

# PART 5

## The type moulds

- CHAPTER 24 **Small type composition moulds, 5–14 pt**
- CHAPTER 25 **Quad and space mould, 5–14 pt**
- CHAPTER 26 **Large type composition moulds, 14–24 pt**
- CHAPTER 27 **Display type machine moulds, 14–36 pt**
- CHAPTER 28 **Short lead and rule mould, 1½, 2 and 3 pt**
- CHAPTER 29 **Super caster display type moulds, 14–36 pt**
- CHAPTER 30 **Super caster display type moulds, 42–72 pt**
- CHAPTER 31 **Casting low quads and spaces**
- CHAPTER 32 **Casting quotations from the Super caster 42–72 pt display type mould**
- CHAPTER 33 **Palace script mould, 14–42 pt**
- CHAPTER 34 **Italic mould, 14–42 pt**
- CHAPTER 35 **Duplex mould, 14–18 pt**
- CHAPTER 36 **Duplex low quad mould, 14–18 pt**
- CHAPTER 37 **Triplex mould, 26 pt**

# PART 5

## Key references

### Chapter 24

- 1 Matrix heads base
- 2 Distance piece
- 3 Type pusher lever connecting rod
- 4 Matrix heads base screws (4)
- 5 Type carrier connecting rod
- 6 Cam lever
- 7 Cam lever
- 8 Mould blade slide drive lever connecting tube
- 9 Ball end lock nut
- 10 Connecting tube ball end
- 11 Mould blade slide drive lever intermediate lever
- 12 Clamp screw
- 13 Mould blade slide driving block abutment
- 14 Mould blade slide
- 15 Stop lever handle
- 16 Wedge screw clamp nut
- 17 Wedge screw housing
- 18 Matrix head screw
- 19 Composition matrix head
- 20 Screws (3)
- 21 Matrix lifter lever connecting rod
- 22 Nut
- 23 Eye
- 24 Yoke
- 25 Matrix cam lever
- 26 Cam lever extension
- 27 Pin
- 28 Cam lever
- 29 Type pusher cam lever
- 30 Nut
- 31 Type pusher connecting rod
- 32 Split pin
- 33 Intermediate lever
- 34 Fulcrum pin eccentric
- 35 Wedge indicator scale
- 36 Adjusting nut
- 37 Driving block screw
- 38 Fork bar
- 39 Set screw
- 40 Connecting pin
- 41 Crossblock
- 42 Upper mould blade
- 43 Low quad lever spring lever
- 44 Mould blade fork
- 45 Mould blade lever
- 46 Plate
- 47 Spring
- 48 Adaptor base
- 49 Locating screw
- 50 Adaptor base clamps (2)
- 51 Nut
- 52 Guide pin
- 53 Mould blade fork pin handle
- 54 Mould oiler
- 55 Crossblock oiler
- 56 Stud
- 57 Washer
- 58 Water supply piping
- 59 Screw
- 60 Matrix holder
- 61 Type support spring cam bracket
- 62 Type carrier
- 63 Coupling hook
- 64 Fixed type channel block
- 65 Adjustable type channel block
- 66 Thumb screw and washer
- 67 Cover plate
- 68 Cover plate screw
- 69 Blade holding down plate
- 70 Spring block plug
- 71 Spring block pressure screw
- 72 Spring block
- 73 Pressure screw lock nut
- 74 Side block cover spring screw
- 75 Side block cover spring
- 76 Adjustable gate block
- 77 Jet blade
- 78 Gate block adjusting screw
- 79 Fixed gate block
- 80 Crossblock backplate
- 81 Centre gib plate screw
- 82 Left-hand adjusting screw
- 83 Gib plate adjusting screw lock nut

- 84 Gib plate
- 85 Intermediate plate
- 86 Side block cover spring
- 87 Side block cover spring screw
- 88 Screw side block
- 89 Blade stop
- 90 Blade stop support screws (2)
- 91 Blade stop support

### Chapter 25

- 1 Adaptor base
- 2 Knurled screw
- 3 Type clamp operating block
- 4 Distance plate
- 5 Cover plate
- 6 Cover plate screw
- 7 Spring block plug
- 8 Spring block pressure screw
- 9 Spring block pressure screw locknut
- 10 Clamping bar
- 11 Clamping bar screws
- 12 Crossblock
- 13 Gib plate
- 14 Intermediate plate
- 15 Spring block
- 16 Screw side block
- 17 Nick side block
- 18 Blade stop
- 19 Blade stop support

## Chapter 26

- 1 Inset screws
- 2 Cover plate
- 3 Mould inset
- 4 Upper mould blade
- 5 Lower mould blade
- 6 Mould blade lever
- 7 Intermediate plate
- 8 Crossblock
- 9 Jet blade
- 10 Mould coupling hook
- 11 Holding back screws
- 12 Mould blade back stop screw
- 13 Cover plate screws
- 14 Mould blade abutment

## Chapter 27

- 1 Type pusher lever connecting rod
- 2 Matrix lifter lever connecting rod
- 3 Type support spring cam bracket
- 4 Display matrix bridge
- 5 Hexagon screws
- 6 Type channel block
- 7 Type carrier connecting rod
- 8 Cover plate
- 9 Upper mould blade
- 10 Lower mould blade
- 11 Abutment
- 12 Cover plate screws
- 13 Blade back stop screw
- 14 Intermediate plate
- 15 Mould blade operating lever spring box
- 16 Mould blade lever

## Chapter 28

- 1 Type carrier connecting rod yoke pin
- 2 Type carrier cam lever extension
- 3 Type support spring cam bracket
- 4 Mould blade slide drive lever connecting tube
- 5 Intermediate lever
- 6 Type clamp operating block
- 7 Inset holding-down screw (vertical)
- 8 Matrix stop
- 9 Cover plate
- 10 Cover plate screws
- 11 Matrix
- 12 Mould blade abutment
- 13 Mould blade abutment screws
- 14 Clamp screw
- 15 Bridge
- 16 Inset holding-down screw (vertical)
- 17 Inset
- 18 Matrix locator
- 19 Inset holding-down screw (horizontal)
- 20 Crossblock
- 21 Inset holding-down screw (horizontal)
- 22 Matrix clamp screw lock nut

## Chapter 30

- 1 Matrix lifter lever connecting rod
- 2 Display matrix bridge
- 3 Type channel block
- 4 Type pusher lever connecting rod
- 5 Type carrier connecting rod
- 6 Cover plate
- 7 Mould blade abutment screws
- 8 Dowel pins
- 9 Mould blade abutment
- 10 Intermediate plate
- 11 Cover plate screws
- 12 Side block
- 13 Mould blade
- 14 Side block
- 15 Cover plate screws (short)

## Chapter 31

- 1 Knurled adjusting screw
- 2 Space casting attachment
- 3 Low quad lever (Adaptor base)
- 4 Mould blade lever spring
- 5 Mould blade lever
- 6 Blade operating lever spring box
- 7 Lower mould blade lever
- 8 Low space cap clamp
- 9 Hexagon headed screws (2)
- 10 Low space cap clamp
- 11 Mould blade cap handle
- 12 Blade cap screw
- 13 Mould blade cap
- 14 Low space cap

# PART 5 *(continued)*

## **Key references**

### **Chapter 32**

- 1 Lifter lever shaft lock pin
- 2 Matrix lifter shaft lever handle
- 3 Core block matrix holder

### **Chapter 33**

- 1 Crossblock backplate
- 2 Fixed gate block
- 3 Plates
- 4 Screws (4)
- 5 Upper mould blade
- 6 Screws (2)
- 7 Blade abutment
- 8 Screws (2)
- 9 Lower mould blade
- 10 Intermediate plate
- 11 Cover plate
- 12 Gate block operating lever
- 13 Adjustable gate block
- 14 Gag block
- 15 Fixed stop

# CHAPTER 24

## Small type composition moulds 5–14 pt

The following, which deals at some length with the 5–14pt composition moulds, covers first the preparation and setting up of the machine, and follows with a detailed description of the assembly of the mould in readiness for casting; taking you through the complete procedure up to the point where you can make your first trial casts. This detailed coverage is also intended, in broad outline, as basic information for the setting up of all the type moulds – the points where they differ being duly explained in each case throughout the manual.

This is followed by instructions in connection with the care and maintenance of the 5–14pt mould, which covers removing the mould from the machine, how it is dismantled for cleaning as necessary, and its subsequent re-assembly on completion.

It is emphasised that all pump preparations should be completed in accordance with the detailed settings and adjustments given in the 'Product Information Table', before the mould is assembled on the machine. These include temperature adjustments as necessary, ensuring that the correct pump body and piston are fitted, together with the correct size nozzle; checking the Duplex spring setting, the spring plate, the latch spring, the nozzle seating timing mechanism and the upper and lower pressure plates; together with the setting of the plunger spring pressure and the fulcrum pin eccentric of the mould blade sizing mechanism. This should ensure that no basic essentials are overlooked; that the metal is at the correct temperature; and that the pump body, immersed in the melting pot, is accordingly pre-heated by the time you are ready to cast.

### 24.1 Preparing the machine to receive the mould

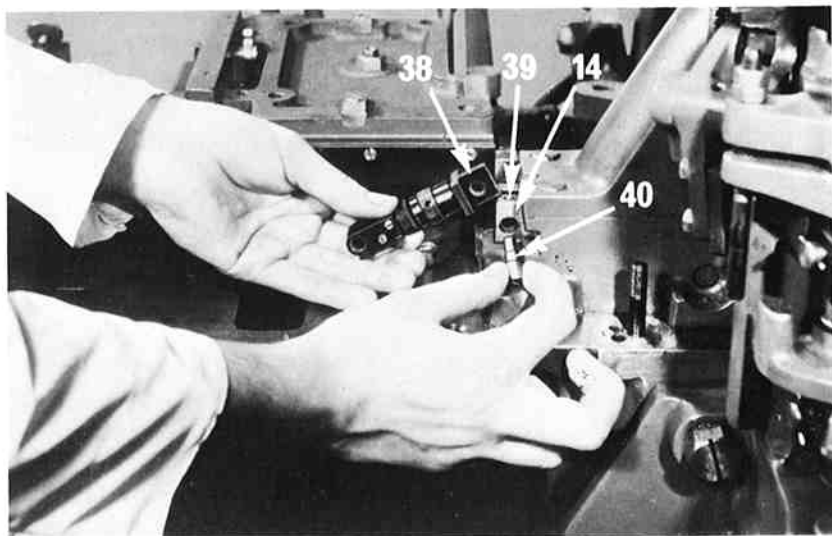
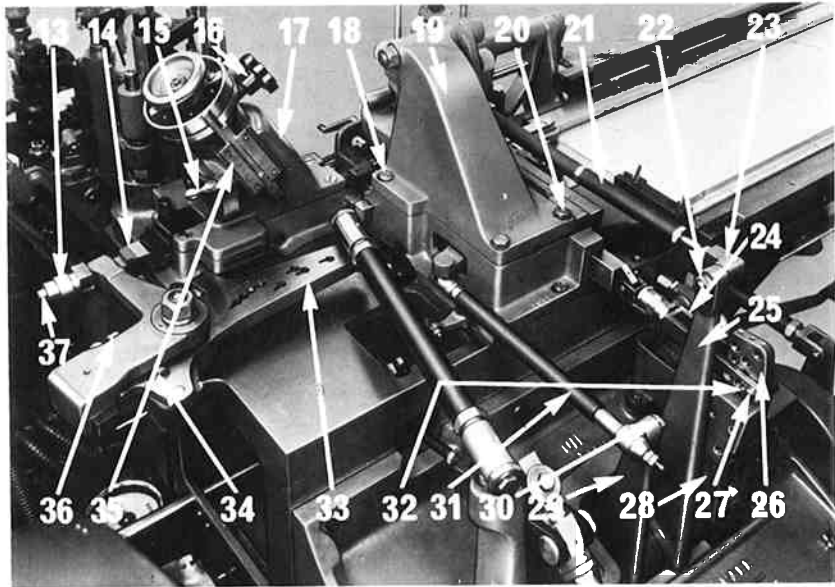
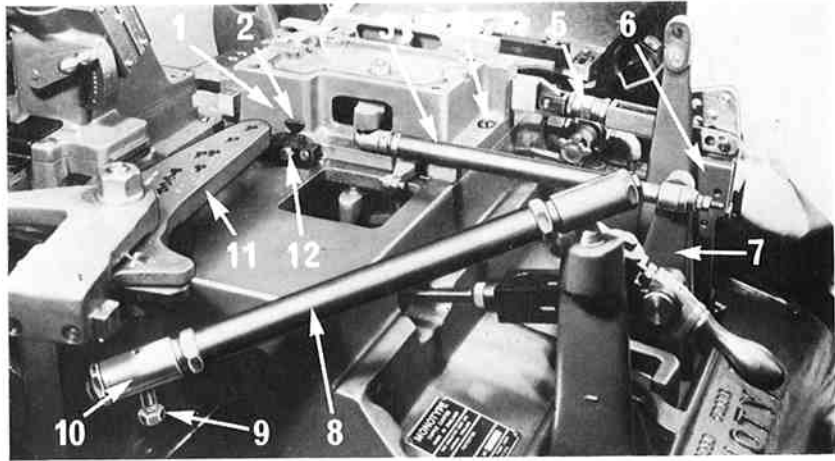
When casting type, or both high and low quads and spaces, the matrix heads base and the required matrix head must be attached in position on the main stand of the machine, before the mould itself is connected. The composition matrix head is not used, however, when casting low quads and spaces, using the space casting attachment, or when casting from the quad and space mould.

Refer to 31.1 in respect of the space casting attachment, and Chapter 25 with regard to the quad and space mould.

### 24.2 Disconnecting the mould blade slide drive lever connecting tube

The connecting tube (8) of the mould blade slide drive lever will already be disconnected whenever the main stand of the machine is clear, since it must always be disconnected first before any mould or machine change-over takes place, just as it is always connected up last, prior to commencing to cast.

To disconnect the connecting tube, turn the handwheel to approximately 150–160° to release the tension on the mould blade slide drive lever intermediate lever (11). This you do by removing the ball end nut (9) which secures the connecting tube ball end (10), lifting the tube out of contact with the intermediate lever and swinging it away to the left of the main stand of the machine. You may find it necessary to manipulate the intermediate lever by



hand a little in order to disengage the ball end. (Make a point of always replacing the lock nut (9) on the ball end so that you will know where it is.)

#### **24.3 Attaching matrix heads base to the main stand of the machine**

The two locating keys on the underside of the matrix heads base (1) must be engaged in the keyways on the main stand, positioning the base with the type carrier connecting rod (5) and the type pusher lever connecting rod (3) running left to right across the machine, their extremities in proximity with the cam levers (6) and (7) to which they will in due course be connected.

Check that the locating distance piece (2) is correctly positioned for casting in the 5-36pt range, reversing it if necessary by releasing the clamp screw (12) and tightening up again on completion of the adjustment.

The matrix heads base can now be secured to the main stand with the four matrix heads base screws (4) provided, making certain that they are tightened securely and that you use the correct size screwdriver to do so.

Refer to Chapter 10 for a detailed description of the matrix heads base.

#### **24.4 Attaching matrix head to the matrix heads base**

The composition matrix head (19) can now be attached to the matrix heads base by means of the three hexagon head screws (20) and the long matrix head screw (18) which passes right through to the main stand of the machine. The matrix lifter lever connecting rod (21) is positioned alongside the connecting rods of the matrix heads base, with its extreme end adjacent to the cam levers.

Refer to Chapter 11 for a detailed description of the composition matrix head.

#### **24.5 Connecting matrix heads base and matrix head to the cam levers**

Remove the nut (30) from the ball stud of the type pusher connecting rod (31); connect the stud to the type pusher cam lever (29) and lock with the nut. Complete the connection of the matrix heads base by removing the pin (27) from the yoke (24) of the type carrier connecting rod, linking the yoke to the cam lever (28) through the hole marked '12' on the cam lever extension (26), passing the pin through the hole, and securing with the split pin (32). The eye (23) of the matrix lifter lever connecting rod (21) must now be connected to the upper hole of the matrix cam lever (25) with the rod eye pin and secured with the nut (22).

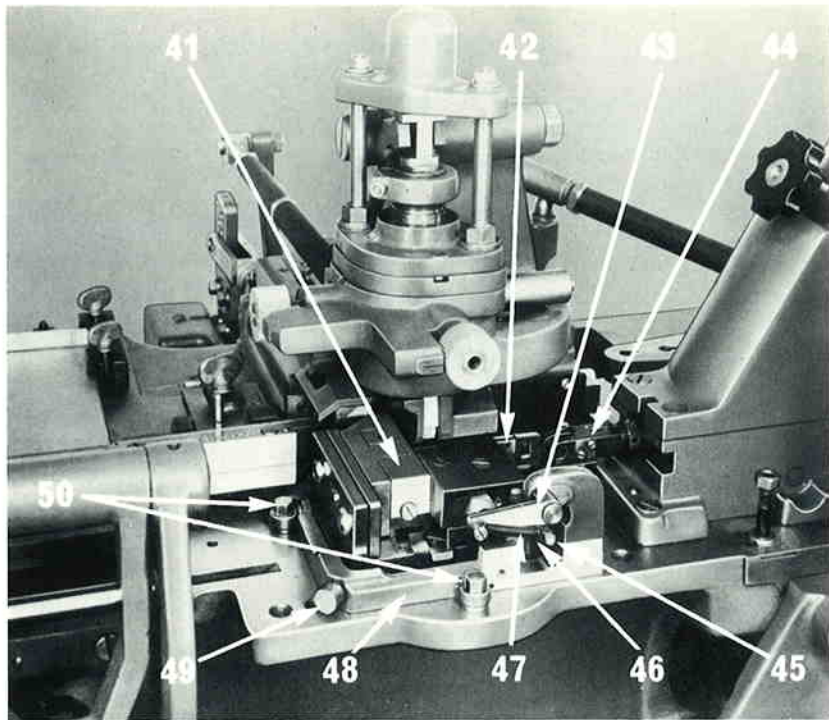
#### **24.6 Connecting mould blade slide to the mould blade fork**

First, the stop lever handle (15) on the wedge screw housing (17) must be placed in the 16ems position. With the stop in this position the mould blade slide can be moved freely without restriction, since the lead mould blade stop is thus moved out of its path.

The intermediate lever (33) of the mould blade slide drive lever can now be operated by hand, by which means the mould blade slide (14) can be moved forward towards the matrix head, thus enabling you to connect the mould blade fork. Having made sure the fork is correct for 5-36pt, remove the mould blade fork connecting pin (40) from the mould blade slide (14); connect the fork bar (38) to the slide and replace the pin, giving it a clockwise turn with a screwdriver until it just grips; then turn the set screw (39) to secure the pin in position. Note that the fork bar must be connected with the figures '5-36' in view on the upper surface.

The wedge screw handwheel must now be turned anti-clockwise until a reading of approximately 60 points is shown on the wedge indicator scale (35), thereby allowing for sufficient movement of the mould blade slide drive lever to enable you in due course to withdraw it to connect the mould blade fork to the mould blade.

The machine is now ready to receive the mould.



#### 24.7 Assembling the mould on the adaptor base

First ensure that the contacting surfaces of both the mould and the adaptor base are clean, and free from any solid particles of type metal etc., also the underside of the adaptor base and the contacting surfaces of the main stand of the machine. This is essential, since any surface not securely contacted could result in mould distortion or water leakage, and lead to other possible troubles.

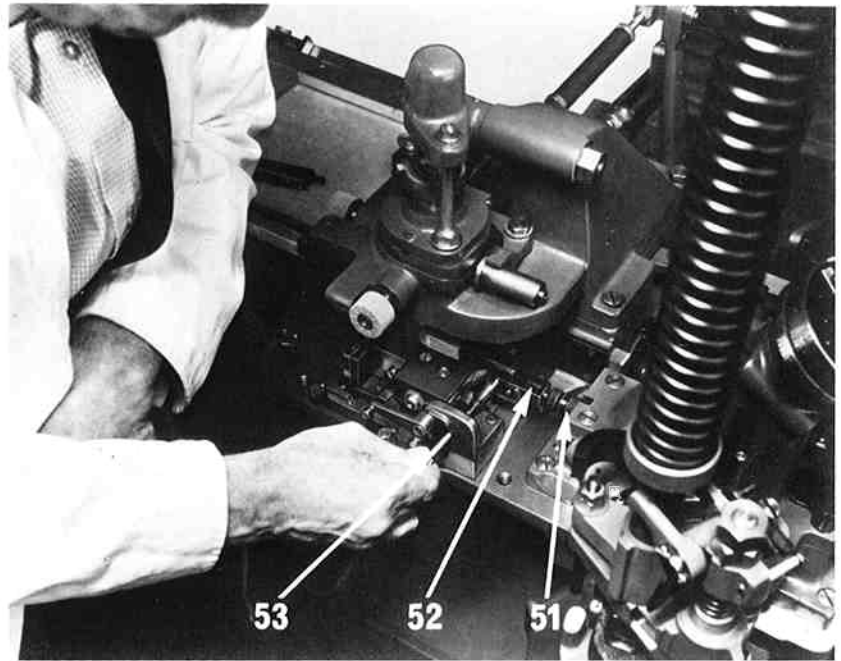
Carefully place the mould on its adaptor base (48) and bring it into position against the locating faces of the base by turning the knurled mould locating screw (49) by hand until it is tight. Then secure the mould to the base with the special screw provided, making sure there is no play between the mould and the base. You must now place the low quad lever spring lever (43) in the correct position for your casting requirements. For casting type and high quads, the lever must be turned forwards in the direction of the galley, and for casting low quads and spaces, back towards the micrometer head. The plate (46) on the end of the spring (47) must be hooked over the end of the mould blade lever (45). You will observe the action of the parts involved if you examine the movement of the upper mould blade (42) against the crossblock (41) when the spring lever is moved from one position to the other. Refer to Chapter 31, 'Casting low quads and spaces'.

Complete the adaptor base assembly at this point by fitting the type clamp operating block for 5-13 pt (at the back of the adaptor base), before you connect the mould to the machine. Two screws are used to position the type clamp operating block on the adaptor base.

#### 24.8 Connecting the mould to the type carrier

Turn the machine to 220° to suitably locate the type carrier in the left-hand position, ready for connection with the mould crossblock. Then place the mould and its adaptor base on the main stand of the machine, positioning the mould crossblock coupling hook (63) to enable it to slide into engagement with





the hook of the type carrier (62). This you can conveniently do by carefully pushing the crossblock (41) forward a little, clear of the mould, slipping the hook into the recess in the hook of the type carrier and then gently pushing the mould and its adaptor base forward into position.

The adaptor base locates against two positioning faces on the matrix heads base, and is positioned against them by the two eccentric adaptor base clamps (50), which must be fitted immediately the mould has been connected to the type carrier. The clamps are secured with a half turn only, using a small wrench; the one nearest the pump being turned clockwise, and the one at the front of the mould anti-clockwise (this ensures the mould is pushed 'back' against its positioning faces – and this applies with all moulds).

*The clamp nearest to the pump, on the right-hand side of the machine, must be fitted first. This is a safety precaution to prevent the mould being inadvertently pushed off the machine by the type carrier to which it is now connected.*

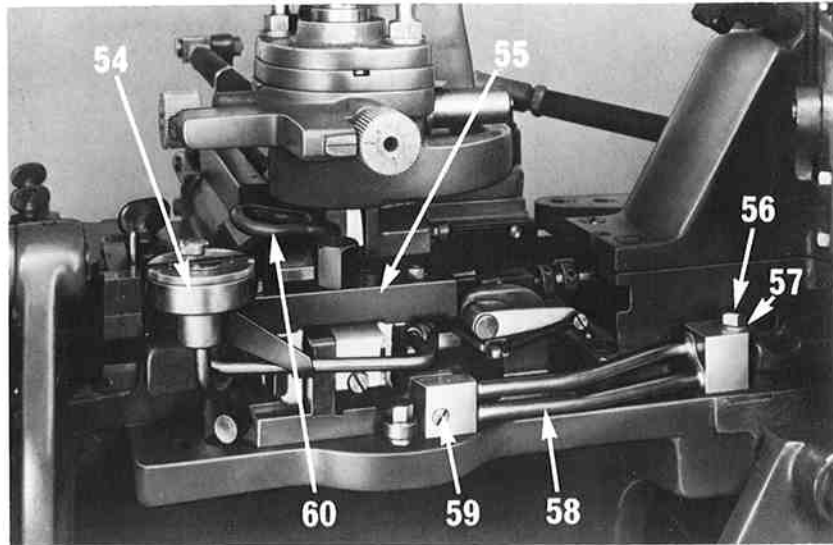
#### 24.9 Fitting mould and adaptor base to the main stand of the machine

The mould and its adaptor base must now be securely fitted to the main stand of the machine, using the three special screws provided. These are fitted to the underside of the main stand.

Extreme care must be taken to ensure that the screws (which you will note are of varying length) are each placed in the correct hole, since failure to do so will result in severe damage to the mould. Use the special square box wrench supplied, when fitting the screws, and make sure they are tightened sufficiently.

#### 24.10 Connecting the mould blade to the mould blade fork

The mould blade can now be connected to the mould blade fork. This you do by carefully sliding the mould blade (42) backwards out of the mould and inserting it into the recess in the prongs of the mould blade fork (44). Complete the connection by passing the mould blade fork pin through both the fork and the mould blade, guiding the pin through with the mould blade fork pin handle (53).



Present the fork pin to the mould blade fork, with its rectangular end piece located upright in the handle. On being inserted, the pin will tend to depress the fork pin retaining spring, thus permitting the pin to slide freely into position. Ensure the pin is properly seated and complete the connection by giving it a half-turn to locate the rectangular end horizontally, whereupon the retaining spring is allowed to rise again to keep the pin secure. The pin holder can best be withdrawn after the connection has been completed as follows:

To make a firm joint, the mould blade must now be brought into contact with the mould blade fork guide pin. This is done by means of the two knurled nuts on the mould blade fork. Turn the rear nut (51) anti-clockwise (viewed from the front) until the mould blade fork guide pin (52) is moved forward into contact with the rear of the mould blade; then lock with the front lock nut, which must be turned in the opposite direction.

*Two pin wrenches are provided for locking the knurled nuts and both must be used together – in opposite directions – to avoid damaging the mould blade by twisting the mould blade fork.*

**24.11 Checking setwise adjustment of driving block abutment**

Make certain that the mould blade slide driving block abutment (13) is correctly positioned for small set-sizes; that is, for characters up to 12 points setwise in width. In this position it is set with its larger diameter towards the front, the effect being to reduce the movement of the mould blade slide drive lever. For set-sizes above 12 points the abutment is used the other way round and must be changed over as necessary. To do this, release the driving block screw (37), reverse the abutment and lock up again with the screw. Note that the abutment spring is under pressure when used in the small set-size position, whereas when located the other way round the spring is concealed and out of action. Refer to Chapter 9, 'The mould blade sizing mechanism'.

**24.12 Attaching mould water supply piping**

Attach the correct water supply piping (58), locating the piping assembly on the stud (56) provided on the main stand, and securing the other end to the side of the mould with the piping block screw (59). (The two locating faces of the piping assembly should first be lightly smeared with grease or mould oil.) Lock the assembly to the main stand, using the stud nut and washer (57).

**24.13 Attaching the mould and crossblock oilers**

Attach the correct mould oiler (54) by slipping the pipe ends into the oil holes provided in the mould, and ensure that the container is filled with the correct mould oil. You should also attach the mould crossblock oiler (55). This you assemble on the machine, locating its keyed base in the grooved keyway on the main stand, and securing in position with the screw collar, the washer and the long hexagon screw. The use of the crossblock oiler in conjunction with the mould oiler is recommended for the better lubrication of the moulds, since it ensures not only that neither side of the crossblock runs dry, but it also wipes off excess oil.

**24.14 Attaching the type channel blocks**

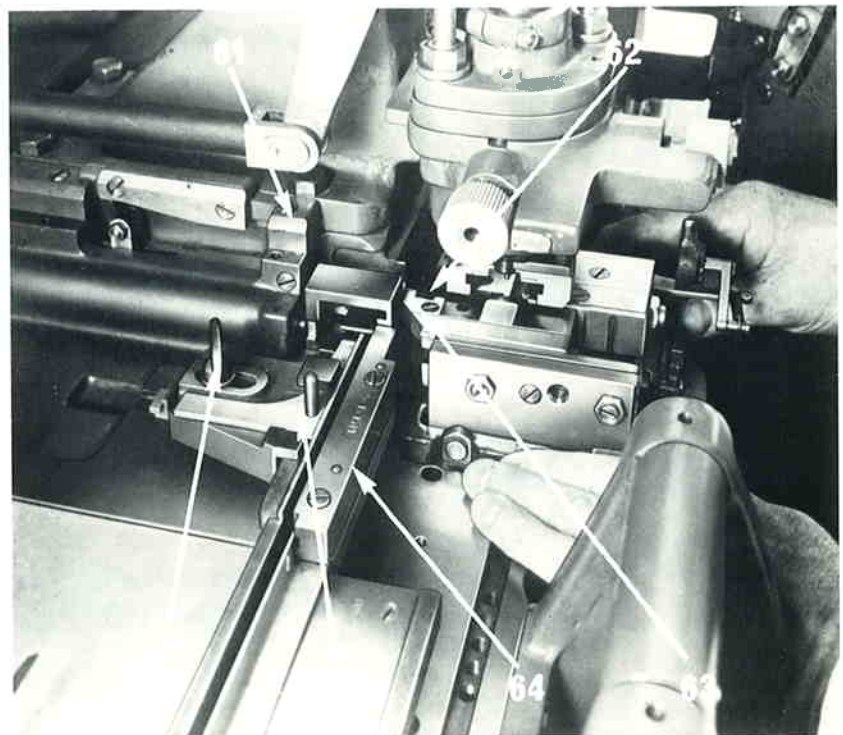
The fixed type channel block for 5-13 pt (64) must be attached to the type carrier cover. Turn the machine by hand to the 'ejection' position at approximately 120-150°, locate the block taper pins in the positioning holes on the cover and secure in position with the two screws provided.

The adjustable type channel block (65) must also be attached on the type carrier cover, opposite the fixed block, and subsequently locked in the required position with the thumb screw and washer (66), after having been positioned in accordance with the body size of the type about to be cast. Refer to 10.10 for details of the type channel blocks.

**24.15 Type support spring cam bracket**

The type support spring cam bracket (61) must be in position on the type carrier cover, without the packing plate; provided of course that 12 pt set-size is not being exceeded. Release the bracket screws to remove the packing plate if necessary. Note that for set-sizes exceeding 12 points, the bracket must be removed.

Refer to 10.9 for a detailed description of the type support spring cam bracket and its role in connection with set and body sizes.



**24.16 Reconnecting  
mould blade slide  
drive lever  
connecting tube**

The mould blade slide drive lever connecting tube (8) must now be reconnected to the mould blade slide drive lever intermediate lever (33). Turn the machine to approximately 150-160°, locate the ball end of the connecting tube in the hole of the intermediate lever marked 'Type to 42 point'; ensure the ball end snug pin engages in the groove and tightly secure with the ball end nut. The snug pin prevents the ball end turning when you are tightening the ball end nut.

You will be unable to secure the ball end if the snug pin is not properly located, and the ball end will in consequence suffer damage when the machine is set in motion.

Set the plunger lever fulcrum pin eccentric (34) in the 5-36 'small type' position, and then, using the pin wrench, set the plunger spring adjusting nut (36) right back against the head of the plunger spring guide rod, thus reducing the tension on the plunger spring to the very minimum. The locating of the plunger spring in this position for the smaller type sizes ensures that the safety device will operate should a blockage occur during casting. The tension can be slightly increased when casting in 14 pt. Refer to 9.10 for details of the function of the mould blade slide drive lever and to the 'Product Information Table' for fulcrum pin eccentric and plunger spring settings and pressures in relation to all sizes and types of product.

**24.17 Zeroing  
the mould blade  
sizing mechanism**

The mould blade sizing mechanism must now be zeroed in readiness for casting. Turn the machine to 150° to bring the mould blade (42) up against its stop - in the ejection position, close up against the crossblock (41), the starting position for sizing the mould blade opening. Now loosen the wedge screw clamp nut (16), screw the micrometer wedge right down to its lowest position and proceed to complete the detailed procedure for adjusting the mould blade sizing mechanism when preparing to cast type.

Refer to Chapter 9 dealing with the mould blade sizing mechanism.

**24.18 Adjusting  
position of the  
matrix holder for  
set and alignment**

Place the 'set' matrix (usually the cap 'H') of the required point-size in the correct matrix holder, positioning it so that the matrix designation number will be to the right when the holder is on the machine; then slide the holder (60) into the matrix lifter on the matrix head. The cap 'H' should be used for both setwise adjustment and alignment 'pointwise' on the type body, unless any other character is specified for the fount in use.

The position of the matrix holder in relation to the mould casting cavity must be correctly adjusted for both set and alignment for each point-size in turn, before you commence casting.

Refer to 18.1 for detailed information on the composition matrices, Chapter 19 in respect of the matrix holders, and Chapter 5 concerning type alignment and the use of the cap 'H' in conjunction with the type-alignment slip gauges and the type-alignment gauge.

**24.19 Final  
adjustment and  
checks before  
casting**

You should now quickly run your eye over all you have already completed, in respect of attachments settings and adjustments; reassure yourself that all is as it should be, and that nothing has been overlooked.

The Varigear speed regulator must be set for the correct running speed, and the micrometer wedge screw adjusted for the required set-width of cast, after due reference to the 'Varigear Speed Tables' and the table listing micrometer head settings.

Refer also to 9.3 dealing with adjustments to the mould blade sizing mechanism when preparing to cast type, and Chapter 16 concerning the Varigear speed regulator.

The water supply valve must now be turned on. The running water should be checked at the drain pipe (and the valve locked by turning the knurled ring until it is hard against the valve shoulder) and adjusted accordingly as necessary, as indicated in the 'Product Information Table'.

Refer to 15.25 in connection with the cooling of the mould.

At this point, before you raise the pot into position for casting, and before starting up under power, rotate the machine by hand and carefully scrutinise the movements of all the inter-related parts you have assembled on the main stand to make certain that everything is working freely, and that no further adjustments whatsoever are required.

Now, provided that all the preliminaries with regard to bringing the metal to the correct temperature, and the adjustment and preparation of the pump and nozzle have been carried out, you can prepare the pump piston; wipe the tip of the nozzle clean and raise the pot into position in readiness for casting. Depress the starting handle to set the machine in motion, and subsequently engage the pump release when you are assured that all is in order. Allow a minute or so to give the mould the opportunity to warm up a little whilst it is in close proximity to the metal pot.

Refer to Chapter 15 dealing with the pump mechanism, and Chapter 41, 'The production of good type'.

#### 24.20 Care and maintenance of the mould

When casting type in the 5-14pt range from the small type composition moulds, a separate mould is required for each point size. The 13pt and 14pt moulds produce type with a slight shoulder on the upper edges of the type body. The object is to give the matrices a larger seating area on the mould. This is due to the fact that the 0.2in matrices, which, though quite small, easily cover the mould casting cavity with sufficient overlap when seated on the mould in the smaller type ranges, they would do so by a very narrow margin in the 13pt and 14pt sizes; with consequent risk of splashes, or the extreme possibility of the matrix body entering the mould instead of sitting firmly on top of it to seal the mould during casting. The side blocks of the 13pt and 14pt small type composition moulds are therefore shaped accordingly, the effect being to reduce the pointwise size of the top of the casting cavity without affecting the size of the type body; whilst the mould blade is similarly shouldered to correspond with the side-block contours and enable it to pass through to eject the cast type into the type carrier.

The type nick is on the right-hand side block.

These moulds, as their name implies, were originally designed for the composition caster, and it is necessary to use an adaptor base to enable them to be used on the Super caster.

The following describes how the mould should be removed from the machine; how it is taken apart for cleaning and re-assembled afterwards; how the mould gib plate should be adjusted when necessary; and likewise how the crossblock is dismantled for cleaning and re-assembled again.

#### 24.21 Removing the mould from the machine

First, remove the matrix holder, then lower the melting pot and swing it back. Turn the machine to 170° and disconnect the ball end of the connecting tube (8) from the intermediate lever (33) of the mould blade slide drive lever,

removing the ball stud nut and replacing it on the ball stud for safe keeping. Now manipulate the intermediate lever by hand to bring the mould blade right forward as far as it will go into the mould; then take the two special pin wrenches, and using them both together as before, carefully release the two knurled nuts on the mould blade fork (44); after which you can readily remove the mould blade fork pin, using the pin handle (53) and reversing the procedure you adopted when making the connection.

Release the wedge screw clamp nut (16) and turn the wedge screw hand-wheel to screw back the wedge until a reading of 60 points is indicated on the wedge indicator scale (35); then, pushing on the intermediate lever (33), ease the mould blade slide back until the mould blade fork is drawn clear of the mould blade (42).

Turn off the water supply at the water supply valve and remove the mould water supply piping connection from the mould, removing the screw (59), easing the nut on the stud on the main stand and swinging the pipe assembly clear. Detach and remove both the mould oiler (54) and the crossblock oiler (55) complete.

Now remove the three screws that secure the mould and its adaptor base to the main stand of the machine, using the special square box wrench; then remove the two adaptor base eccentric clamps, dealing with the one nearest the front of the machine first, and leaving the one near the pump until you are actually about to remove the mould from the machine.

The mould, in its adaptor base, can now be pulled gently back until the crossblock coupling hook (63) is clear of the mould, when it can be slipped out of contact with the hook of the type carrier (62) and removed from the main stand of the machine.

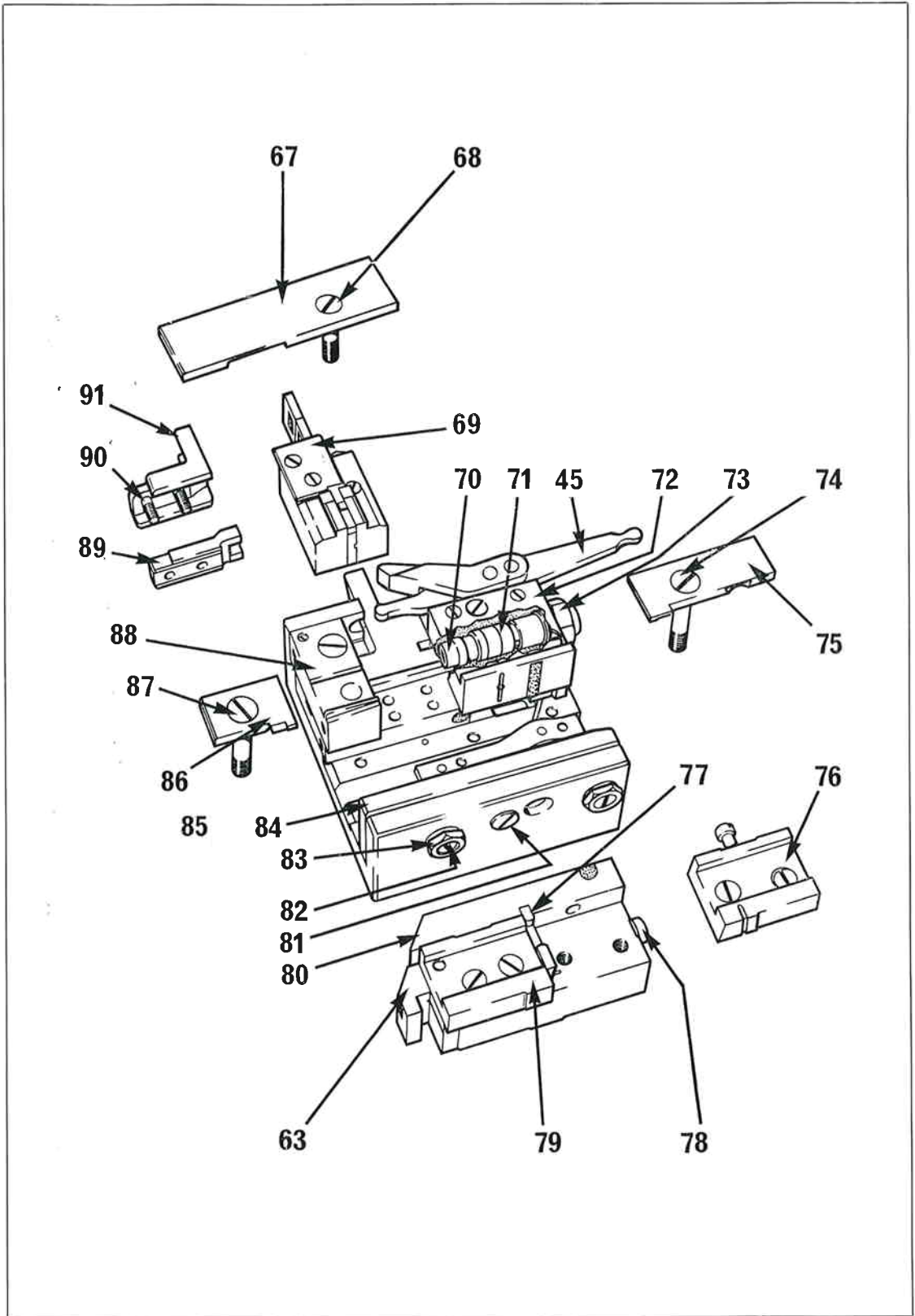
The mould must now be removed from the adaptor base and the water blown out of it right away. Blow a little oil through the mould waterways, then carefully oil the mould and return it to its box for storage.

#### 24.22 Taking the mould apart for cleaning

Generally speaking, it is advisable with moulds, to leave well alone and never take them apart so long as they continue to function properly and produce satisfactory type. Moulds can, however, be stripped down for cleaning when necessary and every care must be taken to ensure that the several parts do not suffer any damage whatsoever in the process. Absolute cleanliness is the maxim and it is most essential that suitable bench space is prepared and covered with clean paper before you begin the operation. A comfortable, smooth, level-surfaced wooden or linoleum-covered workbench is ideal. Never attempt to do the job on the metal surface of the main stand of the machine or direct on to the surface of a metal bench.

First, prepare your working surface, together with the necessary tools and cleaning agents, in order that work may proceed without delay after removal of the mould from the machine or the mould box as the case may be. Prepare two separate sheets of paper if possible, the second being reserved to receive the parts after they have been cleaned. Assemble the required screwdrivers and wrenches in readiness, and ensure these too are clean; also your hands, that is, to the extent of ensuring that everything is free from grit or oil, bearing in mind that even very fine dust can be gritty and consequently often sufficiently abrasive to prove injurious to the mould working parts.

Remember also, not to disturb any 'screws' other than those which are specified, as some are in fact eccentric dowels which are precision-set during



manufacture and locked with grub screws. Interference with these would upset the finely adjusted setting of the mould side blocks and necessitate the return of the mould to The Monotype Corporation Ltd for adjustment.

All this may sound very forbidding, but it is in fact really so much easier to do things right, and so much more rewarding and time saving, in the long run anyhow; and this equally applies to that which follows, as the need for extreme care at all times when handling moulds cannot be over emphasised.

If the mould you are about to dismantle has just been taken off the machine, you must first blow the surplus water out of the waterways with the aid of an air line.

The small type composition mould should then be taken apart as follows:

- a) Begin by removing the crossblock, by carefully sliding it out of the mould and lifting it clear. The exposed surfaces of both the mould and the crossblock should then be carefully wiped over, after which the crossblock should be put carefully to one side for separate treatment later.
- b) Release the centre gib plate screw (81) and remove the gib plate (84). Do not touch the other two gib plate adjusting screws or their lock nuts.
- c) Now remove the blade stop (89) and support (91) which are held by the two screws (90). This partially frees the mould blades in preparation for subsequent withdrawal.
- d) Remove the spring block pressure screw nut (73) and slacken the spring block pressure screw (71).
- e) Release the cover plate screw (68) and remove the cover plate (67).
- f) Insert the spare screw (number 304) in the spring block (72) in place of the cover plate screw and tighten firmly in position.
- g) Remove the blade holding down plate (69) by releasing the two screws.  
*Note:* The two eccentric dowels, which control the position of the side blocks, must not be touched or disturbed in any way whatsoever. Even the slightest movement will seriously affect the correct alignment of the side blocks and render the mould useless.
- h) Release the two screws (87) and (74) and remove both side block cover springs (86) and (75). The mould blades are now free.
- i) The mould blades can now be carefully withdrawn, care being taken to keep them down on the intermediate plate to avoid possible damage to the side block nick projection and the corresponding recess in the mould blade itself.
- j) Insert a few thicknesses of folded paper between the side blocks in substitution of the mould blades, to avoid the surfaces of the side blocks coming into contact with each other whilst they are being removed. A piece of lead strip will serve the same purpose.
- k) The side blocks can now be removed by carefully canting them each in turn towards the blade opening and gently lifting them out of the mould. You will find that the blocks can tend to adhere to the plate and come away suddenly when canted inwards – hence the protective paper cushioning.
- l) Finally, remove the spring block pressure screw (71), the spherical washer and the spring block plug (70), and you have completed the dismantling of the mould, other than the crossblock which is dealt with separately.

This is as far as it is safe or necessary for you to ever venture to take a mould apart, and it is again emphasised that the two eccentric dowels which position the side blocks must never be interfered with in any way.



All the parts must now be washed thoroughly in petroleum solvent, then dried off with an air jet and finished off with a fresh non-fluffy wiper. Any metal or burnt oil adhering thereto can be removed by rubbing with a piece of type metal strip, care being taken to ensure that the corners and sharp edges of the component parts are not damaged in any way in the process. Remember always to use only soft type metal for this purpose, being careful even so, to avoid scratching the mould parts with the edges or corners of the strip; and bear in mind that on no account must you ever attempt to lap or polish the parts with oilstones, metal polish or other abrasives. To do so would completely destroy the mould's sharp corners which are so essential for the production of clean, sharp, burrless type.

#### 24.23 Re-assembling the mould

The same scrupulous regard for care and cleanliness must be maintained when re-assembling the mould, in addition to which you have the added responsibility of making certain not only that everything goes back in the right place and in the right order, but you are also solely responsible for the proper functioning of the mould when the assembly has been completed. In short, you must not only put it together correctly, but with due regard to the function that each of the component parts is required to perform. You should therefore ask yourself just what each part has to do as you handle it whilst re-assembling, and then make certain that it is correctly fitted and adjusted to do so.

Nowhere is this more important than when re-inserting the mould blades between the side blocks. Correct positioning of the mould blade distance pieces allows the blades themselves to ride freely on the distance pieces in the channel formed by the side blocks with the very minimum clearance. This clearance is so slight and at the same time so accurate as to provide for sufficient free movement of the mould blades on the one hand, and to preclude the possibility of molten metal forcing its way between the blades and the side blocks on the other. The foregoing will perhaps at first appear to be somewhat at variance with the 'shock' treatment advocated whereby the mould is tapped lightly on the bench to settle the side blocks and the blades into position; but it is all very necessary in order to ensure that the mould blades have the required freedom of movement and should likewise be carried out carefully and methodically as instructed.

Bearing the above in mind, you can proceed to re-assemble the mould as follows:

- a) First, replace the spring block plug (70), the spherical washer and the pressure screw (71) in position in the spring block (72).
- b) Place the screw side block (88) in position and make sure it is firmly seated on the intermediate plate (85).
- c) Place the nick side block in position, ensuring it is properly seated; at the same time taking care to keep it well clear of the other side block already located.
- d) Replace the mould blade lever (45) on the fulcrum stud; then smear the mould blades with a very light film of clean, fresh mould oil.
- e) Replace the blades in the mould, both together, by keeping them down on the intermediate plate (85) and sliding them forward in one continuous movement, inserting the lever (45) whilst so doing. The lever must be located in the forward recess, not the one at the rear which accommodates the mould blade stop (89).

Extreme care must again be exercised in replacing the blades, to ensure that the nick recess in the blade fits comfortably over the corresponding nick projection in the side block, and that neither suffers any damage in the process.

f) At this point we are called upon to make absolutely certain that the mould blade distance pieces are correctly located. In order to ensure that the mould blade will function properly, it is essential for the blade distance pieces to be so located that they will be positioned at the rear ends of their slots in the blades when the blades are right forward in the ejection position. To achieve this you must carefully withdraw the blades again as far as possible without disengaging from the side block nick and, with a screwdriver, advance the pressure screw (71) so that the distance pieces are lightly nipped. The blades must now be slowly advanced again in the same manner, with a steady and continuous forward movement. During this forward movement, a slight resistance should be felt when the rear ends of the mould blade slots come into contact with the distance pieces, which are already lightly held in position between the two side blocks. The forward movement should be maintained, however, and continued until the blades project just a little beyond the front faces of the side blocks.

Should you inadvertently push the mould blades too far forward at this point, you must withdraw them completely and start this part of the operation again. It would not be sufficient just to withdraw the blades a little to correct the error, since it would not re-locate the distance pieces, which would be likewise too far forward; and the whole object of this delicate operation is to precisely position them so that they will in no way impede the movement of the mould blade in either direction.

You will doubtless appreciate that if the distance pieces are set too far forward when held between the blocks, the blades will be unable to withdraw to the fullest intended distance, whilst, on the other hand, if the distance pieces are held too far back, the blades will be unable to advance sufficiently to completely eject the cast product. Partial ejection would in turn jam the movement of the crossblock and tend to put a severe strain on several of the component parts of the machine.

g) You can now lightly tighten the pressure screw (71), but only after having made certain that the mould blades are moving freely on the distance pieces and that their movement is in no way restricted in either direction.

h) The side blocks and the blades must now be 'bedded down'. This process is carried out in two stages, first by a conventional tightening of the screws and then by a somewhat unconventional but carefully regulated form of shock treatment designed to achieve intimate contact between the faces of the parts.

We begin by replacing the screw side block cover spring (86), the screw (87) of which must first be tightened and then released to finger tight, so that it can react to the shock treatment in due course.

i) Now replace the nick side block cover spring (75) and tighten its screw, and release again in the same manner.

j) The blade holding down plate (69) can now be replaced, and its screws firmly tightened down.

k) Slacken off the pressure screw (71). This is important and must be attended to before you remove the spare screw (No. 304), to avoid possible movement of the pressure block.

- l) You can now remove the spare screw.
- m) Having removed the spare screw, you can replace the cover plate (67) and screw it firmly down.
- n) Now for the 'shock treatment'. This consists of tapping the blade end of the mould on the bench to help the side blocks and blades to settle into their exact position on the mould intermediate plate. The effect of the tapping is initially retained for the moment by increasing pressure from the hollow screw, and subsequently rendered permanent by the tightening down of the cover springs.  
The tapping is accomplished by holding the mould in the left hand, with the palm of the hand applying pressure at the gib plate end, keeping it down on the bench; whilst at the same time the mould is tilted to raise the blade end clear of the bench.  
Tapping consists of sharply lowering the blade end of the mould back on to the bench two or three times, and simultaneously applying pressure from the hollow screw by turning it with a screwdriver held in the other hand. Do not tighten too firmly at this stage.
- o) Check that the blades move freely, then firmly tighten the screw side block cover spring (86), meanwhile repeating the tapping.
- p) Again check that the blades move freely, and then, provided you are satisfied, you can firmly tighten the hollow screw.
- q) With a final tapping, firmly tighten down the nick side block cover spring (75) and once again verify the free movement of the blades. If there is any indication that the blades are either too tight or too free, the two cover springs must be slackened off again and the whole tapping sequence repeated. It may also be necessary to re-position the distance pieces if they have been disturbed.
- r) Replace the blade stop and support, and screw them down firmly with both screws. Note that the blade support (91) should be almost, but not quite, in contact with the blades.
- s) Replace and tighten the pressure screw lock nut (73).
- t) Replace the gib plate (84).
- u) Thoroughly oil the mould; also the crossblock, after it has been dismantled, cleaned and re-assembled.
- v) Replace the crossblock in the mould.
- w) Finally, check the gib plate for correct adjustment and re-adjust if necessary as fully explained in Section 24 which follows.

#### 24.24 Adjusting mould gib plate

With a new mould, one that has been recently overhauled or, conversely, one that has been in use for some considerable length of time, burrs may be formed on the crossblock side of the type, because the rear crossblock face is not pressed firmly enough against the front faces of the side blocks, and metal is allowed to edge its way out of the casting cavity.

The adjustment required to rectify this is quite straightforward.

- a) Ease off the gib plate adjusting screw lock nuts (83) and slide the crossblock into the casting position.

b) Tighten the left-hand adjusting screw (82) just sufficiently until the pressure of the gib plate can be felt, whilst at the same time the crossblock can still be freely moved by hand. Then slide the crossblock to the right to bring its right-hand edge flush with the right-hand edge of the mould base.

c) Repeat the adjustment to the right-hand adjusting screw.

d) Slide the crossblock backwards and forwards a few times to allow it to settle to its new adjustment. If its resistance to hand pressure varies according to its position, or it is altogether either too tight or too free, you must correct or repeat the adjustment as necessary.

e) Having satisfactorily completed the adjustment, tighten the lock nuts, holding the adjusting screws with a screwdriver to prevent them turning with the nuts. Slight pressure only is required when tightening the lock nuts with the wrench.

Further adjustment of the gib plate should not be necessary for some considerable time, provided that the crossblock is kept properly lubricated. To this end, the best possible results are obtained if the auxiliary crossblock oiler (55) is used in conjunction with the syphon oiler (54). The crossblock oiler not only ensures that both sides of the crossblock do not run dry, but it also tends to prevent the top of the mould becoming flooded with oil and affecting the quality of the type.

#### 24.25 **Dismantling the crossblock for cleaning**

As with the mould itself, the crossblock need only be stripped down for cleaning when necessary, or if it is not functioning properly. The same care must again be taken; wash all the parts with petroleum solvent and dry off and clean away burnt oil or type metal with a piece of type metal strip, taking special care not to damage the sharp corners or edges. Similarly, no attempt must on any account be made to lap the parts with oilstones, metal polish or other abrasives.

Dismantle the crossblock as follows:

a) First remove the jet blade (77) – just slide it out.

b) Remove the gate block adjusting screw (78).

c) Remove the screw which passes through the front of the crossblock back plate (80) into the adjustable gate block (76).

d) Free the adjustable gate block by removing its two remaining securing screws.

Having removed the adjustable gate block, the crossblock will not usually need any further stripping down, but should the oil channels be choked with type metal it will also be necessary to remove the fixed gate block (79). This you do as follows:

a) Remove the mould coupling hook (63) which is secured by one screw.

b) Remove the screw which passes through the front of the crossblock back plate (80) into the fixed gate block (79).

c) Free the fixed gate block by removing its two remaining securing screws.

*Note:* The eccentric dowel which positions the fixed gate block must not be disturbed in any way whatsoever.

24.26 **Re-assembling the crossblock**

When re-assembling the crossblock, care must again be taken that all the parts are properly bedded down to their adjacent surfaces, both horizontally and vertically.

The following instructions for re-assembly include the replacement of the fixed gate block, should this have been removed:

- a) Place the fixed gate block in position.
- b) Replace the screw which passes through the back plate; tighten it first and then release to finger tight.
- c) Replace the other two fixed gate block securing screws, tighten them similarly and release to finger tight.
- d) Now firmly tighten the screw which you replaced first.
- e) Firmly tighten the other two screws.
- f) Replace the mould coupling hook (63) and securely tighten its screw.
- g) Place the jet blade (77) against its operating face on the fixed gate block (79).
- h) Replace the adjustable gate block (76).
- i) Replace the screw which passes through the back plate; tighten it first and then release it to finger tight.
- j) Replace the other two adjustable gate block securing screws, tighten them securely and release to finger tight.
- k) Now replace the gate block adjusting screw (78) and tighten until the jet blade tends to rise off its seating.
- l) Lightly tighten the screw which passes through the back plate and then the two screws holding the adjustable gate block (76).
- m) Slightly slacken off the gate block adjusting screw (78), and with the aid of a piece of wood or type metal strip, slide the jet blade back and forth, at the same time pressing it into its seating to ensure it is in contact with the crossblock.
- n) You can now firmly tighten the screw in the back plate (80).
- o) Firmly tighten the two screws securing the adjustable gate block (76).
- p) If all the adjustments have been correctly made, the jet blade should now be seated firmly in the crossblock and it should slide freely in either direction when side pressure is applied by the finger – and it should not project above the surface of the gate blocks. The routine assembly for the adjustable gate block must be repeated if any of the parts show evidence of being out of adjustment in any way whatsoever.
- q) On satisfactory completion of the crossblock re-assembly, its working surfaces must be given a light film of clean mould oil before it is replaced in the mould.

# CHAPTER 25

## Quad and space mould 5–14 pt

The quad and space mould is designed to produce low quads and spaces in the 5–14 pt range, in any set width up to 3 ems. The mould is somewhat similar in construction to the small type composition mould, the basic differences being:

- a) The mould is adjustable, and a mould blade is supplied for each point-size.
- b) Since the mould is designed specifically to produce material of less than type height, no mould blade lever is required and the mould blade is constructed in one piece.
- c) A clamping bar (10) serves in place of the type mould side block springs. It also acts as a blade cap to seal the top of the mould.
- d) A distance plate (4) is used to position the screw side block (16) when casting from 5–9 pt.

It will be appreciated that one of the advantages of this mould lies in the fact that any size in the mould range can be obtained from one mould, whereas if you chose to produce an extensive range of spacing material from the small type composition moulds, you would need to completely change the mould for each point-size.

A separate mould is required for each height of product, and within certain limitations, moulds can be supplied between 0.750 in and 0.855 in to suit individual requirements.

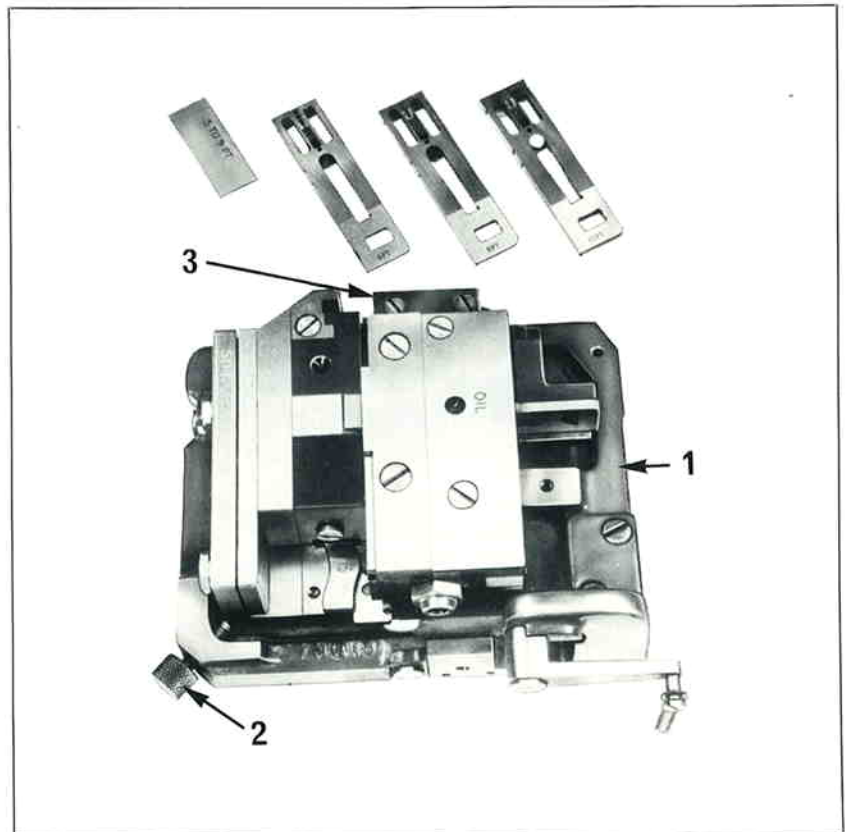
Preparation for casting is very simple. It is only necessary to assemble the mould in the adaptor base and attach it to the machine, together with the matrix heads base. No matrix head is required.

### 25.1 Preparing the machine and attaching the mould

The following briefly outlines the setting-up of the machine for casting quads and spaces from the quad and space mould in the 5–14 pt range, emphasising, as necessary, where the procedure differs from the comprehensive instructions concerning small type composition moulds contained in Chapter 24, which you should use initially as your detailed guide.

- a) Place the mould in its adaptor base (1), locating it in position with the knurled screw (2) and securing the mould to the base with the special screw provided.
- b) Attach the 5–14 pt type clamp operating block (3) to the adaptor base, securing it in position with the two screws.
- c) Attach the matrix heads base to the main stand, ensuring that the locating distance piece is correctly positioned.
- d) Connect the matrix heads base to the cam levers, ensuring that the type carrier connecting rod yoke pin is engaged in the 12-pt hole of the type carrier cam lever extension.

- e) Place the lead mould blade stop lever in the 16-ems position.
- f) Attach the 5-36pt mould blade fork to the mould blade slide, making sure the figures are in view on the upper surface of the fork bar.
- g) Now place the mould and adaptor base on the machine, locating the base against its two locating faces on the matrix heads base with the two eccentric adaptor base clamps, fitting the one nearest the melting pot first.
- h) Secure the mould and adaptor base to the main stand of the machine, using the three special screws provided, taking extreme care, as with the small type composition mould, to ensure that the screws, which are of varying length, are each placed in the correct hole.
- i) Connect the mould blade to the mould blade fork with the mould blade fork pin, and lock the two knurled nuts.
- j) Use the type support spring cam in accordance with the set-size of cast throughout, removing same as necessary as instructed in 10.9.
- k) Set the driving block abutment of the mould blade slide in accordance with the set-width, reversing it as necessary as instructed in 9.3.
- l) Attach the mould oiler as used with the composition moulds, and remember to lubricate the mould blade through the hole in the cover plate.
- m) Attach the 5-14pt type channel block on the type carrier cover.



**25.2 Final adjustments and checks before casting**

- a) Make certain that the stroke of the type carrier is set to the standard adjustments as necessary. Refer to 10.5.
- b) Connect the ball end of the mould blade slide drive lever connecting tube to the hole marked 'Type to 42-point' on the intermediate lever.
- c) Finally, adjust the wedge screw to set the mould to produce a 12-point cast, check the resultant product and alter the handwheel 'type' scale setting accordingly until correctly sized product is obtained.

Release the 'type' scale clamp lock screw, set the handwheel 'type' scale to zero, lock the wedge screw clamp nut and tighten the scale clamp lock screw again. The handwheel scale can now be adjusted to cast any size in the mould range as required.

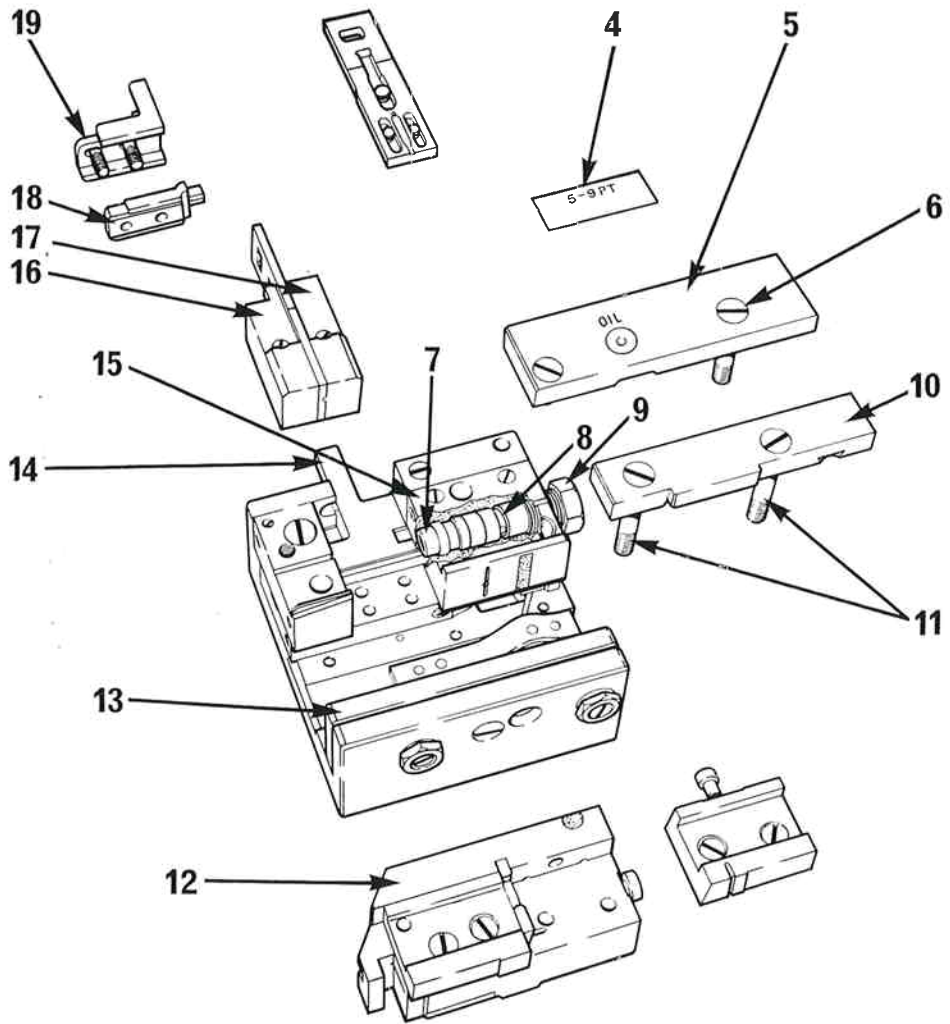
The 'Product Information Table' gives you approximate speeds for each point-size obtainable from the mould, quoting figures for both the quad and the maximum 3-em cast in each case. Set-sizes less than the quad and those which fall between the quad and 3 ems must accordingly be cast at proportionate speeds which you will very quickly be able to establish in relation to your requirements and operating conditions. In the event of bad ejection, or blistered quads, casting speed should be reduced sufficiently to remedy the fault.

**25.3 Taking the mould apart and changing body size**

The following instructions apply both when changing point-size or when stripping down for cleaning, and the several stages of the operation must be carried out in the correct sequence. This is likewise equally true when re-assembling the mould, and the general remarks in respect of care and cleanliness amply stressed in 24.22 in connection with the small type composition moulds, together with the detailed instructions for taking the mould apart for cleaning, and its subsequent re-assembly, should be observed in principle throughout.

- a) First, remove the crossblock (12).
- b) Remove the blade stop (18) and support (19).
- c) Loosen the spring block pressure screw (8) located in the end of the mould.
- d) Release the two cover plate screws and remove the cover plate (5).
- e) Insert spare screw (No. 304) in place of the cover plate screw (6), and tighten firmly in position.
- f) Release the two screws and remove the clamping bar (10).
- g) Withdraw the mould blade, keeping it down on the intermediate plate (14) in order to avoid possible damage to either the nick of the mould, or the corresponding recess in the mould blade.
- h) Insert a few thicknesses of folded paper between the side blocks, in substitution for the mould blade, to prevent the side blocks coming into contact with each other whilst they are being removed. A piece of lead strip will serve the same purpose.
- i) Remove the side blocks, by carefully canting them each in turn towards the blade opening, and lifting them out of the mould; and remove the distance plate, if fitted.





*Note:* When stripping the mould for cleaning, remove the spring block pressure screw (8), the spherical washer and spring block plug (7), and you have completed the dismantling of the mould. The crossblock is dealt with separately.

This is as far as it is safe or necessary for you to take a mould apart, either for cleaning, or when changing the mould blade, etc. to cast in a different size. The eccentric dowels which position the side blocks must not be interfered with in any way. Even the slightest movement will seriously effect the correct alignment of the side blocks and render the mould useless.

All the parts must be washed thoroughly in clean petroleum solvent, dried off with an air jet and a clean, non-fluffy wiper, care being taken not to damage the edges and corners of the blade and side blocks. On no account must you ever attempt to lap or polish the parts with oil stones or other abrasives. To do so would completely destroy the mould's sharp corners, which are essential for the production of clean, sharp, burrless product.

#### 25.4 Re-assembling the mould

Bearing in mind the necessity for care and cleanliness, the need to assemble the various parts in the correct order, and your responsibility for the proper functioning of the mould, you should proceed as follows:

- a) Place the screw side block (16) in position, and likewise the distance plate when casting 9pt and below (after having first replaced the spring block plug (7), the spherical washer and the pressure screw (8), if the mould has been stripped for cleaning). Make sure the side block is firmly seated on the intermediate plate (14).
- b) Place the nick side block (17) in position and make sure it is firmly seated, keeping it, meanwhile, well clear of the screw side block already located in position.
- c) Select the required mould blade and smear with a very light film of clean, fresh mould oil.
- d) Insert the mould blade, whilst exercising the same care as before to avoid damage to either the nick or the nick recess.

At this point, as with the small type composition mould, we have to make sure that the mould blade distance pieces are correctly located in order to ensure that the mould blade will function properly and open to its fullest extent. To achieve this, carefully withdraw the blade again as far as possible without disengaging from the side block nick and, with a screwdriver, advance the hollow screw so that the distance pieces are lightly nipped.

Now advance the blade again with a steady and continuous forward movement, until the blade projects just a little beyond the front faces of the side blocks. During this forward movement, a slight resistance should be felt when the rear ends of the slots come into contact with the distance pieces which are already lightly held in position between the side blocks.

The movement of the mould blade will carry the distance pieces forward, but if you push the blades too far, the distance pieces will likewise be carried too far and consequently wrongly located in their recesses, and the movement of the mould blade will be accordingly restricted.

It would not be sufficient just to withdraw the blade a little to correct the error, since it would not serve to re-locate the distance pieces correctly, and the whole object of this delicate operation is to precisely position these so that they will in no way impede the movement of the mould blade in either direction. Refer also to 24.23 which explains the above procedure in respect of the small type composition moulds.

e) You can now lightly tighten the spring block pressure screw until the distance pieces are held between the side blocks, and then make certain that the mould blade is moving freely on the distance pieces and that its movement is in no way restricted in either direction.

f) The side blocks and the blade must now be 'bedded down' in the manner described in 24.23, which deals with the small type composition moulds.

We begin (with this mould) by replacing the clamping bar (10); securing it in position with its front edge located against both the spring block (15) and the screw block (16). The clamping bar screws (11) must first be tightened, and then released to finger tight, so that the clamping bar can react to the 'shock treatment' to which it will be subjected in due course. Ensure, meanwhile, that the clamping bar remains properly located against the blocks.

g) Slacken off the spring block pressure screw (8). This is important and must be attended to before you remove the spare screw (No. 304), to avoid possible movement of the spring block.

h) You can now remove the spare screw.

i) Having removed the spare screw, you can replace the cover plate (5) and screw it firmly down.

j) Now for the 'shock treatment'. This consists of lightly tapping the blade end of the mould on the bench to help the side blocks and the blade to settle into their exact position on the intermediate plate. The effect of the tapping is initially retained by increasing pressure from the spring block pressure screw, and subsequently rendered permanent by the tightening down of the clamping bar. (If working on a metal bench, use wood or linoleum as a protective covering.)

The tapping is accomplished by holding the mould in the left hand, with the palm of the hand applying pressure at the gib plate end, keeping it down on the bench; whilst at the same time the mould is tilted to raise the blade end clear of the bench.

Tapping involves sharply lowering the blade end of the mould back on to the bench two or three times, whilst simultaneously applying pressure from the hollow screw by turning it with a screwdriver held in the other hand. Do not tighten too firmly at this stage.

k) Check that the mould blade moves freely, then firmly tighten the clamping bar (10); meanwhile repeating the tapping.

l) Again check to confirm that the blade moves freely, and then, provided you are satisfied, you can firmly tighten the spring block pressure screw. If there is any indication that the blade is either too tight or too free, the clamping bar must be slackened off again and the whole tapping sequence repeated. It may also be necessary to re-position the distance pieces if they have been disturbed.

m) Replace the blade stop and support, and screw them down firmly with both screws. Note that the blade support (19) should be almost, but not quite, in contact with the blade.

n) Replace and tighten the spring block pressure screw lock nut (9).

o) Replace the gib plate (13) (if it has been removed for cleaning) and adjust it according to the procedure described in 24.24.

p) Finally, oil the mould thoroughly, and oil and replace the crossblock. (Instructions for dismantling the crossblock for cleaning, and its subsequent re-assembly, are contained in 24.25 and 24.26.)

# CHAPTER 26

## Large type composition moulds 14–24 pt

The large type composition mould is designed to function on lines similar to the small type composition moulds. It differs however in construction, in that it consists of a mould base and a crossblock and a series of interchangeable insets, one for each point-size. The removal and replacement of insets constitute operations demanding extreme care, and the mould must be removed from the machine each time a change is made.

### 26.1 Preparing the machine and attaching the mould

The procedure for completing the pump preparations, preparing the machine and attaching the mould is broadly speaking the same as with the small type composition moulds; the composition matrix head is used, the mould is mounted on to the adaptor base (fitted with the crossblock coupling hook marked '39SEI SUPER') and all connections and adjustments are as described in detail in Chapter 24 in respect of the composition mould, with the following exceptions:

a) The composition matrix head must be assembled with the bridge complete with the auxiliary loading spring required for casting 14–24pt composition type, using 0.4in matrices.

Refer to 11.2, which deals with this aspect of the composition matrix head.

b) The type carrier connecting rod yoke pin must be linked with the type carrier cam lever extension via the hole marked '24'.

c) Use mould oiler b15SL1.

d) Attach the 14–72pt fixed type channel block to the type carrier cover on the main stand.

You must also make certain that the mould blade slide driving block cap abutment is correctly positioned for the 'setwise' size of the type to be cast, as explained in 9.3, 'The mould blade sizing mechanism', and that the type support spring cam bracket is used correctly in relation to the set-width as indicated in 10.9, which deals with the matrix heads base.

### 26.2 Removing the mould from the machine

a) First, remove the matrix holder, then lower the melting pot and swing it clear.

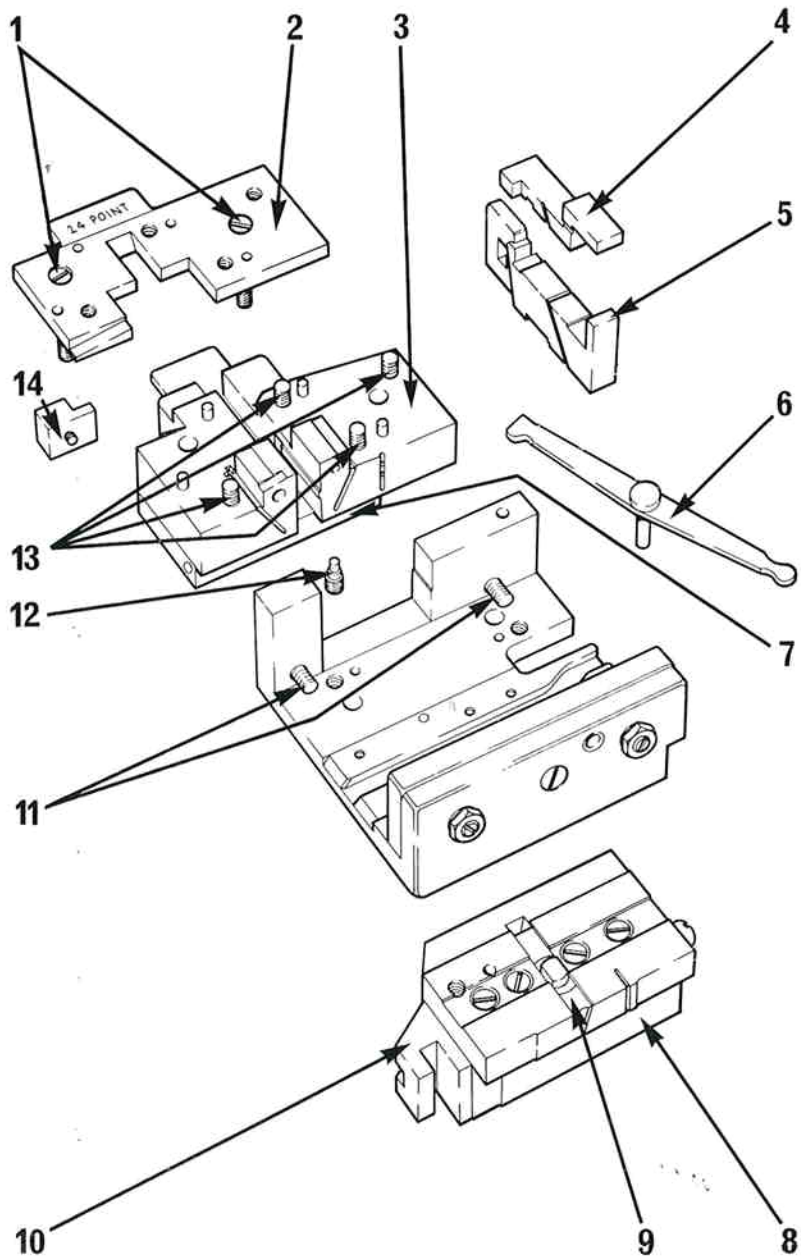
b) Turn the machine by hand to 170° and disconnect the ball end of the mould blade slide drive lever intermediate lever. Return the lock nut to the ball end for safe keeping.

c) Manipulate the intermediate lever by hand to bring the mould blade to its forward position, loosen the two mould blade fork knurled nuts and remove the mould blade fork pin with the aid of the pin handle. Use the two wrenches provided – both together; turning the rear nut in a clockwise direction. See 24.10 which deals with this procedure when attaching the small type composition mould to the machine.

- d) Screw back the micrometer wedge until a mould blade opening of approximately 60 points is indicated on the wedge indicator scale, then pull the mould blade slide back until the mould blade fork is clear of the mould blade.
- e) Remove the mould water supply piping and the mould oiler.
- f) Remove the three mould screws and the two eccentric adaptor base clamps that secure the mould in position on the main stand, dealing with the screws first, and the clamp nearest the melting pot last – immediately prior to removing the mould.
- g) Pull the mould and adaptor base gently away from the matrix heads base, then slide it squarely forward towards the galley until the mould coupling hook (10) is clear of the hook on the type carrier and can be withdrawn. The mould and adaptor base can now be removed complete.
- h) Remove the mould from the adaptor base, blow surplus water out of the mould waterways with an air jet, and blow oil through to reduce risk of corrosion.

### 26.3 Changing insets

- a) Prepare a suitable place, cover with clean paper and proceed with extreme care and with due regard for cleanliness as emphasised in connection with the small type composition moulds dealt with in detail in this respect in 24.22.
- b) First remove the crossblock (8).
- c) Remove the two small 'holding back' screws (11) located at the rear of the mould base, and the two large inset screws (1) on the top of the inset.
- d) The inset can now be removed by gently pushing it forward into the crossblock channel. When the inset is displaced sufficiently to clear the aperture in the base, apply endwise pressure to disengage the mould blade lever (6) from the blade.  
Great care must be exercised to ensure that the sharp corners of the insets are protected from possible damage during this operation.
- e) Blow the waterways clear, and carefully wipe and oil the inset before returning it to its box.
- f) The mould base itself, together with the required replacement inset, must now be washed thoroughly in petroleum solvent, dried off with an air jet and finished off with a clean non-fluffy wiper. Any metal or burnt oil adhering thereto can be removed by rubbing with a piece of type metal strip, care being taken to ensure that the corners and sharp edges of the component parts are not damaged in any way in the process. Remember always to use only soft type metal for this purpose, being careful even so to avoid scratching the mould parts with the edges or corners of the strip; and bear in mind that on no account must you ever attempt to lap or polish the parts with oilstones, metal polish or other abrasives. To do so would destroy the mould's sharp corners which are so essential for the production of clean, sharp, burrless type.
- g) Smear a light coating of clean oil on the underside of the inset, carefully slide it into position in the mould base and re-engage the lever.
- h) Insert the two small screws (11) which hold the inset to the base and screw them up firmly, then release them and bring them just up to bearing.



- i) Insert the two large inset screws (1) and screw them down firmly, then likewise release and bring them just up to bearing.
- j) Finally, tighten the two small screws (11) firmly again, and then the two large inset screws (1), in that order.

*Note:* The crossblock must also be washed thoroughly in petroleum solvent before being replaced in the mould. Care must be taken to ensure that the jet blade (9) is correctly positioned, with the fluted end to the front.

Thoroughly oil the crossblock before inserting it in the mould, and make certain it is running freely in its channel. Should it fail to do so, it can be taken as an indication that there is grit or some other substance between the inset and the mould base – in which case it must be taken out again and cleaned. Also oil the mould inset (3) where the syphon oiler is attached.

#### 26.4 Dismantling and assembling insets

Should you find it necessary to take an inset apart, you must bear in mind all previous precautionary advice with regard to the necessity for scrupulous cleanliness and the careful preservation of the sharp edges and corners of all the parts involved; then prepare a suitable place on which to work and proceed as follows:

- a) Remove the four cover plate screws (13) (ensure they can each be returned to the correct hole), lift off the cover plate (2) by inserting a screwdriver in each of the slots provided at either end; remove the abutment (14) and take out the blade back stop screw (12) from the intermediate plate (7).
- b) Now withdraw the blades (4) and (5) – sliding them from front to rear, removing the lever (6) at the same time. Never lift the rear of the blades when passing them between the side blocks or try to force them over the nick pin, as both the blade and the pin would be damaged in the process.
- c) Carefully clean the insets and all the parts which have been removed (as already instructed for changing insets) and replace the blades, after having given them a light smear of clean mould oil. This is best accomplished by first placing the upper blade on the lower and sliding one backwards and forwards on the other to ensure that the surfaces are in perfect mutual contact, and that no particles of type matter are lodged between them.

Place the blades on the intermediate plate (7) and hold them firmly down when sliding them into position; and insert the compensating lever. The blades should also be worked backwards and forwards on the intermediate plate on being inserted.

- d) Replace the blade back stop screw (12), the abutment (14) and the cover plate (2), and secure with the cover plate screws (13) – returning each screw to the hole from whence it came.

#### 26.5 Dismantling the crossblock for cleaning

The dismantling of the crossblock, its cleaning and subsequent re-assembly should be carried out as detailed at some length in respect of the small type composition moulds in Chapter 24, Sections 25 and 26.

# CHAPTER 27

## Display type machine moulds 14–36 pt

These moulds, designed for use on a 'type and rule caster', (display type machine), can be used on the Super caster when mounted on an adaptor base.

The display type machine mould consists of a mould base, together with a crossblock and a series of interchangeable mould insets, one for each point-size. It is very similar to the Super caster display type moulds, except that the type nick is on the left-hand mould blade block.

### 27.1 Preparing the machine and attaching the mould

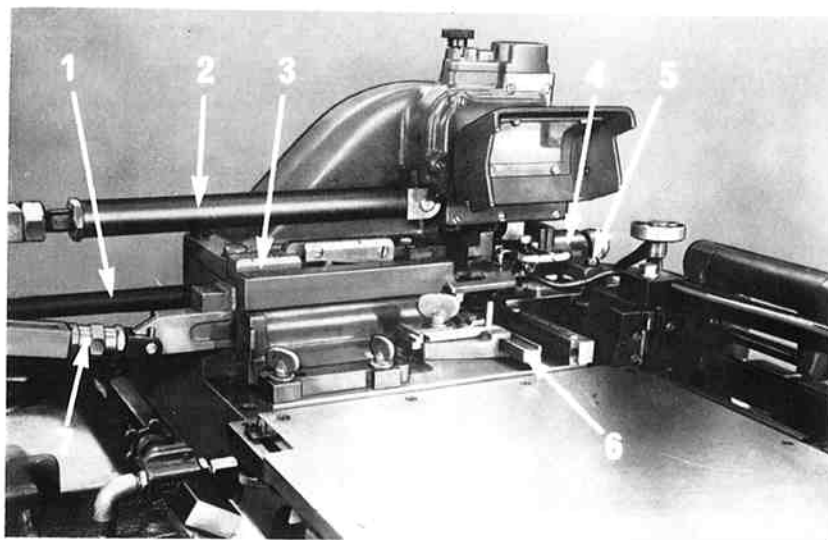
Attach the matrix heads base to the main stand, ensuring that the locating distance piece is correctly positioned as necessary for the point-size of the type to be cast, and secure the display matrix head to the matrix heads base with the screws provided.

Adjust the wedge screw of the mould blade sizing mechanism to give a reading of approximately 60 points on the wedge indicator scale, and attach the mould blade fork (5–36 pt) to the mould blade slide.

The crossblock should be fitted with the mould coupling hook before the mould, complete with the required inset, is inserted in the adaptor base. This can now be attached to the main stand of the machine, butting up against the two locating faces of the matrix heads base. It must be secured in position immediately with the appropriate adaptor base clamps, fitting the clamp nearest to the melting pot first.

The mould is finally secured direct to the main stand of the machine with the three mould screws provided. These are inserted beneath the main stand.

Connect the mould blade to the correct mould blade fork. Fit the display matrix bridge (4) on top of the mould (it is positioned by the bridge locating strip on the underside) and secure it with the three 1 in hexagon screws (5).





Attach water supply piping (14-36) and the correct mould oiler, and secure the 14-72pt 'solid' type channel block (6) in position on the type carrier cover.

Connect the type pusher lever connecting rod (1) to its cam lever, the matrix lifter lever connecting rod (2) similarly to the matrix cam lever, via the upper hole; and the type carrier connecting rod (7) to the type carrier cam lever extension, by means of the yoke pin, which must be linked (via the correct hole in the yoke) with the relevant hole for the size you are about to cast. (Do not forget to change this connection whenever necessary.)

Ensure that the driving block abutment on the mould blade slide is positioned the right way round for the set-size of the type you will initially cast, bearing in mind that 12-points set-width is the decisive figure. (You will have to change the abutment round as necessary, in accordance with the set-width of the character you are casting, as indicated in points on the side of the matrix.) The type support spring cam bracket (3) must also be set and subsequently varied according to your casting programme, in relation to both the point-size and set-width of the product.

Finally, turn the machine to approximately 150-160°; connect the mould blade slide drive lever connecting tube to the intermediate lever, via the hole marked 'Type to 42 point'; set the plunger spring adjusting nut right forward against the stop collar, and the fulcrum pin eccentric in the 'Small Type' position.

Refer also for detailed information to Chapter 10 in respect of the matrix heads base; Chapter 12 the display matrix head and display matrix bridge (which includes instructions for inserting the matrix holder); Chapter 9 in respect of the mould blade sizing mechanism, with reference to Section 3 in connection with adjustments when preparing to cast type, and Section 11 regarding the plunger spring adjusting nut and the fulcrum pin eccentric.

#### 27.2 Removing the mould from the machine

First, remove the matrix holder; lower the melting pot and swing it back; then remove the display matrix bridge, and proceed to remove the mould from the machine as instructed for small type composition moulds, dealt with in detail in 24.21.

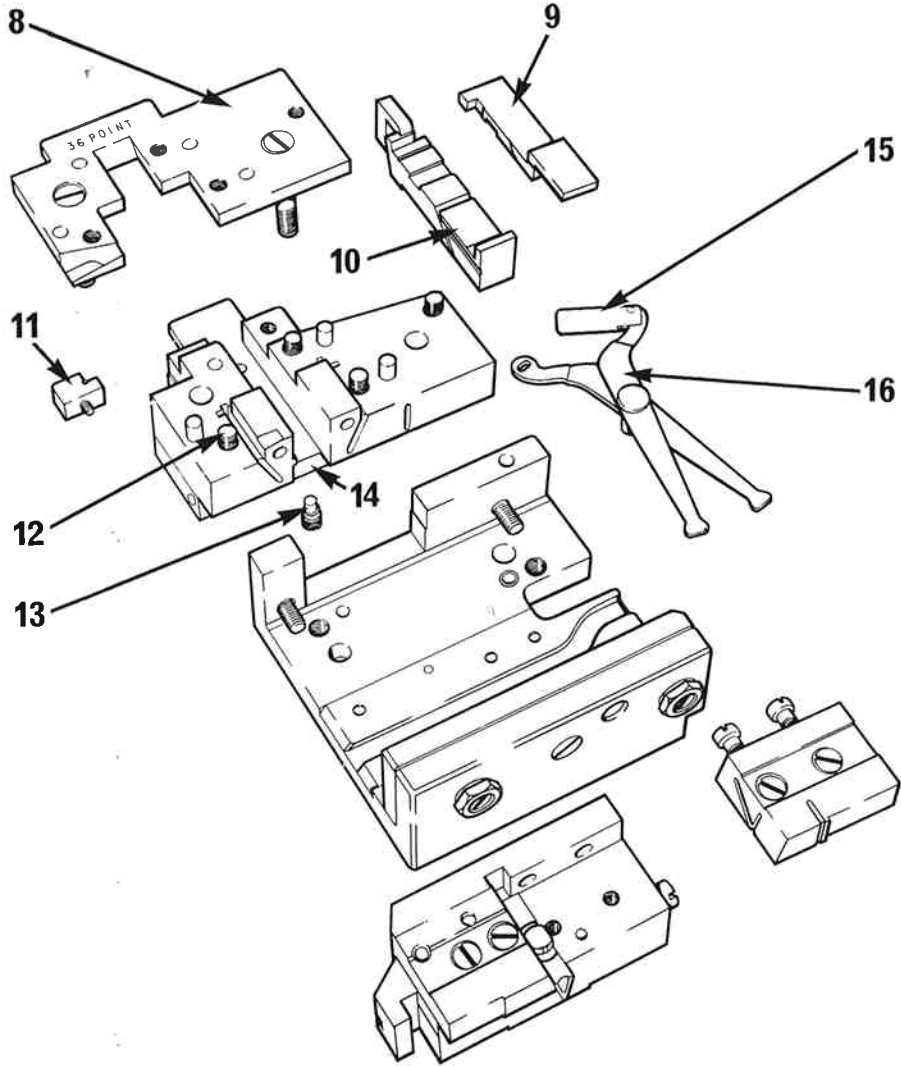
#### 27.3 Changing insets

Adjust the mould blade sizing mechanism to open the mould approximately 18 points, then move the blade operating lever spring box (15) out of contact with the lower blade lever and proceed as for changing insets on the 14-24pt large type composition moulds, as explained in detail in 26.3.

#### 27.4 Dismantling and assembling insets

Should you find it necessary to take an inset apart, you must bear in mind all previous precautionary advice with regard to the necessity for scrupulous cleanliness and the careful preservation of the sharp edges and corners of all the parts involved; then prepare a suitable place on which to work and proceed as follows:

a) Remove the four cover plate screws (12) (ensure they can each be returned to the correct hole), lift off the cover plate (8) by inserting a screwdriver in each of the slots provided at either end; remove the abutment (11), and take out the blade back stop screw (13) from the intermediate plate (14).



b) Now withdraw the blades (9) and (10) – sliding them from front to rear, removing the mould blade lever (16) at the same time. Never lift the rear of the blades when passing them between the side blocks or try to force them over the nick pin, as both the blade and the pin would be damaged in the process.

c) Carefully clean the insets and all the parts which have been removed (as already instructed for changing insets) and replace the blades, after having given them a light smear of clean mould oil. This is best accomplished by first placing the upper blade on the lower and sliding one backwards and forwards on the other to ensure that the surfaces are in perfect mutual contact, and that no particles of type matter are lodged between them.

Place the blades on the intermediate plate (14) and hold them firmly down when sliding them into position, and insert the mould blade lever. The blades should likewise be worked backwards and forwards on the intermediate plate on being inserted.

d) Replace the blade back stop screw (13), the abutment (11) and the cover plate (8), and secure it with the cover plate screws (12) – returning each screw to the hole from whence it came.

**27.5 Dismantling  
the crossblock  
for cleaning**

The dismantling of the crossblock, its cleaning and subsequent re-assembly, should be carried out similarly to that detailed at some length in respect of the small type composition moulds in Chapter 24, Sections 25 and 26.

# CHAPTER 28

## Short lead and rule moulds 1½ pt, 2 pt and 3 pt

The short lead and rule mould consists of a mould base which can be equipped with interchangeable 1½ pt, 2 pt and 3 pt insets, from which can be produced high and low leads, and various rules obtainable from special single line matrices (special insets and mould blades being supplied for full-faced rules). All these it will produce in lengths of from 2 to 36 points.

This mould produces separate pieces of product after the manner of the composition moulds, being designed on similar lines, whilst the type carrier and type pusher are likewise involved in the removal of each completed cast out of the mould after its ejection from the casting cavity by the mould blade. It thus differs considerably from the Super caster strip moulds described in Part 6, which cast strip material in lengths by a succession of fusing casts, the product passing right through the mould, straight on to the galley.

High and low blade caps are used, together with normal mould blades, when casting high or low leads. The mould blades provided for casting rules however (other than full-faced) are shaped to fit in the matrix groove and thus constitute a complete rear wall for the casting cavity. Each rule matrix therefore has its own matching mould blade, whilst the front of the mould is sealed by the crossblock, the height of which is sufficient to serve as a front wall during casting. Rules can be cast flush-sided, central on the body or full-faced.

A matrix locator (18) is fitted above the matrix, accurately maintaining the matrix (11) in position in relation to the front and rear of the inset (17), whilst both matrix and locator are secured by the knurled headed clamp screw (14).

The mould must be used with an adaptor base and set up on the machine together with the matrix heads base, though no matrix head is required, since the various caps and matrices are clamped in position on the mould.

### 28.1 Preparing the machine and attaching the mould

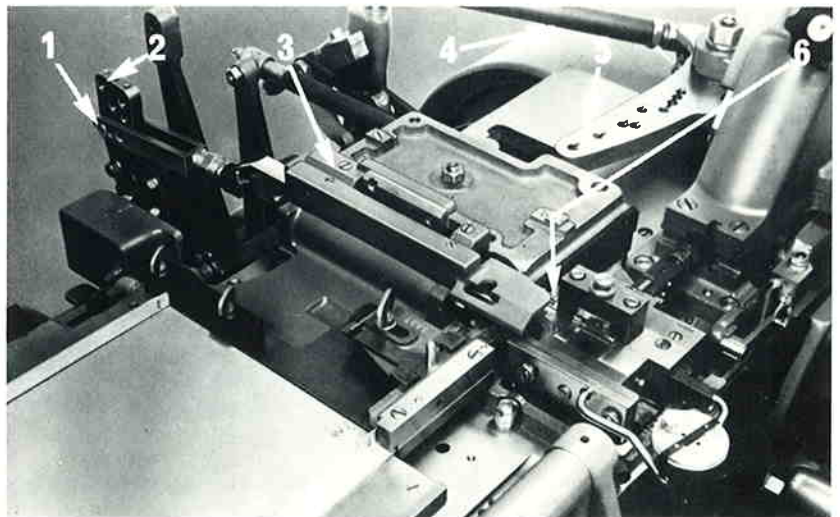
Commence by preparing the pump (attending to all the settings and adjustments as necessary) in order to ensure it will be at the correct temperature by the time you are ready to cast; and fit the short lead and rule nozzle (No. 14).

Other settings and adjustments (except where specified) should be, broadly speaking, in accordance with those specified for leads and rules (1 pt to 3 pt) in the 'Product Information Table'. Note that the piston spring must be adjusted to give as little pressure as possible, consistent with good results throughout.

Having completed the preliminaries, proceed as follows:

- a) Attach the matrix heads base in position on the main stand of the machine, securing it in position with the three matrix heads base screws.
- b) Place the mould in the adaptor base and locate it in position with the knurled mould locating screw.
- c) Raise the lead mould blade stop lever handle to its uppermost position.
- d) Clamp the mould to the adaptor base with the special screw provided, and attach the type clamp operating block (6) (marked 'Short Rule') with the two screws.

- e) Attach the 5-36pt mould blade fork to the mould blade slide.
- f) Place mould and adaptor base on the machine, locating the base against its two positioning faces on the matrix heads base with the two eccentric adaptor base clamps, securing the one nearest the melting pot first.
- g) Secure the mould to the machine, using three of the screws provided (two short and one long), inserting them beneath the main stand.
- h) Attach the mould waterway.
- i) Connect the mould blade to the mould blade fork, with the mould blade fork pin, using the pin handle to locate and secure it in position; locking the knurled nuts as instructed in 24.10.
- j) Release the two screws and remove the type support spring cam bracket (3) complete, since it is not required when casting short leads and rules.
- k) Ensure that the driving block cap abutment, at the end of the mould blade slide, is positioned correctly for the 'set-width' of the product to be cast; that is with its larger diameter at the front for up to and including 12-points set-width, and the other way round for the larger sizes.
- l) Set the plunger lever fulcrum pin eccentric in the 'Short Rule' position.
- m) The type carrier connecting rod yoke pin (1) must be connected in the 12-pt hole of the type carrier cam lever extension (2).
- n) Adjust the stroke of the type carrier so that the line on the top of the crossblock (20) registers with the line on the inset (17), when the type carrier is in the casting position. Refer to 10.5.
- o) Secure the fixed type channel block ('14-72 pt solid type') in position on the type carrier cover.
- p) Connect the mould blade slide drive lever connecting tube (4) to the mould blade slide drive lever, intermediate lever (5), engaging the ball end in the



42-pt position, ensuring that the snug pin is properly located, and securing with the ball end nut.

q) Adjust the micrometer wedge screw to give a reading of 12 points on the wedge indicator scale.

r) Commence casting, and after allowing sufficient time for the mould to warm up, size the last cast after the product has cooled; then adjust the wedge screw scale accordingly and cast again to confirm that the size obtained is exactly 12 points.

s) Loosen the 'type' scale clamp lock screw and set the wedge screw handwheel scale to zero. Tighten the scale clamp lock screw again and lock the wedge screw with the wedge screw clamp nut. The wedge screw is thus set to produce a 12-pt cast, and the mould correctly zeroed to produce any required size obtainable from the mould.

*Note:* It may be necessary, when using this mould on the Super caster, to remove the corners of the tenon on the adjustable type channel block.

Delivery of the product can be assisted by means of the type stacker attachment, which enables the short leads and rules to be stacked in line for the full length of the galley. Each separate casting is pushed into a channel formed between the right-hand side of the galley and the type stacker bar. A line support device is used in the channel, against which the product at the front of the line rests and is thus prevented from falling, as the pieces move forward on the completion of each cast. Refer to 1.5 regarding the type stacker.

The temperature of the metal should be 377°C (710°F), and the machine speed regulated to 110 r.p.m. for mould blade openings between 2pt and 12pt, 90 r.p.m. for 13pt to 24pt, and 80 r.p.m. for openings exceeding 24pt. The speeds (and temperature) should be regarded as flexible and as being generally applicable to 3-pt product. The smaller body sizes (1½pt and 2pt) can usually be satisfactorily cast at speeds in excess of these, dependent on your operating conditions.

## 28.2 Changing blades and matrices

These instructions apply to a change from one product to another of the same point-size.

a) First remove the mould from the machine and take it off the adaptor base. Then slide out the crossblock.

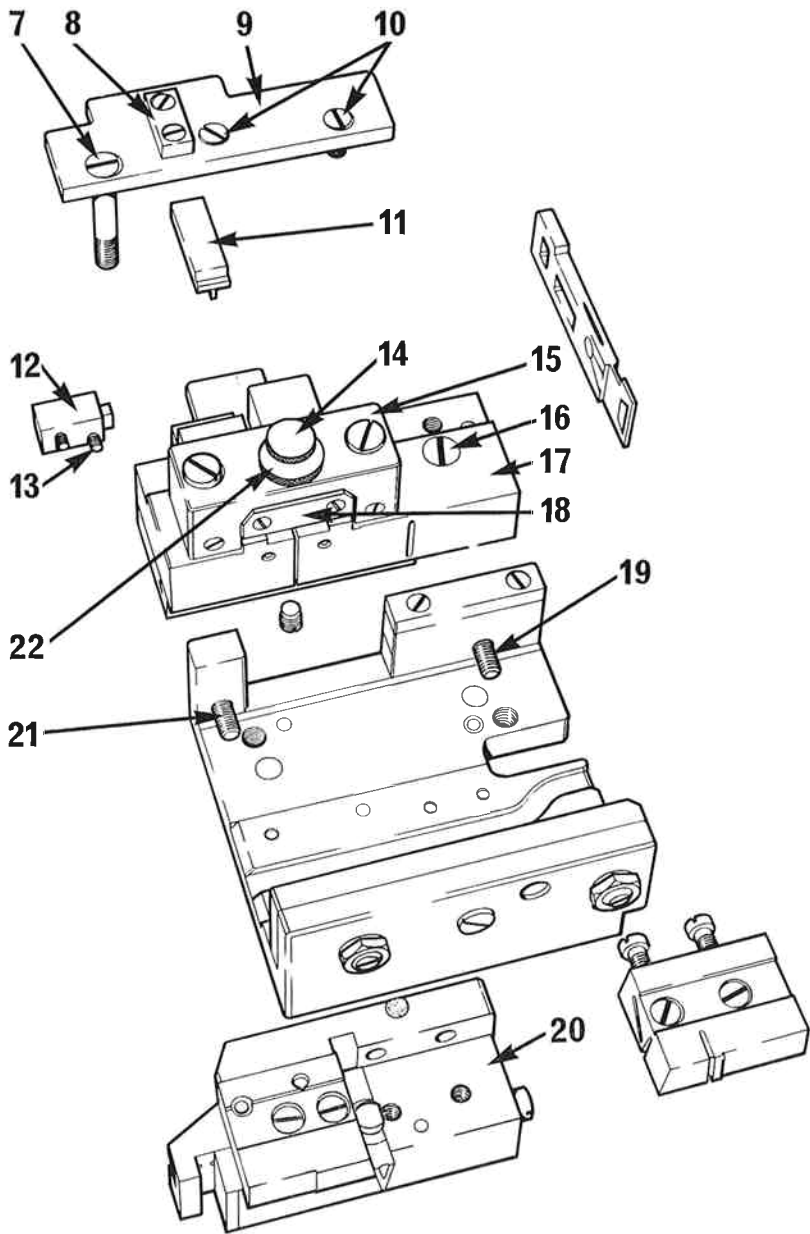
b) Remove the inset holding down screw (7) and the two cover plate screws (10), and lift off the cover plate (9), complete with stop (8).

c) Slacken off the matrix clamp screw locknut (22) and release the matrix clamp screw (14). The matrix (or cap), together with the matrix locator (18), can now be removed from beneath the bridge.

d) Remove the two screws (13) and the blade abutment (12), which will leave the blade free for withdrawal.

e) Mount the required matrix (or cap) in position, together with the locator, then carefully clean the required blade, smear with a light coating of oil and insert it between the side blocks.

f) Replace the blade abutment, locating its lug in the blade aperture, and secure it with the two screws (13).



g) Now replace the cover plate (9), attach with the three screws (7) and (10) and adjust the stop (8) if necessary, to ensure that the matrix (or cap) and locator are pressed into contact with the location faces. Then lightly tighten the clamp screw (14).

h) Final clamping pressure is that which can be exerted by turning the knurled head with the fingers – and only this – provided that the pressure thus applied in no way impedes the free movement of the blade. Move the blade backwards and forwards by hand to make sure it is perfectly free, then secure with the locknut (22).

*Note:* Since, in addition to supporting the clamping screw (14), the bridge (15) which spans the side blocks is designed to prevent them moving and thus to maintain them accurately in position, its removal is not recommended, and you should never find it necessary to do so. Should it ever be inadvertently removed, however, it must be replaced against the locating faces of the side blocks, applying no more pressure than can be exerted by hand without any strain.

### 28.3 Changing insets

The inset is retained in position by four screws, two vertical (7) and (16) and two horizontal (19) and (21), which pass through the rear of the mould base.

First take out the crossblock, then remove the four retaining screws (the horizontal pair first) and lift out the inset, which should be thoroughly cleaned and lubricated before being returned to its storage box.

When attaching the replacement inset, fit the two vertical screws first, and follow with the horizontal pair which may be fully tightened at once.

Finally, drive the vertical screws firmly home, and then return the crossblock, which must be duly cleaned and lubricated first.

### 28.4 Cleaning the mould

Whilst the mould is dismantled for changing insets, with crossblock, cover plate, matrix locator, blade abutment and blade and inset removed, routine maintenance should be carried out, since at this stage all the relevant components and surfaces are suitably exposed for treatment, or can be easily reached with a brush.

When all parts have been thoroughly washed in solvent and blown dry, apply a light coating of oil to the components before re-assembling.

### 28.5 Dismantling the crossblock for cleaning

The dismantling of the crossblock, its cleaning and subsequent re-assembly should be carried out as detailed at some length in respect of the small type composition moulds in Chapter 24, Sections 25 and 26.



# CHAPTER 29

## Super caster display type moulds 14–36 pt

Super caster display type moulds function much the same as the composition moulds, though they are designed to produce larger type sizes, using larger matrices of different basic design. Consequently, although the casting process itself is the same, the display matrix head is used and the mould is attached direct to the main stand with three mould screws of equal length, whilst the various connecting rods and levers have to be either linked or adjusted somewhat differently to vary and control their tension and movement, according to the size of product being cast.

The 14–36pt mould consists of a mould base, together with a crossblock and a series of interchangeable mould insets, there being one for each point-size.

The following briefly outlines the setting up of the machine for casting display type in the 14–36pt range, emphasising where the procedure differs from the comprehensive instructions concerning the composition moulds contained in Chapter 24 which you should use initially as your detailed guide; together with reference as necessary to the various chapters and sections which deal in detail with the several parts concerned.

- 29.1 Preparing the machine and attaching the mould** The detailed instructions in respect of type and rule caster display type moulds 14–36pt, given in 27.1, equally apply to Super caster display type moulds, except that the crossblock will not be fitted with the mould coupling hook, and an adaptor base will not be required.
- 29.2 Removing the mould from the machine** First remove the matrix holder, then remove the display matrix bridge and proceed to remove the mould from the main stand of the machine as instructed for small type composition moulds, dealt with in detail in 24.21.
- 29.3 Changing insets** Adjust the mould blade sizing mechanism to open the mould approximately 18 points, then move the blade operating lever spring box out of contact with the lower blade lever and proceed as for changing insets on the 14–24pt large type composition moulds, as explained in detail in 26.3.
- 29.4 Dismantling and assembling insets** Should you find it necessary to take an inset apart, you must bear in mind all previous precautionary advice with regard to the necessity for scrupulous cleanliness and the careful preservation of the sharp edges and corners of all the parts involved; then prepare a suitable place on which to work and proceed as detailed in 26.4.
- 29.5 Dismantling the crossblock for cleaning** The dismantling of the crossblock, its cleaning and subsequent re-assembly should be carried out as detailed at some length in respect of the small type composition moulds in Chapter 24, Sections 25 and 26.

# CHAPTER 30

## Super caster display type moulds 42–72 pt

Super caster display type moulds function much the same as the composition moulds, though they are designed to produce larger type sizes, using larger matrices of different basic design. Consequently, although the casting process itself is the same, the display matrix head is used and the mould is attached direct to the main stand with three mould screws of equal length; whilst the various connecting rods and levers have to be either linked or adjusted somewhat differently to vary and control their tension and movement, according to the size of product being cast.

The 42–72 pt mould is basically the same as the 14–36 pt mould. It likewise consists of a base and crossblock and a series of mould insets, one for each point-size. Both the inset and the mould blade normally supplied with the mould are somewhat different, however, from those of the 14–36 pt mould, being shaped to produce semi-cored type bodies.

Standard mould insets are also available for producing solid type, and cored quotations. Refer to Chapter 32 regarding the casting of cored quotations.

The following briefly outlines the setting up of the machine for casting display type in the 42–72 pt range, emphasising where the procedure differs from the comprehensive instructions concerning the composition moulds contained in Chapter 24, which you should use initially as your detailed guide, together with reference as necessary to the various chapters and sections which deal in detail with the several parts concerned.

### 30.1 Preparing the machine and attaching the mould

Attach the matrix heads base to the main stand, ensuring that the locating distance piece is correctly positioned as necessary for the point-size of the type to be cast, and secure the display matrix head to the matrix heads base with the screws provided.

Adjust the wedge screw of the mould blade sizing mechanism to give a reading of approximately 60 points on the wedge indicator scale, and attach the mould blade fork (40–72 pt) to the mould blade slide.

Attach the mould, complete with the required inset, direct to the main stand of the machine – butting up against the two locating faces of the matrix heads base. It must be secured in position immediately with the two eccentric mould clamps (which are larger than the adaptor base clamps used with the composition moulds), fitting the clamp nearest to the melting pot first.

The mould is finally secured to the main stand with three short ( $\frac{15}{16}$  in) (23.8 mm) mould screws provided, inserted from beneath the main stand.

Connect the mould blade to the correct mould blade fork. Fit the display matrix bridge (2) on top of the mould (it is located in position by the bridge locating strip on the underside) and secure with the three 1 in (25.4 mm) hexagon screws.

Attach water supply piping (42–72) and the correct mould oiler, and secure the 40–72 pt ‘light type’ channel block (3) in position on the type carrier cover.

Connect the type pusher lever connecting rod (4) to its cam lever, the

matrix lifter lever connecting rod (1) similarly to the matrix cam lever, via the upper hole, and the type carrier connecting rod (5) to the type carrier cam lever extension, by means of the yoke pin, which must be linked (via the correct hole in the yoke) with the relevant hole for the size you are about to cast. (Do not forget to change this connection whenever necessary.)

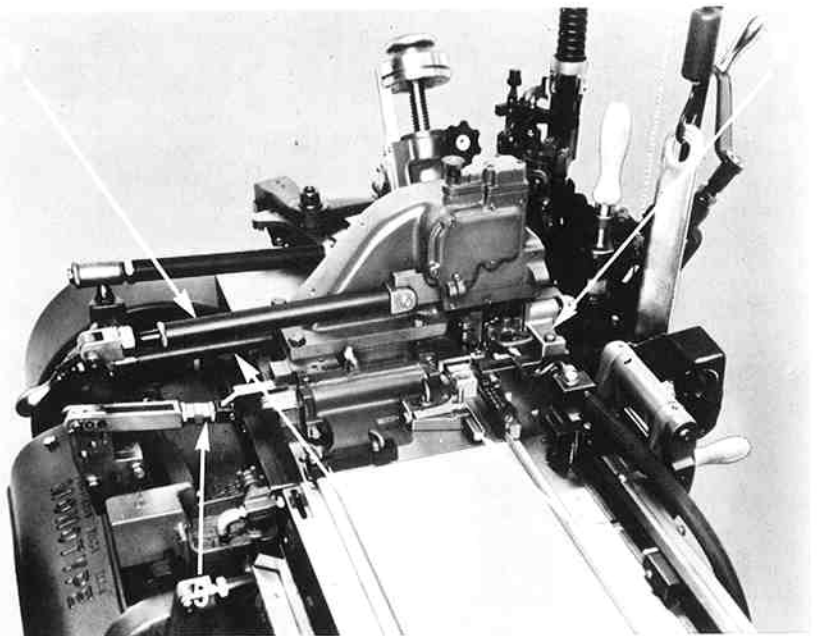
Ensure that the driving block abutment on the mould blade slide is positioned the right way round for the set-size of the type you will initially cast, bearing in mind that 12-points set-width is the decisive figure. (You will have to change the abutment round as necessary, in accordance with the set-width of the character you are casting, as indicated in points on the side of the matrix.) The type support spring cam bracket must also be set and subsequently varied according to your casting programme, in relation to both the point-size and set-width of the product.

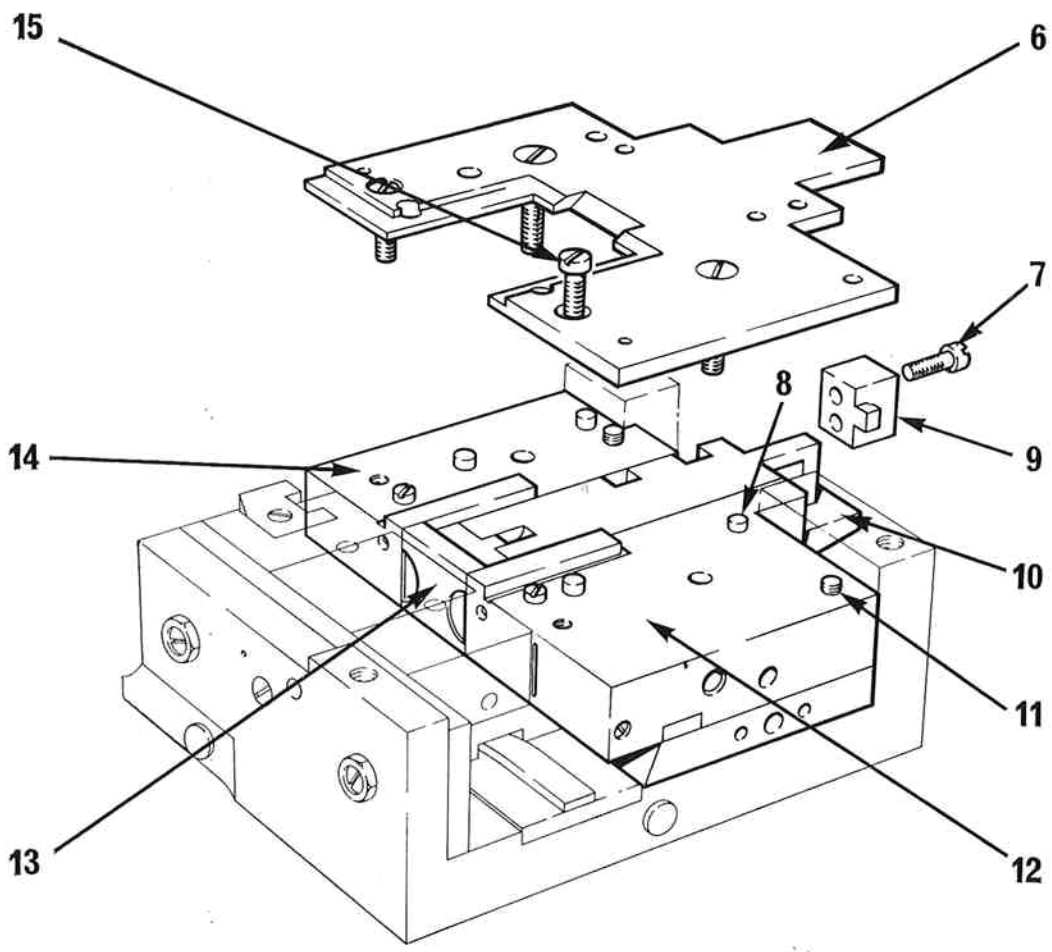
Finally, turn the machine to approximately 150-160°; connect the mould blade slide drive lever connecting tube to the intermediate lever, via the correct hole for the required set-width (changing as necessary during casting); set the plunger spring adjusting nut right forward against the stop collar, and the fulcrum pin in the 42-72 pt position.

Refer also for detailed information to Chapter 10 in respect of the matrix heads base; Chapter 12, the display matrix head and display matrix bridge (which includes instructions for inserting the matrix holder); Chapter 9 in respect of the mould blade sizing mechanism, with reference to Section 3 in connection with adjustments when preparing to cast type and Section 11 regarding the plunger spring adjusting nut and the fulcrum pin eccentric. Refer also to 15.17 in respect of the nozzle seating timing mechanism, which is brought into use when casting at speeds below 25r.p.m.

### 30.2 Removing the mould from the machine

Remove the display matrix bridge and proceed to remove the mould from the main stand of the machine as instructed for small type composition moulds, dealt with in detail in 24.21.





**30.3 Changing insets** Proceed as for changing insets on the 14–24pt large type composition moulds, as explained in detail in 26.3. Note, however, that the 42–72pt display mould is not provided with blade operating levers for producing low spaces, these being produced by means of a low space cap. Refer to Chapter 31, ‘Casting low quads and spaces’.

**30.4 Dismantling and assembling insets** Should you find it necessary to take an inset apart, begin by preparing a suitable place in which to work and make sure your hands are clean. An area on the workbench, suitably covered with clean paper or cloth is ideal, and you should bear in mind throughout that the success of the operation depends entirely on the observance of scrupulous cleanliness, extreme care and methodical working – and the preservation of the sharp edges of the insets.

a) Place the inset upside down on your working surface, with the cover plate (6) resting on the bench, and remove the three long screws (11) that secure the cover plate, taking care to remove only these screws, which can be easily identified in that their threaded ends are flush with the cover plate face. Place the screws in a safe place in such a manner as to ensure that you will, with absolute certainty, be able to return each one to its correct hole in due course.

b) Now turn the inset over, and remove the two shorter cover screws (15) from the top of the cover plate, whilst taking care that you do not remove, disturb or in any way damage the two dowel pins (8).

c) The cover plate (6) can now be taken off by inserting a screwdriver in each of the slots provided at either end.

d) Remove the mould blade abutment (9) by taking out the two small screws (7). You can now remove the mould blade (13) by sliding it carefully towards the back of the inset, keeping it down on the intermediate plate throughout, until it is withdrawn clear of the mould.

*When dealing with solid type insets, and insets used for casting cored quotations, you must be especially careful not to lift the rear of the blade when passing it between the side blocks. You should likewise never try to force it over the nick pin, or both the blade and the nick pin will be damaged.*

e) Before re-assembling, carefully and thoroughly clean all the parts you have removed. Insert the blade (13) by placing it on the intermediate plate (10) and holding it down while you slide it into position again. Do not push it straight in, but gently work it back and forth until it is in position, keeping it down on the intermediate plate all the time.

f) Make sure the cover plate (6) and the side blocks (14) and (12) are clean. Replace the cover plate on the dowel pins (8) and secure it in position with the two front cover screws (15), then turn the inset over and replace the three longer screws (11).

g) Finally, replace the mould blade abutment (9) and the two screws (7).

*The water passages of the mould must be kept clean, and remember always, whenever you take the mould off the machine for either dismantling, cleaning or storage – first, blow all the water out and then blow oil through it.*

**30.5 Dismantling the crossblock for cleaning** The dismantling of the crossblock, its cleaning and subsequent re-assembly should be carried out as detailed at some length in respect of the small type composition moulds in Chapter 24, Sections 25 and 26.

# CHAPTER 31

## Casting low quads and spaces

Low quads and spaces can be produced on the Super caster as required; the small type composition moulds covering the 5-14pt range and the display type moulds similarly from 14-72pt. This is apart from the quad and space mould, which casts spacing material up to 3 ems in the 5-14pt range.

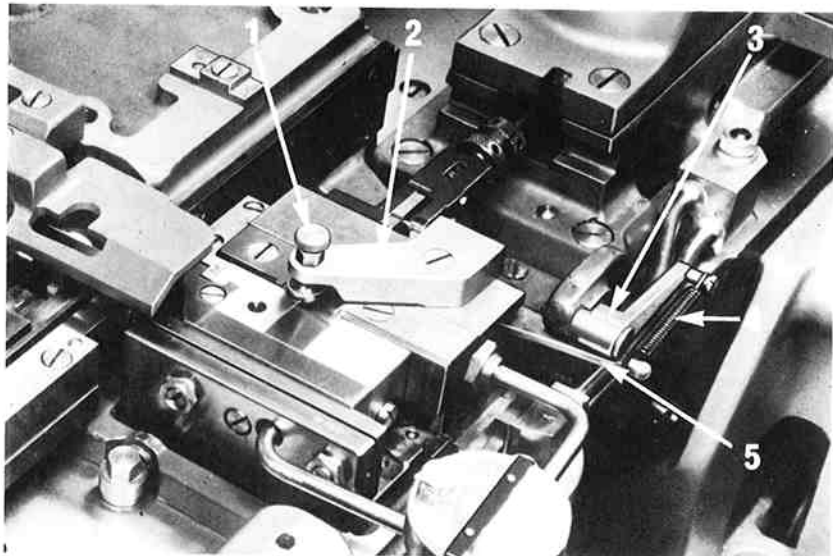
Low quads and spaces are cast from the type moulds as follows:

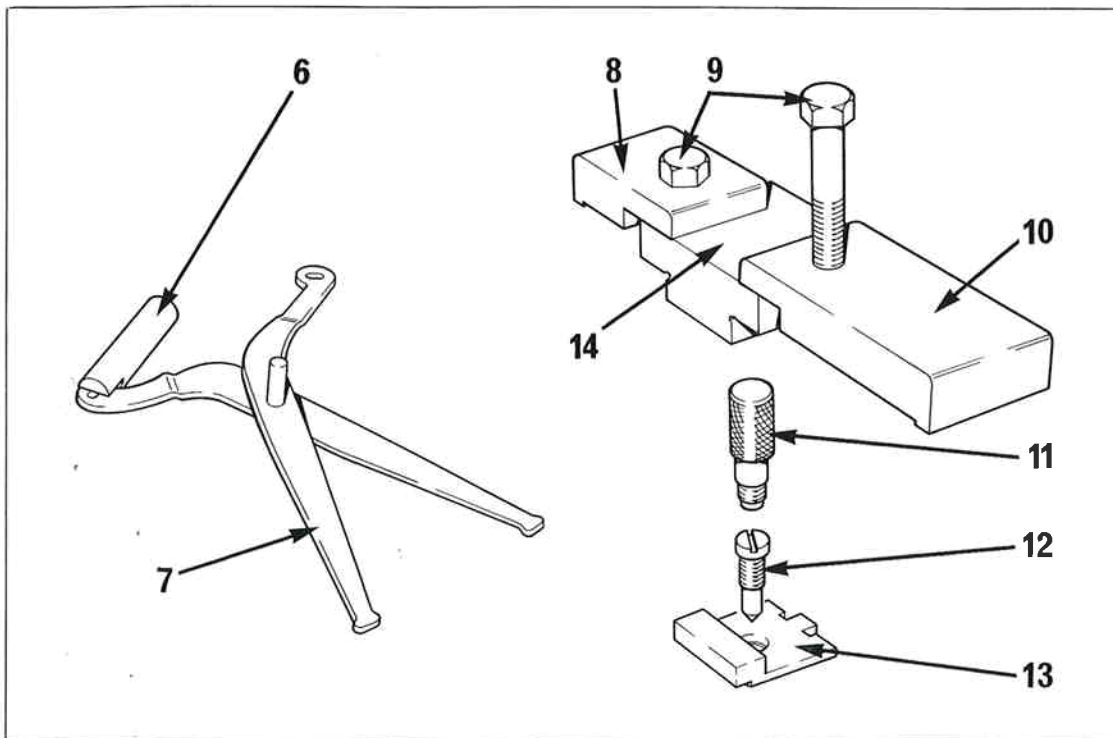
### 31.1 Small type composition moulds 5-14pt

The mould blade lever (5) on these moulds is operated by means of the spring (4) attached to the low quad lever (3) on the adaptor base. To cast low quads and spaces, the lever (3) must be turned towards the rear – in the direction of the mould blade sizing mechanism. This moves the upper mould blade forward to seal the top of the mould. When casting type or high quads, the lever (3) must be turned the other way, towards the galley.

The composition matrix head must be attached, and a blank matrix inserted in the matrix holder. The blank matrix serves to reinforce the upper mould blade against the pressure of the molten metal when casting low quads and spaces. It likewise seals the top of the mould when casting high quads. Alternatively, the space-casting attachment (2) can be used if a large quantity of spaces are to be cast in the 5-14pt range; thus obviating the necessity to set up the composition matrix head, and the use of a blank matrix. This, in the long term, serves to reduce wear on both mould and matrix if you are called upon to produce spacing material in any quantity in this range; and it can be used for both high and low quads.

The illustration shows the attachment bracket fitted to the mould. The required pressure is applied by means of the knurled adjusting screw (1).





**31.2 Super caster display type moulds 14-36 pt**

Swing the blade operating lever spring box (6) out of contact with the lower blade lever (7), and place it in the reverse position, abutting on the stop fixed to the mould oiler. You will find that this adjustment can be made without removing the bridge.

A blank matrix must be inserted in the matrix holder when casting low quads and spaces. This is extremely important, as the matrix, bearing down on the upper mould blade, supports it against the pressure of the molten metal which would otherwise cause the mould blades to spring apart and give rise to considerable trouble.

**31.3 Super caster display type moulds 42-72 pt**

Assemble the mould, complete with the crossblock and the required inset; then remove the blade cap screw (12) from the top of the blade, and using the mould blade cap handle (11), remove the mould blade cap (13).

Make sure the matrix seating area and the low space cap (14) are absolutely clean, and assemble the cap on the mould, with the slot against the crossblock, which must be located in the casting position. This ensures a metal-tight fit between the crossblock and the cap.

Assemble the two low space cap clamps (8) and (10) and place them in position as illustrated. Clamp them securely in position by means of the two hexagon-headed screws (9), taking great care to ensure that both sides of the cap are evenly clamped. This is best achieved by first tightening both screws until they just bear on the clamps, then by making them both moderately tight, and then finally tightening them firmly in position.

Remember when re-assembling the mould blade cap (13), to make certain that both the blade and the cap are perfectly clean, and that they are fitting snug against the crossblock - otherwise metal will escape during casting.

# CHAPTER 32

## Casting quotations from display type moulds 42–72 pt

Both hollow and wooden-cored quotations provide a readily adaptable medium for precision mounting of printing plates and blocks; the accuracy with which they are cast ensuring a perfect surface parallel with the bed of the printing press, making them ideal for the purpose. Hollow quotations, cast at the height of low quads, are also used extensively as spacing material.

Quotations are cast from the 42–72pt moulds, using special quotation insets with vertical side walls. Insets of 48pt, 60pt and 72pt are available for this purpose, and core blocks are supplied to produce quotations of from 2-ems to 5-ems set-width (4ems being the maximum from the 48pt inset). Furthermore, provision is made for quotations for block mounting to be cast at two different heights, depending on which type of printing block is to be mounted, since a half-tone plate for instance is much thinner than a stereo, and each when mounted must conform exactly to the required 'height to paper' measurement. Mould insets are in consequence supplied as necessary, to meet the varying requirements of printers throughout the world.

High quotations for mounting half-tone blocks are therefore cast to the shoulder height of type, and to cast these, the required point-size quotation inset is used, in conjunction with the normal mould crossblock as used for casting type.

However, low quotations used as spacing material and for mounting stereos are cast at the same height as low quads, which for standard 'English' requirements is 0.750in, as against 0.853in for mounting half-tone blocks, in relation to a 'height-to-paper' measurement of 0.918in.

In consequence, for low quotations, both a lower inset and a special low quotation crossblock must be used. The matching height of both crossblock and inset in all cases ensures perfect seating of the quotation core block on the top of the mould.

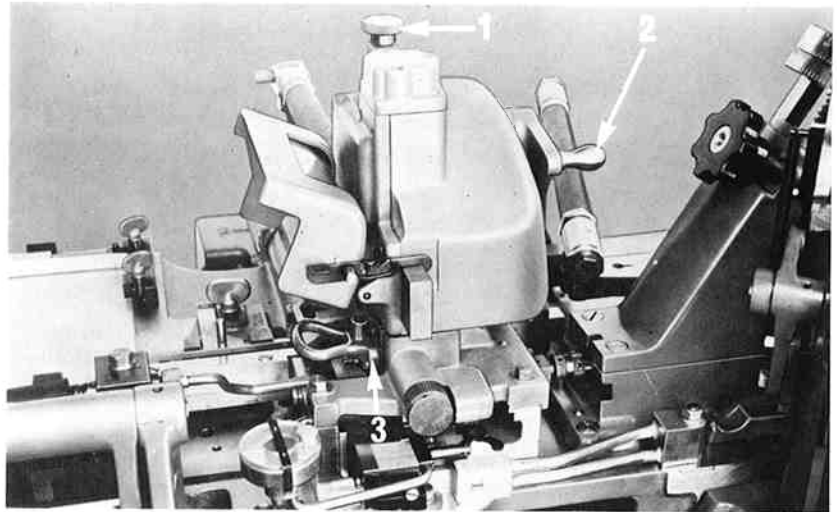
You will appreciate that if you use a crossblock that is higher than the inset, the core block will not seat properly on the mould and a metal splash will result.

When setting up to cast quotations, the fixed type channel block used for casting 'solid' type must be fitted to the type carrier cover of the matrix heads base, on the main stand of the machine; and the matrix lifter shaft lever handle (2) must be turned to the left, to give the necessary increased movement to the matrix lifter which enables the quotation core to be withdrawn clear of the mould after casting.

To set the handle in the correct position, turn the machine to 10° to raise the matrix lifter; and lift the knob of the shaft lock pin (1), making sure that it locks the shaft with the handle correctly positioned.

Adjust the mould blade to the correct set-size required, insert the correct core inset in the special core block matrix holder (3), place the holder on the matrix lifter, and make certain that the core is correctly positioned over the mould.





Care must be taken to ensure that the quotation core does not foul the mould blade as it descends into the mould. Check carefully to make sure all is in order before commencing to cast.

Metal temperature, casting speeds and all pump and machine settings and adjustments are given in the 'Product Information Table'.

Refer also to Chapter 12 with reference to the matrix lifter.

### 32.1 **Wooden-cored quotations**

The 42–72 pt display type mould can be equipped to cast quotations with wooden-cored insets in two sizes, 72 pt × 72 pt and 72 pt × 36 pt. These, once again can be cast at the required height for the mounting of either half-tone blocks or stereos, using the same special insets and the special crossblock as necessary, as with hollow quotations. The equipment required for the casting of wooden-cored quotations comprises a special core piece for each size and quotation height, a core block holder, and an assembly fixture for locating the wooden cores in position on the holder.

Specially prepared wooden cores are supplied for use with this equipment, and they are positioned on the core piece after it has been located in the core block holder.

Wooden-cored quotations are cast with the wooden core attached to the core block, which enables the correctly positioned wooden core inset to be lowered, slots downward, into the mould. The metal on injection surrounds the core, producing a much lighter quotation with a flat metal working surface the same as hollow quotations, through which block mounting brads can be driven and securely retained in the wooden inset.

In order to ensure that the mould blade is clear of the wooden core as it descends into the mould, the ball end of the mould blade slide drive lever connecting tube must be connected to the '90 pt type set' position on the mould blade slide drive lever intermediate lever, when casting 72 pt quotations – and in the '60 pt type set' position when casting 36 pt quotations.

Hollow and wooden-cored quotations can be assembled to suit any size of printing plate or block, and the wooden-cored ones obviously need only be used just where the mounting brads are to be fixed.

The uniformity of the flat surface thus provided can considerably reduce machine room time spent in make-ready.

# CHAPTER 33

## The Palace script mould 14–42 pt

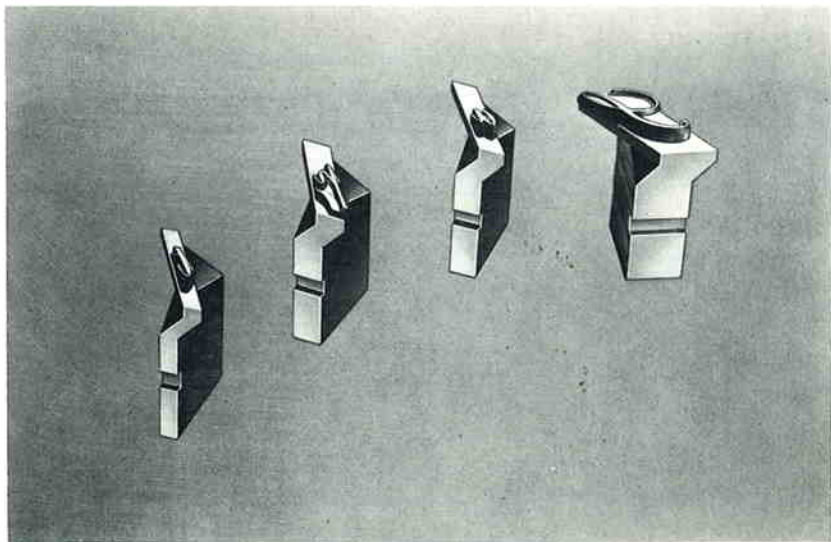
This mould enables type to be cast on the Super caster from script matrices. A mould is required for each point size in the range, which covers 14pt, 18pt, 24pt, 30pt, 36pt and 42pt.

The complex design of the mould results in an unusual-shaped body which ensures that the overhanging parts of the cast character are amply supported. The required type body shape is obtained by means of a special top blade (5) in conjunction with plates (3) on the crossblock.

Because of the peculiar construction of the mould, it is essential for the crossblock to be positively located when in the casting position. This is achieved by an extended crossblock backplate (1) which is shaped to bring it into contact with a fixed stop (15) on the mould base.

The finished cast is ejected from the mould by the lower mould blade (9) which has a square end section, thus avoiding exposing the delicately constructed upper mould blade to any risk of damage. Due to the extensive character overhang which has to be pushed clear of the casting cavity, the lower mould blade travels some considerable distance further forward than the blade of a standard mould.

A gag block (14) fitted to the mould prevents the type carrier moving to the left and causing the crossblock to damage the mould blade before it is completely withdrawn. This could only occur in the event of the mould blade seizing up in the forward position. The mould blade, as it completes its withdrawal, trips the gag block out of the path of the extension at the rear of the crossblock and allows the crossblock to move to the left to the casting position, where the extension is brought up against the mould base stop (15).



**33.1 Equipment required** The following special equipment is required, in addition to the mould of the correct point size:

- a) Script mould, mould blade slide
- b) Script mould, connecting pin (a35F)
- c) Script mould, mould blade slide drive lever connecting tube
- d) Script mould, type carrier
- e) Script mould, type pusher
- f) Script mould, latches for type channel blocks (2)
- g) Script mould, mould oiler
- h) Script mould, display matrix holder

**33.2 Preparations and adjustments** To prepare the machine, attach the matrix heads base to the main stand of the machine, and then remove the following parts:

- a) The type carrier, complete with the connecting rod
- b) The type pusher
- c) The type channel blocks
- d) The wedge screw housing and the mould blade slide
- e) The mould blade slide drive lever connecting tube (6SF)

Refer to Chapter 10 Sections 3 and 12 in respect of the type carrier and the type pusher, and 9.8 in respect of the wedge screw housing and the mould blade slide.

Having removed the type pusher, the slot in which the type pusher lever runs must be increased in length. File sufficient clearance where indicated, to allow for the increased forward movement required to enable the type pusher to safely deposit each finished cast in the type channel. This increased movement is necessary to allow for the overhang of the head of the type, which exceeds the width of the type body.

Assemble the special type carrier to the matrix heads base, and connect the yoke pin to the type carrier cam lever extension as follows:

- a) To the 24 pt hole for 14 pt to 24 pt type
- b) To the 36 pt hole for 30 pt and 36 pt type
- c) To the 42 pt hole for 42 pt type

Attach the display matrix head to the matrix heads base.

Remove the standard latches from both the adjustable type channel block and the fixed type channel block (30SE). Dismantle the adjustable block by removing the two clamp tongue stop plate screws and release the latch screw; the latch can then be removed. Release the latch screw to remove the latch from the fixed type channel block.

Fit the special latches in the type channel blocks, then replace the blocks on the type carrier cover.

Assemble the special type pusher (b34SE) in the matrix heads base, hold the cover to the rear and replace and tighten the six cover screws.

Assemble the special mould blade slide (a4SF) in the wedge screw housing base. Turn the wedge screw to its highest position and assemble the wedge screw housing on the wedge screw housing base, replacing and securing the wedge screw housing cover and the three wedge screw housing screws.

Place the mould in position on the main stand of the machine; secure it against the locating faces on the matrix heads base with the two mould clamps, securing the one nearest the melting pot first.

Remove the mould coupling hook from the crossblock, and connect the type carrier, replacing the hook and securing with the screw.

Connect the mould blade to the mould blade slide with the aid of the pin handle, using the special mould blade fork connecting pin which can only be inserted when the lower mould blade is in the extreme forward position – with the crossblock moved to the right.

Adjust the type carrier connecting rod so that, with the machine at  $220^\circ$  and the crossblock in the casting position, the projection on the back plate of the crossblock is just in contact with its stop on the mould base. Loosen the connecting rod lock nuts and adjust the length of the connecting rod as necessary. Rotate the machine by hand to ensure that the mould base stop is operative when the crossblock is precisely located in the casting position.

Adjust the travel of the type pusher, so that when in the forward position, the front of the pusher is positioned just past the front of the special type channel block latches. This you do by releasing the type pusher connecting rod nut and lock nut, adjusting the nut as required and securing again with the lock nut. Press on the end of the type pusher to take up any play, then rotate the machine again by hand to check that the adjustment is correct.

Release the mould blade slide drive lever lock nuts, remove the connecting tube, and assemble the special mould blade slide drive lever connecting tube (a6SF) in its place. Connect the ball end of the connecting tube to the 46-pt to 60-pt hole in the intermediate lever for all mould blade openings up to 0.5 in (12.700mm) inclusive, and to the 72-pt hole for wider openings up to 42 set.

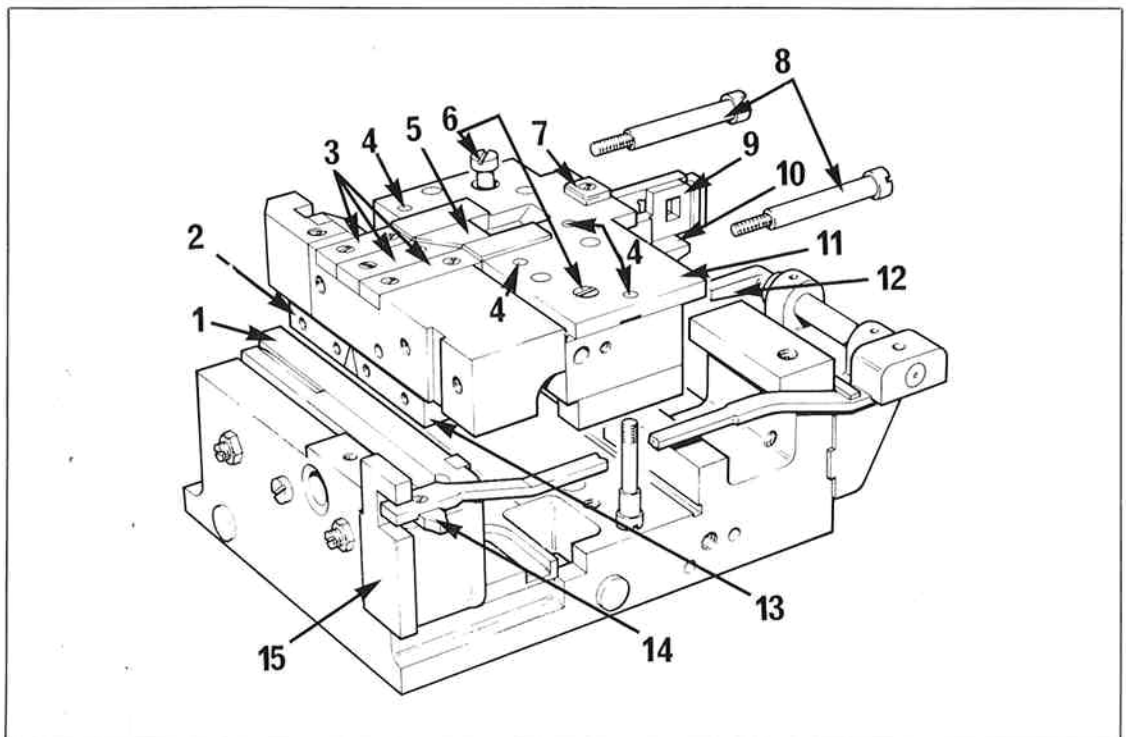
Set the wedge screw handwheel scale to produce a mould blade opening of 18 units of the required size (as for aligning set mark) then adjust the special connecting tube to give approximately  $\frac{1}{4}$  in (6.350mm) compression of the mould blade slide drive lever plunger spring when the mould blade is in the forward position, and  $\frac{3}{8}$  in (3.175 mm) compression when the mould blade is fully withdrawn. This adjustment must be altered as the set-size is reduced during casting, in order to maintain a constant  $\frac{3}{8}$  in (3.175 mm) compression throughout when the mould blade is fully withdrawn.

Check that the safety device remains in engagement between the mould base and the crossblock backplate until the front of the lower mould blade is just inside the front of the side blocks. With the lower mould blade in this position, adjust the two screws in the spring thrust plate at the rear of the wedge screw housing, so that the thrust plate is out of contact with the mould blade slide.

Ensure that, with the machine at  $220^\circ$ , the adjustable type channel block permits maximum freedom for the entry of the product into the latches.

Assemble the matrix bridge (a1SE) and the special oiler (X57SL) to the mould. Remember to oil frequently the upper mould blade, the type carrier cam lever plunger, the crossblock and the safety mechanism.

*Note:* It may be necessary to file a clearance in the underside of the display matrix bridge to enable the safety gag block to be raised to its stop to allow the crossblock to move to the casting position.



### 33.3 Stripping the mould for cleaning

Should you find it necessary to take the mould apart, you must bear in mind all previous precautionary advice with regard to the necessity for scrupulous cleanliness and the careful preservation of the sharp edges and corners of all the parts involved; then prepare a suitable place on which to work and proceed as follows:

- a) Before commencing to strip the mould you must first make certain the lower mould blade (9) is not projecting forward beyond the front faces of the side blocks. This you can ensure by pulling both blades to the rear.
- b) You can now remove the crossblock. This can only be removed one way; by sliding it gently back out of its channel, in the direction of the gag block (14), after which it should be put aside for treatment later.
- c) Remove the two 'holding back' screws (8), located at the rear of the mould base, and the two screws (6) which hold the inset down.
- d) The inset can now be removed by gently pushing it forward into the crossblock channel. Great care must be exercised to ensure that the sharp corners of the insets are protected from possible damage during this operation.
- e) Wipe the inset clean and blow the waterways clear.
- f) Remove the four cover plate screws (4) from the underside of the inset (ensure they can each be returned to the same hole) and lift off the cover plate (11) by inserting a screwdriver in each of the slots provided at either end. (The blade abutment (7) on the cover plate must not be disturbed, as this acts as a stop to correctly position the upper mould blade for casting, and to prevent it protruding into the crossblock channel; the dowels likewise must not be disturbed.)

g) Now remove the blades – carefully lifting off the upper mould blade, and sliding the lower mould blade out from front to rear. Never lift the rear of the lower mould blade when passing it between the side blocks, or try to force it over the nick pin, as both the blade and the pin would be damaged.

h) The mould base, the inset, the cover plate and the mould blades must now be washed thoroughly in petroleum solvent, dried off with an air jet and finished off with a clean non-fluffy wiper. Any metal or burnt oil adhering thereto can be removed by rubbing with a piece of type metal strip, care being taken to ensure that the corners and sharp edges of the component parts are not damaged in any way in the process. Remember always to use only soft type metal for this purpose, being careful even so to avoid scratching the mould parts with the edges or corners of the strip; and bear in mind that on no account must you ever attempt to lap or polish the parts with oilstones, metal polish or other abrasives. To do so would completely destroy the mould's sharp corners which are so essential for the production of clean, sharp, burrless type.

#### 33.4 Re-assembling the mould

a) Smear the inset, the cover plate and the mould blades with a light film of oil.

b) Replace the lower mould blade (9), inserting it from the rear of the inset, engaging the nick recess with the nick pin and bearing down on the intermediate plate (10) as you slide it gently forward. Do not use force, or the blade recess and the nick pin could be damaged in the process.

Carefully place the upper mould blade (5) on top of the lower blade, replacing it in the inset, forward of the rear edges of the side blocks.

c) Replace the cover plate (11) and replace the four screws (4), returning each to the hole from whence it came. Lightly tighten the screws: check the mould blades for free movement, then firmly tighten the four screws down and check the mould blades again on completion. (The abutment faces of the blade abutment and the lower mould blade must be clean.)

d) Replace the inset in the mould base, whilst making sure the rear of the lower mould blade is beneath the gate block operating lever (12).

e) Replace the two holding back screws (8), and lightly tighten them.

f) Replace the two holding down screws (6), and lightly tighten them.

g) Firmly tighten the screws – in the same order.

h) Check the mould blades again for free movement; and then make certain that the gag block will trip, to prevent the crossblock fouling the mould blade when the lower mould blade is pushed forward in advance of the front face of the side blocks.

#### 33.5 Dismantling the crossblock for cleaning

As with the mould itself, the crossblock need only be stripped down for cleaning when necessary, should it not be functioning properly. The same care must again be taken; wash all the parts with petroleum solvent and dry off and clean away burnt oil or type metal with a piece of type metal strip, taking special care not to damage the sharp corners or edges. Similarly, no attempt must on any account be made to lap the parts with oilstones, metal polish or other abrasives.

The crossblock is stripped in the same manner as the crossblock of the Super caster 14-36pt display mould (see 27.5) which is based on the procedure used for the 5-14pt composition mould, insofar as the removal of the adjustable gate block, except that the front of the crossblock backplate has two screws which have to be removed.

However, should further stripping be necessary at any time, the mould coupling hook must be removed and then the fixed gate block (as with the 5-14pt composition mould), except that, once again, the front of the crossblock backplate has two screws which have to be removed; while the dowel, which in this case is not eccentric, is liable to come away with the fixed gate block (2) and must in consequence be replaced when re-assembling.

33.6 **Re-assembling the crossblock**

When re-assembling the crossblock, care must be taken to ensure all the parts are properly bedded down to their adjacent surfaces, both horizontally and vertically. The procedure is the same as with the small type composition mould, covered in detail in 24.26, except that the back plate of the fixed gate block (2) and the adjustable gate block (13) is secured with two screws in each case.

When replacing the fixed gate block, it must be pulled 'back' against the dowel as the screws are tightened.

# CHAPTER 34

## Italic mould 14–42 pt

This mould (which is basically the same as the Palace script mould) can be used for casting italic type faces in the 14–42pt range. The design of the mould is precisely the same; the lower mould blade ejects the product, and a gag block is used to avoid risk of the crossblock damaging the upper mould blade. The same special equipment is required and all the preparations and adjustments are identical.

All instructions in respect of stripping and re-assembling the mould and dismantling and re-assembling the crossblock are the same as for the Palace script mould covered in detail in Chapter 33.



# CHAPTER 35

## Duplex mould 14, 16 and 18 pt

The Duplex mould (designed for the composition caster) is used for casting exotic faces (Arabic etc.), where composition matrices of differing sizes are used to produce the character on the head of the type body. A mould is supplied for each point size.

The upper portion of the main blade is cut away, in order to permit an auxiliary blade to operate by its side. This enables a seating to be provided for a 0.2in × 0.2in or 0.2in × 0.4in matrix, for which the main blade only is withdrawn, or for a 0.4in × 0.4in matrix, when the auxiliary blade is also withdrawn flush with the main blade.

Information in respect of the operation of the auxiliary blade can be obtained from the charts issued with the MCA (matrix-case arrangement) provided with matrix founts supplied for use with the composition caster.

Duplex moulds are used with an adaptor base on the Super caster.

The low quad lever of the adaptor base is used to operate the auxiliary blade: it is thus positioned as required to provide the correct seating for whichever size matrix is used.

All instructions in respect of preparing the machine and attaching the mould, removing the mould from the machine, dismantling and assembling and assembling insets, and dismantling the crossblock are the same as for large type composition moulds covered in detail in Chapter 26.

# CHAPTER 36

## Duplex low quad mould 14, 16 and 18 pt

The Duplex low quad mould is designed on similar lines to the Duplex mould, except that the main blade has a top blade, thus in effect providing two auxiliary blades which have to be controlled individually by the low quad lever on the adaptor base, in order to accommodate  $0.2\text{in} \times 0.2\text{in}$ ,  $0.2\text{in} \times 0.4\text{in}$  or  $0.4\text{in} \times 0.4\text{in}$  matrices as necessary, or to produce low quads. A special lever bracket attachment (as used with the Triplex mould) is supplied for this purpose: it can be attached to the adaptor base in place of the standard bracket as required.

Information in respect of the operation of the auxiliary blades can be obtained from the charts issued with the MCA (matrix-case arrangement) provided with matrix founts supplied for use with the composition caster.

All instructions in respect of preparing the machine and attaching the mould, removing the mould from the machine, dismantling and assembling insets, and dismantling the crossblock are the same as for large-type composition moulds, covered in detail in Chapter 26.

# CHAPTER 37

## Triplex mould 26 pt

The Triplex mould is designed to accommodate the high and low accented characters of Arabic series 589. The mould, which has three blades, functions on lines similar to the Duplex low quad mould, the two auxiliary blades being individually adjusted and controlled by the low quad lever on the adaptor base, to provide correct seating for the matrix used. A special lever bracket attachment (as used with the Duplex low quad mould) is supplied for this purpose: it can be attached to the adaptor base in place of the standard bracket as required.

The required information for the operation of the auxiliary blades can be obtained from the fount casting chart issued with the MCA (matrix-case arrangement) provided with the matrix founts supplied for use with the composition caster.

All instructions in respect of preparing the machine and attaching the mould, removing the mould from the machine, dismantling and assembling insets, and dismantling the crossblock are the same as for large type composition moulds, covered in detail in Chapter 26.