

色料色母自動計量器

MASTER-BATCH FEEDER



ISO 9001 品質保證
An ISO 9001
Certified Company

晏邦電機工業有限公司

YANN BANG ELECTRICAL MACHINERY CO., LTD.

色料色母自動計量器

MASTER-BATCH FEEDER

MF & Mixer MF & 混合機



MF Series



臺灣專利新型 第184457號
TAIWAN PATENT: NO.184457
大陸專利新型 第96215963.8號
CHINA PATENT: NO.96215963.8



Alternative dosing
screw/cylinder
可供選擇的進料螺旋 / 套筒



MFS Series



Mixer Series (Option)

Features 機型特點

Automatic Coloring 自動配色

傳統人工配色需經多次對色、拆裝、攪拌，搬運等繁雜手續，不但費時，且對工廠環境及工作人員的健康危害極大，而本公司色料色母自動計量器 MF 與各類成型機同步自動配色混料，可節省工時、原料、倉儲空間、採購成本及防止工廠環境之污染。

The masterbatch mixes with your virgin resin at the machine hopper automatically.
You don't need to pre-color nor pre-mix your resin anymore. It saves the manpower, resin, stock costs, and keeps working environment clean.

Accurate Mixing 混料精確

MF 可將色料、色母、添加劑、能自由滑落的粉末料、粉碎料及主要原料等精確的自動計量，避免人工配色混料所產生的誤差及原料的浪費，使成形品的顏色保持一致性。

The MF mixes and doses masterbatch, additives, free flowing powders, regrinded and virgin resin to ensure consistent and accurate mixing which results in better quality of product and less rejects.

換色簡捷

成形品顏色的轉換，只需清理 MF 之進料螺旋桿，短時間內即可改變顏色，省時又方便。

Character of Structure 結構特性

- 1) MF 可區分為進料底座、進料馬達組、貯料筒及控制箱等四大部份，本機可同時精確的混合二~七種塑料。
- 2) MF 的內部做過特殊處理，計量精準且無死角，容易清理，無卡料之煩惱。進料馬達組的主體是重力壓鑄一體成形，安全美觀，且進料螺旋桿及進料套筒皆由鎔鋼製成。
- 3) MF 不怕變頻波干擾。採用電磁制動馬達，當進料信號停止，立即產生制動，防止馬達慣性轉動，且附有轉速傳感器可實行反饋控制，使本機的轉速(RPM)不受外界電源不穩定之干擾，能精確固定於所設定的轉速，因此添加色料、色母或其他添加劑時皆能保持均勻穩定。
- 4) 如壓出機在設定後因某種因素而再改變R.P.M時，MF會隨改變後的R.P.M.值(%)自動做調整。
- 5) 只需將主原料的使用量及色料、色母或其他添加劑之添加率輸入，電腦即自動演算所需之轉速，操作簡單，且有多組記憶儲存功能，使成形工作之轉換更加得心應手。
- 6) 針對間歇進料之射出成型機，MF亦配備有自動計時器，可免除成型機進料時間不定，造成色母添加量不穩定之困擾。
- 7) 進料馬達組右下側設有貯料筒之卸料裝置，易於轉換顏色與換料。

- 1.The MF consists of four basic parts: Multi-station feed throat adapter, main body, hopper and electrical control box. It is possible to mix up to seven different materials with our special multi-station feed throat adapter.
- 2.With the special process, the internal part of MF has no dead corners and makes the dosing process more accurate. The main body is made of cast aluminum with the dosing-cylinder and dosing-screw made of chrome steel. Both dosing-cylinder and dosing-screw can be easily changed.
- 3.MF will not be interfered by interver. The MF is equipped with an electronic brake motor which stops the motor instantly when the dosing impulse signal is completed. The motor feedback control is operated by the tacho-generator which will not be influenced by power fluctuations. It gives the utmost accurate dosing.
- 4.If some reasons changed R.P.M.of the extruder after setting, MF will automatically to be changed by the percentage of new R.P.M.
- 5.By just entering the weight of the materials, screw back time, dosing capacity per turn and additional rate of the masterbatch, the CPU will calculate proper RPM rate automatically. Such a control panel is user friendly & much more accurate. Besides, it also has the function to store up to 10 sets of RPM setting.
- 6.To work with the injection molding machines, MF is also equipped with a timer to control the dosing time.
- 7.Special discharging device for emptying material from hopper for color or material changes .The main body is made of cast aluminum with the dosing-cylinder and dosing-screw made of chrome steel. Both dosing-cylinder and dosing-screw can be easily changed.



How to Choose the Models?

機型選擇方法

1. Un-disconnected dosing type (i.e. blow molding machine or extruder)

連續進料型(如中空成型機或押出機)

A = 成型機每小時進料量 (kg)

B = 色母或添加劑之添加率 (%)

C = 色母(添加劑)每小時用量 (kg) = A × B

請依計算所得之 C 值，參照 MF 規格表 “計料量範圍” 選擇適合之機型。

例：A = 50kg/hr B = 2% C = A × B = 50 × 2% = 1kg/hr，則 MF-A1 為最佳選擇。

A = Hourly capacity of the molding machine (kg/hr)

B = The percentage of the masterbatch or additives (%)

C = Hourly consumption of the masterbatch or additives (kg) = A × B

After obtaining the C value, please choose the most suitable model according to the MF specification table.

Example: A = 50 kg/hr B = 2 % C = A X B = 50 x 2 % = 1 kg/hr. Then MF-A1 will be the best choice.

2. Disconnected dosing type (i.e. injection molding machine) 間歇進料型(如射出成型機)

A = 每模(含料頭)成品重 (kg)

B = 色母或添加劑之添加率 (%)

C = 成型機每模進料時間 (sec)

D = 成型機每模循環時間 (sec)

E = 色母(添加劑)每小時用量 (kg)

= A × B × (3600 ÷ D)

F = 色母(添加劑)模擬成連續進料時之每小時用量 (kg)

= E × D ÷ C。

請依照計算所得之 F 值，參照 MF 規格表 “計料量範圍” 選擇適合之機型。

例：A = 0.2kg B = 2% C = 3 sec D = 12 sec E = 0.2 × 2% × (3600/12) = 1.2 kg/hr

本例每小時用量為 1.2kg，但若依MF規格表 “計料量範圍” 選擇 MF-A1 可能失真，因射出量為間歇進料，故需另求算 F = 1.2 × 12 ÷ 3 = 4.8 kg/hr，則 MF-A2 為最佳選擇。

A = Weight of the product (including sprue & runner) (kg)

B = Additional rate of the masterbatch or additives (%)

C = Time in seconds of screw back per dosing (sec)

D = Cycle time (sec)

E = Hourly consumption of the masterbatch or additives = A × B × (3600 ÷ D)

F = Hourly consumption of the masterbatch (additives) if dosing continuously = E × D ÷ C

After obtaining the F value, please choose the most suitable model according to the MF specification table.

Example: A = 0.2 kg B = 2% C = 3 sec D = 12 sec E = 0.2 × 2% × (3600/12) = 1.2 kg/hr

The hourly consumption in the example is 1.2 kg. It will be a wrong choice if choosing the MF-A1 model according to the table because the injection molding machine is of disconnected type. So the correct calculation should be as following: F = 1.2 × 12/3 = 4.8 kg/hr. The MF-A2 model shall be the right choice.



Operating Principles 操作原理

1. MF與射出機、中空成型機、押出機等同步進料，即當成型機進料時，將進料信號傳遞給MF，MF則在成型機進料時間內，依所設定的RPM適時且精確地完成進料，當射出成型機進料完畢，開始射出成型時，MF則停止進料(若是中空成型機、押出機則不停的進料，所以MF亦不停地運轉)，如此可充份均勻地供應色料、色母，避免夾層現象。

2.若配備有晏邦小型混合機(選購配備)，其運轉方式並不受成型機或MF進料影響，而是一直在運轉。

1. The MF unit is connected to the control of the plastic processing machine. As soon as the process of the machine starts, the dosing system of the MF Master-Batch Feeder is activated. It works with the adjustable screw speed and is therefore mixing the correct quantity of master-batch into the desired used.

2. If adding a mixer to the system, the mixing system is continuously operating.

Specification Table 規格表

| 機種 MODEL | MF-AS MFS-AS | MF-A1 MFS-A1 | MF-A2 MFS-A2 | MF-A3 MFS-A3 | MF-A4 MFS-A4 | MF-B1 MFS-B1 | MIXER-A | MIXER-B |
|---|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------|---------|
| 馬達功率 MOTOR(kw) | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.09 | 0.06 | 0.37 |
| 進料螺旋規格 DOSING SCREW \varnothing x PITCH(mm) | \varnothing 10x5 | \varnothing 10x10 | \varnothing 16x10 | \varnothing 16x18 | \varnothing 20x20 | \varnothing 40x40 | | |
| 計料量範圍 DOSING CAPACITY (kg/hr) | 0.18~2.38 | 0.35~3.30 | 1.15~11.00 | 1.95~19.35 | 3.15~31.00 | 12~108 | | |
| 每轉計料量 DOSING CAPACITY PER REVOLUTION(g) | 0.46 | 0.92 | 1.53 | 2.69 | 4.31 | 33.33 | | |
| 貯料筒容量 HOPPER CAPACITY(l) | 12 | 12 | 12 | 12 | 12 | 30 | 1 | 11 |
| 重量 APPROX. WEIGHT(kg) | 17 | 17 | 17 | 17 | 17 | 32 | 17 | 29 |

I. Remarks:

1. 每小時計料量以重0.65kg/l 之色料、色母，MF不停運轉為計算基礎。

Dosing capacities in kg/hr are tested with bulk density of masterbatch 0.65kg/l by continuing operation.

2. 計料量將依色料、色母之比重，顆粒大小，電壓頻率及RPM而改變。

Dosing capacity varies in accordance with the density of granule, size of master-batch frequency, and R.P.M.

3. 產品規格若有變動，恕不另行通知。

We reserve the right to change specifications without prior notice.

II. 選擇配備 Options:

1. 混合機 Mixer

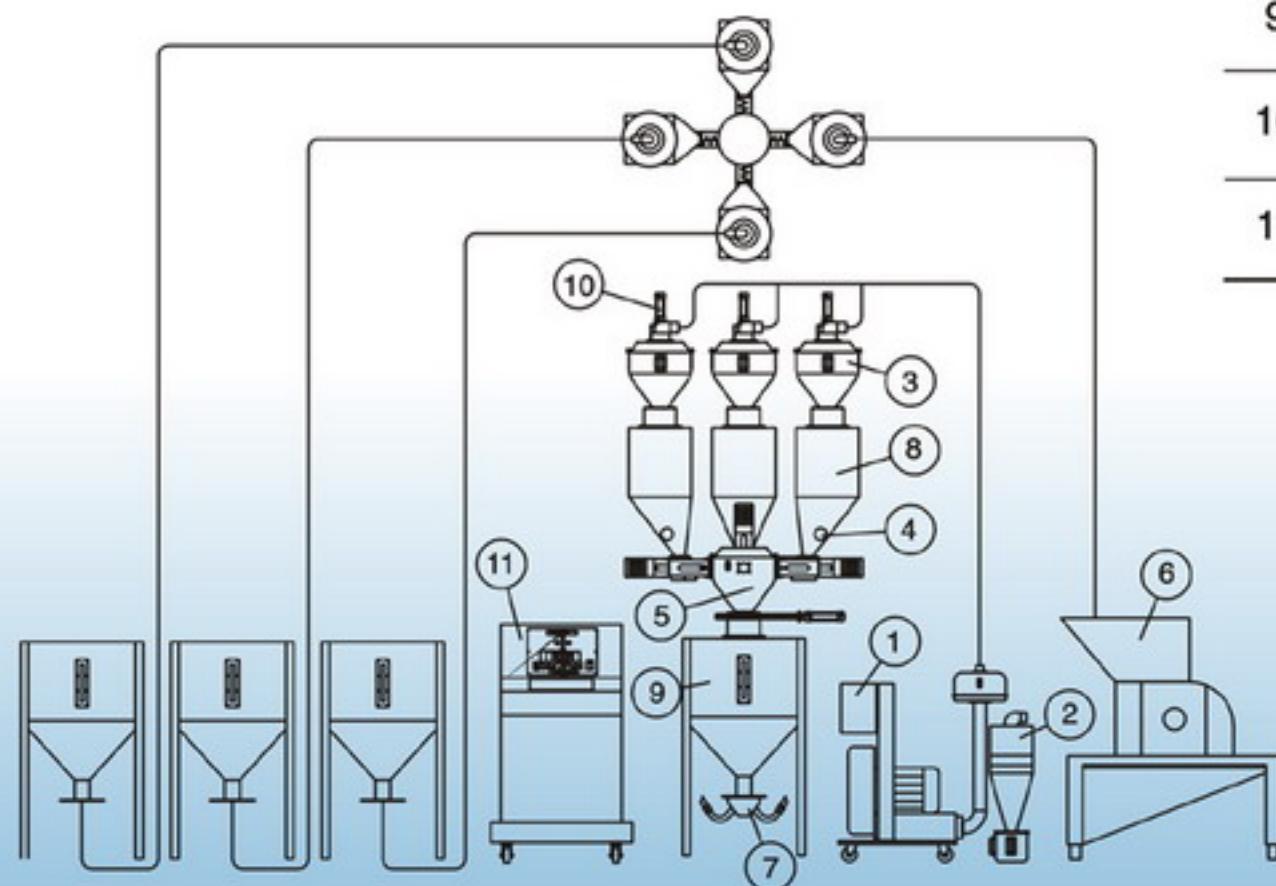
2. 貯料筒無料警報裝置 Alarm of material shortage.

Auto Dosing Mixer (ADM)

中央配色混料系統

MF 除可單台成型配色外，亦可應用於中央配色，供多台成型機使用。

Yann Bang MF can also supply several molding machines.



| No | Description | Quantity |
|----|---------------------------------------|----------|
| 1 | 自動填料機 Auto Vacuum Loader | 1 |
| 2 | 旋風集塵筒 Vortex Cyclone | 1 |
| 3 | 吸料筒 Suction Hopper | 4 |
| 4 | 料位感應器 Sensor | 6 |
| 5 | 自動計量混合機 Auto Dosing Mixer | 1 |
| 6 | 粉碎機 Crusher | 1 |
| 7 | 吸料盒 Suction Base | 1 |
| 8 | 混合前儲料筒 Material Tank Before Mixing | 4 |
| 9 | 混合後儲料筒 Material Tank After Mixing | 1 |
| 10 | 截風閥 Air Cut-off Valve | 4 |
| 11 | 中央控制台 ADM Control Station | 1 |



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