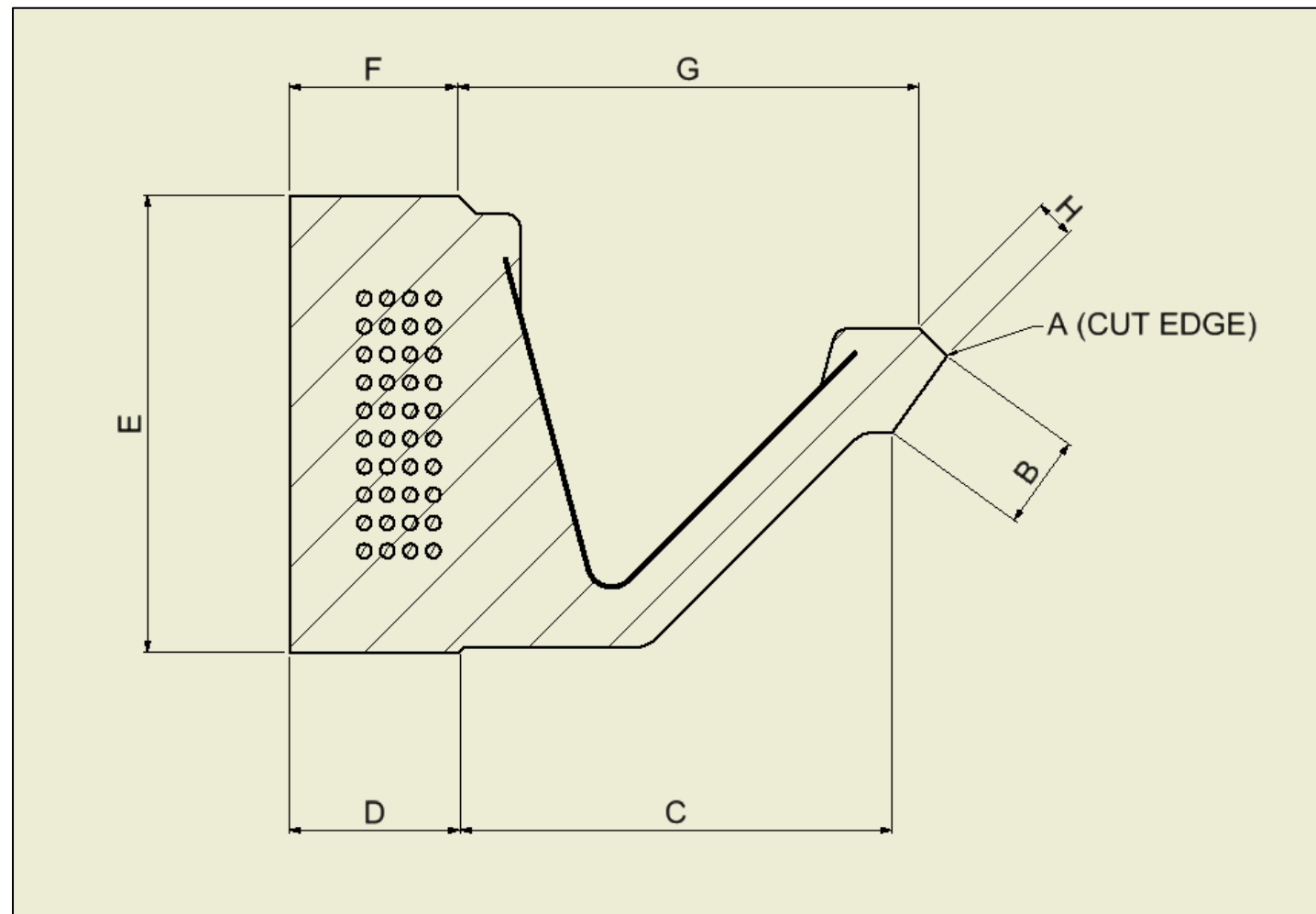


QUALITY STANDARD

Please use this standard for inspecting an X-Gen Fingerspring seal which has been joined.

The diagram shows a general view of the seal and its main features.



Zone A: Sealing edge - **HIGHLY CRITICAL**

Zone B: Outer running face – **HIGHLY CRITICAL**

Zone C: Non-critical

Zone D: Static sealing face - **CRITICAL**

Zone E: Static sealing face - **CRITICAL**

Zone F: Static sealing face - **CRITICAL**

Zone G: Non-critical

Zone H: Inner running faces - **HIGHLY CRITICAL**

VISUAL INSPECTION OF ENTIRE SEAL

Rings to be checked under good lighting (minimum 1000 lux) to ensure no defects are present. Complete a tactile check of the seal with your fingers to detect smaller defects.

Pen marks other than inspection identifications and numbers must be removed from the seal using appropriate cleaning materials.

Common defects inherent to the manufacturing process can but not limited to:

- Flow marks
- Non-fill
- Tearing
- Nicks or cuts
- Scorching
- Backrind
- Inclusions
- Splits
- Spring movement
- Air trapping

If defects can be lightly cleaned or dressed using fine emery paper and scotchbrite they are acceptable. If the defect cannot be cleaned or dressed it is a reject.

The sealing face must be left clean and smooth after dressing and must retain the full lip profile.

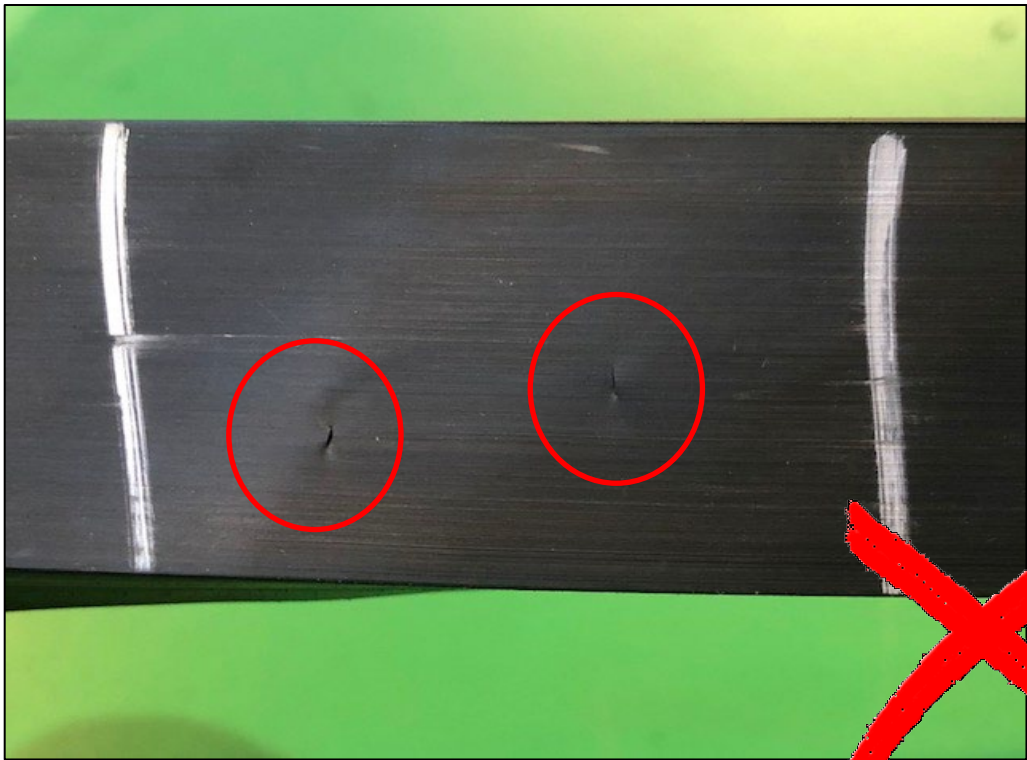
DEFECT EXAMPLES



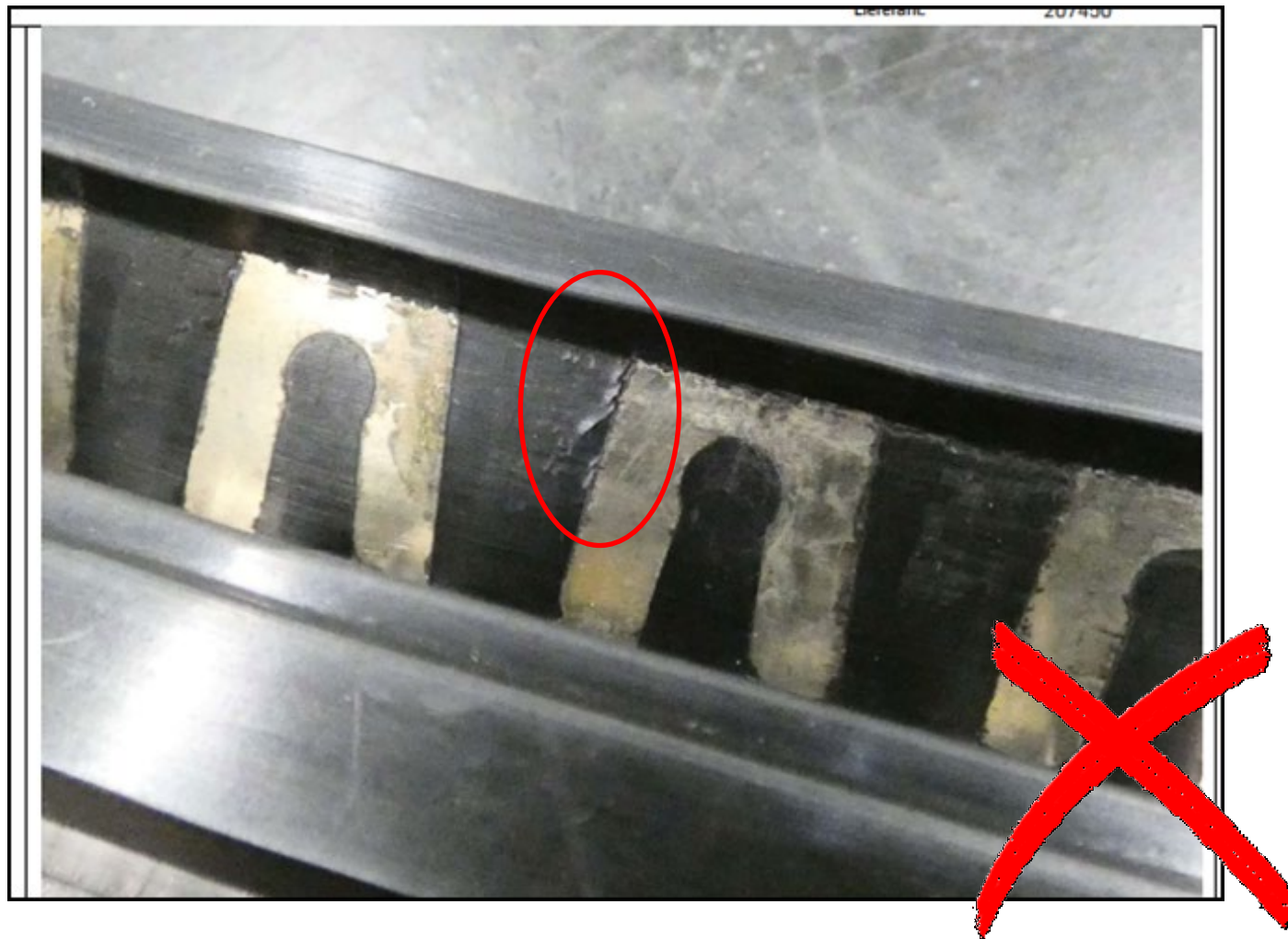
Non-Fill



Air Trap, split

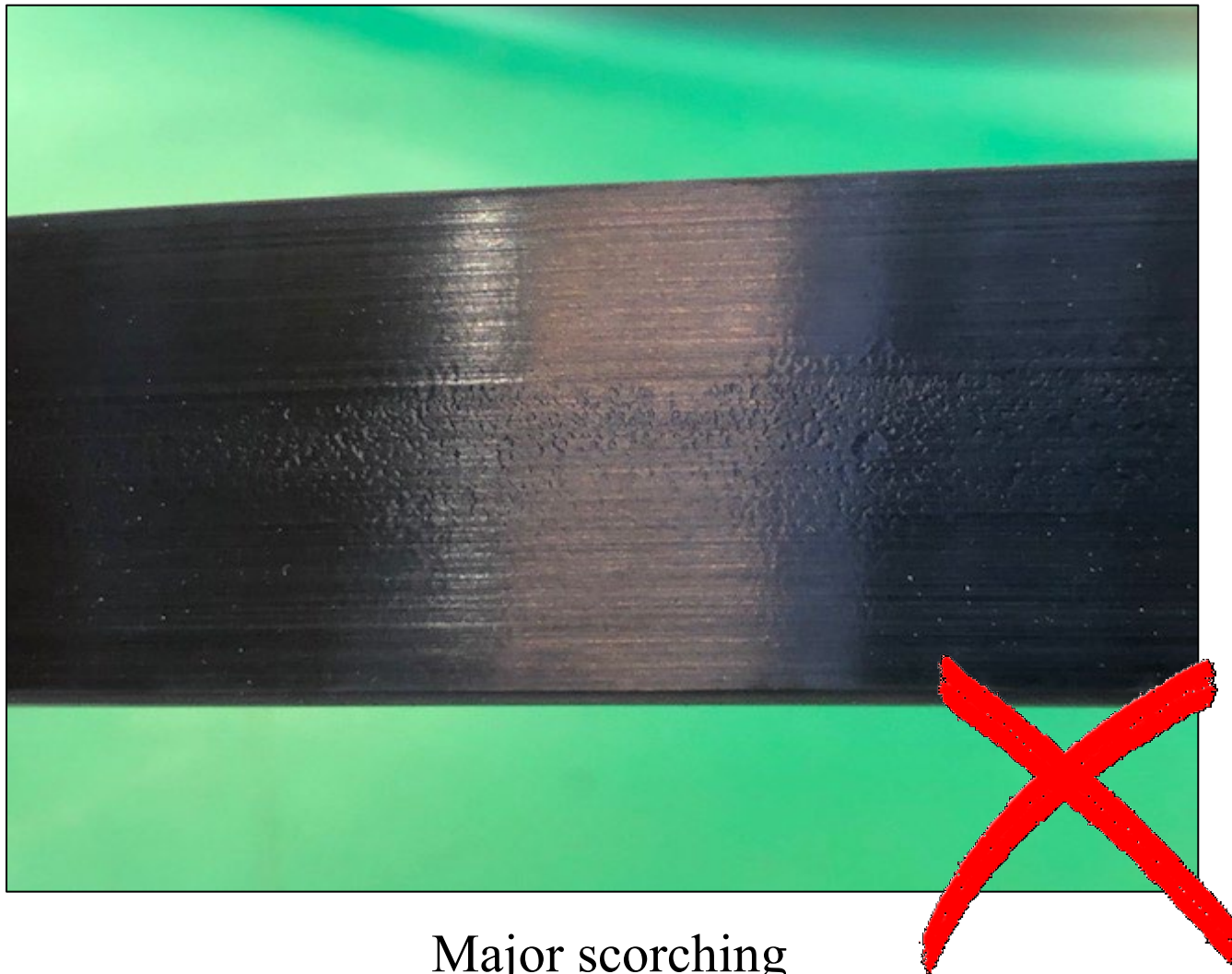


Air Trap, split

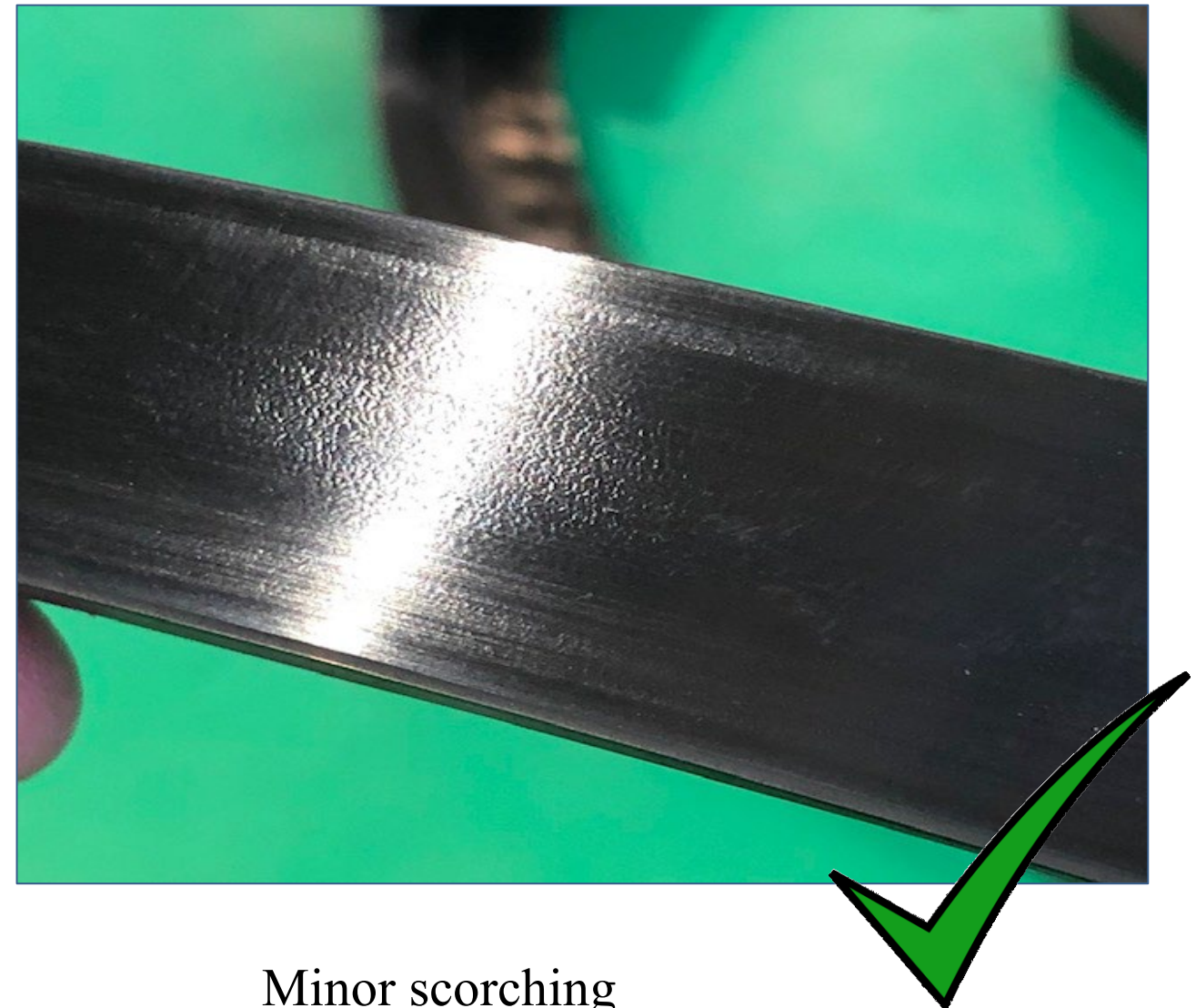


If insufficient mould release is applied during the mould process, the seal may stick to the cavity. This can cause the rubber to crack or split.

If the seal sticks to the top cavity and the press opens when unattended, the rest of the seal can drop down causing excessive bending. This can result in cracks or splits in the rubber.



Major scorching



Minor scorching

Minor scorching is acceptable and is defined as scorching that doesn't affect the smoothness of the surface finish.

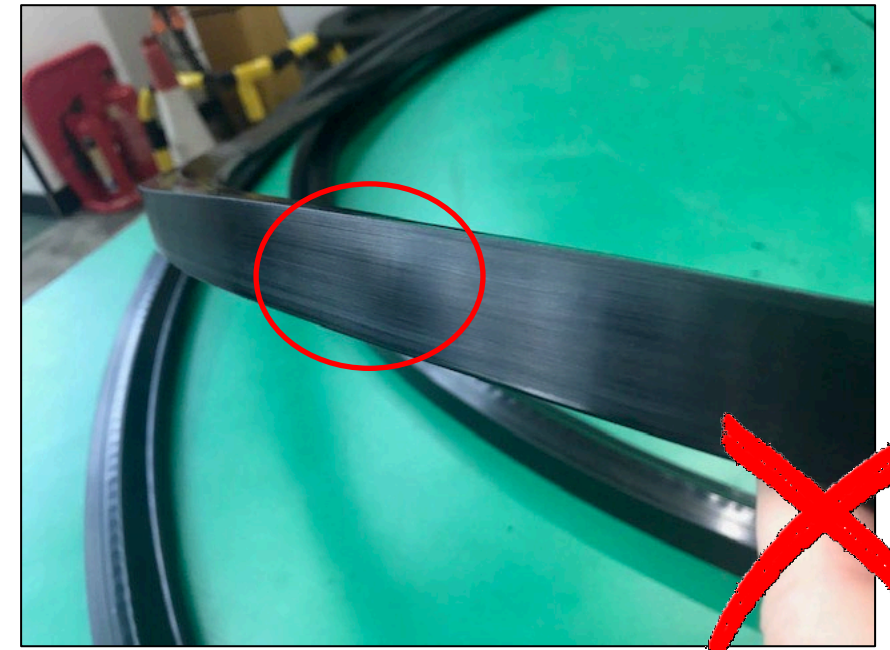
Major scorching causes irregularities in the surface smoothness and is a defect. This is more evident in the tactile check.



Bulge in seal



Indent in seal



Bulge in back

Visually inspect the seal for uniformity. Bulges or indents on the seal may indicate air trapping under the surface or a problem with the spring.

LIP CHAMFER QUALITY

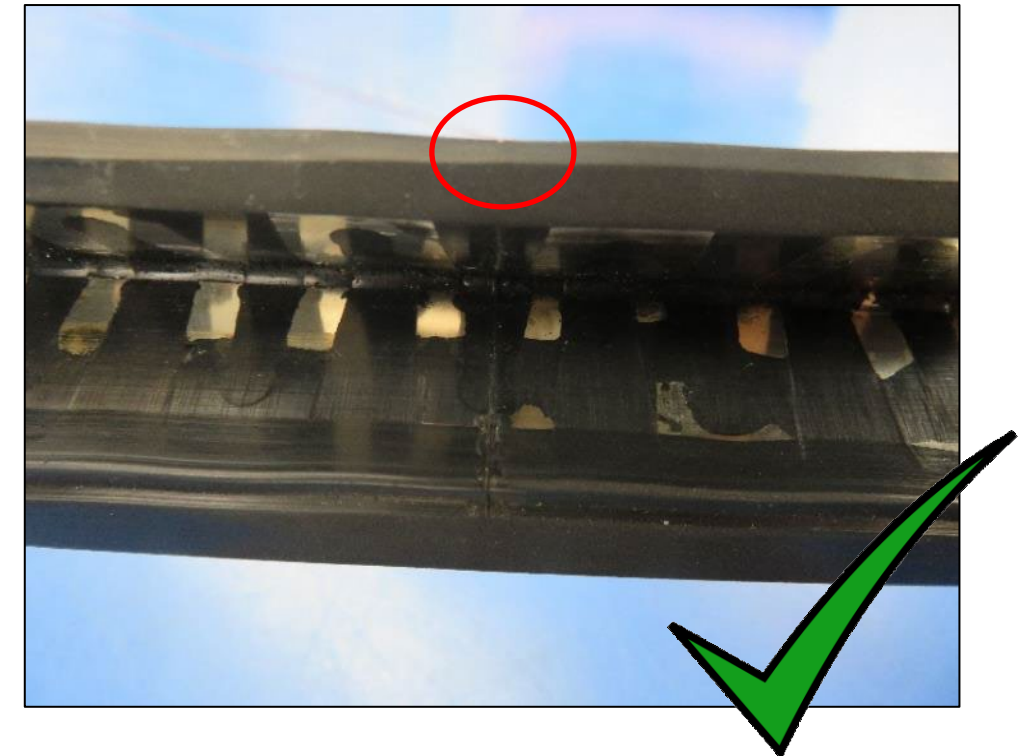
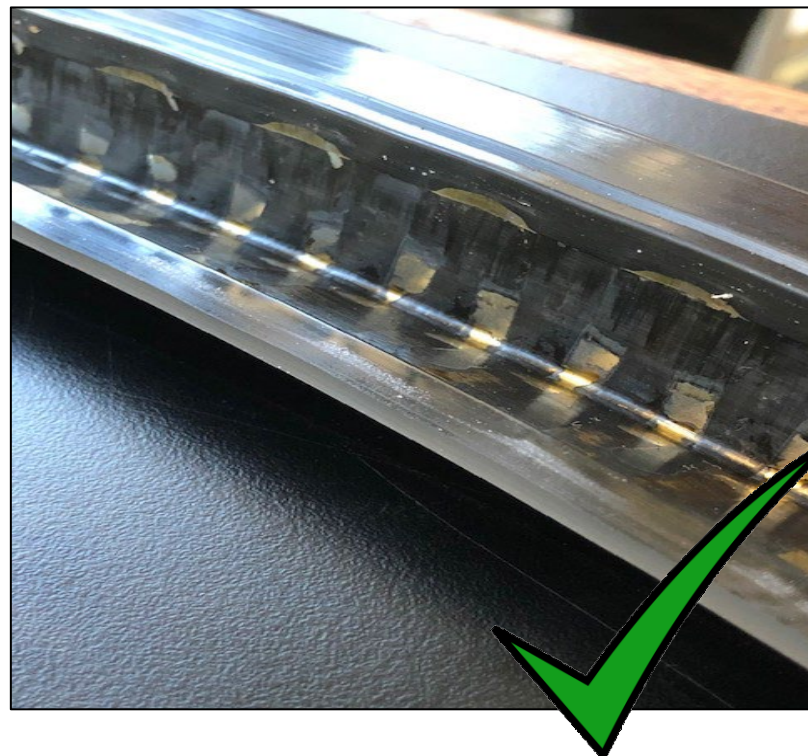
Chamfer should be clean cut with sharp edges. There should be no change in visual aspect of the chamfer.

If chamfer looks to be irregular or uneven, measure with a vernier and reject if out of tolerance to James Walker drawing.

Check for holes and splits in the chamfer especially at the join area. A split or hole is a reject as this indicates damage to the join.

Slight dips may be felt at the join area which is different to a hole or a split. A dip of less than 0.2mm is acceptable.

When dressing the join around the chamfer, take care to preserve the clean cut sharp edges as this is the critical zone of the seal. A rounded edge on the lip chamfer is a reject.



DEPTH CHECK AT JOIN

Check the depth using a Vernier on each join checking before and after the join to ensure no sudden drop in depth dimension.



- If join is down on depth reject the seal.
- If join is up on depth, dress the seal and re measure.

EXCESSIVE RUBBING AT JOIN

When dressing the join it is extremely important that the depth of the seal is not affected at zones D & F

TAKING THE JOIN OR ANY SECTION OF THE SEAL BELOW TOLERANCE ON DEPTH IS A REJECT

If the join is stepped and dressed excessively this is also a reject.

Joins in the seal must be at least 500mm apart.

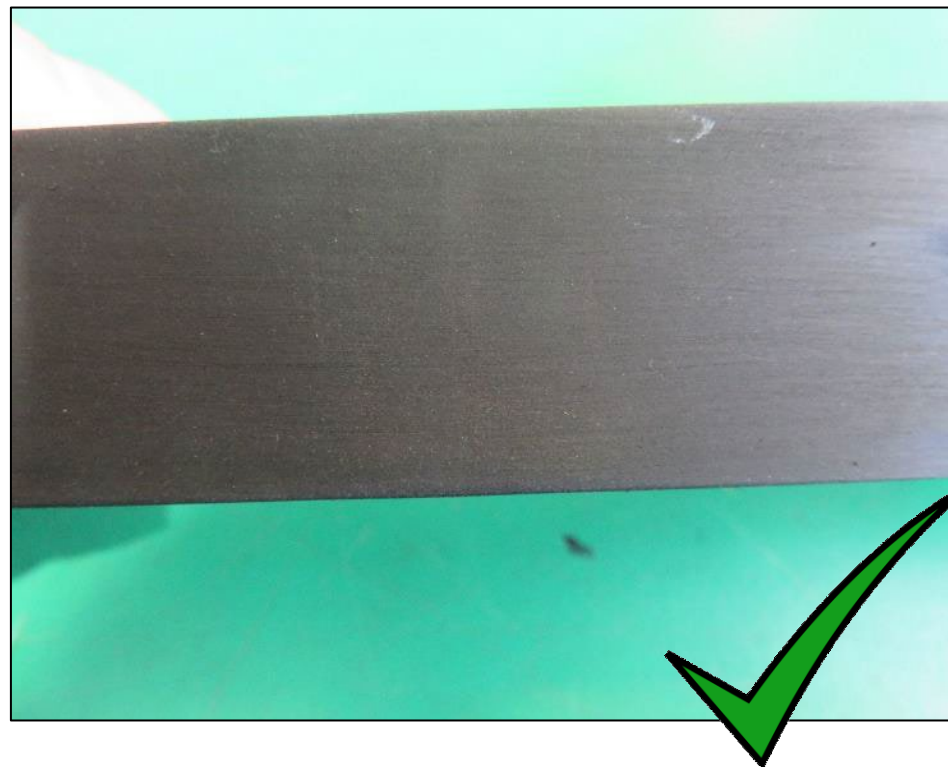
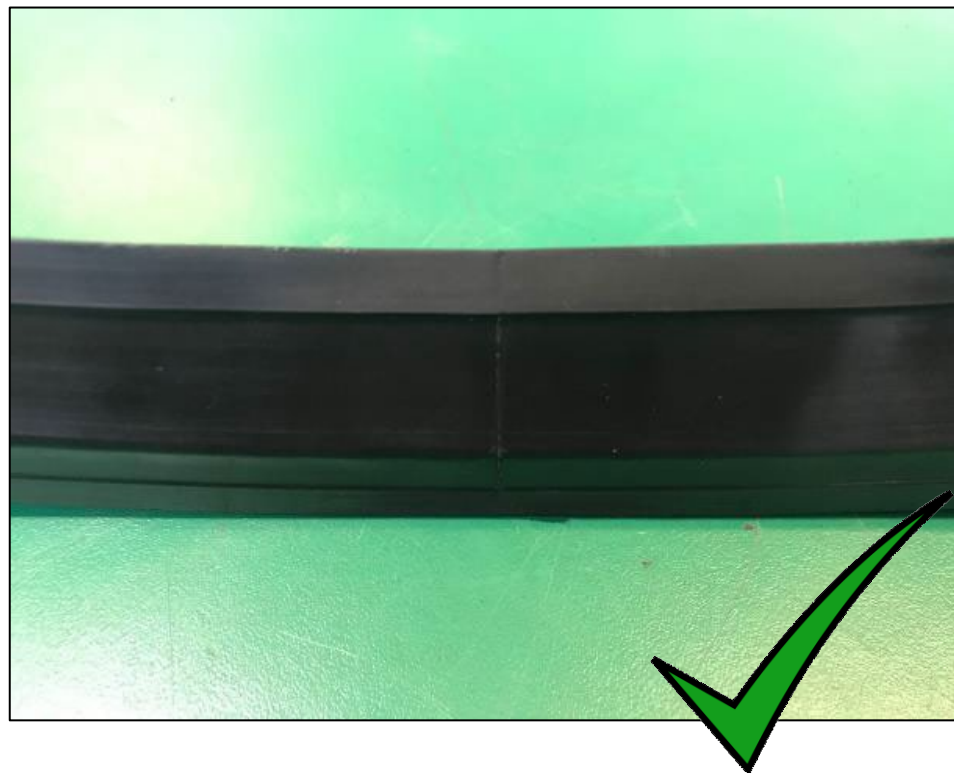
DEFECTS IN THE JOIN AREA

Lightly flex the join area in the direction of the natural curve of the seal to check for cracks or splitting. Do not bend the seal back.

DO NOT bend the joins. Excessive bending will promote cracking or splitting at the join. A light flex will identify any cracks or splits present.

Reject the seal if a crack or split is present.

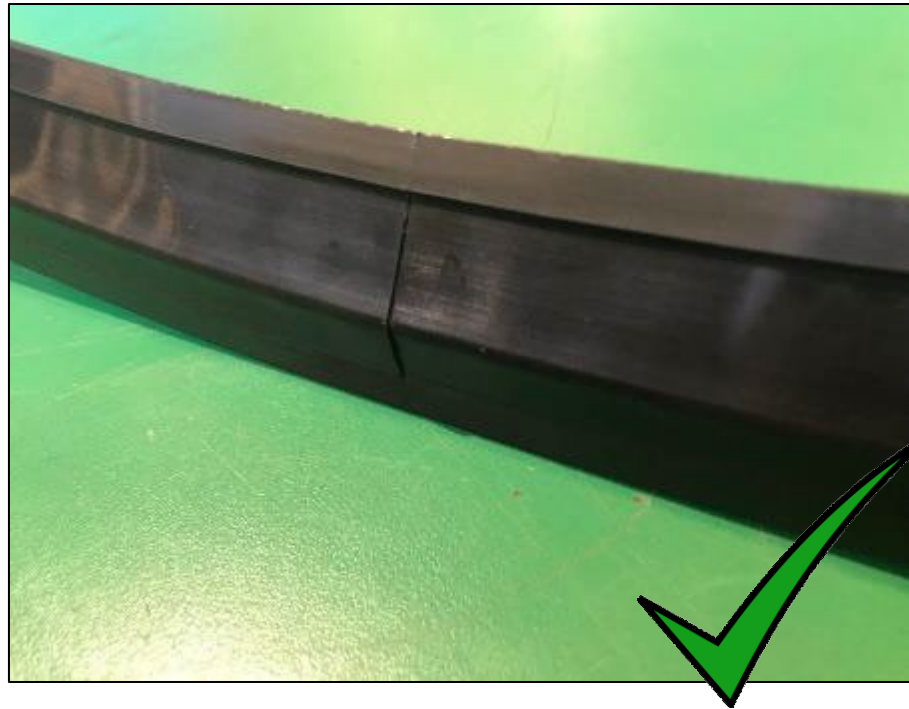
Pin holes can be dressed to remove them but if they can't be removed or open up then it is a reject.



JOIN APPEARANCE/DRESSING

The critical areas of the seal will be dressed after joining, zone B, D, E, F & H.

Dressing is performed to achieve as smooth a finish as possible without affecting the integrity of the join.



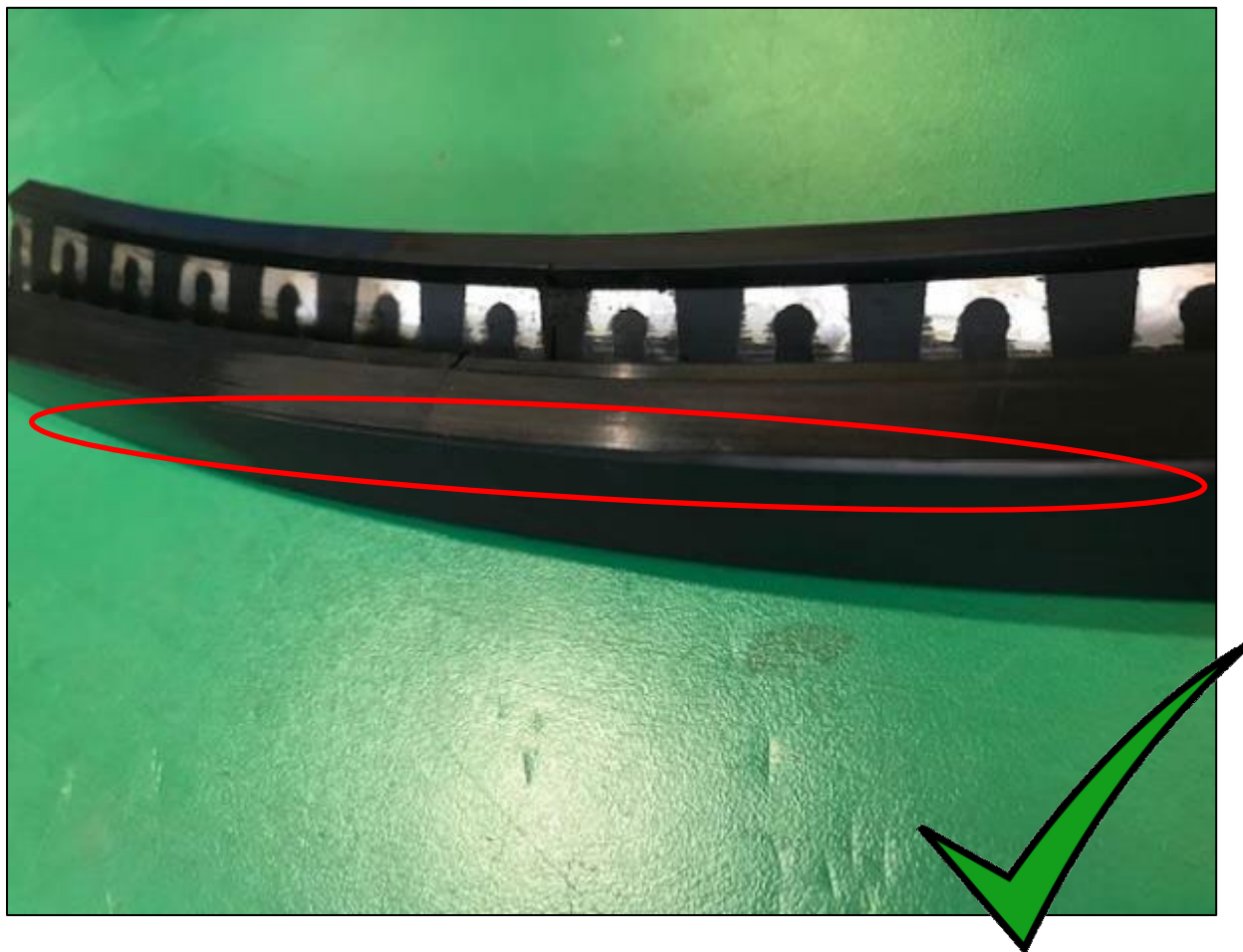
TRIMMING QUALITY

A back chamfer after trimming is acceptable as per drawing.

Check around the entire seal for poor trimming. Edges should be cleanly cut and regular.

In most cases trimming can be improved by dressing with light emery paper.

IF POOR TRIM CANNOT BE REMOVED WITH EMERY REJECT FOR RE-TRIM



Spring Quality

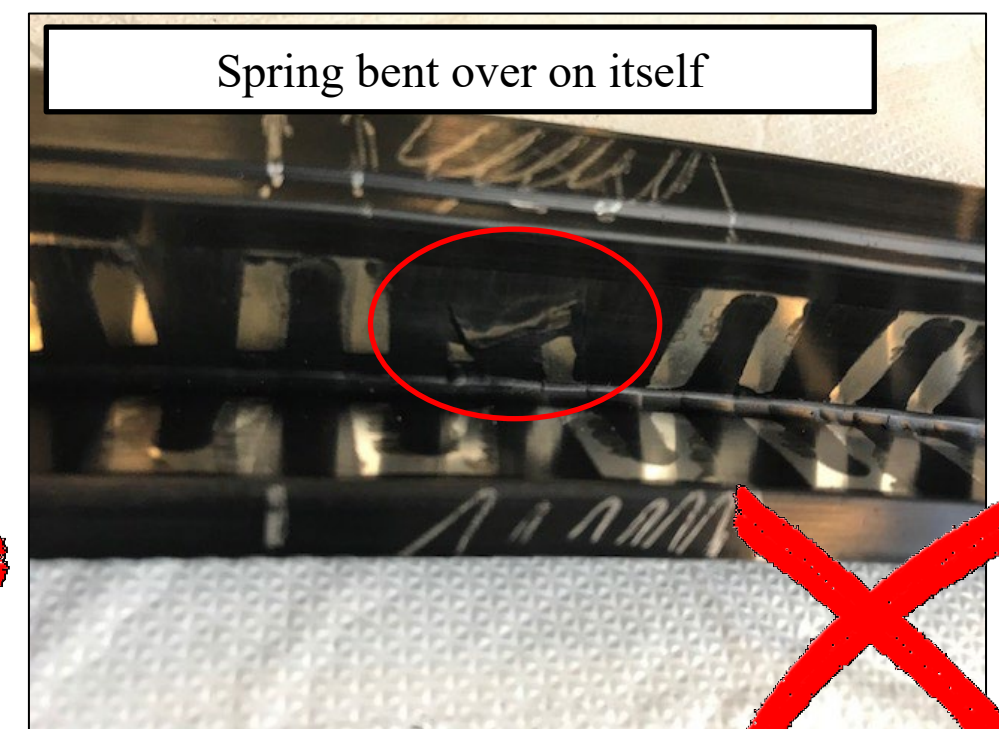
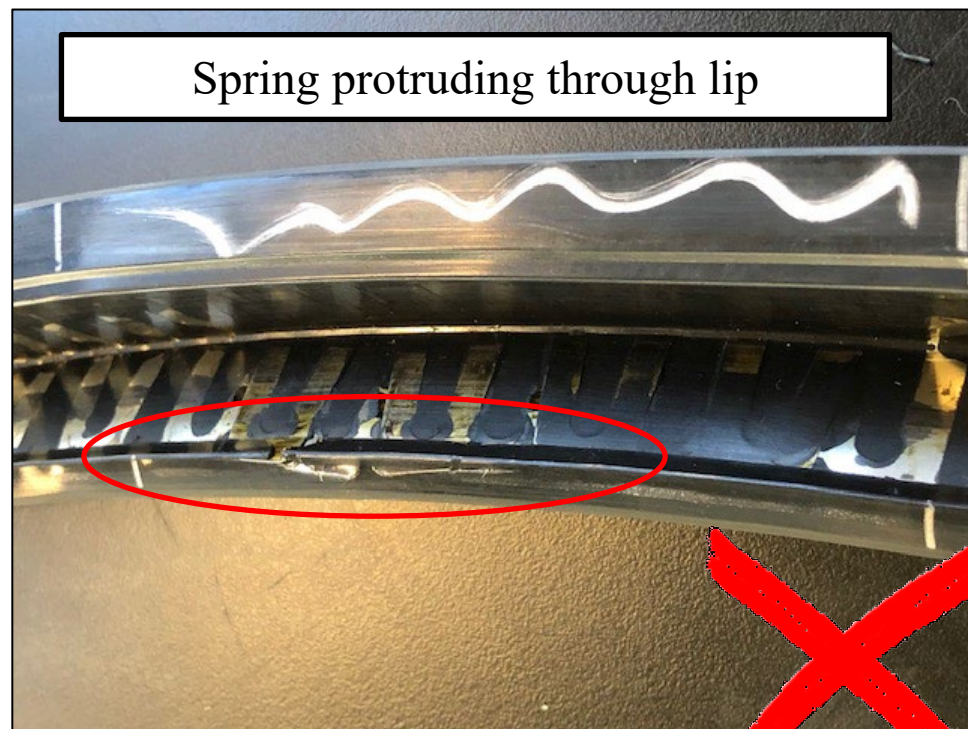
The gap between springs on the lip must be no more than 25mm. No overlap of springs is allowed.

No folding of spring allowed from lip to back or vice versa. The spring must not be folded over on itself at any point.

There must be no sharp slivers of spring at the join area. Sharp edges can be filed down to remove.

Reject the seal if the spring protrudes through the lip.

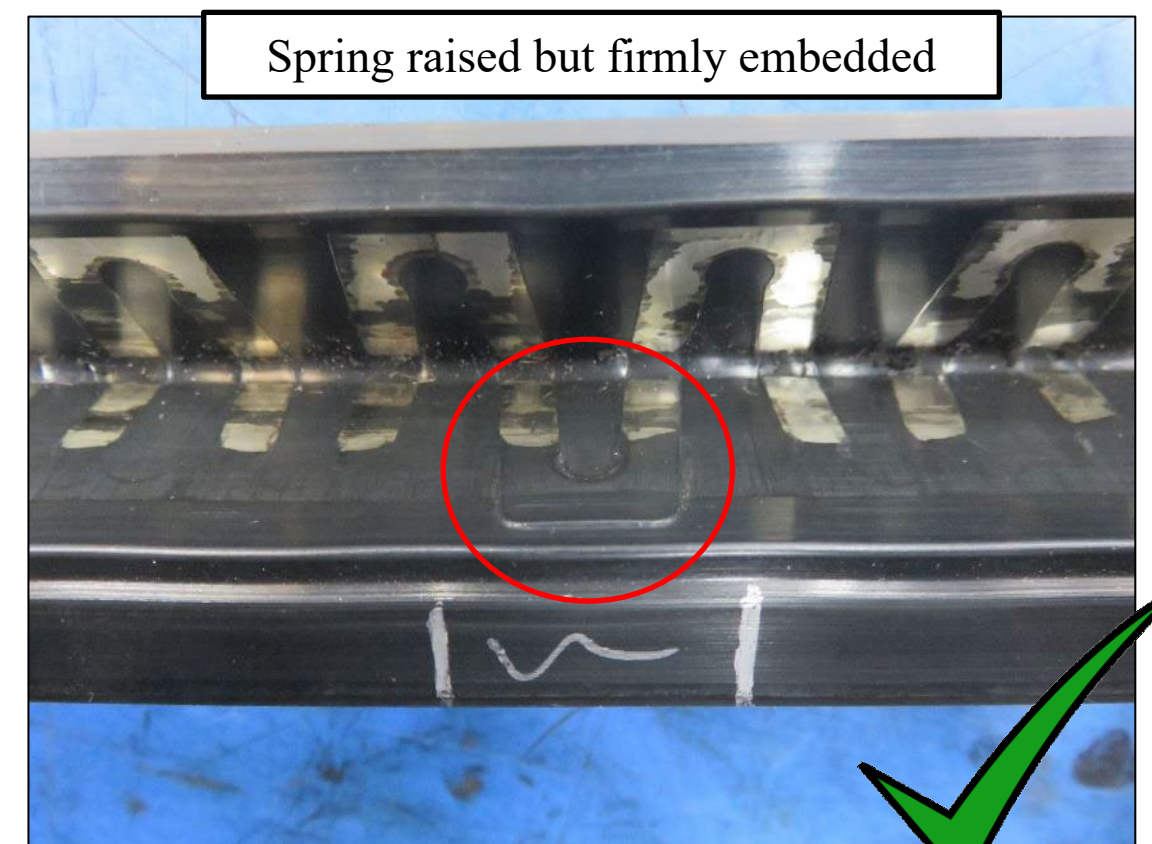
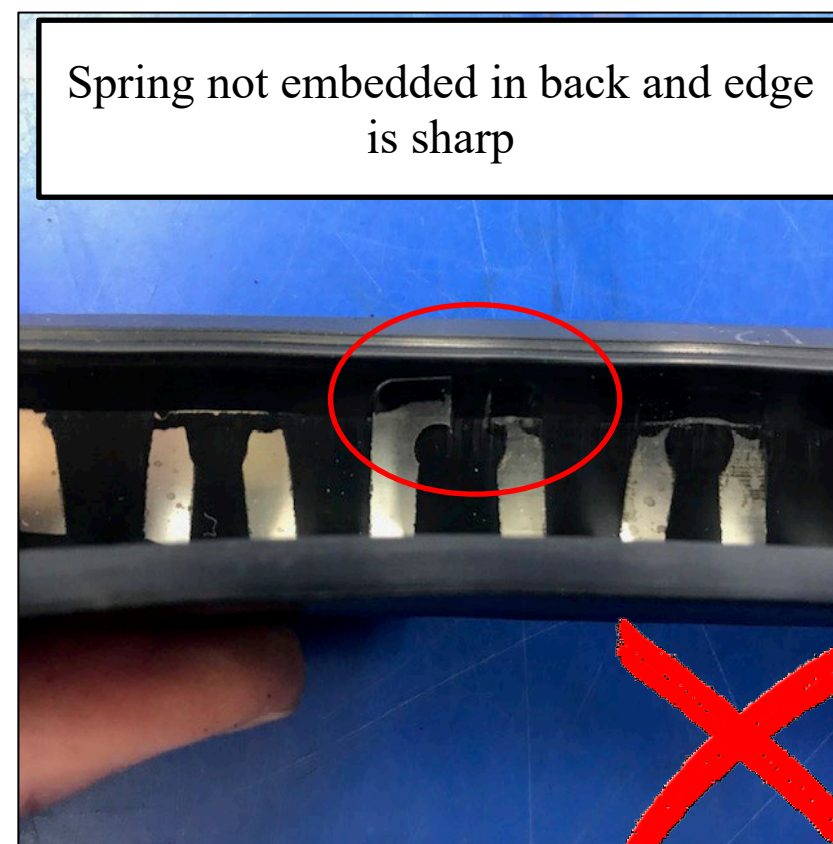
Discolouration or rubber bonded to the face of the spring is acceptable.



A bulge on the outside of the lip may indicate an issue with the spring and should be investigated and rejected if spring appears damaged or deformed.

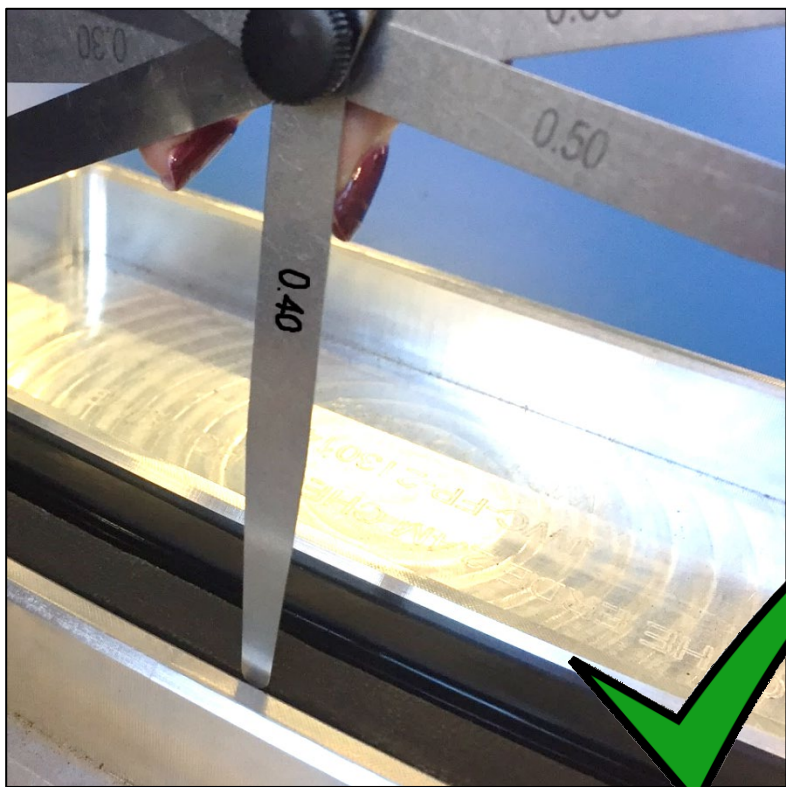
The spring fingers on each seal should be embedded firmly in the lip and back material during moulding. Inspect the spring for any sharp edges.

Some sections of the spring may feel slightly raised but as long as there are no sharp edges and the spring is held firmly in place this is ok.



CHECKING FOR GAPS AT JOIN

- a) Select the correct inspection housing for the OD size of the seal being measured. The sizes are marked on the inspection housing.
- b) Place the seal in the inspection housing ensuring that it is lying flat and that the join is roughly central in the housing. The seal should be placed lip side up in the housing.
- c) Run a feeler gauge along the edge where the seal meets the housing to check for gaps. Do not apply any downward force to the feeler gauge, it should fall into the gap under its own weight.
- d) Record the measurement on F150a (record the maximum size feeler gauge that drops down). Stamp & date.
- e)The maximum gap permitted is .4mm. Reject the seal if a gap larger than .4mm is present.



			Customer:	
th	Joining Point 1	Joining Point 2	Laser Marking	Rotl Ord
15	Feeler Gauge	Feeler Gauge	Stamp & Date	Stamp Ord
35	Check Result	Check Result		
	Stamp & Date	Stamp & Date		

MEASURING O/D, SECTION AND DEPTH FOR INSPECTION REPORT

The below dimensions to be rechecked using the following methods:
Seal to be flat on the inspection bench, top of seal up.

Check dimensions at a point in between the marked numbers 1-8.

Outside Diameter – *Circumference diameter tape*

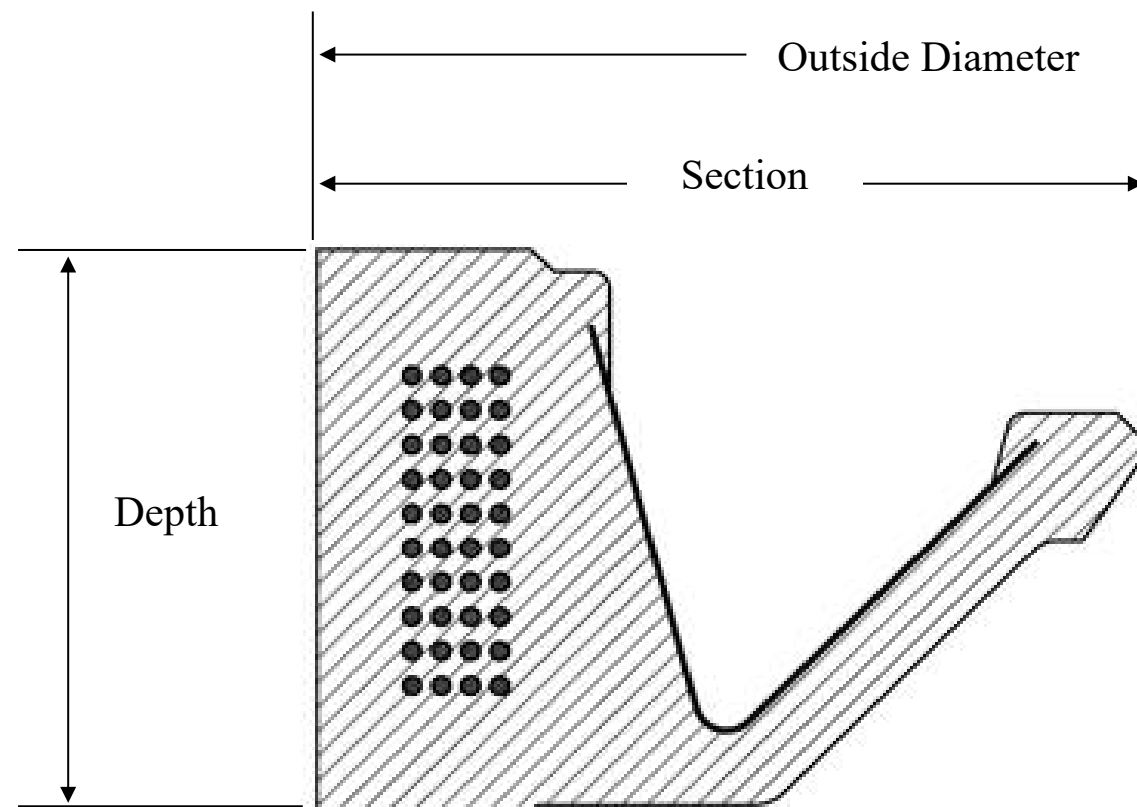
Verify that the measurements recorded by the operator on Form F150a are all within tolerances.

Section (After chamfer) – *Vernier*

Verify that the measurements recorded by the operator on Form F150a are all within tolerances.

Depth - *Vernier*

Verify that the measurements recorded by the operator on Form F150a are all within tolerances.



Verify that the Drawing number, DJ number, Order number and Order number are correct as per the DJ/Drawing.

Stamp and date Inspector section on Form F150a (RE orders only)

[illegible]