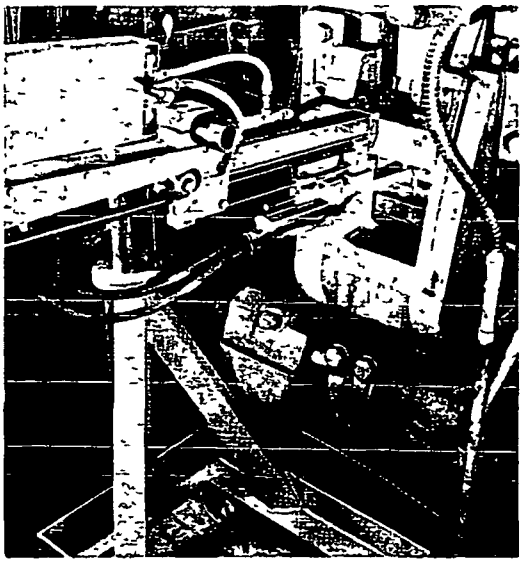


FIG 32–30 —Jaws on pneumatic unloader grip finished part and remove it from die area on upstroke of press slide

Pneumatically powered cylinders operating sweeps or kickout pins and timed with the upstroke of the press are more effective than air jets for removal of large and heavy pieces For safety, when jams must be cleared or tryout operations performed, the pneumatic equipment should have a valve to shut off the flow of air and bleed any residual air pressure between valve and cylinders

Clamp and pan shuttle extractors are used on presses of all sizes Pivoting or straight line clamps grip the part and remove it from the die area to a pallet, bin, or conveyor for further processing A pan shuttle (Fig 32–32) catches the piece as it is stripped from the upper die by knockout pins or other means and removes it from the die area

While some extractors are actuated mechanically by connection with the press slide or shafting, independently powered extractors (Fig 32–30) are used more frequently because they are more versatile and can be used with several presses

Every independently powered extractor should be interlocked with the press control circuit so that the press cannot operate unless the extractor is in "home" or "out" position

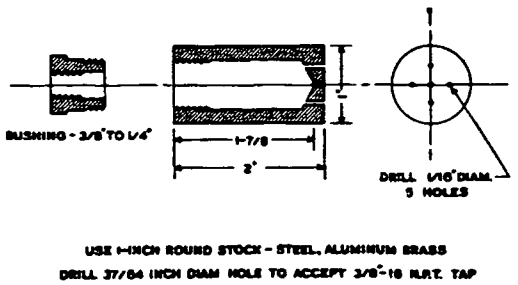


FIG 32–31 —A multi-orifice air ejector nozzle designed for noise reduction

Die Handling

All mechanical, hydraulic, or pneumatic power presses use some type of die in their point of operations The heavy die, in turn, must be changed periodically

Die handling produces its share of injuries too Dies are generally precision tools and deserve to be treated as such They may weigh from a few pounds to several tons, and, in addition, many of them have razor-sharp edges both inside and out If it is dropped, not only may the die be damaged, but the hand or foot it contacts will suffer Too many companies have inadequate die handling equipment, and too frequently they allow manual handling and carrying of smaller dies

All dies should be transported to and from the die storage area on either a die table, truck, or appropriately rated hoist, unless the die is truly small and light enough to be carried in one hand

Dies weighing up to about 100 lb can generally be handled without lifting apparatus only if proper die trucks are provided (Fig 32–33) These trucks should have elevating tables which are adjustable to the heights of storage shelves and press bolster plates Dies should be carried at the lowest elevation of the truck Rollers or balls mounted in the top surface of the table will aid in sliding the die on or off the truck

Heavy dies require more equipment for safe handling Because they are often lifted and moved by hoists, these dies should have tapped holes and eye bolts (or hooks), drilled holes and pins, chain slots, cast lugs in lower shoes, or clamping lugs to facilitate hookup