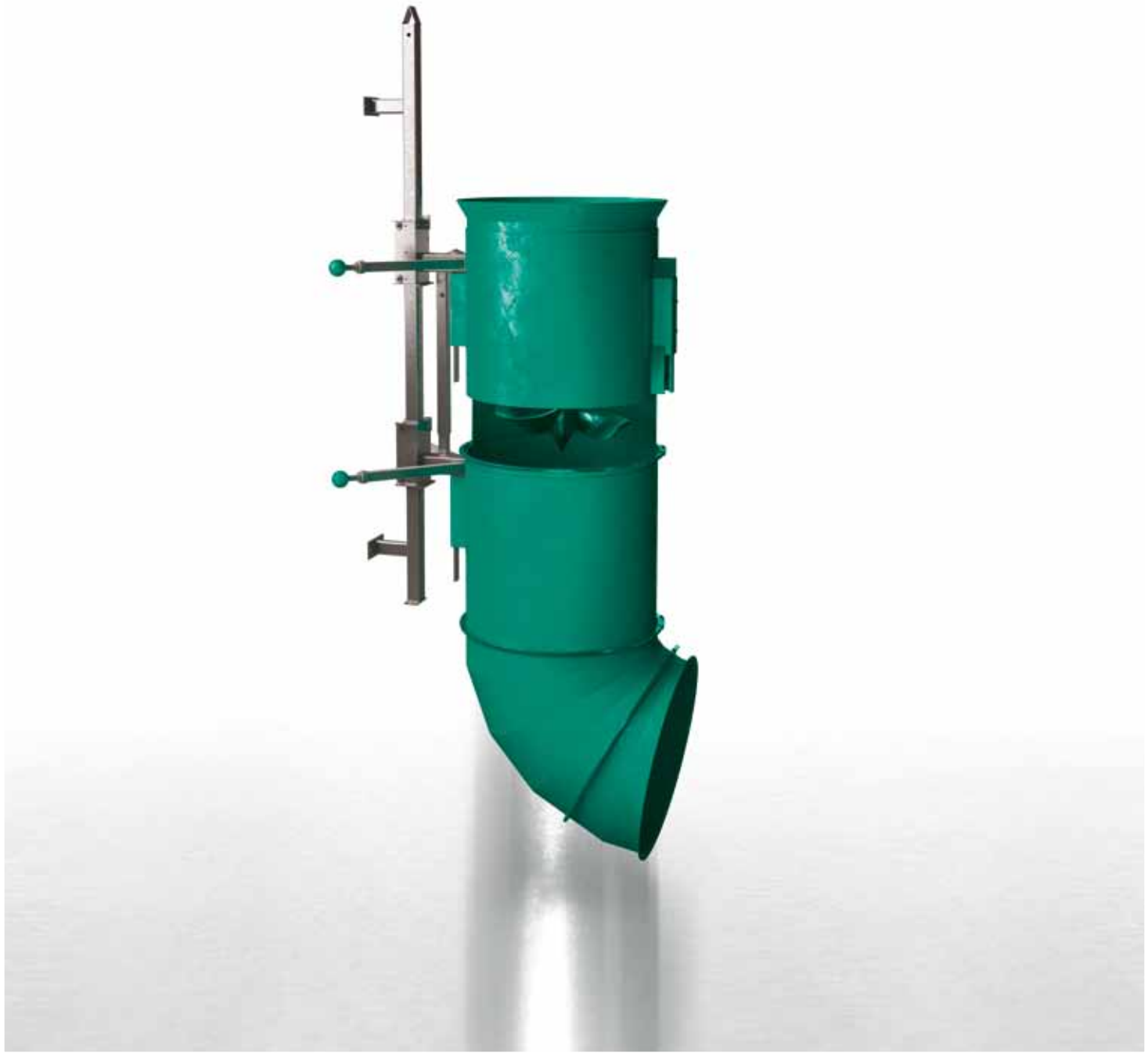
Innovative waste water treatment.
Wilo-Sevio ACT.

Product brochure.



Efficiently increasing treatment performance.
With innovative technology from Wilo.

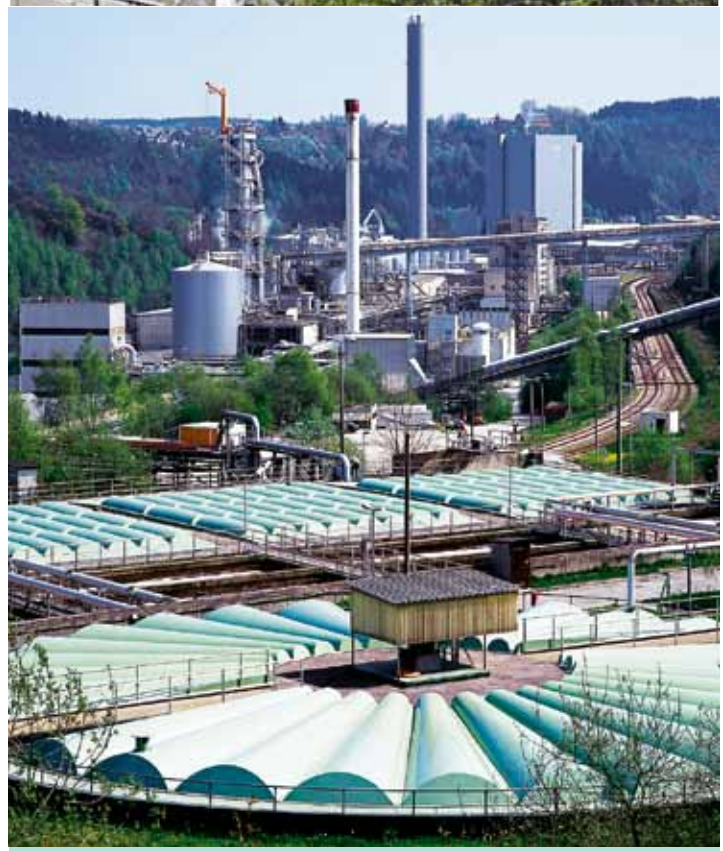
Operators of waste water treatment plants are increasingly confronted with new challenges. Cities are expanding, resulting in waste water treatment plants often being incorporated into suburban areas and being burdened by an increased number of inhabitants. Mainly due to opposition from these inhabitants, expansion of the waste water treatment plant is out of the question, meaning that treatment performance cannot be improved by additional constructions.

Increasingly higher demands are also made on the treatment of industrial waste water. Whether it's changes to production processes or new legal requirements, highly flexible and safe process engineering is what's called for.

Current processes, such as classic sludge activation or the biofilm method, are stretched to their limits again and again as a result of these increasing demands.

Modifying or converting plants to incorporate processes that use biomass carriers is ground-breaking and efficient. This method optimises the treatment process and also reduces the need for secondary treatment.

The aim is to keep the biomass carrier particles moving freely in the basin using the innovative Wilo-Sevio ACT in order to optimise the biological process.



TAILOR-MADE FOR YOUR REQUIREMENTS

- For the biological treatment of municipal and industrial waste water, for example in the areas of carbon decomposition, nitrification and denitrification
- Designed especially for waste water treatment plants that are not permitted to expand in size
- Ideal for industrial waste water treatment plants in the areas of food and animal feed manufacturing and the production of steel, chemicals and paper
- Suitable for various basin depths and geometries
- For all types of biomass carrier particles
- Can also be used for suctioning floating sludge

Optimised treatment process.

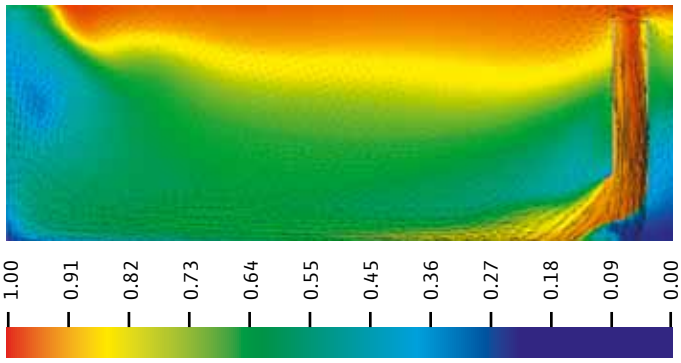
By entering biomass carrier particles gently into the fluid.

Floating cover of biomass carrier particles:
The carrier particles located on the top layer and mostly not in the waste water are not available for biological degradation. Using the Wilo-Sevio ACT the carrier particles are sucked in and fed back into the biological process underneath the water's surface.

Sucking in the biomass carrier particles:
The Wilo-Sevio ACT ensures that the carrier particles are continuously distributed and entered gently in order to protect the growth on them. Due to the outlet being located near the ground, deposition is minimised and even mixing achieved.

Benefit from our know-how
The fully immersed Wilo-Sevio ACT components allow the flow pulse to take effect from the most favourable hydraulic point. This improves the economic efficiency of your entire process.

This is made possible by a combination of the following:
- Computer-based design
- Simulation of flow profiles
- Individual adjustment to the respective system – optimally matched individual components



Volume proportion of carrier particle

Even distribution:
The higher the number of carrier particles that react with the fluid, the better the treatment performance. Our individual configuration and the innovative technology of our Wilo-Sevio ACT ensure optimal treatment results.

Classic sludge activation firstly requires a lot of space. Secondly, sedimentation in secondary clarifiers frequently poses a challenge. Conventional biofilm systems, such as percolating filters, rotating biological contactors, immersed fixed beds or biofilters, require a large amount of space, too. A further problem is posed by the even distribution of organic load in activated sludge tanks and fixed-bed reactors.

The ground-breaking method using biomass carrier particles combines the benefits of classic sludge activation and the well-known biofilm method. On the one hand, the entire basin volume is used just like in the sludge activation method. On the other hand, the biomass carrier particles are distributed and moved freely in the water by means of even mixing.

Biomass that becomes detached from the carrier is taken out as excess sludge and removed during secondary treatment. Secondary treatment can be designed significantly smaller seen as no sludge has to be returned in most cases.

THE ADVANTAGES TO YOU

- Reduced energy costs
- Low investment costs
- Improved treatment performance
- High process reliability
- Even mixing and reduced deposition
- Easy installation
- Can be retrofitted at any time

Wilo-Sevio ACT.

The advantages to you at a glance.

CALCULATION EXAMPLE FOR OPTIMISED CONFIGURATION

	Pneumatic circulation*	Submersible mixer	Wilo-Sevio ACT
Annual operating time	8,760 h		
Energy costs	0.15 €/kWh		
Basin volume	600 m³		
Energy input	45 W/m³	30 W/m³	10 W/m³
Power consumption in duty point P1.1	27 kW	18 kW	6 kW
Energy costs per year	8,760 h × 0.15 €/kWh × 27 kW = € 35,478	8,760 h × 0.15 €/kWh × 18 kW = € 23,652	8,760 h × 0.15 €/kWh × 6 kW = € 7,884
Total energy costs over 5 years**	**€ 177,390**	**€ 118,260**	**€ 39,420**

Potential energy savings over 5 years** for Wilo-Sevio ACT compared to	Pneumatic circulation*	Submersible mixer
	€ 137,970	**€ 78,840**

* E.g. for bioreactors in industrial applications.

** Energy costs calculated at a constant rate of 0.15 €/kWh.

TECHNICAL DATA

Wilo-Sevio ACT SD 101 ...	
Diameter	900 mm
Flow rate	3,300–4,000 m³/h
Rated motor power	3–4.5 kW
Propeller speed	200–250 rpm
Power input	6–10 W/m³
Max. basin depth	4–≥ 8 m
Max. bulk density	approx. 70 %

IE3

Wilo-Sevio ACT SD 101	Basin depth	Max. floating layer thickness	Max. proportion of biomass carrier particles
Standard 30°/ DF238...	4/(3 + sloping bottom) m	1.6 m	50 %
Standard / VF273...	4 m	1.9 m	50 %
Telescope / VT435...	6 m	3.5 m	60 %
Telescope long / VT615...	≥ 8 m	5.3 m	70 %

SCOPE OF DELIVERY
Lowering device including fastening elements, unit with 10 m cable (excess lengths on request). Any necessary changes to the construction (e.g. railings, covers, bridges, pedestals) are to be made onsite. This includes the supply of power. The operator is responsible for proper operation and the compliance of all accident prevention, safety and hygiene regulations. Free access as well as safe operation and installation are to be ensured.

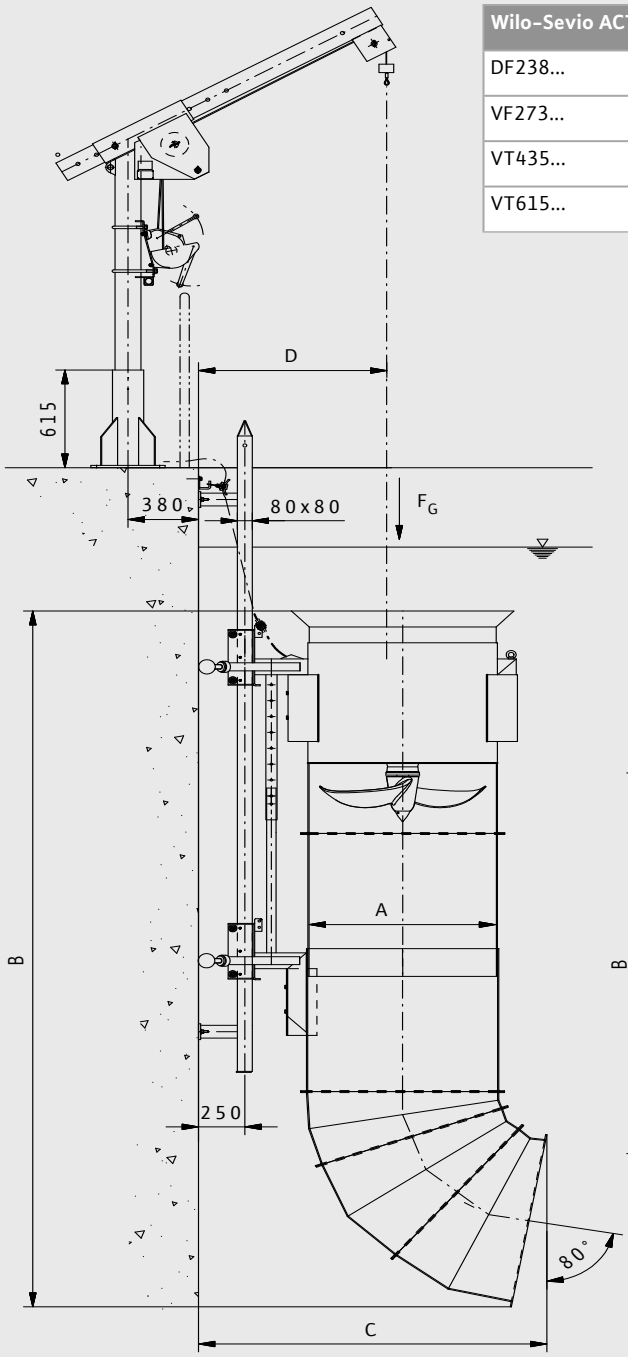
System-optimised
Energy-optimised circulation thanks to individual configuration and efficient components

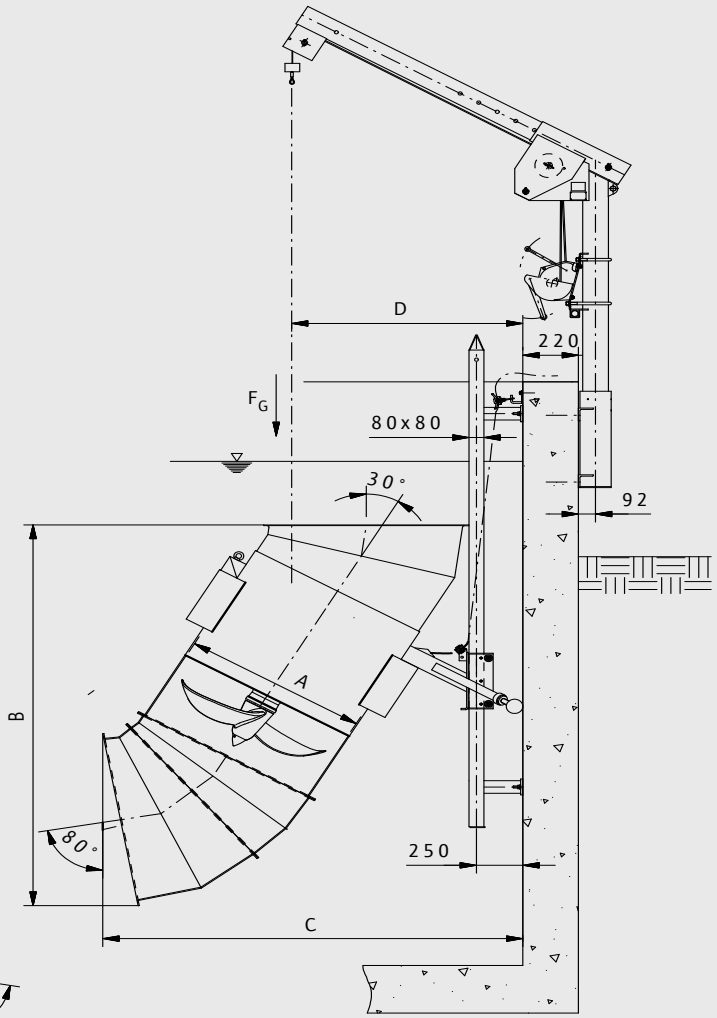
Practical
Simple installation and maintenance using lowering devices and auxiliary hoisting gear

Process-optimised
Adjustment of circulation effect by individually setting the discharge angle and direction

DIMENSION DRAWING OF INSTALLATION

Wilo-Sevio ACT SD 101 ...	A	B	C	D	F_G
DF238...	1010 Ø	≤ 2,375	≤ 2,290	1,250	270–305 kg
VF273...		≤ 2,730	≤ 1,925	1,100	260–295 kg
VT435...		3,650–4,350	≤ 1,925	1,000	360–395 kg
VT615...		4,550–6,150	≤ 1,925	1,000	420–455 kg





WILO SE
Nortkirchenstraße 100
44263 Dortmund
Germany
T +49 231 4102-0
F +49 231 4102-7363
wilo@wilo.com
www.wilo.com

Wilo – International (Subsidiaries)

Argentina
WILO SALMSON
Argentina S.A.
C1295ABI Ciudad
Autónoma de Buenos Aires
T+ 54 11 4361 5929
info@salmson.com.ar

Austria
WILO Pumpen
Österreich GmbH
2351 Wiener Neudorf
T +43 507 507-0
office@wilo.at

Azerbaijan
WILO Caspian LLC
1014 Baku
T +994 12 5962372
info@wilo.az

Belarus
WILO Bel OOO
220035 Minsk
T +375 17 2535363
wilo@wilo.by

Belgium
WILO SA/NV
1083 Ganshoren
T +32 2 4823333
info@wilo.be

Bulgaria
WILO Bulgaria Ltd.
1125 Sofia
T +359 2 9701970
info@wilo.bg

Brazil
WILO Brasil Ltda
Jundiaí - SP - CEP
13.201-005
T + 55 11 2817 0349
wilo@wilo-brasil.com.br

Canada
WILO Canada Inc.
Calgary, Alberta T2A 5L4
T +1 403 2769456
bill.lowe@wilo-na.com

China
WILO China Ltd.
101300 Beijing
T +86 10 58041888
wilobj@wilo.com.cn

Croatia
WILO Hrvatska d.o.o.
HR-10430 Samobor
T +38 51 3430914
wilo-hrvatska@wilo.hr

Czech Republic
WILO Praha s.r.o.
25101 Cestlice
T +420 234 098711
info@wilo.cz

Denmark
WILO Danmark A/S
2690 Karlslunde
T +45 70 253312
wilo@wilo.dk

Estonia
WILO Eesti OÜ
12618 Tallinn
T +372 6 509780
info@wilo.ee

Finland
WILO Finland OY
02330 Espoo
T +358 207401540
wilo@wilo.fi

France
Pompes Salmson
78403 Chatou
T + 33 820 0000 44
service.conso@salmson.fr

Great Britain
WILO (U.K.) Ltd.
DE14 2WJ Burton-
Upon-Trent
T +44 1283 523000
sales@wilo.co.uk

Greece
WILO Hellas AG
14569 Anixi (Attika)
T +302 10 6248300
wilo.info@wilo.gr

Hungary
WILO Magyarország Kft
2045 Törökbálint
(Budapest)
T +36 23 889500
wilo@wilo.hu

India
WILO India Mather and
Platt Pumps Ltd.
Pune 411019
T +91 20 27442100
service@
pun.matherplatt.co.in

Indonesia
WILO Pumps Indonesia
Jakarta Selatan 12140
T +62 21 7247676
citrawilo@cbn.net.id

Ireland
WILO Engineering Ltd.
Limerick
T +353 61 227566
sales@wilo.ie

Italy
WILO Italia s.r.l.
20068 Peschiera
Borromeo (Milano)
T +39 25538351
wilo.italia@wilo.it

Kazakhstan
WILO Central Asia
050002 Almaty
T +7 727 2785961
info@wilo.kz

Korea
WILO Pumps Ltd.
621-807 Gimhae
Gyeongnam
T +82 55 3405890
wilo@wilo.co.kr

Latvia
WILO Baltic SIA
1019 Riga
T +371 7 145229
mail@wilo.lv

Lebanon
WILO SALMSON
Lebanon
12022030 El Metn
T +961 4 722280
wsl@cyberia.net.lb

Lithuania
WILO Lietuva UAB
03202 Vilnius
T +370 5 2136495
mail@wilo.lt

Morocco
Wilo Maroc
Sarlquartier Industriel ain Sebaa
20250 Casablanca
T + 212 (0) 5 22 660 924
contact@wilo.ma

The Netherlands
WILO Nederland b.v.
1551 NA Westzaan
T +31 88 9456 000
info@wilo.nl

Norway
WILO Norge AS
0975 Oslo
T +47 22 804570
wilo@wilo.no

Poland
WILO Polska Sp. z.o.o.
05-090 Raszyn
T +48 22 7026161
wilo@wilo.pl

Portugal
Bombas Wilo-Salmson
Portugal Lda.
4050-040 Porto
T +351 22 2080350
bombas@wilo.pt

Romania
WILO Romania s.r.l.
077040 Com. Chiajna
Jud. Ilfov
T +40 21 3170164
wilo@wilo.ro

Russia
WILO Rus ooo
123592 Moscow
T +7 495 7810690
wilo@wilo.ru

Saudi Arabia
WILO ME - Riyadh
Riyadh 11465
T +966 1 4624430
wshoula@wataniaind.com

Serbia and Montenegro
WILO Beograd d.o.o.
11000 Beograd
T +381 11 2851278
office@wilo.co.yu

Slovakia
WILO Slovakia s.r.o.
83106 Bratislava
T +421 2 33014511
wilo@wilo.sk

Slovenia
WILO Adriatic d.o.o.
1000 Ljubljana
T +386 1 5838130
wilo.adriatic@wilo.si

South Africa
Salmson South Africa
1610 Edenvale
T +27 11 6082780
errol.cornelius@
salmson.co.za

Spain
WILO Ibérica S.A.
28806 Alcalá de Henares
(Madrid)
T +34 91 8797100
wilo.iberica@wilo.es

Sweden
WILO Sverige AB
35246 Växjö
T +46 470 727600
wilo@wilo.se

Switzerland
EMB Pumpen AG
4310 Rheinfelden
T +41 61 83680-20
info@emb-pumpen.ch

Taiwan
WILO-EMU Taiwan Co. Ltd.
110 Taipeh
T +886 227 391655
nelson.wu@
wiloemutaiwan.com.tw

Turkey
WILO Pompa Sistemleri
San. ve Tic. A. S.
34956 Istanbul
T +90 216 2509400
wilo@wilo.com.tr

Ukraina
WILO Ukraina t.o.w.
01033 Kiew
T +38 044 2011870
wilo@wilo.ua

United Arab Emirates
WILO Middle East FZE
Jebel Ali Free Zone -
South - Dubai
T +971 4 880 91 77
info@wilo.ae

USA
WILO USA LLC
Rosemont, IL 60018
T + 1 866 945 6872
info@wilo-usa.com

Vietnam
WILO Vietnam Co Ltd.
Ho Chi Minh City, Vietnam
T +84 8 38109975
nkminh@wilo.vn

Wilo – International (Representation offices)

Algeria
Bad Ezzouar, Dar El Beida
T +213 21 247979
chabane.hamdad@ salmson.fr

Armenia
0001 Yerevan
T +374 10 544336
info@wilo.am

Bosnia and Herzegovina
71000 Sarajevo
T +387 33 714510
zeljko.cvjetkovic@ wilo.ba

Georgia
0179 Tbilisi
T +995 32 306375
info@wilo.ge

Macedonia
1000 Skopje
T +389 2 3122058
valerij.vojneski@wilo.com.mk

Mexico
07300 Mexico
T +52 55 55863209
roberto.valenzuela@wilo.
com.mx

Moldova
2012 Chisinau
T +373 22 223501
sergiu.zagurean@wilo.md

Rep. Mongolia
Ulaanbaatar
T +976 11 314843
wilo@magicnet.mn

Tajikistan
734025 Dushanbe
T +992 37 2312354
info@wilo.tj

Turkmenistan
744000 Ashgabad
T +993 12 345838
kerim.kertiyev@wilo-tm.info

Uzbekistan
100015 Tashkent
T +998 71 1206774
info@wilo.uz

2132268/0.ST/1209/EN/SH