

Chapter IV

MAGAZINE FRAME MECHANISM

The fourth and last major unit of the Intertype machine includes magazine frame equipment and the mechanism provided for shifting the magazines into operating position. Since the differences between the various models of the Intertype machine are based primarily upon magazine frame equipment, it will be helpful first to outline the models and to indicate the number and type of magazines they carry.

When considering the models of the Intertype machine, it is important to understand that *Intertype has established a policy of basic standardization and has adhered to the policy ever since its inception.* From the standpoint of design and construction, all Intertype machines may be grouped under two broad headings: single distributor machines and double distributor machines. These two types of machines serve the two fundamental requirements of line casting machine composition. Broadly speaking, the majority of single distributor machines are used for text composition; the double distributor machines may be used for mixed text composition involving a number of different type faces but are usually employed for setting combination text and display composition.

On the basis of these two types of machines, Intertype has developed a line of Universal and Star Base machines, of standard design and construction. *It is a notable fact that differences between the models within the two groups—single distributor and double distributor—are confined principally to magazine frame equipment and do not affect other units of the machine.* In the field of the single distributor machine, for example, all models are equipped with a keyboard and escapement mechanism of basic design, a standard casting unit and the same type of transfer and distributing mechanism. Since single distributor machines are designed primarily for composition involving one main or side magazine font at a time, the assembling mechanism and distributing unit are of the single type.

The same principle of standardized construction is followed in the field of Intertype double distributor machines. Regardless of model designation, all Intertype double distributor machines have the same type of keyboard and escapement mechanism, a unit casting mechanism and a standard transfer and distributing mechanism. Since double distributor machines are designed primarily for composition in which two or more type faces are mixed in the same line, a double assembling and distributing mechanism are provided to make "mixed" composition possible without having to shift the magazines or the distributor units in any way. *This principle of standardized machine design is of the greatest importance from the standpoint of interchangeable parts, flexibility of equipment in the composing room and protection against obsolescence.*

Advantages of Intertype Standardization

From the foregoing summary of Intertype's basic standardization policy, it is obvious that users of the equipment enjoy many advantages of paramount importance. Before outlining the most outstanding advantages in detail, it should be

noted generally that *the fundamental benefit derived from standardization is maximum utility of equipment with minimum investment and labor*. Parts which interchange freely from one machine to another within the two basic groups reduce the amount of equipment required and simplify the operating details related to the use of the equipment. The organization and administration of operations in the composing room likewise can be established with greater efficiency if they are based upon standardized line casting machines and flexible equipment.

Among the many advantages of standardized Intertype equipment, the following considerations are probably of the greatest importance to all groups of line composing machine users:

1. Standard Keyboard Operation. The keyboards of all Intertype machines operate on the same basic principle and serve all models with equal efficiency. The keyboard for the main magazines is of unit construction and releases matrices from the 72-channel magazine as well as from the 90-channel magazine without extra attachments or special parts. The side magazine keyboard likewise serves all standard 34-channel side magazines and operates in precisely the same manner as the main keyboard. Standardization of keyboard design facilitates operation, reduces replacement costs and simplifies problems of maintenance.

2. Unit Escapement Mechanism. All magazines manufactured by Intertype Corporation are equipped with *one standard type of escapement of proven efficiency and durability*. The escapement mechanism consists simply of a movable escapement for each matrix channel and a tension spring. The escapements are mounted at the lower end of the magazine and form an integral part of the unit. When operated by the keyboard keyrods, the escapements release matrices positively from the magazine, and when stationary, the escapements serve to hold the matrices automatically in the channels. In standardizing the escapement mechanism for 72, 90 and 34-channel magazines, Intertype has secured the advantage of free interchangeability of magazines from one machine to another and has simplified operations relative to handling the magazines.

3. Standard Width Magazines. Intertype manufactures three standard types of magazines to satisfy the full requirements of the trade: a 90-channel and a 72-channel main magazine and a 34-channel side magazine. The 90-channel magazines carry full-width 18 point faces; the 72-channel magazines accommodate full-width 30 point faces; the 34-channel side magazines can be used for faces up to 60 points condensed or for other uses supplementary to the main magazine fonts. All three types of magazines are of standard widths and will interchange freely with the same types of magazines on other machines.

4. Fixed Distributor Bars. Corresponding with the three groups of magazines, Intertype provides three standard types of distributor bars. The 90-channel bar returns matrices to all magazines of the 90-channel type; the 72-channel bar serves all wide 72-channel magazines; and the 34-channel bar conveys matrices to the side magazines. All three types of distributor bars are fixed positively in position on the distributor beam and operate with the same efficiency on both single and double distributor machines.

5. Single Distributor Box. Regardless of the type of machine—whether single or double distributor—all *Intertype machines are equipped with one distributor box*. The box for all single distributor machines is fixed to the distributing unit

and raises matrices positively into the unit distributor. The box for all double distributor machines is clamped on a pivoted arm and delivers matrices automatically to the double distributing unit. This principle of single and double distribution by means of one distributor box is one of the most economical and simplified features of Intertype standardization.

6. Standard Distributor Mechanism. The two basic groups of Intertype machines are equipped with either a single or a double distributor to suit the type of composition for which each machine is intended. All single distributor machines have the same type of unit distributor, which conveys matrices automatically to the main and side magazine in position. All double distributor machines are provided with the same type of dual distributor, which conveys matrices simultaneously to the upper and lower main and side magazines in position. Other than these standard types of distributors, there are no special units which have a restricted application to one type of work or a limited utility in the composing room.

The driving mechanism of the two types of distributors likewise is standard in construction. Only one type of clutch is used to turn the distributor screws. The unit is of the friction type and is driven by a belt connected with the intermediate shaft of the machine. No special parts are provided for driving or for stopping the distributor screws of either type of distributor.

7. Basic Channel Entrance Units. Like the magazines, distributor bars and assembler entrances, Intertype has standardized the channel entrance units. One channel entrance of standard width is supplied for 90-channel magazines, another for wide 72-channel magazines and a third for 34-channel side magazines. In each case, the channel entrance is standard in construction and embodies the feature of variable channel spacing to suit the widths of the characters. In establishing channel dimensions according to maximum character widths, Intertype has extended the range of 72, 90 and 34-channel operation. Full-width 18 point faces are carried in 90-channel magazines; full-width 30 point faces run in the 72-channel magazines; and faces up to 60 points condensed may be carried in the side magazines. This important feature of Intertype standardization insures maximum utility of matrix and magazine equipment.

8. Fixed Assembler Entrance. The assembler entrances of both the single and double distributor machines are fixed positively in position and convey matrices to the assembler with efficiency. This is especially advantageous on double distributor machines, where matrices from two main and two side magazines may be assembled without having to shift the magazines or the assembling unit. The operations performed when setting "mixed" composition are as simple and as rapid as those carried out when setting text matter on a single distributor machine.

9. Manual and Power Magazine Shift. Two types of magazine shifting devices have been established for all Intertype machines. A dependable manual mechanism is supplied for certain models to shift the magazines into operating position. The manual unit is counterbalanced effectively by suitable springs and requires little effort on the part of the operator. Also, a power magazine shifting mechanism is available for certain of the latest Universal machines. The power unit is automatic in operation and is actuated by a reliable worm gear drive. The

two basic types of magazine shifting units suffice for all Intertype models and demonstrate tangibly the simplification resulting from standardized mechanical design.

10. Front and Rear Magazine Removal. To suit the storage location of magazines in the composing room, various Intertype models are designed to permit removal of main magazines from either the front or the rear of the machine. No matter what type of removal is provided, however, the handling of magazines is in all cases efficient and easy. There are no intricate dismantling operations or cumbersome movements—all magazines from the highest to the lowest part of the magazine frame may be removed and replaced with speed, convenience and ease.

11. Conversion of Models. As a result of the basic standardization policy devised by Intertype Corporation, all models of the Intertype machine have a wide degree of conversion possibilities unequaled in the field of line composing machinery. While the conversion features of Intertype models are outlined in detail in the description of Universal and Star Base machines, it should be recognized at this point that *Intertype's standardization plan is in effect a guarantee of simple operation, efficient composing room organization and protection against premature obsolescence of machines.*

The foregoing outline summarizes only the most important advantages of Intertype's policy of design and development. There are many other benefits attributable directly or indirectly to the policy, but they are well known to operators and machinists and do not require detailed description at this point.

Intertype Models

Intertype is manufacturing two basic groups of machines known as *Universal* machines and *Star Base* machines. Both groups include machines of improved construction and of the single distributor and double distributor types. The titles, Universal and Star Base, indicate whether a machine is of streamlined design and whether the latest improvements are applied to the machine. In general, the basic distinction between the two groups of machines is that only the *Universal* models are of streamlined design and are equipped with the latest improvements, such as the electrically-driven magazine shift, the power channel entrance operating mechanism, etc. The *Star Base* models are equipped with standard brackets of the non-streamlined type and may be equipped with all special attachments except those developed specifically for Universal models. The attachments applicable to *Star Base* machines include the automatic quadding and centering device, the stick attachment, justified indentation attachment, six-mold disk and other devices developed prior to the introduction of Universal machines.

Another important distinction between Universal and *Star Base* machines is based upon the type of magazine frame supplied, the maximum number of main magazines carried on the machine and the method used in removing magazines from the frame. In general, the maximum number of main magazines carried by current *Star Base* single distributor machines is three (Model C), whereas Universal single distributor machines may have a maximum of four main magazines (Models C4 and H4). In the double distributor group, *Star Base* machines are limited to a maximum of two main magazines (Models F and G), whereas Uni-

versal double distributor machines may have up to four main magazines (Models 72-90 C4, Twin C4, F4 and G4). From the standpoint of magazine removal, all Star Base machines are equipped with magazine frames suitable for rear removal of main magazines. In the Universal group, most of the models are equipped with movable magazine carriages to permit removal of main magazines from the front of the machine, while others are equipped, when specified, with frames suitable for rear removal of magazines.

In the subsequent description of models, the type of magazine removal is indicated in each case. It will be noted, too, that the side magazine equipment of the various models is described after the outline of main magazine equipment. The tabular summary following the textual description indicates all the models of the Intertype machine according to main and side magazine equipment and is presented as a means of identifying the models and their equipment readily.

The line of Universal Intertypes includes three basic types of machines: Non-Mixer, Mixer and Straight models. The characteristics of each of the three types of machines are described in each case under their respective headings.

Universal Intertypes

UNIVERSAL NON-MIXER MODELS

(Double Distributor)

Universal Non-Mixer Machines are designed for straight composition and offer the advantage of rapid changes from one type face to another with a minimum of magazine shifts. The Non-Mixer machine is equipped with a double assembling and distributing unit. If the machine is equipped with a side magazine unit, two main and two side magazines are always in operating position and matrices may be drawn from any of the four magazines simply by shifting the keyrods to the desired magazine. Since the Non-Mixer machine is designed for straight composition, each assembled line may contain matrices exclusively from the upper or the lower magazines. After a line from one main magazine has been distributed, operation may be changed instantly to the other main magazine simply by shifting the keyrods. The same rapid change is also characteristic of the side magazines.

Model 72-90 C2 is a double distributor Non-Mixer machine with two main magazines: one wide 72-channel magazine and one 90-channel magazine. This machine may be equipped with two or four 34-channel side magazines, in which case the models are designated as 72-90 C2-2s.m. and 72-90 C2-4s.m. The main magazines are removed from the front of the machine on these models.

All 72-90 C2 Non-Mixer machines are convertible into corresponding Mixer machines (G2, G2-2s.m. and G2-4s.m.).

Model 72-90 C4 is a double distributor Non-Mixer machine with four main magazines. The main magazines are of the wide 72-channel and 90-channel types and are available in any desired combination: two wide 72-channel and two 90-channel magazines, or one wide 72-channel and three 90-channel magazines, or three wide 72-channel and one 90-channel magazines. This machine may be

equipped with two or four 34-channel side magazines (72-90 C4-2s.m. and 72-90 C4-4s.m.). Main magazines are removed from the front of the machine.

All 72-90 C4 Non-Mixer machines are convertible into Mixer machines (G4, G4-2s.m. and G4-4s.m.).

Model Twin C2 is a double distributor Non-Mixer machine having two 90-channel main magazines. This machine may be equipped with two or four 34-channel side magazines (Twin C2-2s.m. and Twin C2-4s.m.). Front removal of main magazines.

All Twin C2 Non-Mixer machines are convertible into Mixer machines (F2, F2-2s.m. and F2-4s.m.).

Model Twin C4 is a double distributor Non-Mixer machine having four 90-channel main magazines. This machine may be equipped with two or four 34-channel side magazines (Twin C4-2s.m. and Twin C4-4s.m.). Front removal of main magazines.

All Twin C4 Non-Mixer machines are convertible into Mixer machines (F4, F4-2s.m. and F4-4s.m.).

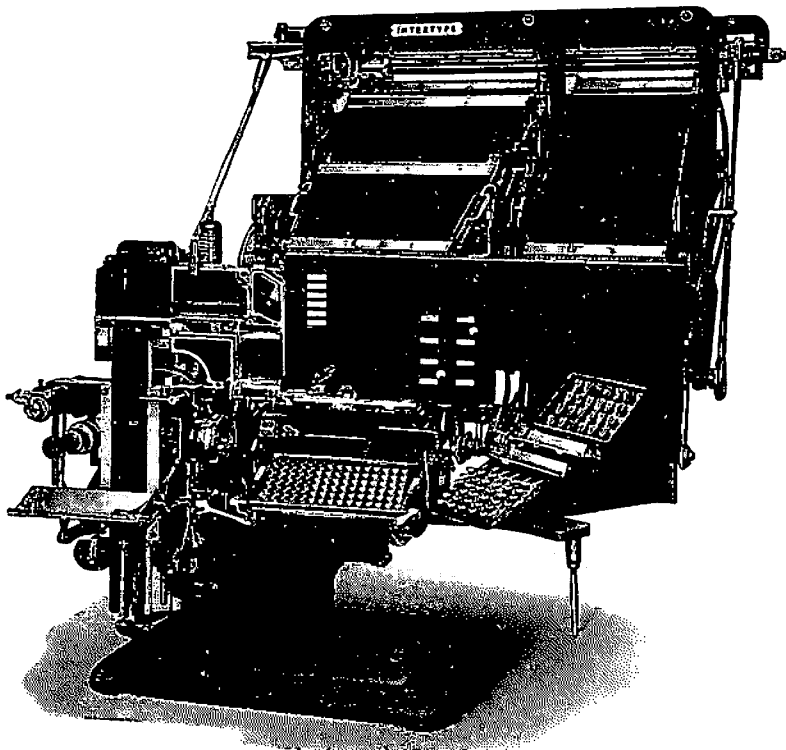


Fig. 189. Universal Intertype Machine, showing the general streamlined design and some of the latest improvements. Both single and double distributor machines are available in this group. The electrically driven magazine frame operating mechanism (power shift), power channel entrance operating device and the automatic font selector are among the new devices shown. Stack construction side magazine unit of the Universal line also shown.

UNIVERSAL MIXER MODELS

(Double Distributor)

Universal Mixer Machines have the same basic construction as those of the Non-Mixer type but incorporate the feature of "mixed" composition in which two main and side magazine type faces may be combined in one line. The Mixer machine is equipped with a double assembling and distributing unit. If the machine is equipped with side magazines, two main and two side magazines are always in operating position and matrices from all four magazines may be assembled simply by shifting the keyrod frames to the desired magazines. Matrices from both the upper and the lower main and side magazines may be assembled in the same line and are returned automatically to the correct magazines by the font selector mechanism and the double distributor unit.

Model F2 is a double distributor Mixer machine with two 90-channel main magazines. This machine may be equipped with two or four 34-channel side magazines (F2-2s.m. and F2-4s.m.). Front removal of main magazines.

All F2 Mixer machines are convertible into Non-Mixer machines (Twin C2, C2-2s.m. and C2-4s.m.).

Model F4 is a double distributor Mixer machine with four 90-channel main magazines. This machine may be equipped with two or four 34-channel side magazines (F4-2s.m. and F4-4s.m.). Front removal of main magazines.

All F4 Mixer machines are convertible into Non-Mixer machines (Twin C4, C4-2s.m. and C4-4s.m.).

Model G2 is a double distributor Mixer machine with two main magazines: one wide 72-channel magazine and one 90-channel magazine. This machine may be equipped to carry two or four 34-channel side magazines (G2-2s.m. and G2-4s.m.). Front removal of main magazines.

All G2 Mixer machines are convertible into Non-Mixer machines (72-90 C2, 72-90 C2-2s.m. and 72-90 C2-4s.m.).

Model G4 is a double distributor Mixer machine with four main magazines. The magazines are of the wide 72-channel and 90-channel types and are available in any desired combination: two wide 72-channel and two 90-channel magazines, or one wide 72-channel and three 90-channel magazines, or three wide 72-channel and one 90-channel magazines. This machine may be equipped with two or four 34-channel side magazines (G4-2s.m. and G4-4s.m.). Front removal of main magazines.

All G4 Mixer machines are convertible into Non-Mixer machines (72-90 C4, 72-90 C4-2s.m. and 72-90 C4-4s.m.).

UNIVERSAL STRAIGHT MODELS

(Single Distributor)

Universal Straight Machines are of the single distributor type and require a magazine shift each time a change is made from one main magazine to another or from one side magazine to another. Two types of Straight machines are available: the Straight C type, which carries standard 90-channel main magazines, and the Straight H type, which is equipped with main magazines of the standard wide 72-channel type.

Model C1 is a single distributor machine with one 90-channel main magazine. The machine may be equipped with one, two, three or four 34-channel side magazines (C1-1 s.m., C1-2 s.m., C1-3 s.m. and C1-4 s.m.). Front or rear removal of the main magazine.

All single distributor C1 machines are convertible into corresponding single distributor models with two, three or four 90-channel main magazines (C2, C3 and C4). Any converted model may have from one to four side magazines.

Model C2 is a single distributor machine with two 90-channel main magazines. The machine may be equipped with one, two, three or four 34-channel side magazines (C2-1 s.m., C2-2 s.m., C2-3 s.m. and C2-4 s.m.). Front or rear removal of main magazines.

All single distributor C2 machines are convertible into corresponding single distributor models with three or four 90-channel main magazines (C3 and C4). Similarly, any of the models may have from one to four side magazines.

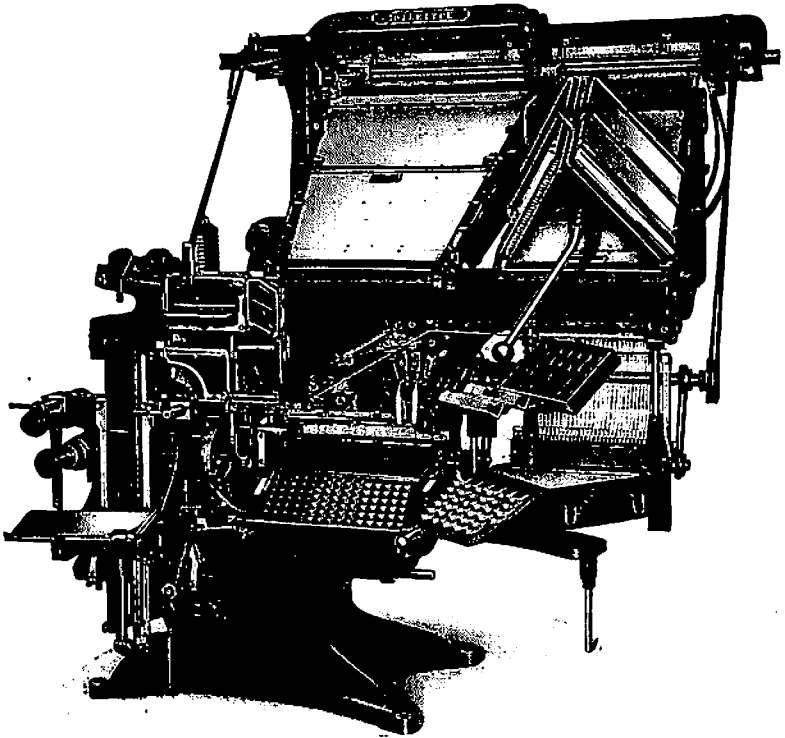


Fig. 190. Star Base Intertype Machine. Both single and double distributor machines of improved construction are available in this group. Star Base models are equipped with the standard brackets of the non-streamlined design and may be equipped with any special attachment developed prior to the Universal line. The various devices available for Star Base machines include the automatic quadding and centering device, justified quadding attachment, six-mold disk, stick attachment, etc. Note that side magazine frame of Star Base machines is of the tripod type and is applicable to both single and double distributor machines.

Model C3 is a single distributor machine with three 90-channel main magazines. The machine may be equipped with one, two, three or four 34-channel side magazines (C3-1 s.m., C3-2 s.m., C3-3 s.m. and C3-4 s.m.). Front or rear removal of main magazines.

All single distributor C3 machines are convertible into corresponding single distributor models with four 90-channel main magazines (C4). Similarly, any of the models may have from one to four side magazines.

Model C4 is a single distributor machine with four 90-channel main magazines. The machine may be equipped with one, two, three or four 34-channel side magazines (C4-1 s.m., C4-2 s.m., C4-3 s.m. and C4-4 s.m.). Front removal of main magazines.

Model H4 is a single distributor machine with four wide 72-channel main magazines. The machine may be equipped with one, two, three or four 34-channel side magazines (H4-1 s.m., H4-2 s.m., H4-3 s.m. and H4-4 s.m.). Front removal of main magazines. The four wide 72-channel main magazines carried by the machine will accommodate full-width 30 point faces and certain other faces in 36 point sizes. The Model H, therefore, is primarily a machine for display composition and offers the advantage of having four main magazines always on the machine and ready for instant use.

Star Base Intertypes

In the introductory description of model groups, it was indicated previously that the line of Star Base machines includes a number of single and double distributor machines of improved construction. All Star Base machines are of the non-streamlined type and may be equipped with all special attachments except those developed specifically for Universal models. The excepted devices are the electrically-driven magazine frame operating mechanism, the power channel entrance operating device and the latest types of automatic font distinguishers and selectors.

STAR BASE SINGLE DISTRIBUTOR MODELS

Three single distributor Star Base models, carrying one, two or three 90-channel main magazines, are available for straight composition.

Model A is a single distributor machine with one 90-channel main magazine. The machine may be equipped with one or three 34-channel side magazines (A-1 s.m. and A-3 s.m.). Rear removal of main magazine.

All single distributor A machines are convertible into corresponding single distributor models with two or three 90-channel main magazines (B and C). Similarly, any of the models may have one or three side magazines.

Model B is a single distributor machine with two 90-channel main magazines. The machine may be equipped with one or three 34-channel side magazines (B-1 s.m. and B-3 s.m.). Rear removal of main magazines.

All single distributor B machines are convertible into corresponding single distributor models with three 90-channel main magazines (C). Similarly, any of the models may have one or three side magazines.

Model C is a single distributor machine with three 90-channel main magazines. The machine may also be equipped to have one or three 34-channel side magazines (C-1 s.m. and C-3 s.m.). Rear removal of main magazines.

STAR BASE DOUBLE DISTRIBUTOR MODELS

Star Base machines of the double distributor type permit mixing of two main and side magazine type faces in one line. Like the Universal Mixer machine. Star Base Mixer models are equipped with a double assembling and distributing unit. If the machine has a side magazine unit, two main and two side magazines are always in operating position and matrices from all four magazines may be assembled simply by shifting the keyrod frame to the desired magazines. Matrices from both main and side magazines may be assembled in the same line and are returned automatically to the correct magazines by the font selector mechanism and the double distributor unit.

An important difference between Universal Mixer machines and Star Base Mixer machines, as indicated previously, is that Universal Mixers may have a maximum of four main magazines, whereas Star Base Mixers are limited to a maximum of two main magazines.

Model F is a double distributor Mixer machine with two 90-channel main magazines. The machine may be equipped with two or four 34-channel side magazines (F-2 s.m. and F-4 s.m.). Rear removal of main magazines.

Model G is a double distributor Mixer machine with two main magazines: one wide 72-channel magazine and one 90-channel magazine. This machine may be equipped with two or four 34-channel side magazines (G-2 s.m. and G-4 s.m.). Rear removal of main magazines.

Side Magazine Equipment

Intertype Corporation manufactures two standard types of side magazine equipment designated respectively as stack construction and tripod construction. While the tripod construction side unit was applied to certain streamlined machines shortly after their inception, the present policy is to apply the tripod construction unit only to Star Base machines and the stack construction unit only to Universal machines.

Stack Construction. The stack construction side magazine unit, as the name implies, carries the magazines in a stack similar to the arrangement of the main magazines. The four side magazine stack unit is shown in Fig. 191. The stack unit is applicable to all Universal models. All single distributor Straight Universal models (C1, C2, C3, C4 and H4) may have one, two, three or four side magazines; all double distributor Universal Non-Mixer and Mixer models (72-90 C2, 72-90 C4, Twin C2, Twin C4, F2, F4, G2 and G4) may have two or four side magazines.

It will be noted in Fig. 191 that each of the side magazines has its own stub or upper magazine section. The stubs are always in alignment with their respective magazines and thereby permit, in cases where the side magazines are not changed, a far greater matrix capacity than is available on machines where side magazines are moved in relation to the stubs. It is apparent that when the stub

is always stationary with respect to the magazine, the channels of the stub may be used to carry matrices in addition to the channels in the magazine itself.

From the standpoint of moving side magazines into operating position, the movement of the stack side magazine frame is similar to that of the main magazine frame. If the machine is equipped with the chain shift type of magazine frame operating mechanism, a convenient clutch mechanism permits movement of the side magazine frame by means of the same handle which moves the main magazine frame. If the electrically-driven magazine frame operating mechanism, commonly known as the power shift, is applied to the machine, a convenient operating lever is provided to control the movement of the side magazine frame. Both the chain and the power shifting mechanisms are described in this section under their respective headings.

Tripod Construction. The essential features of the tripod construction side magazine unit are shown in Fig. 192. This type of unit may be applied to all Star Base machines. All single distributor Star Base machines (A, B and C) may have one or three side magazines; all double distributor Star Base machines (F and

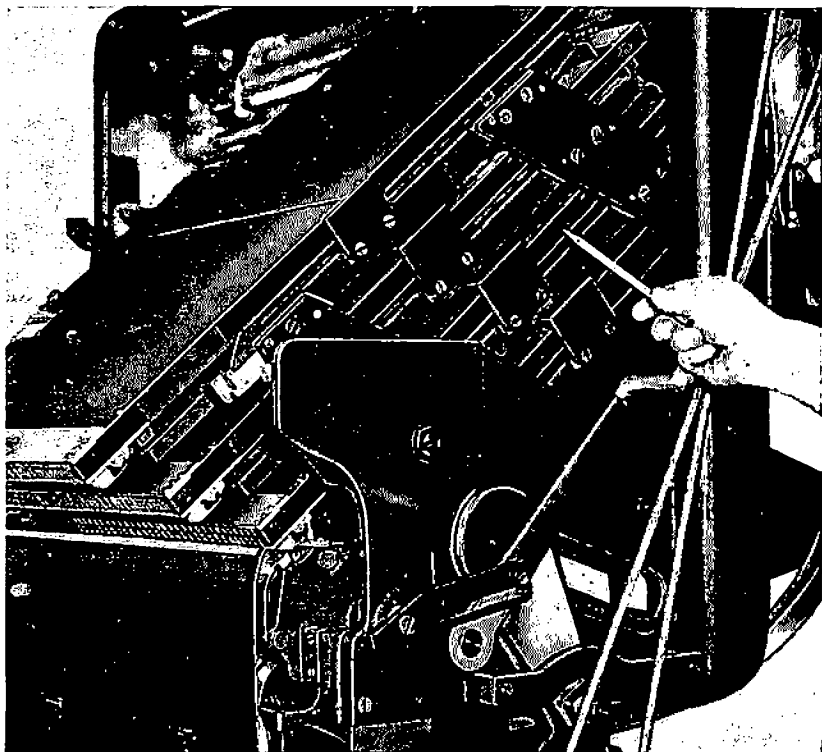


Fig. 191. Stack Construction Side Magazine Equipment. This construction is applied to Universal machines and carries the side magazines in a stack arrangement similar to that of the main magazine frame. Note that each of the side magazines has its own stub or upper magazine section. This insures correct alignment between the two magazine sections and makes it possible, in cases where side magazines are not changed, to carry extra matrices in the channels of the stubs as well as in the magazines themselves.

G) may have two or four side magazines. When a single distributor machine is equipped with three side magazines, the magazines are mounted on the tripod frame as shown in Fig. 192. When a double distributor machine is equipped with four side magazines, three of the magazines are mounted in the tripod frame and the fourth magazine is carried on rails under the tripod. One stub is provided for the lower magazine and another stub for the three upper magazines. This arrangement on the mixer machine makes it possible to distribute matrices simultaneously to both an upper and a lower side magazine.

When three magazines are provided on the tripod frame, changes from one magazine to another are made simply by raising the frame by means of the handle, rotating the frame until the desired magazine is in position, then lowering the frame to its operating location. The tripod frame is counterbalanced effectively by a suitable spring and only a slight effort is required for the shift. In the case of a double distributor machine with four side magazines, the fourth maga-

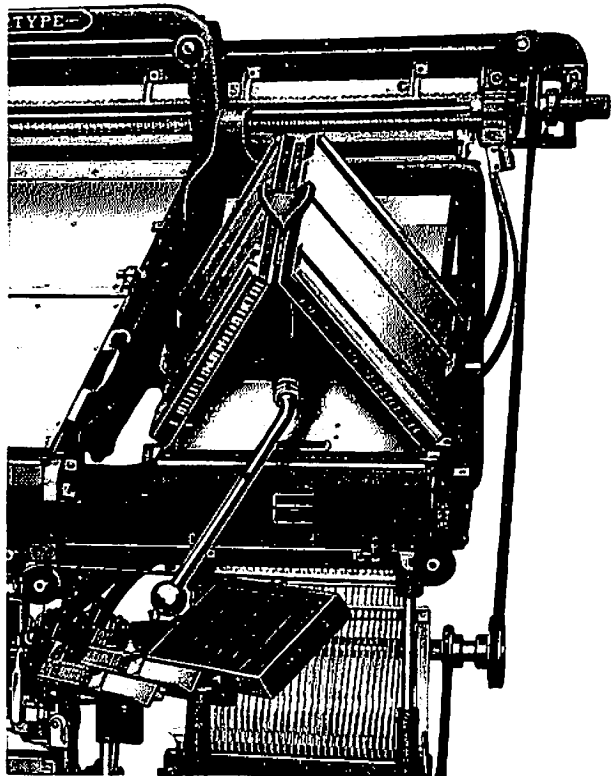


Fig. 192. Tripod Construction Side Magazine Equipment. This construction is applied to Star Base machines and carries three magazines on the pivoted tripod frame. Changing magazines is accomplished simply by raising the counterbalanced tripod and rotating it until the desired magazine is in operating position. On double distributor Star Base machines with four side magazines, the fourth magazine is carried on rails under the tripod and is removed from the side of the machine.

Tabular Summary of Intertype Models

STAR BASE MACHINES

Machine Model	Type of Machine*	Magazines			Machine Model	Type of Machine*	Magazines		
		72†	Main 90	Side 34‡			72†	Main 90	Side 34‡
A	SD	—	1	—	C-3 s.m.	SD	—	3	3
A-1 s.m.	SD	—	1	1	F	DDM	—	2	—
A-3 s.m.	SD	—	1	3	F-2 s.m.	DDM	—	2	2
B	SD	—	2	—	F-4 s.m.	DDM	—	2	4
B-1 s.m.	SD	—	2	1	G	DDM	1	1	—
B-3 s.m.	SD	—	2	3	G-2 s.m.	DDM	1	1	2
C	SD	—	3	—	G-4 s.m.	DDM	1	1	4
C-1 s.m.	SD	—	3	1					

UNIVERSAL MACHINES

Machine Model	Type of Machine*	Magazines			Machine Model	Type of Machine*	Magazines		
		72†	Main 90	Side 34‡			72†	Main 90	Side 34‡
C1	SD	—	1	—	§72-90 C4-4 s.m.	DDNM	2	2	4
C1-1 s.m.	SD	—	1	1	Twin C2	DDNM	—	2	—
C1-2 s.m.	SD	—	1	2	Twin C2-2 s.m.	DDNM	—	2	2
C1-3 s.m.	SD	—	1	3	Twin C2-4 s.m.	DDNM	—	2	4
C1-4 s.m.	SD	—	1	4	Twin C4	DDNM	—	4	—
C2	SD	—	2	—	Twin C4-2 s.m.	DDNM	—	4	2
C2-1 s.m.	SD	—	2	1	Twin C4-4 s.m.	DDNM	—	4	4
C2-2 s.m.	SD	—	2	2	F2	DDM	—	2	—
C2-3 s.m.	SD	—	2	3	F2-2 s.m.	DDM	—	2	2
C2-4 s.m.	SD	—	2	4	F2-4 s.m.	DDM	—	2	4
C3	SD	—	3	—	F4	DDM	—	4	—
C3-1 s.m.	SD	—	3	1	F4-2 s.m.	DDM	—	4	2
C3-2 s.m.	SD	—	3	2	F4-4 s.m.	DDM	—	4	4
C3-3 s.m.	SD	—	3	3	G2	DDM	1	1	—
C3-4 s.m.	SD	—	3	4	G2-2 s.m.	DDM	1	1	2
C4	SD	—	4	—	G2-4 s.m.	DDM	1	1	4
C4-1 s.m.	SD	—	4	1	§G4	DDM	2	2	—
C4-2 s.m.	SD	—	4	2	§G4-2 s.m.	DDM	2	2	2
C4-3 s.m.	SD	—	4	3	§G4-4 s.m.	DDM	2	2	4
C4-4 s.m.	SD	—	4	4	H4	SD	4	—	—
72-90 C2	DDNM	1	1	—	H4-1 s.m.	SD	4	—	1
72-90 C2-2 s.m.	DDNM	1	1	2	H4-2 s.m.	SD	4	—	2
72-90 C2-4 s.m.	DDNM	1	1	4	H4-3 s.m.	SD	4	—	3
§72-90 C4	DDNM	2	2	—	H4-4 s.m.	SD	4	—	4
§72-90 C4-2 s.m.	DDNM	2	2	2					

*SD—Single Distributor; DDM—Double Distributor Mixer; DDNM—Double Distributor Non-Mixer.

†Wide 72-channel magazine.

‡The side magazine equipment of all Star Base machines is of the tripod construction. Single distributor machines may have one or three side magazines; double distributor machines may have two or four side magazines. In cases where single and double distributor machines respectively are provided originally with one and two side magazines, the tripod magazine frame may be applied at a later date to accommodate three and four side magazines respectively.

The side magazine frame of all Universal machines is of the stack construction. Single distributor Universal machines may have one, two, three or four side magazines; double distributor Universal machines may have two or four side magazines.

§These machines may have two wide 72-channel and two 90-channel main magazines, or one wide 72-channel and three 90-channel main magazines, or three wide 72-channel and one 90-channel main magazines.

zine under the tripod can be removed instantly and replaced from the side of the machine.

When a single distributor Star Base machine is equipped with one side magazine, the stub and the magazine are mounted in a suitable bracket. If at a later date three side magazines are desired, the tripod frame is applied with a minimum of time and expense to the original supporting bracket provided for the single side magazine. This procedure is of great convenience to establishments in which display requirements are constantly changing and is another indication of the advantages of Intertype's basic standardization policy. The same features characterize the conversion of a two magazine mixer side unit into a four magazine unit.

Magazine Frame Shifting Mechanism (Manual)

In the preceding description of Intertype models, it was mentioned that there are two types of magazine frame shifting devices: a manual operating mechanism, commonly referred to as the chain shift, and an electrically driven mechanism, commonly referred to as the power shift or autoshift. The manual or chain shift mechanism is standard equipment for most of the models and is described below. The electric or power shifting mechanism is optional extra equipment for certain of the Universal models and is described in the section dealing with special attachments.

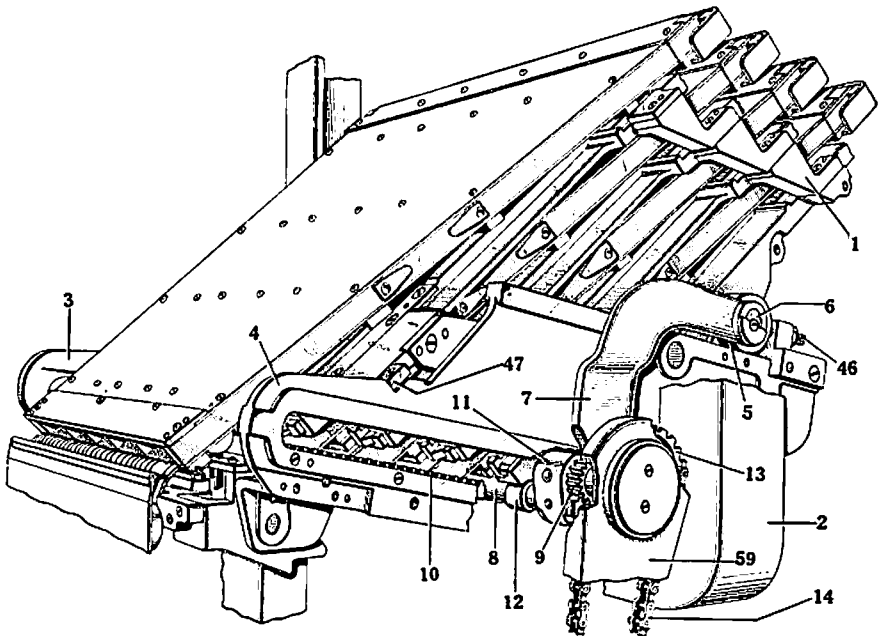


Fig. 193. Magazine Frame, Supporting Brackets and Shafts in Assembly. This view shows how the assembled frame is supported on the left and right-hand brackets 3 and 4 and also indicates the connection between the lower shaft 8 and the upper shaft 6 through links 7. The lower shaft 8 promotes the forward and backward movements of the frame when operated by the mechanism shown in Fig. 195.

The chain type of magazine shifting mechanism includes these three basic assemblies:

1. **The Assembled Magazine Frame**, which carries the magazines and which may be moved forward or backward on two supporting brackets.
2. **The Magazine Frame Operating Mechanism**, which turns the magazine frame lower shaft and imparts movement to the magazine frame.
3. **The Magazine Frame Counterbalance Mechanism**, which relieves the operating mechanism of the weight of the magazine frame and magazines. The counterbalance device assists the forward movement and cushions the backward movement of the magazine frame.

In the succeeding description of the magazine frame shifting mechanism, the material will be presented in terms of the three assemblies indicated.

Magazine Frame and Supporting Brackets

For purposes of describing how the magazine frame is shifted by its operating mechanism, the Model C4 magazine frame has been selected because it is representative of the basic principles of design and construction embodied in the latest machines. It should be understood, however, that the details of operation outlined in the following description are similar for all machines equipped with the chain shift type of magazine frame operating mechanism.

The assembled magazine frame is shown with its supporting mechanism in Fig. 193. The frame 1 is mounted on a left-hand supporting bracket 3 and a right-hand bracket 4. The two supporting brackets are fastened to the distributor bracket 2 at their upper ends and to the machine column and intermediate bracket at their lower ends. The supporting brackets are provided with finished surfaces on which the magazine frame upper shaft rolls 5 turn. The rolls are held on the ends of shaft 6, which passes through lugs of the magazine frame.

The magazine frame upper shaft 6, Fig. 193, is connected with the lower shaft 8 by a left and right-hand pinion link 7. The lower shaft promotes the forward and backward movements of the magazine frame and also lifts the front end of the frame so that the magazines will clear the keyboard keyrods during a magazine shift. The lower shaft is provided with pinions 9, which run on racks 10 fastened to the supporting brackets. Whenever the lower shaft 8 is moved forward, therefore, links 7 and the upper shaft 6 move the magazine frame and magazines in the same direction; backward movement of the magazine frame is effected by the same means. While the operating mechanism which moves the lower shaft 8 is described under the next main heading, it should be noted at this point that the sprocket 13 on the end of the shaft causes the shaft to move as chain 14 is operated by the shifting mechanism.

Before outlining the connections between the magazine frame lower shaft and the operating mechanism, it should be noted in Fig. 193 that the lower magazine shaft 8 of single distributor machines operates with an eccentric movement during a magazine shift. As shown in the illustration, the shaft 8 is pinned to yokes 11 and is lifted and lowered as the yokes move forward or backward. The lifting and lowering actions of the shaft are imparted to the magazine frame through rolls 12, on which the front end of the lower magazine frame rests. The magazine frame lower shaft is so timed in relation to the operating mechanism that the

magazine is lifted clear of the keyboard keyrods at the beginning of the magazine shift. As the magazine approaches its operating location, the lower shaft permits the magazine to come to position above the keyrods and in alignment with the assembler entrance, as illustrated.

Instead of the eccentric lower shaft just described for single distributor machines, a lifting cam arrangement is provided on four-magazine double distributor machines for the purpose of raising the magazines clear of the escapement rods. The left-hand magazine frame lifting cam is shown at 1, Fig. 194. The cam is fastened to the magazine frame supporting bracket 3 and is provided with rising and falling surfaces on which the magazine frame lifting cam rollers ride. The rising surfaces of the lifting cams raise the magazines clear of the escapement rods during a magazine shift; the descending surfaces of the cams permit the magazines to lower to operating position. The magazine lifting cam bridges 2 are provided to render the center operating position of the lifting cams inoperative when desired. When the bridges are moved down on the cams, the upper or the lower pairs of main magazines may be used. In shifting from one pair of magazines to the other, the magazine frame moves directly to position with-

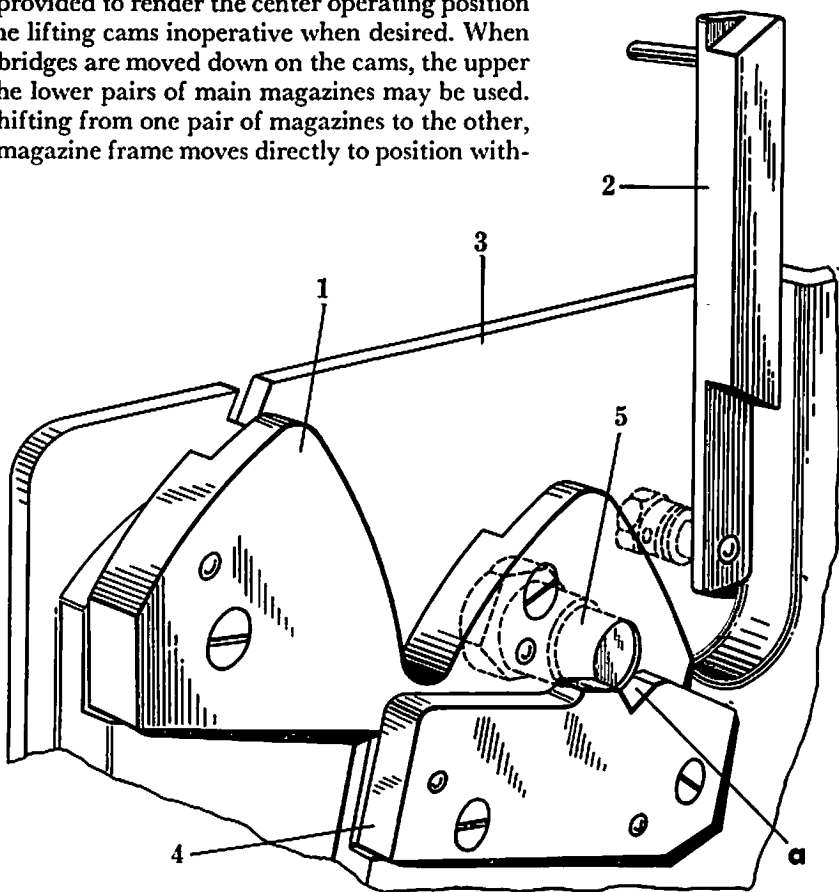


Fig. 194. Magazine Frame Lifting Cam. This type of cam 1 is provided on double distributor machines to raise the magazines clear of the escapement rods during a magazine shift. An eccentric magazine frame lower shaft is provided on single distributor machines for the same purpose.