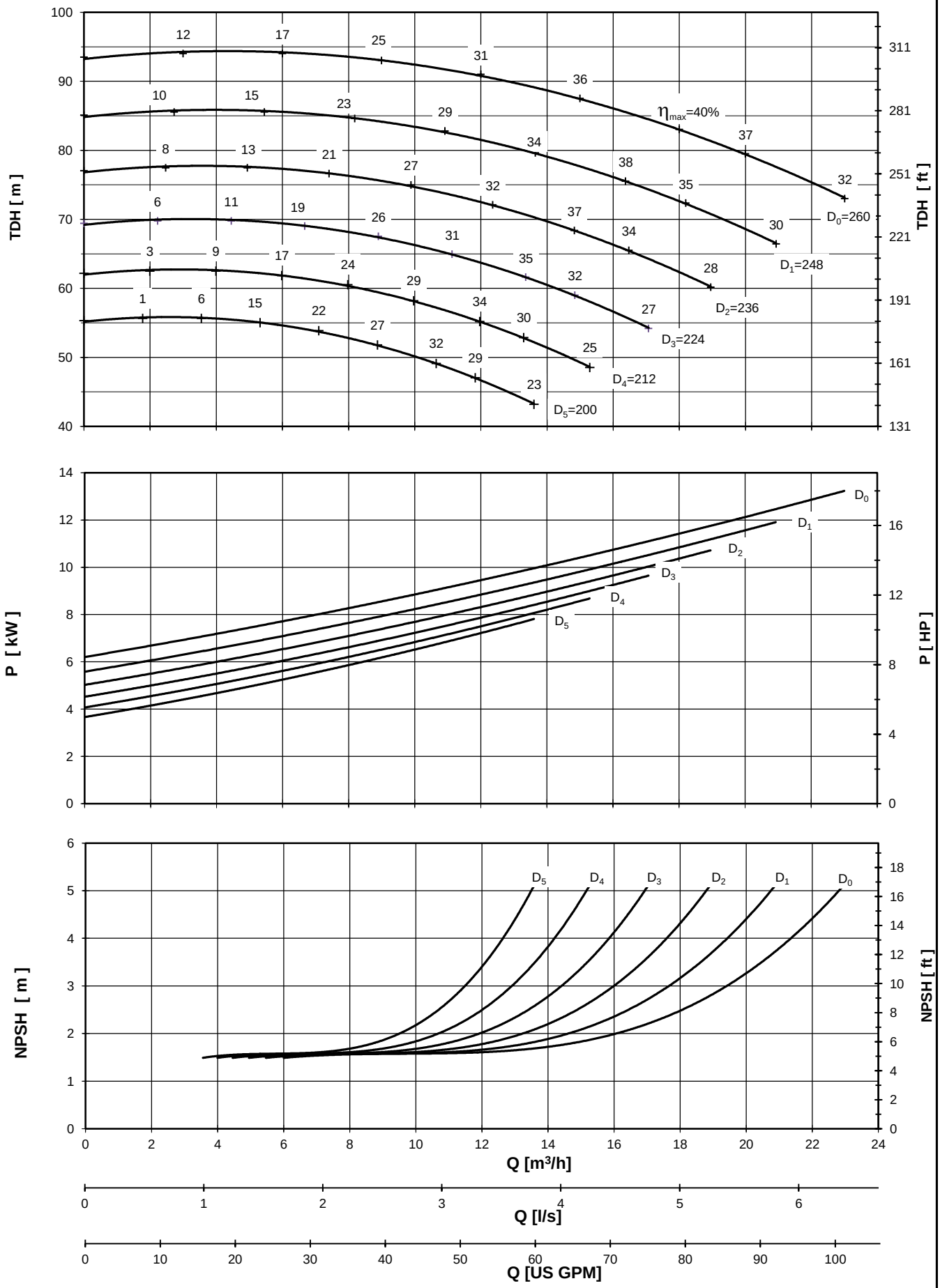
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0143.05	PUMP TYPE SCPT 32 - 200 2900 [rpm]



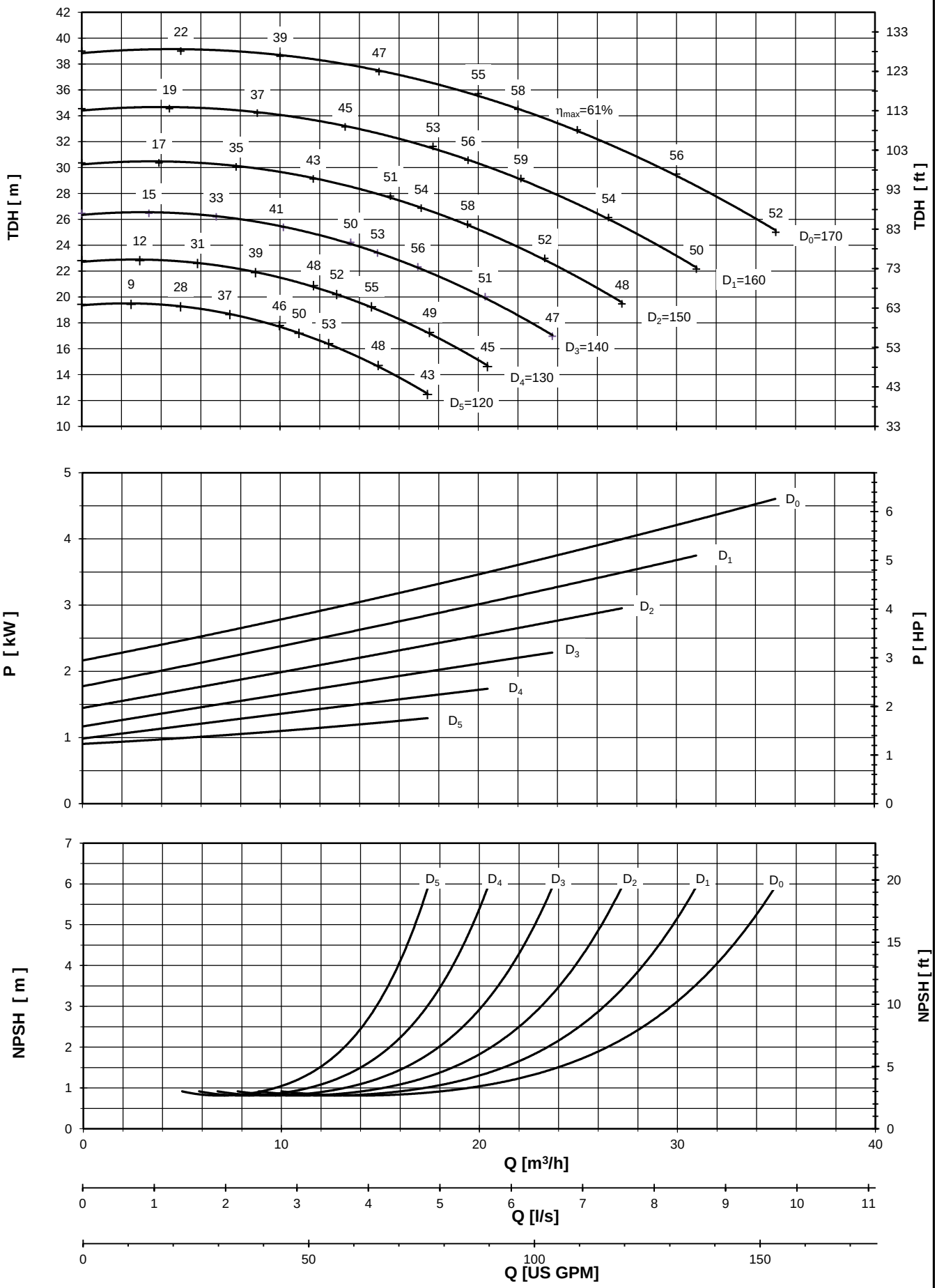
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm2/s], density 1000 [kg/m3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HS.0144.05	PUMP TYPE SCPT 32 - 250 2900 [rpm]



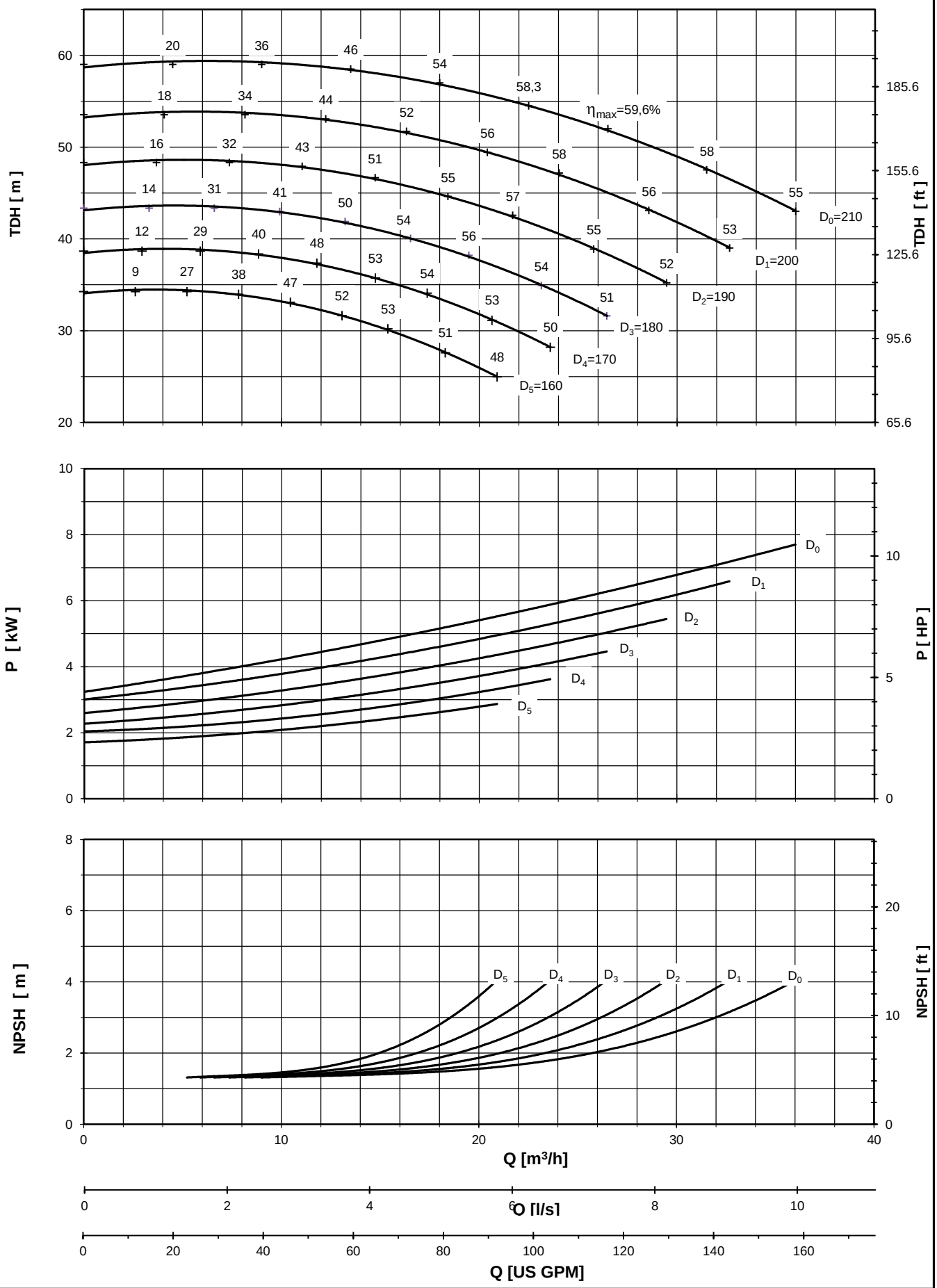
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0146.05	PUMP TYPE SCPT 40 - 160 2900 [rpm]



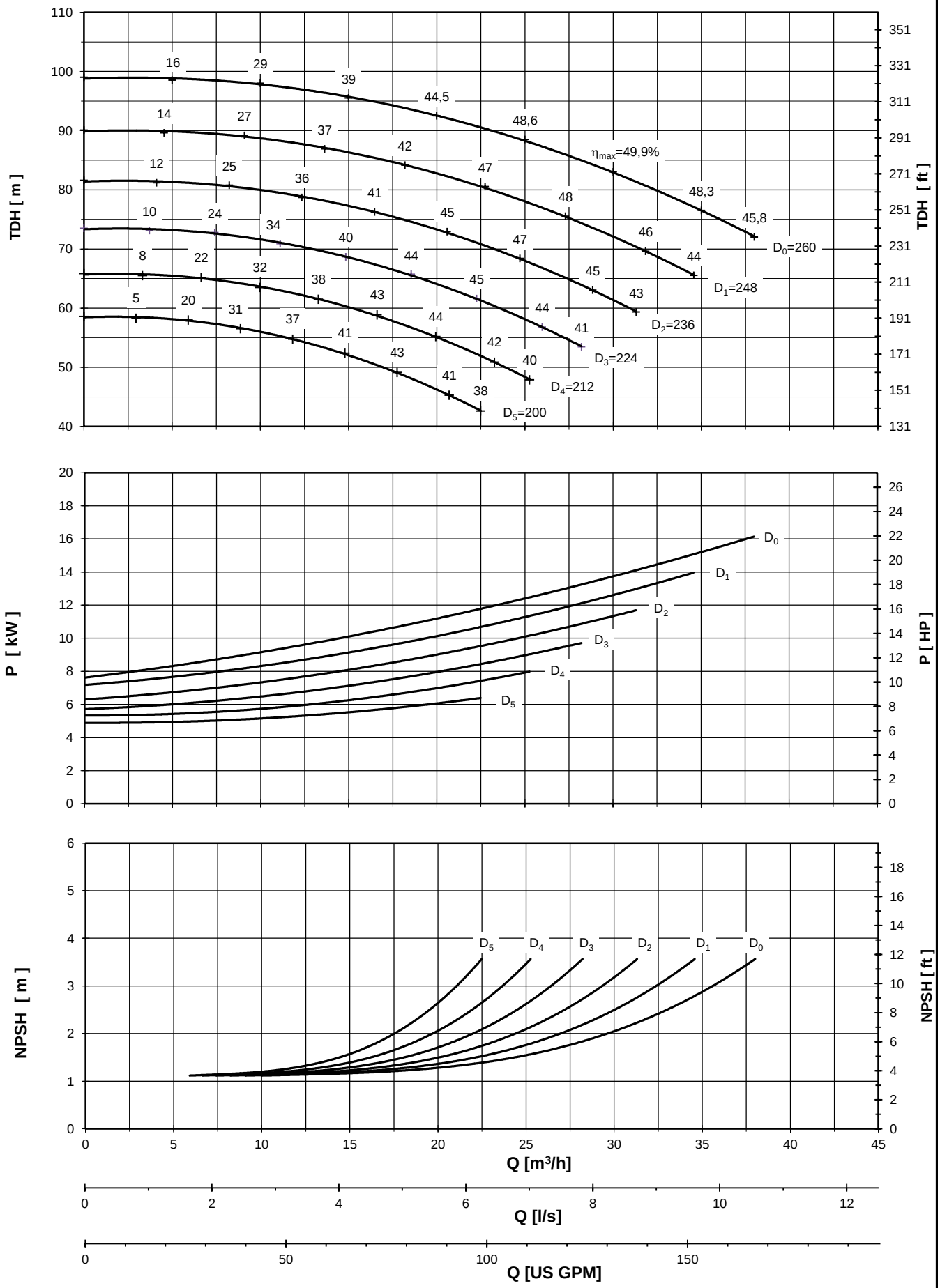
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0147.05	PUMP TYPE SCPT 40 - 200 2900 [rpm]



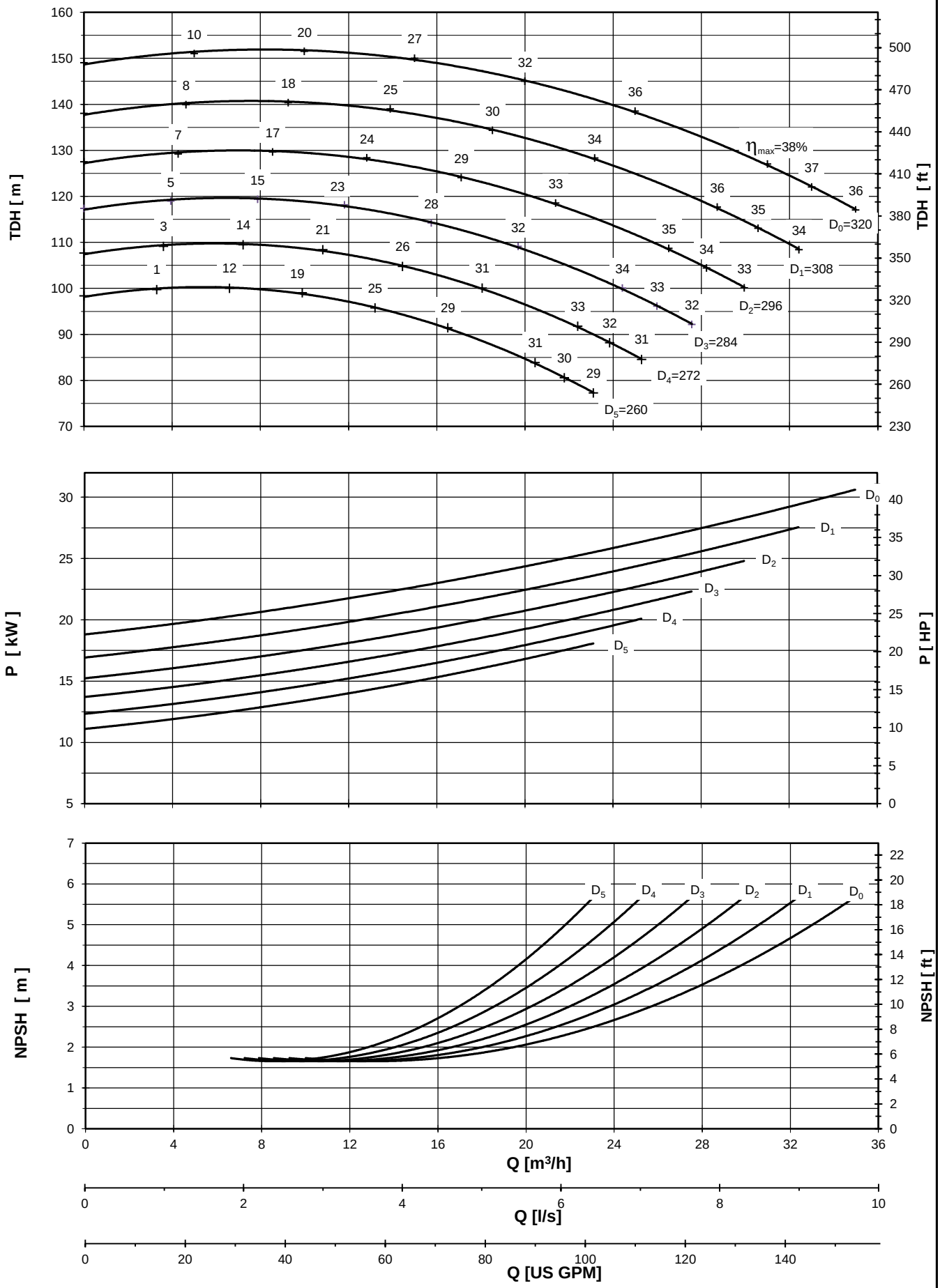
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm2/s], density 1000 [kg/m3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0148.05	PUMP TYPE SCPT 40 - 250 2900 [rpm]



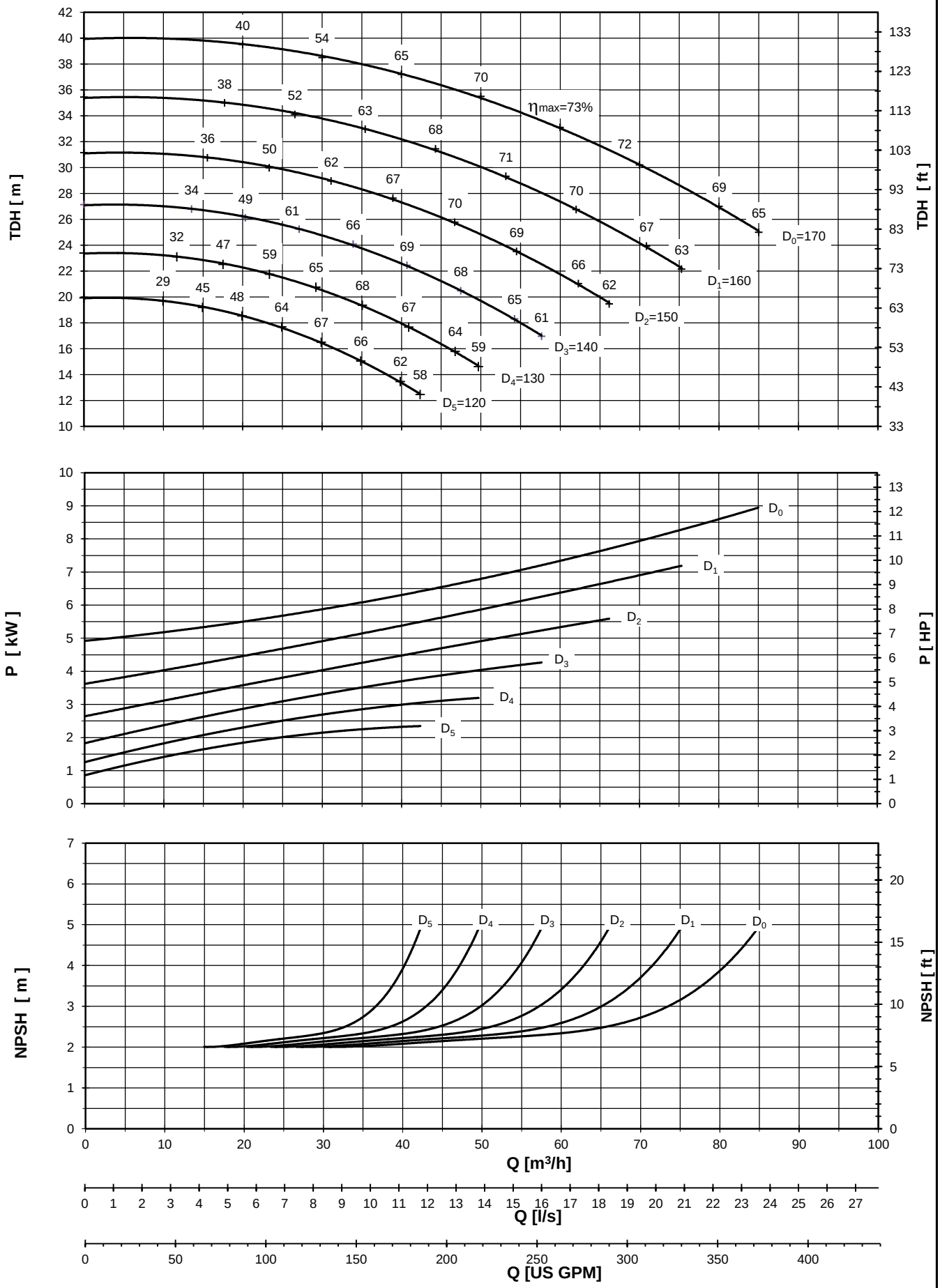
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0149.05	PUMP TYPE SCPT 40 - 315 2900 [rpm]



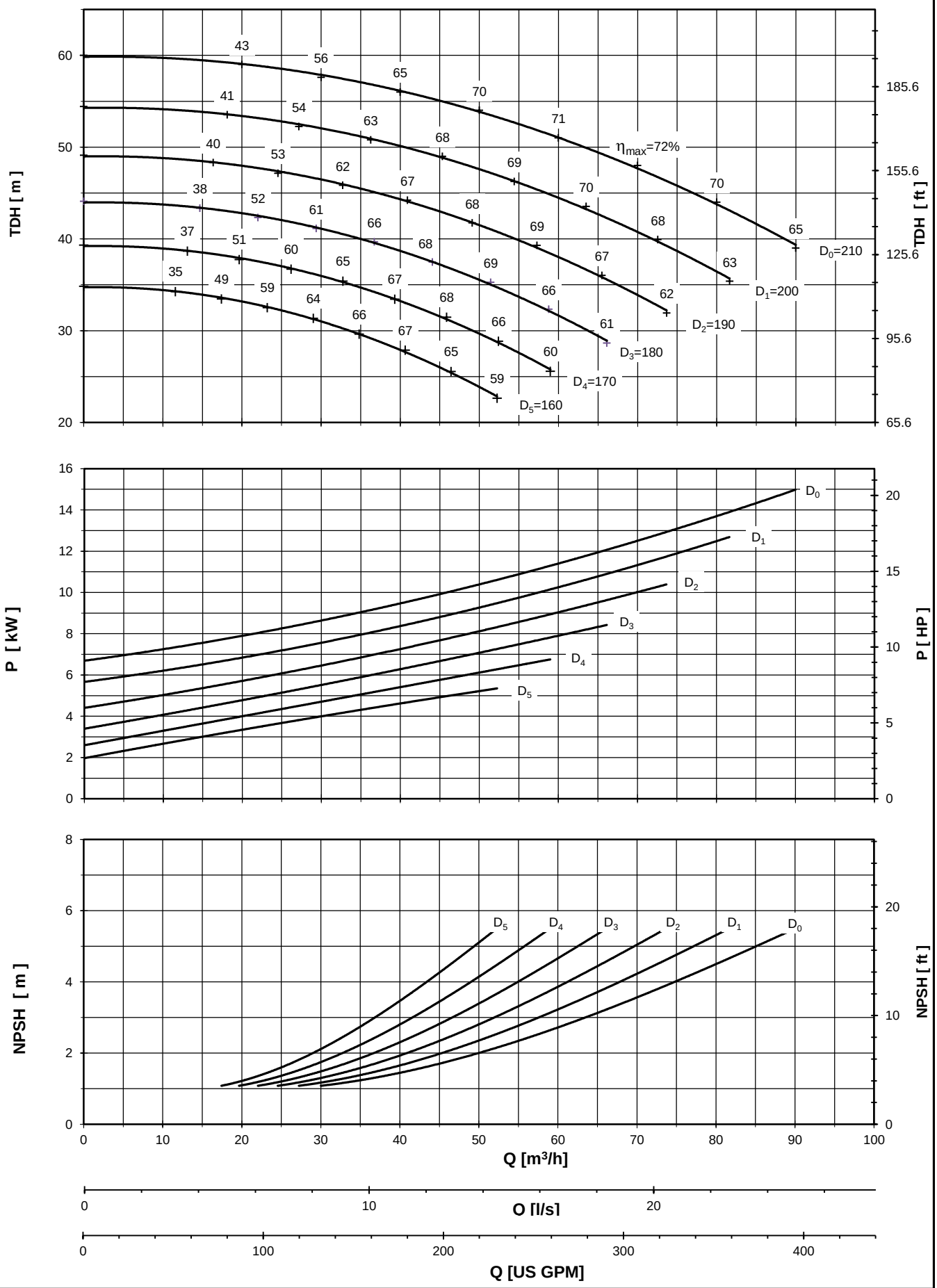
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0181.05	PUMP TYPE SCPT 50 - 160 2900 [rpm]



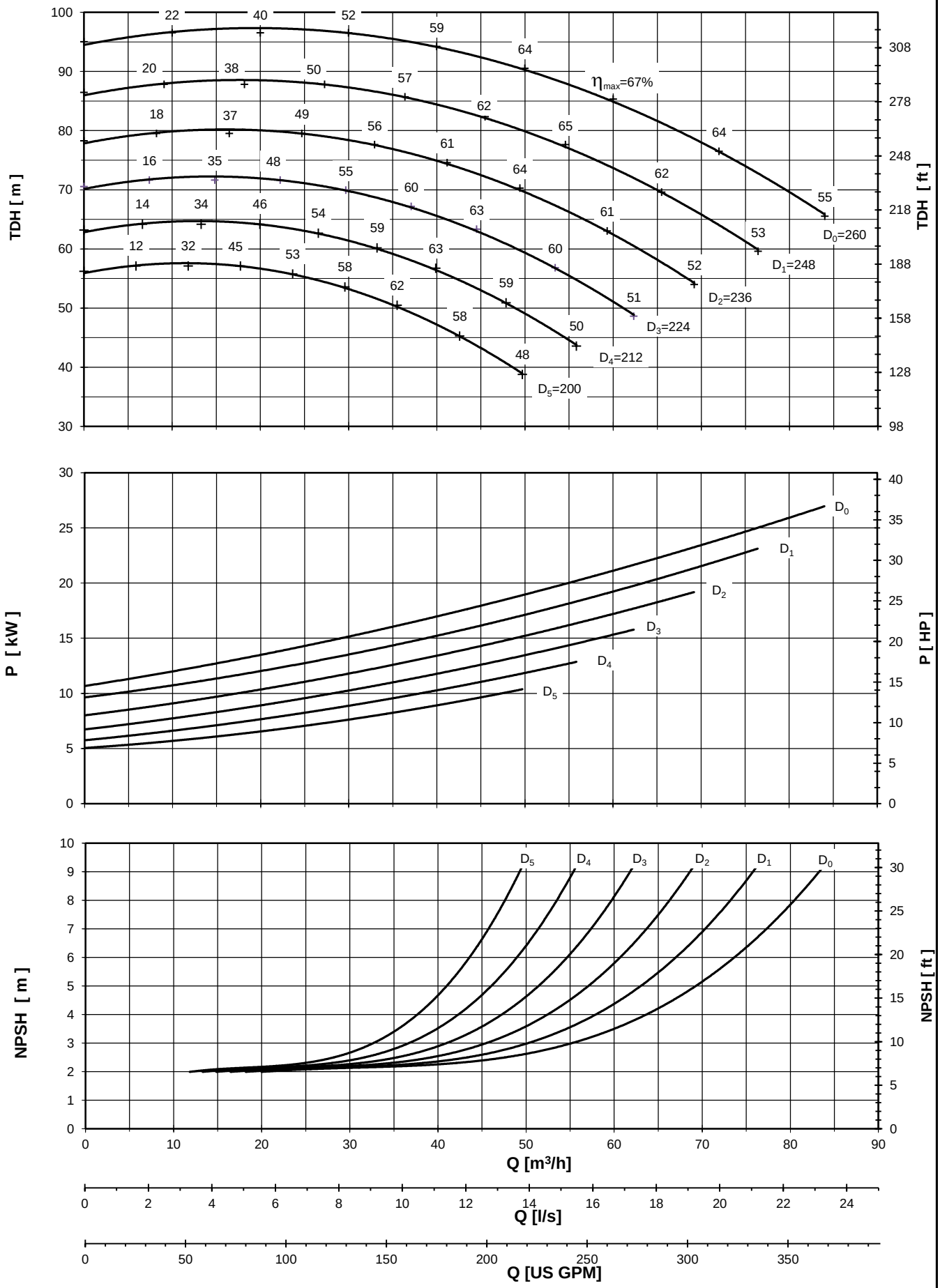
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0152.05	PUMP TYPE SCPT 50 - 200 2900 [rpm]



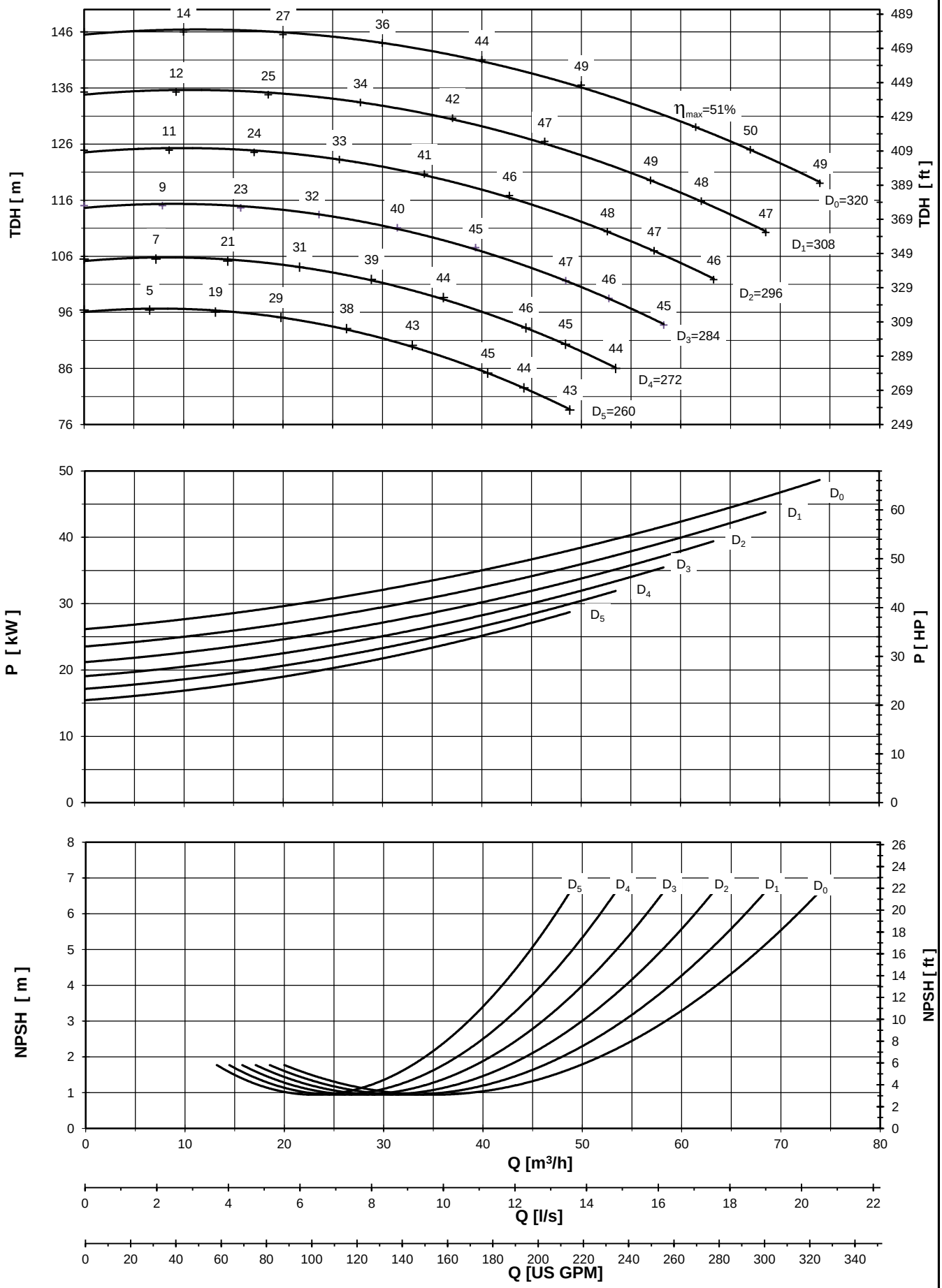
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm2/s], density 1000 [kg/m3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HS.0153.05	PUMP TYPE SCPT 50 - 250 2900 [rpm]



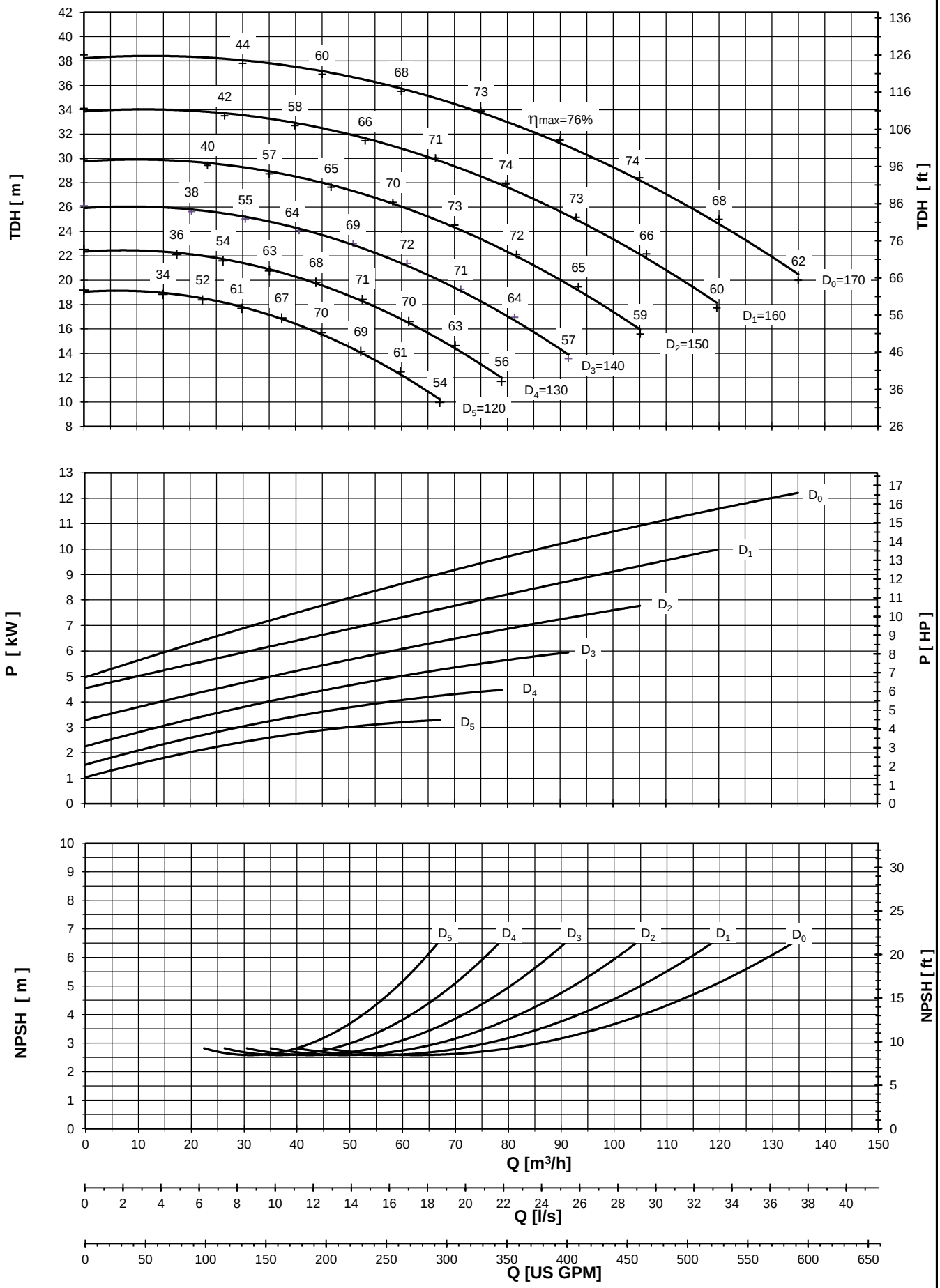
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0154.05	PUMP TYPE SCPT 50 - 315 2900 [rpm]



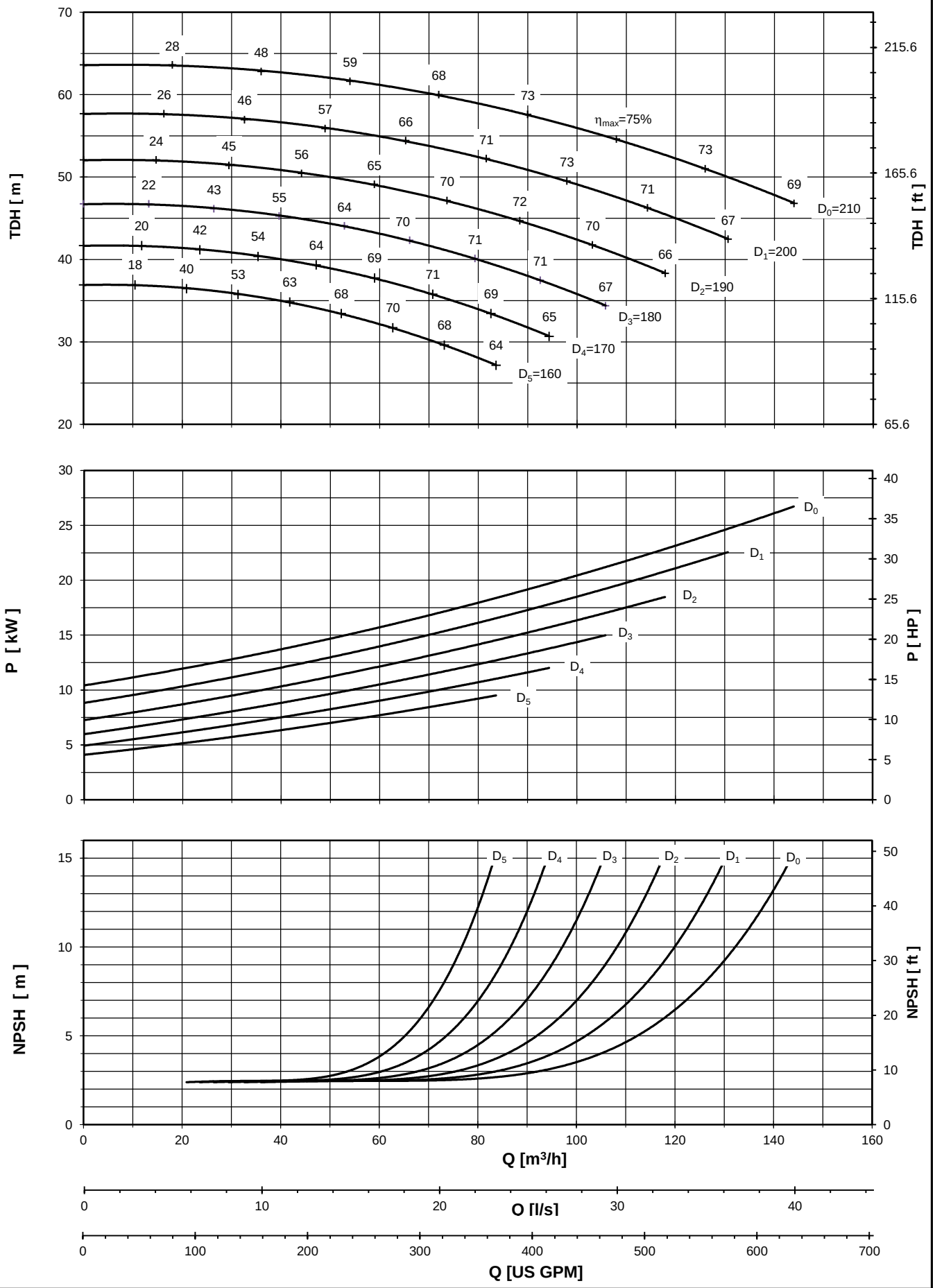
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0151.05	PUMP TYPE SCPT 65 - 160 2900 [rpm]



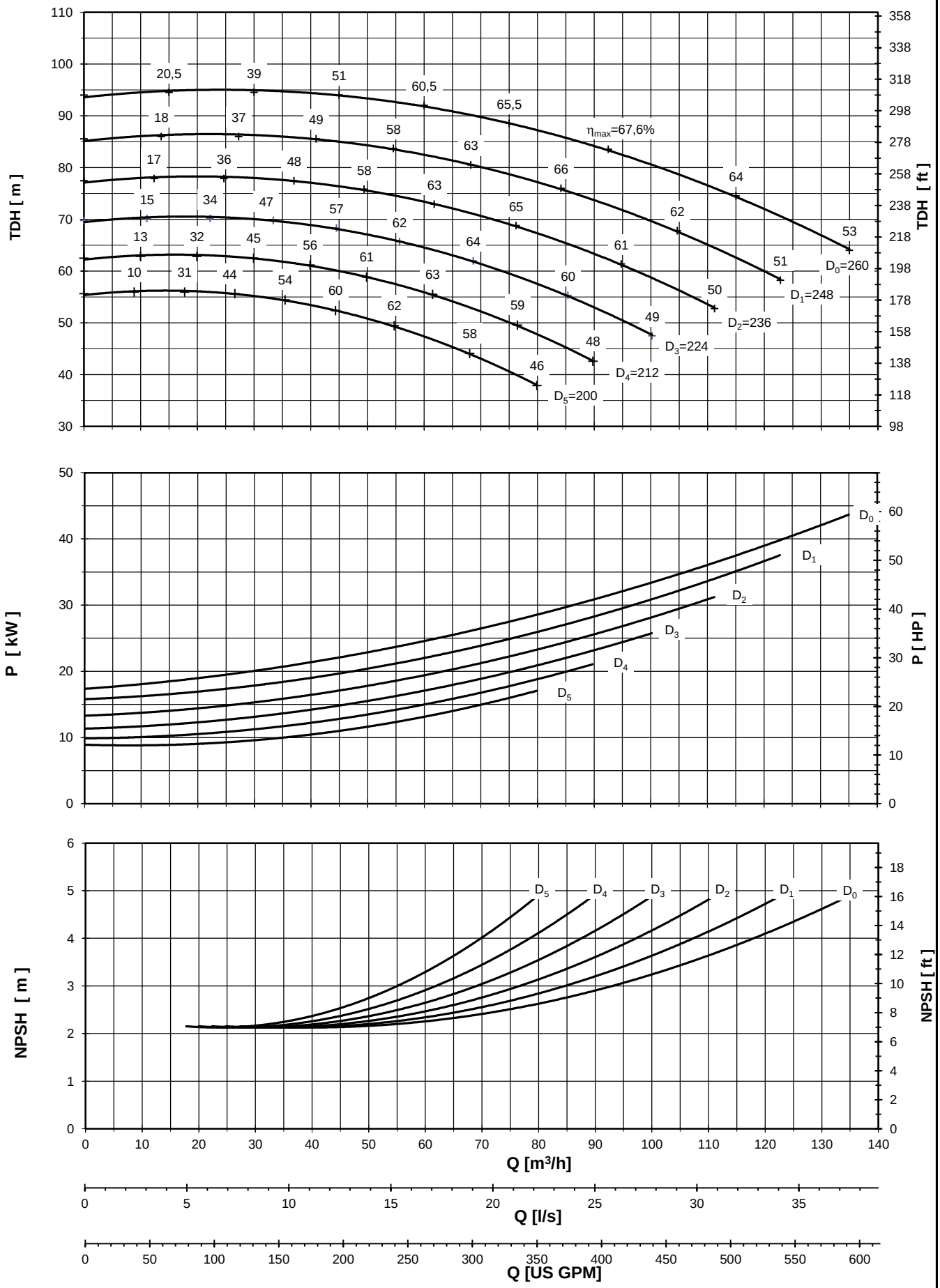
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0157.05	PUMP TYPE SCPT 65 - 200 2900 [rpm]



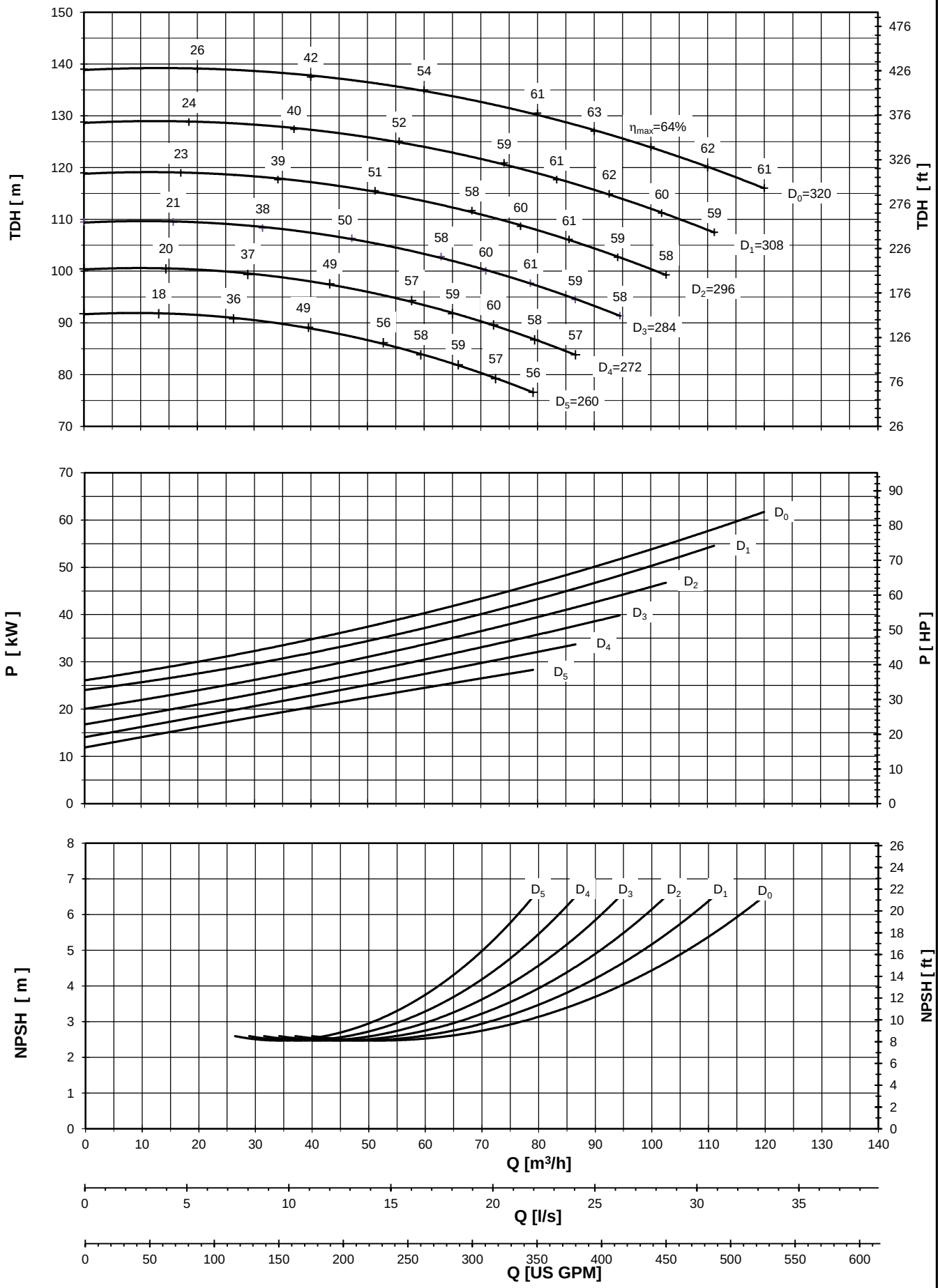
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm2/s], density 1000 [kg/m3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0158.05	PUMP TYPE SCPT 65 - 250 2900 [rpm]



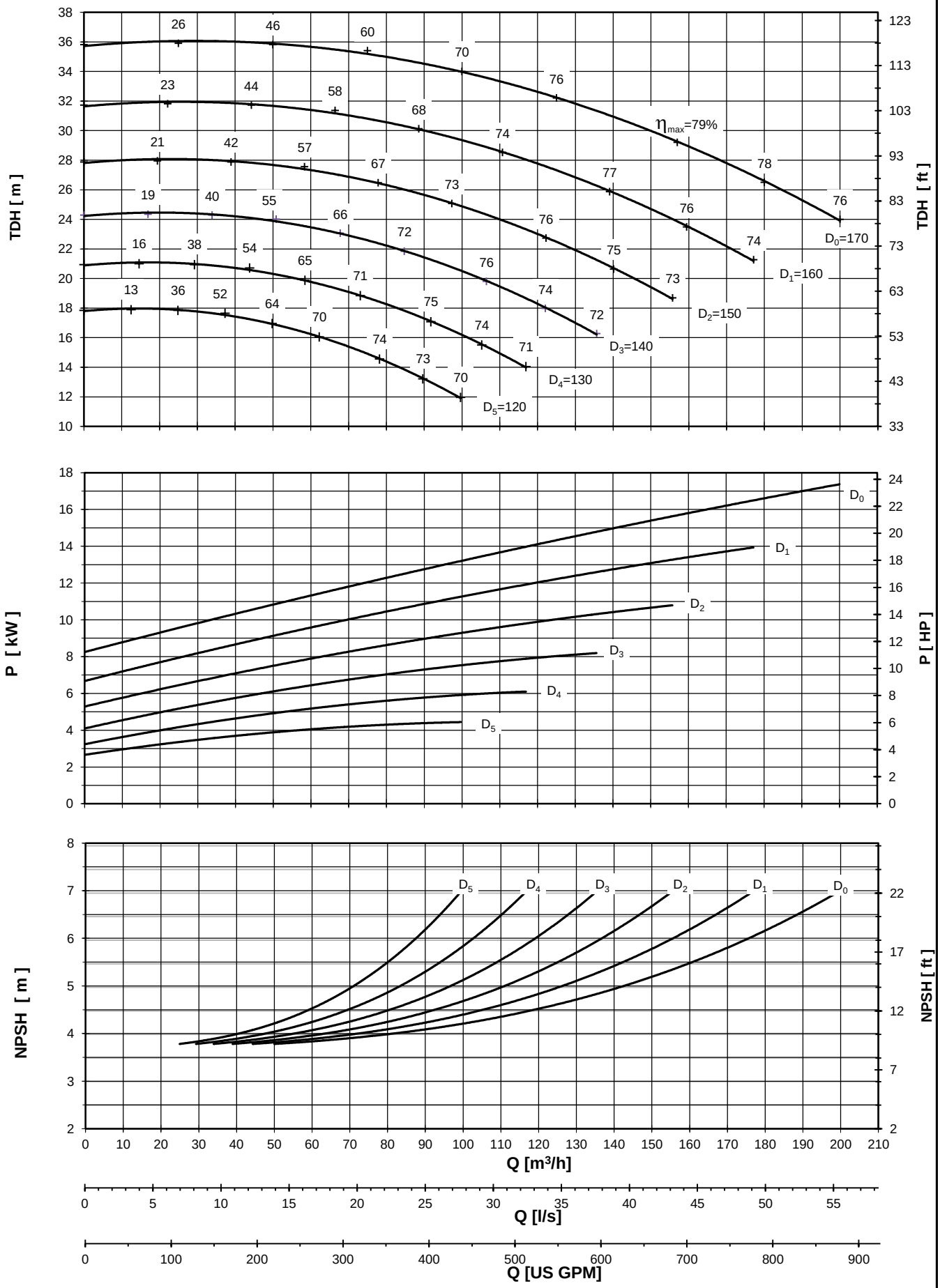
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0159.05	PUMP TYPE SCPT 65 - 315 2900 [rpm]



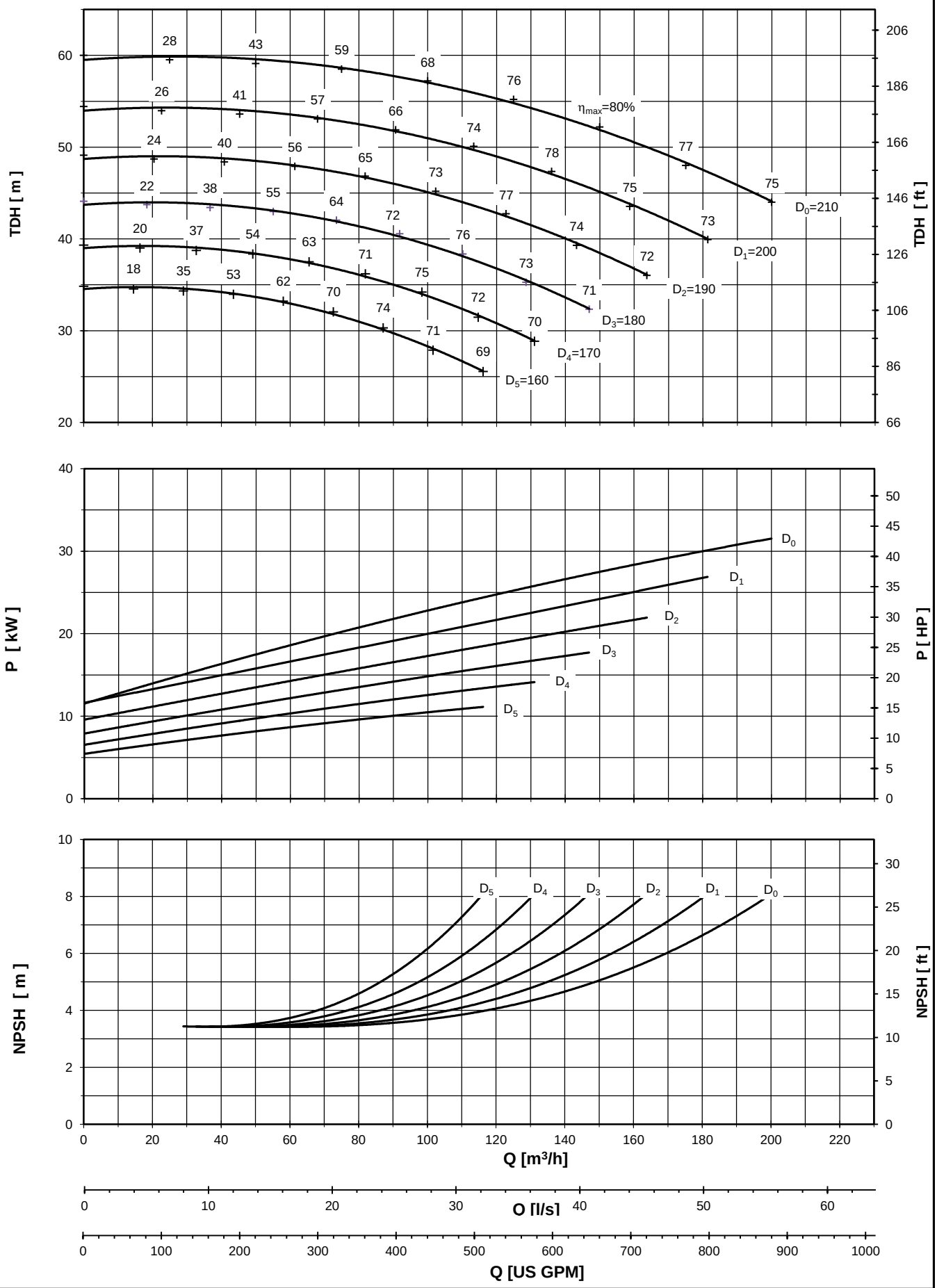
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0160.05	PUMP TYPE SCPT 80 - 160 2900 [rpm]



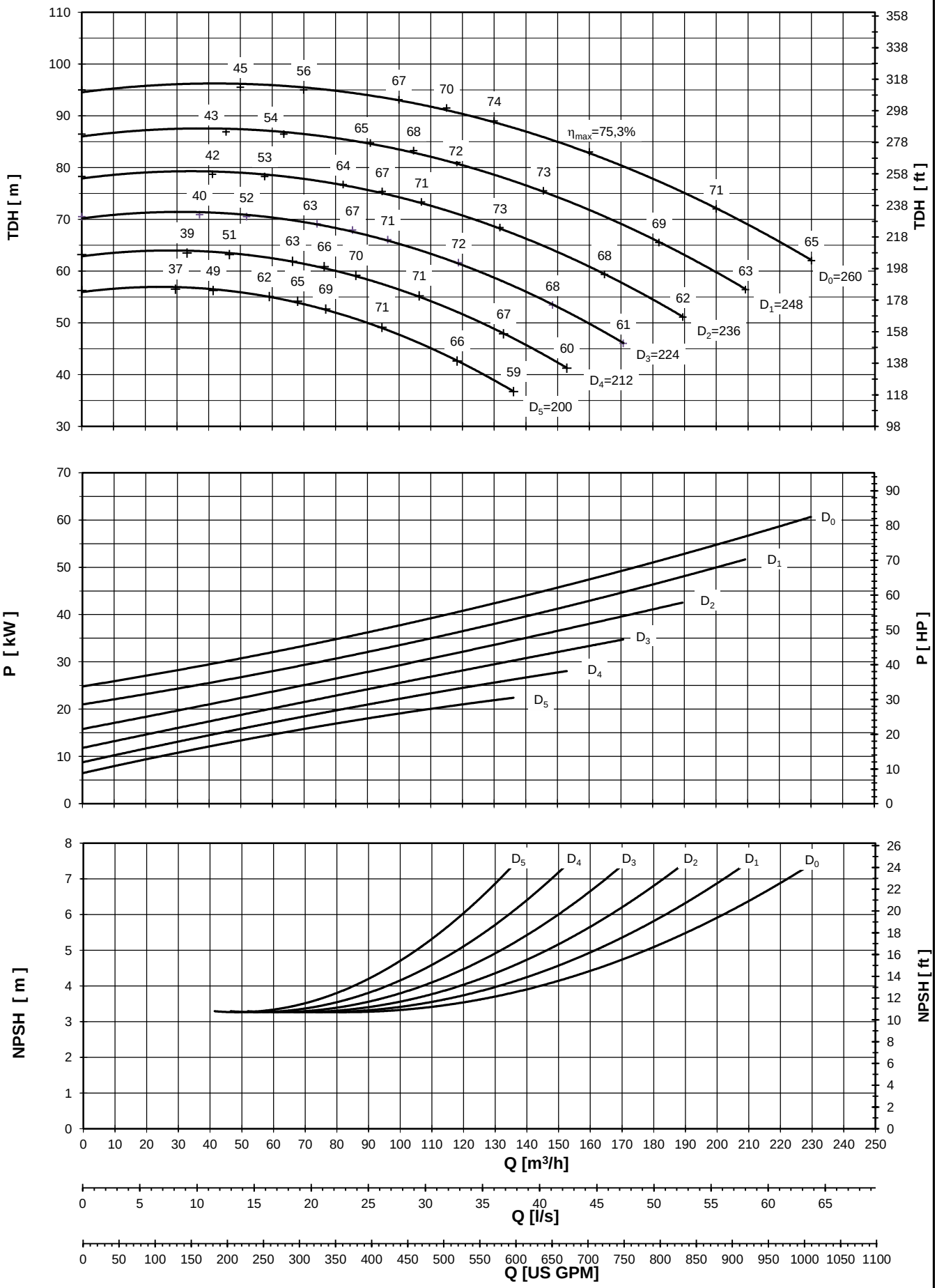
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0161.05	PUMP TYPE SCPT 80 - 200 2900 [rpm]



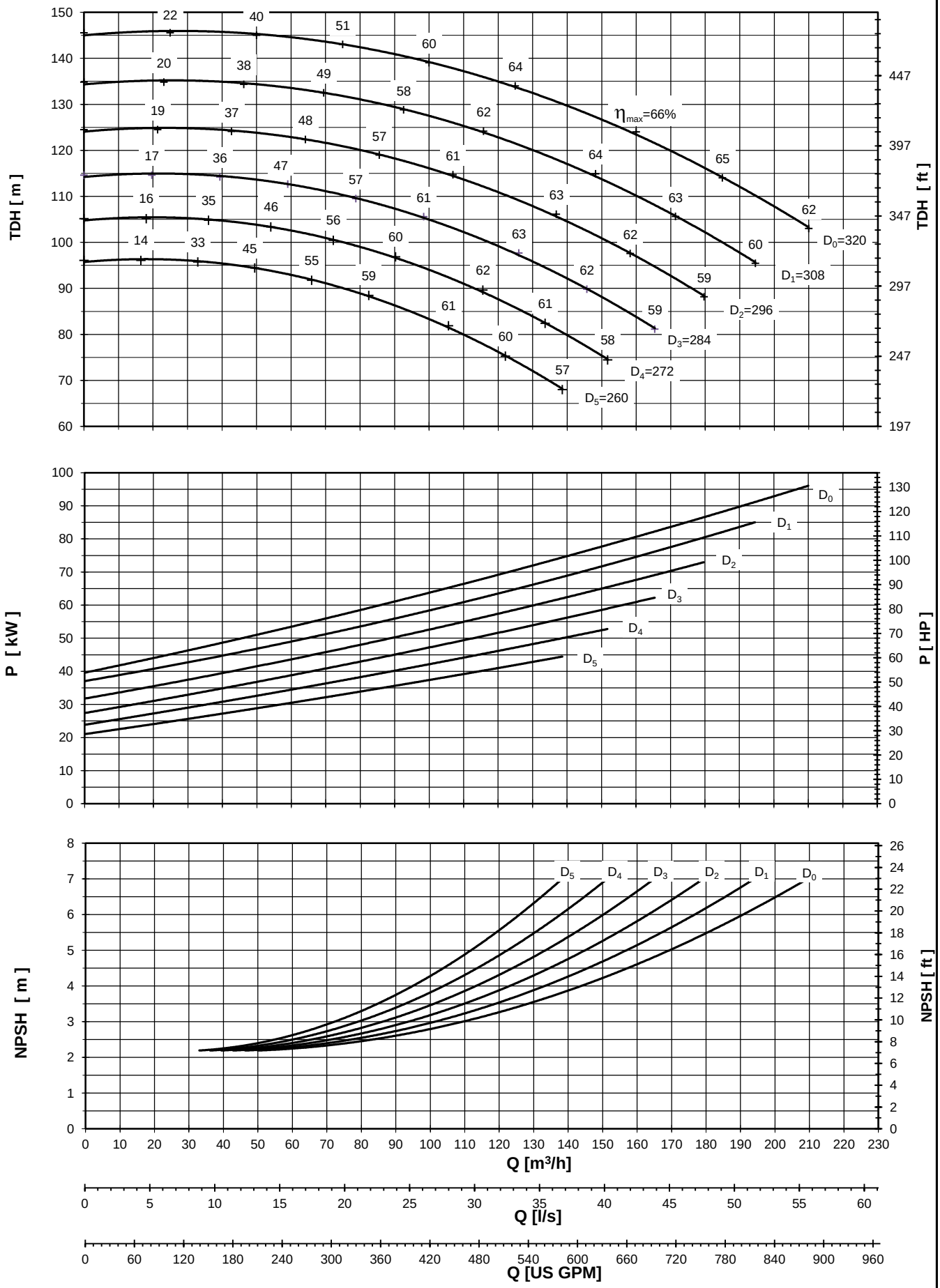
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm2/s], density 1000 [kg/m3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0162.05	PUMP TYPE SCPT 80 - 250 2900 [rpm]



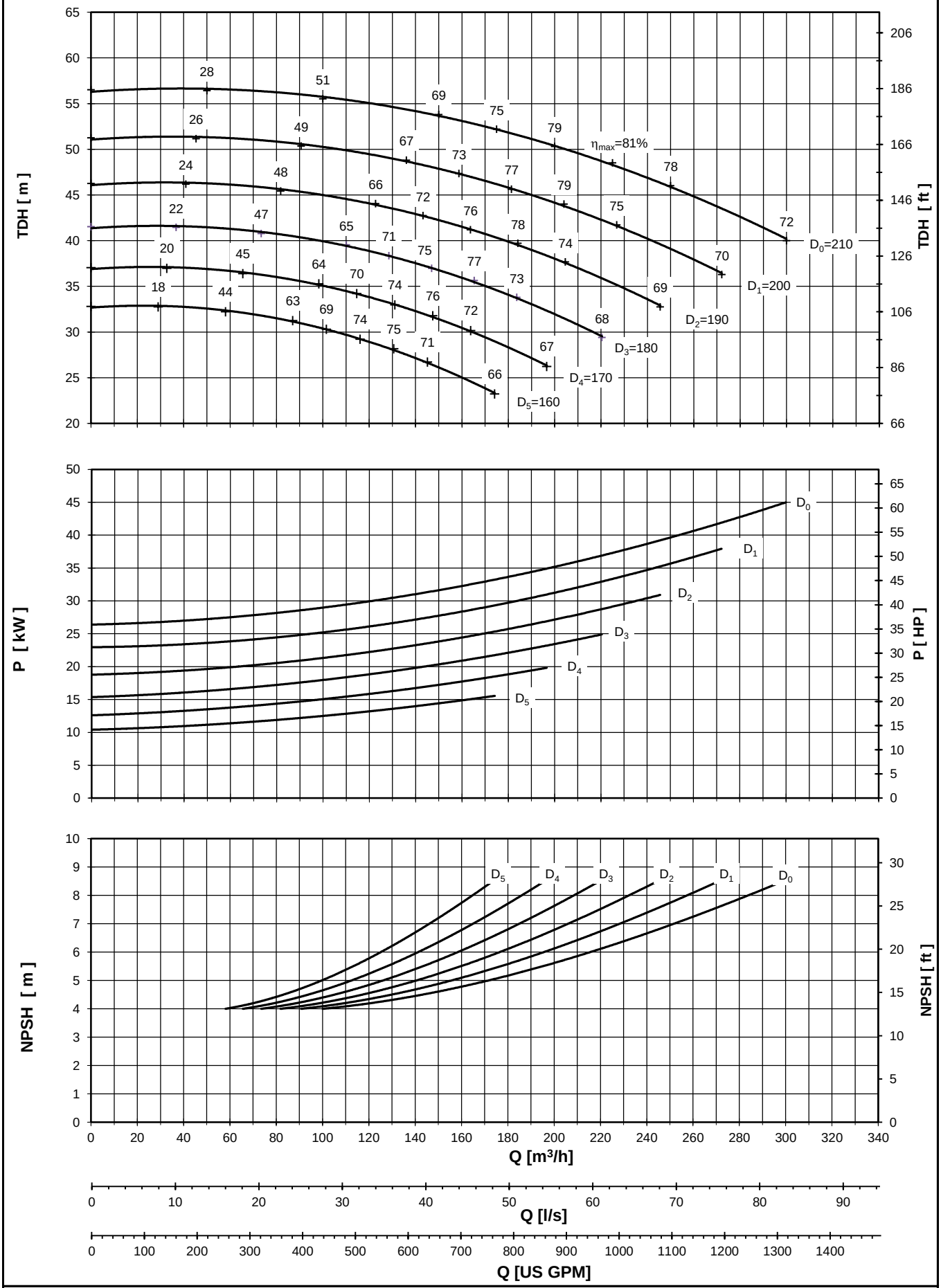
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0163.05	PUMP TYPE SCPT 80 - 315 2900 [rpm]



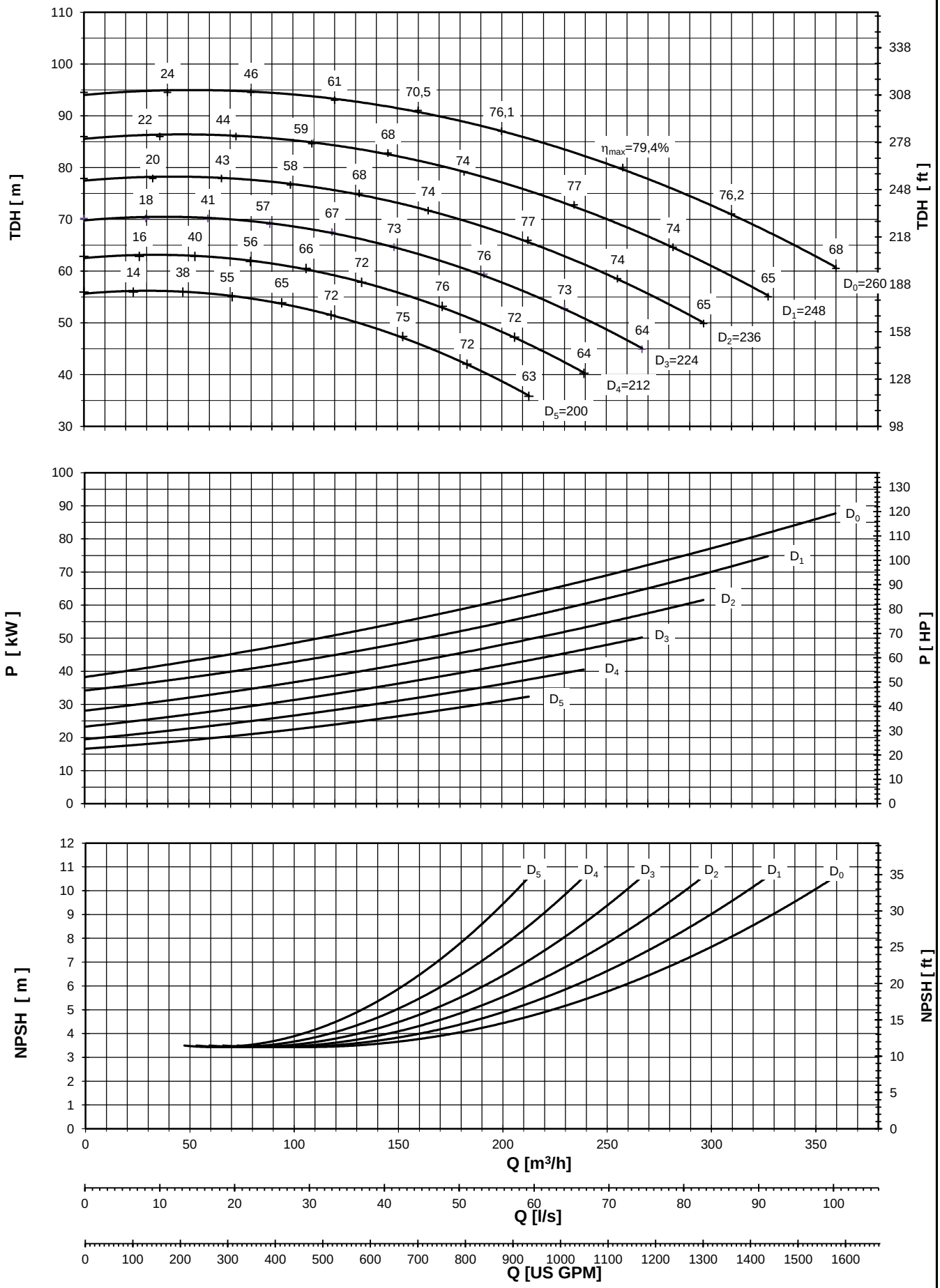
Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HD.0165.05	PUMP TYPE SCPT 100 - 200 2900 [rpm]



Performance curves are valid for clean cold water-kinematic viscosity 1 [mm2/s], density 1000 [kg/m3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI	PUMP PERFORMANCE CURVES No. 4HS.0166.05	PUMP TYPE SCPT 100 - 250 2900 [rpm]



Performance curves are valid for clean cold water-kinematic viscosity 1 [mm^2/s], density 1000 [kg/m^3]. Methods and tolerances of presented performance curves are in accordance with ISO 9906 - Annex A

MZT PUMPI

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