

RGA22 scale applicator

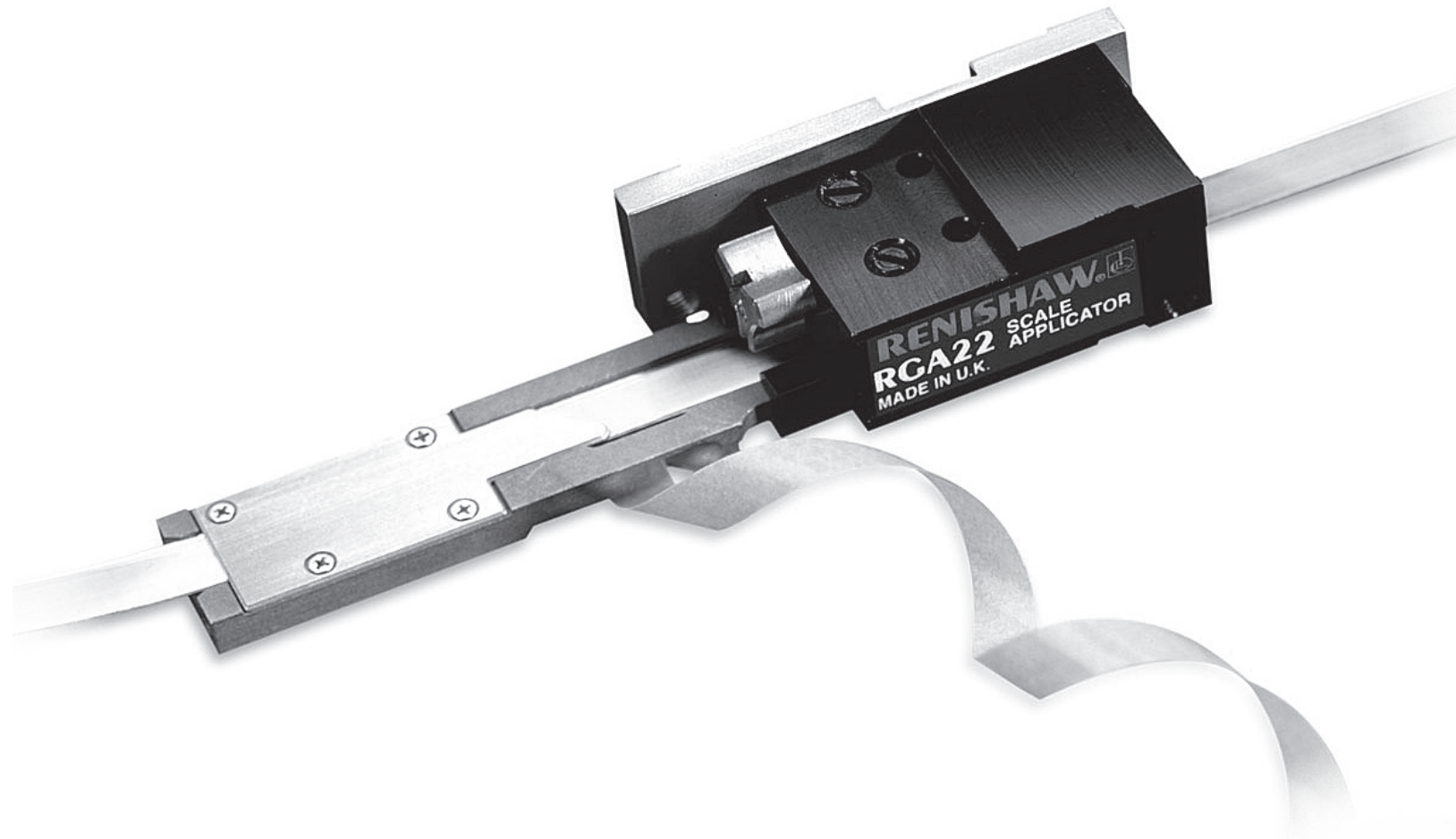


TABLE OF CONTENTS

	Page
Introduction	1
RGA22 Scale Applicator Kit	2
Section 1 Kit contents	2
1.1 Applicator body	2
1.2 Adaptors	2
1.3 Scale guide	2
1.4 Extension handles	2
1.5 Tools and accessories	2
Section 2 Scale installation procedure	3
2.1 Applicator assembly	3
2.2 Axis preparation	3
2.3 Readhead mounting bracket alignment	3
2.4 Scale guide preparation	3
2.5 Scale application	3-4
Section 3 Adaptor selection	4-5
Section 4 Maintenance	5

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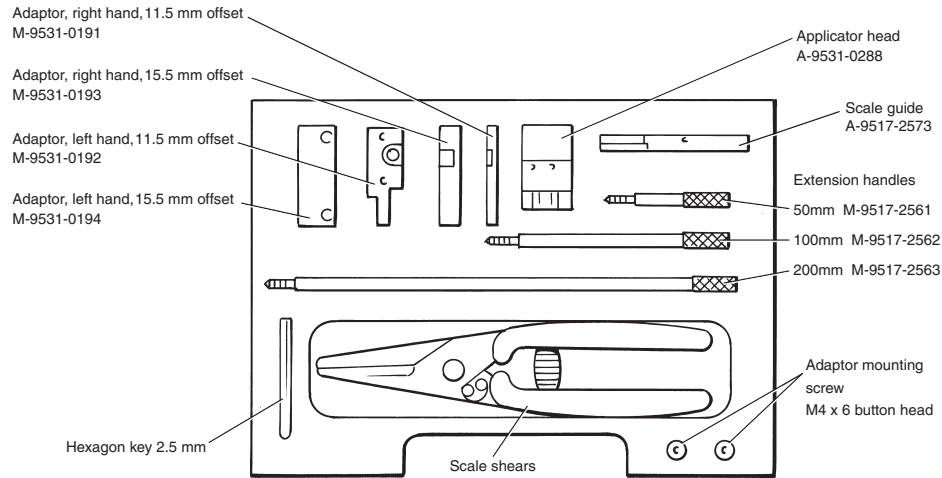
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Introduction

The RGA22 scale applicator is an installation tool used to lay the RGS20-S and RGS40-S self-adhesive scale to an axis. The applicator utilises the readhead mountings and uses the motion of the axis to guarantee that the scale is laid parallel to the axis guideway. Adaptors are supplied that configure the applicator to all the mounting options of the RGH22 and RGH41 series readheads.

RGA22 Scale applicator kit A-9531-0265



1.1 Applicator body

The applicator body has a retractable spring loaded plastic plunger that, during operation, applies a tacking force to the scale. The plunger is raised and lowered by means of the release knob shown and is held in both positions by detents.

The plunger is retracted for setup purposes and lowered when scale application takes place. The release knob is shaped in arrowhead form such that if access or view is restricted it is possible to both determine the position of the plunger and raise or lower it.

1.2 Adaptors

The applicator body is mounted on an adaptor to set the correct offset between the readhead mounting face and the scale. There are four adaptors in the kit providing configuration for 15.5 mm and 11.5 mm offsets, and right or left hand operation. The two right hand adaptors should be used as standard. The left hand adaptors should be used only where access to engage the scale guide is not possible with the right hand ones.

1.3 Scale guide

The scale guide locates into the applicator head beneath the plunger knob and is retained by detents. In operation the scale guide guides the scale into the applicator whilst simultaneously removing the scale backing paper. It is detachable from the applicator body to enable easy loading of the scale and also incorporates a locking mechanism to prevent the scale falling out during initial setup. The lock is a pinch roller which is activated by tightening the extension handle. The release paper is separated from the scale by a blade within the guide and ejected to one side.

1.4 Extension handles

Three extension handles of different lengths are supplied for optional use to permit access to locate the scale guide into the applicator in restricted circumstances.

They can be screwed together where particularly long extensions are required.

Hint: If long extensions are required, using the appropriate left hand adaptor may allow easier scale application.

Caution: When using extension handles, care must be exercised to prevent collision with any protruding machine parts as they are likely to extend beyond the axis limits.

1.5 Tools and accessories

Shears are supplied to cut the scale to length prior to application.

A 2.5 mm hexagon key and appropriate adaptor mounting screws are also included.

1. Kit contents

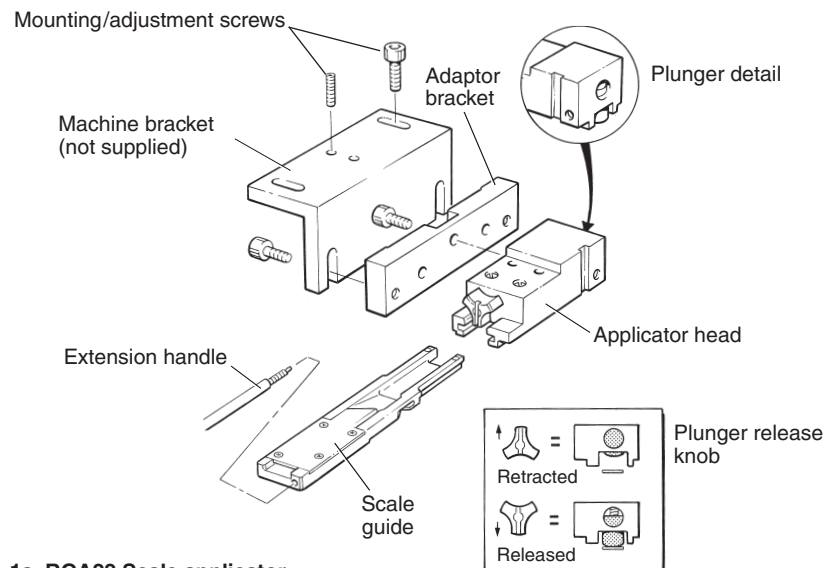


Figure 1a RGA22 Scale applicator

2. Scale installation procedure.

Refer to the relevant RGH22 or RGH41 system installation guides for general details of scale application including: location, orientation, protection and operating environment. Also scale and mounting surface (substrate) preparation.

2.1 Applicator assembly.

Select an appropriate adaptor, as described in section 3, and attach it to the applicator body using the screw and hexagon key provided. This will give either 11.5 mm or 15.5 mm offset dimension from the scale centreline to the mounting face.

2.2 Axis preparation.

Refer to the relevant RGH22 or RGH41 system installation guides for axis preparation details. Mark a line on the substrate parallel to the axis guideway at the desired position of the scale centreline.

2.3 Readhead mounting bracket alignment.

To lay the scale at a given position using the RGA22 applicator, it is necessary to set the machine bracket, on which the readhead mounts, at the appropriate offset given in 2.1 above, from the known scale centreline position.

1. Set the machine bracket with 11.5 mm or 15.5 mm offset from scale centreline, as appropriate, depending upon which way round the readhead is to be mounted. This can be done by measurement or by attaching the assembled applicator to the machine bracket, locating it into the readhead setting gauge and adjusting the position to align the setting gauge notch over the marked centreline, see Figure 2a.
2. Adjust the readhead mounting bracket to ensure that the readhead mounting face is square to the scale's mounting surface and parallel to the axis guideway within the tolerances shown in Figure 2a.

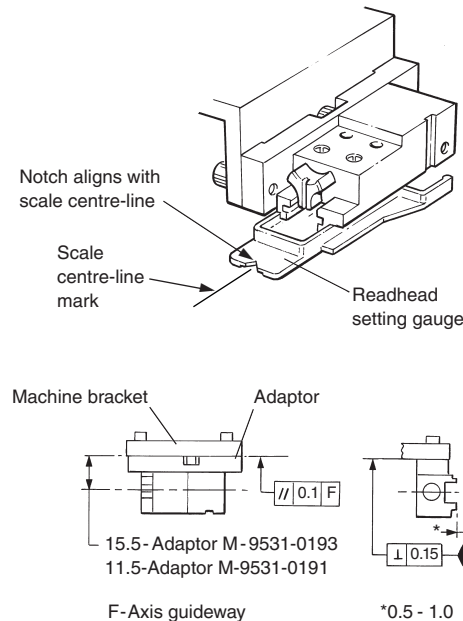


Figure 2a Applicator set-up

2.4 Scale guide preparation

1. Cut scale to the required length and feed into the scale guide slot. The scale profile is symmetrical, therefore it can be applied either way round.

Hint: To ensure that the scale backing paper engages in the splitter blade, carefully roll back the leading 5-10 mm and then re-attach. Do **not** fold the backing paper as this will prevent correct engagement

2. Feed the scale as far as point X, (Figure 2b), checking that the backing paper is removed correctly by the feeding action.
3. If required, lock scale at this position by fitting and lightly tightening the extension handle as shown. Do not use excessive torque as this could damage the scale guide or scale face.

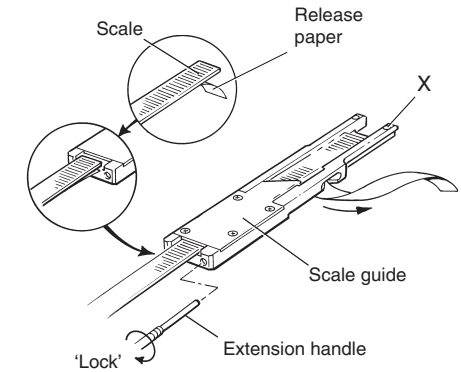


Figure 2b Scale insertion

2.5 Scale application

1. Move the axis to the start of travel, noting direction of scale application.
2. Turn plunger release knob to the UP position to ensure that applicator plunger is retracted.
3. Engage the scale guide into the applicator head until the detent clicks (see Figure 2c).

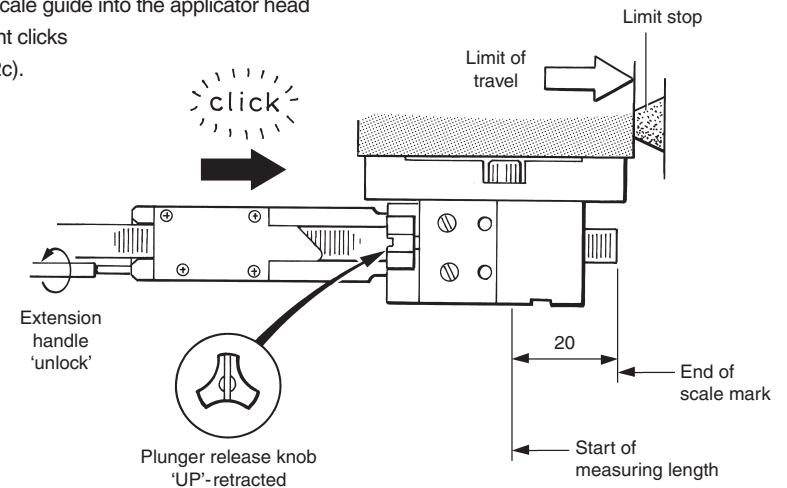


Figure 2c Scale positioning

- If fitted, release the scale lock by backing off the extension handle one turn minimum. There is no need to remove the handle.
- Manually feed the scale until the leading edge aligns with the 'end of scale' mark as shown.
- Release the applicator plunger by turning knob to DOWN position. This will lightly attach the end of the scale to the substrate.

- As shown in Figure 2d, traverse axis through full travel at a steady slow speed to adhere scale to substrate while simultaneously ejecting the backing paper.

Caution: During scale application:

Do not:

- move the axis in reverse direction at any time.
- pull backing paper away (to avoid tearing).

Do:

- move axis at a steady slow speed.
- guide the backing paper away to ensure smooth ejection.
- stop at any time if desired.

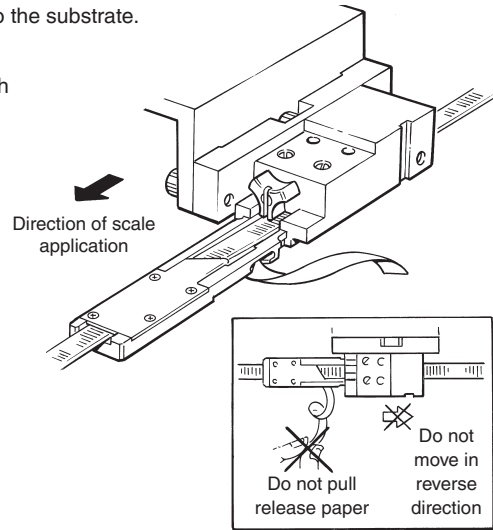


Figure 2d Scale laying

- At limit of travel, the remaining scale will probably still be engaged in the scale guide. Lock the axis and manually withdraw scale guide from the scale applicator head, (see Figure 2e). If an extension handle has been used, it can be removed before withdrawing scale guide, or afterwards if access is restricted.

The remaining backing paper will be completely removed. The axis is now free to move in either direction allowing access to the whole scale length.

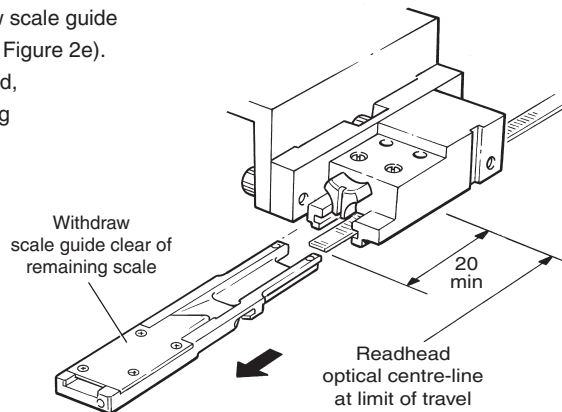


Figure 2e Scale guide removal

- Carefully remove applicator head and place all applicator components in the protective case supplied for storage.
- Apply firm finger pressure along the full length of the scale from the centre out, to ensure complete adhesion.

NOTE: Once installed, the scale cannot be re-used; removal and reapplication is likely to adversely affect subsequent scale performance and operational reliability.

3. Adaptor selection

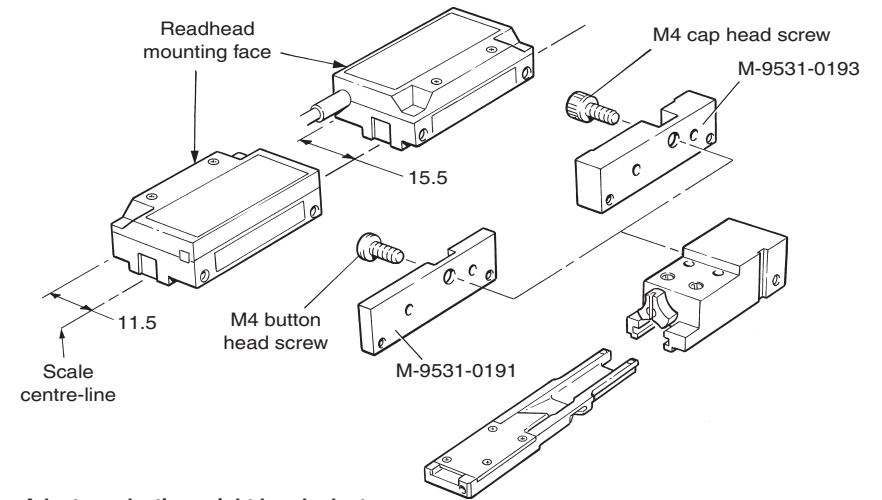


Figure 3a Adaptor selection - right hand adaptors

The correct adaptor will be determined by the chosen readhead mounting option giving either 15.5 mm or 11.5 mm offset from the scale centreline to readhead mounting face.

The applicator kit contains all adaptors, but left hand adaptors should be used only where access using the right hand ones make installation difficult (see Figures 3a and 3b).

Refer to Figure 3c for installation offsets and direction of application details.

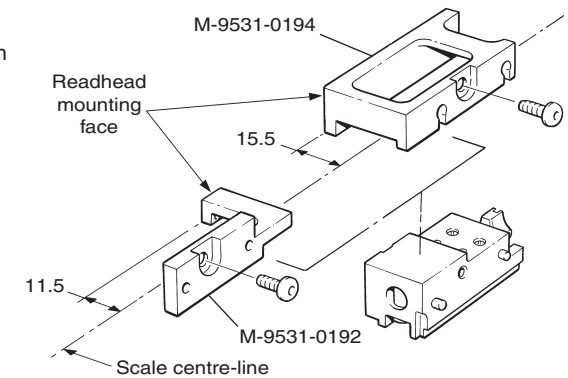


Figure 3b Adaptor selection - left hand adaptors

Figure 3c Scale installation direction using right and left hand adaptors

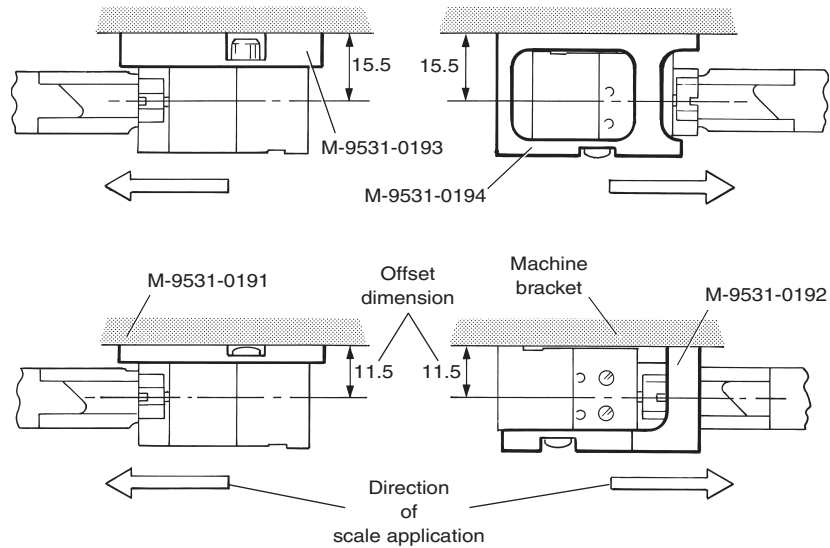


Figure 3c shows direction of scale installation for all adaptor options and scale centreline offsets. If any intermediate brackets are to be used to mount the readhead then these must also be assembled when attaching the applicator.

4. Maintenance

The applicator has few moving parts and requires only periodic cleaning to ensure reliable operation. Clean the guide slot and splitter blade of the scale guide by washing thoroughly in alcohol and clearing with a clean air-line.

The plunger face should be inspected before use to ensure it is free of any sharp particles that may scratch or damage the scale surface during application.

Lubrication of the moving parts is unnecessary and should be avoided to prevent possible contamination of the scale adhesive tape during use. However, after repeated use the scale guide forks may benefit from an occasional and very slight application of grease to ease engagement.

The splitter blade is not sharp and therefore will not require routine maintenance. Using a low power magnifier inspect the blade for nicks and burrs that could cause tearing of the release paper. If any such damage is detected, the complete applicator should be returned to Renishaw for overhaul.

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