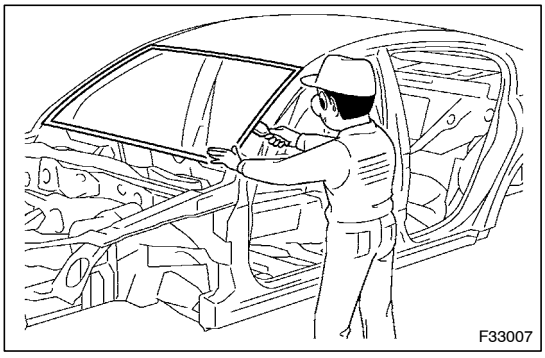
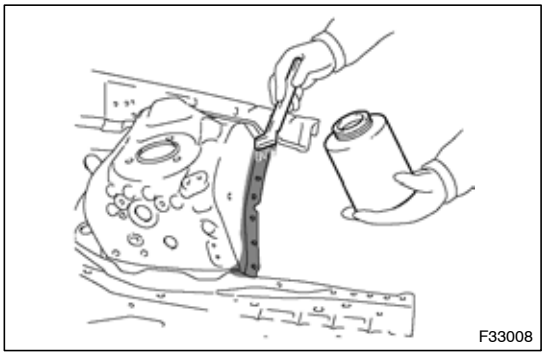
3. PRECAUTIONS FOR CORRECT REPAIR



(a) REMOVAL OF ADJACENT COMPONENTS

(1) To prevent damage to the body and parts, apply protective tape to the body and tools before removing the parts.

NOTICE:
If the paint film is damaged, make sure to refinish the paint.



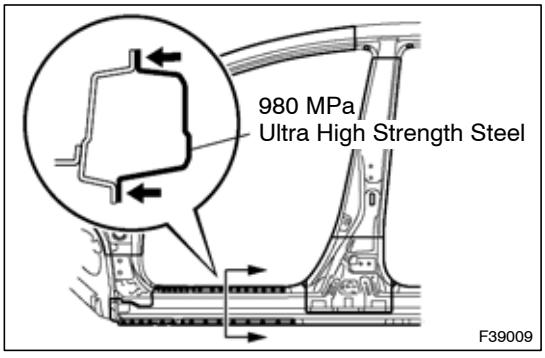
(b) ANTI-RUST TREATMENT BEFORE WELDING

(1) Apply welding primer to the contact surfaces of the welding areas to protect them from rust.

NOTICE:
Do not apply welding primer outside of the contact surfaces.

(c) WELDING WORK

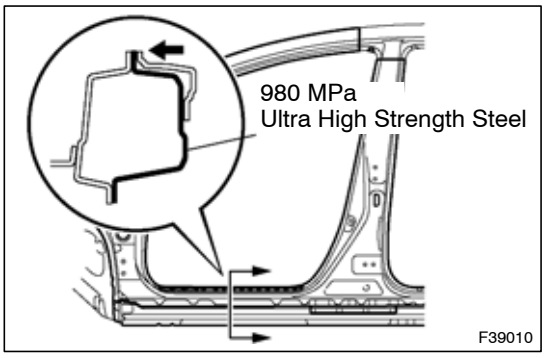
(1) Follow the welding conditions below when welding ultra high strength steel to assure sufficient weld strength.



When welding 2 panels together including 980 MPa ultra high strength steel.

Spot weld	Pressure	2940 N (300 kgf, 661 lbf)
	Weld current	10000 A
	Weld time	18 Cyc. (0.30 Sec.)
Plug weld	Plug diameter	10 mm (0.39 in.)
	Wire type	AWS A5.18 ER70S-3
	Shield gas	Metal active gas

NOTICE:
Be sure to use Metal active gas (Ar 80% + CO_2 20%) as the shield gas when plug welding. Sufficient weld strength cannot be assured when using 100% CO_2 shield gas.



When welding more than 3 panels together including 980 MPa ultra high strength steel. (When plug welding a panel to the welded panels with the weld condition above.)

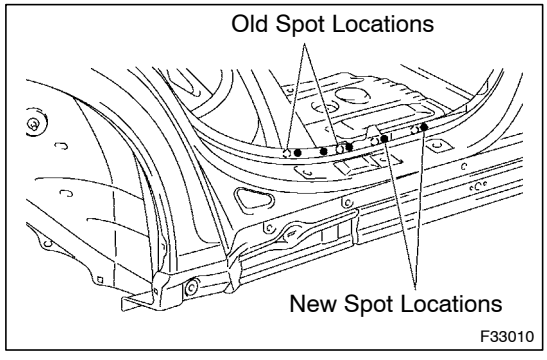
Plug weld	Plug diameter	Same as the standard method (See the introduction)
	Wire type	AWS A5.18 ER70S-3
	Shield gas	Metal active gas

NOTICE:
Be sure to use Metal active gas (Ar 80% + CO_2 20%) as the shield gas when plug welding. Sufficient weld strength cannot be assured when using 100% CO_2 shield gas.

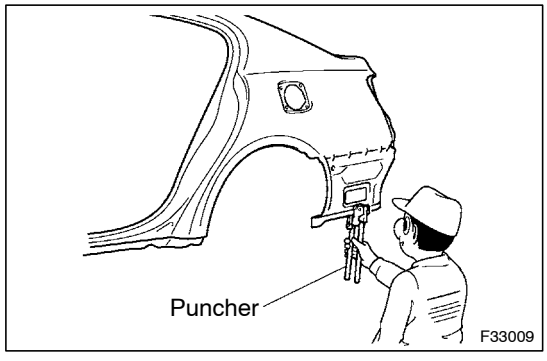
(2) Standard Number of Welds

980 MPa ultra high strength steel	Number of spot welds	More than the number of welds made by the manufacturer
	Number of plug welds	More than the number of welds made by the manufacturer
Normal steel or high strength steel	Number of spot welds	More than 1.3x the number of welds made by the manufacturer
	Number of plug welds	More than the number of welds made by the manufacturer

NOTICE:
Inspect the welds after spot welding. For points with insufficient weld strength join the panels using plug welds.



(3) Spot weld locations
Avoid welding over previously welded areas.



(d) MAKING HOLES FOR PLUG WELDING

(1) For areas where a spot welder cannot be used, use a puncher or drill to make holes for plug welding.

Thickness of welded portion	Diameter of plug hole
Under 1.0 mm (0.04 in.)	Over 5.0 mm (0.20 in.)
1.0 to 1.6 mm (0.04 to 0.06 in.)	Over 6.5 mm (0.26 in.)
1.7 to 2.3 mm (0.07 to 0.09 in.)	Over 8.0 mm (0.31 in.)
Over 2.4 mm (0.09 in.)	Over 10 mm (0.39 in.)