

# SIDE PANEL SHEET METAL REPAIRS (G2394466)

## SPECIFICATIONS

### NOTES:

- Breakstem Fastener (BSF) installation involves using the Jaguar Land Rover (JLR) approved BSF installation tool and requires a hole diameter of 6.5 mm.
- Self Piercing Rivet (SPR) installation requires using the JLR approved SPR tool.
- Make sure the JLR approved SPRs, die type and load are used during installation.
- Flow Form Rivet (FFR) installation requires using the JLR approved FFR installation tool.

### Required Fixings - Side Panel Sheet Metal Repairs.

#### A-Pillar Outer Panel

| FIXING TYPE         | CODE      | DIE TYPE | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|---------------------|-----------|----------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener  | BSF G     | N/A      | N/A       | LR044288    | x 3             | W780389 SJ46 |
| Breakstem Fastener  | BSF L     | N/A      | N/A       | LR147840    | x 4             | W781047 SJ90 |
| Breakstem Fastener  | BSF M     | N/A      | N/A       | LR147841    | x 4             | W780579 SJ90 |
| Self Piercing Rivet | SPR L16FS | Shallow  | 45 kN     | LR099825    | x 2             | W780565 SJ91 |
| Self Piercing Rivet | SPR L16G  | Pip      | 45 kN     | LR099825    | x 24            | W780565 SJ91 |
| Self Piercing Rivet | SPR L21AS | Shallow  | 45 kN     | LR099826    | x 9             | W780566 SJ91 |
| Flow Form Rivet     | FFR S3    | N/A      | 55 kN     | LR146795    | x 3             | W585443 SJ50 |

#### A-Pillar Section

| FIXING TYPE         | CODE      | DIE TYPE | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|---------------------|-----------|----------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener  | BSF G     | N/A      | N/A       | LR044288    | x 1             | W780389 SJ46 |
| Breakstem Fastener  | BSF L     | N/A      | N/A       | LR147840    | x 5             | W781047 SJ90 |
| Breakstem Fastener  | BSF M     | N/A      | N/A       | LR147841    | x 4             | W780579 SJ90 |
| Self Piercing Rivet | SPR L16FS | Shallow  | 45 kN     | LR099825    | x 7             | W780565 SJ91 |
| Self Piercing Rivet | SPR L21AS | Shallow  | 45 kN     | LR099826    | x 2             | W780566 SJ91 |

| FIXING TYPE     | CODE   | DIE TYPE | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|-----------------|--------|----------|-----------|-------------|-----------------|--------------|
| Flow Form Rivet | FFR S3 | N/A      | 55 kN     | LR146795    | x 2             | W585443 SJ50 |

#### A-Pillar Reinforcement

| FIXING TYPE        | CODE     | DIE TYPE | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|--------------------|----------|----------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener | BSF G    | N/A      | N/A       | LR044288    | x 3             | W780389 SJ46 |
| Breakstem Fastener | BSF L    | N/A      | N/A       | LR147840    | x 2             | W781047 SJ90 |
| Breakstem Fastener | BSF M    | N/A      | N/A       | LR147841    | x 10            | W780579 SJ90 |
| Breakstem Fastener | BSF N    | N/A      | N/A       | LR147842    | x 2             | W781049 SJ90 |
| Flow Form Rivet    | CFFR CS2 | N/A      | 55 kN     | LR146799    | X 1             | W585447 SJ50 |

#### Rocker Panel And B-Pillar Outer Panel. Vehicles With Roof Opening Panel

| FIXING TYPE         | CODE      | DIE TYPE | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|---------------------|-----------|----------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener  | BSF G     | N/A      | N/A       | LR044288    | x 2             | W780389 SJ46 |
| Breakstem Fastener  | BSF K     | N/A      | N/A       | LR147839    | x 2             | W781165 SJ90 |
| Breakstem Fastener  | BSF L     | N/A      | N/A       | LR147840    | x 20            | W781047 SJ90 |
| Breakstem Fastener  | BSF M     | N/A      | N/A       | LR147841    | x 2             | W780579 SJ90 |
| Self Piercing Rivet | SPR L16AS | Shallow  | 50 kN     | LR099825    | x 33            | W780565 SJ91 |
| Self Piercing Rivet | SPR L16FS | Shallow  | 45 kN     | LR099825    | x 8             | W780565 SJ91 |
| Self Piercing Rivet | SPR L16G  | Pipped   | 45 kN     | LR099825    | x 6             | W780565 SJ91 |
| Self Piercing Rivet | SPR L21KS | Shallow  | 45 kN     | LR099826    | x 1             | W780566 SJ91 |
| Flow Form Rivet     | FFR S1    | N/A      | 55 kN     | LR146792    | x 6             | W585441 SJ50 |
| Flow Form Rivet     | FFR S2    | N/A      | 55 kN     | LR146794    | x 1             | W585442 SJ50 |
| Flow Form Rivet     | FFR S3    | N/A      | 55 kN     | LR146795    | x 15            | W585443 SJ50 |

#### Rocker Panel And B-Pillar Outer Panel. Vehicles Without Roof Opening Panel

| FIXING TYPE        | CODE  | DIE TYPE | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|--------------------|-------|----------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener | BSF G | N/A      | N/A       | LR044288    | x 2             | W780389 SJ46 |
| Breakstem Fastener | BSF L | N/A      | N/A       | LR147840    | x 14            | W781047 SJ90 |
| Breakstem Fastener | BSF M | N/A      | N/A       | LR147841    | x 2             | W780579 SJ90 |

| FIXING TYPE         | CODE      | DIE TYPE | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|---------------------|-----------|----------|-----------|-------------|-----------------|--------------|
| Self Piercing Rivet | SPR L16AS | Shallow  | 50 kN     | LR099825    | x 33            | W780565 SJ91 |
| Self Piercing Rivet | SPR L16FS | Shallow  | 45 kN     | LR099825    | x 8             | W780565 SJ91 |
| Self Piercing Rivet | SPR L16G  | Pipped   | 45 kN     | LR099825    | x 6             | W780565 SJ91 |
| Self Piercing Rivet | SPR L21KS | Shallow  | 45 kN     | LR099826    | x 1             | W780566 SJ91 |
| Flow Form Rivet     | FFR S1    | N/A      | 55 kN     | LR146792    | x 6             | W585441 SJ50 |
| Flow Form Rivet     | FFR S2    | N/A      | 55 kN     | LR146794    | x 1             | W585442 SJ50 |
| Flow Form Rivet     | FFR S3    | N/A      | 55 kN     | LR146795    | x 15            | W585443 SJ50 |

### B-Pillar Outer Panel

| FIXING TYPE         | CODE      | DIE TYPE | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|---------------------|-----------|----------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener  | BSF G     | N/A      | N/A       | LR044288    | x 2             | W780389 SJ46 |
| Breakstem Fastener  | BSF L     | N/A      | N/A       | LR147840    | x 8             | W781047 SJ90 |
| Breakstem Fastener  | BSF M     | N/A      | N/A       | LR147841    | x 2             | W780579 SJ90 |
| Self Piercing Rivet | SPR L16AS | Shallow  | 50 kN     | LR099825    | x 29            | W780565 SJ91 |
| Self Piercing Rivet | SPR L16FS | Shallow  | 45 kN     | LR099825    | x 1             | W780565 SJ91 |
| Flow Form Rivet     | FFR S1    | N/A      | 55 kN     | LR146792    | x 1             | W585441 SJ50 |
| Flow Form Rivet     | FFR S3    | N/A      | 55 kN     | LR146795    | x 8             | W585443 SJ50 |

### B-Pillar Reinforcement

| FIXING TYPE        | CODE  | DIE TYPE | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|--------------------|-------|----------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener | BSF M | N/A      | N/A       | LR147841    | x 6             | W780579 SJ90 |

### B-Pillar Inner Panel

| FIXING TYPE         | CODE     | DIE TYPE    | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|---------------------|----------|-------------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener  | BSF G    | N/A         | N/A       | LR044288    | x 2             | W780389 SJ46 |
| Breakstem Fastener  | BSF M    | N/A         | N/A       | LR147841    | x 8             | W780579 SJ90 |
| Self Piercing Rivet | SPR L19C | Flat bottom | 50 kN     | LR099830    | x 4             | W780648 SJ91 |
| Flow Form Rivet     | CFFR CS5 | N/A         | 55 kN     | .           | x 2             | .            |

### Rocker Panel Section

| FIXING TYPE         | CODE      | DIE TYPE | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|---------------------|-----------|----------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener  | BSF L     | N/A      | N/A       | LR147840    | x 4             | W781047 SJ90 |
| Self Piercing Rivet | SPR L16FS | Shallow  | 45 kN     | LR099825    | x 7             | W780565 SJ91 |

## Rocker Panel

| FIXING TYPE         | CODE      | DIE TYPE | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|---------------------|-----------|----------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener  | BSF G     | N/A      | N/A       | LR044288    | x 2             | W780389 SJ46 |
| Breakstem Fastener  | BSF L     | N/A      | N/A       | LR147840    | x 17            | W781047 SJ90 |
| Breakstem Fastener  | BSF M     | N/A      | N/A       | LR147841    | x 6             | W780579 SJ90 |
| Self Piercing Rivet | SPR L16AS | Shallow  | 50 kN     | LR099825    | x 4             | W780565 SJ91 |
| Self Piercing Rivet | SPR L16FS | Shallow  | 45 kN     | LR099825    | x 10            | W780565 SJ91 |
| Self Piercing Rivet | SPR L21AS | Shallow  | 45 kN     | LR099826    | x 2             | W780566 SJ91 |
| Self Piercing Rivet | SPR L21KS | Shallow  | 45 kN     | LR099826    | x 1             | W780566 SJ91 |
| Flow Form Rivet     | FFR S1    | N/A      | 55 kN     | LR146792    | x 6             | W585441 SJ50 |
| Flow Form Rivet     | FFR S2    | N/A      | 55 kN     | LR146794    | x 1             | W585442 SJ50 |
| Flow Form Rivet     | FFR S3    | N/A      | 55 kN     | LR146795    | x 13            | W585443 SJ50 |

## Rocker Panel Reinforcement

| FIXING TYPE        | CODE  | DIE TYPE | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|--------------------|-------|----------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener | BSF M | N/A      | N/A       | LR147841    | x 28            | W780579 SJ90 |
| Breakstem Fastener | BSF N | N/A      | N/A       | LR147842    | x 4             | W781049 SJ90 |

## Rocker Panel Inner Reinforcement

| FIXING TYPE         | CODE      | DIE TYPE    | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|---------------------|-----------|-------------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener  | BSF L     | N/A         | N/A       | LR147840    | x 20            | W781047 SJ90 |
| Breakstem Fastener  | BSF M     | N/A         | N/A       | LR147841    | x 17            | W780579 SJ90 |
| Breakstem Fastener  | BSF N     | N/A         | N/A       | LR147842    | x 1             | W781049 SJ90 |
| Self Piercing Rivet | SPR L15AS | Shallow     | 45 kN     | LR099824    | x 2             | W780564 SJ91 |
| Self Piercing Rivet | SPR L15B  | Flat Bottom | 45 kN     | LR099824    | x 2             | W780564 SJ91 |
| Flow Form Rivet     | FFR S3    | N/A         | 55 kN     | LR146795    | x 4             | W585443 SJ50 |

**Side Panel. Vehicles With Roof Opening Panel.**

| FIXING TYPE         | CODE      | DIE TYPE    | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|---------------------|-----------|-------------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener  | BSF G     | N/A         | N/A       | LR044288    | x 7             | W780389 SJ46 |
| Breakstem Fastener  | BSF K     | N/A         | N/A       | LR147839    | x 21            | W781165 SJ90 |
| Breakstem Fastener  | BSF L     | N/A         | N/A       | LR147840    | x 31            | W781047 SJ90 |
| Breakstem Fastener  | BSF M     | N/A         | N/A       | LR147841    | x 6             | W780579 SJ90 |
| Self Piercing Rivet | SPR L2D   | Flat Bottom | 35 kN     | LR043556    | x 10            | W709934 S900 |
| Self Piercing Rivet | SPR L5K   | Pip         | 50 kN     | LR043553    | x 8             | W708716 S900 |
| Self Piercing Rivet | SPR L16AS | Shallow     | 50 kN     | LR099825    | x 33            | W780565 SJ91 |
| Self Piercing Rivet | SPR L16FS | Shallow     | 45 kN     | LR099825    | x 10            | W780565 SJ91 |
| Self Piercing Rivet | SPR L16G  | Pipped      | 45 kN     | LR099825    | x 41            | W780565 SJ91 |
| Self Piercing Rivet | SPR L21AS | Shallow     | 45 kN     | LR099826    | x 9             | W780566 SJ91 |
| Self Piercing Rivet | SPR L21KS | Shallow     | 45 kN     | LR099826    | x 1             | W780566 SJ91 |
| Flow Form Rivet     | FFR S1    | N/A         | 55 kN     | LR146792    | x 22            | W585441 SJ50 |
| Flow Form Rivet     | FFR S2    | N/A         | 55 kN     | LR146794    | x 16            | W585442 SJ50 |
| Flow Form Rivet     | FFR S3    | N/A         | 55 kN     | LR146795    | x 32            | W585443 SJ50 |

**Side Panel. Vehicles Without Roof Opening Panel.**

| FIXING TYPE         | CODE      | DIE TYPE    | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|---------------------|-----------|-------------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener  | BSF G     | N/A         | N/A       | LR044288    | x 7             | W780389 SJ46 |
| Breakstem Fastener  | BSF K     | N/A         | N/A       | LR147839    | x 18            | W781165 SJ90 |
| Breakstem Fastener  | BSF L     | N/A         | N/A       | LR147840    | x 25            | W781047 SJ90 |
| Breakstem Fastener  | BSF M     | N/A         | N/A       | LR147841    | x 6             | W780579 SJ90 |
| Self Piercing Rivet | SPR L2D   | Flat Bottom | 35 kN     | LR043556    | x 10            | W709934 S900 |
| Self Piercing Rivet | SPR L5K   | Pip         | 50 kN     | LR043553    | x 6             | W708716 S900 |
| Self Piercing Rivet | SPR L16AS | Shallow     | 50 kN     | LR099825    | x 33            | W780565 SJ91 |
| Self Piercing Rivet | SPR L16FS | Shallow     | 45 kN     | LR099825    | x 10            | W780565 SJ91 |
| Self Piercing Rivet | SPR L16G  | Pipped      | 45 kN     | LR099825    | x 41            | W780565 SJ91 |
| Self Piercing Rivet | SPR L21AS | Shallow     | 45 kN     | LR099826    | x 9             | W780566 SJ91 |
| Self Piercing Rivet | SPR L21KS | Shallow     | 45 kN     | LR099826    | x 1             | W780566 SJ91 |

| FIXING TYPE     | CODE   | DIE TYPE | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|-----------------|--------|----------|-----------|-------------|-----------------|--------------|
| Flow Form Rivet | FFR S1 | N/A      | 55 kN     | LR146792    | x 22            | W585441 SJ50 |
| Flow Form Rivet | FFR S2 | N/A      | 55 kN     | LR146794    | x 16            | W585442 SJ50 |
| Flow Form Rivet | FFR S3 | N/A      | 55 kN     | LR146795    | x 32            | W585443 SJ50 |

#### Side Panel Reinforcement Rear Extension. Vehicles With Roof Opening Panel.

| FIXING TYPE         | CODE      | DIE TYPE    | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|---------------------|-----------|-------------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener  | BSF G     | N/A         | N/A       | LR044288    | x 1             | W780389 SJ46 |
| Breakstem Fastener  | BSF L     | N/A         | N/A       | LR147840    | x 4             | W781047 SJ90 |
| Self Piercing Rivet | SPR L3    | Flat Bottom | 30 kN     | LR043551    | x 11            | W708711 S900 |
| Self Piercing Rivet | SPR L5F   | Flat Bottom | 45 kN     | LR043553    | x 4             | W708716 S900 |
| Self Piercing Rivet | SPR L7E   | Pipped      | 50 kN     | LR043554    | x 2             | W708717 S900 |
| Self Piercing Rivet | SPR L15E  | Pipped      | 45 kN     | LR099824    | x 1             | W780564 SJ91 |
| Self Piercing Rivet | SPR L19DS | Shallow     | 45 kN     | LR099830    | x 1             | W780648 SJ91 |
| Flow Form Rivet     | FFR S4    | N/A         | 55 kN     | LR146796    | x 2             | W585444 SJ50 |

#### Side Panel Reinforcement Rear Extension. Vehicles Without Roof Opening Panel.

| FIXING TYPE         | CODE      | DIE TYPE    | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|---------------------|-----------|-------------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener  | BSF G     | N/A         | N/A       | LR044288    | x 1             | W780389 SJ46 |
| Breakstem Fastener  | BSF L     | N/A         | N/A       | LR147840    | x 4             | W781047 SJ90 |
| Self Piercing Rivet | SPR L3    | Flat Bottom | 30 kN     | LR043551    | x 6             | W708711 S900 |
| Self Piercing Rivet | SPR L5F   | Flat Bottom | 45 kN     | LR043553    | x 2             | W708716 S900 |
| Self Piercing Rivet | SPR L7E   | Pipped      | 50 kN     | LR043554    | x 2             | W708717 S900 |
| Self Piercing Rivet | SPR L15E  | Pipped      | 45 kN     | LR099824    | x 1             | W780564 SJ91 |
| Self Piercing Rivet | SPR L19DS | Shallow     | 45 kN     | LR099830    | x 1             | W780648 SJ91 |
| Flow Form Rivet     | FFR S4    | N/A         | 55 kN     | LR146796    | x 2             | W585444 SJ50 |

#### Side Panel Reinforcement Front Assembly. Vehicles With Roof Opening Panel.

| FIXING TYPE        | CODE  | DIE TYPE | LOAD (KN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|--------------------|-------|----------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener | BSF G | N/A      | N/A       | LR044288    | x 2             | W780389 SJ46 |

| FIXING TYPE         | CODE      | DIE TYPE    | LOAD (kN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|---------------------|-----------|-------------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener  | BSF M     | N/A         | N/A       | LR147841    | x 25            | W780579 SJ90 |
| Breakstem Fastener  | BSF N     | N/A         | N/A       | LR147842    | x 6             | W781049 SJ90 |
| Self Piercing Rivet | SPR L3    | Flat Bottom | 30 kN     | LR043551    | x 11            | W708711 S900 |
| Self Piercing Rivet | SPR L5F   | Flat Bottom | 45 kN     | LR043553    | x 4             | W708716 S900 |
| Self Piercing Rivet | SPR L7E   | Pipped      | 50 kN     | LR043554    | x 2             | W708717 S900 |
| Self Piercing Rivet | SPR L19DS | Shallow     | 45 kN     | LR099830    | x 13            | W780648 SJ91 |
| Flow Form Rivet     | FFR S4    | N/A         | 55 kN     | LR146796    | x 2             | W585444 SJ50 |

#### Side Panel Reinforcement Front Assembly. Vehicles Without Roof Opening Panel.

| FIXING TYPE         | CODE      | DIE TYPE    | LOAD (kN) | PART NUMBER | AMOUNT REQUIRED | WERS NUMBER  |
|---------------------|-----------|-------------|-----------|-------------|-----------------|--------------|
| Breakstem Fastener  | BSF G     | N/A         | N/A       | LR044288    | x 2             | W780389 SJ46 |
| Breakstem Fastener  | BSF M     | N/A         | N/A       | LR147841    | x 25            | W780579 SJ90 |
| Breakstem Fastener  | BSF N     | N/A         | N/A       | LR147842    | x 6             | W781049 SJ90 |
| Self Piercing Rivet | SPR L3    | Flat Bottom | 30 kN     | LR043551    | x 6             | W708711 S900 |
| Self Piercing Rivet | SPR L5F   | Flat Bottom | 45 kN     | LR043553    | x 2             | W708716 S900 |
| Self Piercing Rivet | SPR L7E   | Pipped      | 50 kN     | LR043554    | x 2             | W708717 S900 |
| Self Piercing Rivet | SPR L19DS | Shallow     | 45 kN     | LR099830    | x 10            | W780648 SJ91 |
| Flow Form Rivet     | FFR S4    | N/A         | 55 kN     | LR146796    | x 2             | W585444 SJ50 |