

HELIOS conveying technics HEROLIFT®
of special, highly wear-resistant glass

“Simply brilliant”



- HELIOSTAR compressed air hopper loader for 1 component conveying
- HELIOMIX compressed air mixing hopper loader for 2 components conveying
- Hopper loader for conveying resins
- Hopper loader for conveying fine resin powders
- Hopper loader for conveying powders
- Vacuum units
- Piping systems



HEROLIFT®
wear-resistant vacuum conveying technics

HELIOS compressed air hopper loaders

HELIOS compressed air hopper loaders HELIOSTAR and HELIOMIX will suit to convey free flowing bulk materials, such as resins, regrinds or fine resin powders.

The bulk material is conveyed by means of ejector suction lance using compressed air to the loader. The sophisticated filter technics allow separation between conveying air and bulk material without dust. All parts of HELIOSTAR and HELIOMIX compressed air hopper loaders in contact with conveyed material are made of highly wear-resistant borosilicate glass, stainless steel and tubes of PUR respectively.

HELIOS compressed air hopper loaders are mainly used for conveying capacities up to approx. 50 kg/h and for vertical conveying distances up to approx. 8 m.



HELIOSTAR
HE-1/M-1K

HELIOMIX
HE-1/M-2K

HELIOSTAR

compressed air 1 component hopper loader with filter dedusting device



- + conveying control HF-1/E-1K
- + PUR conveying tube kit of 3 m
- + HELIOS ejector suction lance
- + adapter set

- 5 mm clear-transparent cylinder of borosilicate glass with material inlet diameter 32 mm
- HELIOS conveying control offers a choice of
 - filling level by conveying time
 - filter dedusting while and after conveying
 - number of dedusting intervals from 0 to 9
 - max. conveying time (conveying time control)
- antistatic quality filter removable
- stainless steel conveying pipe
- probe for minimum adjustment of filling level
- HELIOS Venturi type suction lance, suction pipe of wear-resistant INOX with PUR conveying tube
- conical bottom and flange resp. of Aluminium

in option

- nickel-plated outlet cone
- Arburg, Demag, Krauss-Maffei, Boy, Netstal, etc. injection moulding machine adaptation

HELIOMIX

compressed air 2 components mixing hopper loader with filter dedusting device



- + conveying control HF-1/E-2K
- + 2 sets of PUR conveying tube kit of 3 m
- + 2 sets of HELIOS ejector suction lance
- + adapter set

- 5 mm clear-transparent cylinder of borosilicate glass with material inlet diameter 32 mm
- HELIOS conveying control offers a choice of
 - mixing rate
 - adjustable conveying time for component 1 and 2
 - delayed suction time adjustable for component 1 and 2
 - filter dedusting while and after conveying
 - number of dedusting intervals from 0 to 9
 - max. conveying time (conveying time control)
- antistatic quality filter removable
- 2 stainless steel material inlet tube adapters with non-return flap
- probe for minimum adjustment of filling level
- 2 HELIOS Venturi type suction lances, suction pipe of wear-resistant INOX with 3 m of PUR conveying tube, Venturi type suction lance for the main component, suction lance with nozzle for regrind material
- conical bottom and flange resp. of Aluminium

Simultaneous conveying and mixing – at any rate desired

The HELIOS mixing hopper loader is developed for capacities from 0,1 kg/h to 30 kg/h and can either be mounted on the feed zone of an injection moulding machine or on an intermediate container. The regrind and virgin material is mixed fully automatically while conveying.

The both components are conveyed by means of Venturi type suction lance of new design and that followed mixed in a container of special, highly wear-resistant glass. The system enables to regard different conveying distances achieving exactly mixing rate of both components. The material turbulence in hopper creates homogeneous mixing before processing, thus quality fluctuations, such as laminations of both components, can be avoided.

The filter cleaning being especially developed for this equipment line enables virtually maintenance-free operation. The filter is automatically dedusted before and while conveying. Additionally, the cleaning intervals can be individually adjusted and – as all the conveying parameters (such as mixing rate, both components' removal time) – easily keyed in during operation on digital display.



Mounted on an intermediate container or directly on feed zone.

Equipment parts for expansions/modifications

Previously delivered equipments, for example mounted on HELIOS JETBOX units, can be modified later by adding corresponding modification kits of filter dedusting or 2 components conveying.



The control unit can either be placed on a mixing conveyer or separately at any place desired.



Well approved suction lance with nozzle for high regrinds unloading capacities out of grinder.



Venturi type suction lance
New ejector suction lance type in wear-resistant design for longer life cycle can be completely dismantled.



**“The HELIOS technics:
simply brilliant for small
material capacities”**

HELIOS vacuum hopper loader types

The problem

Abrasive bulk materials – such as glass fibre reinforced plastics resins, glass fibres etc. – wear conventional hopper loaders of Aluminium cast or stainless steel within a shortest period.

The solution

The vacuum hopper loaders of extremely wear-resistant borosilicate glass are built by HELIOS since 1997. Among the high-resistance to abrasion, the conveyed material is also 100% visible all side enabling control of conveying process at any time. The top part can be opened by hand for easy cleaning top down. Combined with a single control unit, the HELIOS vacuum hopper loader for resins provides a single conveying unit and, combined with a multipoint conveying control including vacuum unit, a centralized conveying system. No matter, if using hopper loaders for tiniest material quantities or also big hopper loaders integrated in a vacuum conveying system.



Hopper loader type HFM

- top can be opened for easy cleaning
- conveyed material is separated from conveying air without filter
- removable filter disc between glass hopper and loader top

Standard equipment

- conveyed material volume 100% visible all side
 - parts in contact with conveyed material of highly wear-resistant borosilicate glass and INOX
 - HELIOS quick sliding guide system enabling vacuum sealed adaptation on the pusher rail (type S)
- or
- flange for mounting on an intermediate container/dryer hopper (type K)
 - top can be opened for easy cleaning
 - conveyed material is separated from conveying air without filter
 - removable filter disc between glass hopper and loader top
 - top can be closed by using 1 quick lock fastener only
 - switch box with plug socket for adaptation to centralized conveying control, probe and mixing valve
 - separate ON/OFF toggle switch
 - material inlet pipe Ø 50/65mm, vacuum inlet pipe Ø 50mm
 - stable support handle



HFM 1/S



HFM 3/S



HFM 15/S



HFM 1/K



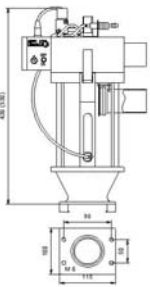
HFM 3/K



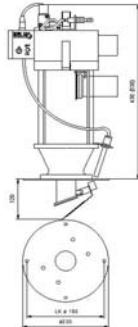
HFM 15/K

HFM	1/S	1/K	3/S	3/K	15/S	15/K	30/S	30/K
volume/per conveying cycle (l)	1	1	3	3	15	15	25	25
material (parts in contact with bulk material)	INOX glass	INOX glass	INOX glass	INOX glass	INOX glass	INOX glass	INOX glass	INOX glass
inlets Ø (mm)	50	50	50	50	50	50	65	65
weight (kg)	6,5	7,0	7,0	7,5	10,5	14,0	20,5	20,5
electro-magnetic pulse via	probe	valve	probe	valve	probe	valve	probe	valve
diameter, assemblies not incl. (mm)	160	160	160	160	315	315	315	315
height (mm)	400	430	530	640	700	750	980	1030

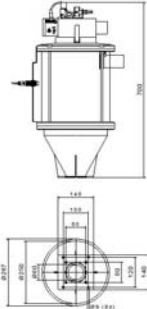
HFM 1/S



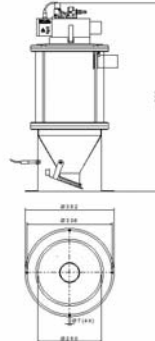
HFM 1/K



HFM 15/S



HFM 15/K



HELIOS conveying controls

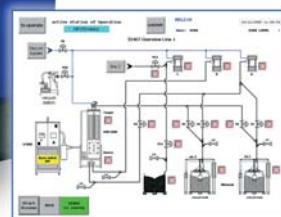
The conveyor line HFM can be combined with a single control unit or with a centralized conveying control system. Both types control in addition to the vacuum station over a 2-components mixing valve, an automatic filter cleaning and a discharge valve on each conveying point.



Single control unit HF-1/2K



centralized conveying system for discharging/conveying/drying with touch screen monitoring



Options

- adapters to conveying pipe diameters 60mm, 50mm, 45mm, 40mm or 38mm
- quick couplings for adaptation to vacuum and conveying pipe
- filter disc with fine or coarse mesh aperture



HF-16/64 centralized conveying control system in series connection

- up to max. 64 conveying points can be attached under max. 8 conveying lines additionally
- the series connection allows to activate additional conveying points from 16 to 64 units in 8-units steps
- operated by Siemens C7-633-panel
- a touch screen panel with monitoring of total conveying system is alternatively available

HELIOS hopper loaders for fine resin powders and fibres



HFM 15/G
with tube filter

HFM 15/G
with fold filter

HFM 1/G
with tube filter

auf HELIOS Zwischenbehälter

For flowing bulk materials: glass fibre/glass grind, PTFE fine resin, active carbon, corundum, pelletized carbon black, quartz sand, Zeolith ...etc.

Especially for bulk materials between powdered and resin consistence, HELIOS offers vacuum hopper loaders of glass/stainless steel, matching to each conveying task: The parts contacting material are made of special glass and stainless steel respectively, filter technics with automatic filter dedusting, controlled outlet valve, conveying control and vacuum unit.

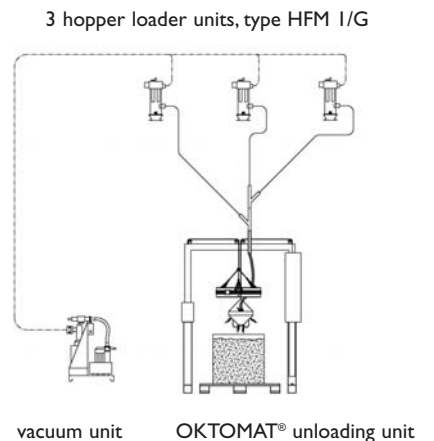
HFM	1/G	15/G	30/G
separated material volume per each conveying cycle (l)	1,5	15	25
material (conveyed material contacting parts)	INOX/glass	INOX/glass	INOX/glass
inlets Ø (mm)	50	50	65
weight (kg)	7,5	10,5	20,5
electro-magnetic pulse via	valve	valve	valve
Diameter, assemblies not incl. (mm)	160	315	315
height (mm)	540	1030	1300

Standard equipment

- 100% of conveyed material visible all side
- conveyed material contacting parts of highly wear-resistant borosilicate glass and INOX
- top can be opened for easy cleaning
- top can be closed by using 1 quick lock fastener only
- vacuum inlet Ø 50 mm and material inlet Ø 38/50/65 mm
- filter dedusting by means of compressed air
- removable filter element
- PE sintered material filter or Polyester fold filter

Options

- forced outlet valve control
- compressed air storage
- intermediate container
- single control unit
- multi-point control unit
- vacuum units



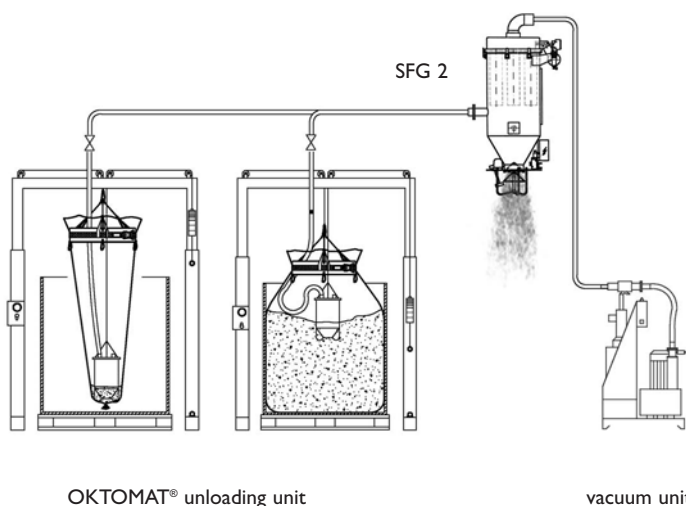
HELIOS hopper loader types SFG 2 / 3 / 6 for powdered material



Universally operating hopper loader unit for automatic feeding of extruders, processing machines, containers and storage silos. Basing on large filter surface area with easy access for cleaning together with large conical outlet diameter, the hopper loader type is especially designed for powdered and poorly flowing materials. Used as single controlled unit or integrated in a centralized material conveying system.

Design characteristics vacuum hopper loader for powdered materials

- high efficiency hose filter with compressed air filter dedusting
- filter plate/filters can easily be removed in one piece at material change
- parts in contact with conveyed material of INOX
- electro-pneumatically operated conical discharge valve, silicon coated
- lever indicator signal by rotating wing
- easy access for filter servicing
- electric control system
- large filter surface area
- large outlet diameter enabling short discharge period
- temperature range from -10°C to $+80^{\circ}\text{C}$



OKTOMAT® unloading unit

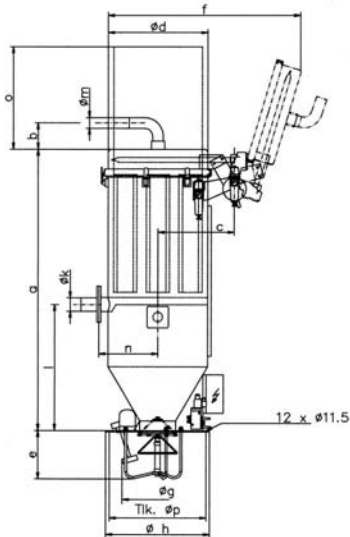
vacuum unit

Special design

- continuous operation is possible by using a rotary feeder instead of outlet valve
- specific filters and filter kits
- nozzles at conical bottom for fluidisation of sticky materials
- max. filling level indicator at hopper
- master control unit to control max. 5 hopper loader unit under 1 vacuum line
- ATEX application, zone 22 and 21

HELIOS hopper loaders for recycled materials

HELIOS hopper loader types SFG 2 / 3 / 6 for powdered materials



type	SFG 2	SFG 3	SFG 6
a	910	1200	1400
b	150	150	150
c	340	340	430
Ød	380	380	560
e	260	260	260
f	800	800	1100
Øg	400	400	420
Øh	484	484	587
i	240	240	330
j	250	480	480
Øk	50/65/80	50/65/80	65/80
l	400	400	520
Øm	60	60	60
Øp	448	448	551
filter surface (m²)			
tube	0,6	1,3	2,7
tube quantity	9	9	19
net volume (l)			
material container	24	24	63
approx. weight (kg)			
empty	50	60	100
vacuum unit (kW)		2,2 - 7,5	



effective filter cleaning by means of compressed air counter-flow



filter can be replaced in one piece



silicone coated outlet/closing cone, large outlet diameter enables short output times and thus large throughput capacity

HELIOS vacuum units

HELIOS vacuum units

To achieve the necessary conveying air flow supply, a separate blower unit with standby modus and filter technics are used for vacuum suction technics with HELIOS. For the most applications, the maintenance-free and very compact side channel blowers are in operation. There are also other channel blower types available for specific applications, such as claw or rotary valve pumps. The hopper loader is adapted by means of vacuum pipe system to the vacuum station and by means of the conveying pipe system to the feeding of a vacuum conveying system. At the material intake, either a suction lance or a suction head (OKTOMAT® unloading system) is used for the bulk material conveying.



HELIOS vacuum units, series HV

vacuum unit, type HV	2,2	3,0	4,3	6,4 FU
total connection load (kW) 400V/3Ph/50Hz	2,2	3,0	4,3	6,4
volumetric suction at 180 mbar (m³/h)	250	250	250	100-400
max. total pressure flow (mbar)	220	280	350	350
pipe diameter (mm)	65/80	50/65	50/65	50/65/80
measurement (mm) width	730	730	730	730
measurement (mm) depth	500	500	500	500
measurement (mm) height	1300	1300	1300	1300

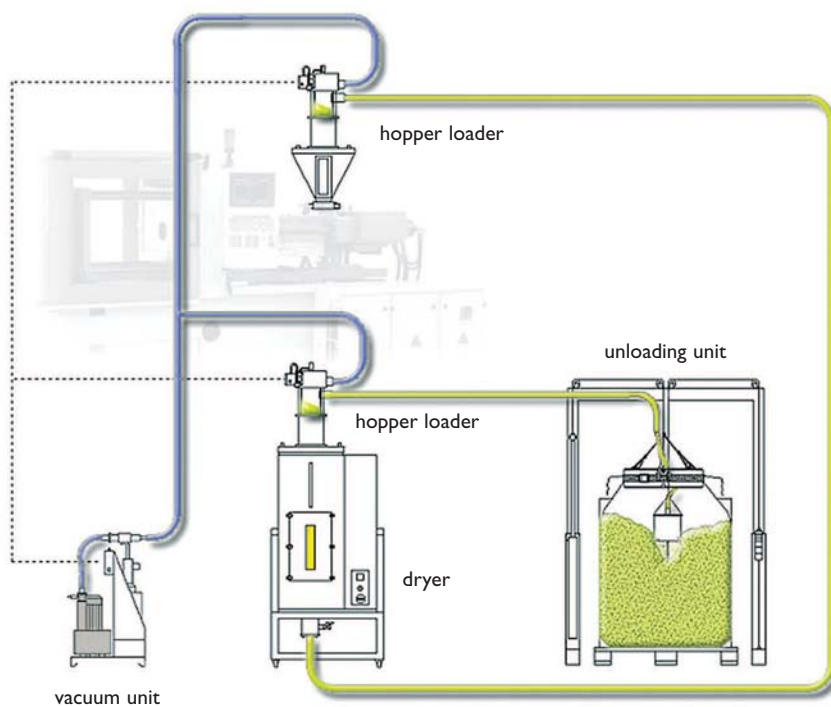


HV 2,2 / 6,4 FU

vacuum unit, type HV	5,5 E	7,5
total connection load (kW) 400V/3Ph/50Hz	5,5	7,5
volumetric suction at 180 mbar (m³/h)	320	400
max. total pressure flow (mbar)	300	420
pipe diameter (mm)	65/80	50/65
measurement (mm) width	1520	1520
measurement (mm) depth	600	600
measurement (mm) height	1500	1500



HV 5,5 E / 7,5



Standard equipment

- stable powder coated or Aluminium profile housing
- efficient and maintenance-free side channel blower
- power unit with main switch
- release valve
- central dedusting by means of cyclone
- central cyclone with fine filter
- big dust collection container with glass viewing and carry handles
- low pressure manometer

Options

- rotary valve pump
- claw valve pump
- speed regulation

HELIOS materials handling/piping components



Additionally to piping system components of Aluminium and INOX, HELIOS offers specific pipe pieces of highly wear-resistent borosilicate glass for conveying abrasive materials under vacuum. The single glass pipe pieces can be attached either by means of removable pipe adapters or bonded socket joints.

Matching joint pieces to adapt glass components to stainless steel are available as well.

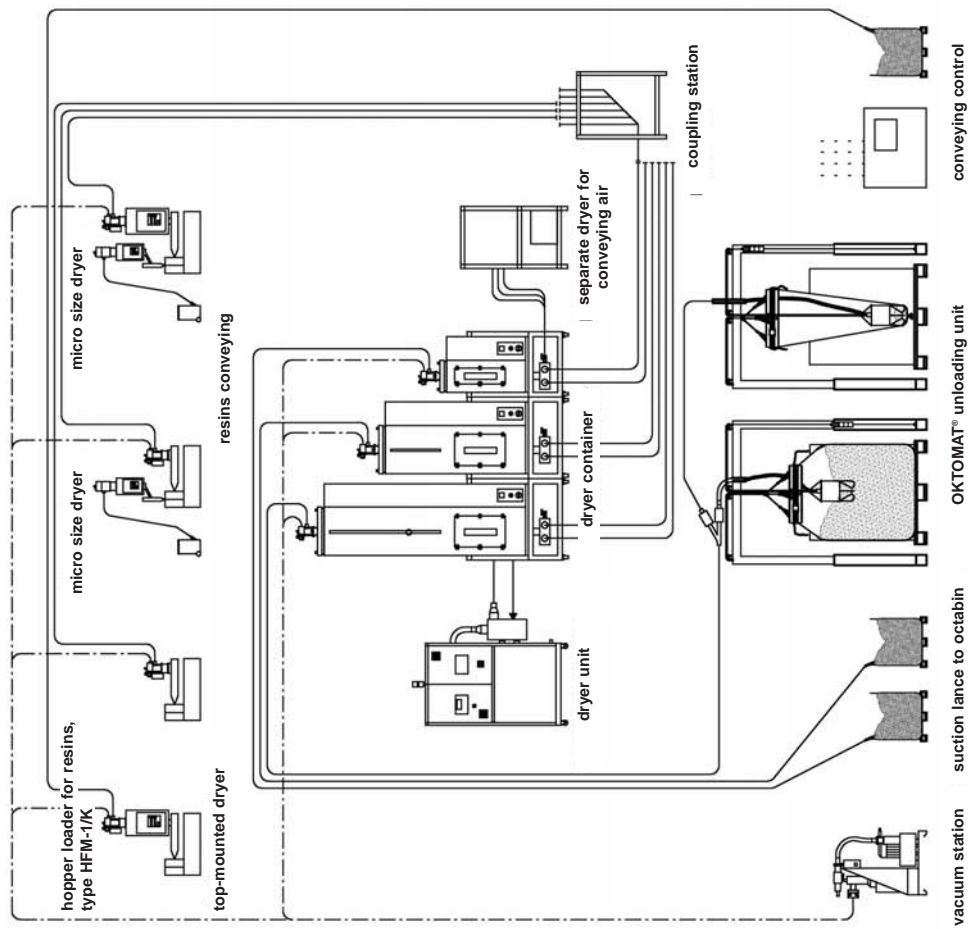


Further to straight pipings up to lengths of max. 1500 mm (D), there are also 45° (B) and 90° (A) bends respectively as well as V pipe bends (C) available being necessary to build up a wear-resistant coupling station for example.

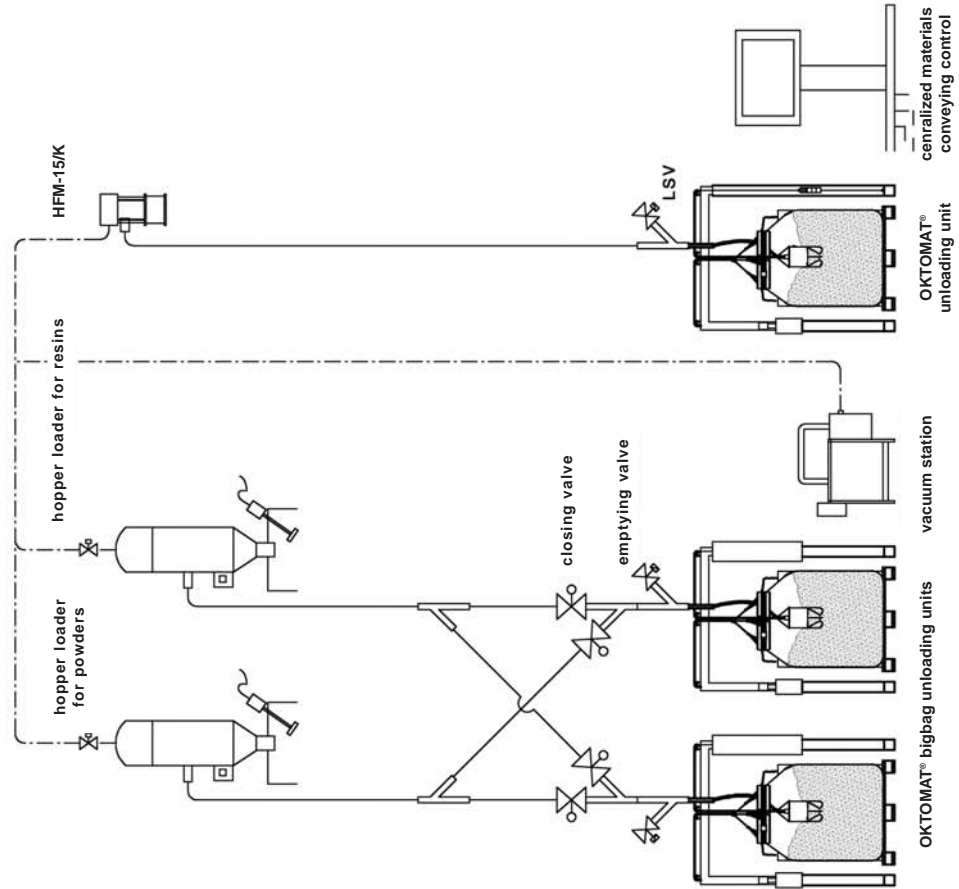
pipe diameter 56 x 5 mm



materials handling in injection moulding process



materials handling in extrusion process



“Simply brilliant”

DISCHARGING



OKTOMAT®-
unloading unit



OKTOMAT® twin station with
automatic switch-over



Micro suction head with
fluidisation device

CONVEYING



Vacuum conveying
unit



Mixing compressed air
conveying unit HELIOMIX



Vacuum station



Coupling station made
from special glass



Vacuum hopper loader
made from special glass
1 + 3 l



Vacuum hopper loader
made from special glass
15 + 30 l



Refilling station with vacuum station

DRYING



JETBOX
Top-mounted dryer



JETBOX
Stand-alone dryer



HELIOMAT®
portions dryer



HELIOMAT®
Centralized dryer systems