标准 Q8A&Q12A（3354-iTECH5630&5680）卧式机操作手册（精简版）（简中英）

Standard Q8A&Q12A(3354-iTECH5630&5680) Horizontal Machine Operating Manual

(Brief version)

前 言

本手册为弘讯科技控制系统的用户手册，该手册包括了控制界面（下称面板、控制界面、HMI 界面、操作界面）与系统相关设定的指导。

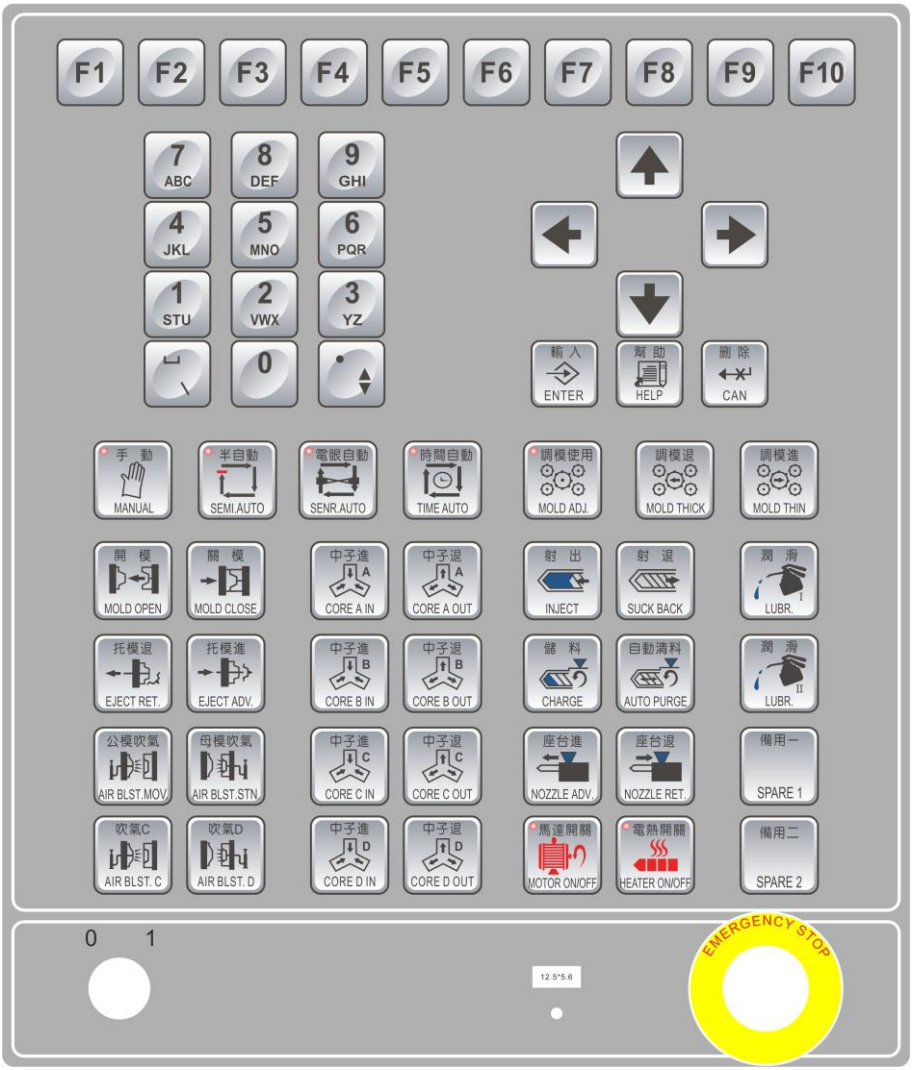
警告：为保证操作者的安全和保护机器免于受损，请认真阅读本手册并严格按照该手册的操作说明进行操作。

责任：除本控制系统以外的连接及操作，在任何形式上本公司无任何责任。确保机器安全操作是贵公司的责任。未经过训练及专业技术指导请勿操作机器，在操作任何机器前请先认真阅读机械厂提供的说明书与本手册。

注意：本手册中的任何数据，在没有任何通知的情况下，是不可以做任何更动的。如有任何信息、备品、服务及相关疑问等，敬请联络我司。同时，为了精益求精不断优化满足您的需求，敬请提出宝贵建议。

目 录

第一章 控制界面 (HMI)



Q8A 一体式

Q12A 一体式

操作面板外表贴有美丽大方的彩色塑料薄膜 Mylar 片，具有防尘、防污功能，并且可清洗上面的污垢，字体清晰且具有图案辅助，并在内部装有印刷电路板，上面有数十个 A 接点的触控开关，此开关属于触点机械，触感好，保证使用可达数百万次，如有故障可调换其他未使用的按键，使用及维修皆方便。

1.1 控制界面和按键

1.1.1 控制界面按键

此操作面板可选择不同自动模式和手动模式下操作机台动作，利用储存在面板上的模具数据来执行动作。因此，必须确认模具数据才能够使机器安全运转。

Q8A 一体式

Q12A 一体式

1.1.2 机器操作模式按键

按键	使用说明
手动	按下此键，进入手动模式，同时也可清除警报。
半自动	按下此键，进入半自动模式，每一循环开始需人工开安全门拿产品或放嵌件时使用此模式。
电眼自动	按下此键，进入电眼自动模式，每一个循环结束需通过电眼检查产品掉落时使用此模式。
时间自动	按下此键，进入时间自动模式，即全自动，全程不需要人工操作或电眼检查产品掉落使用此模式。

注：凡由手动状态按下自动键转入自动操作时，均需开关安全门一次，以确保模内无异物，才可进行关模。

1.1.3 模具调整键

按键	使用说明
调模使用	■ 按此键一次进入粗调模式，此时可以做调模进退动作。为了方便及安全安装模具，在此状态下，所有动作按低压慢速动作。因此在装设模具时，请务必使用此模式； ■ 操作者将模具装好后，设定好开关模所需的压力、速度、位置等参数后，需使用自动调模时，此时连按此键两次进入自动调模模式。
调模进	■ 当处于粗调模下，按下此键，做调模进动作。
调模退	■ 当处于粗调模下，按下此键，做调模退动作。

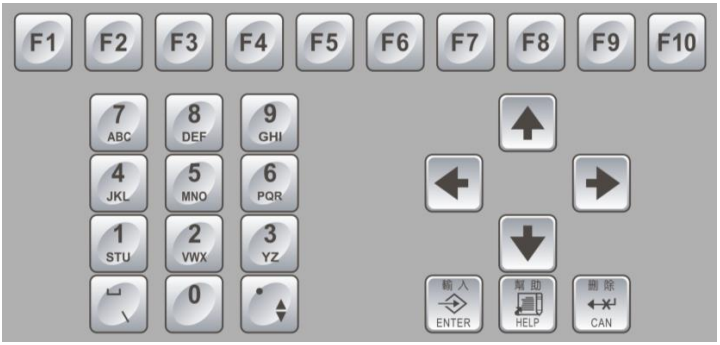
1.1.4 手动操作键

按键	使用说明
开模	■ 手动或粗调状态下，按此键会依设定数据进行开模。若有设定中子动作，则会连锁进行设定的动作。
关模	■ 手动或粗调状态下，按此键会依设定数据进行关模。若有设定中子动作，则会连锁进行设定的动作。
托模退	■ 手动或粗调状态下按此键会依设定数据进行托模退。
托模进	■ 手动或粗调状态下按此键会依设定数据进行托模进。
吹气 A/B/C/D	■ 吹气功能选用，于手动下按下吹气 A/B/C/D 键，可于开关模任何位置依设定的吹气时间进行吹气。
中子 A 进/中子 A 退	■ 中子 A 功能选用。在手动或粗调下，按下进或退键，则做中子 A 进或退。

中子 B进/中子B退	■ 中子 B 功能选用。在手动或粗调下，按下进或退键，则做中子 B 进或退。
中子 C进/中子C退	■ 中子 C 功能选用。在手动或粗调下，按下进或退键，则做中子 C 进或退。
中子 D进/中子D退	■ 中子 D 功能选用。在手动或粗调下，按下进或退键，则做中子 D 进或退。
射出	■ 手动或粗调下，当料管温度在偏差范围内，按此键则根据设定做射出、保压动作。
射退	■ 手动或粗调下，当料管温度在偏差范围内，按此键则根据设定做射退动作。
储料	■ 手动或粗调下，当料管温度在偏差范围内，按此键则根据设定做储料动作，再按一次可结束动作。
自动清料	■ 操作者若欲清除料管中的残料时，按下此键根据设定的清料次数和清料时间做自动清料的动作。
座台进	■ 手动或粗调下，按下此键即根据设定做座台进动作。
座台退	■ 手动或粗调下，按下此键即根据设定做座台退动作。
马达开关	■ 手动或粗调下，按下此键马达如果是关闭的则开启马达；反之则关闭马达。
电热开关	■ 手动或粗调下，按下此键电热如果是关闭的则开启电热；反之则关闭电热。
润滑 I	■ 手动状态下按下此键，则可使润滑油帮浦打开。
润滑 II	■ 手动状态下按下此键，则可使润滑二油帮浦打开。

1.1.5 数据设定键

此部份在说明数字及文字输入键的使用。



按键	使用说明
数字键	■ 当需要输入数据数字时，按相应键输入即可，当数字设定超过上下限时将无法输入（上下限范围可查看屏幕下方的提示）。 ■ 如需输入英文字母，例如：**A** 则按【数字键 7】2 下，会输入成 **A**；**B** 则按【数字键 7】键 3 下，会输入成 **B**，以此类推……。 **请注意**：当修改数值后，光标必须移出编辑框，否则修改不成功。
输入键	■ 输入数值后，按此键表示对该数据进行存储，且光标会自动移到下一位置，此键也可替代方向键使用。
删除键	■ 此键做为设定值清除键，按下此键会把该设定值归零，以便重新设定。
帮助键	■ 此键可以提供在线帮助。该键仅对某些特殊功能有效，按下此键，将出现特殊功能的解释。
方向键	■ 4 个箭头方向键是控制光标上下左右移动的按键。
画面保存键 	■ **以下动作请在手动状态下执行：** （1）将记忆卡插入端口； （2）切换至需要抓取的画面后，连续按键两次； （3）大约 2～3 秒，画面会弹出“完成数据保存“对话框，按下输入键，画面就会保存至记忆卡中； ⑷ 将记忆卡连接计算机，进入其根目录下 print 文件夹，里面为保存的画面。 **注：用户也可在其他语言下执行以上操作，保存所需画面**
画面选择键 F1~F10	■ 系统提供 10 个键（F1~F10）来用于切换画面； ■ 当画面被选中时，画面对应的选择键会高亮显示； ■ 具体画面分布请参考 1.2.1 画面选择。

1.2 画面介绍

1.2.1 选择画面

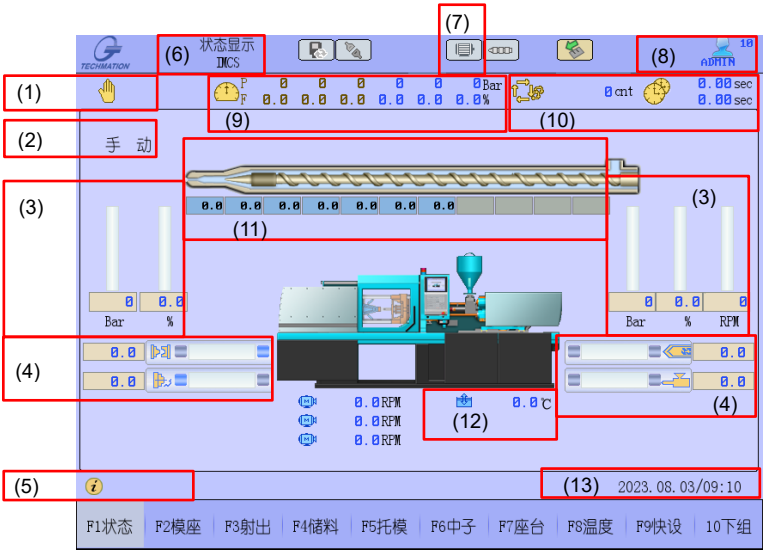
下图提供您系统画面的选择路径：

F1 状态											
F2 模座	→	F1 状态	F2 模座	F3 功能	F4 参一	F5 参二	F6 特参				F10 返回
F3 射出	→	F1 状态	F2 射出	F3 阀门	F4 阀门	F5 功能	F6 曲线	F7 参数	F8 特参	F9 储料	F10 返回
F4 储料	→	F1 状态	F2 储料	F3 清料	F4 功能	F5 参数	F6 特参			F9 射出	F10 返回
F5 托模	→	F1 状态	F2 托模	F3 吹气	F4 功能	F5 参数			F8 模座	F9 中子	F10 返回
F6 中子	→	F1 状态	F2 中一	F3 中二	F4 中三	F5 功能	F6 参数		F8 模座	F9 托模	F10 返回
F7 座台	→	F1 状态	F2 座台	F3 参数					F8 射出	F9 储料	F10 返回
F8 温度	→	F1 状态	F2 温度	F3 功能	F4 参数	F5 特参					F10 返回
F9 快设	→	F1 状态	F2 快设	F3 调模	F4 参数						F10 返回
F10 下组											

F1 状态											
F2 生管	→	F1 状态	F2 警报	F3 测一	F4 测二	F5 测三	F6 测四	F7 生产	F8 能耗	F9 参数	F10 返回
F3 校正	→	F1 状态	F2 AD1	F3 AD2	F4 DA	F5 组态 1	F6 组态 2	F7 主卡	F8 DA		F10 返回
F4 I O	→	F1 状态	F2 PB1	F3 PB2	F4 PB3	F5 PC1	F6 PC2	F7 PC3	F8 设 IO	F9 诊断	F10 返回
F5 模具	→	F1 状态	F2 储存	F3 读取	F4 复制	F5 删除	F6 机器	F7 记录	F8 事件		F10 返回
F6 其他	→	F1 状态	F2 其他	F3 测 PA	F4 配置	F5 机绞					F10 返回
F7 系统	→	F1 状态	F2 系统	F3 更新	F4 重置	F5 权级	F6 资料	F7 建置			F10 返回
F8 版本	→	F1 状态	F2 版本	F3 版本							F10 下组
F10 下组											

想要了解如何来使用屏幕选择键（F1~F10），请看操作手册的画面选择键部份。

1.3 操作画面



（1）动作状态图标显示。

（2）显示当前状态显示。

（3）压力、速度以及储料转速注状图显示。

（4）开关模、托模、射出、座台现在位置。

（5）提示信息，如警报说明、上下限提示等。

（6）显示屏幕标题(下方标示模具名称)。

（7）当马达启动时会出现此马达运转符号。

（8）当前用户权级显示。

（9）压力、速度显示。

（10）循环完成的开模数总计、自动循环中的时间总计和当前动作计时。

（11）料管温度及加热状态显示。

（12）此处显示油温温度，若不使用则显示为“0”。

（13）日期时间显示。

1.4 开关模设定

包含：F2 模座、F3 功能、F4 参一、F5 参二、F6 特参

1.4.1 开关模模座设定

进入路径 －**主画面 → F2 模座 → F2 模座**

（1）开模行程：开模行程设定值。

（2）开关模数据设定：开关模动作各分为五段，其压力、速度、位置皆可分开调整。

1.4.2 开关模功能设定

进入路径 －**主画面 → F2 模座 → F3 功能**

（1）关模段数：可以根据要求选择关模的段数。

（2）开模段数：可以根据要求选择开模的段数。

（3）再循环计时：等待下一次关模的延迟时间。

（4）差动合模：如有差动阀时，此功能选择使用，将产生快速合模效果。

（5）开模连动：模座功能画面，可选择不用或托模或中子(A/B/C)，再设定连动位置；当选择使用时，开模走到开模连动设定的位置时，开始连动动作。

（6）连动位置：连动动作开始动作的位置点。

（7）开模泄压计时：开模前泄压的时间设定值。

1.5 射出设定

包含：F2 射出、F3 阀门、F4 阀门、F5 功能、F6 曲线、F7 参数、F8 特参

1.5.1 射出设定

进入路径 －**主画面 → F3 射出 → F2 射出**

（1）射出：射出分为 6 段，各段有自己的压力及速度设定，各段的切换均使用位置来同时切换压力及速度。

（2）保压：保压分为 5 段，各段有自己的压力及速度设定，各段的切换均使用时间来切换压力及速度。

（3）保压转换：射出后转保压方式有“位置、时间、压力”3 种选择。

- 选择**位置**转换方式，则在转保压位置或时间先到达后转保压；
- 选择**时间**转换方式，则在注射时间到达后转保压；
- 选择**压力**转换方式，则在保压压力和位置或时间到达后转保压。

（4）保压压力：选择保压转换方式为压力方式时，此设定是转保压的压力设定。

（5）射出时间：选择位置转保压时，此设定作为时间保护，即时间或位置任一到达即转保压；当选时间转保压时，此设定作为射出时间用。

1.5.2 射出功能设定

进入路径 －**主画面 → F3 射出 → F5 功能**

（1）射出段数：可设定射出使用段数。如果只想使用三段射出功能，请设定 3。

（2）保压段数：可设定保压使用段数。如果只想使用三段保压功能，请设定 3。

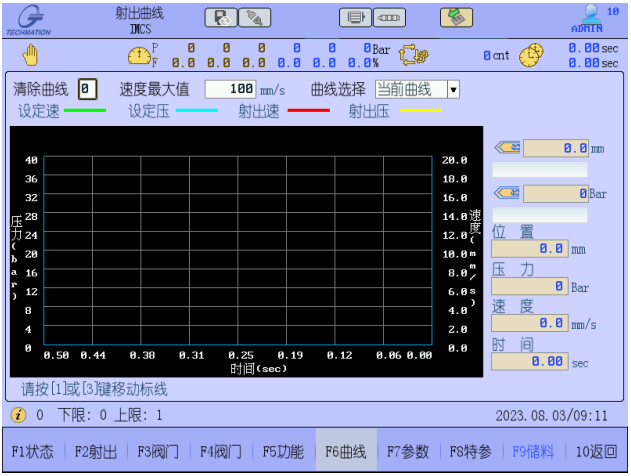
（3）射出增速功能：配合蓄能器，达到高速射出效果。

（4）射出快速功能：配合油路结构，选择后射出时多开一个方向阀，达到高速射出效果。

（5）射出喷嘴：当机器有配备封闭式喷嘴时选用。

1.5.3 射出曲线设定

进入路径 －主画面 **→ F3 射出 → F6 曲线**



（1）射出曲线——指射出/保压设定值的曲线和射出/保压动作期间的实际值曲线，都会及时的显示在射出曲线画面上。

（2）设定速：此绿色线指射出和保压的设定速度。

（3）设定压：此蓝色线指射出和保压的设定压力。

（4）射出速：此红色线指射出/保压循环期间的实际速度。

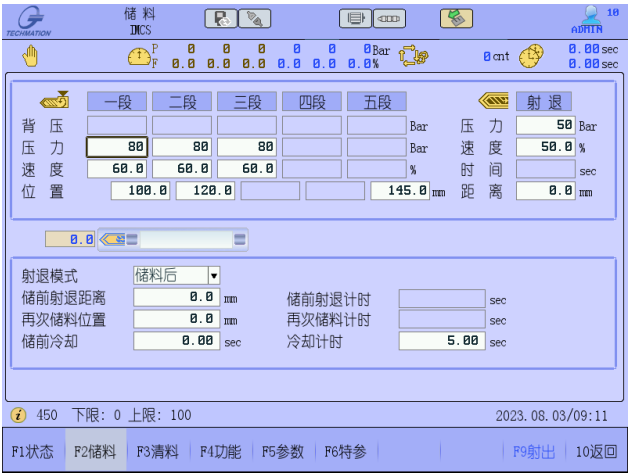
（5）射出压：此黄色线指射出/保压循环期间的实际压力。

1.6 储料设定

包含：F2 储料、F3 清料、F4 功能、F5 参数、F6 特参

1.6.1 储料及射退设定

进入路径 - **主画面 →F4 储料 → F2 储料**



（1）储料设定：储料过程共有五段压力、速度控制，可自由设定其启动、中途及末段所需的压力、速度和位置。

（2）射退设定：射退可设定压力速度，其动作方式可分为位置或时间，可在储料功能页进行设定，若选用位置，只需输入所需的射退距离，不使用射退请将位置/时间设定为 0 。

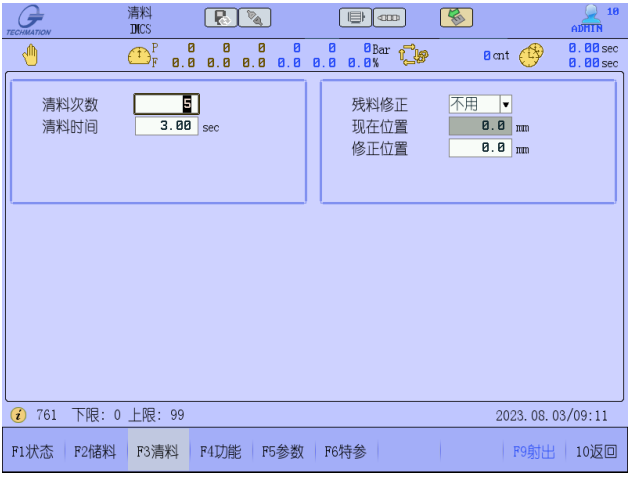
（3）射退模式：可根据实际需求选择储料后或冷却后射退。

（4）储前冷却：储前冷却时间亦可做储料前之冷却功能用。

（5）冷却计时：射出完毕即开始计时冷却。

1.6.2 残料修正和自动清料功能设定

进入路径 －**主画面 →F4 储料 → F3 清料**



（1）清料次数：可根据实际要求设定清料次数，最多可设定为 99 次。

（2）清料时间：根据实际情况设置清料时间。

（3）残料修正：当机器正常运转生产时，若产品成型后螺杆最终位置太大（现在位置），操作者想修正此数值时，依照往例须将储料、射出等相关数据一起更动，但此功能可简化此操作。只要在“修正位置”输入所要的射出最终位置，再于“残料修正”字段选用“使用”即可将所有储料射出位置自动更正完毕。

1.6.3 储料功能设定

进入路径 －**主画面 →F4 储料 →F4 功能**

（1）储料段数：可以根据要求选择储料的段数。

（2）储料背压阀：功能使用时，在储料时打开。

（3）储时开模：储料同时做开模动作。

（4）射退控制方式：射退方式选用时间控制时，“射退距离”字段将变成“射退时间”，即可设定射退的动作时间。

（5）储前射退方式：储料前先做射退动作，可选择位置或时间控制。

（6）再次储料方式：在射出前先做储料动作，可选择位置或时间控制。

1.7 托模设定

包含：F2 托模、F3 吹气、F4 功能及 F5 参数

1.7.1 托模设定

进入路径 －**主画面 → F5 托模 → F2 托模**

（1）托模设定：最初的托模进可分为二段压力速度和动作位置，假设在开模完成后等待机械手下降时，可设定**托模前延迟**时间来配合机械手使用，**托模退延迟**时间为到达托模进终位置，延迟设定时间再做托模退动作。

（2）托模方式共有 3 种可以选择：

- 停留：使用此模式，一律限定为半自动，此时按全自动无效。

  顶针会在顶出后即停止，等待成品取出，关上安全门才做顶退关模。
- 定次：是一般的计数托模，根据托模次数的设定值进行托模。
- 振动：是振动托模，顶针会依所设定的次数，在托进终做短时间的来回快速托模，造成振动现象，使成品脱落。

（3）托模次数：托模进退所需的次数。

（4）托模位置：显示托模现在位置。

1.7.2 托模吹气设定

进入路径 －**主画面 → F5 托模 → F3 吹气**

（1）吹气：本机可做 6 组分别吹气，以位置控制动作点，时间计时吹气延迟时间，若托模已完毕，须等待吹气完成，才能关模。可在此画面设置吹气使用组数。

1.7.3 托模功能设定

进入路径 －**主画面 → F5 托模 → F4 功能**

Q8A 一体式

Q12A 一体式

（1）机械手：为了配合生产线的自动化生产，让机械手代替工作人员取出射出成品，因此在每一模开模完成后机械手便会自动下降取出成品，并且本公司控制器为了保护模具及机械手，在关模之前会先确认机械手已回到预备位置，才继续关模动作。

（2）吹气按键：手动吹气按键选择（可根据画面选项来设定）。

（3）自动安全门：若有装设气动或油压安全门，此处须设定为使用，否则操作面板上的安全门键无效。

1.8 中子设定

包含：F2 中一、F3 中二、F4 中三、F5 功能及 F6 参数

1.8.1 中一、中二、中三设定

进入路径 - **主画面 → F6 中子 → F2 中一**

中二（中子 C、D 设定画面）、中三画面（中子 E、F 设定画面）与中一画面类似

（1）中子即是抽芯插芯动作，也就是模具需于关模行程中，用油压缸将模芯插入模内以待射出，而在开模行程中将模芯抽出回复原状，此功能多半使用于成品需中空的模具。在自动状态中射出与中子是同时迫进以防中子因射出而收缩，所以中子与绞牙不可混用。

（2）功能：选择中子模式，是一般的抽芯插芯动作；选择绞牙模式是指成品需要加工有牙纹的，配合油压马达做旋转的定位控制。（但在选用以上功能时，请检查机器有无配备相关的油路开关，因为此功能乃非标准配备）。

（3）中子设定：控制器最多提供六组中子控制，但须依您机器油路配备而定，每组中子皆可依您要求分开设定压力、速度、动作时间、动作位置。

（4）控制：若选用中子模式，可选用行程控制或时间控制，若选绞牙模式可选用计数控制或时间控制。

1.8.2 中子功能设定

进入路径 －**主画面 → F6 中子 → F5 功能**

Q8A 一体式

Q12A 一体式

（1）**特殊中子功能：**特殊中子动作流程代码。

（2）**特殊中子时间一/二：**特殊中子激活时间。

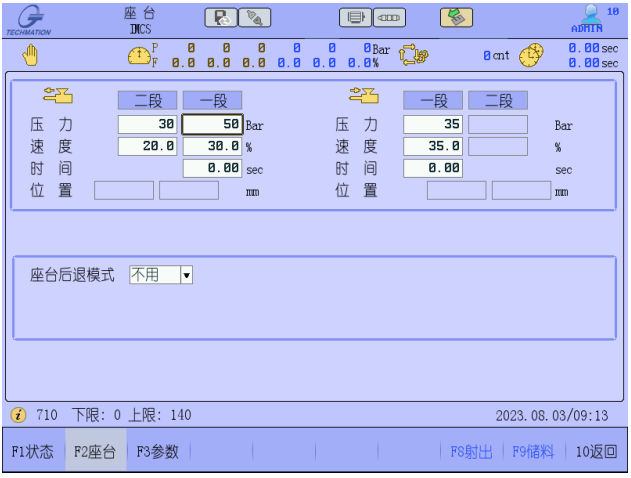
（3）**中子按键：**面膜上中子按键的复用功能（可根据画面选项来设定）。

1.9 座台设定

包含：F2 座台及 F3 参数

1.9.1 座台设定

进入路径 - **主画面 → F7 座台 → F2 座台**



（1）**座台后退模式：**选择——

- “储料后”在储料结束后座台后退；

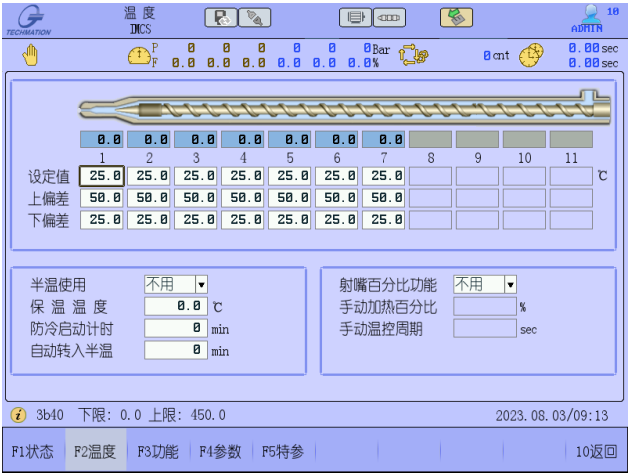
- “开模前”在开模动作前，座台后退（表示冷却计时已到）；
- “射出后”在射出完成后，座台后退；
- “不用”表示座台不活动。

1.10 温度设定

包含：F2 温度、F3 功能、F4 参数、F5 特参

1.10.1 温度设定

进入路径 -**主画面 → F8 温度 → F2 温度**



（1）温度设定值最高为 450℃。

（2）半温使用：当选择使用时加温只会加到设定的一半(保温温度=0)。

（3）保温温度：半温使用的情况下，设定需要的保温温度。

（4）防冷计时：开机开始计时。计时结束后才允许射出、储料及射退等动作。

（5）电热圈颜色说明：

- **蓝色：**加热回路正常；
- **黄色：**加热回路正在工作；
- **红色：**加热回路异常。

注：如果实际温度超过原设定温度警报的上、下限就会有“温度偏差”的讯息，但如此将可减少下次加温的时间。

（6）当温度发生故障， 画面上会显示“970”，“988”，“990”：

- 970 表示温度板没有连接上或损坏；
- 988 表示感温线断线或温度感应有问题；
- 990 表示温度超过正常范围或感温线有问题。

1.10.2 温度功能设定

进入路径 －**主画面 → F8 温度 → F3 功能**

（1）定时加温 ：当您要使用定时加温时，请设定加温时间且选择使用，当到达预设时间，控制器便会自动开启电热开关。

1.11 快设设定

包含：F2 快设、F3 调模、F4 参数

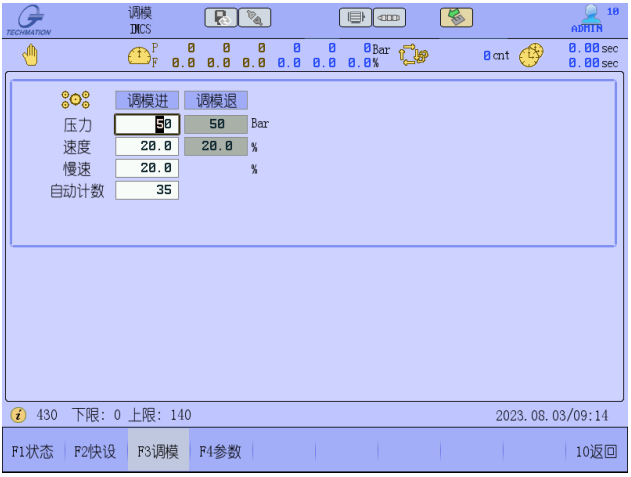
1.11.1 快设设定

进入路径 －**主画面 → F9 快设 → F2 快设**

在此画面可快速设定模座、射出、保压、储料、射退、托模相关的压力、速度及位置

1.11.2 调模设定

进入路径 －**主画面 → F9 快设 → F3 调模**



（1）调模设定：调模的慢速是做为调模进、退起动的速度使用，一旦调模盘开始计数后，则转换为快速动作，至于计数计算机将自动计算，无须设定。

1.11.3 调模参数设定

进入路径 －**主画面 → F9 快设 → F4 参数**

此画面为润滑相关参数

1.12 生管设定

包含：F2 警报、F3 测一、F4 测二、F5 测三、F6 测四、F7 生产、F8 能耗、F9 参数

1.12.1 警报显示

进入路径 －**主画面 → F10 下组 → F2 生管 → F2 警报**

（1）错误储存总数：记录警报总数。

（2）显示起始序号：画面最多可显示 10 组警报数据，但您若要看前面的警报数据可输入其序号即可。且关电再开机资料仍会被保存。

（3）重置 (不用/使用)：设定“使用”将会把警报数据清除。

（4）序号：表示显示序号。

（5）警报说明：包含简单易懂的中文说明，辅助您快速寻找错误来源。

（6）起始时间：错误产生时间。

（7）还原时间：排除错误讯息时间。

1.12.2 监测一设定

进入路径 －**主画面 → F10 下组 → F2 生管 → F3 测一**

控制器提供自动监测和自动警报系统，它允许每个动作参数设定其警报上下限，当实际动作参数超过其上下限，机器便会发出警报，循环结束停止动作。

启动：当连续生产模数到达**自动警报模数，自动监测**自动变为使用，开始监测。

自动警报模数：设定自动监测开始的模数，等于 0 即不监测。“自动警报启动模数”在生管参数中设定。

设定：其上下限的设定，由实际生产参数配合误差%和误差值求得。假如您一起使用%或误差来计算其值的上下限，将可使用以下公式来计算:

最大值	说 明
RV+ (RV*X/100) + Y	RV=参考值
最小值	X=误差百分比 (e.g.10 for 10%)
RV- (RV*X/100) -Y	Y=偏差值 Upper Limit

重新取样：假若您想要用现在动作参数取代原先的参考值，您可以在**自动监测**模式选择**重新取样**，控制器将会用当模的参数值做为新的参考值。

现在仅就各监测值逐一说明——

- **关　　模：**关模整个行程的时间；
- **低　　压：**关模低压行程时间；
- **高　　压：**关模高压行程时间；
- **开　　模：**开模整个行程时间；
- **射出终点：**射出及保压结束的位置；
- **循　　环：**自动循环的时间；
- **托　　模：**托模行程时间；
- **射出时间：**射出所需的全部时间；

- **保压转换：**射出转保压的位置；
- **保压转换：**射出转保压的时间；
- **保压转换：**射出转保压的压力；
- **射出监测：**射出过程中的最小位置（如过冲再回来，则为过冲时的位置）；
- **射出起点：**射出开始的位置；
- **储　　料：**储料行程的时间；
- **射退时间：**射退所需的时间。

1.12.3 监测二/三/四设定

进入路径 －**主画面 → F10 下组 → F2 生管 → F4 测二/F5 测三/F6 测四**

（1）监测二/三/四画面是显示比较重要的生产参数在生产期间的误差变化。可由不同生产周期的比较来调整相关的设定数据，改善其生产质量。

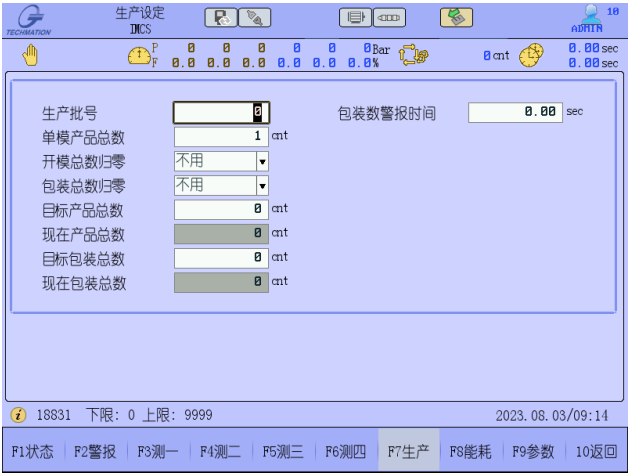
（2）计算机最多可储存 5000 组资料，且一次最多显示 14 组数据——

- **显示启始序点：**选择您想要查的启始模数。
- **取样间隔次数：**输入您想要的取样间隔模数。
- **重置（不用/使用）：**假如您要清除监测二/三/四资料，请用  键选择使用。
- **成品序号：**生产的成品序号。
- **循环时间：**自动时的总循环时间。
- **开模终点：**开模结束的位置。
- **开模时间：**开模行程的时间。
- **关模时间：**关模行程的时间。
- **射出起点：**射出开始的位置。
- **保压起点：**射出转保压的位置。
- **射出终点：**射出及保压结束的位置。
- **射出时间：**射出行程的时间。
- **射出监测：**射出过程中的最小位置（如过冲再回来，则为过冲时的位置）。
- **转保时间：**射出转保压的时间。
- **转保压力：**射出转保压的压力。
- **射出尖压：**射出压力的最大值。
- **储料时间：**储料行程的时间。
- **射退时间：**射退行程的时间。
- **托进时间：**托进行程的时间。

■ **托退时间：**托退行程的时间。

1.12.4 生产计数设定

进入路径 －**主画面 → F10 下组 → F2 生管 → F7 生产**



（1）开模总数归零：若想将开模总数完成计数归零，则请在此设定“使用”，再按【输入】键重新开始计数。

（2）包装总数归零：若想将包装总数完成计数归零，则请在此设定“使用”，再按【输入】键重新开始计数。

（3）目标产品总数：设定您想要的生产总数，当开模总数到达此设定值，计算机便会警报“开模总数已到”并停止机台运作。除非您将开模数归零，否则机台无法运作。

（4）现在产品总数：指目前实际生产数。

（5）目标包装总数：设定您所需装箱数，若已达到设定的包装数，则警报器会响，画面提示“包装总数已到”通知客户，但机器并不会停机，而是继续下一模动作。

（6）现在包装总数：指目前实际的包装数，但当设定值与现在值相同时会将现在值清为 0。

1.12.5 生产能耗设定

进入路径 －**主画面 → F10 下组 → F2 生管 → F8 能耗**

此画面记录机器每天每小时的生产量

（1）**当前生产：**当前产品的耗电量。

（2）**自动模式：**当前自动生产过程中的耗电量。

（3）**产品数：**当前已生产的产品数。

（4）**单位产品能耗：**单位产品的耗电量（度/件）。

（5）**每模产品重量：**每模产品的重量（克）。

（6）**单位重量能耗：**单位重量产品的耗电量（度/公斤）。

（7）**复位操作：**清除当前生产的资料。

（8）**复位时间：**记录上次复位的时间。

（9）**机器总能耗：**此台机器总的耗电量。

（10）**其他模式：**机器非自动模式下的耗电量。

（11）**自动模式：**机器自动模式下的耗电量（包括半自动、全自动、电眼自动）。

（12）**合计：**机器总耗电量。A\B\C 相电压是直接从电力计上读取的资料。

（13）**总电能：**总电能读数。

（14）**总功率：**当前的功率。

1.12.6 生产参数设定

包含：F2 警报、F3 监测、F4 能耗、F5PPH

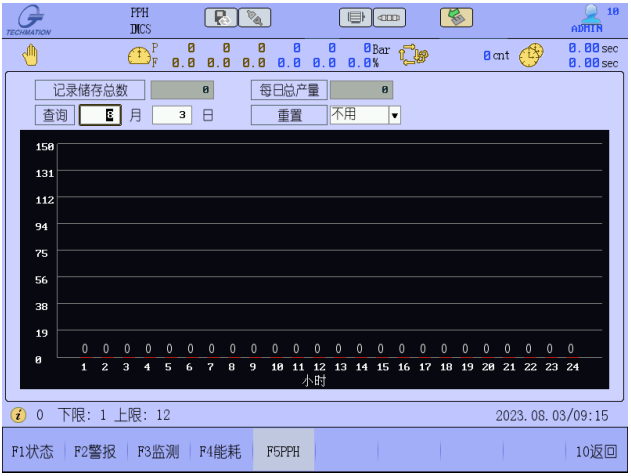
1.12.6.1 生产警报参数

进入路径 -**主画面 → F10 下组 → F2 生管 → F9 参数 → F2 警报**

此画面包含监测设定的所有相关参数

1.12.6.2 生产 PPH 参数

进入路径 –**主画面 → F10 下组 → F2 生管 → F9 参数 → F5PPH**



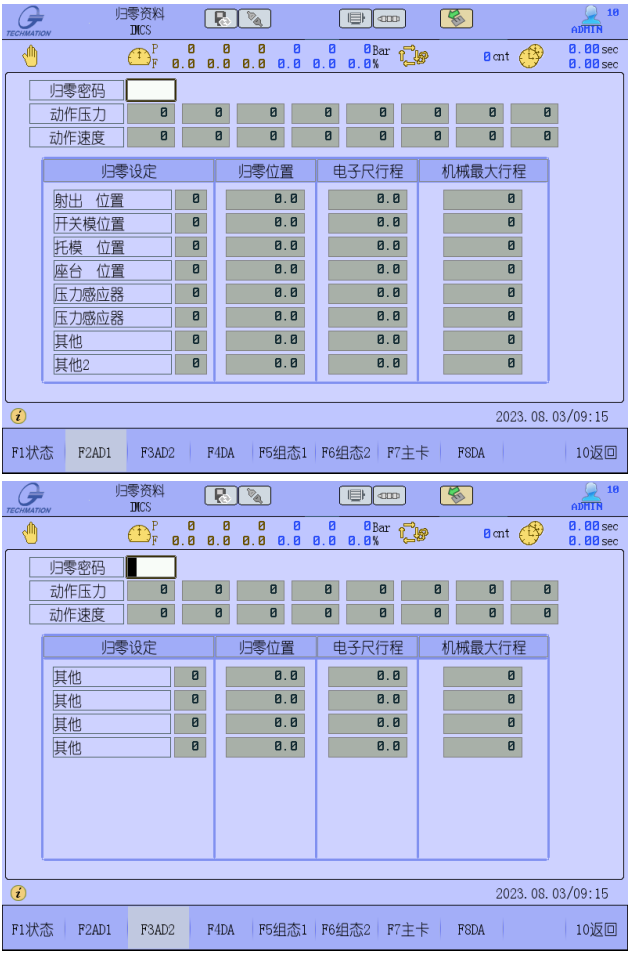
此画面记录机器每天每小时的生产量

1.13 校正画面

包含：F2 AD1、F3 AD2、F4 DA、F5 组态 1、F6 组态 2、F7 主卡、F8 DA

1.13.1 归零资料画面

进入路径 －**主画面 → F10 下组 → F3 校正 → F2 AD1**



因为更换位置尺或某些机械零件修改，所以须重新校正归零位置（只能在手动状态下）：

（1）请输入密码；

（2）请将所需归零部份操作前往归零点；

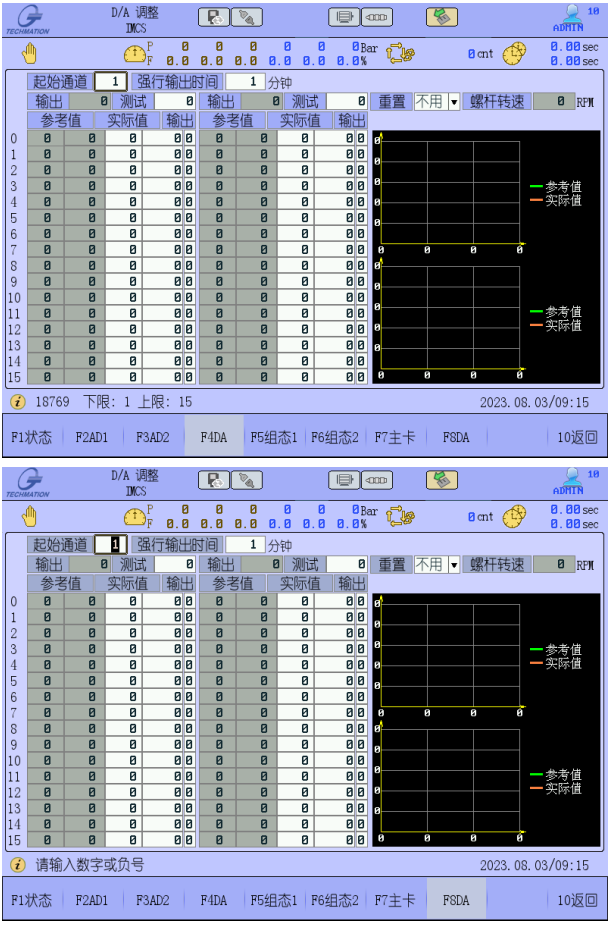
（3）将该归零设定值改为 1，再按【输入】键，便完成归零动作。

1.13.2 DA 调整

DA 调整方式采用 step 与 output 同时可调整的 DA 输出曲线调整方式，它不仅可以很直观的调节 PQ 曲线，而且还具有支持快速调节、微调以及自由选取调整节点等功能。

DA 调整方式的画面为两组 DA 信道展开式，如图：

进入路径：**主画面 → F10 下组 → F3 校正 → F4 DA/F8 DA**



（1）强行输出时间：在 DA 校正输出测试时，对应通道的持续输出计时，当计时达到此限制时，将自动切掉其输出。

（2）测试：校正时，输入需要测试的压力或者流量设定值。

（3）输出：主机回馈的对应信道的响应值。

（4）参考值：系统对 DA 曲线的默认值。

（5）实际值：根据实际需要对 DA 曲线进行调整后的校正值。

（6）操作方式举例（第一组比例阀）：

从 0～140 中选取需要做测试的节点，如 60。在测试处输入 60，系统会立即回馈输出响应值 60。然后，通过观察机器本身的系统压力表或者外部压力测试工具，得到实际的压力值，假设为 58。在对应的节点处，将 60 改为 58 即可！假设得到的实际压力为 58.5，则在对应的节点处，将 60 改为 58 或者 59，然后通过调整对应的二进制数字量输出值，来达到微调的目的。

如需其他调整方式，敬请致电弘讯公司技术服务处！

1.14 I/O 输入输出检测

包含：F2 PB1、F3 PB2、F4 PB3、F5 PC1、F6 PC2、F7 PC3、F8 设 IO 及 F9 诊断

1.14.1 输入检测画面(PB)

进入路径 －**主画面 → F10 下组 → F4 IO → F2 PB1**

PB2、PB3 画面与 PB1 画面类似

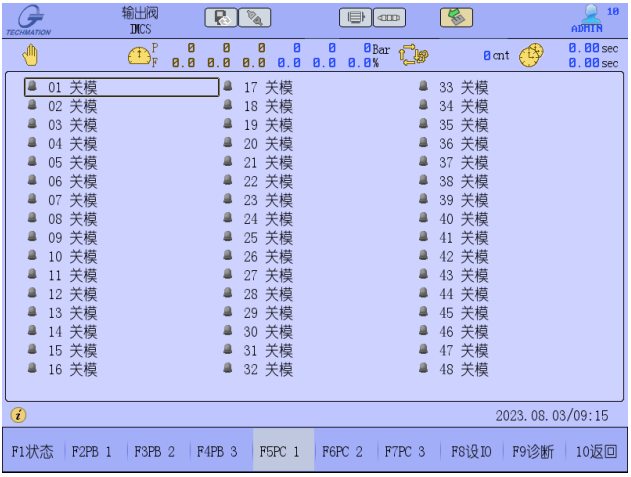
可经由此画面来确认控制器是否有接收到相对应的输入讯号，若在机器运转中遇到 INPUT 信号有问题，可经由此画面来确认控制器是否有接收到相对应输入信号。

（1）若 PB 信号灯显示红色代表输入正常，若显示灰色代表输入信号未收到。

（2）假如 I/O 板的 INPUT 信号故障，可用 PB REASSIGN 解决 PCB 板故障问题，操作方式请参考输入输出检测分配画面。

1.14.2 输出检测画面(PC)

进入路径 －**主画面 → F10 下组 → F4 IO → F5 PC1**



PC2、PC3 画面与 PC1 画面类似

（1）当输出阀有输出的时候，信号灯则显示红色，无输出则显示灰色。

（2）在手动状态马达关的条件下，按输入【输入】键信号灯会显示红色，此时阀强制输出，按【删除】键，信号灯会显示灰色，取消强制输出。

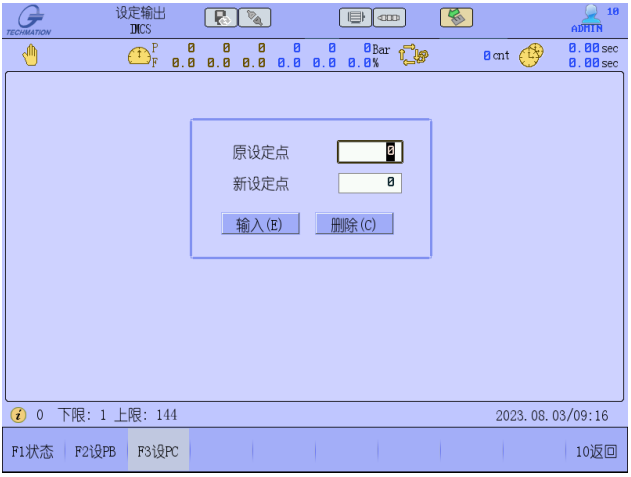
1.14.3 输入/输出检测分配画面

包含：F2 设 PB 及 F3 设 PC

进入路径 －**主画面 →F10 下组 → F4 IO → F8 设 IO → F2 设 PB**

假若 PCB 板故障，您可以将故障点转换到未使用的输入点上。密码请洽询供应厂商。

进入路径 －**主画面 →F10 下组 → F4 IO → F8 设 IO → F3 设 PC**



假如 PCB 板故障，您可以将故障点转换到未使用的输出点上。密码请洽询供应厂商。

1.15 模具设定

包含：F2 储存、F3 读取、F4 复制、F5 删除、F6 机器、F7 记录、F8 事件

序　　号：模具数据储存顺序号码。

模具名称：模具名称，最多 12 个字节。

储存日期：某月/某日/某年。

材　　料：材料信息，最多 5 个字节。

颜　　色：颜色信息，最多 5 个字节。

1.15.1 储存模具数据

进入路径 －**主画面 → F10 下组 → F5 模具 → F2 储存**

面板按键设定如下：

（1）目　标：用  选择储存目标 面板或记忆卡。

（2）排序方式：现有的模具清单中，可以用  选择按日期或模具名称排序。

（3）查询换页：用  键选择↓下一页或↑上一页，选定后按【输入键】切换页面。

（4）储存方式：用  选择【另存】或【覆盖】。

- **另存：**将来源模具的名称数据拷贝为另一已不存在的模具中，需在选单中为另存的模具自行设定“模具名称”+“材料”+“颜色”，储存日期会自动产生，无须自行输入；
- **覆盖：**将修改后的模具数据覆盖至当前现正使用的模具中重新储存。

（5）确　认：用  选择【取消】或【确定】。

- **取消：**取消储存模具数据；
- **确定：**储存模具数据。

（6）最大储存量：可储存最多的模具数据的数量。

（7）剩余储存量：还可储存多少模具数据的数量。

1.15.2 读取模具数据

进入路径 －**主画面 → F10 下组 → F5 模具 → F3 读取**

面板按键设定如下：

（1）来　源：选用  键择读取模具数据源 面板或记忆卡。

（2）排序方式：现有的模具清单中，可以用  键选择按日期或模具名称排序。

（3）查询换页：用  键选择↓下一页或↑上一页，选定后按【输入键】切换页面。

（4）读取模具：输入欲读取的模具序号。

（5）确　认：用  选择【取消】或【确定】。

- **取消：**取消读取模具数据；
- **确定：**读取模具数据。

（6）最大储存量：可储存最多的模具数据的数量。

（7）剩余储存量：还可储存多少模具数据的数量。

1.15.3 复制模具数据

进入路径 －**主画面 → F10 下组 → F5 模具 → F4 复制**

面板按键设定如下：

（1）来　源：选用  键选择复制模具数据源 面板或记忆卡。

（2）排序方式：现有的模具清单中，可以用  键选择按日期或模具名称排序。

（3）查询换页：用  键选择↓下一页或↑上一页，选定后按【输入键】切换页面。

（4）目　标：用  选择复制目标面板或记忆卡。

（5）复制模具：设定来源的模具序号。

（6）确　认：用  选择【取消】或【确定】。

- **取消：**取消复制模具数据；
- **确定：**复制模具数据。

（7）最大储存量：可储存最多的模具数据的数量。

（8）剩余储存量：还可储存多少模具数据的数量。

1.15.4 删除模具数据

进入路径 －**主画面 → F10 下组 → F5 模具 → F5 删除**

面板按键设定如下：

（1）来　源：选用  键选择删除模具数据源 面板或记忆卡。

（2）排序方式：现有的模具清单中，可以用  键选择按日期或模具名称排序。

（3）查询换页：用  键选择 ▼下一页 ▲上一页，选定后按输入【输入键】切换页面。

（4）删除模具：输入欲删除的模具序号。

（5）确　认：用  选择【取消】或【确定】。

- **取消：**取消删除模具数据；
- **确定：**删除模具数据。

（6）最大储存量：可储存最多的模具数据的数量。

（7）剩余储存量：还可储存多少模具数据的数量。

1.16 其他设定

包含：F2 其他、F3 测 PA、F4 配置及 F5 机绞

1.16.1 操作面板画面 (PA)

进入路径 -**主画面 → F10 下组 → F6 其他 → F3 测 PA**

Q8A 一体式

Q12A 一体式

这个画面用来测试操作面板上所有的按键，当您按面板上任何一键， 画面上相对应的键会变黄色（例如 ： 图中 - 号键则是按下  键后的变化）。

假若画面未按照您所按的键变化，代表操作面板故障，此时请检查扁平电缆或按键

或者请更换操作面板。 按下【删除】键两次，便会退出此画面。

1.17 系统设定

包含：F2 系统、F3 更新、F4 重置、F5 权级、F6 资料、F7 建置

1.17.1 系统设置

进入路径 －**主画面 → F10 下组 → F7 系统 → F2 系统**

（1）荧屏保护装置：根据您的设定数据来保护 LCD 屏幕并增长其使用寿命。

（2）由闲置时间启动：在设置的“闲置时间”内没有对屏幕进行操作，则屏幕自动进入屏保。如设置为 3min，3 分钟内没有对屏幕进行操作，则进入屏保。

（3）由开模次数启动：当自动下连续生产数达到所设定的“开模次数”，且期间没有对屏幕进行操作，则屏幕自动进入屏保。

以上两种情况（由闲置时间启动、由循环次数启动），满足任意一个均会进入屏保。

（4）语言显示：标准为中文或英文画面，其他语言画面为选配。选择需要的语言，选定后点击【确定】，便会自动切换语言。

（5）日期时间：系统的日期和时间设定。

1.17.2 更新设置

进入路径 －**主画面 → F10 下组 → F7 系统 → F3 更新**

（1）U 盘新建文件夹：updatefile；

（2）把所有需要更新的 55、28 的 BOOT 和 BIN、RMTP12 的 BOOT 和 BIN 放在此文件夹下；

（3）在面板的系统--更新画面：选择对应更新程序：DSP55/DSP28/温度卡

- **Download 55 程序：**进入更新画面，选择 DSP55，选择所需更新 55 程序，更新确认选择确定开始更新。
- **Download 28 程序：**进入更新画面，选择 DSP28，选择所需更新 28 程序，更新确认选择确定开始更新。
- **Download 温度卡程序：**进入更新画面，选择温度卡，选择所需更新温度卡程序，更新确认选择确定开始更新。

1.17.3 系统重置

进入路径 –**主画面 → F10 下组 → F7 系统 → F4 重置**

可以在此画面选择重置面板或主机。

因控制器动作不正常，可利用此画面将系统重置，若按确定，系统将会重置。为避免数据的遗失，进入系统重置画面前需输入密码，请洽询供应厂商。

警告：系统重置为最后手段，系统重置后，所有的模块数据、参数数据都会消失。当系统重置后，须将电源关闭。

1.17.4 使用权级

进入路径 –**主画面 → F10 下组 → F7 系统 → F5 权级**

客户可由此画面来更改原设定的密码

1.17.5 内部数据

进入路径 －**主画面 → F10 下组 → F7 系统 → F6 资料**

此为软件工程人员修改数据时使用，请勿使用

1.17.6 建置画面

包含：F2 建置及 F3 建置

进入路径 －**主画面 → F10 下组 → F7 系统 → F7 建置 → F2 建置/F3 建置**

（1）在**机台编号**和**出厂日期**栏内输入数值，然后算出 F3 建置画面的开机密码。

（2）输入密码按确认键，会出现以下画面。

（1）机台交付日期：为机台送达客户日期，亦为停机功能开启后的起算日期。

（2）期　数：表示为客户付款的总期数，当前期数表示为目前客户已付款的期数。

（3）单期停车天数：为每期缴款的间隔天数。

（4）下期停车日期：使用停车日期时，年/月/日必须重新输入一次否则无效。

（5）停车警告天数：为停车日期到达前预先提示客户之提前天数。

（6）间隔分钟：当警告动作时，每隔一段时间再显示出警告讯息。

（7）下次警告日期：使用停车时数功能，在停车时数前的预警时间。

（8）运转时数：此为马达启动后累积运转时间，只显示不能设定。

（9）运转状态：设定为 1 时上述功能开机功能即开始运作，0 为不使用。

（10）注意事项:

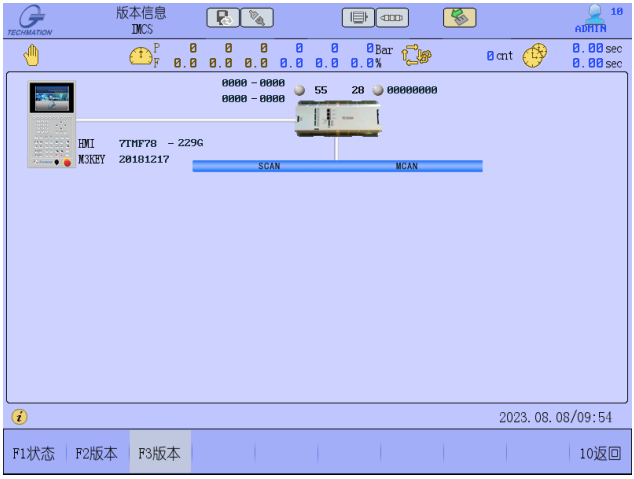
- 停机功能“年/月/日”有更动“月/日”，则“年”必须重打一次；
- 停机功能使用时，现在日期时间必须开机密码方能进入修改；
- 客户机器编号与开机密码，面板内控制板编号需详细记录，一但开机密码设定本公司亦无法从画面解开；
- 停机功能的机器在维修面板时须将停机功能于控制板更替时，再行输入，贵司必须将停机功能使用的控制板编号记录完告知我司以防客户直接送修或本司支持维修误换上(无须开机密码告知)；
- 本司若要解开密码功能唯有更换硬件，贵司须要支付零件费；

1.18 版本信息

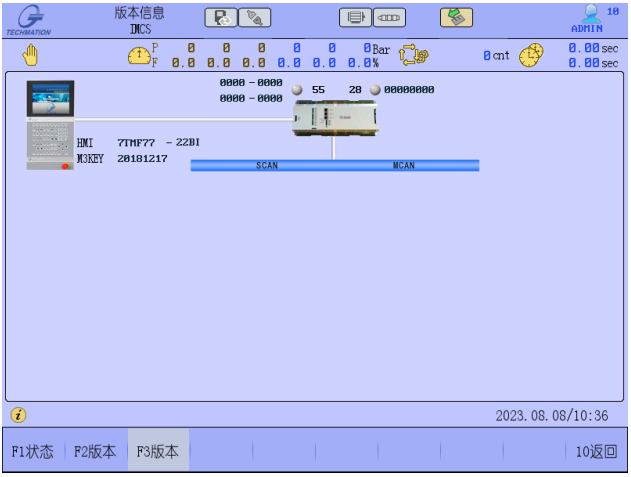
进入路径 -**主画面 → F10 下组 → F8 版本 → F2 版本/F3 版本**

Q8A 一体式

Q12A 一体式



Q8A 一体式



Q12A 一体式

维修人员可经由这个记录了解系统数据及机型，方便日后联络时使用

第二章 参数表

编号	参数名称	功能说明
1	装模压力	调模状态下，手动动作压力
2	装模流量	调模状态下，手动动作流量
3	压力 Ramp	压力上升斜率时间
4	流量 Ramp	速度上升斜率时间
5	阀延时开计时	动作起始，阀延时开时间
6	阀延时切计时	动作结束，阀延时关时间
7	比例阀延时	动作起始，压力流量延时送时间

第三章 警报说明及故障排除

当机器在运转过程中发生警报时，除了主画面会显示警报说明外，警报画面也会同时显示，不同的是若有其他警报同时发生，主画面只能显示第一优先，但警报显示画面可同时显示 10 个警报，待使用者一一排除，现将各个警报说明及故障排除方法列举于后。

编号	警报内容	产生原因	解决方法
1	**温度偏差**	■ 注射、储料、射退时，料筒加热的其中一段或多段的实际温度，超过设定温度的上下偏差范围，造成无法注射、储料和射退	(1) 检查料筒对应加热区的设定及实际温度，实际温度处于上下偏差外，等待温度到达； (2) 检查是否加热圈、保险丝、加热接触器或者 SSR 故障导致不加温； (3) 若出现某段 970 或 988，请检查是否热电偶断线或者未接好，线路正常，则为电脑板故障，请与我司联系； (4) 所有段显示 970 或 988，请检查 T1015 变压器供电是否正常，黄白线之间电压正常为 10V（交流）。
2	**安全门未关**	■ 如果只是显示**“安全门未关”**字符串，但**没有红色警报条**，则此警报只是一个提示信息，当进入半自动、全自动、自动调模状态，如发现安全门是打开的，则会提示操作者，关闭安全门，进入自动循环状态； ■ 如果在显示**“安全门未关”**字符串的同时，又**有红色警报条**存在，则说明安全门在不该打开的时候被打开了，造成设备的运行停止；	(1) 关闭安全门，重复刚才的操作，看警报是否继续，如还是继续，则检查安全门电气回路和安全门开关装配。

3	**请开安全门**	■ 当进入半自动、全自动、自动调模状态时，如发现安全门是关的，则会提示操作者，打开安全门，以便启动自动状态。	⑴ 打开安全门，看警报是否消失，如还是继续，则检查安全门电气硬件回路。
4	**放开手动/急停键**	■ 手动键被长期按下，此时会提示操作者放开手动键。 ■ 紧急停止按下的时候，会出现此信息。	⑴ 放开手动按键； ⑵ 如设备维护结束，在确保安全的前提下，放开紧急停止键。
5	**油温偏差**	■ 实际油温超过油温上下限设定	⑴ 检查油温的设定及实际温度，若实际油温高于系统允许最高油温，则检查油温冷却回路； ⑵ 若实际油温低于系统允许最低油温，则启动油温预热功能； ⑶ 检查油温热电偶信号是否正常； ⑷ 检查电脑板油温检测电路，可拆下热电偶短接，正常为显示室温，异常请与我司联系。
6	**全程未定时完成**	■ 实际的周期循环时间，超过所允许的上限值	⑴ 检查实际循环时间和设定的循环，如设定正常，则检查自动循环中每个动作的数据，找出具体是哪个动作造成了循环周期的增加，再做维护检查。
7	**加热器电流错误**	■ 保险线及加热圈存在异常	⑴ 请检查保险线及加热圈是否正常。
8	**脱模未到定位**	■ 合模或中子动作时检查到托模未退到位	⑴ 是否托退二段位置设定过大，正确设定； ⑵ 确保脱模油缸退到底的情况下，调整托退终开关位置，脱模电子尺重新归零。
9	**射出监控失败**	■ 射出及保压过程中，程序会取样最小的螺杆位置，注射结束后，此取样值，和监测一画	⑴ 检查射出监控上下限是否正常设定； ⑵ 修改注射工艺后，进入监测画

		面的射出监控上下限值进行比较，如不在此范围内，则会警报	面选择重新采样； ⑶ 检查是否喷嘴阻塞、射出不足、溢料或其他原因。
10	**射出防护罩未关**	■ 注射时检查到射出防护罩未关闭。新国家安全标准，会要求储料、座进时也检查	⑴ 关闭射出防护罩； ⑵ 检查射出防护罩行程开关，及与射出防护罩相关的电气回路。
11	**机械手失败**	■ 关模时机械手未回位	⑴ 结合机械手实际取件时间，适当增加再循环计时； ⑵ 检查机械手回位后是否正常输出，若无输出，请检查机械手教导程序是否正常。
12	**开模数已到**	■ 累计开模总数达到设定值	⑴ 进入《生管》→《生产》画面，将开模总数进行归零操作。
13	**开模未到定位**	■ 托模时检查到当前动模板位置未处于开模位置有效区内	⑴ 调整开模结束段工艺，减小开模过冲； ⑵ 在确保机械安全前提下，适当调整开模有效区的设定值。
14	**托模失败**	■ 电眼自动(全自动)循环时，托模完毕，4 秒内检物电眼未感应到成品托落	⑴ 检查成品是否未落下； ⑵ 检查电眼或者电气回路是否故障。
15	**储料未定时完成**	■ 实际储料时间超过设定的储料监控时间	⑴ 缺料，导致螺杆不会后退，请加料； ⑵ 落料口结料，清理落料口结料，并适当调整落料口温度和冷却水大小； ⑶ 储料背压值太高，适当减小背压；比例背压的话检查背压通道输出是否异常； ⑷ 螺杆加料段磨损，请检查螺杆。
16	**关模未到定位**	■ 实际高压锁模时间超过设定的高压锁模监控时间	⑴ 模厚没有调整好，使高压锁模无法完成，请重新调整模厚； ⑵ 高压锁模压力流量值设定太小，高压锁模力不够，请重新调整高压锁模压力流量设定值。

17	**完成 自动调模**	■ 当自动调模顺利的完成之后，会出现此提示	⑴ 按手动键，此提示会消失。
18	**润滑油位 偏差**	■ 润滑油位低于下限，此功能目前用于稀油润滑的机器	⑴ 若油量不足，请加油； ⑵ 检查油量检出开关是否异常。
19	**射出起始 位置偏差**	■ 注射开始时，程序取样到当前的螺杆位置和监测一画面的射出起始位置比较后，超出上下限范围	⑴ 检查射出起始位置上下限是否正常设定； ⑵ 修改储料位置后，进入监测画面选择重新采样；
20	**射出 时间偏差**	■ 从注射开始到保压结束的累积时间，超过监测一画面的射出监控时间上下偏差值	⑴ 检查射出监控时间上下限是否正常设定； ⑵ 修改注射工艺后，进入监测画面选择重新采样； ⑶ 检查是否其他原因导致的射出不稳定。
21	**开模一慢 未定位**	■ 自动调模时，检查到开模动作刚开始位置未在开模一慢距离内	⑴ 自动调模时，适当增大开模一慢距离。
22	**关模 保护失败**	■ 实际低压模保时间超过设定的低压模保监控时间	⑴ 检查是否模具表面存在异物； ⑵ 高压锁模压力流量值设定太小，无法完成锁模动作，适当调整高压锁模压力流量设定； ⑶ 关模低压设定位置过长，或压力流量过小，适当调整； ⑷ 模具热胀导致模厚变化，请重新调整模厚。
23	**射退终 未到定位**	■ 实际射退时间超过设定的射退监控时间	⑴ 射退压力流量值设定太小，使射退力量不够，合理设定射退压力流值； ⑵ 射退结束位置设定不合理，合理设定射退结束位置。
24	**开模 装数已到**	■ 累计包装数到达设定值	⑴ 进入《生管》→《计数》画面。将包装总数进行归零操作。

25	**中子 未到定位**	■ 托模或开关模的过程中，检查到某组中子未处于安全位置（进终或退终）	(1) 进入手动状态，根据警报内容，操作对应中子到达安全位置； (2) 若选择多组中子，在手动状态下会互锁，即：中子 A 动作时会检查中子 B 的安全位置，而中子 B 动作时会检查中子 A 的安全位置，请在确保安全的前提下，进入粗调模状态，解锁各组中子之间的互锁，使各组中子回到安全位置。
26	**油量 检出失败**	■ 检测到油量检出信号异常	(1) 若油量不足，请加油； (2) 检查油量检出开关是否异常。
27	**润滑 检出失败**	■ 润滑动作过程中，在润滑警报计时的过程中，程序未检测到润滑压力继电器的回馈信号	(1) 请检查润滑油是否够，不够请加润滑油； (2) 请检查润滑压力继电器或润滑管路是否故障； (3) 请检查润滑检测电气回路； (4) 合理设定润滑参数。
28	**滤网 检知失败**	■ 液压油过滤网堵塞或者检测信号异常	(1) 检查润滑油滤油网有无阻塞，阻塞的话请及时清理或者更换； (2) 检查是否检出开关故障。
29	**调模终 已到**	■ 调模进动作时，检测到调模进终开关，或调模退动作时，检测到调模退终开关	(1) 作反方向调模动作，使被压到的开关不动作。
30	**调模电眼 失败**	■ 自动调模状态下，调模进或调模退动作时，调模电眼未被正确的感应到	(1) 请检查调模电眼是否损坏或者被油污遮挡，电气回路是否 OK； (2) 若动力不足导致调不动，请适当加大调模压力流量； (3) 机器水平不好导致调不动，请调整机器水平。
31	**中子动作 位置偏**	■ 中子进或退时开关模位置不对	(1) 开关模位置过冲太大，请合理设定开关模速度。
32	**机械手 急停**	■ 机械手使用时，机械手的紧急停止按钮被按下	(1) 在确保安全的前提下，放开机械手紧急停止按钮。

33	**等待 机械手**	■ 当选择机械手使用时，如果机械手没有给注塑机相关确认信号，导致注塑机无法进行相应的动作，此时会出现“等待机械手—允许合模”或“等待机械手—模区安全”等类似警报	(1) 根据具体警报内容，检查对应的输入信号。
34	**请按 关模键**	■ 半自动、全自动、自动调模状态下，在安全门关闭之后，部分安全标准，会提示操作者按下关模键，以便确认开始真正的循环动作	(1) 根据提示内容，按下合模键。
35	**马达 启动失败**	■ 直接启动方式下，马达启动完成信号没有送给主机	(1) 请检查马达启动电气回路有无异常。
36	**请按循环 启动键**	■ 半自动、全自动、自动调模状态下，在安全门关闭之后，会提示操作者按下循环启动键，以便确认开始真正的循环动作	(1) 根据提示内容，按下循环启动键。
37	**背面安全 门未关**	■ 背面安全门未关或者信号异常	(1) 关闭背面安全门； (2) 检查背面安全门开关及对应电气回路。
38	**温度 没有上升**	■ 连续加温 3 分钟，温度未达到参数三的检查温度设定值	(1) 检查料筒对应加热区的设定及实际温度； (2) 检查加热圈、加热继电器/SSR、保险丝是否损坏； (3) 检查加热电气硬件回路是否存在故障。
39	**请开 安全门二**	■ 有安装安全门二开关的机器，半自动完成及自动开始必须开关安全门二一次	(1) 请打开安全门； (2) 确认安全门二开关、装配及电气回路。
40	**油温 过高**	■ 机器油温超过油温上限	(1) 检查冷却水路； (2) 合理设定油温限温； (3) 检测热电偶是否正常；

			⑷ 拆除主机热电偶接线，短接若显示的非室温，则主机故障，请与我司联系。
41	**托模退未到定位**	■ 托退没有退到位	⑴ 确认托模油缸已到底，若电子尺位置非 0，请至【校正】画面归零；若托退终未检测到，请调整托退终电眼安装位置； ⑵ 合理设定托退位置； ⑶ 合理设定托退位置有效区。

用户手册版本变更记录

日期	变更后版本	变更内容
2023-10	V1.0	第一版

Preface

This manual for Techmation control system consists of two parts: Control interface manual (following named front panel, control interface, HMI interface and operation interface) and System operation manual.

 Warning: To avoid serious injury to the machine operator's safety and prevent damage to the machine, you must refer to this manual carefully and do operation according to this manual strictly.

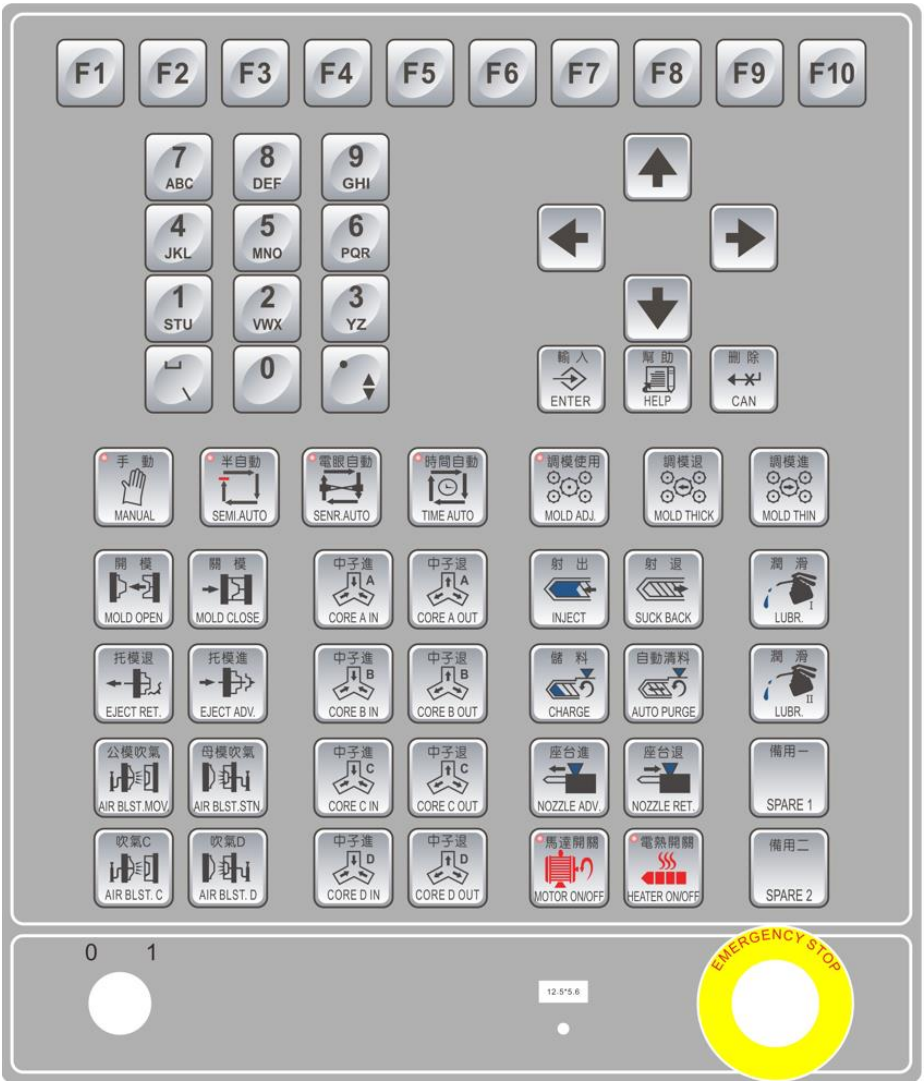
Liability: Techmation assumes no liability in any form except for this control system's connection. It is your responsibility to ensure safe machine operations. Never operate the machine without proper training and instructions. Read two manuals first (the machine manufacturer's manual and this manual) before attempting any operation of the machine.

Notes: The information in this manual isn't subject to change without any notice. For any further information about spare parts and services etc., please contact us with the following address. At the same time, to constantly meet your requirement, we encourage you to provide us with any feedback and suggestions.

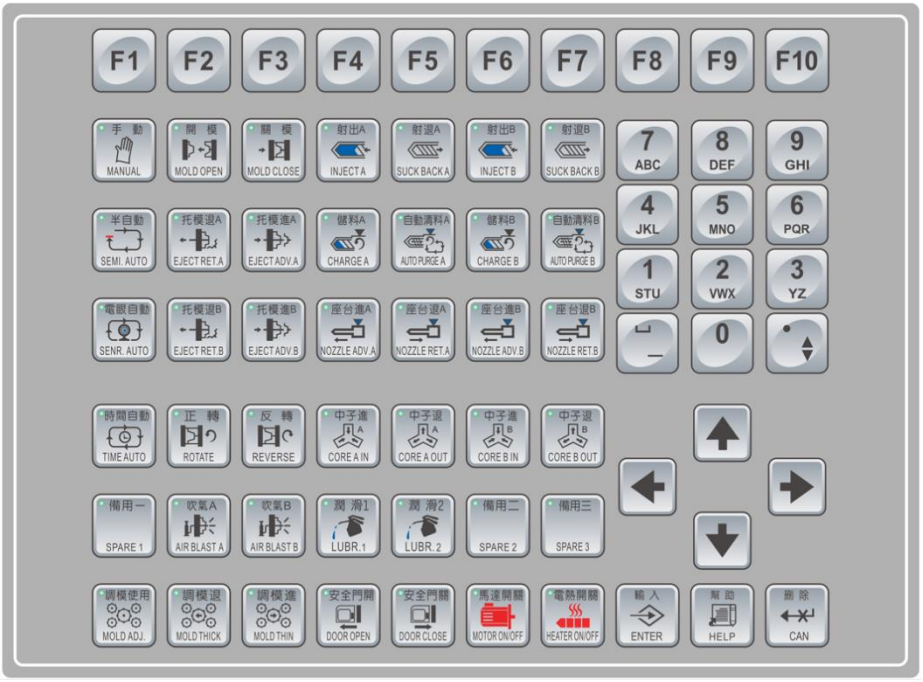
Table of Contents

Chapter 1Control Panel (HMI)

The corresponding program can match 2 types of hardwares including Q8A integrated type and Q12A integrated type.



Q8A Integrated Type



Q12A Integrated Type

1.1 Control Panel and Keys

The control panel is covered with a protective Mylar layer to make the panel water, dirt and abrasion resistant. Each key is printed with key name and corresponding draft. All keys on the electronic board have Type A mechanical contact switches to provide for reliability and a long server life for several million switches. If you have any trouble with the switches, you can use the backup switches instead of the damaged switch.

1.1.1 Control Panel Keys

Q8A Integrated Type

Q12A Integrated Type

This operation panel offers different automatic mode keys and machine movement keys in manual mode, which will execute movements according to the mold data stored in the panel. Therefore it is necessary to confirm the mold data first to ensure the safe machine operation.

1.1.2 Operation Mode Keys

Key	Instructions for use
Manual	This key has various functions. It is used not only to change Auto mode back to Manual mode but also to clear alarm and abnormal conditions. This key itself is a restore key.
Semi. Auto	Press this key to run the machine in automatic cycle. At the end of each cycle, you need open and close the power door once to continue the next cycle.
Sensor-Auto	Press this key to run the machine in automatic cycle. At the end of each cycle, the photo sensor will verify whether the product has dropped within 4 seconds. If the product is still in the mold, the machine will automatically stop and the alarm will sound. The display screen will show an error "Eject Failure".
Time-Auto	Press this key to run the machine in automatic cycle. At the end of each cycle, the photo sensor will verify whether the product has dropped within 4 seconds. If the product is still in the mold, the machine will automatically stop and the alarm will sound. The display screen will show an error "Eject Failure".

Warning: Every time you switch to Auto mode by pressing Auto Key in Manual mode, you need open and close the power door once to ensure there is no foreign matter in the mold before closing mold is activated.

1.1.3 Mold Adjustment Keys

Key	Instructions for use
Mold Adjustment	This key provides two functions, the first pressing means Coarse Adjustment and the status will switch from Manual to Coarse Adjustment on the screen. In this mode, the mold adjustment advance and retraction are able to activate. Meanwhile, in order to install the mold conveniently and safely, the pressure and speed of the opening/closing mold, injection, charge, suck-back and nozzle advance/retraction at the moment adopt the internal low pressure & low speed and won't change along with position during moving. However, opening mold will stop along with position arrives. Therefore, please use Coarse Adjustment when installing the mold. The second pressing means Automatic Adjustment. When the operator has fixed with the mold and set the required pressure, speed, position and other parameters for mold opening/closing,

	Automatic Adjustment is able to be activated. After the power door is closed, the computer will adjust the mold height automatically according to the pre-set Closing High Pressure and won't stop until the actual pressure of Press Mold stage equals the pre-set high pressure. When an alarm sounds, it means Automatic Adjustment has been finished, and you can prepare for the next step. Just press Manual key to return to Manual mode. Please note that it is unable to switch to Auto mode from Mold Adjustment mode directly, and you need switch to Manual mode first.
Mold Thick	The movement procedure is similar as above, excepting that the direction is opposite. This mold adjustment is moving backward. When it retracts to the limit switch, mold adjustment movement will stop to avoid any danger.
Mold Thin	In Coarse Adjustment mode, press this key, the mold adjustment will move forward one space at the beginning, which is used as the Micro Adjustment Mold. The distance of mold adjustment advance is depended on the pressing frequency. Keep this key pressed for one second, the mold adjustment will move forward all the time for a long distance adjustment. Release your hand to stop.

1.1.4 Manual Operation Keys

Key	Instructions for use
Open Mold	In the manual mode, press this key to execute mold opening according to the pre-set data. If the cores have already been set, the continuous movement will be carried out according to the settings.
Close Mold	In the manual mode, close the power door, press this key to execute mold closing according to the pre-set data. If the cores have already been set, the continuous movement will be executed according to the settings.
Ejector Retraction	In the manual mode or Coarse Adjustment mode press this key to retract the ejector back continuously according to the pre-set data.
Ejector Advance	In the manual mode or Coarse Adjustment mode press this key to execute ejection advance continuously according to the pre-set data.
Air Blast A/B/C/D	In the manual mode, press this key to execute air blast A/B/C/D according to the pre-set time at any position of mold opening/closing.

Injection	In the manual mode or Coarse Adjustment mode, when the barrel temperature is within the deviation range, press this key to execute injection and execute hold pressure.
Suck-Back	In the manual mode or Coarse Adjustment mode, when the barrel temperature is within the deviation range, press this key to execute suck-back.
Charge	In the manual mode or Coarse Adjustment mode, when the barrel temperature is within the deviation range, press this key to execute charge, and please press this key once more to stop.
Auto Purge	In the manual mode, if the operator is willing to clean up the defective material in the barrel, press this key to execute *Auto Purge* according to the pre-set cleaning count and time in *Purge* page.
Nozzle Advance	In the manual mode or Coarse Adjustment mode, press this key to execute nozzle advance.
Nozzle Retraction	In the manual mode or Coarse Adjustment mode, press this key to execute the nozzle retraction.
Core A In / Core A Out	Core A function option, press c*ore in* or *core out* key in the manual mode, the core A will move in/out.
Core B In / Core B Out	Core B function option, press c*ore in* or *core out* key in the manual mode, the core B will move in/out.
Core C In/ Core C Out	Core C function option, press c*ore in* or *core out* key in the manual mode, the core C will move in/out.
Core D In/ Core D Out	Core D function option, press c*ore in* or *core out* key in the manual mode, the core D will move in/out.
Lubrication I	In the manual mode, press this key to open the lubrication#I bump.
Lubrication II	In the manual mode, press this key to open the lubrication#II bump.

Motor On/Off	In the manual mode or Coarse Adjustment mode，press this key to turn on the hydraulic pump motor and the motor icon will appear on the screen. Press once again to turn off the motor and the motor icon will disappear. (This key is invalid in *Auto mode*)
Heater On/Off	In the manual mode or Coarse Adjustment mode，the barrel will start heating and the heater icon will appear on the screen. Press once again, heating will stop and the heater icon will disappear. (This key is invalid in *Auto mode*)

1.1.5 Data Entry Keys

This section explains how to use the numerical and letter input keys on the panel.

Important: In order to avoid any loss of the setting data, please make sure you have stored the right mold data again before changing a new mold. If you encounter any error when saving mold, all data will be lost.

When you turn off the machine, the right setting data will be saved as the working mold setting. During the working mold setting, you don't save any changed data in the mold setting database. Therefore, you must save the mold data again before changing any new mold.

If you are unsure whether the right settings have been saved, please enter the mold setting database to clarify.

Key	Instructions for use
Numerical	When you need to enter the numeric data, pressing *Enter key* will confirm the input. when the input number exceeds the maximum value, it will be unable to insert and the screen will display a error "value exceeding". For English letter input, such as: **A** then press【Number key 7 】twice, then A will be inserted. **B** then press【Number key 7 】three times, then B will be inserted, etc… **Note:** when the value is modified, the cursor must be moved

	out of the edit box, otherwise the modification will be unsuccessful.
Conversations Enter	After the numeric value is input, press this key to save the data. And press it again, the cursor will move to the next position automatically. This key can be used to replace the arrow keys as well.
Cancel	Pressing this key means that the change you have made with the current field is invalid and still keep its original state.
Online Help	This key can provide online help.
Arrow	You can use the arrow (up/down/left/right) keys to move the cursor to the position where you need input data.
Screen Saving 	The instructions below should be executed in manual mode: 1. Insert the memory card to the port; 2. Turn to the printing view, press this button 【Screen Saving Key】 twice; 3. A dialog box will pop up from the screen in about 2 or 3 seconds, which means that the view is already printed and saved in the memory card. After that, press *Enter key* on the panel to confirm. 4. Link the memory card to computer and enter "print" folder under the root directory. The printed view is inside. **Note: User can carry out the operations above to print the required view in other languages.**
ScreenSelection F1~F10	This system provides 10 keys (*F1 – F10*) for screen selection When the screen is selected, the selection key corresponding to the screen will be highlighted.For specific screen distribution, please refer to 1.2.1 Screen Selection.

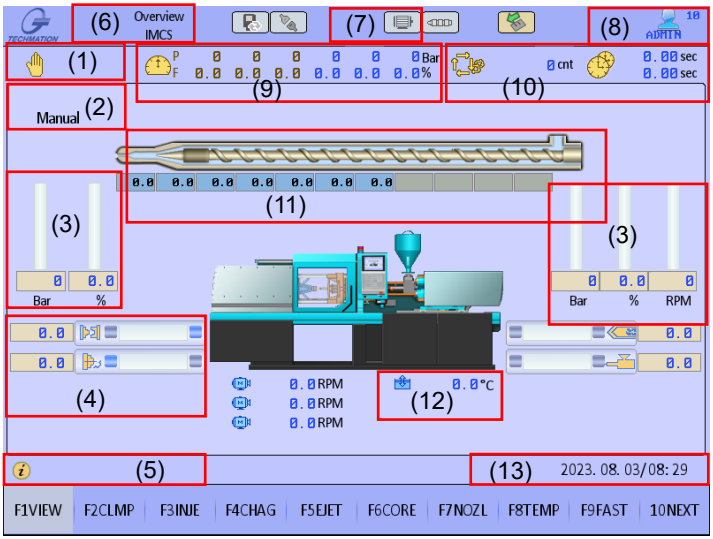
1.2 HMI Display

1.2.1 Screen Selection

F1 VIEW											
F2 CLMP	→	F1 VIEW	F2 CLMP	F3 FUNC	F4 PAR1	F5 PAR2	F6 SPPA				F10 BACK
F3 INJE	→	F1 VIEW	F2 INJE	F3 VALV	F4 VALV	F5 FUNC	F6 PROF	F7 PARA	F8 SPPA	F9 CHAG	F10 BACK
F4 CHRG	→	F1 VIEW	F2 CHRG	F3 PURG	F4 FUNC	F5 PARA	F6 SPPA			F9 INJE	F10 BACK
F5 EJET	→	F1 VIEW	F2 EJET	F3 BLST	F4 FUNC	F5 PARA			F8 CLMP	F9 CORE	F10 BACK
F6 CORE	→	F1 VIEW	F2 COR1	F3 COR2	F4 COR3	F5 FUNC	F6 PARA		F8 CLMP	F9 EJET	F10 BACK
F7 NOZL	→	F1 VIEW	F2 NOZL	F3 PARA					F8 INJE	F9 CHRG	F10 BACK
F8 TEMP	→	F1 VIEW	F2 TEMP	F3 FUNC	F4 PARA	F5 SPPA					F10 BACK
F9 FAST	→	F1 VIEW	F2 FAST	F3 ADJM	F4 PARA						F10 BACK
F10 NEXT											
F1 VIEW											
F2 PM	→	F1 VIEW	F2 ALAM	F3 MON1	F4 MON2	F5 MON3	F6 MON4	F7 PROD	F8 ENER	F9 PARA	F10 BACK
F3 REVS	→	F1 VIEW	F2 AD1	F3 AD2	F4 DA	F5 CONF1	F6 CONF2	F7 CARD	F8 DA		F10 BACK
F4 I/O	→	F1 VIEW	F2 PB1	F3 PB2	F4 PB3	F5 PC1	F6 PC2	F7 PC3	F8 AIO	F9 DIAG	F10 BACK
F5 MOLD	→	F1 VIEW	F2 SAVE	F3 READ	F4 COPY	F5 DEL	F6 MACH	F7 RECD	F8 Event		F10 BACK
F6 OTHR	→	F1 VIEW	F2 OTHR	F3 PA	F4 CONF	F5 MASC					F10 BACK
F7 SYST	→	F1 VIEW	F2 SYST	F3 UPDT	F4 REST	F5 PRIV	F6 DATA	F7 INST			F10 BACK
F8 VERS	→	F1 VIEW	F2 VERS	F3 VERS							
F10 NEXT											

For a more detailed explanation about how to use the screen selection keys (F1 ~ F10), please refer to the *Screen Selection Keys* section of this manual.

1.3 Overview Screen



(1) The machine’s operation mode.

(2) The machine movement state.

(3) Machine movement’s pressure and speed.

(4) Current status display.Display the position of the injection, clamp ,nozzle and ejector.

(5) Alarm display, promoting message about input of character, numerical or decimal point and explanation of upper/lower limit.

(6) Display the screen's title & Mold name.

(7) The motor icon will appear here if the motor is turned on.

(8) User privilege and name.

(9) Machine movement’s pressure, speed and back pressure.

(10) Total amount of opening mold, total time of one cycle and the current movement time.

(11) Current barrel temperature and heating condition.

(12) Oil Temperature, show 0 without using.

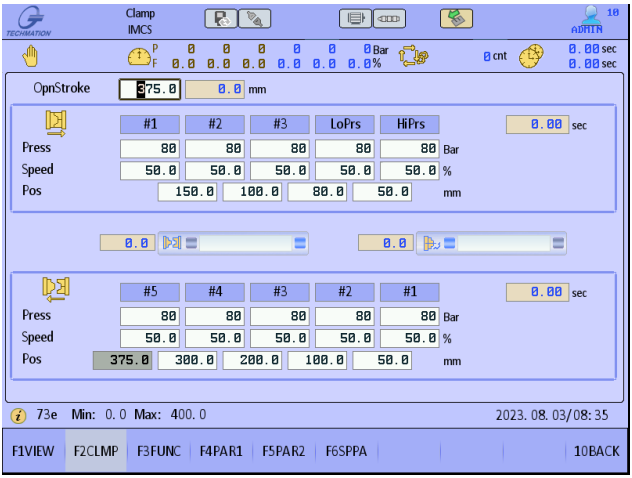
(13) Date and time.

1.4 Clamp Settings

Include F2 CLMP, F3 FUNC, F4 PAR1, F5 PAR2 and F6 SPPA

1.4.1 Mold Open/Close Setting

Path - **Main screen → F2 CLMP → F2 CLMP**

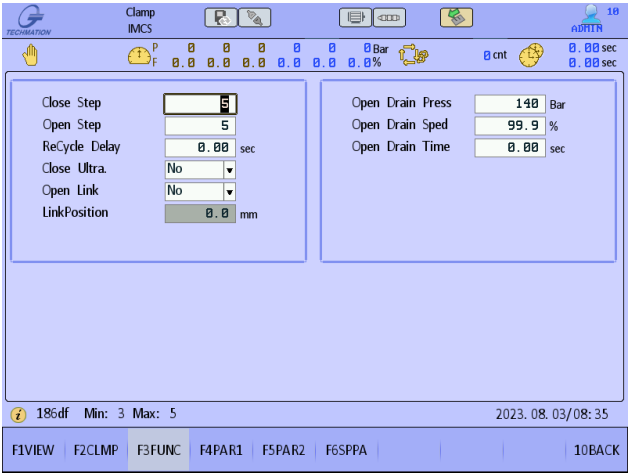


Mold Opening Stroke: The maximum stroke of mold opening.

Mold Opening and Closing Settings: *Mold Opening* and *Mold Closing* are divided into 5 stages respectively. The pressure and speed can be adjusted separately and will be transformed according to the setting positions of opening/closing mold.

1.4.2 Clamp Function Setting

Path - **Main screen → F2 CLMP → F3 FUNC**



Close Step: Be used to set closing mold's rank number.

Open Step: Be used to set opening mold's rank number.

Recycle Delay: The delay time before the next cycle starts. It is used usually as the waiting time for robot picking up.

Close Ultra(Differential Close Mold): If the machine is equipped with the ultra valve, choosing this function will lead to closing mold fast.

Open Link: You can choose ejector or core by your preference. Link position is needed when you choose Use. When opening mold reaches the pre-set link position, the continuous movement will be activated.

Linkage position: The point where the linked action starts.

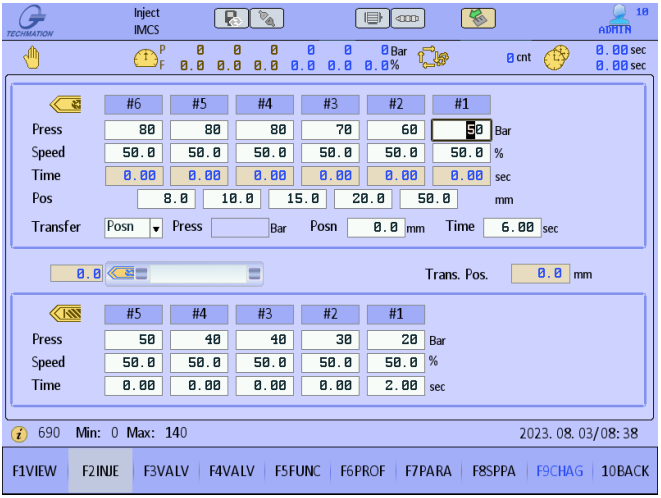
Open Drain Time: Time setting value of pressure relief before mold opening.

1.5 Injection Settings

Including F2 INJE, F3 VALV, F4 VALV, F5 FUNC, F6 PROF and F7 PARA

1.5.1 Injection Settings

Path - **Main screen → F3 INJE → F2 INJE**



Injection and Hold Pressure: Injection is divided into 6 stages. Each stage has its own pressure and speed, the transition of pressure & speed between each stage is executed according to the position, which is suitable for all kinds of complicated and high precision mold.

Hold pressure is divided into 5 stages.Each stage has its own pressure and speed, transition between each stage is done according to the time and switch the pressure and speed.

Transform Mode: Transform to hold pressure after injection is mainly controlled by 3 modes: position, time and pressure.

■ **Position mode** is chose, transform to hold pressure when the transfer position or time is reached.

■ **Time mode** is chose, transform to hold pressure when the transfer time is reached;

■ **Pressure mode** is chose, transform to hold pressure when either the transfer pressure and position are both reached or the transfer time is reached.

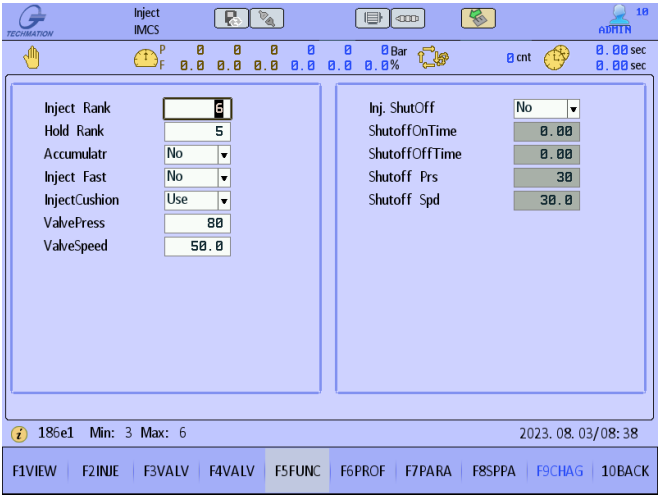
Transfer Pressure: When the transformation mode is pressure, this setup is available.

Transfer Time: When selecting the position to switch to holding pressure, this setting is used as time protection, that is, when any time or position is reached, the setting will be changed to holding pressure; when the time is selected to switch to holding pressure, this setting is used as injection time.

Transfer Position: When the hold pressure transform is controlled by position, when the screw reaches the pre-set transfer position, it will transform to hold pressure. If the position isn't reached, the transform will happen when the transfer time is reached. Therefore, the time's setting value will normally be longer than the actual injection time.

1.5.2 Injection Function Setting

Path - **Main screen → F3 INJE → F5 FUNC**



Inject Rank: It's set for injection's stage number, if need 3 ranks please input 3.

Hold Rank: It's set for hold pressure's stage number, if need 3 ranks please input 3.

Accumular: Cooperate with accumulator to achieve high-speed injection effect.

Injection Fast: You can use this function, adding a direction valve more will lead to

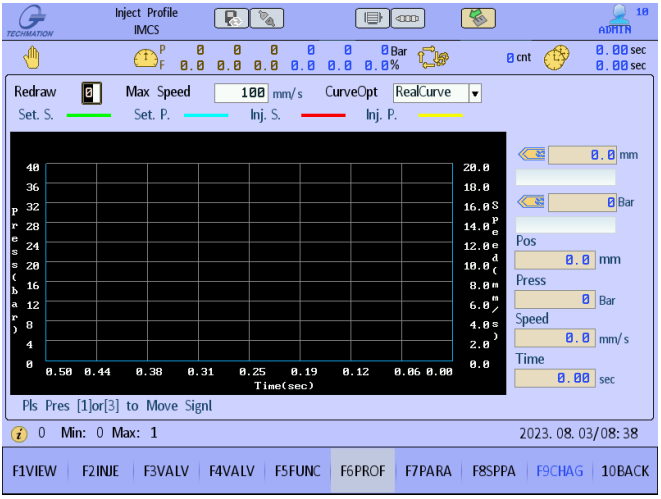
fast injection.

Injection Cushion: You can use it for accurate production deviation.

Injection Shut Off: Usage is available when the machine is equipped with the closed shut off.

1.5.3 Injection Profile Setting

Path - **Main screen → F3 INJE → F6 PROF**



Injection Curve – Indicate the pressure & speed graphs of injection/hold setting values and the actual values in injection/hold pressure cycle.

Setting Speed: This green line refers to the setting speed of the injection/hold pressure.

Setting Pressure: This blue line refers to the setting pressure of the injection/hold pressure.

Injection Speed: This red line refers to the actual speed of the injection/hold pressure cycle.

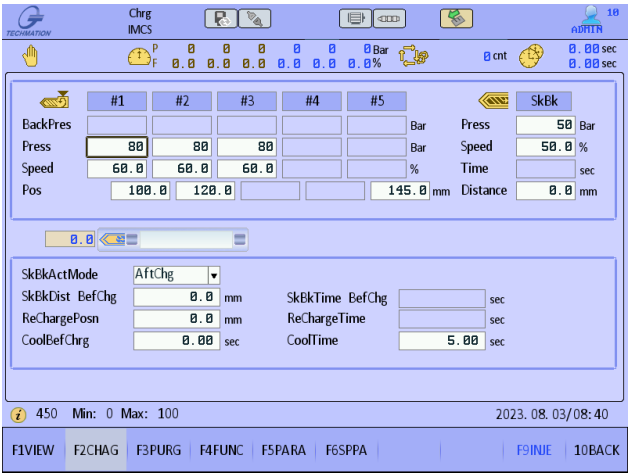
Injection Pressure: This yellow line refers to the actual pressure of the injection/hold pressure cycle.

1.6 Charge and Suck-back Settings

Including F2 CHRG, F3 PURG, F4 FUNC, F5 PARA and F6 SPPA

1.6.1 Charge and Suck-back Setting

Path - **Main screen → F4 CHAG → F2 CHAG**



Charge Setting: Charging process, a total of 5 stages of pressure and speed control, is free to set the necessary pressure, speed and position of each stage.

Suck-back Setting: Suck-back setting includes pressure and speed, and its control mode is divided into position and time. If *position control mode* is used, just need input the suck-back distance. If *time control* mode is used, just need input the suck-back time. The choice of time or distance depends on the control mode you choose. If you don't need suck-back, please set the time/distance to 0.

Suck-back Activation Mode (SkBkActMode): You can choose suck-back after charge or suck-back after cooling according to the actual demand.

Suck-back Before Charge (SkBkDist BefChg): Activate suck-back before charge starts.

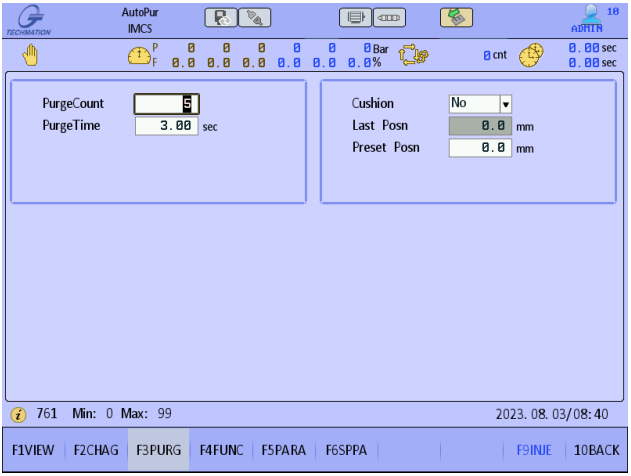
Recharge Function (Charge Again): Doing charge movement before injection. You need input the position or time according to the control mode you choose.

Cool Before Charge(CoolBefChrg): The time can also be used as the cooling function before charge is activated.

Cool Time: After injection ends, cooling time will begin counting.

1.6.2 Auto Purge Setting

Path - **Main screen → F4 CHAG → F3 PURG**



Automatic Purge: In manual mode, if the operator is willing to clean up the residual material in the barrel, you can press *Auto Purge key* on the panel, automatic purge will be executed according to the pre-set count and time. (The prerequisite is the frequency and time should not be 0)

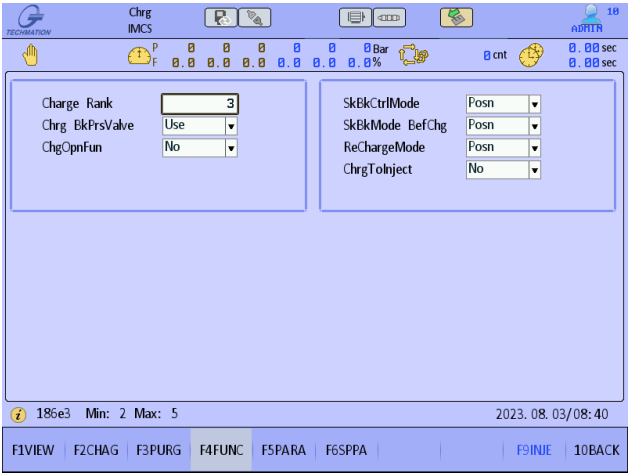
PurgeCount: Set the cleaning frequency according to the actual demand, the maximum is 99.

Cushion Function: When the machine is running normally, if the end position of the screw arbor after the product is taking shape is too big(current position), the operator wants to modify this value, a modification of charge, injection and the related data is needed as usual. However this function is able to simplify the operation by inserting the desired injection end position in "*Preset Position*" field and choose "Use" at the *Cushion* field, then the charge & injection positions will be modified automatically.

PurgeTime: Set the cleaning time according to the actual demand.

1.6.3 Charge Function Setting

Path - **Main screen → F4 CHAG → F4 FUNC**



Charge Rank: It's used to set charge's stage number.

Charge BackPrs Valve: If this function is used, open the back pressure valve at charge 1 stage and close the valve when charge ends.

SuckBack Control Mode: You can choose *Position* or *Time*. Input the *distance* or *time* correspondingly according to the mode you select.

SuckBack Before Charge Mode: Activate suck-back before charge, you can choose *Position* or *Time* control.

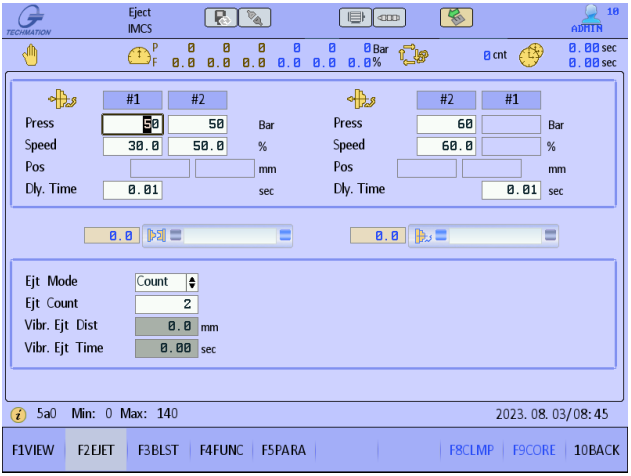
Charge Again Mode(ReChargeMode): Doing charge before injection, you can choose *Position* or *Time* control.

1.7 Ejection Settings

Including F2 EJET, F3 BLST, F4 FUNC and F5 PARA

1.7.1 Ejection Setting

Path - **Main screen → F5 EJET → F2 EJET**



Ejection Setting: The initial ejector advance movement is divided into 2 stages of pressure, speed and position. In case of waiting for the robot falling after opening mold ends, you can set the delay time before ejector advance to cooperate with the robot. The delay time before ejector retraction indicates that the ejector will delay the pre-set time first at the ejector forward end before ejector retracts.

There are 3 options for the ejection mode:

■ **Hold:** It indicates ejection hold. The system will be limited to semi-automatic mode by force when using this mode and pressing full-auto key is ineffective at this moment. The thimble will stop after push-out to wait for the product taken out. Ejector retraction will be activated after closing the power door. Mold closing will be executed after the ejector retraction is finished.

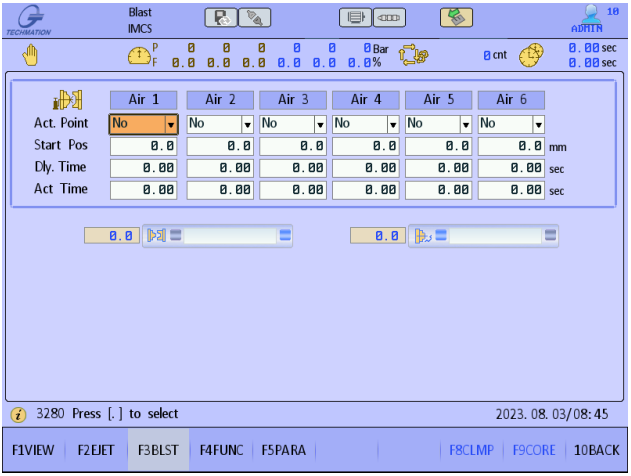
■ **Count:** It is the normal count mode, namely ejection is executed according to the preset count.

■ **Vibration:** It is the ejection vibration, the thimble will eject back and forth fast in a short time at the forward end position according to the setting count, which will cause a vibration phenomenon and make the product drop.

Ejection Count: The frequency of the ejection forward/backward needed. ("0" means ejection is invalid).

1.7.2 Air Blast Setting

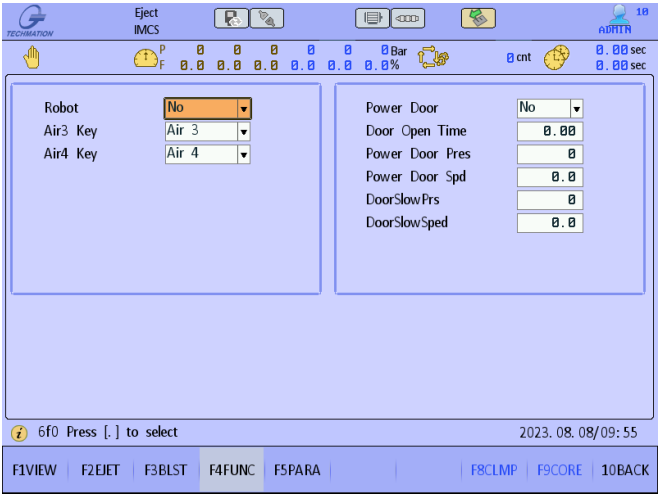
Path - **Main screen → F5 EJET → F3 BLST**



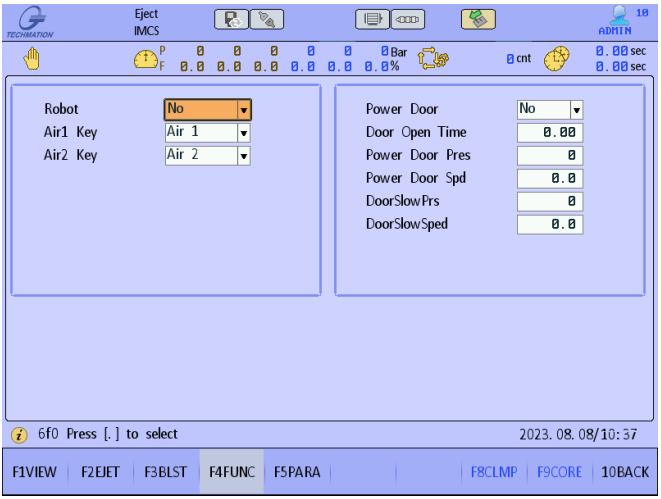
Air blast movement: This machine is equipped with 6 groups of air separately. The activation point of blasting is controlled by position and blowing lasts for the pre-set activation time. If the ejection is done, mold closing will only be activated after blasting is completed.

1.7.3 Ejection Function Setting

Path - **Main screen → F5 EJET → F4 FUNC**



Q8A Integrated Type



Q12A Integrated Type

Robot: In order to cooperate with the automatic production of the product line, the robot is used to replace the workers to extract the final products. After the opening mold ends, the robot will automatically extract the products. Besides, in order to protect the mold platen and robot, our company's computer will confirm whether the robot has returned to its ready position before closing mold starts. Only when it is in place, closing mold can be activated.

Power Door: If there is an installment of pneumatic or oil pressure power door, this function should be set "Use". Otherwise the power door key on the operation panel will be invalid.

Air Key: Options for manual air blow keys.(According to the contents of the image)

1.8 Core Settings

Including F2 COR1, F3 COR2, F4 COR3, F5 FUNC and F6 PARA

1.8.1 Core1/Core2/Core3 Settings

Path - **Main screen → F6 CORE → F2 COR1**

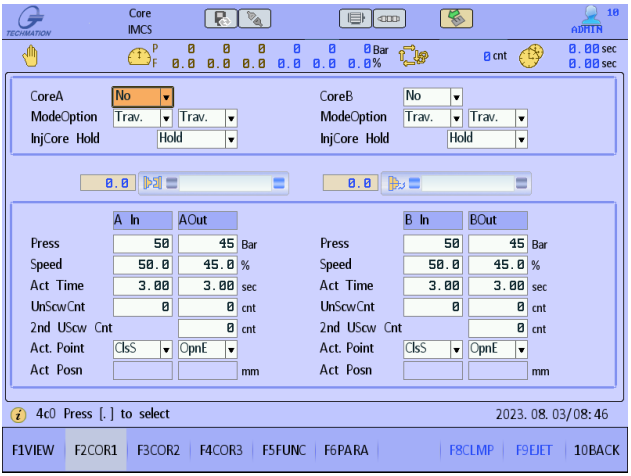


Diagram and function of COR2, COR3 and COR1 are similar.

Core means core in and core out movement. It also means the core should be inserted into the mold waiting for injection with the help of hydraulic cylinder in the closing mold stroke. While in the opening mold stroke, the core is retracted out and returns to its original form. This function basically is used for a cannular mold platen. In *Auto mode*, injection and core move forward at the same time to prevent the core from being contracted when injection occurs. Therefore core and screw are not allowed to be used simultaneously.

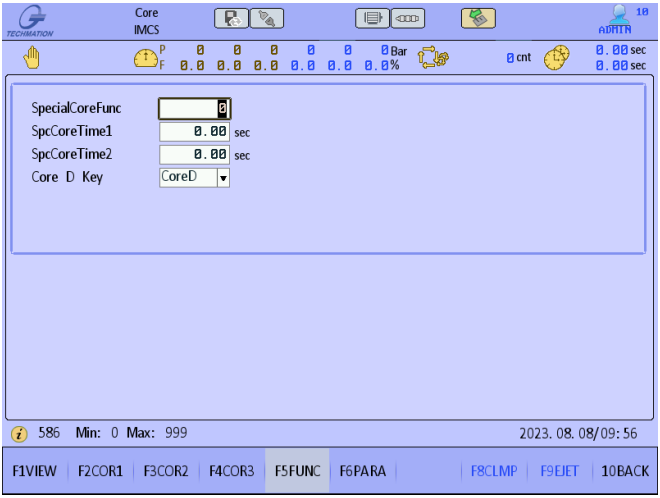
Function: Selecting *core mode*, it is the normal core in/out movement. Selecting *screw mode*, it means the products need to be manufactured with grains, to be used as position fixing control of revolution in coordination with the oil pressure motor.(When using the functions above, please check whether the machine is equipped with the relevant oil passage switch, because this function is non-standard.)

Core Setting: The computer can provide at most 6 groups of core control which is depended on the motor oil passage equipment. The pressure, speed, activation time and activation position for each core can be set separately according to your requirements.

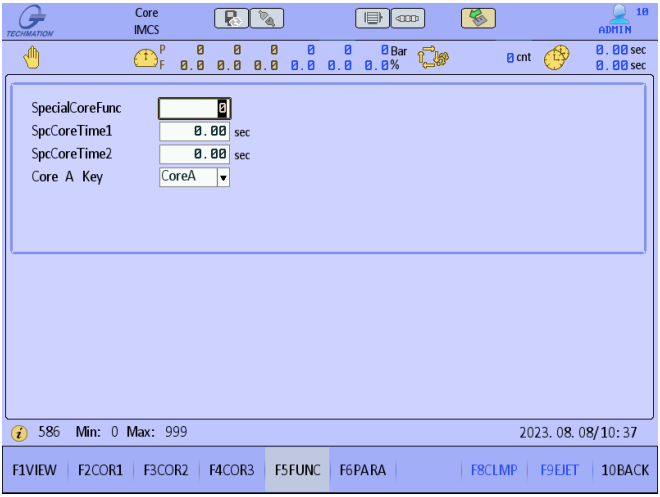
Control Mode Option: If *core mode* is selected, you can choose *travel control* or *time control*; if *screw mode* is selected, you can choose *count control* or *time control*.

1.8.2 Core Function Setting

Path - **Main screen → F6 CORE → F5 FUNC**



Q8A Integrated Type



Q12A Integrated Type

Special Core Function: Non-standard core movement made according to custom demands. Here is the code to activate special core function. (Standard: Cores move in during closing mold, while cores move out during opening mold.)

Special Core Time: The special core's activation time.

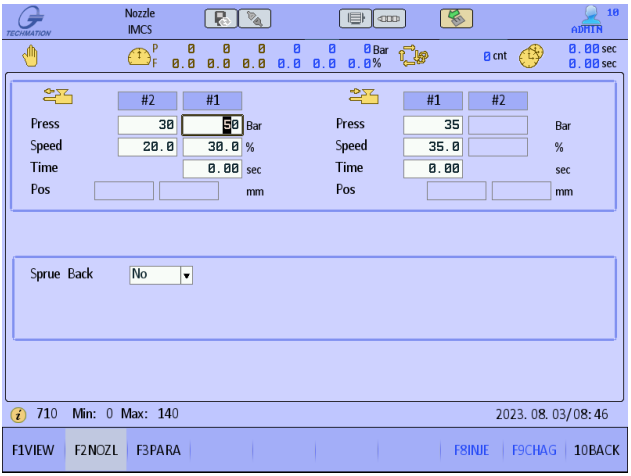
Core Key: Core key's multiplexing function on the panel.(According to the contents of the image)

1.9 Nozzle Settings

Including F2 NOZL and F3 PARA

1.9.1 Nozzle Setting

Path - **Main screen → F7 NOZL → F2 NOZL**



Sprue Back Mode(Nozzle Back Mode)：Use this  **key to select the nozzle back mode.**

■ **After Charge:** Nozzle retracts after the charge ends.

■ **Before Mold Open:** Nozzle retracts before mold opening starts.(means the cool time has reached)

■ **After Injection:** Nozzle retracts after the injection ends.

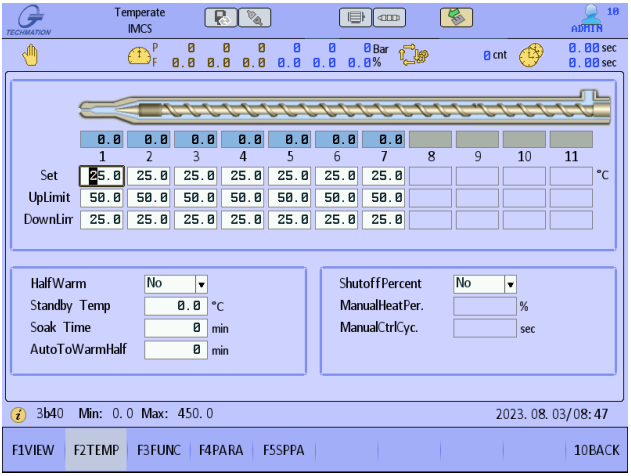
■ **No:** means the nozzle doesn't move.

1.10 Temperature Settings

Including F2 TEMP, F3 FUNC, F4 PARA and F5 PID

1.10.1 Temperature Setting

Path - **Main screen → F8 TEMP → F2 TEMP**



Maximum temperature preset value is 450℃.

Half Warm Function: Use  to select "No" or "Use". When this function is selected usage, the actual temperature will only increase to the preset standby temperature.

Standby Temperature: When use the half warm function, set the required holding temperature.

Soak Time: The time counting is activated when power-on. Injection, charging and suck-back movement will only activate after the timing ends.

Shut Off Percent Function: If *Shut Off Percent* function is set to Use, during the manual temperature control cycle, shut off's heating time = Cycle time * Heat percent

The explanation of electric heat diagram's color:

■ **Green:** The real temperature is in the range of upper/lower limit.

■ **Yellow:** Indicates heating state.

■ **Red:** The real temperature is out the range of the pre-set temperature and exceeds the alarm's upper limit

※ Note: If the actual temperature exceeds the upper/lower limit, the screen will display "temperature deviations" message, which is good to reduce the heating time of next cycle.

When the temperature meets some special error, the screen will show "970" , "988", "990":

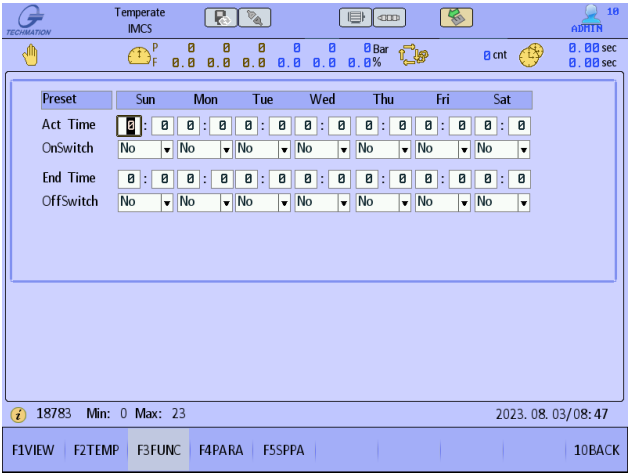
■ 970 indicates that the temperature board isn't connected or damaged.

■ 988 indicates that something is wrong with the thermocouple wire or the temperature sensor.

■ 990 indicates that temperature exceeds the normal range or something is wrong with the thermocouple wire.

1.10.2 Temperature Function Settings

Path - **Main screen → F8 TEMP → F3 FUNC**



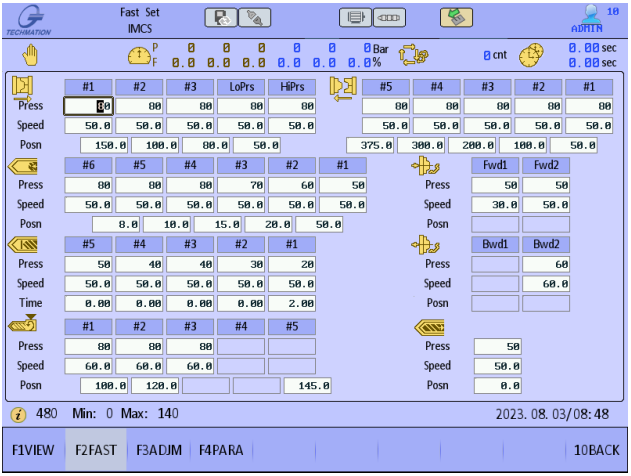
Heating On Time: If you are willing to activate heating on time, please set up the heating time and select "Use" according to the date. When it reaches the pre-set time, the computer will switch on the heater automatically.

1.11 Fast Settings

Including F2 FAST, F3 ADJM and F4 PARA

1.11.1 Fast Setting

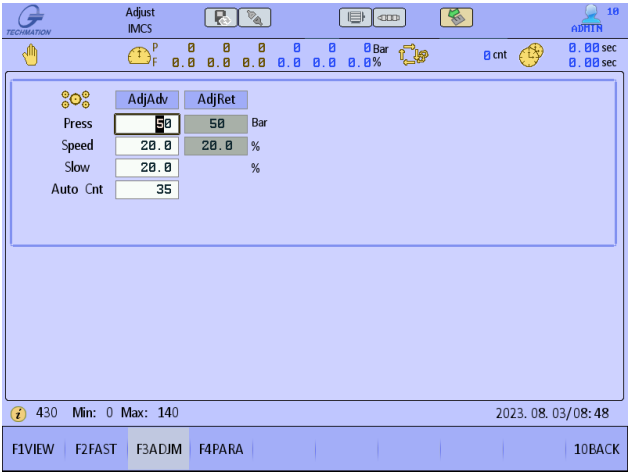
Path - **Main screen → F9 FAST → F2 FAST**



You can set mold closing/opening, eject, inject, hold pressure, charge and suck-back fast in this page.

1.11.2 Mold Adjustment Setting

Path - **Main screen → F9 FAST → F3 ADJM**

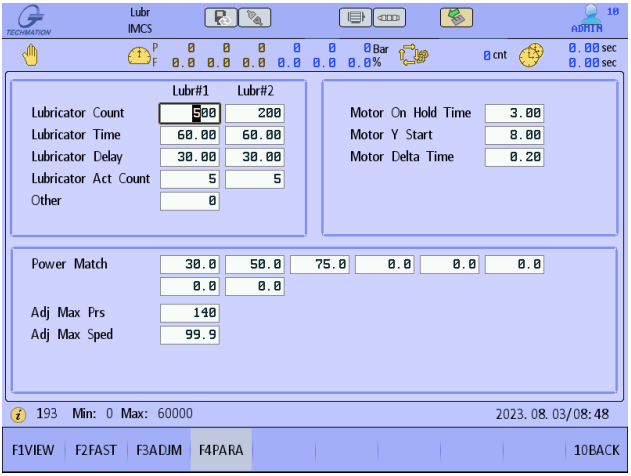


Mold adjustment setting: The low speed of mold adjustment is used as the initial speed of adjustment advance and retraction. Once the adjustmold platen starts

counting, it will turn to high speed. The computer will automatically count, and setting is not necessary.

1.11.3 Fast Parameters Setting

Path - **Main screen → F9 FAST → F4 PARA**



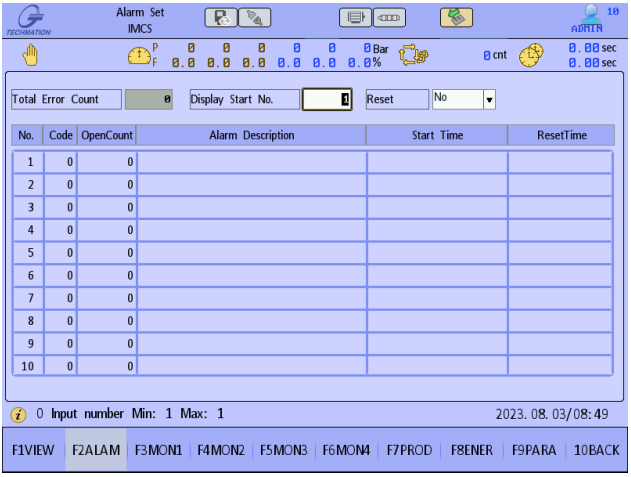
This picture contains all relevant parameters of Lubricator, Motor and Power Match Settings

1.12Monitor Settings

Including F2 ALAM, F3 MON1, F4 MON2, F5 MON3, F6 MON4, F7 PROD, F8 ENER and F9 PARA

1.12.1 Alarm Display

Path - **Main screen → F10 NEXT → F2 PM → F2 ALAM**



Total Error Count: The total number of errors recorded.

Display Start No: The screen displays 10 error messages at a time. If you want to refer to the previous errors, you can input its serial number here, the screen will show it as the first item. What's more, the data will be saved even if the power is off.

Reset: Set this function to "Use", if you want to clear all error records.

No. : Indicates the display serial number, which increases from 1 to 200.

Code: Error code to identify the type of error.

Open No.: The order number of opening mold when the error occurs.

Alarm Description: Simple and understood explanation of the error to help you seek reason.

Start Time: The time when the error occurred.

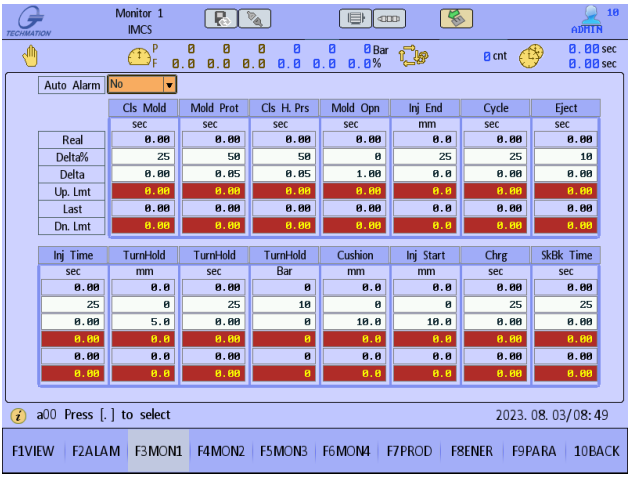
Reset Time: The time when the error is eliminated.

1.12.2 Monitor Setting

Including F2 MON1, F3 MON2, F4 MON3 and F5 MON4

1.12.2.1 Monitor1 Screen

Path - **Main screen → F10 NEXT → F2 PM → F3 MONI → F2 MON1**



The computer provides you with the automatic monitoring and alarm system, which allows you to set the desired upper and lower limits for each movement parameter. Once the actual parameter exceeds the pre-set upper/lower limit, the machine will stop and the alarm will sound. At the same time, the alarm screen will record the time and the mode of the alarm.

Machine Starts Running: When the machine starts running, until the production cycle count equals the pre-set *Auto Alarm Activation Count* in auto mode, and the automatic monitoring automatically changes to use, start monitoring.

Auto Alarm Activation Count: when setting *Auto Alarm Activation Count*, If it is equal to 0, it will not be monitored. Set the *Auto Alarm Activation Count*in the parameters.

You can combine the actual production parameter in coordination with delta % and the delta value to build the upper/lower limit. If you use % and delta value to get the upper/lower limit, please calculate according to the formula below:

Upper Limit	**Explanation**
RV+ (RV*X/100) + Y	RV=Reference Value
Lower Limit	X= Delta % (e.g. 10 for 10%)
RV- (RV*X/100) -Y	Y= Delta Value

When the machine is turned off, the reference values will be lost. When you restart the machine, the upper/lower limits will be re-established by using the previous mold's parameters as the new references after auto alarm function is activated again.

If you want to replace the original reference values with the current movement parameters, you can set the *Auto Alarm* mode to "Resample". The computer will use the parameters of the last mold as the new reference values.

When the auto alarm system display "Use": auto alarm is open;

Display "No": auto alarm is closed;

Explanation of the monitoring value:

■ **Cls.Mold(Close Mold):** Total time of mold closing stroke.

■ **ClsLowPrs (Close Low Pressure):** Total time of mold closing low pressure stage.

■ **Cls HiPrs(Close High Pressure):** Total time of mold closing high pressure stage.

■ **Opn.Mold(Open Mold):** Total time of mold opening stroke.

■ **Inj.End(Injection End):** The ending position of injection and hold pressure.

■ **Cycle:** Total time of the production cycle in *Auto Mode*.

■ **Eject:** Total time of ejection stroke.

■ **Inj.Time(Injection Time):** Total time of injection stroke.

■ **Turn Hold:** The transition position from injection to hold pressure.

■ **Turn Hold:** The transition time from injection to hold pressure.

■ **Turn Hold:** The transition pressure from injection to hold pressure.

■ **Cushion:** The minimum position of injection process (If overswing and then back,

it's the position of overswing.).

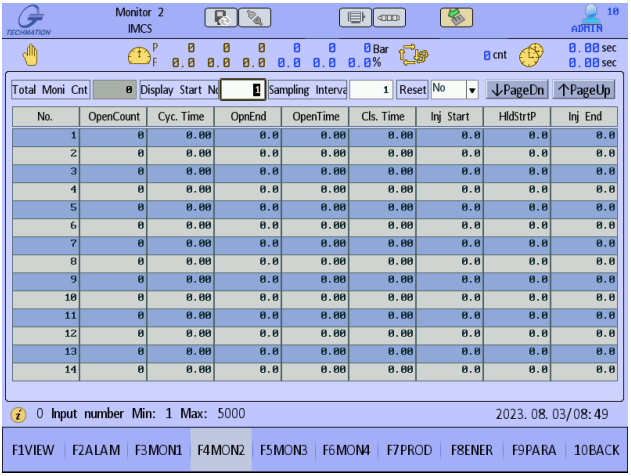
■ **Inj.Start(Injection Start):** The starting position of injection.

■ **Charge:** Total time of charge stroke.

■ **SkBk Time(Suckback Time):** Total time of suck-back stroke.

1.12.2.2 Monitor2/3/4 Setting

Path - **Main screen → F10 NEXT → F2 PM → F4 MON2 /F5 MON3 / F6 MON4**



MON2&3&4 screen will record the important production parameters and their variances in production cycles. To improve production quality, you can adjust the relevant setting valves by comparing different cycles' parameters.

Display Start No.: Input the initial serial number of the mold which you want to seek and the corresponding parameters monitor system records will display as the first one at the top of the screen.

Sampling Interval: Input the sampling interval you desire.

Reset: If you want to clear the data recorded in MON2&3&4 screens, please select "Use".

Open Count: The corresponding product's opening serial number whose parameters are recorded in this row.

Cyc. Time(Cycle Time): Total time of the production cycle.

Open End: The ending position of mold opening.

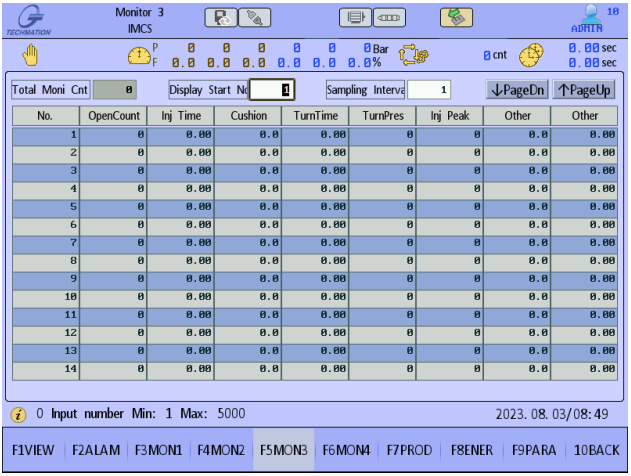
OpenTime: Total time of opening mold stroke.

Cls. Time(Close Time): Total time of closing mold stroke.

Inj. Start (Injection Start): The position where injection starts.

HldStrtP(Hold Pressure Start): The position where hold pressure starts.

Inj.End(Injection End): The position where injection and hold pressure end.



MON3 screen will record the important production parameters and their variances in production cycles. To improve production quality, you can adjust the relevant setting valves by comparing different cycles' parameters.

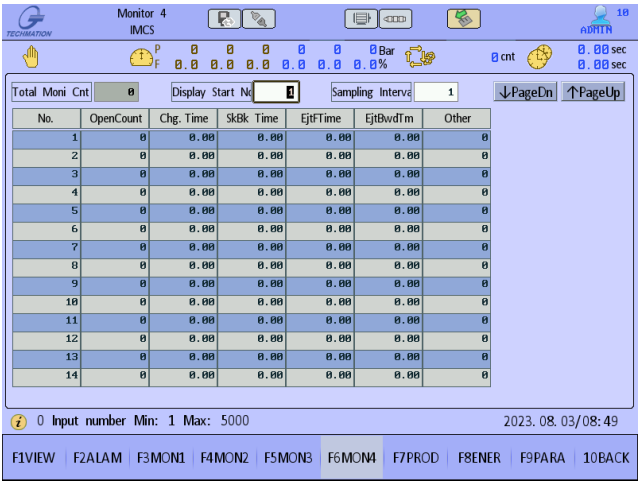
Inj.Time(Injection Time): Total time of injection stroke.

Cushion: The minimum position of injection process.(If overswing and then back, it's the position of overswing.)

TurnTime: The transition time from injection to hold pressure.

TurnPress: The transition pressure from injection to hold pressure.

Inj. Peak: Maximum injection pressure.



MON4 screen will record the important production parameters and their variances in production cycles. To improve production quality, you can adjust the relevant setting valves by comparing different cycles' parameters.

Total Count: The corresponding product's serial number whose parameters are recorded in this row.

Display Start No.: Input the initial serial number of the mold which you want to seek and the corresponding parameters monitor system records will display as the first one at the top of the screen.

Sampling Interval: Input the sampling interval you desire.

Open Count: The corresponding product's opening serial number whose parameters are recorded in this row.

Chg.Time(Charge Time): Total time of charge stroke.

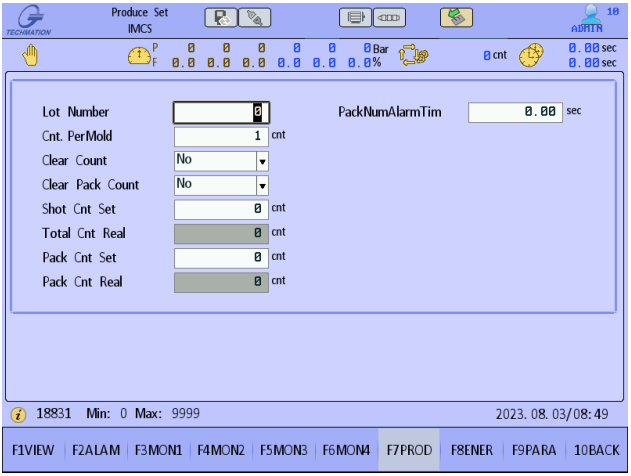
SkBkTime(Suckback Time): Total time of suck-back stroke.

EjtFTime(Ejector Forward Time): Total time of the ejector forward movement.

EjtBwdTm(Ejector Backward Time): Total time of the ejector backward movement.

1.12.3 Production Setting

Path - **Main screen → F10 NEXT → F2 PM → F7 PROD**



Count Per Mold: The product amount of one mold producing.

Clear Count: If you choose "Use", "Total Count Real" and "Total Pack Real" will be cleared to 0.

Clear Pack Count: If you choose "Use", only "Total Pack Count" is cleared to 0.

Shot Count Set: Set the desired production quantity. When the total count of opening mold has reached this value, the computer will alarm "Shot Count Reached" and the machine will stop. Unless the opening mold count is cleared to 0, the machine can't continue running.

Total Count Real: Means the actual total count of production at present.

Pack Count Set: Set the desired package quantity. When the total count of package has reached this value, the alarm will sound and error "Pack Shots Reached" will be shown on the display screen to inform the customer. The machine will not stop, but continue the next movement.

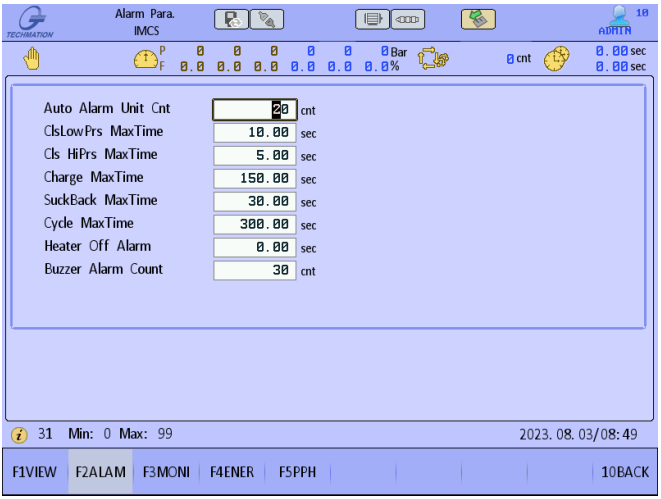
Pack Count Real: Means the actual package count at present. If the pre-set value and the current value is the same, the current value will be cleared to 0.

1.12.4 Parameters Setting

Including F2 ALAM, F3 MONI, F4 ENER and F5 PPH.

1.12.4.1 Alarm Parameters Setting

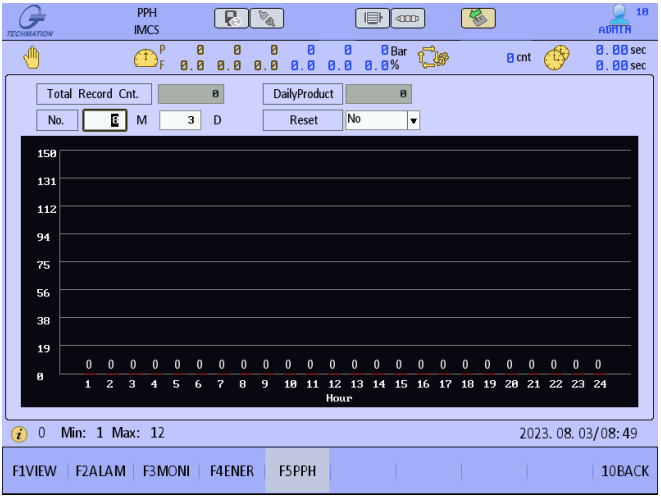
Path - **Main screen → F10 NEXT → F2 PM → F9 PARA→ F2 ALAM**



This screen displays the production amount of daily per hour.

1.12.4.2 PPH Screen

Path - **Main screen → F10 NEXT → F2 PM → F9 PARA → F5 PPH**



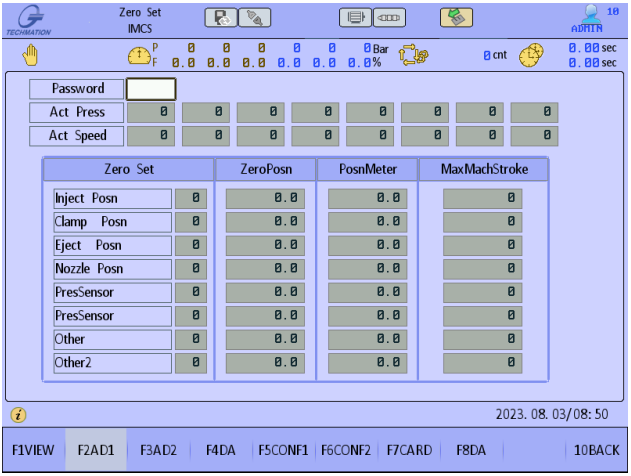
This screen displays the production amount of daily per hour.

1.13 Reversion Setting

Including F2 AD1, F3 AD2, F4 DA, F5 CONF1, F6 CONF2, F7 CARD and F8 DA

1.13.1 Zero Point Setting

Path - **Main screen → F10 NEXT → F3 REVS → F2 AD1**



Because the position ruler is replaced or some machinery parts are modified, you need correct the zero position:

1. Please input the password.

2. Please move the cursor to the desired part according to the requirement.

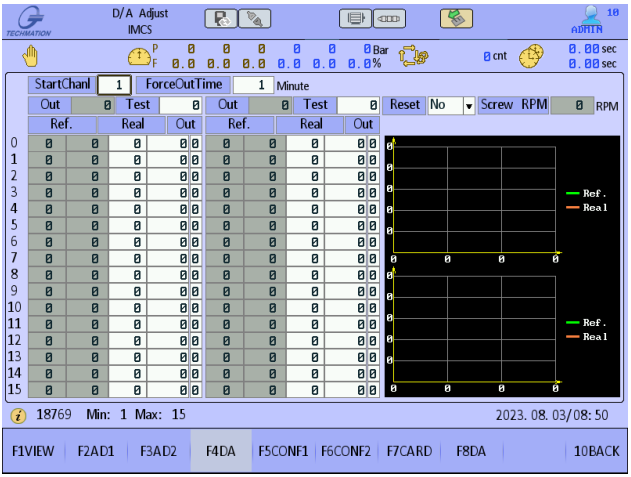
3. Please set the value to 1, then press “Enter” key on the panel to complete the zero movement.

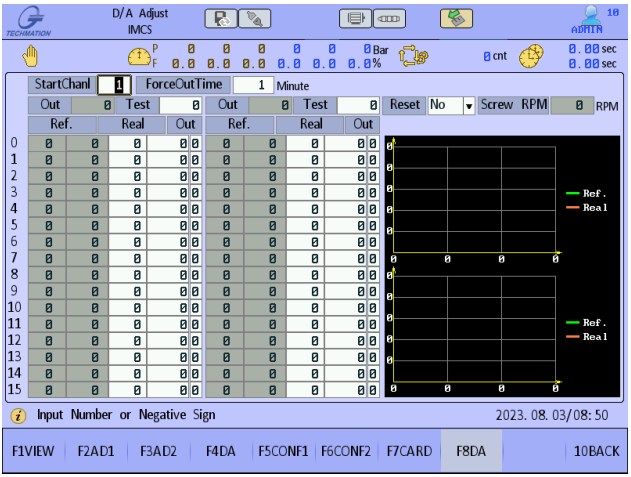
1.13.2 DA Setting

This system adopts the adjustable step and output at the same time to adjust DA output curve. Not only it can adjust the PQ curve visually, it also can support the fast adjustment, micro adjustment, free selection for adjustment point and other functions;

DA adjustment screen consists of two groups of DA channels with expanded form as shown below:

Path - **Main screen → F10 NEXT → F3 REVS → F3 DA**





Output Time: When DA is correcting the output test, the corresponding channel's continues output starts timing. When the timing reaches the limit value, the output will automatically be cut off.

Test: When correcting, input the desired pressure or flow.

Output: The corresponding value of the DSP feedback.

Reference value: Preset value of DA curve set by the system.

Real value: Correction value after adjusting DA curve according to the actual demand.

Example of the operation:(DA)

Select the node from 0 to 140 for testing, such as 60. Input 60 in the testing field, the system will immediately respond and output the feedback value of 60. Then, by

observing the system pressure gage of the machine itself or external pressure test tools, the real pressure will be obtained, assumed to be 58. Correct 60 to 58 in the corresponding node! If the actual pressure is 58.5, in the corresponding node, 60 can be modified to 58 or 59, then adjust the corresponding binary output value to achieve the fine-tuning

If you need other adjustment ways, please contact Technical Service Department of Techmation!

1.14 I/O Channel Diagnostics

Including F2 PB1, F3 PB2, F4 PB3, F5 PC1, F6 PC2, F7 PC3, F8 A IO

and F9 DIAG

1.14.1 Input Channel Diagnostics (PB)

Path - **Main screen → F10 NEXT → F4 IO → F2 PB1/ F3 PB2 / F4 PB3**

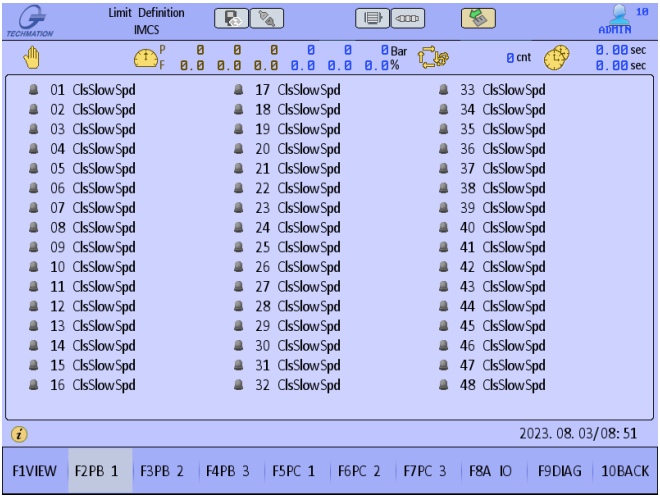


Diagram and function of PB2 ,PB3 and PB1 are similar.

If something is wrong with the input signal when the machine is running, you can check whether the controller has received the corresponding input signal through this screen

If the PB signal displays red it means normal input, while it displays gray it means the signal isn't received yet.

1.14.2 Output Channel Diagnostics (PC)

Path - **Main screen → F10 NEXT → F4 IO → F5 PC1/ F6 PC2/ F7 PC3**

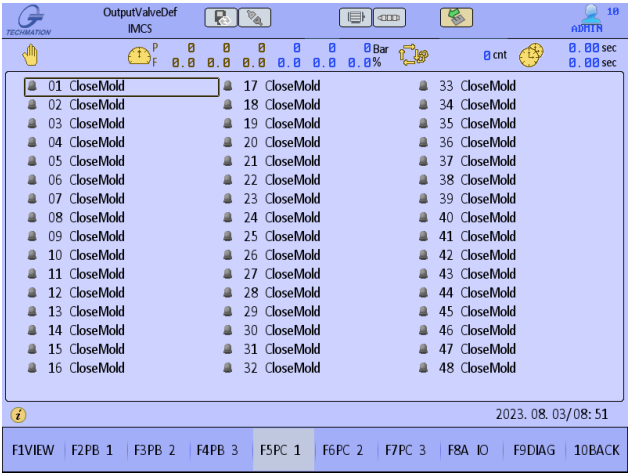


Diagram and function of PC2 ,PC3 and PC1 are similar.

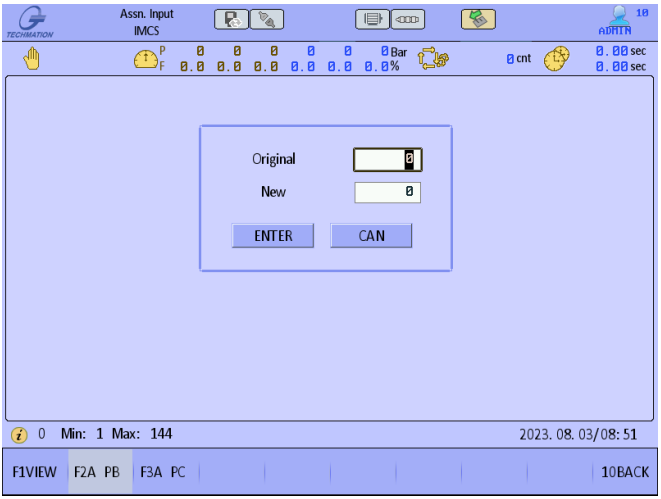
When the output valve is outputing, the signal light will display red, while not outputing, the signal light will display gray.

In manual mode with motor off, press Enter key, the signal light will display red, at the moment the valve will output by force. While press Cancel key, the signal light will display gray to cancel the forced output.

1.14.3 I/O Channel Reassignment

Setting Input PB

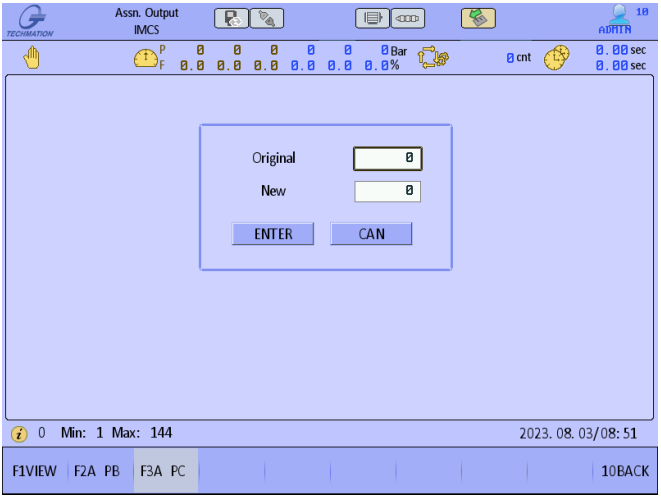
Path - **Main screen → F10 NEXT → F4 IO → F8 A IO → F2 A PB**



If you need to add some existing standard or custom PB, you can directly modify it on this screen when you are on a PC, without having to modify the program.Please consult the producer for the password.

Setting Output PC

Path - **Main screen → F10 NEXT → F4 IO → F8 A IO → F3 A PC**



If something is wrong with the PCB board, you can transfer the malfunction point to the unused output point. Please consult the producer for the password.

1.15 Mold Database Setting

Including F2 SAVE, F3 READ, F4 COPY, F5 DEL, F6 MACH, F7 RECD and F8 Event

NO.: Mold data storage's serial number.

Mold Code: Mold's name, the max length is 12 bytes.

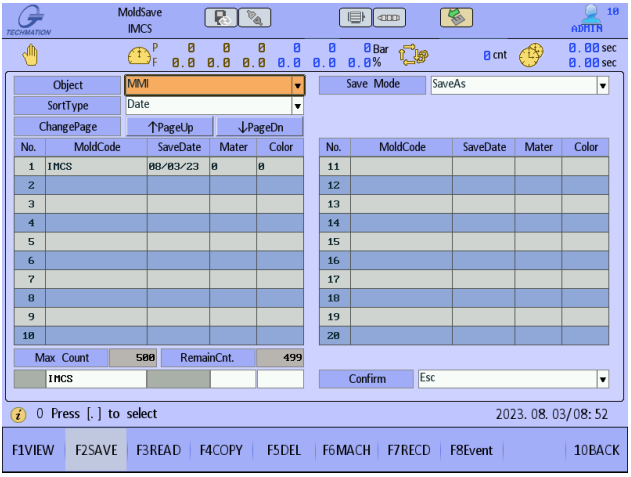
Save Date: Month/day/year

Materials: Materials information, the max length is 5 bytes.

Color: Color information, the max length is 5 bytes.

1.15.1 Mold Save

Path - **Main screen → F10 NEXT → F5 MOLD → F2 SAVE**



Object: You can use  key to select the storage target: MMI or Memory Card

Sort Type: In the existing mold list, use  key to choose to sort by date or name.

Change Page: Use  key to choose ↓ next or ↑ previous page. Press Enter key to confirm.

Save mode: Use  key to choose "Replace" or "Save as"

■ **Save As:** Save and copy the data and name from the source mold to another non-existent one. You need set "mold name"+"material"+"color" for saving.

The saving date will appear automatically.

■ **Replace:** Replace the current mold data with the correction data and save again.

Confirm: Use  key to choose ESC or OK

■ **Esc:** Cancel saving the mold data

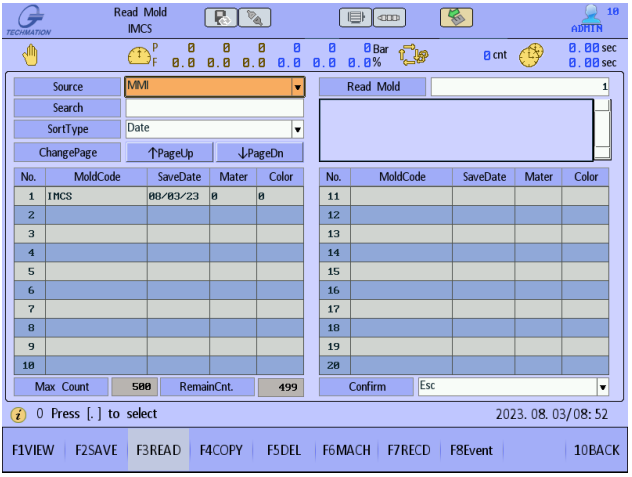
■ **OK:** Confirm saving the mold data

Max Count: The maximum amount of mold data that can be saved.

Remain Count: The residual amount of mold data that can be saved.

1.15.2 Mold Read

Path - **Main screen → F10 NEXT → F5 MOLD → F3 READ**



Source: Use  key to select reading the mold data from MMI or Memory Card.

Sort Type: In the existing mold list, use  key to choose to sort by date or name.

Change Page: Use  key to choose ↓ next or ↑ previous page. Press Enter key to confirm.

Mold Read: Input the mold's serial number you want to read, after the serial number is already set.

Confirm: Use  to choose Esc or OK.

■ **Esc:** Cancel reading the mold data

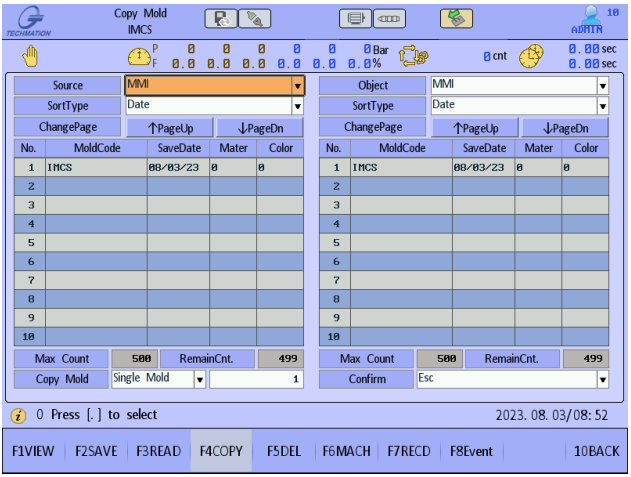
■ **OK:** Confirm reading the mold data

Max Count: The maximum amount of mold data that can be saved.

Remain Count: The residual amount of mold data that can be saved.

1.15.3 Mold Copy

Path - **Main screen → F10 NEXT → F5 MOLD → F4 COPY**



You can copy mold data from the memory card to the panel or from the panel to the memory card with this function.

Source: Use  key to select copying the mold data from MMI or Memory Card.

Object: Use  key to select saving the target: MMI or Memory Card.

Sort Type: In the existing mold list, use  key to choose to sort by date or name.

Change Page: Use  key to choose ↓ next or ↑ previous page. Press Enter key to confirm.

Copy Mold: Set the serial number of the source mold

Confirm: Use  to choose Esc or OK.

■ **Esc:** Cancel copying the mold data

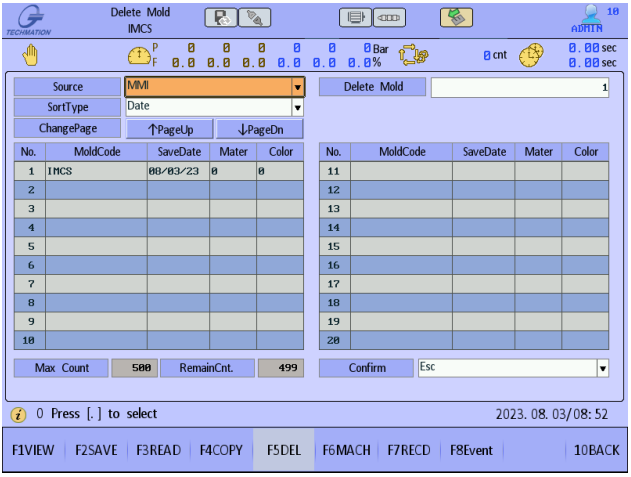
■ **OK:** Confirm copying the mold data

Max Count: The maximum amount of mold data that can be saved.

Remain Count: The residual amount of mold data that can be saved.

1.15.4 Mold Delete

Path - **Main screen → F10 NEXT → F5 MOLD → F5 DELT**



Use this screen to delete the mold data.

Source: Use  key to select deleting the mold data from MMI or Memory Card.

Sort Type: In the existing mold list, use  key to choose to sort by date or name.

Change Page: Use  key to choose ↓ next or ↑ previous page. Press Enter key to confirm.

Mold delete: Insert the serial number of the mold which you want to delete.

Confirm: Use  to choose Esc or OK.

■ **Esc:** Cancel deleting the mold data

■ **OK:** Confirm deleting the mold data

Max Count: The maximum amount of mold data that can be saved.

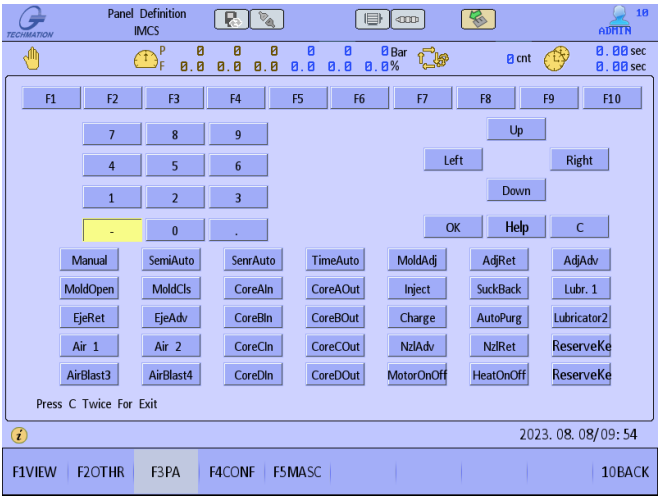
Remain Count: The residual amount of mold data that can be saved.

1.16 Other Parameters Setting

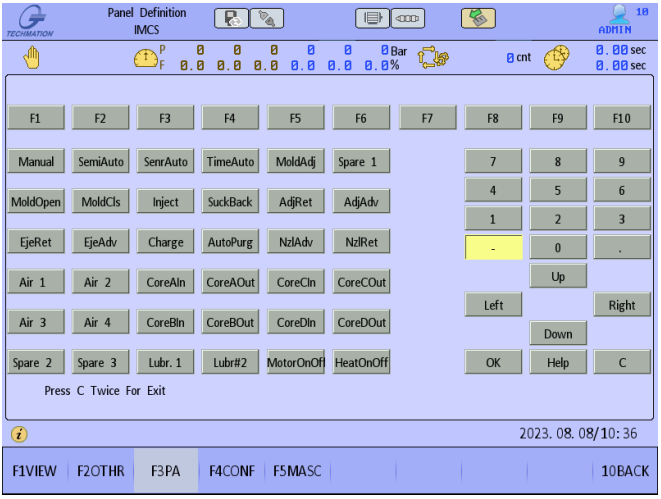
Including F2 OTHR, F3 PA, F4 CONF, F5 MASC and F6 SPPA

1.16.1 Control Panel Monitor Screen (PA)

Path - **Main screen → F10 NEXT → F6 OTHR→ F3 PA**



Q8A Integrated Type



Q12A Integrated Type

This screen is used to test all keys on the control panel, when you press any key on the panel, the key on the screen will correspondingly turn yellow. (The graph below  is the changes after  is pressed.) If the display screen hasn't changed along with the key you press, it means that the operation panel is out of work. At the

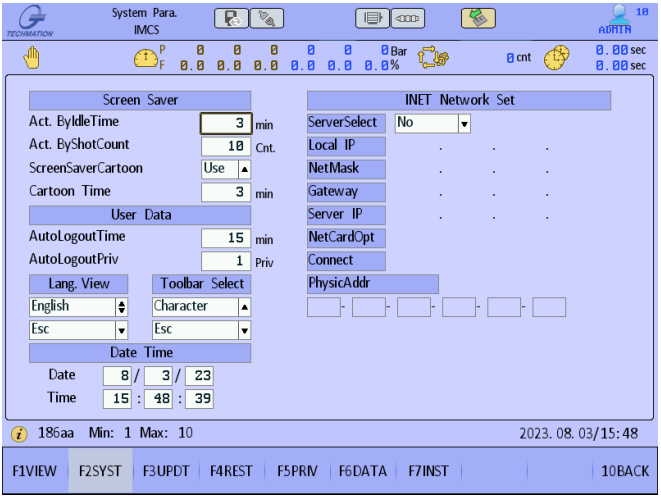
moment, please check the flat cable and the key or change the operation panel. Press *Cancel* key twice to exit from this screen.

1.17 System Settings

Including F2 SYST, F3 UPDT, F4 REST, F5 PRIV, F6 DATA and F7 INST

1.17.1 System Parameter Setting

Path - **Main screen → F10 NEXT → F7 SYST → F2 SYST**



Screen Saver: Protect LCD screen and increase its service life according to your setting data.

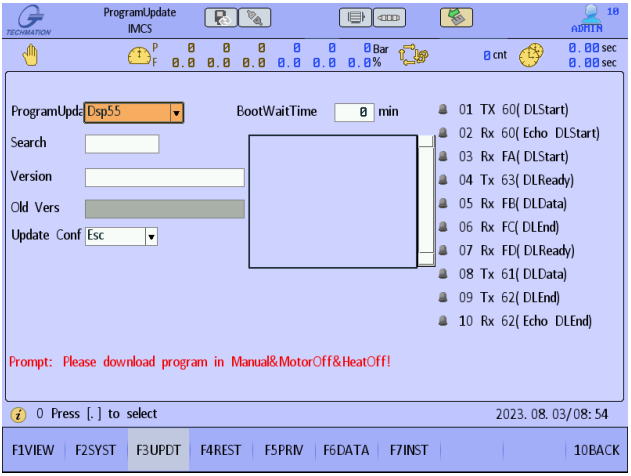
Time and Date: Set the time and date of the system.

Language View: The standard is Chinese or English, including choices of other languages.

Toolbar Selection: You can choose Character or Figure to show the toolbar by this function.

1.17.2 System Update

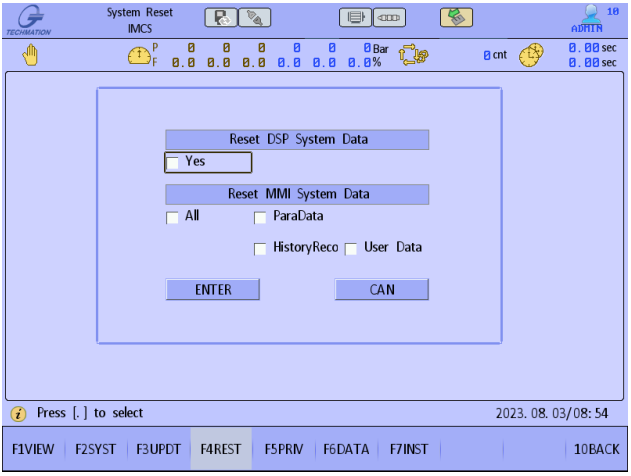
Path - **Main screen → F10 NEXT → F7 SYST → F3 UPDT**



This page is used to update DSP28, DSP55 and RMTP12.

1.17.3 System Reset

Path - **Main screen → F10 NEXT → F7 SYST → F4 REST**



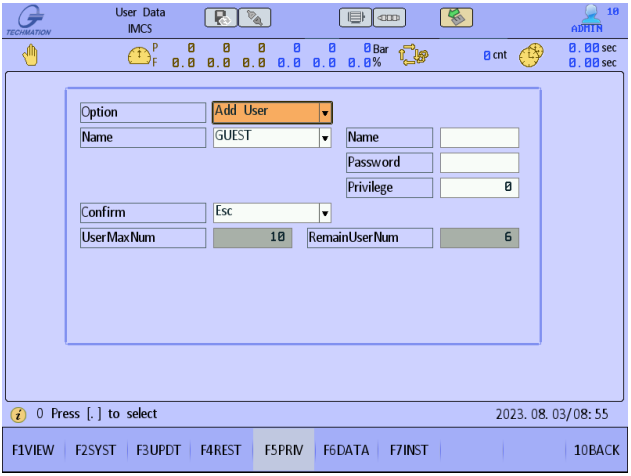
You can either reset the panel or the host computer.

Due to the abnormal movement of the machine, you can use this screen to reset the system. If "ENTER" is selected, the system will reset. In order to prevent any data loss, it is necessary to input the password before entering this screen. Please consult the supplier for password.

Warning: System reset is the last method, all mold data and parameters that you have changed will disappear after reset. After the reset is finished, please restart the system.

1.17.4 Privilege

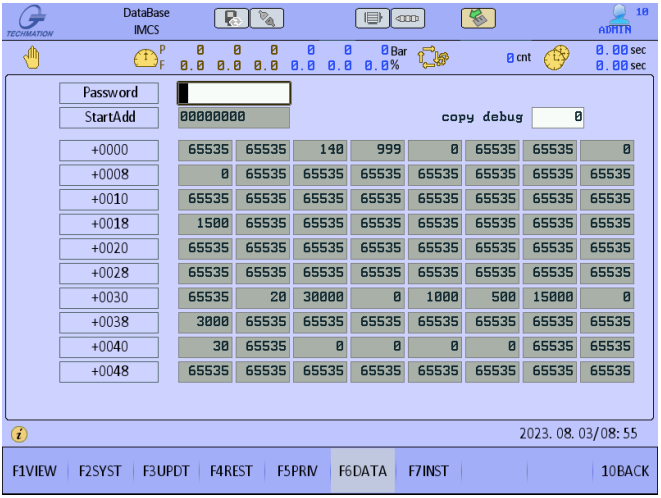
Path - **Main screen → F10 NEXT → F7 SYST → F5 PRIV**



Customer could change the original password in this page.

1.17.5 Internal Data

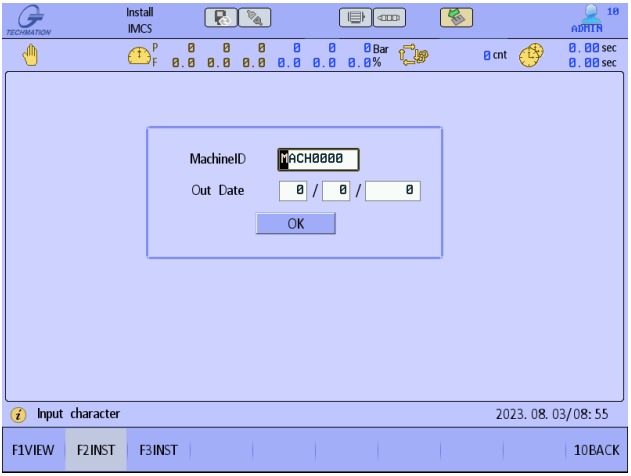
Path - **Main screen → F10 NEXT → F7 SYST → F6 DATA**



This is specialized for software engineer to modify data, please do not use.

1.17.6 Install Screen

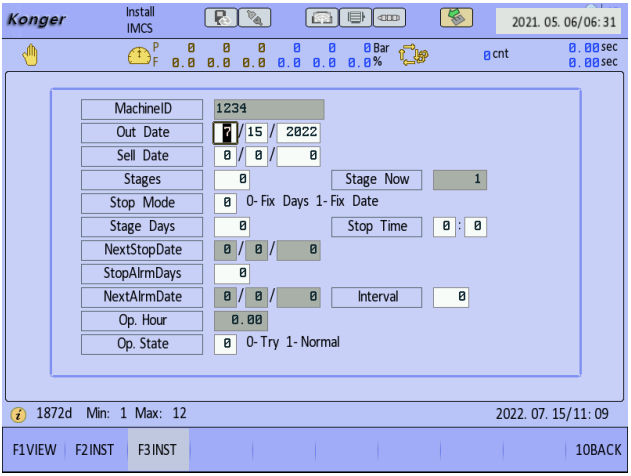
Path - **Main screen → F10 NEXT → F7 SYST → F7 INST → F2 INST**



Input data in "**Machine ID**" and "**Out Date**" field, then calculate the power-on password of F3 screen.

Path - Main screen → **F10 NEXT → F7 SYST → F7 INST → F3 INST**

Insert the password and press Enter, the contents below will be shown:



Sell Date: The date when the machine is sent to the customers, which is also the initial day when the stop function is activated.

Stages: Represent the total stages of the customer's payment, "Stage Now" represents the stages that the customer has already paid at present.

Stage Days: Represent the interval day of each payment.

Next Stop Date: Represent the date of the next payment.

Stop Alarm Days: The day number in advance to remind the customer before the stop date reached

Next Alarm Date: Be got from "Next Stop Date" minus "Stop Alarm Days".

Interval: Indicating the interval time to remind the customer that the stop date comes near.

Op.Hour: Indicating the total time since the stop function is activated, and it is only available for display.

Op. State: When the setup is "1", the stop function will be activated, "0" means nonuse.

Important items:

■ After the stop function is activated, the machine ID, total stages and current stage will be shown in Version screen.

■ After the stop function is activated, the system's date and time can't be modified.

■ The customer need record the machine ID and power-on password in detail. Once the power-on password is set, our company is unable to disentangle from the screen.

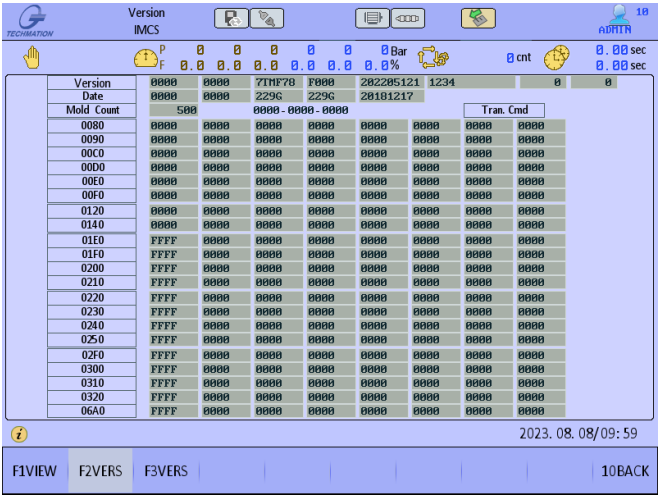
■ When the machine is repairing the panel with stop function on, your company need record the control board ID and tell our company.

■ If your company is willing to unlock the stop function, the only way is to replace the hardware, your company should charge for the parts.

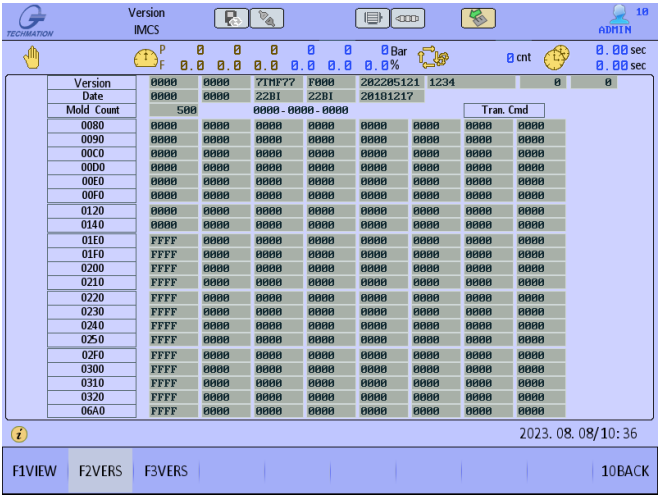
1.18 Version

Including F2 VERS, F3 VERS

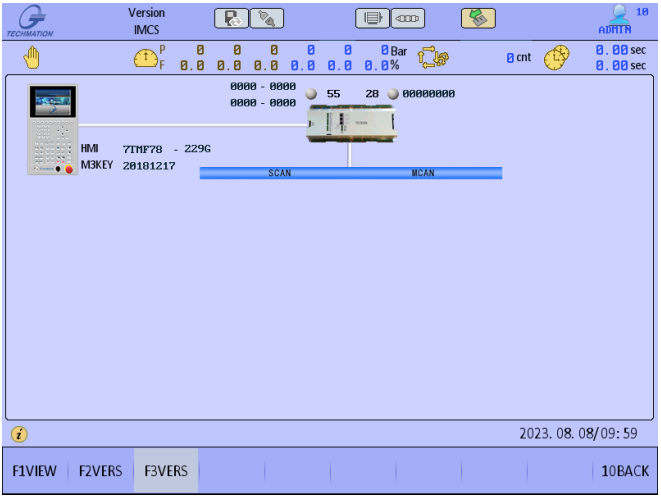
Path - **Main screen → F10 NEXT → F8 SYST → F2 VERS / F3 VERS**



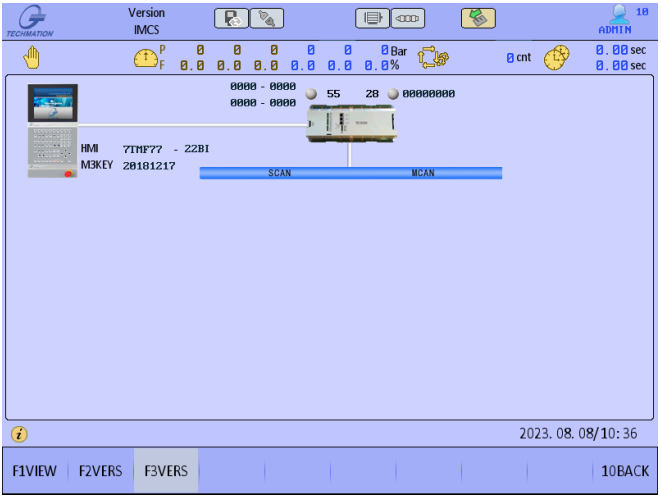
Q8A Integrated Type



Q12A Integrated Type



Q8A Integrated Type



Q12A Integrated Type

The maintenance staff should get the system data and machine type from this screen, which will provide convenience to communication in the future.

Chapter 2 Parameter Index

Parameter Name	Function Description
Mold Pressure	Manual mold pressure in the state of mold adjustment
Mold Flow	Manual mold flow in the state of mold adjustment
Pressure Ramp	The increase slope of pressure buildup time.
Speed Ramp	The increase slope of speed buildup time.
Valve On Delay	The delay time of valve open at the beginning of action.
Valve Off Delay	The delay time of valve close at the ending of action.
Proportional Valve Delay	The delay time of pressure and speed output at the beginning of action.

Chapter 3 Alarm/Error Message Index

When an error occurs during the operation of the machine, not only the main screen will display the error message, the alarm screen will also display at the same time. The difference is that when other alarms occur simultaneously, then the main screen has the priority to display. However the alarm screen could display 10 messages, awaiting for the user to eliminate one by one. Below is the explanation of each alarm message and the elimination ways.

1."Temperature Error"

Reason: When executing injecting, charging and nozzle, one or many stages' real temperature of the barrel is lower than this stage's minimum allowable value or higher than its maximum allowable value, which leads to unable to execute inject, charge and nozzle.

Solution: 1) Check the setting and current temperature of the barrel. If the setting is OK, please check whether there is something wrong with the heating hardware circuit;

2) Check whether the heating coil, fuse, heating contactor or SSR failure causes no heating;

3) If there is a section of 970 or 988, please check whether the thermocouple is disconnected or not connected properly. If the circuit is normal, the computer board is faulty. Please contact our company;

4) All segments display 970 or 988, please check whether the power supply of the T1015 transformer is normal, and the voltage between the yellow and white lines is normal at 10V (AC).

2."Please Close Door"

Reason:1) If just the character string "Please Close Door" occurs, and the red alarm strip doesn't occur, meaning this alarm is just a prompt message. After entering Semi-Auto, Time-Auto and Auto Adjustment mode, if finding the door is open, the system will remind the operator to close the door to enter auto cycle.

2) If the red alarm strip and the character string "Please Close Door" occur at the same time, meaning the door is opened at the wrong time, causing the machine stop.

Solution: Please close the door, repeat the former operations. If the alarm still occurs, please check whether there is something wrong with the door's hardware circuit

3."Please Open Door"

Reason: When entering Semi-Auto, Time-Auto and Auto Adjustment mode, if finding the door is closed, the system will remind the operator to open the door to activate auto mode.

Solution: Please open the door. If the alarm still occurs, please check whether there is something wrong with the door's hardware circuit.

4."Off Man./Emerg. Key"

Reason: 1) If manual key is pressed for a long time, system will remind operator to release manual key.

2) Press Emergent Stop key, this message will occur.

Solution: 1) Release the manual key.

2) If the equipment maintenance ends, on the premise of safety, please release Emergent Stop key.

5."Oil Temp. Over"

Reason: The real oil temperature is below the allowable min value or exceeds the allowable max value.

Solution: 1) Check the setting and real oil temperature. If the real oil temperature is higher than the allowable max value, please check the cooling circuit. 2) If the real oil temperature is lower than the allowable min value, please activate the oil preheat function.

3) Please check whether the oil temperature thermocouple signal is normal;

4) Please check the oil temperature detection circuit of the computer board. The thermocouple can be removed and the short circuit is connected. Normally, the room temperature is displayed. If it is abnormal, please contact our company.

6."Cycle Time Exceeded"

Reason: The real cycle time exceeds the allowable upper limit.

Solution: Please check the real cycle time and the setting time. If the setting is OK, please check every movement's data in auto cycle to find the specific movement that increases the cycle time and do maintenance test.

7."Temperature Ct.Error"

Reason: There is something wrong with the fuse and heater

Solution: Please check the fuse and heater whether it is normal.

8."Eject Position Error"

Reason: The system will check whether the ejector has retracted to the right place when executing mold closing or core. If not, the alarm will occur.

Solution: 1) Enter the manual or coarse adjustment mode, press Ejector Backward key to retract to the end.

2) If the ejector has retracted to the end, the alarm still occurs, please adjust the ejector rule and confirm the switch of eject backward end.

9."Inject Cushion Error"

Reason: The system will sample the screw's min position in the process of injection and hold pressure. After injection ends, this sample value

would compare with the upper/lower of injection cushion in monitor1 screen. If exceeding this range, the alarm will occur.

Solution: 1) On the premise that the upper/lower of injection cushion is right, the alarm's occurrence indicates that the injection's craft parameters have been changed, maybe injector is blocked, injection is not enough, overflowing or other reasons.

2) After modifying the injection process, enter the monitoring screen to select re-sampling;

10."Purge Guard Opened"

Reason: The system will check whether the injection guard is closed when injecting. If not, the alarm will occur and injection stops. The new national safety standards will require inspections during storage and seating.

Solution: 1) Close the injection guard, repeat the former operations.

2) If the alarm still occurs, please check whether there is something wrong with the injection guard's hardware circuit

11."Robot Malfunction"

Reason: The robot doesn't return to its right position when closing mold.

Solution:1)Combined with the actual pick-up time of the manipulator, appropriately increase the recirculation timing;

2) Check whether the manipulator is outputting normally after returning to the position. If there is no output, please check whether the manipulator teaching program is normal.

12."No.Of Open mold Reached"

Reason: Total open mold count has reached the pre-set value.

Solution: Clear the open mold count.

13."Mold Open End Error "

Reason: The system will check whether the moving plate is located at the effective area of opening mold position when ejecting. If not, the alarm will occur and ejection stops.

Solution: 1) Adjust the relevant parameters of mold opening in order that the moving plate is located at the effective area of opening mold.

2) If necessary, adjust the setting value of opening mold's effective area under the engineer's guidance.

14."Part Not Dropped"

Reason: In photo sensor mode, if the sensor doesn't discover the product dropping within 4s after ejection ends, the alarm will occur.

Solution: Please check whether the product has dropped or the sensor is damaged.

15."Charge Time Exceeded"

Reason: The real charge time exceeds the allowable monitor range. Lack material or the charge back pressure is too high, causing that charge is unable to reach the end in the pre-set monitor time.

Solution: 1) Lack of material, the screw will not retreat, please add material;

2) Material at the blanking port, clean the material at the blanking port, and appropriately adjust the temperature of the blanking port and the size of the cooling water;

3) If the real storage back pressure value is too high, reduce the back pressure appropriately; if the back pressure is proportional, check whether the output of the back pressure channel is abnormal;

16."Mold Close End Error"

Reason: The real high pressure time exceeds the setting monitor range.

Solution: 1) The mold isn't adjusted well, causing high pressure can't end, please readjust the mold height.

2) The foreign matter exists in the mold, causing high pressure can't end, check the die cavity.

3) The pressure and flow of high pressure is too small, leading to insufficient force, please readjust the setting value.

17."Finish Auto Adjust"

Reason: When the *Auto Mold Adjustment* has been completed favorably, this prompt message occurs.

Solution: Press the manual key to clear.

18."Lubr. Oil Level Error"

Reason: The lubricants oil level is below the lower limit. Only used for the thin oil machine at present.

Solution: 1) Check the oil level, if below the lower limit, fill up the lubricants oil;

2) If the oil level is normal, please check the relevant hardware circuit.

19."Inj. Start Posn Error"

Reason: When injection starts, the system will sample the current screw's position to compare with the upper/lower of injection start position in monitor1 screen. If exceeding this range, the alarm will occur and injection stops.

Solution: 1) Check whether the upper/lower limit of injection start position is right, the alarm's occurrence indicates that the injection's end position or nozzle retraction's end position deviates, which leads to the position deviation occurs when injection starts.

2) Please check the relevant parameters setting of injection and nozzle retraction. If necessary, adjust the oil way.

20."Inject Time Error"

Reason: If the cumulative time from injection starts to hold pressure ends exceeds the upper/lower of injection time in monitor1 screen, the alarm will occur after hold pressure ends. The following charge isn't executed, after cooling time ends, open mold to the end directly and execute ejection. The next cycle doesn't continue.

Solution: 1) Check whether the upper/lower limit of injection time is right, the alarm's occurrence maybe indicate that the overall system is instable.

2) After modifying the injection process, enter the monitoring screen to select re-sampling;

3) Check whether the injection is unstable due to other reasons.

21."Opn 1-Slow Posn Error"

Reason: In auto adjustment mode, the system will check whether the start position of opening mold is within the scope of open slow1.

Solution: Readjust the machine.

22."Mold Protection Error"

Reason: The real time of low pressure mold protection stage exceeds the allowable monitor range.

Solution: 1) The foreign matter exists in the mold, causing low pressure can't end, please check the die cavity.

2) The high-pressure mold clamping pressure and flow value setting is too small to complete the clamping action. Adjust the high-pressure mold clamping pressure and flow setting appropriately;

3) The low pressure setting position of mold closing is too long, or the pressure flow is too small, adjust appropriately;

4) Thermal expansion of the mold causes the mold thickness to change, please readjust the mold thickness.

23."Decompress End Error"

Reason: The real time of suck-back exceeds the allowable monitor range. If the alarm occurs, suck-back will stop and open the mold directly after cooling time elapses.

Solution: The pressure and flow of suck-back are too small, leading to insufficient force, please readjust the setting values. Or the end position of suck-back is unreasonable, please readjust.

24."Pack Count Reached"

Reason: Total packing count has reached the pre-set value.

Solution: Clear the packing count.

25."Core Pull End Error"

Reason: The system will check whether each core is located at the safe range(forward/backward end). If not within the safe range, alarm occurs: Core X In Pull End Error or Core X Out Pull End Error.

Solution: 1) Enter the manual mode, according to the alarm content, operate each core to arrive at the safe position.

2) Notes: If two or more cores are used, these cores will interlock in manual mode. That is to say, check the safe position of core B when core A is activated and check the safe position of core A when core B is activated, which makes it hard to reach the safe position. At the moment, on the premise of ensuring safety, enter the coarse adjustment mode, the system will clear each core's interlocking. In this way through manual operation keys, each core can return to the safe position. You must operate each core on the premise that the mold is safe.

26."Oil Level detection failed "

Reason: Abnormal oil level detection signal detected.

Solution: 1) If the amount of oil is insufficient，please fill up the oil.

2) Check whether the oil detection switch is abnormal.

27."Lubrication Fail"

Reason: The program doesn't discover the feedback signal of the lubrication pressure relay when the lubrication is activated. The alarm will occur after the lubrication alarm time ends.

Solution: 1) Please fill up the lubrication oil.

2) Please check whether the lubrication pressure relay or lubrication pipeline is faulty;

3) Please check the lubrication detection electrical circuit;

4) Reasonably set lubrication parameters.

28."Oil Filter Blocked"

Reason: The hydraulic oil filter is blocked.

Solution: Please clean the filter. If the filter is normal, please check the relevant hardware circuit

29."Adjust End Touched"

Reason: When mold adjustment moves forward, if the advance end switch is pressed, the alarm occurs and the action stops. When mold adjustment moves backward, if the retraction end switch is pressed, the alarm occurs and the action stops.

Solution: Please do the opposite adjustment movement to make the pressed switch not act.

30."Adj. Sensor Fail."

Reason: In auto adjustment mode, when the mold adjustment moves forward or backward, the sensor is invalid, the alarm occurs.

Solution: 1) Please check whether the modulating electric sensor is blocked by oil, and whether the electrical circuit is OK;

2) If the power cannot be adjusted due to insufficient power, please appropriately increase the pressure and flow rate of the mold adjustment;

3) The machine cannot be adjusted due to poor level, please adjust the machine level.

31."Core Active Position Error"

Reason: Open/close mold's position is incorrect when core moves in or out.

Solution: Please adjust the position of open/close mold.

32."Robot Emergency Stop"

Reason: When the robot is used, if the robot's emergency stop button is pressed, the alarm occurs and motor stops.

Solution: On the premise of safety, release the robot's emergency stop button.

33."Waiting Robot"

Reason: When the robot is used, if the robot doesn't send the relevant confirmation signal to the injection molding machine, causing that the machine can't execute the corresponding action, the similar alarm "Waiting Robot-Enable Close Mold" or "Waiting Robot-Mold Area Free" occurs, in order to remind the operator to check the corresponding input signal.

Solution: Check the corresponding input signal according to the concrete alarm content.

34."Pls Press Close Key"

Reason: In semi-auto, time-auto and auto adjustment mode, after the door is closed, some safety standard reminds the operators to press the mold close key to start the cycle.

Solution: Press the mold close key according to the prompt content.

35."Motor Fail"

Reason: In directly starting mode, the accomplishment signal of motor starting isn't sent to DSP.

Solution: Please check whether there is any abnormality in the motor starting electrical circuit.

36."Pls Press Start Key"

Reason: In semi-auto, time-auto and auto adjustment mode, after the door is closed, some safety standard reminds the operators to press the start key to start the cycle.

Solution: Press the start key according to the prompt content.

37."Pls Close Rear Door"

Reason: The rear door is opened.

Solution: 1) Close the rear door.

2) Check the safety door switch on the back and the corresponding electrical circuit.

38."Temperature not up"

Reason: The temperature doesn't rise to the setting value after heating continually for 3 minutes.

Solution: 1) Please check the setting temperature and real value.

2) If setting is normal, please check the relevant hardware circuit.

3) Check whether the heating coil, heating relay/SSR, and fuse are damaged;

39."Please Open Door 2"

Reason: For the machines equipped with the switch of door2, when semi-auto cycle ends and auto cycle starts, you must open and close door2 once.

Solution: Open the power door. If the alarm still occurs, please confirm the door2 switch.

40."Oil Temperature Over"

Reason: The oil temperature of the machine is too high.

Solution: 1) Please check the cooling water route & cooling point;

2) Reset the oil temperature limit.

41."Eject Not Back"

Reason: Finding the ejector isn't located at the backward end position .

Solution: 1) Make sure that the mold carrier cylinder is in the bottom. If the position of the electronic ruler is not 0, please go to the [calibration] screen to reset to zero; if it is not detected at the end of the retraction, please adjust the installation position of the sensor at the end of the retraction;

2) Reasonably set the position of ejector ;

3) Reasonably set the effective area of the ejector position.

User manual version change record

Date	Version After Changed	Change Content
2023-10	V1.0	1st Version

欢迎关注弘讯科技官微

Welcome to Techmation's official WeChat!

NingBo Techmation Co., Ltd.
ADD: No.88 Dagang Fifth Road, Beilun, Ningbo, Zhejiang, China
Service Telephone: 0574-86987285
Fax: 0574-86987286
Web: www.techmation.com.cn
Postal Code: 315800

1MUL_MABFF_MA01