DAB Pump 1/2 NKV

FIRE-FIGHTING PUMP UNITS TO EN 12845 WITH VERTICAL NKV PUMPS

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TECHNICAL DATA
Fire-fighting pump units manufactured in compliance with the prescriptions of European standard UNI EN 12845.Fixed fire-fighting installations – Automatic sprinkler systems

NOTES ON UNI EN 12845
UNI EN 12845, the Italian version of European standard EN 12845, establishes design, installation and maintenance criteria for sprinkler systems and it replaces the earlier Italian standards UNI 9489 and UNI 9490.
An automatic sprinkler system is designed to detect the presence of fire and extinguish it in the initial stages, or to keep flames under control until they can be extinguished fully using ancillary means.
The classic sprinkler system is composed of: a water source, a fire-fighting pump unit, a series of control valves, and a sprinklers circuit.

The main pump continues to run until it is stopped manually by pressing the STOP pushbutton on the control panel.
In the case of hydrant circuits refer to the prescriptions of UNI 10779- July 07. UNI 10779,as well as stating that fire-fighting pumps must be in compliance with the requirements of UNI EN 12845, also permits, in the case of work not constantly supervised, automatic stopping of the pumps 20 minutes after closure of the hydrants.
DAB pump sets are suitable for sprinkler installations with manual stopping and for hydrant installations with automatic stopping.

OPERATION OF EN 12845 FIRE-FIGHTING PUMP SET
In normal conditions (zero water demand) the system is maintained under static pressure.
The first demand for water results in start-up of the jockey pump, which restores system pressure. If a significant flow rate of water is demanded (opening of sprinklers), the pressure will drop until the two pressure switches connected in series trip to start up the main pump.
The two start-up pressure switches must be calibrated in such a way as to start the pumps at the following pressure values:

ONE PUMP SETS	P = 0,8 X MAX. PUMP PRESSURE	
SETS WITH TWO PUMPS	PUMP 1: P1 = 0,8 X MAX PRESSURE	PUMP 2: P2 = 0,6 X MAX PRESSURE

Es: Max. pressure 10 bar - pump 1 starts at 8 bar, pump 2 starts at 6 bar

TECHNICAL DATA - 1 NKV PUMP

1 NKV PUMPS

MODEL	CODE
1NKV 10/3 T400/50 EN12845	60118437
1NKV 10/4 T400/50 EN12845	60118438
1NKV 10/5 T400/50 EN12845	60118439
1NKV 10/6 T400/50 EN12845	60118440
1NKV 10/7 T400/50 EN12845	60118441
1NKV 10/8 T400/50 EN12845	60118442
1NKV 10/9 T400/50 EN12845	60118443
1NKV 10/10 T400/50 EN12845	60118444
1NKV 10/12 T400/50 EN12845	60118445
1NKV 10/14 T400/50 EN12845	60118446
1NKV 15/3 T400/50 EN12845	60118447
1NKV 15/4 T400/50 EN12845	60118448
1NKV 15/5 T400/50 EN12845	60118451
1NKV 15/6 T400/50 EN12845	60118452
1NKV 15/7 T400/50 EN12845	60118456
1NKV 15/8 T400/50 EN12845	60118457
1NKV 15/9 T400/50 EN12845	60118458
1NKV 15/10 T400/50 EN12845	60118462
1NKV 20/3 T400/50 EN12845	60118464
1NKV 20/4 T400/50 EN12845	60118465
1NKV 20/5 T400/50 EN12845	60118466
1NKV 20/6 T400/50 EN12845	60118467
1NKV 20/7 T400/50 EN12845	60118468
1NKV 20/8 T400/50 EN12845	60118469
1NKV 20/9 T400/50 EN12845	60118470
1NKV 20/10 T400/50 EN12845	60118471

1 NKV PUMPS + PILOT PUMP

MODEL	CODE
1NKV 10/3 T400/50 EN12845 - JET	60118472
1NKV 10/4 T400/50 EN12845 - JET	60118473
1NKV 10/5 T400/50 EN12845 - JET	60118474
1NKV 10/6 T400/50 EN12845 - JET	60118475
1NKV 10/7 T400/50 EN12845 - KV 3/10	60118476
1NKV 10/8 T400/50 EN12845 - KV 3/12	60118477
1NKV 10/9 T400/50 EN12845 - KV 3/12	60118478
1NKV 10/10 T400/50 EN12845 - KV 3/18	60118479
1NKV 10/12 T400/50 EN12845 - KV 3/18	60118480
1NKV 10/14 T400/50 EN12845 - KV 3/18	60118481
1NKV 15/3 T400/50 EN12845 - JET	60118482
1NKV 15/4 T400/50 EN12845 – JET	60118483
1NKV 15/5 T400/50 EN12845 – JET	60118484
1NKV 15/6 T400/50 EN12845 - KV 3/12	60118485
1NKV 15/7 T400/50 EN12845 - KV 3/12	60118486
1NKV 15/8 T400/50 EN12845 - KV 3/18	60118487
1NKV 15/9 T400/50 EN12845 - KV 3/18	60118488
1NKV 15/10 T400/50 EN12845 - KV 3/18	60118489
1NKV 20/3 T400/50 EN12845 – JET	60118490
1NKV 20/4 T400/50 EN12845 – JET	60118491
1NKV 20/5 T400/50 EN12845 - JET	60118492
1NKV 20/6 T400/50 EN12845 - KV 3/12	60118493
1NKV 20/7 T400/50 EN12845 - KV 3/18	60118494
1NKV 20/8 T400/50 EN12845 - KV 3/18	60118495
1NKV 20/9 T400/50 EN12845 - KV 3/18	60118496
1NKV 20/10 T400/50 EN12845 - KV 3/18	60118497

TECHNICAL DATA - 2 NKV PUMPS

2 PUMPS NKV

MODEL	CODE
2NKV 10/3 T400/50 EN12845	60118498
2NKV 10/4 T400/50 EN12845	60118499
2NKV 10/5 T400/50 EN12845	60118500
2NKV 10/6 T400/50 EN12845	60118501
2NKV 10/7 T400/50 EN12845	60118502
2NKV 10/8 T400/50 EN12845	60118503
2NKV 10/9 T400/50 EN12845	60118504
2NKV 10/10 T400/50 EN12845	60118505
2NKV 10/12 T400/50 EN12845	60118506
2NKV 10/14 T400/50 EN12845	60118507
2NKV 15/3 T400/50 EN12845	60118533
2NKV 15/4 T400/50 EN12845	60118534
2NKV 15/5 T400/50 EN12845	60118535
2NKV 15/6 T400/50 EN12845	60118536
2NKV 15/7 T400/50 EN12845	60118537
2NKV 15/8 T400/50 EN12845	60118538
2NKV 15/9 T400/50 EN12845	60118539
2NKV 15/10 T400/50 EN12845	60118540
2NKV 20/3 T400/50 EN12845	60118541
2NKV 20/4 T400/50 EN12845	60118542
2NKV 20/5 T400/50 EN12845	60118543
2NKV 20/6 T400/50 EN12845	60118544
2NKV 20/7 T400/50 EN12845	60118545
2NKV 20/8 T400/50 EN12845	60118546
2NKV 20/9 T400/50 EN12845	60118547
2NKV 20/10 T400/50 EN12845	60118548

2 PUMPS NKV + PILOT PUMP

MODEL	CODE
2NKV 10/3 T400/50 EN12845 - JET	60118549
2NKV 10/4 T400/50 EN12845 - JET	60118550
2NKV 10/5 T400/50 EN12845 - JET	60118551
2NKV 10/6 T400/50 EN12845 - JET	60118552
2NKV 10/7 T400/50 EN12845 - KV 3/10	60118553
2NKV 10/8 T400/50 EN12845 - KV 3/12	60118554
2NKV 10/9 T400/50 EN12845 - KV 3/12	60118555
2NKV 10/10 T400/50 EN12845 - KV 3/18	60118556
2NKV 10/12 T400/50 EN12845 - KV 3/18	60118557
2NKV 10/14 T400/50 EN12845 - KV 3/18	60118558
2NKV 15/3 T400/50 EN12845 - JET	60118559
2NKV 15/4 T400/50 EN12845 - JET	60118560
2NKV 15/5 T400/50 EN12845 - JET	60118561
2NKV 15/6 T400/50 EN12845 - KV 3/12	60118562
2NKV 15/7 T400/50 EN12845 - KV 3/12	60118563
2NKV 15/8 T400/50 EN12845 - KV 3/18	60118564
2NKV 15/9 T400/50 EN12845 - KV 3/18	60118565
2NKV 15/10 T400/50 EN12845 - KV 3/18	60118566
2NKV 20/3 T400/50 EN12845 - JET	60118567
2NKV 20/4 T400/50 EN12845 - JET	60118568
2NKV 20/5 T400/50 EN12845 - JET	60118569
2NKV 20/6 T400/50 EN12845 - KV 3/12	60118570
2NKV 20/7 T400/50 EN12845 - KV 3/18	60118571
2NKV 20/8 T400/50 EN12845 - KV 3/18	60118572
2NKV 20/9 T400/50 EN12845 - KV 3/18	60118573
2NKV 20/10 T400/50 EN12845 - KV 3/18	60118574

PUMP SET SELECTION PARAMETERS

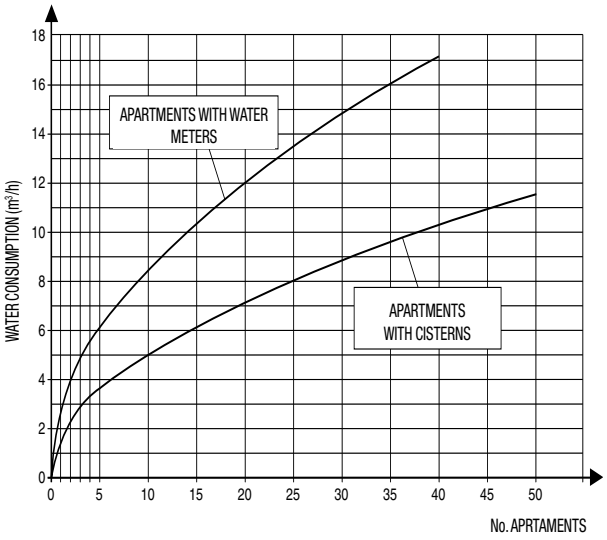
TO SUPPLY WATER TO APARTMENTS, HOTELS HOSPITALS AND SIMILAR BUILDINGS

To choose a pump set it is important to have two basic items of information: how much water is required and to what height must it be pumped. The following table describes how water is used in the case of a house or apartment

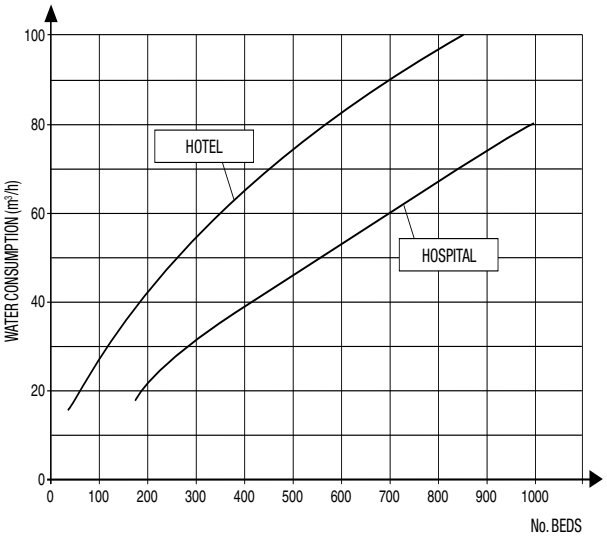
	Q (l/min)
Toilet with direct flush valve	90
Bath tub	15
Shower	12
Washing machine	12
Dishwasher	10
Kitchen sink	9
Wash basin	6
Bidet	6
Toilet with cistern flush	6
	166

Clearly, 166 l/min per apartment is excessive because shower, toilet, etc. are not used simultaneously. Therefore, to calculate the quantity of water needed we can use mathematical formulae that give us the necessary flow rate per number of apartments. The calculation results are given in the following tables.

For apartments



For hotels and hospitals



For apartments with two bathrooms, the flow rate should be increased by 30%, by 25% for 3 bathrooms and by 20% for 4 bathrooms. For holiday resorts, the number of apartments should be multiplied by 1.2.

So, once we know the number of apartments or beds, we can calculate the amount of water needed. The pump set must lift water to the highest floor of the building and must have a minimum pressure of 1 bar (approx 10 m) at the most distant user point. The set must however also be able to compensate for leakages from the distribution system, and it is also aided by the water mains pressure; the pump set head is therefore equivalent to:
H = (building H + leaks H + residual H) – water mains H (m)

Considering that leaks amount to approximately 20% of building H, we obtain:
H = (1.2 x building H + 10) – water mains H (m)

Summarising:
1) From the number of apartments we can calculate flow rate Q.
2) From the building height and water mains pressure we can calculate H.
3) IN the tables given on the following pages we can choose the pump set whose curve end point coincides with the calculated Q and H values and which has at least 2 bar (20 m) between curve start and curve end.