

same time have sufficient tolerance to carry a thin film of water to the plate. A conventional ink may emulsify too readily.

#### **Other considerations**

With economy and ease of operation very much in mind, it is sensible to limit the need for regular wash-ups. Although the need for colour is increasing, most small offset presses run only one colour, black, and it should therefore be unnecessary to waste time, ink and wash-up solvents for a nightly clean-up. Press stability is high on the list of priorities for a small offset ink which should be capable of being left on the press at least overnight and preferably for 2-3 days. After an extended stoppage, a quick, easy start-up must be possible to avoid unnecessary waste. Good press stability must not affect the drying of the ink on paper.

Whereas the commercial printer needs to deal only with metal plates, the in-plant printer may have to cope with two or more types. Metal plates are often used, but would normally only be economical for long runs or the highest quality work. Paper plates are the most commonly used being easy and cheap to produce and more suitable for the short-run duplicator work that is typical of this market. Unfortunately, they pose more problems for the ink-maker as they tend to break up fairly easily and do not have the same image/non-image contrast or transference properties as metal or plastic.

#### **Ink types available**

Two different types of ink are in common use today. Rubber-based inks were introduced to overcome the more unreliable performance of oil-based inks on presses with integrated damping. In this respect, rubber based inks still have the edge and their excellent press stability is difficult to match.

A more recent trend is for much greater versatility than rubber based inks can offer and a new generation of oleoresinous inks is now available to satisfy this need. The ability to dry on coated papers is becoming much more important following the introduction of economical vacuum-fed machines (coated paper is



*A typical small offset machine – the Rex-Rotary RR1602S*

difficult to feed on friction-fed machines), and the increasing demand for higher quality. Rubber based inks do not 'dry' in the normal sense of the word – no oxidation occurs and the inks become smear-free by penetrating into the stock. Although this setting action is extremely rapid on uncoated papers, it is a disadvantage on coated stocks as the ink constituents can separate and give poor rub resistance and a matt finish. Oil-based inks are much better suited to coated stocks giving a reasonable degree of gloss and a scuff-free finish.

Because of the nature of the resin, rubber-based inks have a tendency to string and do not give such sharp print definition when printed from paper plates. On larger machines, the higher rolling power aggravates this stringing, and flying, or misting, can be a problem.

Although both ink systems have their disadvantages and other inks are often needed for speciality work eg. label printing on cast coated stocks, oil-based inks have the advantage of greater versatility. In today's market, this is an increasingly popular requirement.