

# A "DAWN" 4 SP VICE

(SEND FOR DAWN VICE AND TOOL CATALOGUE)

RENOMA PRINTERY PTY. LTD., 205 SCOTCHMER STREET, NORTH FITZROY.

DAWN P.T.

# TOGGLE CLAMPS

Manufactured by G. N. RAYMOND LTD. Engineering Division, Norris Street, North Coburg, Victoria, Australia, 3058.

This new catalogue has been produced to serve as a guide to swifter, more accurate production.

We present this DAWN-P.T. Toggle Clamp range knowing that it will enable the tool engineer to design infinitely better foolproof jigs and fixtures.



DAWN P.T.

means . . . Smart Tooling

II SIMPLE!

CATALOGUE No. 22



# G. N. RAYMOND LIMITED, ENGINEERING DIVISION

1 NORRIS STREET, NORTH COBURG, VICTORIA, AUSTRALIA



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# HERE'S PROOF THAT IT PAYS YOU TO USE DAWN-P.T. TOGGLE CLAMPS . . .

# 'We invested \$19.18 and saved over \$1170 per year in one operation alone'

The case history presented here is taken from a report received from an Australian Factory which produces assemblies and component parts on a sub-contract basis. It is a typical example of how and why P.T. Toggle Clamps save you time and money.

### THE PROBLEM:

To reduce the time of drilling four  $\frac{1}{4}$  in. diameter holes in  $\frac{1}{2}$  in. square mild steel.

### ORIGINAL METHOD:

Loading the jig and holding parts in location with two hinged screws and wing nuts. Production time and cost of drilling a batch of 10,000 units by this method were as follows:—

Production Rate - - 76 units per hour Total Batch Time 132 hours at \$3.00

Labour and Overhead - - \$396

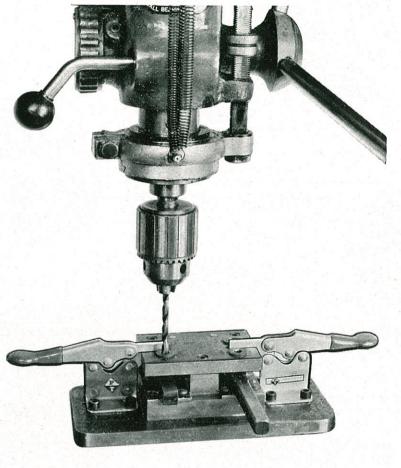
### **NEW METHOD**

Two T-106-20 P.T. Toggle Clamps were obtained and special jaws fitted. (Note: The complete assembly is illustrated at right.)
Cost — clamps \$4.68, plus cost of fitting \$14.50, — total \$19.18

The complete success of the change-over was revealed in the costing of the first batch of 10,000 units:—

Production Rate — — 92 units per hour Total Batch Time 109 hours at \$3.00 per hour

Labour and Overhead - - \$327



"We paid for the clamps and their fittings within the first 30 hours of operating the new jig. We saved 23 hours of drilling time on each 10,000 units, thus saving \$69 on each batch. The annual saving on this operation alone will exceed \$1170."

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# What Toggle Clamps will do for you . . .

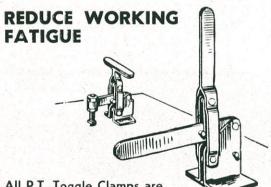
# INCREASE PRODUCTION RATE

P.T. Toggle Clamps offer secure clamping and release. Removal and insertion of parts is done quickly and easily. Their quick, positive clamping and accuracy combine for greater ease of operation and consequent higher production.

# SAVE TIME AND MONEY



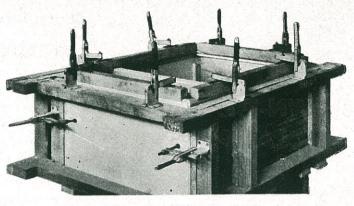
By using P.T. Toggle Clamps, the tool engineer is able to design much more simplified, fool proof jigs and fixtures ... fixtures which are accurate and assure rigid holding of parts with one swift movement. A single pull on the handle releases the part instantaneously when the manufacturing operation is complete.



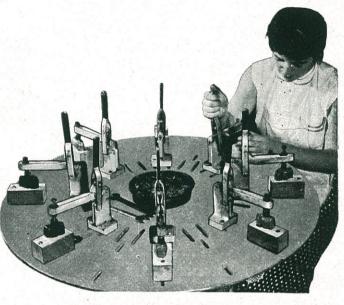
All P.T. Toggle Clamps are quick-acting. Because they lock automatically and hold

firmly, operator fatigue is reduced to a minimum. The removal and insertion of parts is thus accomplished with the least possible labour, with all unnecessary hand movement and manipulation eliminated. This greater ease of operation must result in higher production.

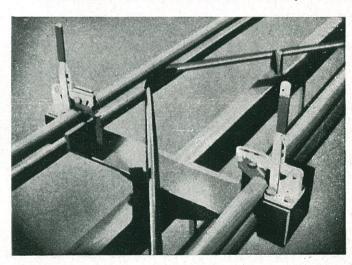
The illustrations below depict some of the many applications for DAWN-P.T. Toggle Clamps



GLUING in the TIMBER Industry

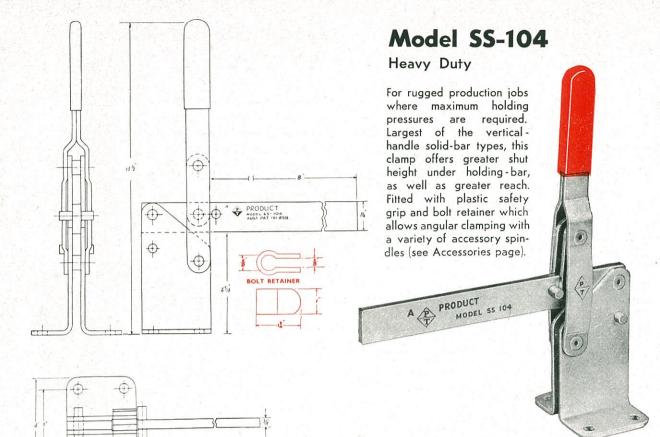


ASSEMBLY in the PLASTICS Industry

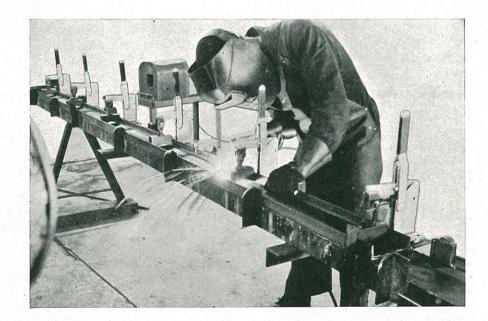


WELDING in the ENGINEERING Industries

# VERTICAL-HANDLE, HORIZONTAL SOLID-BAR TYPE



Two lengths of heavy angle iron are located and prevented from twisting during a WELDING operation by the rapid and very firm application of a number of SS-104 P.T. Toggle Clamps.

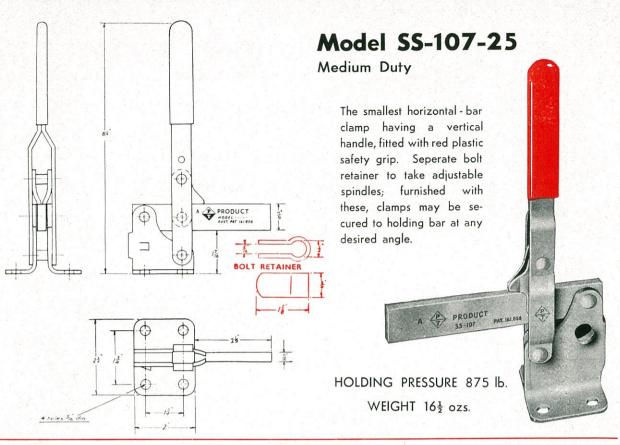


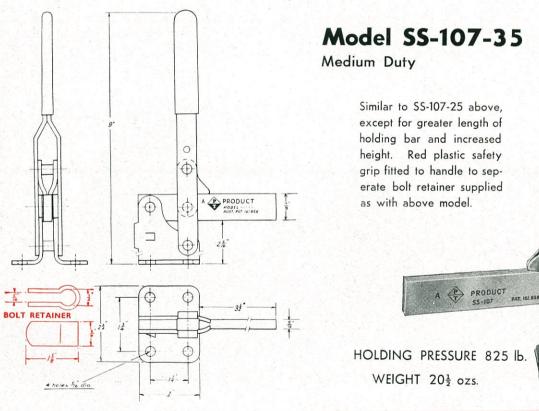
HOLDING PRESSURE 1300 lb.

WEIGHT 5 lb. 4 oz

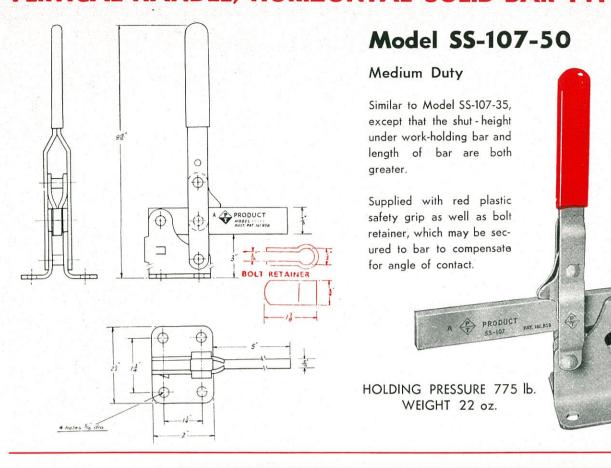
3

# VERTICAL-HANDLE, HORIZONTAL SOLID-BAR TYPE

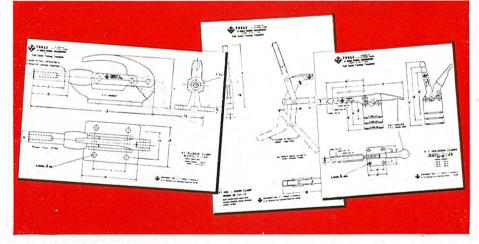




# VERTICAL-HANDLE, HORIZONTAL SOLID-BAR TYPE



Complete
Sets of
Tracing
Templates
for all
DAWN
P.T.
TOGGLE
CLAMPS



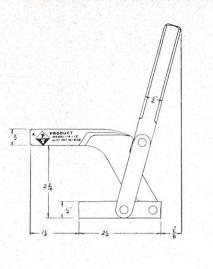
DAWN-P.T. Toggle Clamp Templates are available to engineers and draughtsmen without charge. They are printed in full scale, showing both right and left hand views.

For immediate use or for future reference, you will find these Templates great time-savers at the draughting board. We shall be pleased to supply you with free Templates of all clamp

to: O. N. RAYMOND LIMITED, Engineering Division

1 NORRIS STREET, NORTH COBURG, VICTORIA, 3058

# ANGULAR-HANDLE, HORIZONTAL SOLID BAR TYPE

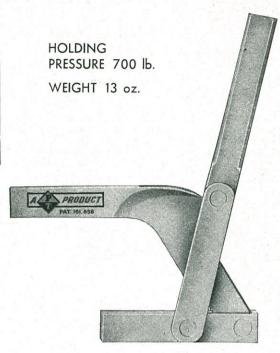


For the most rugged production jobs.

Drop-forged alloy steel work-holding bar

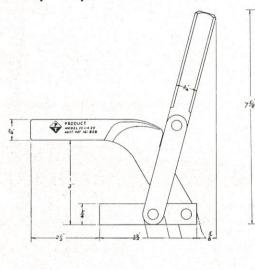
# Model SS-114-15

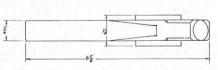
Heavy Duty



# Model SS-114-25

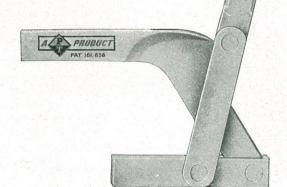
Heavy Duty





HOLDING PRESSURE 1500 lb. WEIGHT 2½ lb.

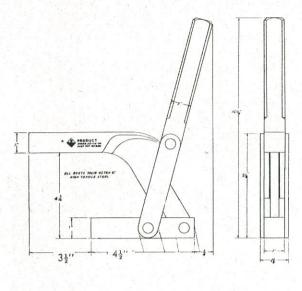
Similar in design to above, but with increased strength in all working components. Straight base facilitates welding or drilling.

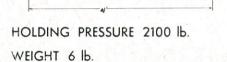


# ANGULAR-HANDLE, HORIZONTAL SOLID BAR TYPE

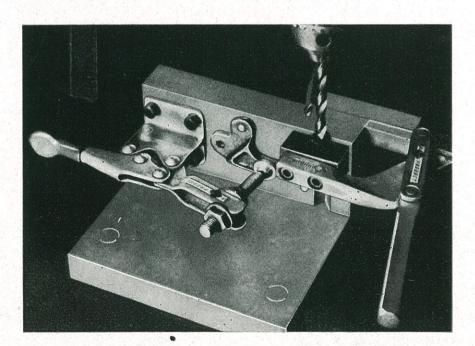
# Model SS-114-35

Extra Heavy Duty





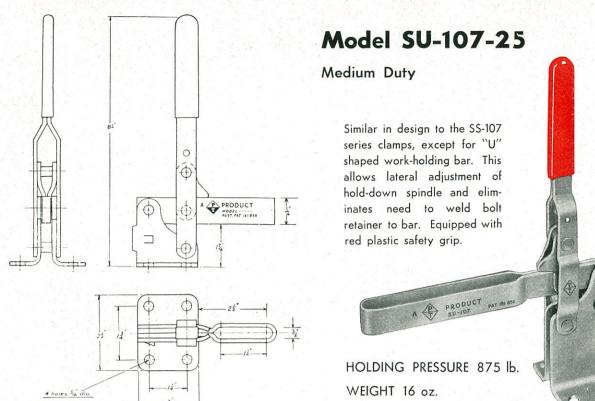


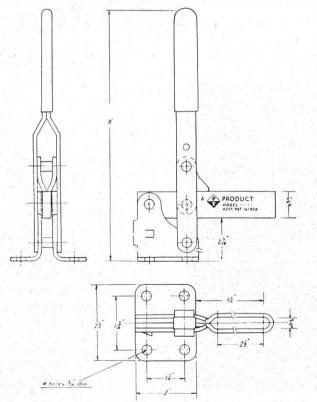


In an efficient DRILLING AND TAPPING jig, an SS-114-15 P.T. Toggle Clamp, with built-in drill bush, is used for accurate, firm location.

After drilling, the workholding bar complete with drill brush is swung clear so that the component can be tapped without being removed from the fixture.

# VERTICAL-HANDLE, HORIZONTAL "U" BAR TYPE

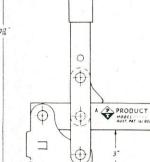


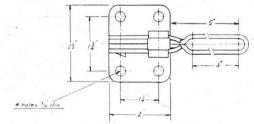










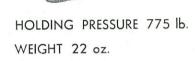


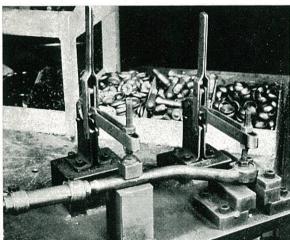
# VERTICAL-HANDLE, HORIZONTAL "U" BAR TYPE



Medium Duty

Similar to, but larger than, the two preceding models, giving greater reach and greater shutheight under work-holding bar. Allows considerable lateral adjustment of hold-down spindle (for details see Accessories page).

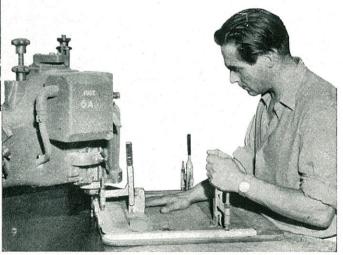




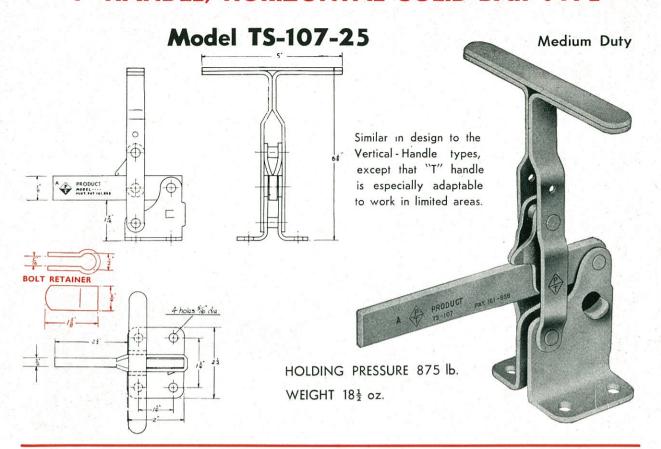
RIGHT: A ROUTING operation carried out with high efficiency in a large T.V. cabinet factory. Three SU-107-50 P.T. Toggle Clamps are used to locate and hold routing template and timber.

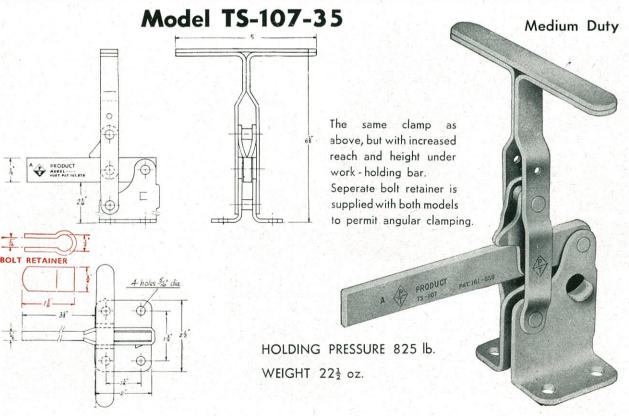
LEFT: Motor car tie rods are ASSEMBLED more swiftly and efficiently when the various components are located and held by two SU-107-35 P.T. Toggle Clamps.

A PRODUCT PAT, IN BER



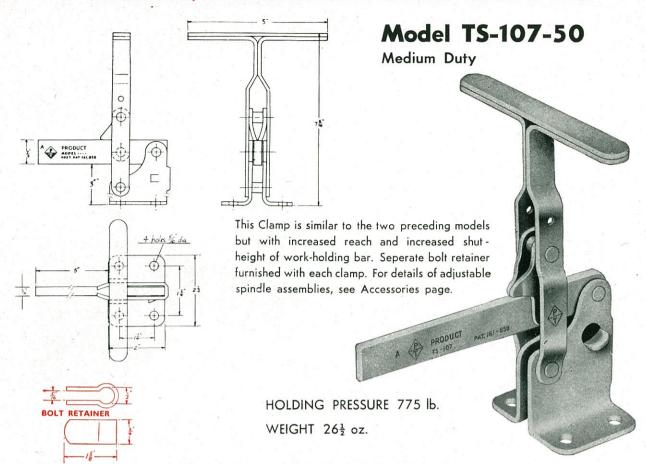
# "T"-HANDLE, HORIZONTAL SOLID-BAR TYPE

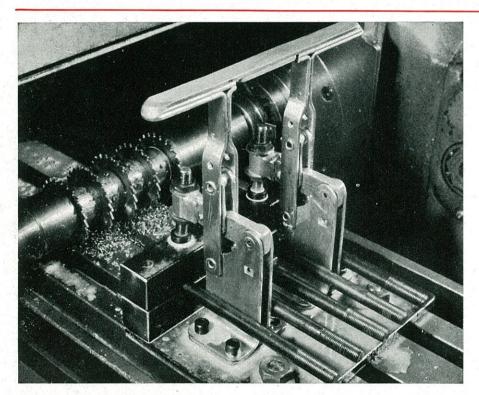




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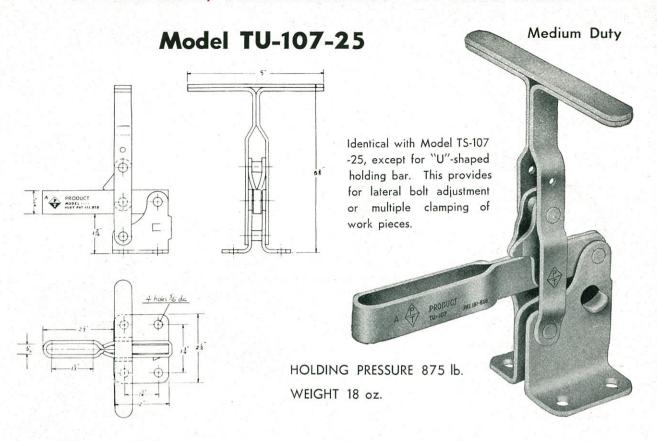
# "T"-HANDLE, HORIZONTAL SOLID BAR TYPE

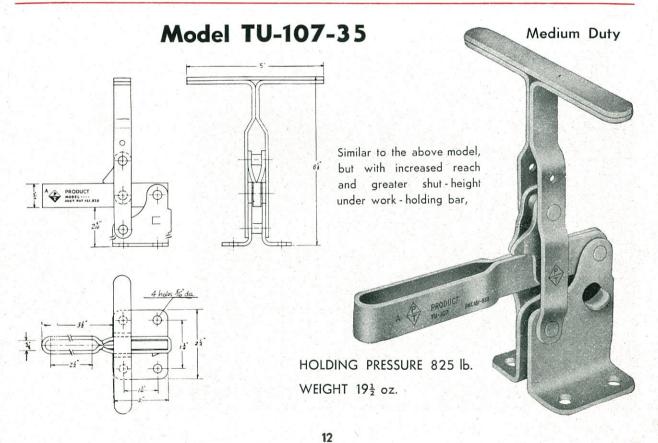




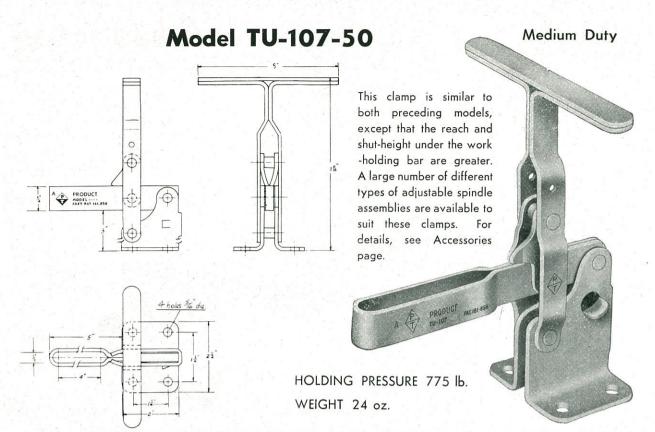
Instant and secure clamping of five seperate components in a gang MILLING jig is obtained by using two TU-107-50 P.T. Toggle Clamps linked together by their "T" handles.

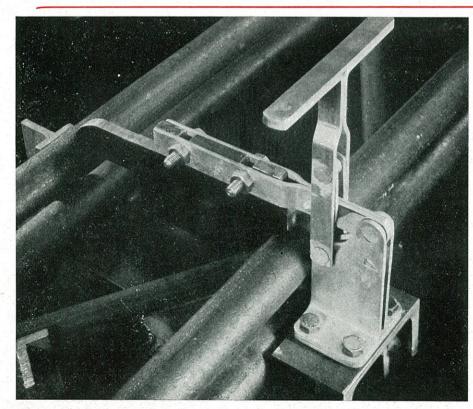
# "T"-HANDLE, HORIZONTAL "U" BAR TYPE





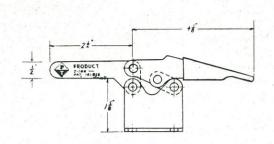
# "T"-HANDLE, HORIZONTAL "U" BAR TYPE

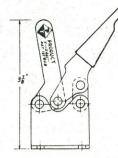




LEFT: A model TU-107-50 P.T. Toggle Clamp fitted with special jaw clamps and firmly locates tubular steel members in a welding jig.

# HORIZONTAL HANDLE-AND-BAR TYPE

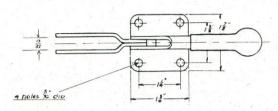




# Model T-106-20

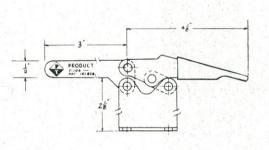
Light Duty

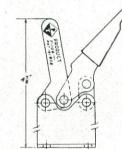
For its size, this clamp has an extremely smooth and powerful toggle action. Bar and handle are both horizontal when locked. Bar retracts to vertical position when open. Equipped with red plastic safety grip.





HOLDING PRESSURE 350 lb. WEIGHT 8 oz.

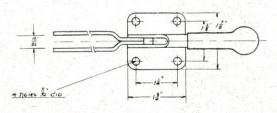


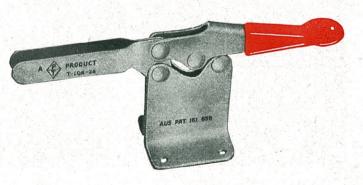


# Model T-106-25

Light Duty

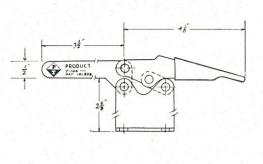
Identical with above, except for increased reach and locked height of work-holding bar. Full range of adjustable spindle assemblies are available (see Accessories page.

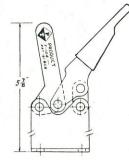




HOLDING PRESSURE 325 lb WEIGHT 9 oz.

# HORIZONTAL HANDLE-AND-BAR TYPE

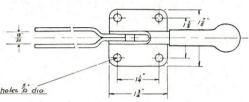


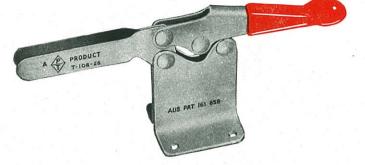


# Model T-106-30

Light Duty

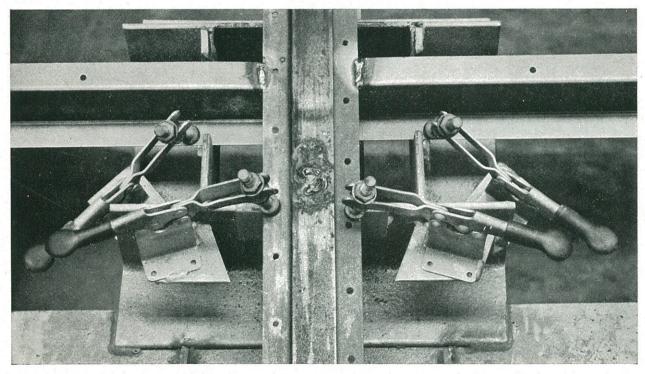
Similar to the two preceding models and with the same powerfull toggle action, but with increased shut-height and reach. Equipped with red plastic safety grip.





HOLDING PRESSURE 300 lb.
WEIGHT 10 oz.

A major Australian manufacturer of light-weight bus bodies used more than one thousand Series T-106 Toggle Clamps to locate and hold all structural alloy components in position for WELDING. The four seen here are T-106-25 P.T. Toggle Clamps and were among the many of this type used on the roof frame jig.

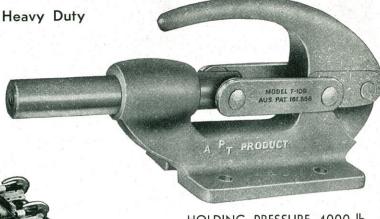


# HORIZONTAL TRAVEL PLUNGER TYPE

# Model T-109

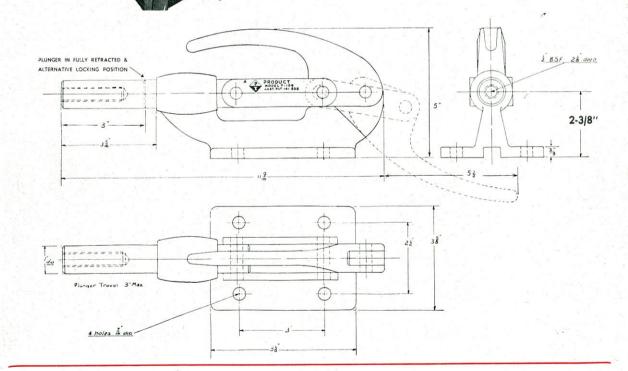
Extra Heavy Duty

Of extremely rugged construction, both base and handle are S.G. Iron castings. Designed for either "Push" or "Pull" operation the clamp locks in both positions. Detailed information on adjustable spindle assemblies is contained on Accessories page.



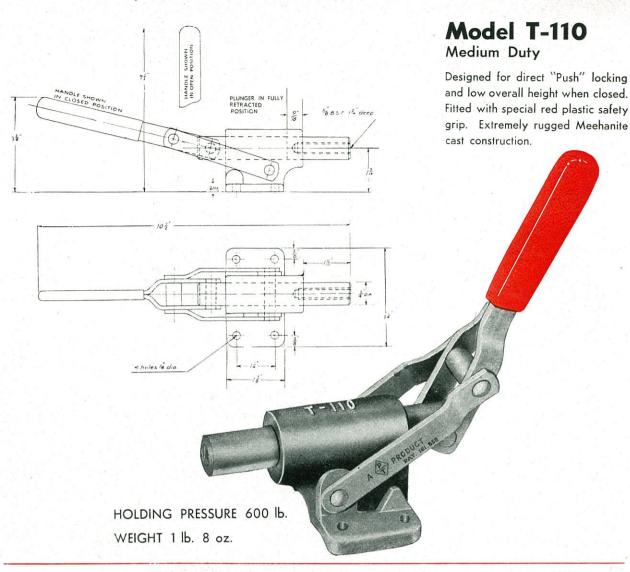
HOLDING PRESSURE 4000 lb. WEIGHT 5 lb. 10 oz.

LEFT: Eight T-109 P.T. Plunger Clamps serve a double purpose on this heavy duty welding jig. For accurate location, the plunger end fits through the parts to be held, while the pads provide the heavy clamping force required to hold the components against welding stresses.



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# HORIZONTAL TRAVEL PLUNGER TYPE



An efficient little drill jig uses this T-110 plunger clamp to lock two components securely in position for DRILLING.



# PORTABLE TOGGLE-PLIER TYPE

Model P.T. 10

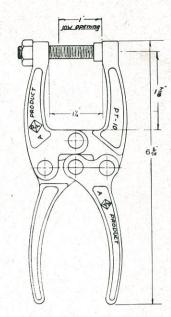
Medium Duty

A compact clamp with small, powerful jaws; fits snugly in one hand. Provides instant, positive holding pressure at all times. All drop-forged alloy steel components. Copper-plated spindle throws off welding spatter.

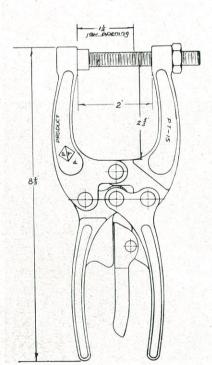
HOLDING PRESSURE 300 lb.

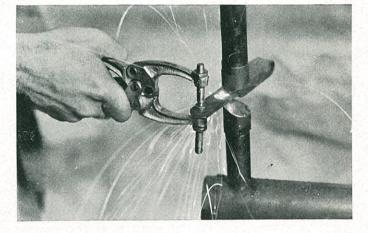
WEIGHT 8 oz.





A P.T. 10 Toggle Clamp locates and holds two components in one swift movement during a spot welding operation.



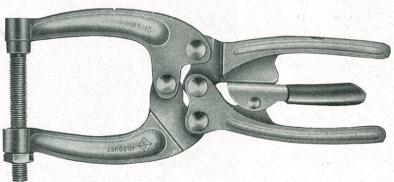


Model P.T. 15

Heavy Duty

Designed for instant one-hand clamping and two-way release.

Trigger may be pushed in either direction to release pressure immediately.

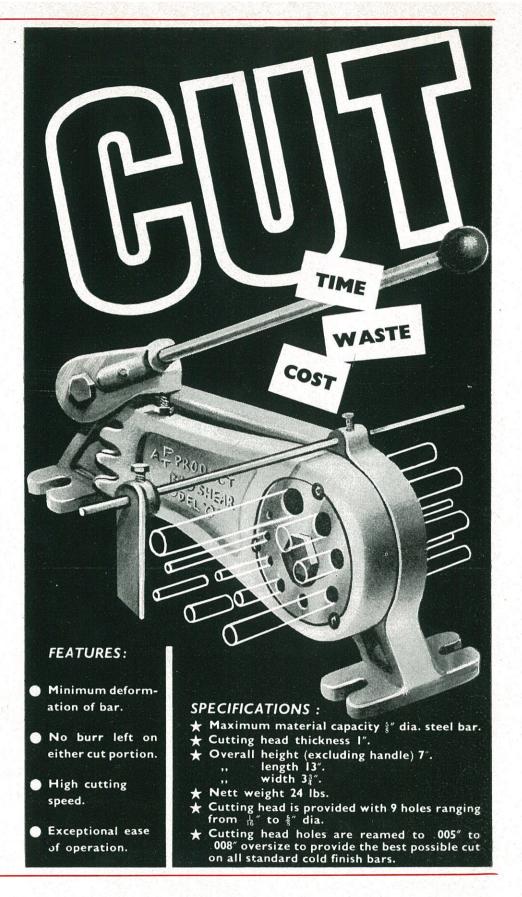


with your...

DAWN P.T.

> R O D

CUTT



# TOGGLE CLAMP ACCESSORIES

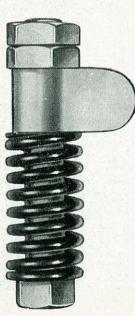
# 

Illustrated here is the excellent range of P.T. Toggle Clamp Accessories . . . It will pay you to study these accessories carefully. Their use in various applications will save time and money because they are specifically devised to assist towards the ultimate in clamping efficiency. All spindles are heavily copper-plated to throw off welding spatter. All lengths quoted are length of thread.

"FIXED PAD" ADJUSTABLE SPINDLE ASSEMBLIES		
Part No.	Description	Suitable for:
2538 FP	2½ in. x 3/8 in. B.S.F.	SU-107-25, TU-107-25, T-106-20, T-106-25, T-106-30, T-110, SS-114-15
3038 FP	3 in. x 3/8 in. B.S.F.	SU-107-35, TU-107-35, T-110, SS-114-15
3538 FP	3½ in. x 3/8 in. B.S.F.	SU-107-50, TU-107-50, T-110, SS-114-15
3050 FP	3 in. x ½ in. B.S.F.	SS-107-25, TS-107-25, T-109, SS-114-25, SS-114-30
3550 FP	3½ in. x ½ in. B.S.F.	SS-107-35, TS-107-35, T-109, SS-114-25, SS-114-30
4050 FP	4 in. x ½ in. B.S.F.	SS-107-50, TS-107-50, T-109, SS-114-25, SS-114-30
5558 FP	5½ in. x 5/8 in. B.S.F.	SS-104, SS-114-30

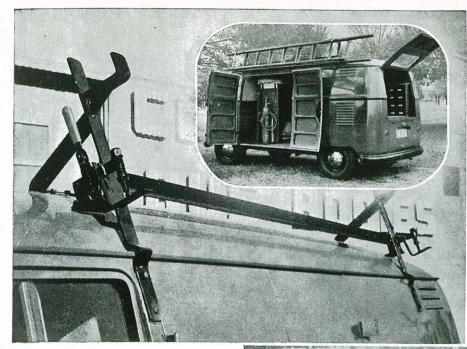
	"SWIVEL FOOT"	ADJUSTABLE SPINDLE ASSEMBLY
Part No.	Description	Suitable for:
2538 SF	2½ in. x 3/8 in. B.S.F.	SU-107-25, TU-107-25, T-106-20, T-106-25, T-106-30, T-110, SS-114-15
3038 SF	3 in. x 3/8 in. B.S.F.	SU-107-35, TU-107-35, T-110, SS-114-15
3538 SF	3½ in. x 3/8 in. B.S.F.	SU-107-50, TU-107-50, T-110, SS-114-15
3050 SF	3 in. x ½ in. B.S.F.	SS-107-25, TS-107-25, T-109, SS-114-25, SS-114-30
3550 SF	3½ in. x ½ in. B.S.F.	SS-107-35, TS-107-35, T-109, SS-114-25, SS-114-30
4050 SF	4 in. x ½ in. B.S.F.	SS-107-50, TS-107-50, T-109, SS-114-25, SS-114-30
5558 SF	5½ in. x 5/8 in. B.S.F.	SS-104, SS-114-30





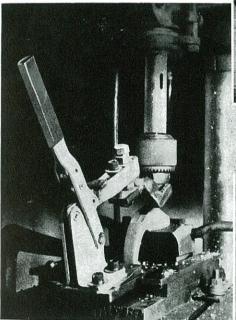
	"SPRING LOADED"	ADJUSTABLE SPINDLE ASSEMBLY
Part No.	Description	Suitable for:
2538 SL	2½ in. x 3/8 in. B.S.F.	SU-107-25, TU-107-25, T-106-20, T-106-25, T-106-30, T-110, SS-114-15
3038 SL	3 in. x 3/8 in. B.S.F.	SU-107-35, TU-107-35, T-110, SS-114-15
3538 SL	3½ in. x 3/8 in. B.S.F.	SU-107-50, TU-107-50, T-110, SS-114-15
3050 SL	3 in. x ½ in. B.S.F.	SS-107-25, TS-107-25, T-109, SS-114-25, SS-114-30
3550 SL	3½ in. x ½ in. B.S.F.	SS-107-35, TS-107-35, T-109, SS-114-25, SS-114-30
4050 SL	4 in. x ½ in. B.S.F.	SS-107-50, TS-107-50, T-109, SS-114-25, SS-114-30
5558 SL	5½ in. x 5/8 in. B.S.F.	SS-104, SS-114-30

LEFT: This assembly allows you to clamp parts that vary as much as  $\frac{1}{4}$ in. in thickness, without manual adjustment. This is particularly desirable when holding castings or sheet metal of varying guages. Manual adjustment, therefore, is infrequent. All portable P.T. Toggle Clamps can also be equipped with this feature, which provides automatic adjustments of spindle gap.



BELOW: A single model SU-107-50 P.T.
Toggle Clamp accurately locates a plastic
honey dispenser top for drilling and

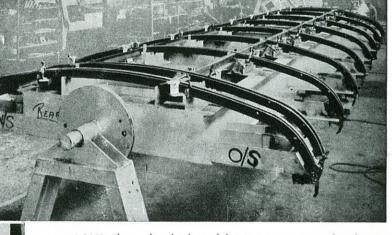
tapping operation.



RIGHT: Several SU-107-50 P.T. Toggle Clamps hold a battery of plastic rattles for a gluing operation.

# DAWN - P.T. TOGGLE CLAMPS AT WORK

LEFT: Most Australian P.M.G. Service Vans are now equipped with two SS-107-25 P.T. Toggle Clamps, fitted with spring loaded assemblies to hold ladders securely in position on the roof rack.



ABOVE: Eleven hundred Model T-106-25 P.T. Toggle Clamps are used in these roof and rear end frame jigs, speeding up the production of motor bus bodies.

