

## Drainage: Which pump for which application?

Pumping, recirculation of clear water from containers, pools, ponds etc.

Pumping out, recirculation of dirty water

Low-intake suction

Minimal residual water level after pumping out (mm)

Shaft drainage (depending on the size of the shaft)

Drainage of clear water from cellars / ponds

Drainage of very dirty water from cellars / ponds

Pumping dry construction pits and flooded areas

High water protection

Fire and water restoration

Agricultural use

Industrial use

	Clear Water							Dirty Water								
	Clear Water Immersion Pumps							Combi Pumps		Construction and Dirty Water Pumps				Dirty Water Immersion Pumps		
	TP 6600	TPF 6600 SN	TPF 7000 S	TP 7500 SI	TP 8000 S	TP 12000 SI	TP 13000 S	TPS 14000 S Combi	TPS 16000 S Combi	DP 18-5 SA	DP 28-10 S Inox	SP 24-46 SG	SP 28-50 S Inox	PS 7500 S	PS 15000 S	PS 18000 SN
Pumping, recirculation of clear water from containers, pools, ponds etc.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Pumping out, recirculation of dirty water								■	■	■	■	■	■	■	■	■
Low-intake suction		■	■	■		■		■	■							
Minimal residual water level after pumping out (mm)	7	2	2	2	7	2	4	3	3	22	28	41	48	34	39	48
Shaft drainage (depending on the size of the shaft)								■	■	■	■	■	■	■	■	■
Drainage of clear water from cellars / ponds	■	■	■	■	■	■	■	■	■							
Drainage of very dirty water from cellars / ponds										■	■					
Pumping dry construction pits and flooded areas										■	■	■	■			
High water protection								■	■	■	■	■	■			
Fire and water restoration								■	■	■	■	■	■			
Agricultural use										■	■	■	■			
Industrial use												■	■			

## Irrigation: Which pump for which application?

Groundwater Pumping

Garden Irrigation

Garden irrigation: Number of possible attachments (e.g. sprinkler, showers)

Pumping, pumping out, recirculation of clear water

Automatic Domestic Water Supply

Pumping of water from wells, deeper springs

Pumping of water from greater depths e.g. bore holes / shafts min. Ø 100 mm

Pressure increase

Automatic water supply in the agricultural area

	Irrigation						Domestic Water Supply																
	Garden Pumps			Submersible Pressure Pump	Deep Well Pumps	Domestic Water Systems							Domestic Water Systems										
	P 2000 G	P 3300 G	P 4000 G	P 4500 Inox	P 6000 Inox	P 9000G	TDP 7501 S	TBP 4000 M	TBP 5000 M	HHW 3300/25 G	HHW 3500/25 Inox	HHWI 3500/25 Inox	HHW 4000/25 G	HHW 4500/25 Inox	HHW 4500/25 Inox Plus	HHWI 4500/25 Inox	HHW 6000/25 Inox	HHW 6000/50 Inox	HHW 9000/100 G	HWA 3500 Inox	HWAI 4500 Inox	HWA 6000 Inox	
Groundwater Pumping	■	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Garden Irrigation	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Garden irrigation: Number of possible attachments (e.g. sprinkler, showers)	2	2	2	3	4	6	3	3	3	2	2	2	3	3	3	3	4	4	6	2	3	4	
Pumping, pumping out, recirculation of clear water	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Automatic Domestic Water Supply										■	■	■	■	■	■	■	■	■	■	■	■	■	■
Pumping of water from wells, deeper springs							■	■	■														
Pumping of water from greater depths e.g. bore holes / shafts min. Ø 100 mm								■	■														
Pressure increase										■	■	■	■	■	■	■	■	■	■	■	■	■	■
Automatic water supply in the agricultural area																							■

Delivery height

Maximum height to which the water is pumped upwards vertically in a hose (10 m corresponds to 1 bar pressure)

Delivery output / delivery rate

Maximum water quantity that can be pumped. (l/h or l/min)

Suction height

Difference in height between water level and pump

Free passage

Max. grain / particle size that can be processed by the pump

## Calculation of the required delivery output and the required pressure.

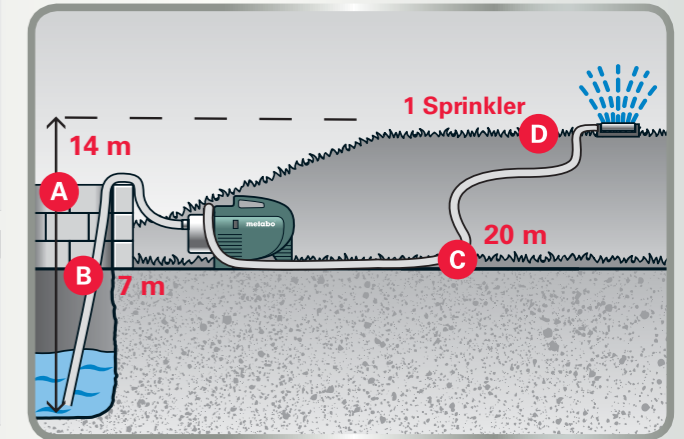
Calculation example for required pressure

	Calculation	Result
<b>A</b> Delivery height	14 m : 10 =	1.4
Suction height + pressure head (10 m = 1 bar)		+
<b>B</b> Length suction hose	7 m x 0.005 =	0,035
(Calculation friction loss with a hose Ø 1" = 0.005)		+
<b>C</b> Length pressure hose	20 m x 0.015 =	0.3
(Calculation friction loss with a hose Ø 3/4" = 0.015)		+
Required minimum pressure in general		2 bar =
<b>1</b> Required minimum pressure in total:		3.7 bar

Calculation example required amount of water

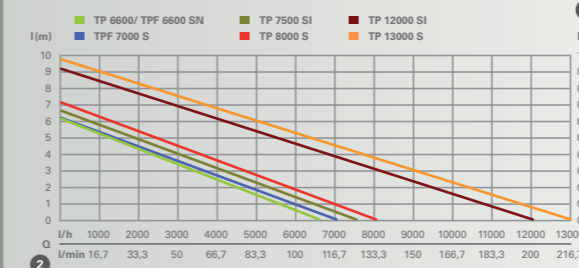
	Calculation	Result
<b>D</b> Delivery rate	(Water requirements of all connected consumers, e.g. sprinkler, toilet)	700 l/h
Water requirements house	(Estimate 1 house with 5 persons)	2,000 l/h
<b>2</b> Required amount of water in total:		2,700 l/h

Selection of the correct pump with **1 + 2**

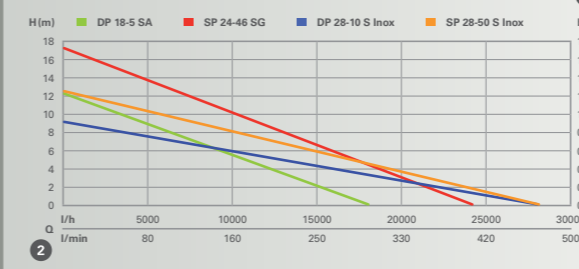


## Pump characteristics

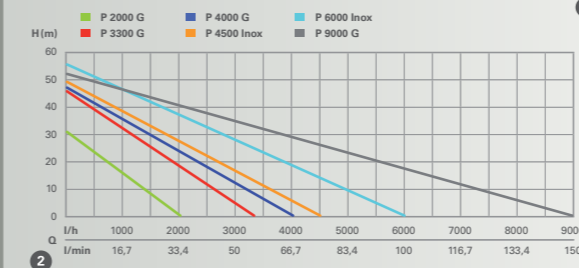
Clear Water Immersion Pumps



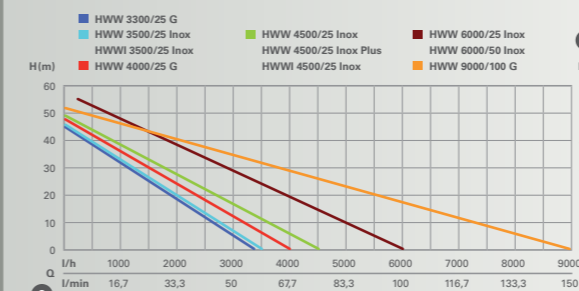
Construction and Dirty Water Pumps



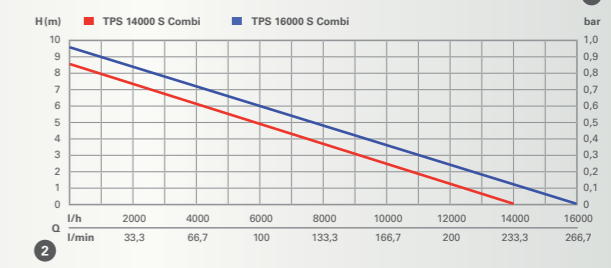
Garden Pumps



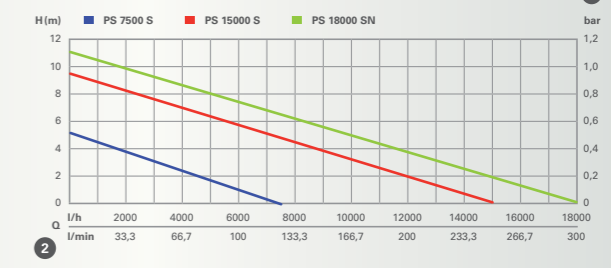
Domestic Water Systems



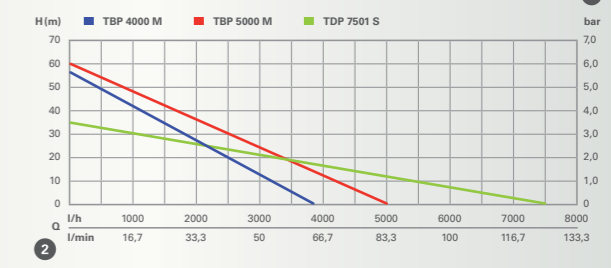
Combi Submersible Pumps



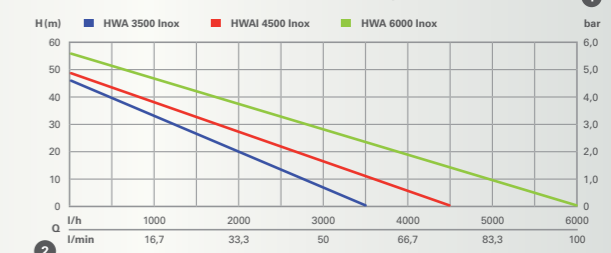
Dirty Water Immersion Pumps



Deep Well Pumps / Submersible Pressure Pumps



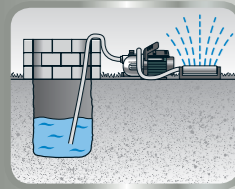
Domestic Water Works Automatic Systems



# IRRIGATION

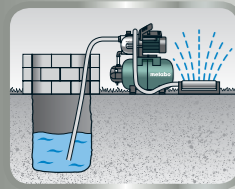
# DRAINAGE

## Garden Pumps



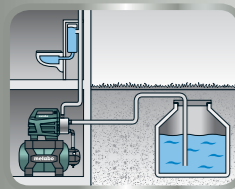
						
	<b>P 2000 G</b>	<b>P 3300 G</b>	<b>P 4000 G</b>	<b>P 4500 Inox</b>	<b>P 6000 Inox</b>	<b>P 9000 G</b>
Order number	600962	600963	600964	600965	600966	600967
Motor output	450 W	900 W	1,100 W	1,300 W	1,300 W	1,900 W
Maximum delivery rate	2,000 l/h	3,300 l/h	4,000 l/h	4,500 l/h	6,000 l/h	9,000 l/h
Maximum suction height	8 m	8 m	8 m	8 m	8 m	9 m
Max. delivery height / pressure	30 m / 3 bar	45 m / 4.5 bar	46 m / 4.6 bar	48 m / 4.8 bar	55 m / 5.5 bar	51 m / 5.1 bar
Suction / discharge port	1" FThr	1" FThr	1" FThr	1" FThr	1" FThr	1 1/4" FThr / 1" FThr

## Domestic Water Systems



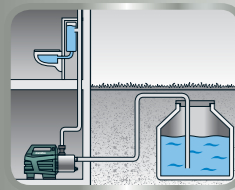
					
	<b>HWW 3300/25 G</b>	<b>HWW 3500/25 Inox</b>	<b>HWWI 3500/25 Inox</b>	<b>HWW 4000/25 G</b>	<b>HWW 4500/25 Inox</b>
Order number	600968	600969	600970	600971	600972
Motor output	900 W	900 W	1,100 W	1,100 W	1,300 W
Maximum delivery rate	3,300 l/h	3,500 l/h	3,500 l/h	4,000 l/h	4,500 l/h
Maximum suction height	8 m	8 m	8 m	8 m	8 m
Max. delivery height / pressure	45 m / 4.5 bar	45 m / 4.5 bar	45 m / 4.5 bar	46 m / 4.6 bar	48 m / 4.8 bar
Suction / discharge port	1" FThr	1" FThr	1" FThr	1" FThr	1" FThr
Tank capacity	24 l	24 l	24 l	24 l	24 l

## Domestic Water Systems



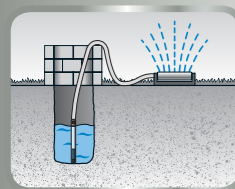
					
	<b>HWW 4500/25 Inox Plus</b>	<b>HWWI 4500/25 Inox</b>	<b>HWW 6000/25 Inox</b>	<b>HWW 6000/50 Inox</b>	<b>HWW 9000/100 G</b>
Order number	600973	600974	600975	600976	600977
Motor output	1,300 W	1,300 W	1,300 W	1,300 W	1,900 W
Maximum delivery rate	4,500 l/h	4,500 l/h	6,000 l/h	6,000 l/h	9,000 l/h
Maximum suction height	8 m	8 m	8 m	8 m	9 m
Max. delivery height / pressure	48 m / 4.8 bar	48 m / 4.8 bar	55 m / 5.5 bar	55 m / 5.5 bar	51 m / 5.1 bar
Suction / discharge port	1" FThr	1" FThr	1" FThr	1" FThr	1 1/4" FThr / 1" FThr
Tank capacity	24 l	24 l	24 l	50 l	100 l

## Domestic Water Works Automatic Systems



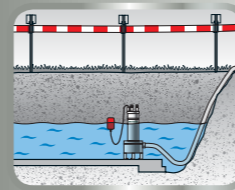
			
	<b>HWA 3500 Inox</b>	<b>HWA I 4500 Inox</b>	<b>HWA 6000 Inox</b>
Order number	600978	600979	600980
Motor output	1,100 W	1,300 W	1,300 W
Maximum delivery rate	3,500 l/h	4,500 l/h	6,000 l/h
Maximum suction height	8 m	8 m	8 m
Max. delivery height / pressure	45 m / 4.5 bar	48 m / 4.8 bar	55 m / 5.5 bar
Suction / discharge port	1" FThr	1" FThr	1" FThr

## Deep Well Pumps / Submersible Pressure Pumps



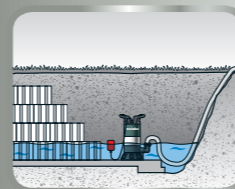
			
	<b>TBP 4000 M*</b>	<b>TBP 5000 M*</b>	<b>TDP 7501 S</b>
Order number	0250400055	0250500050	0250750100
Motor output	750 W	1,000 W	1,000 W
Maximum delivery rate	3,800 l/h	5,000 l/h	7,500 l/h
Max. delivery height / pressure	55 m / 5.5 bar	60 m / 6 bar	34 m / 3.4 bar
Maximum immersion depth	20 m	20 m	7 m
Discharge port	1" FThr	1" FThr	1" FThr
Cable length	22 m	22 m	10 m

## Construction and Dirty Water Pumps



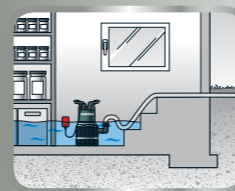
				
	<b>DP 18-5 SA</b>	<b>DP 28-10 S Inox</b>	<b>SP 24-46 SG</b>	<b>SP 28-50 S Inox</b>
Order number	604111	604112	604113	604114
Motor output	900 W	1,850 W	900 W	1,470 W
Maximum delivery rate	18,000 l/h	28,000 l/h	24,000 l/h	28,000 l/h
Max. delivery height / pressure	9,4 m / 0.94 bar	17 m / 1.7 bar	9 m / 0.9 bar	12 m / 1.2 bar
Maximum particle size up to	5 mm	10 mm	46 mm	50 mm
Discharge port	1 1/2" FThr	1 1/2" FThr	2" FThr	2" FThr
Cable length / max. immersion depth	10 m / 7 m	10 m / 7 m	10 m / 7 m	10 m / 7 m

## Dirty Water Immersion Pumps



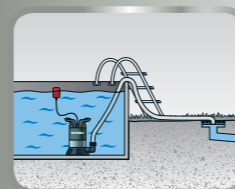
			
	<b>PS 7500 S</b>	<b>PS 15000 S</b>	<b>PS 18000 SN</b>
Order number	0250750000	0251500000	0251800000
Motor output	450 W	850 W	1,100 W
Maximum delivery rate	7,500 l/h	15,000 l/h	19,000 l/h
Max. delivery height / pressure	5 m / 0.5 bar	9,5 m / 0.95 bar	11 m / 1.1 bar
Maximum particle size up to	30 mm	30 mm	35 mm
Discharge port	1 1/4" FThr	1 1/4" FThr	1 1/2" FThr
Cable length / max. immersion depth	10 m / 5 m	10 m / 5 m	10 m / 7 m

## Combi Submersible Pumps



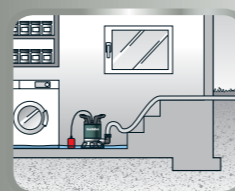
		
	<b>TPS 14000 S Combi</b>	<b>TPS 16000 S Combi</b>
Order number	0251400000	0251600000
Motor output	770 W	970 W
Maximum delivery rate	14,000 l/h	16,000 l/h
Max. delivery height / pressure	8,5 m / 0.85 bar	9,5 m / 0.95 bar
Maximum particle size up to	20 mm	30 mm
Discharge port	1 1/2" FThr	1 1/2" FThr
Cable length / max. immersion depth	10 m / 7 m	10 m / 7 m



## Clear Water Immersion Pumps



			
	<b>TP 6600*</b>	<b>TP 8000 S</b>	<b>TP 13000 S</b>
Order number	0250660000	0250800000	0251300000
Motor output	250 W	350 W	550 W
Maximum delivery rate	6,600 l/h	8,000 l/h	13,000 l/h
Max. delivery height / pressure	6 m / 0.6 bar	7 m / 0.7 bar	9.5 m / 0.95 bar
Discharge port	1 1/4" FThr	1 1/4" FThr	1 1/4" FThr
Cable length / max. immersion depth	10 m / 5 m	10 m / 5 m	10 m / 5 m

## Low-intake clear water submersible pumps



				
	<b>TPF 6600 SN</b>	<b>TPF 7000 S</b>	<b>TP 7500 SI</b>	<b>TP 12000 SI</b>
Order number	0250660006	0250800002	0250750013	0251200009
Motor output	450 W	450 W	300 W	600 W
Maximum delivery rate	6,600 l/h	7,000 l/h	7,500 l/h	11,700 l/h
Maximum delivery height	6 m / 0.6 bar	6 m / 0.6 bar	6.5 m / 0.65 bar	9 m / 0.9 bar
Discharge port	1 1/4" FThr	1 1/4" FThr	1 1/4" MThr	1 1/4" MThr
Cable length / max. immersion depth	10 m / 5 m	10 m / 5 m	10 m / 7 m	10 m / 7 m

\*without float switch FThr = female thread MThr = male thread