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Excellence in Mixing

COMBIMIX HC MIXING SYSTEM

High Speed Mixer TRM + High Efficiency Cooling Mixer HEC

The COMBIMIX-HC is a mixing system that combines the high-speed mixing efficiency of the TRM with the intensive cooling capabilities of the HEC, offering a complete and optimized solution for high-quality dry-blend production. Suitable for a wide range of applications including PVC compounds, WPC/SPC, masterbatches, thermoplastic polymers and technical powders, this system ensures high throughput, reduces cycle times and consistent product quality.

Key Strengths

- Effective Material Processing: Designed to ensure uniform dispersion, homogenization and agglomeration of additives, fillers and base polymers across a wide range of formulations.
- Optimized Energy Efficiency: Equipped with high-efficiency motors and intelligent control systems that reduce energy consumption while maintaining top-level performance.
- High Productivity: Engineered to support high hourly output with reliable process repeatability and short cycle times.
- Easy Integration: Seamlessly connects to existing production lines with minimal downtime during installation.
- Custom Configurations: Both the TRM and HEC units can be equipped with a variety of optional accessories and configurations tailored to specific process requirements, such as material type, production capacity, automation level, and environmental conditions.
- Low Maintenance Requirements: Built with durable components, designed for easy access, simple servicing and reduced operating costs.

HIGH SPEED MIXER type TRM

The TRM is a high-performance mixer developed for fast and high level of dispersion, homogenization and agglomeration. It delivers consistent dry-blends across a broad spectrum of materials with process efficiency, product uniformity, and high throughput, supporting downstream processes such as extrusion, moulding or compounding.
It is extremely efficient in processing rigid and plasticized PVC and other thermoplastic polymers like ABS, POM, PC and is also suitable for a variety of formulations and industries, including:
Masterbatches (with pigments and functional additives), Engineered compounds, WPC/SPC (Wood or Stone Polymer Composites), Powder coatings, including pre-mixed or metallic pigments, Battery powders.

MAIN FEATURES

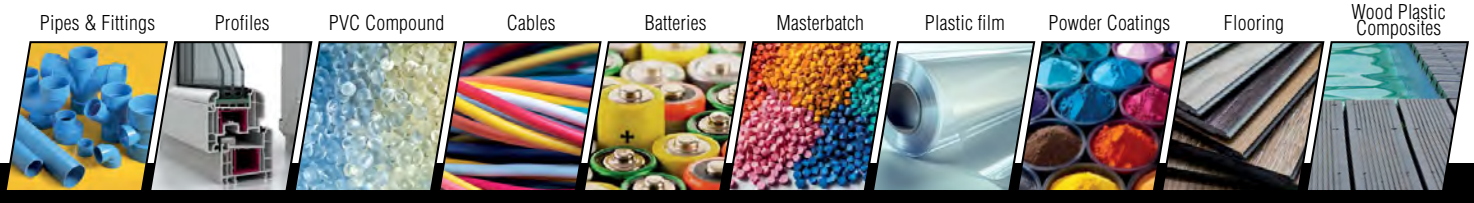
- Mixing Vessel: Made of AISI 304 stainless steel with a polished internal surface and thermally insulated.
- Lid: Horizontal or vertical opening, with customizable inlets.
- Outlet: Aluminium housing with stainless steel plug valve shaped to the vessel contour.
- Temperature Monitoring: Dual sensors provide fast, safe, and precise measurement during the mixing cycle.
- Mixing Tool: Stainless steel with wear-resistant coating on high-friction surfaces.
- Shaft Sealing: Compressed air system with grease lubrication.
- Motor & Transmission: Frequency-controlled motor with low-loss belt transmission and optimized bearings for energy efficiency.

HIGH EFFICIENCY COOLING MIXER type HEC

The HEC cooling mixer ensures rapid and uniform temperature reduction following the heating mixing phase, preserving product quality and avoiding thermal degradation.
Its cooling circuit is specifically designed to maximize heat exchange efficiency, ensuring fast and controlled temperature drop even in demanding processing conditions. This results in high overall system performance and supports elevated production rates, particularly in continuous and high-volume operations.
It is especially suitable for cooling PVC dry-blends, powder coatings, masterbatches, and sensitive thermoplastic compounds that require effective thermal stabilization before further processing.

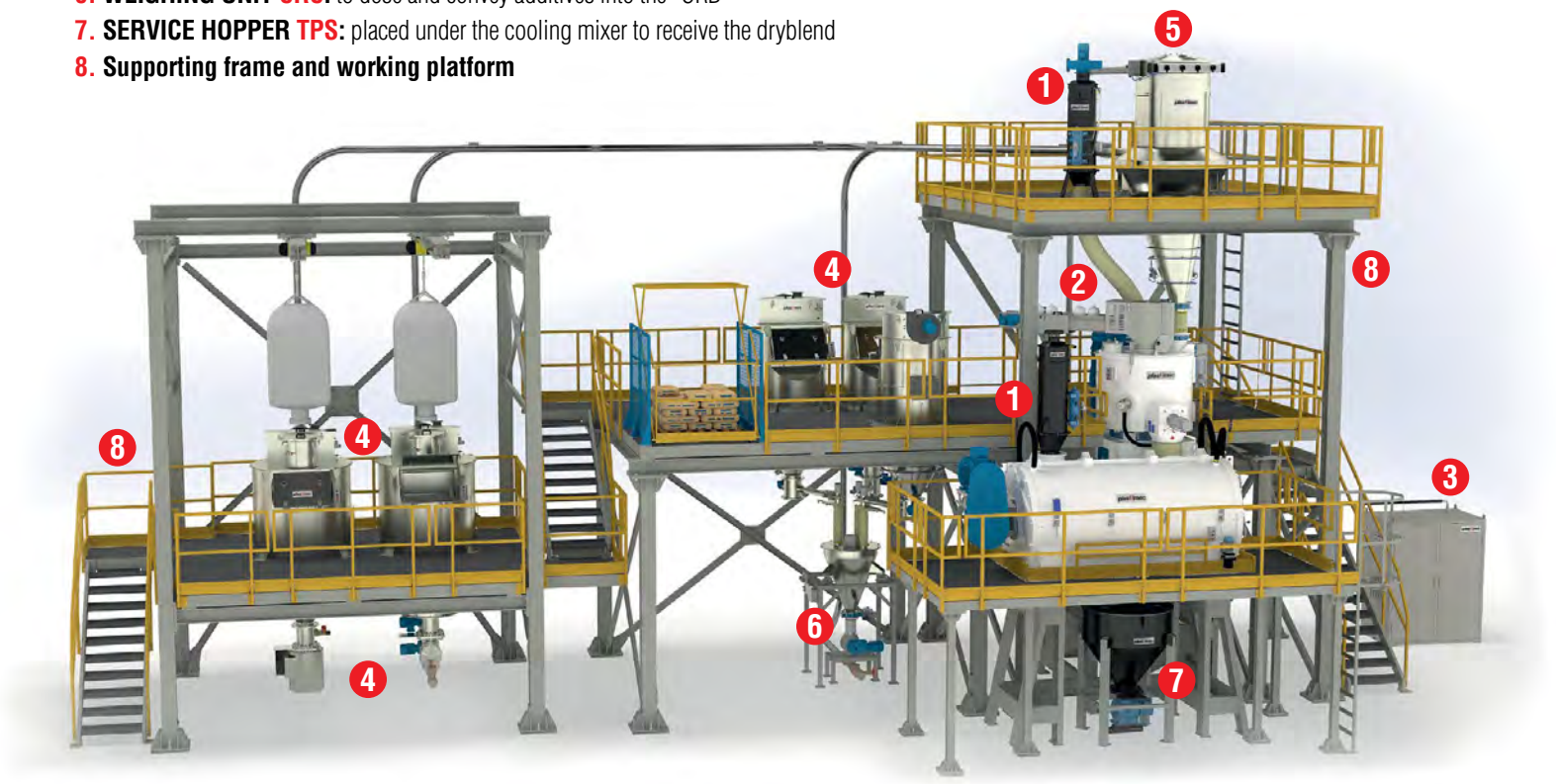
MAIN FEATURES

- Vessel: Made internally of stainless steel with polished internal surfaces, and double jacket for cooling water circulation (up to 2.5 bar). Inlet ports can be customized.
- Lid: Fully openable along its length for easy cleaning, internally in stainless steel with double water-jacket circulation (up to 2.5 bar).
- Shoulders: Made internally of stainless steel with polished internal surfaces.
- Outlet: Equipped with a butterfly valve for smooth discharge.
- Temperature Monitoring: Integrated sensor ensures stable control throughout the cooling phase.
- Mixing Tool: AISI 304 stainless steel shaft configured for radial and axial mixing.
- Shaft Sealing: Compressed air and grease-lubricated for long-term reliability.
- Motor & Transmission:
  - Up to 37 kW: Direct motor coupling with gearbox.
  - Above 37 kW: Belt-driven gearbox configuration.



ACCESSORIES

1. **JET FILTER:** to avoid dust pollution
2. **BELT CONVEYOR:** to load pre-weighed additives bags into the heating mixer
3. **GRAVIMETRIC DOSING UNIT DGL:** to weigh and load liquids into the heating mixer
4. **DEBAGGING UNIT VSC:** to unload powders from small or big bags
5. **WEIGHING UNIT CRB:** to feed powders into the heating mixer
6. **WEIGHING UNIT CRC:** to dose and convey additives into the "CRB"
7. **SERVICE HOPPER TPS:** placed under the cooling mixer to receive the dryblend
8. **Supporting frame and working platform**



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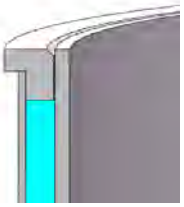
OPTIONS

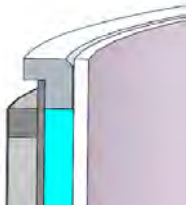
- Mixing tool: different shape and coating according to application or customer's need.
- Inside vessel: in different stainless steel and coating according to application.
- Specific mixer design for ATEX or hazardous requirements.
- Mixer configuration for metallic bonding.
- Special design for any other application.

Lid: vertical opening

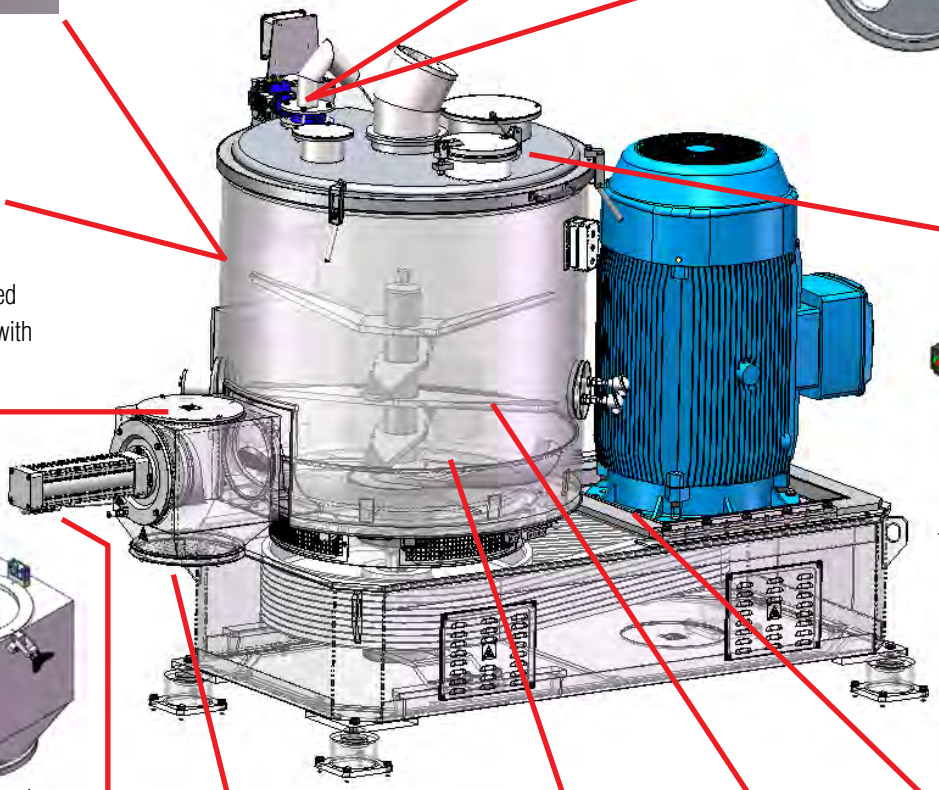


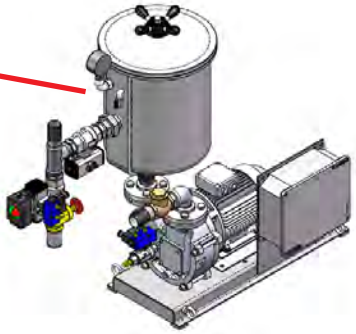
Vessel: double jacketed for liquid circulation

Lid: horizontal opening with tilting

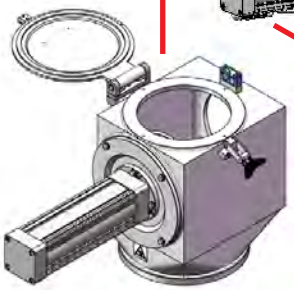


Vessel: triple jacketed for liquid circulation with thermal insulation

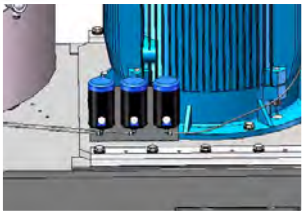




Vacuum dehumidifying unit to remove moisture from the mixing



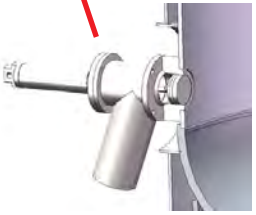
Outlet: discharge valve openable from the top



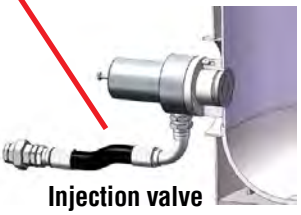
Lubrication: automatic system

Outlet: side sliding & pivotting plug valve

Additional outlet



Sampling valve

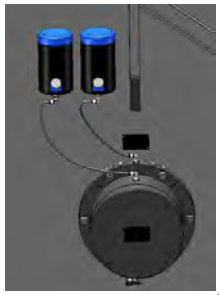


Injection valve for liquid addition

OPTIONS

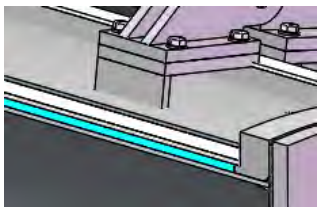
HIGH EFFICIENCY COOLING MIXER **HEC**

- Outside vessel: in stainless steel according to customer's need.
- Inside vessel: in different stainless steel according to application.
- Specific cooler design for ATEX or hazardous requirements.
- Special design for any other application.

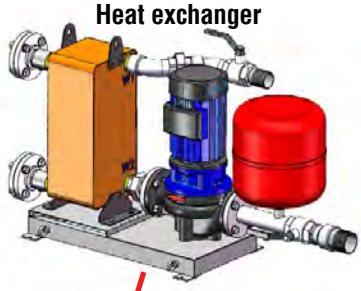


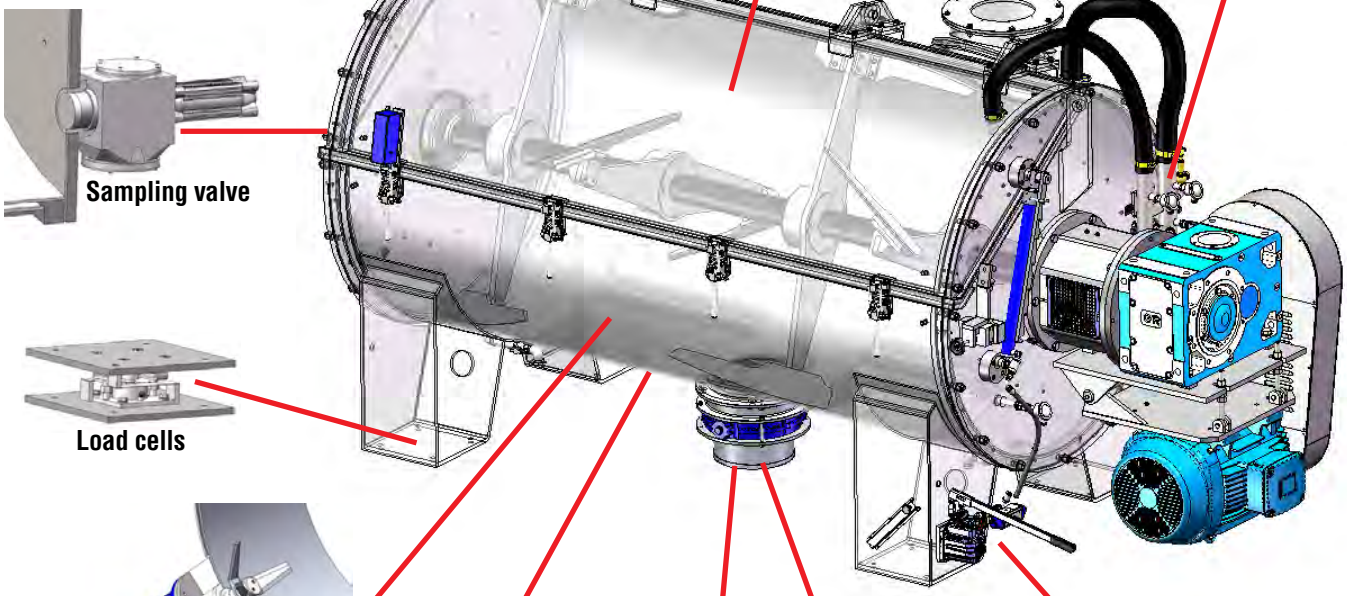
Lubrication: automatic system

Vessel and lid: thermal insulated



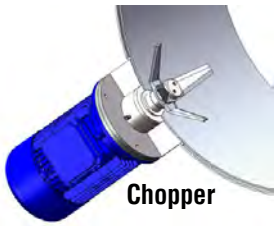
Heat exchanger





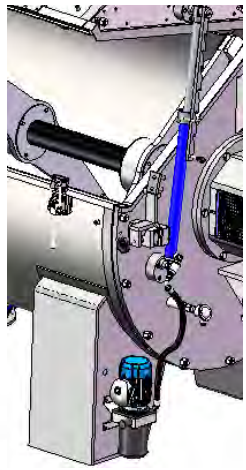
Sampling valve

Load cells



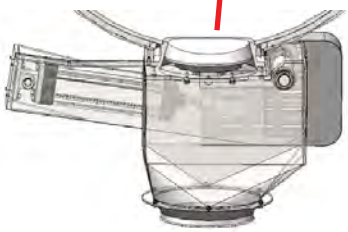
Chopper

Additional outlet



Lid: openable by motorized pump

Semi-spherical valve



Plug valve

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TRM	Useful volume		Batch size *		Mixing motor power	
model	lts	ft³	kg	lb	kW	HP
TRM 200	130 - 170	4.59 - 6	65 - 102	143 - 225	45	60
TRM 250	163 - 212	5.75 - 7.48	82 - 127	180 - 280	55	75
TRM 300	195 - 255	6.88 - 9	95 - 153	209 - 337	75	100
TRM 400	260 - 340	9.18 - 12	130 - 204	286 - 449	90	120
TRM 500	325 - 425	11.47 - 15	162 - 255	357 - 562	110	150
TRM 600	390 - 510	13.77 - 18	195 - 306	430 - 674	132	175
TRM 700	455 - 595	16 - 21	227 - 357	500 - 787	160	215
TRM 800	520 - 680	18.36 - 24	260 - 408	573 - 899	200	270
TRM 1000	650 - 850	22.95 - 30	325 - 510	716 - 1124	200 - 250	270 - 335
TRM 1200	780 - 1020	27.54 - 36	390 - 612	860 - 1349	250 - 315	335 - 420
TRM 1500	975 - 1275	34.43 - 45	487 - 765	1073 - 1686	315 - 355	420 - 475
TRM 2000	1300 - 1700	45.9 - 60	650 - 1020	1433 - 2248	400 - 450	535 - 600
TRM 2500	1625 - 2125	57.38 - 75	812 - 1275	1790 - 2810	500 - 630	670 - 845
TRM 3000	1950 - 2550	68.86 - 90	975 - 1530	2149 - 3373	630	845

COMBIMIX HC	Indicative production capacity **			
model	P-PVC kg/h	U-PVC kg/h	P-PVC - lb/h	U-PVC - lb/h
HC 200/800	480 - 576	640 - 768	1058 - 1270	1410 - 1693
HC 250/800	600 - 720	800 - 960	1322 - 1587	1763 - 2116
HC 300/800 HC 300/1000	720 - 864	960 - 1152	1587 - 1904	2116 - 2539
HC 400/1000 HC 400/1500	960 - 1152	1280 - 1536	2116 - 2539	2821 - 3386
HC 500/1500	1200 - 1440	1600 - 1920	2645 - 3174	3527 - 4232
HC 600/1500 HC 600/1800	1440 - 1728	1920 - 2304	3174 - 3928	4232 - 5079
HC 700/1800 HC 700/2500	1680 - 2016	2240 - 2688	3703 - 4444	4938 - 5926
HC 800/2500	1920 - 2304	2560 - 3072	4232 - 5079	5643 - 6772
HC 1000/2500 HC 1000/3500	2400 - 2880	3200 - 3840	5291 - 6349	7054 - 8465
HC 1200/3500	2880 - 3456	3840 - 4608	6349 - 7619	8465 - 10158
HC 1500/4500	3600 - 4320	4800 - 5760	7936 - 9523	10582 - 12698
HC 2000/5500 HC 2000/6500	4800 - 5760	6400 - 6880	10582 - 12698	14109 - 15167
HC 2500/6500 HC 2500/8500	6000 - 7200	8000 - 9600	13227 - 15873	17636 - 21164
HC 3000/8500	7200 - 8640	9600 - 11520	15873 - 19047	21164 - 25397

*Considering batch bulk density: 0,5-0,6 l/kg - 31.2-37.4 lb/ft3

** Considering conventional formulations in automated processes, 6 batches/hour for P-PVC and 8 batches/hour for U-PVC .

All values provided are strictly indicative as additional evaluations would have an impact and therefore must be confirmed by Plas Mec.

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Founded in 1967, **PLAS MEC** is an Italian manufacturer of high-performance mixing systems for PVC dryblend, powder coatings, thermoplastic rubbers, masterbatch and more.
Thanks to its long-standing tradition and worldwide sales network the company's equipment is trusted by customers across the globe for its quality, reliability and innovation.

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