

Architetture e tecnologie degli autoveicoli elettrificati



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Benvenuti



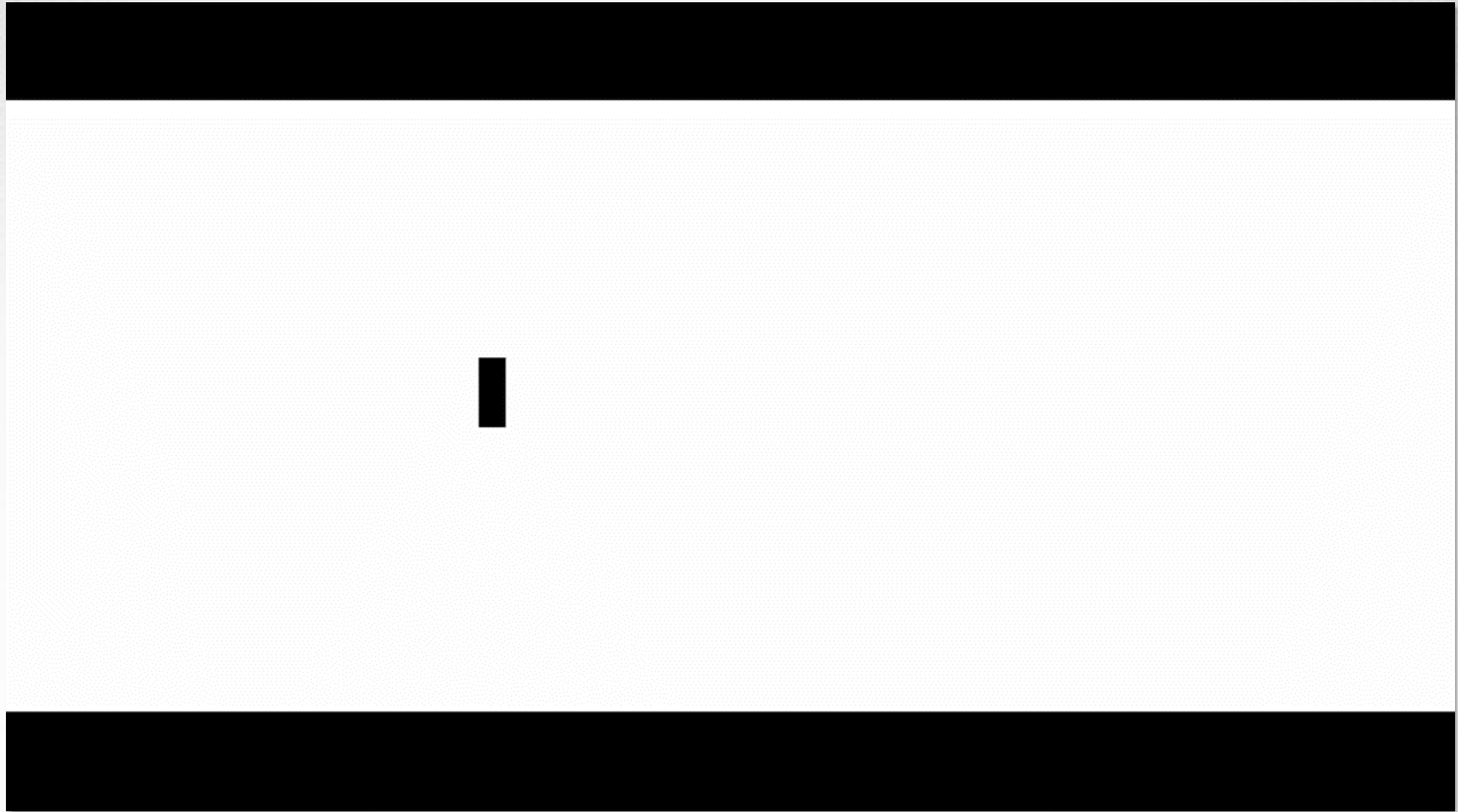
Ing. Giuseppe Bentivoglio
NISSAN ITALIA

Contenuti

1. e-Power Informazioni Generali;
2. Batteria agli Ioni di Litio;
3. Motore e Generatore;
4. ICE KR15 DDT;
5. Servofreno elettronico



e-Power

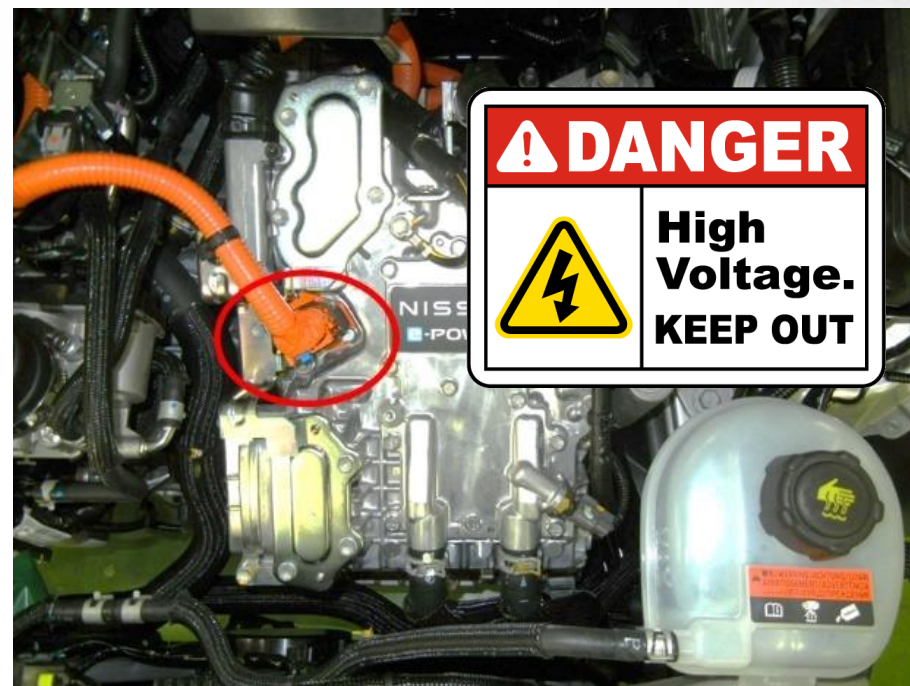
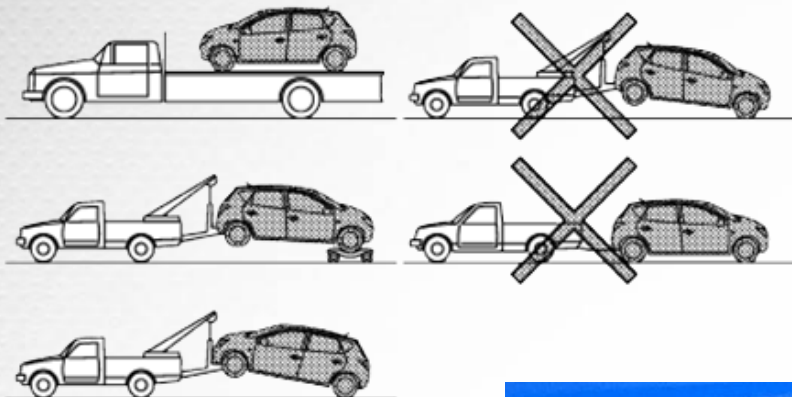


Informazioni Generali

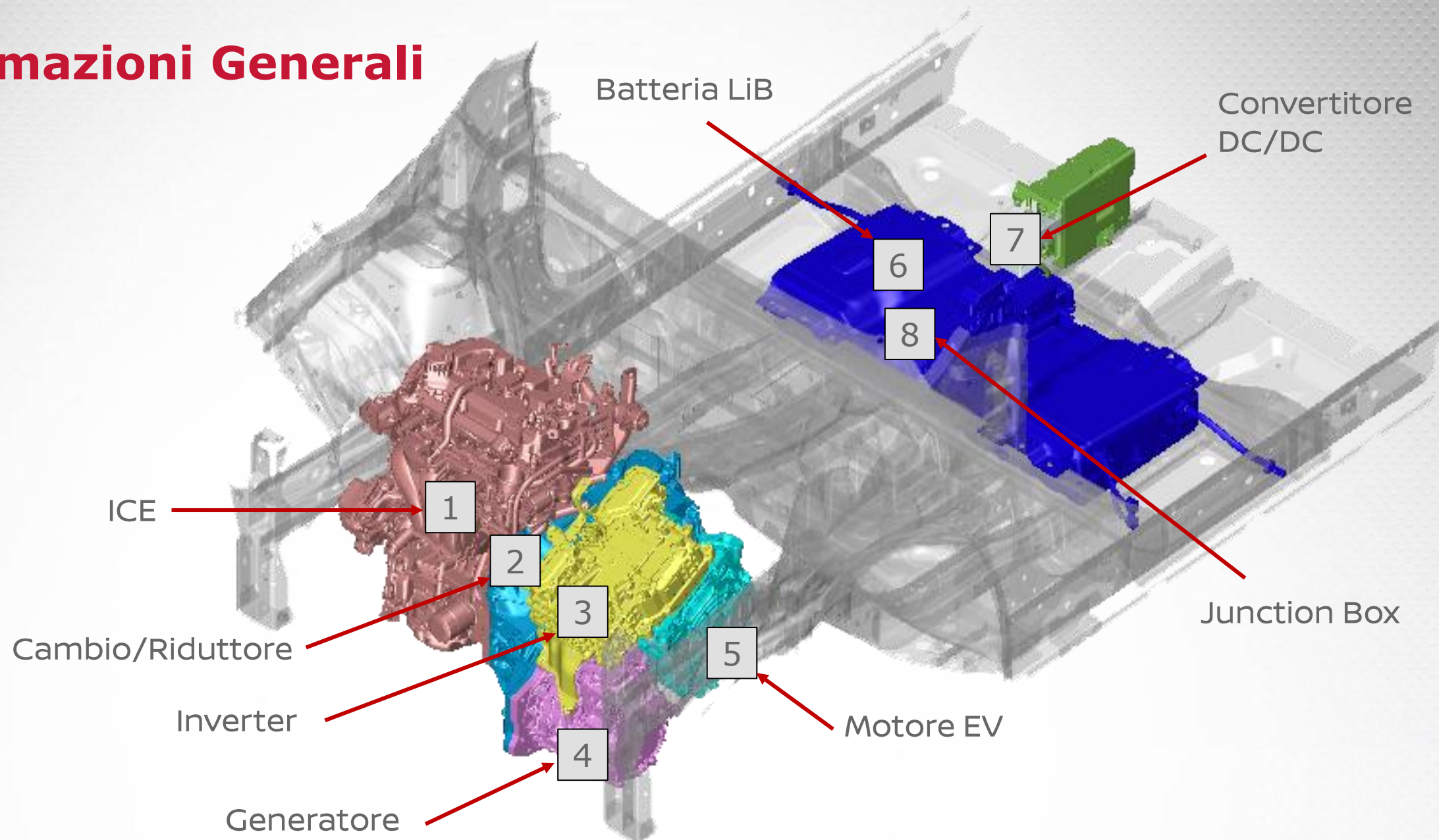


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Informazioni Generali



Informazioni Generali



Informazioni Generali



CHARGE

EV



Informazioni Generali



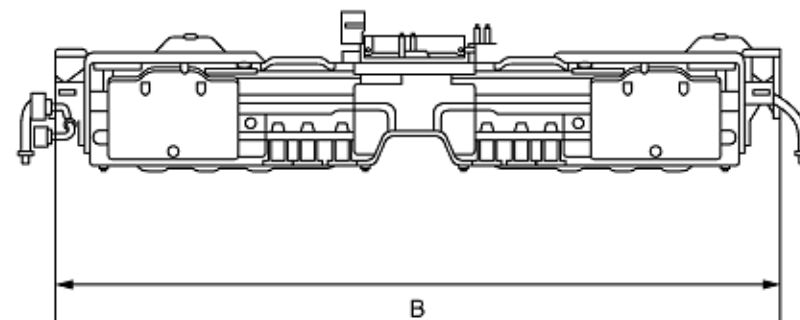
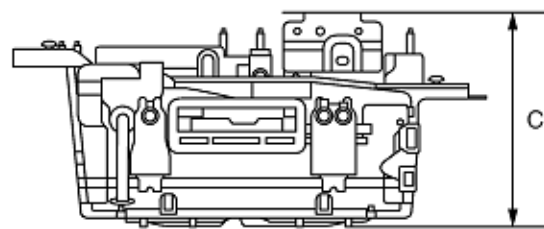
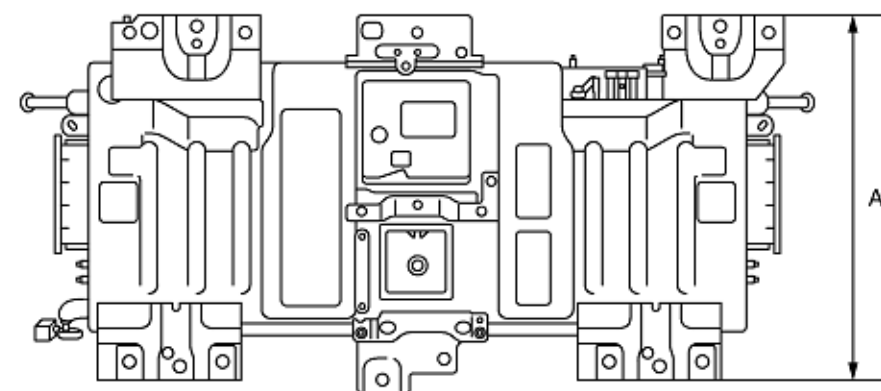
Batteria agli Ioni di Litio



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Batteria agli Ioni di Litio – Scheda tecnica

Caratteristiche	
Tipo	Ioni di litio
Configurazione	Suddivisa in moduli, ogni modulo suddiviso in celle
Tensione nominale	350 Volt
Potenza max erogabile	66 kW
Capacità	2,1 kWh nominale / 1,8 kWh utilizzabile
Numero di moduli	4 moduli
Tensione per modulo	87,6 Volt per modulo
Numero di celle	96 totali, 24 celle per modulo
Tensione per cella	3,7 Volt
Raffreddamento	Raffreddata ad Aria
Degassificazione	per mezzo di tubi
Spina di servizio	Sulla batteria
Larghezza massima (B)	104,7 cm / 41,21 inch
Altezza massima (C)	21,4 cm / 8,42 inch
Lunghezza massima (A)	50,3 cm / 19,80 inch
Peso	53,8 KG / 120 lb



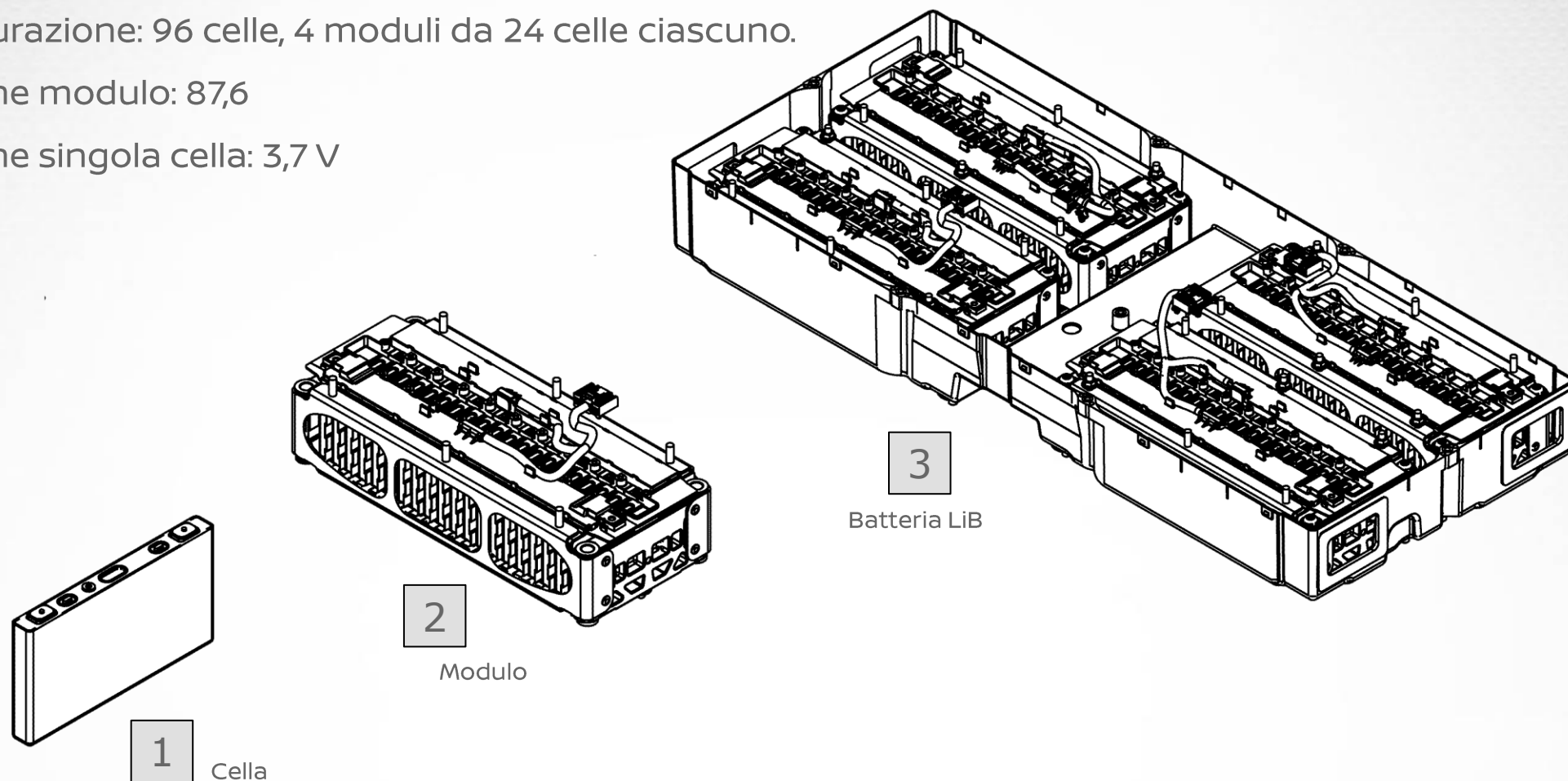
Batteria agli Ioni di Litio – Struttura moduli

Tensione nominale: 350 V

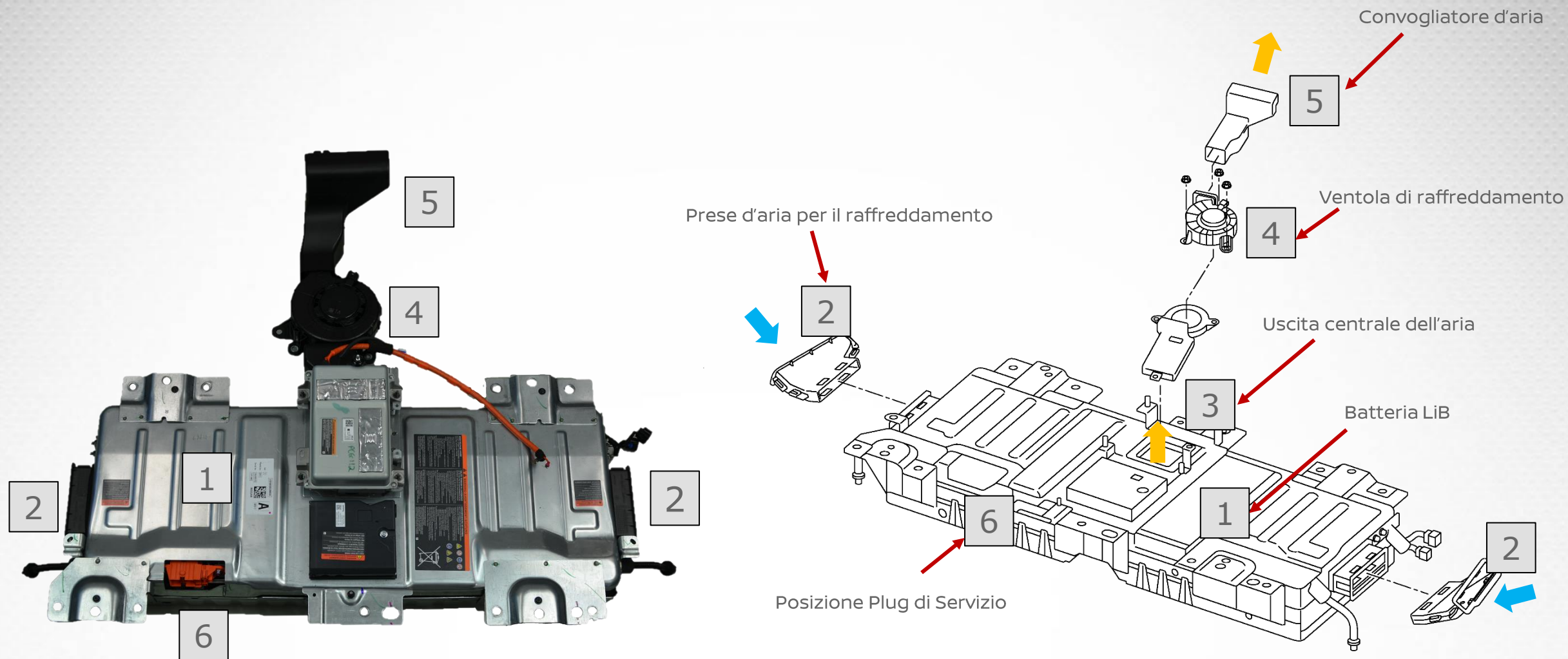
Configurazione: 96 celle, 4 moduli da 24 celle ciascuno.

Tensione modulo: 87,6

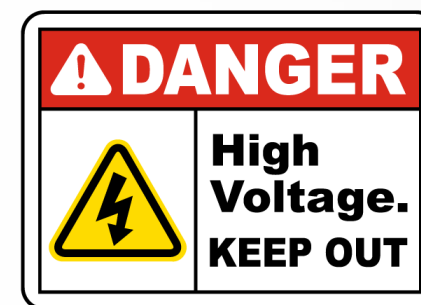
Tensione singola cella: 3,7 V



Batteria agli Ioni di Litio



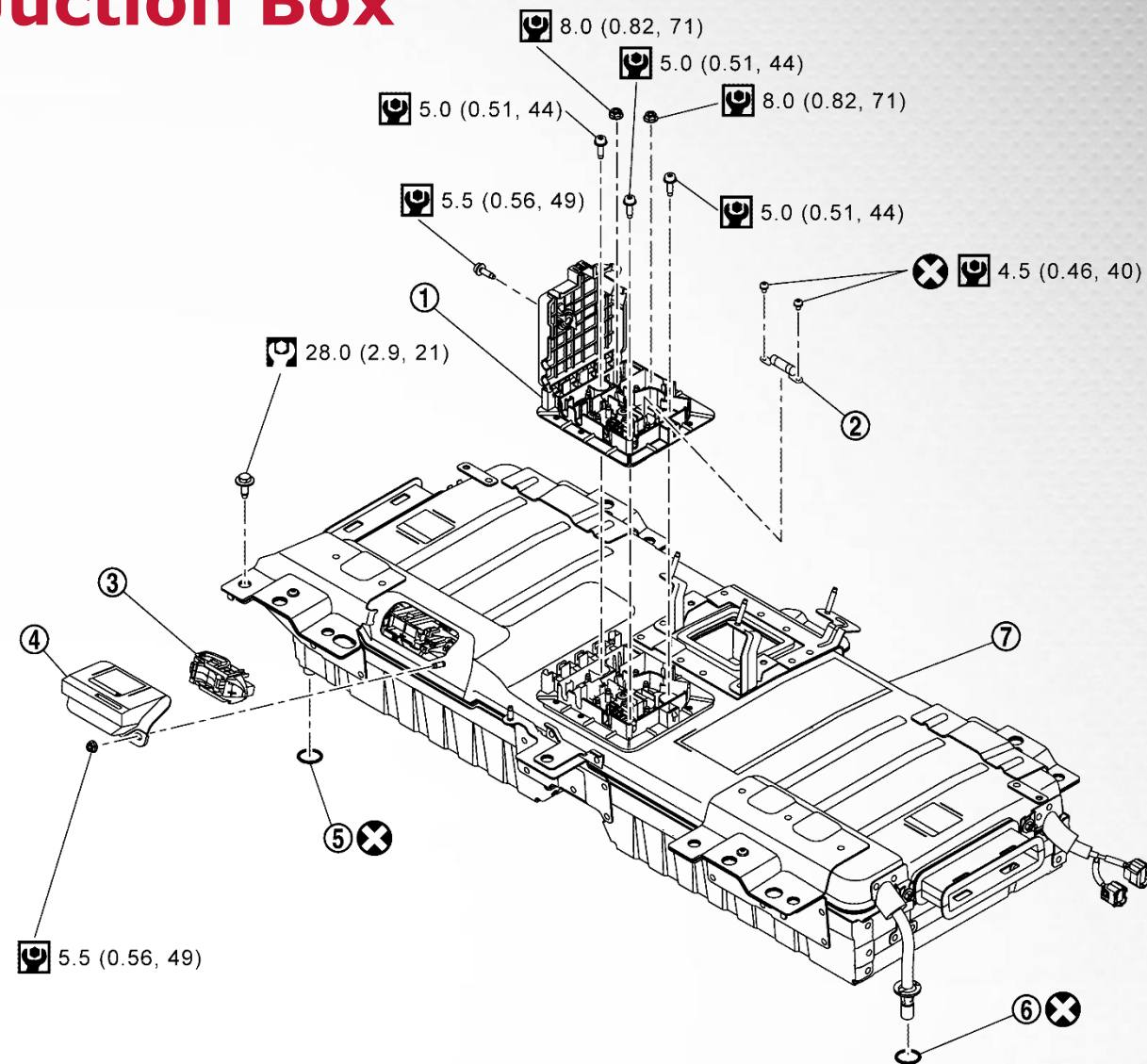
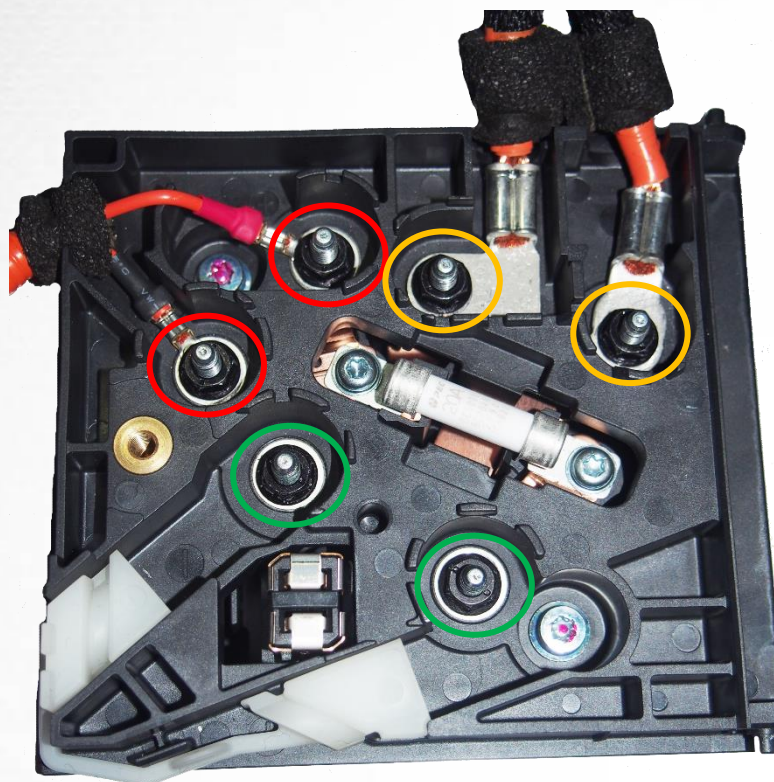
Batteria agli Ioni di Litio – Plug di sicurezza



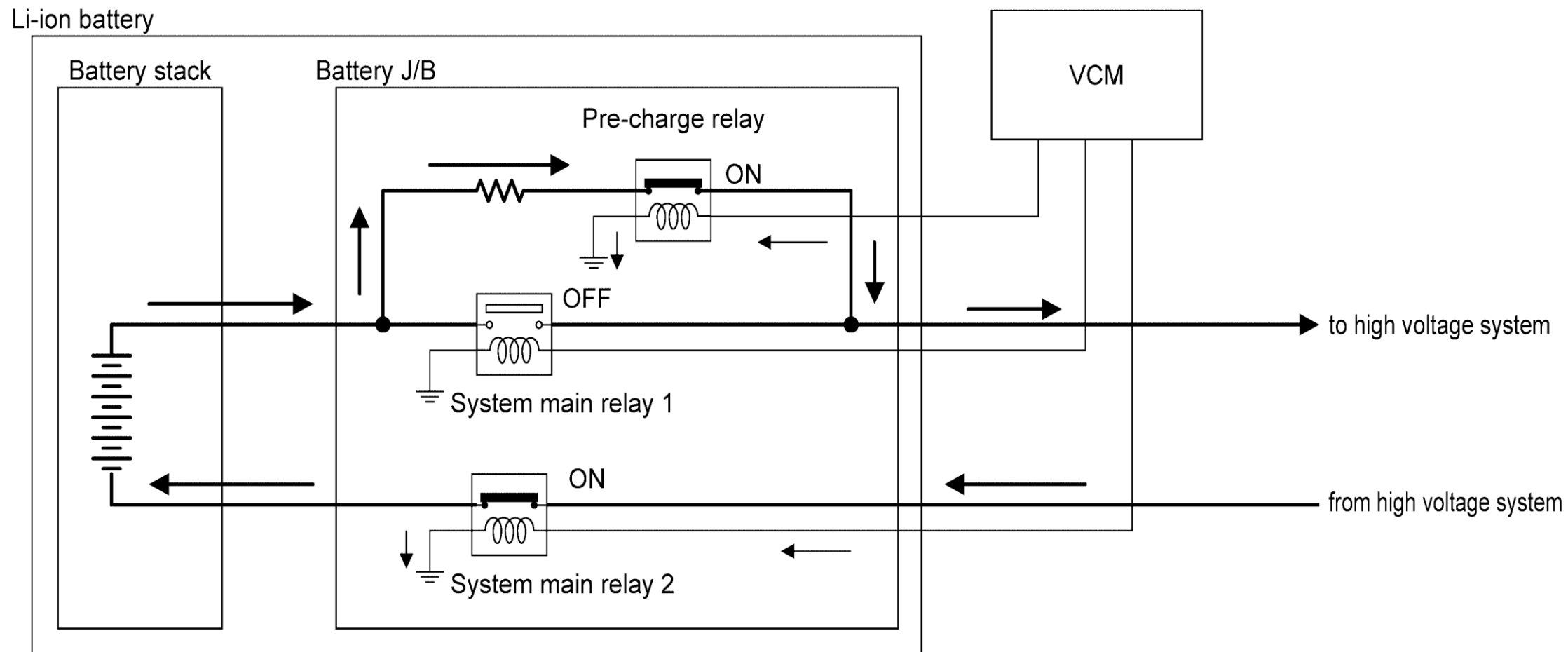
Batteria agli Ioni di Litio – Junction Box



Fronte Veicolo



Batteria agli Ioni di Litio – Schema elettrico

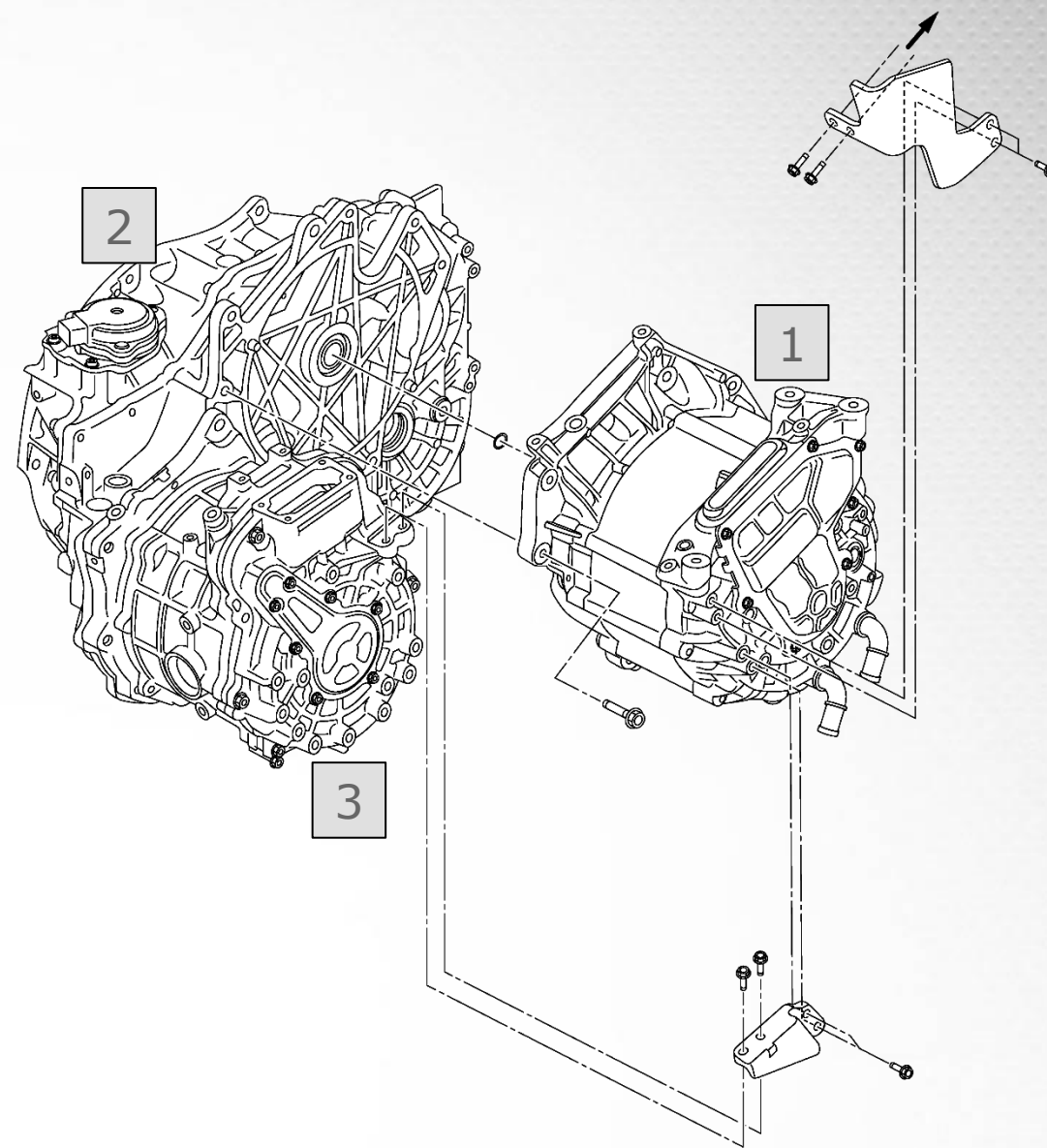
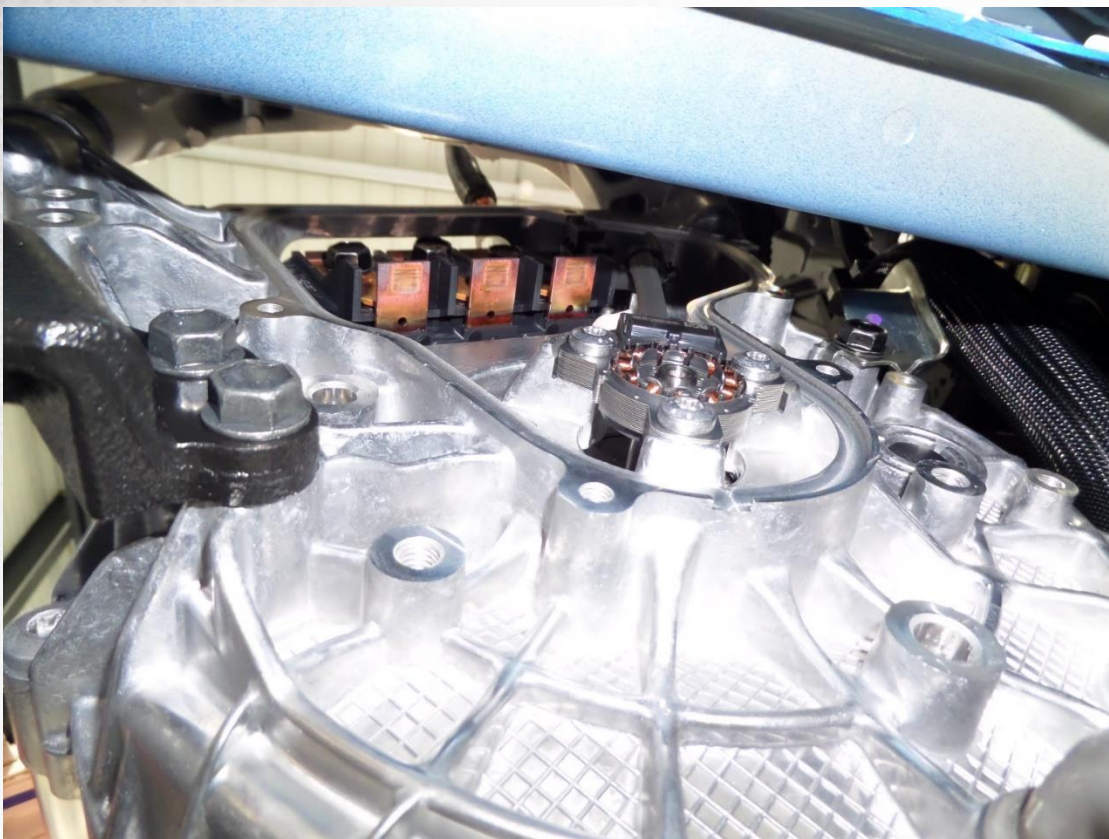


Motore e Generatore

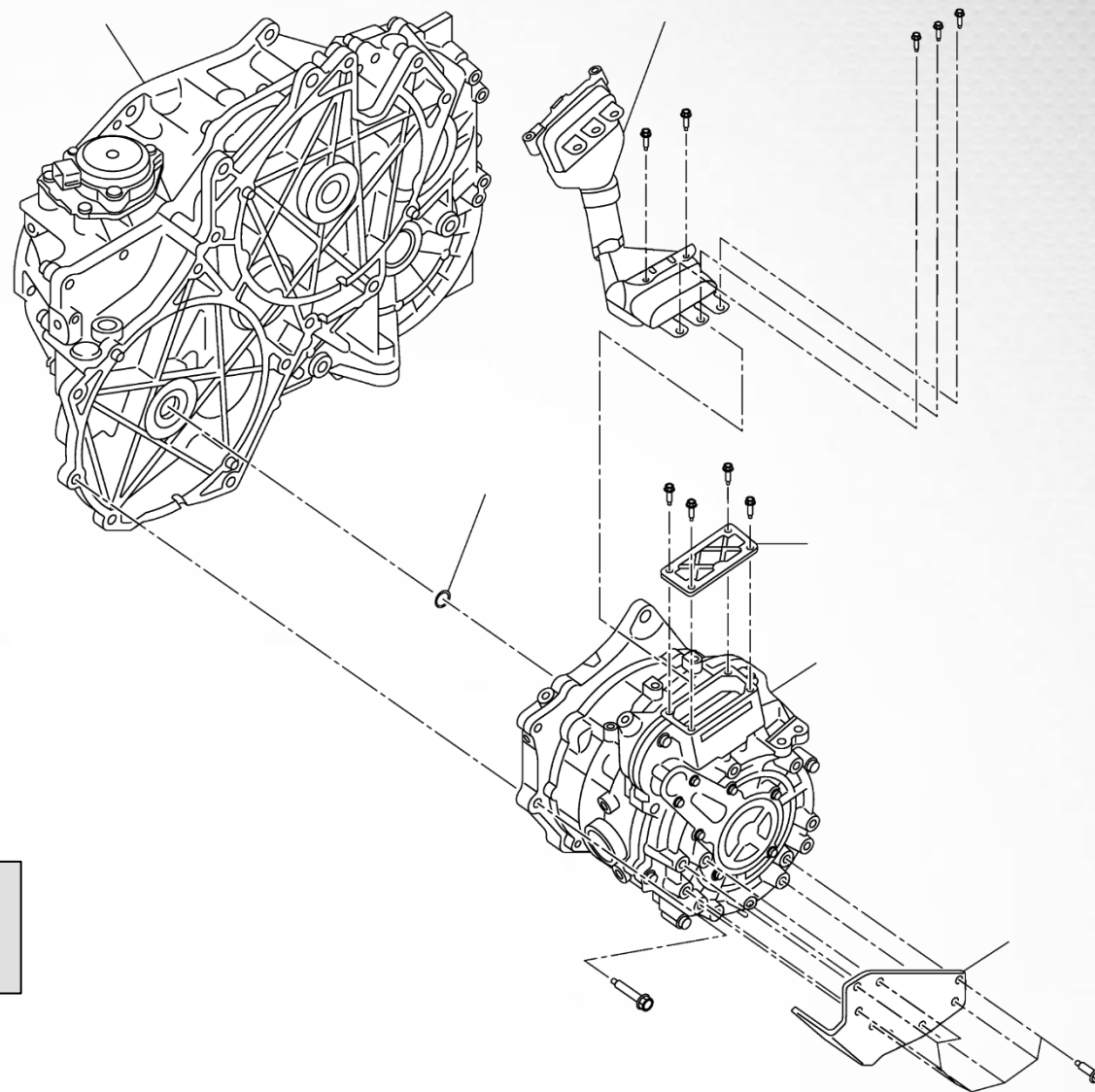
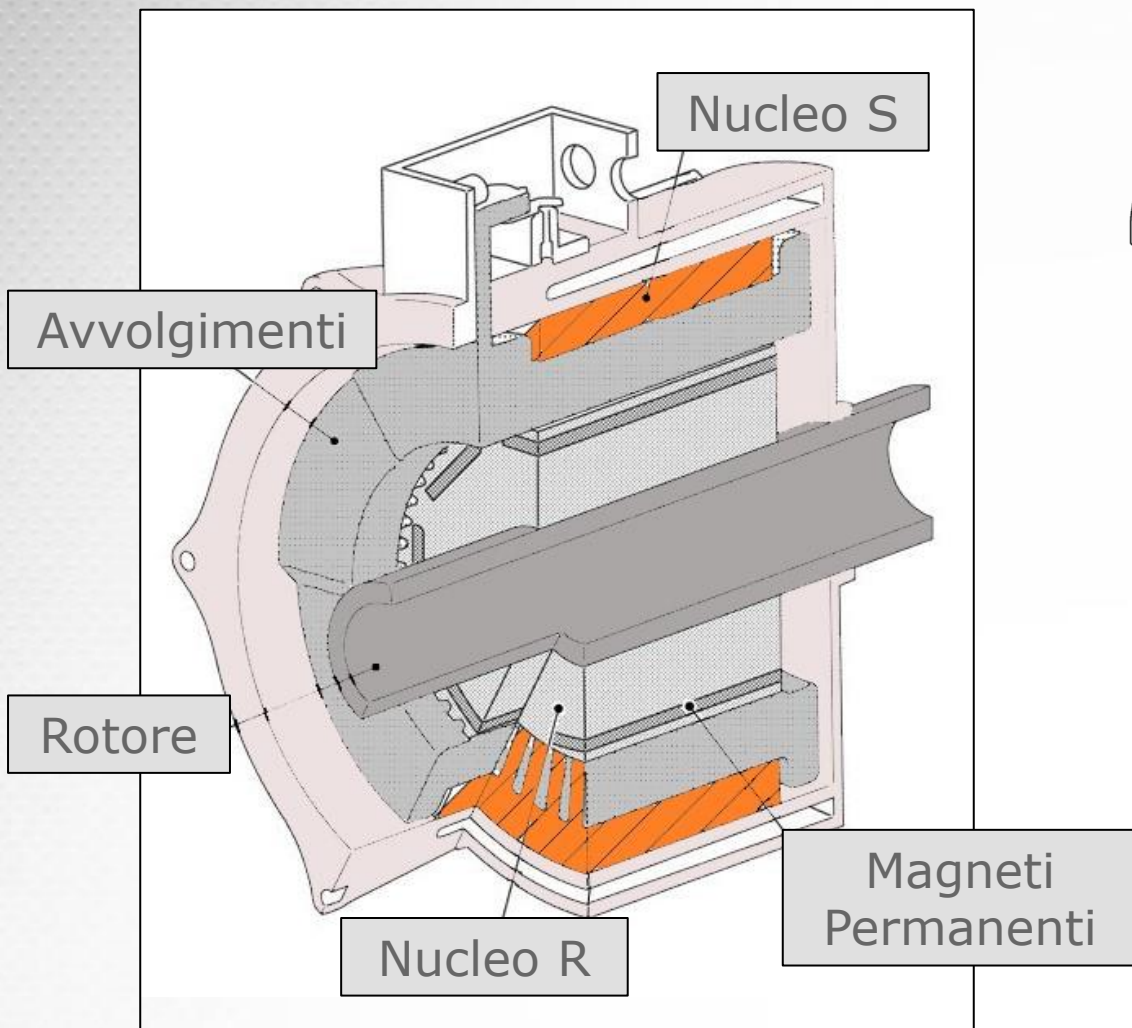


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Motore e Generatore

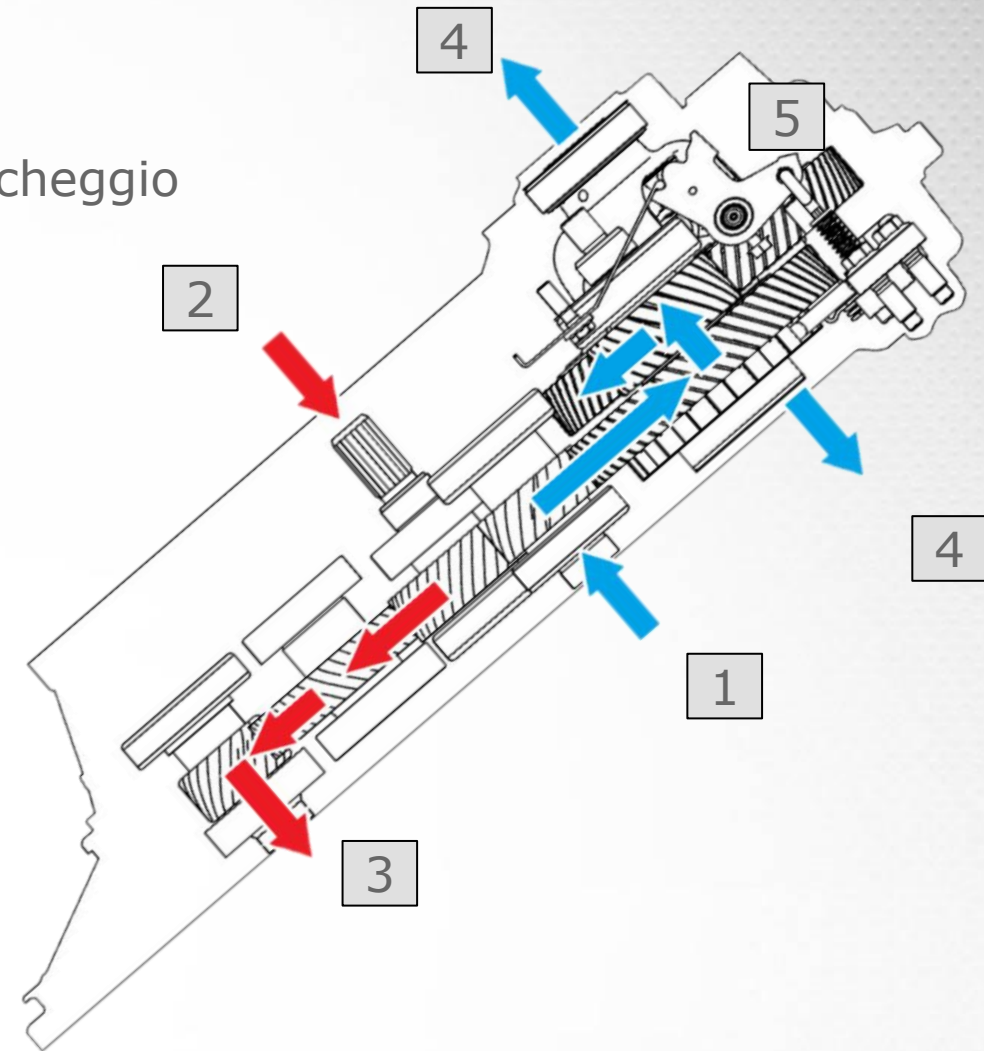
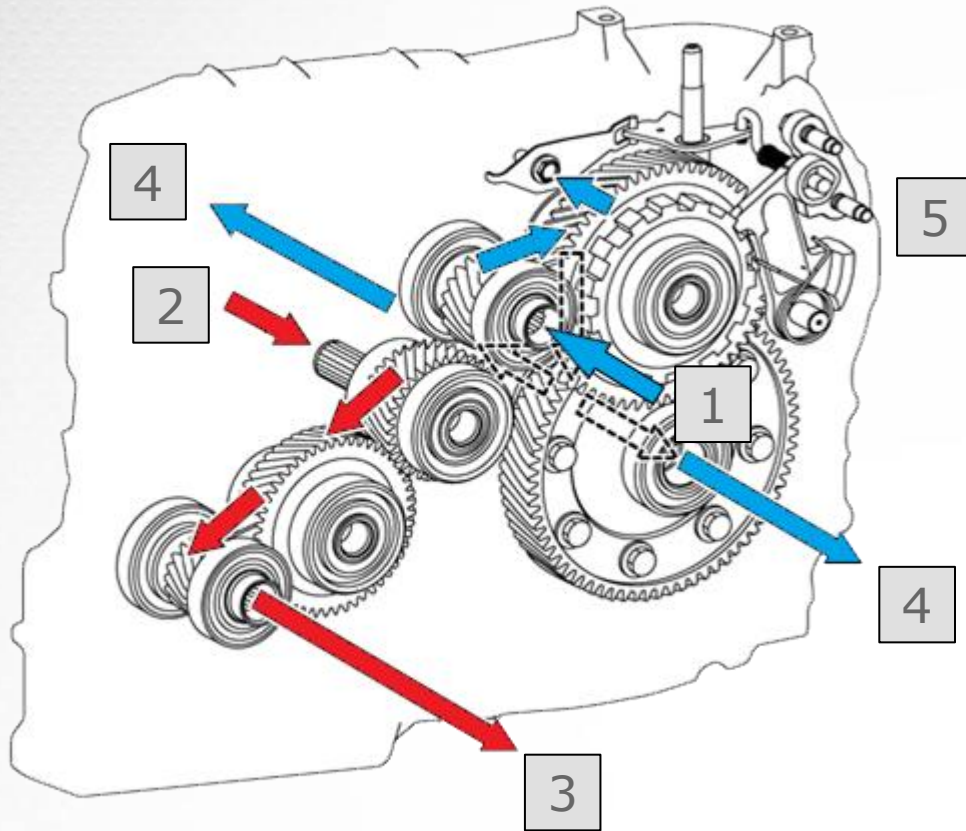


Motore e Generatore

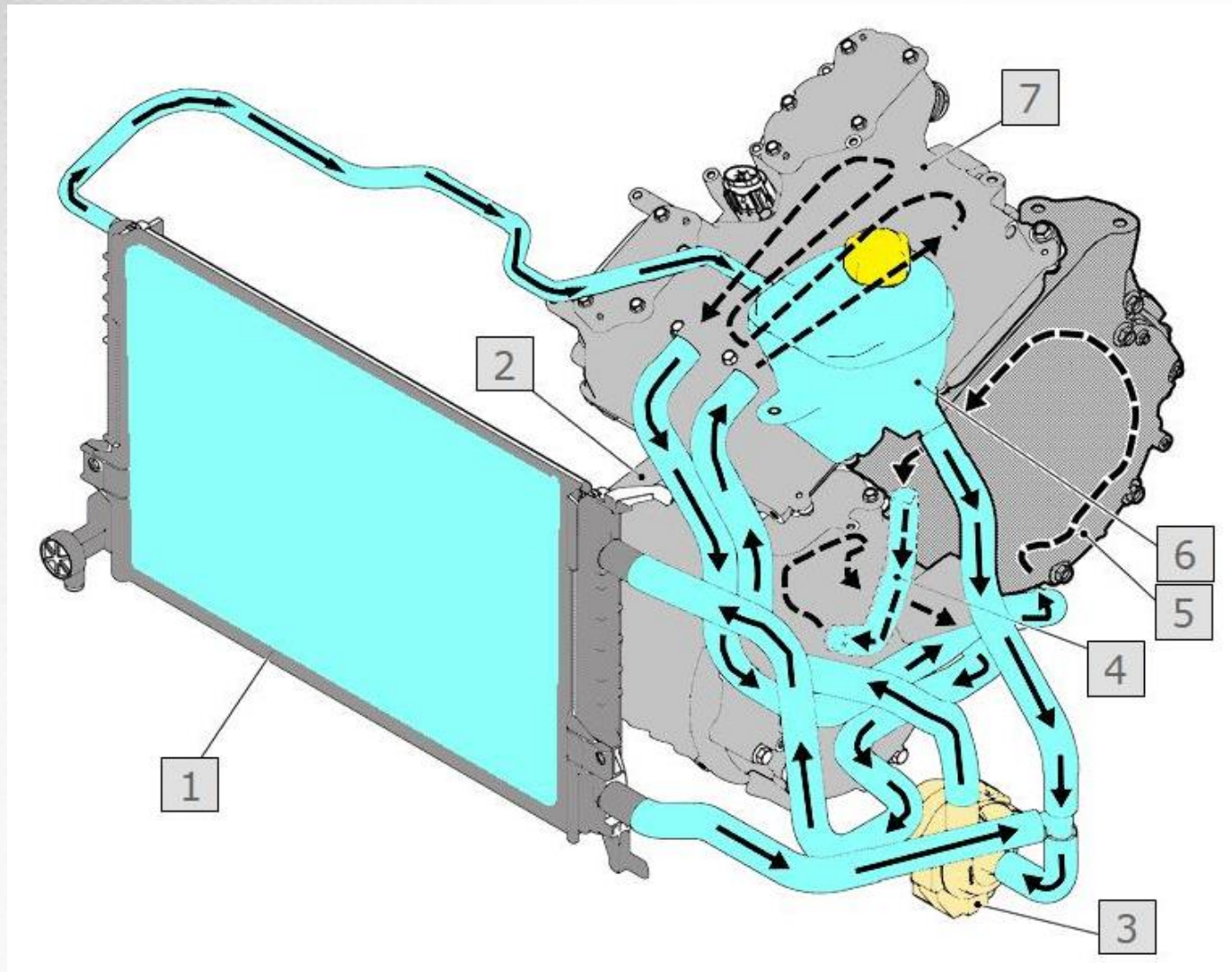


Motore e Generatore

- 1 Motore elettrico di trazione
- 2 Motore a combustione interna
- 3 Generatore
- 4 Semiassi
- 5 Blocco di parcheggio



Motore e Generatore



ICE KR15 DDT



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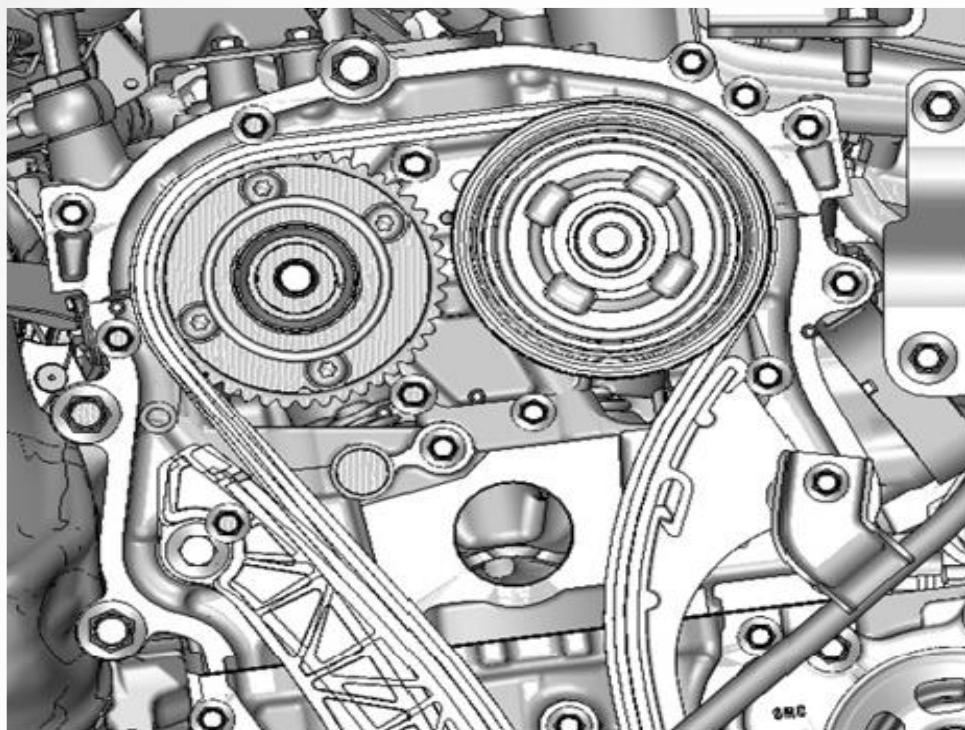
ICE KR15 DDT – Scheda tecnica

Motore KR15 DDT (versione e-POWER)

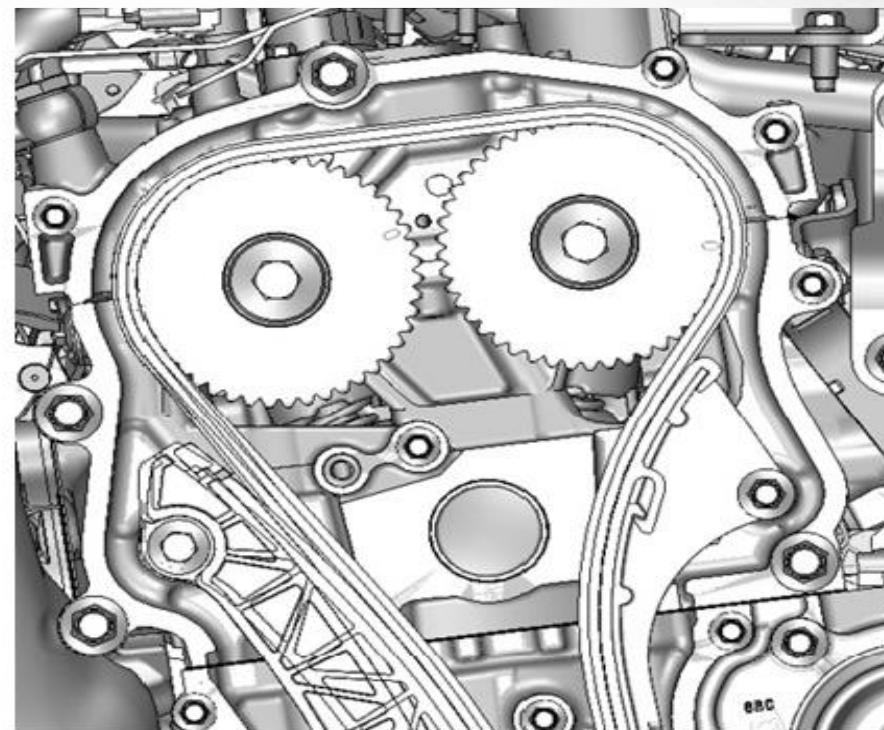
Disposizione dei cilindri	Motore a benzina, 3 cilindri in linea
Monoblocco	Alluminio pressofuso
Testata	Alluminio pressofuso con collettore di scarico integrato
Disposizione delle valvole	DOHC, 4 valvole per cilindro
Distribuzione	A catena
Cilindrata (L)	1,498 cc a 1,478 cc
Alesaggio x corsa (mm/inch)	84,0 mm x 88,9 mm a 90,1 mm
Rapporto di compressione	Variabile tra 8,0:1 a bassa Comp. E 14,0:1 per alta Comp.
Sistema ibrido	Sistema ibrido serie e-POWER
Sistema di alimentazione	Diretta con 1 iniettore per cilindro
Sistema di accensione	Candela singola con bobina integrata
Sequenza di accensione	1 – 2 – 3
Sovralimentazione	Turbocompressore a geometria fissa, raffreddato ad acqua. Intercooler aria-acqua. Wastegate elettrica e nessuna valvola di bypass.
Potenza massima	106 Kw (144 CV) ICE / 140 Kw (190 CV) e-POWER
Coppia massima	250 Nm ICE / 330 Nm e-POWER
Regolamento sulle emissioni	Filtro antiparticolato benzina
Sistema di raffreddamento	Con di valvola di controllo a più vie (MCV)

ICE KR15 DDT – differenze con versione STD

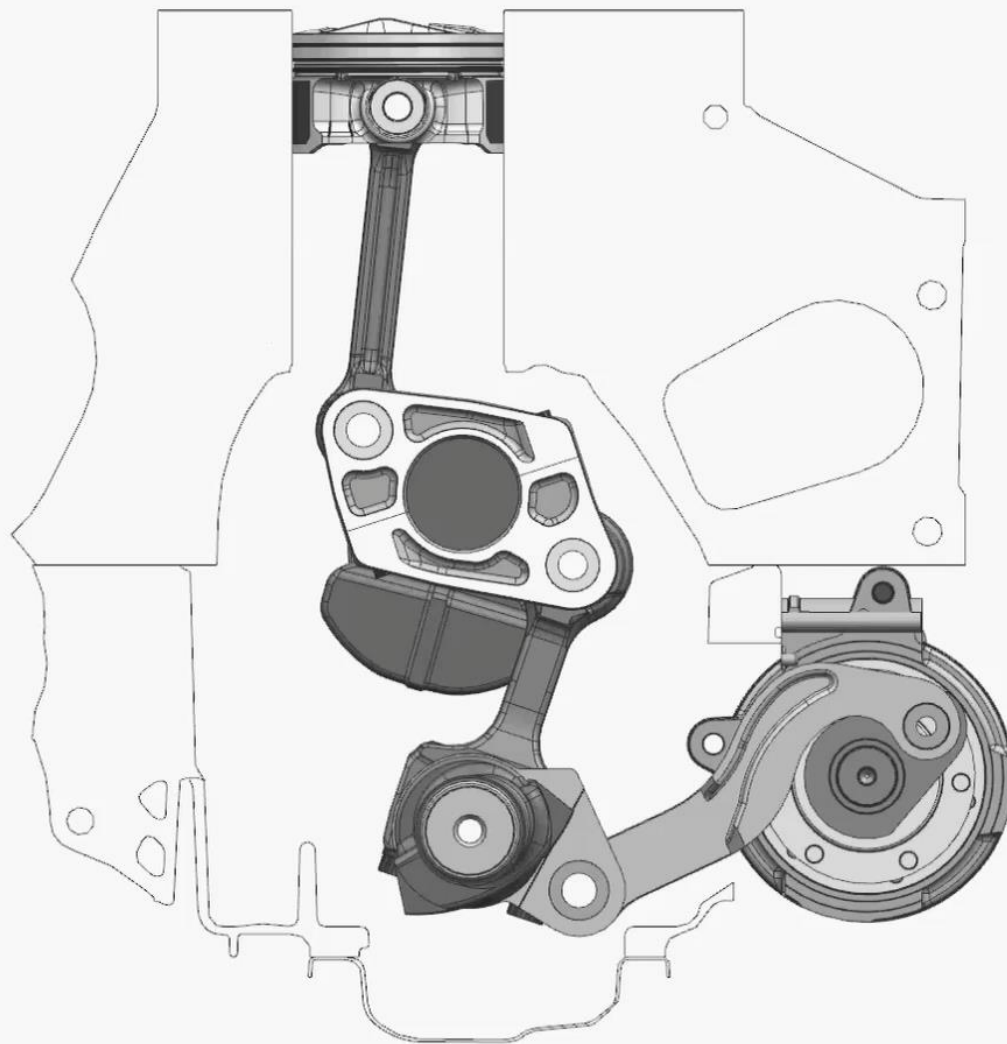
Versione solo ICE



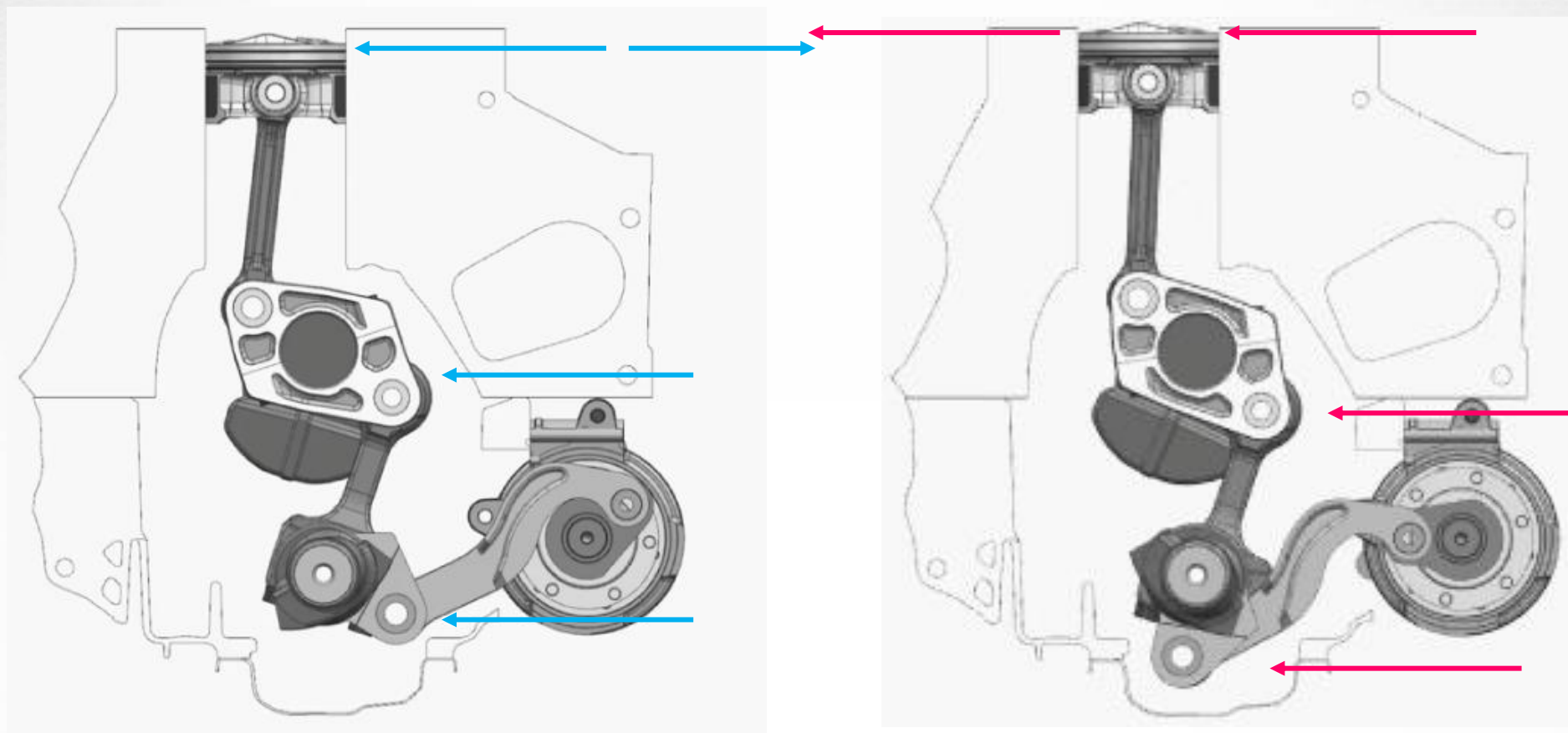
Con e-POWER



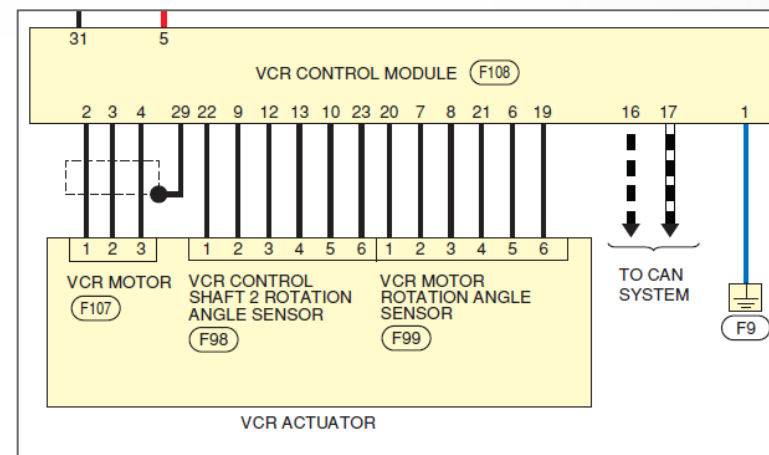
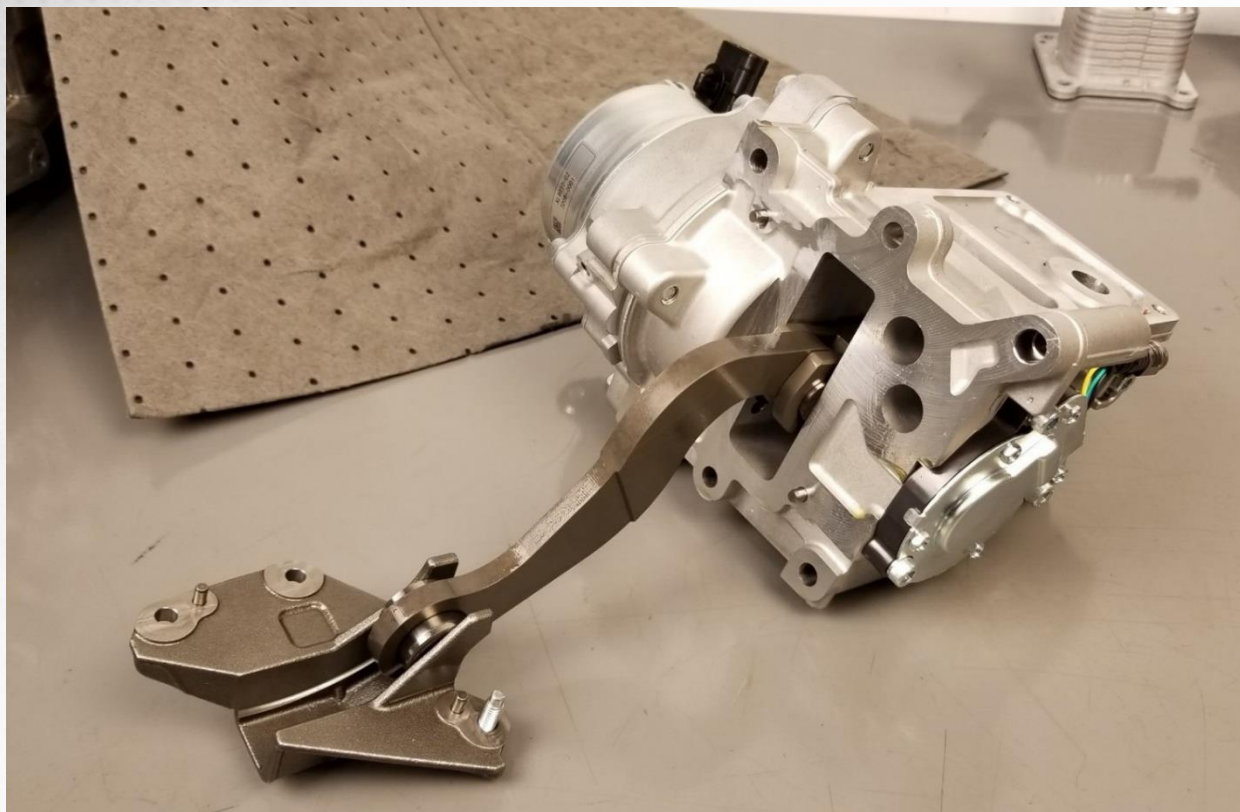
ICE KR15 DDT



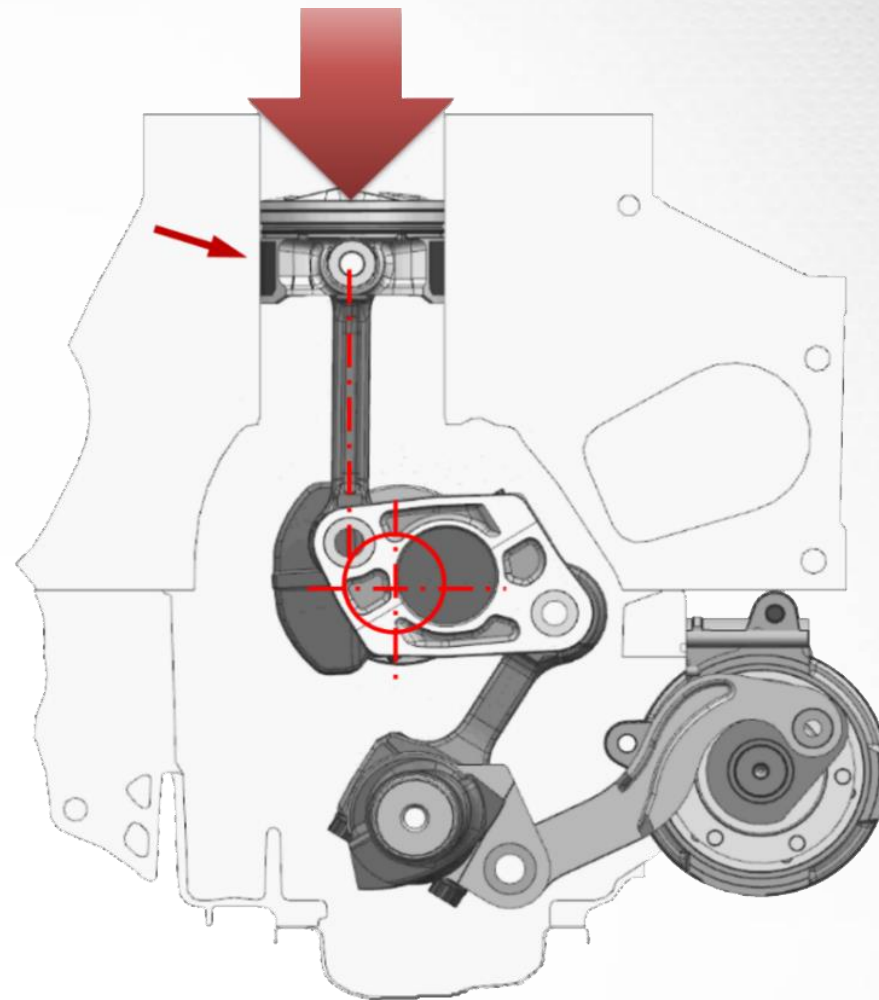
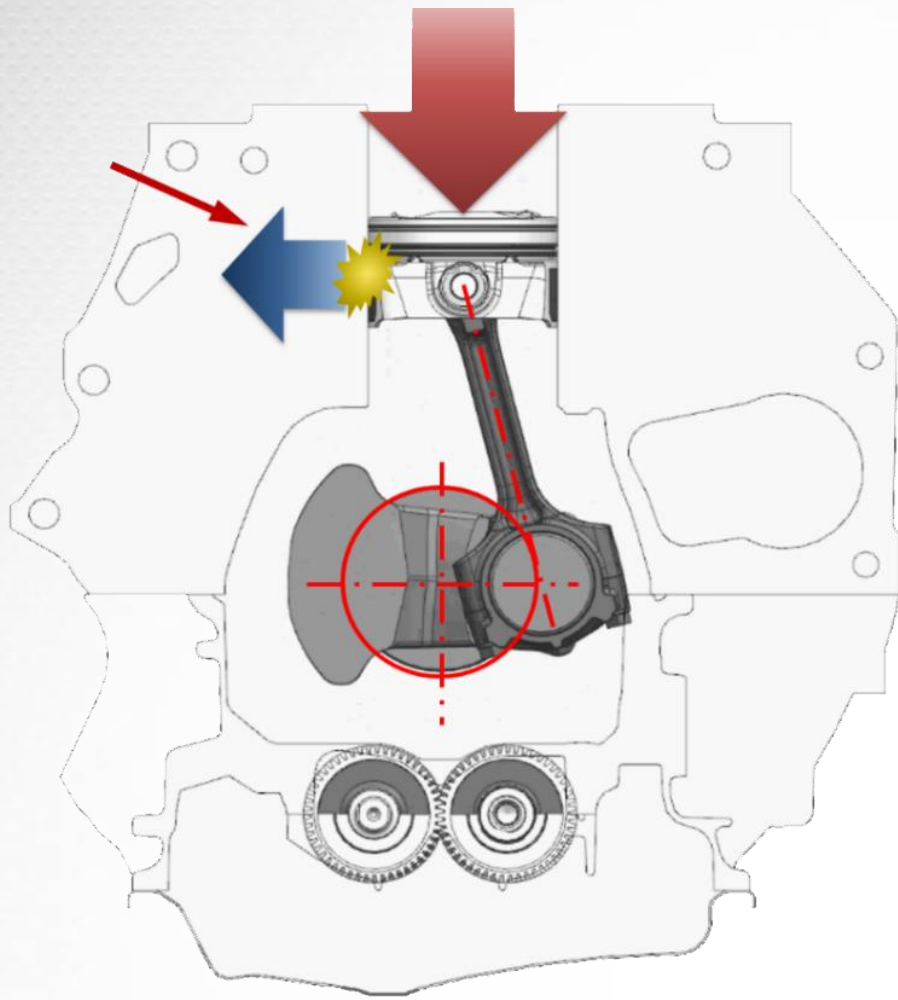
ICE KR15 DDT



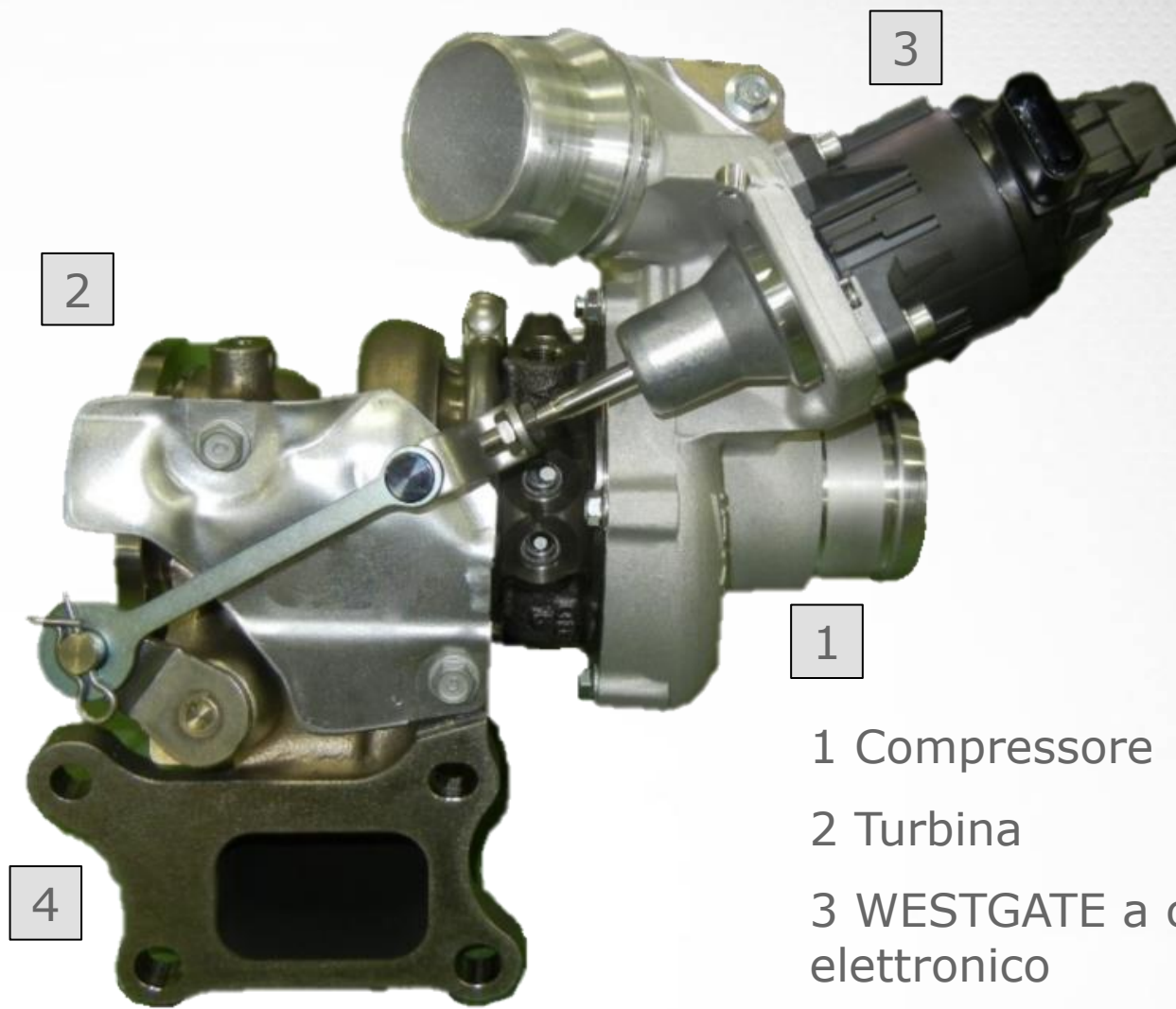
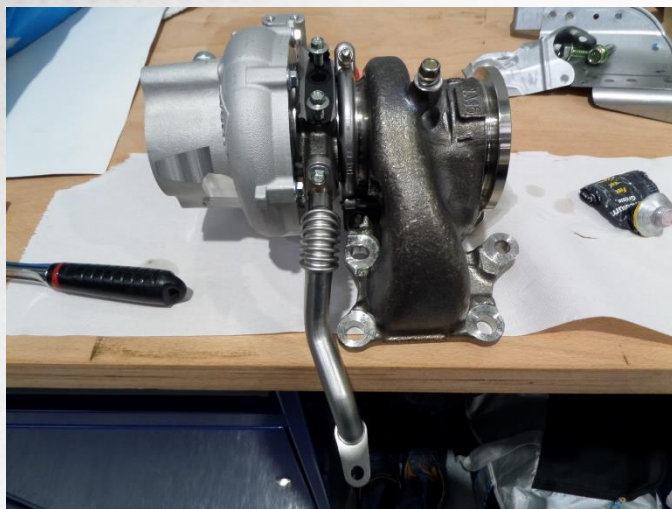
ICE KR15 DDT



ICE KR15 DDT



ICE KR15 DDT



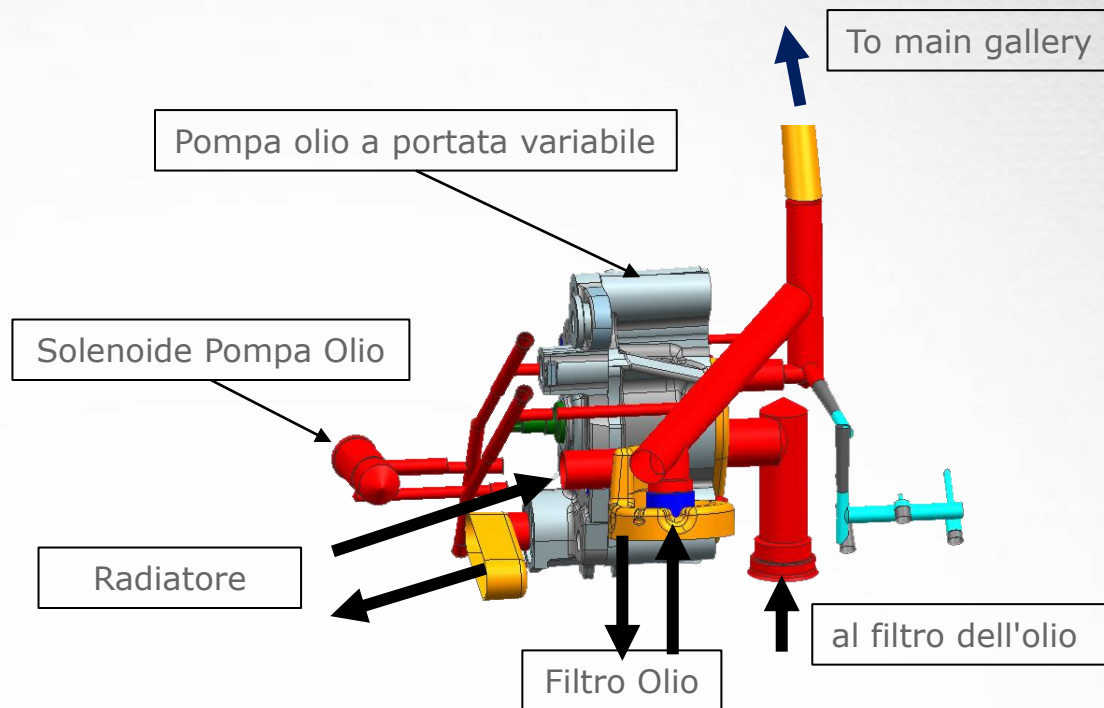
1 Compressore

2 Turbina

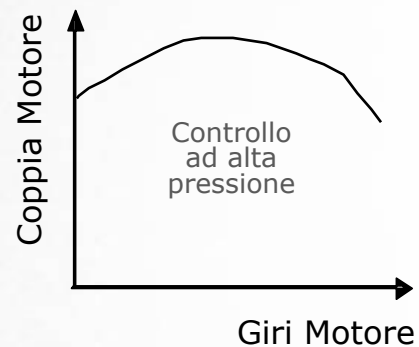
3 WESTGATE a controllo elettronico

4 Collettore di scarico

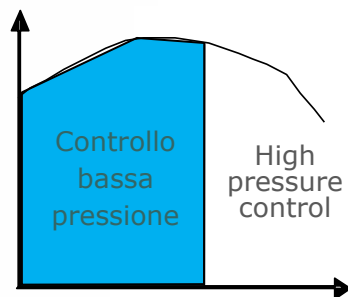
ICE KR15 DDT



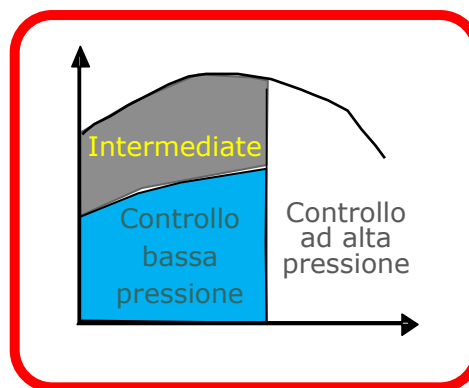
Temperature estremamente basse



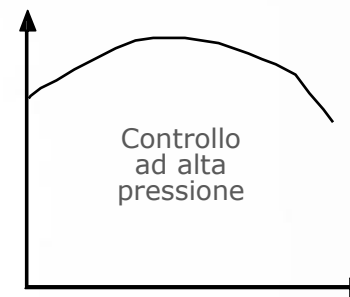
Condizione fredda



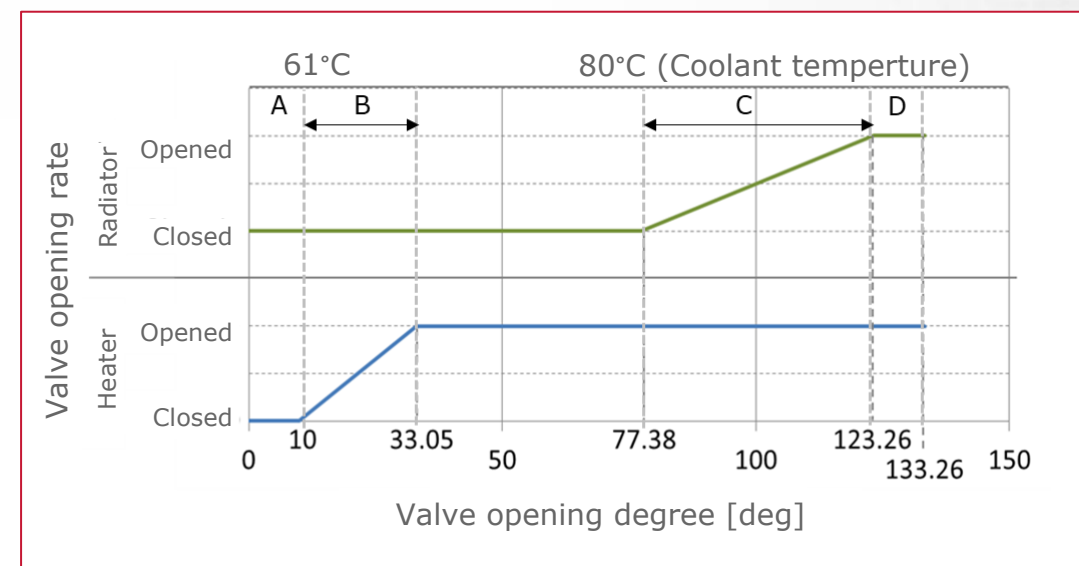
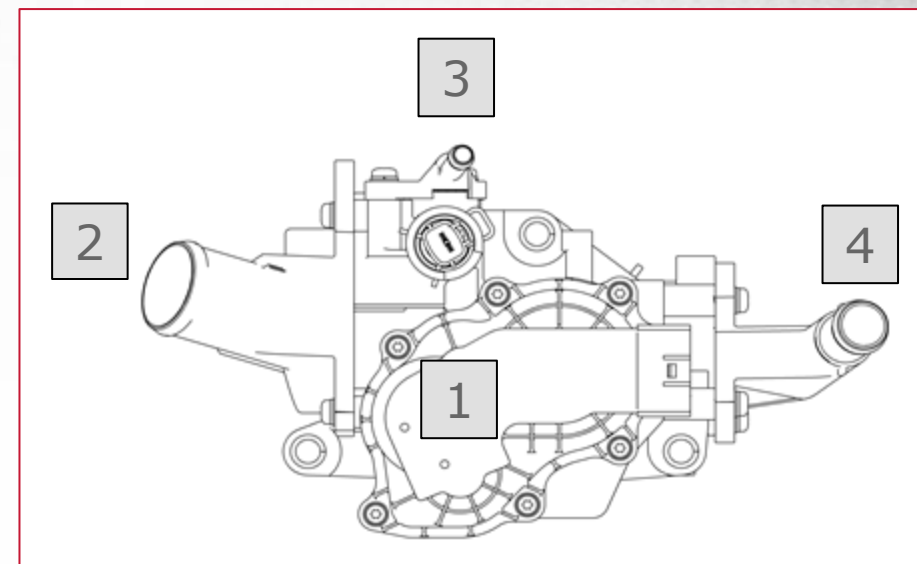
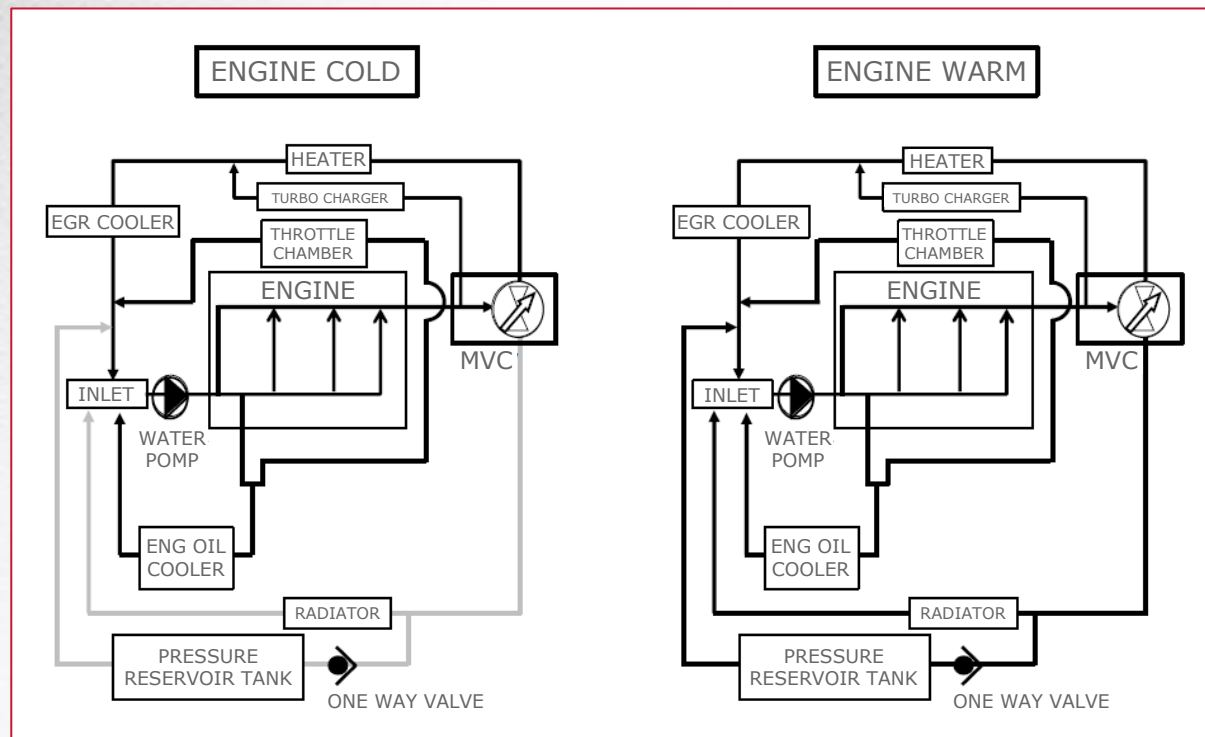
Dopo il riscaldamento



Alte temperature



ICE KR15 DDT

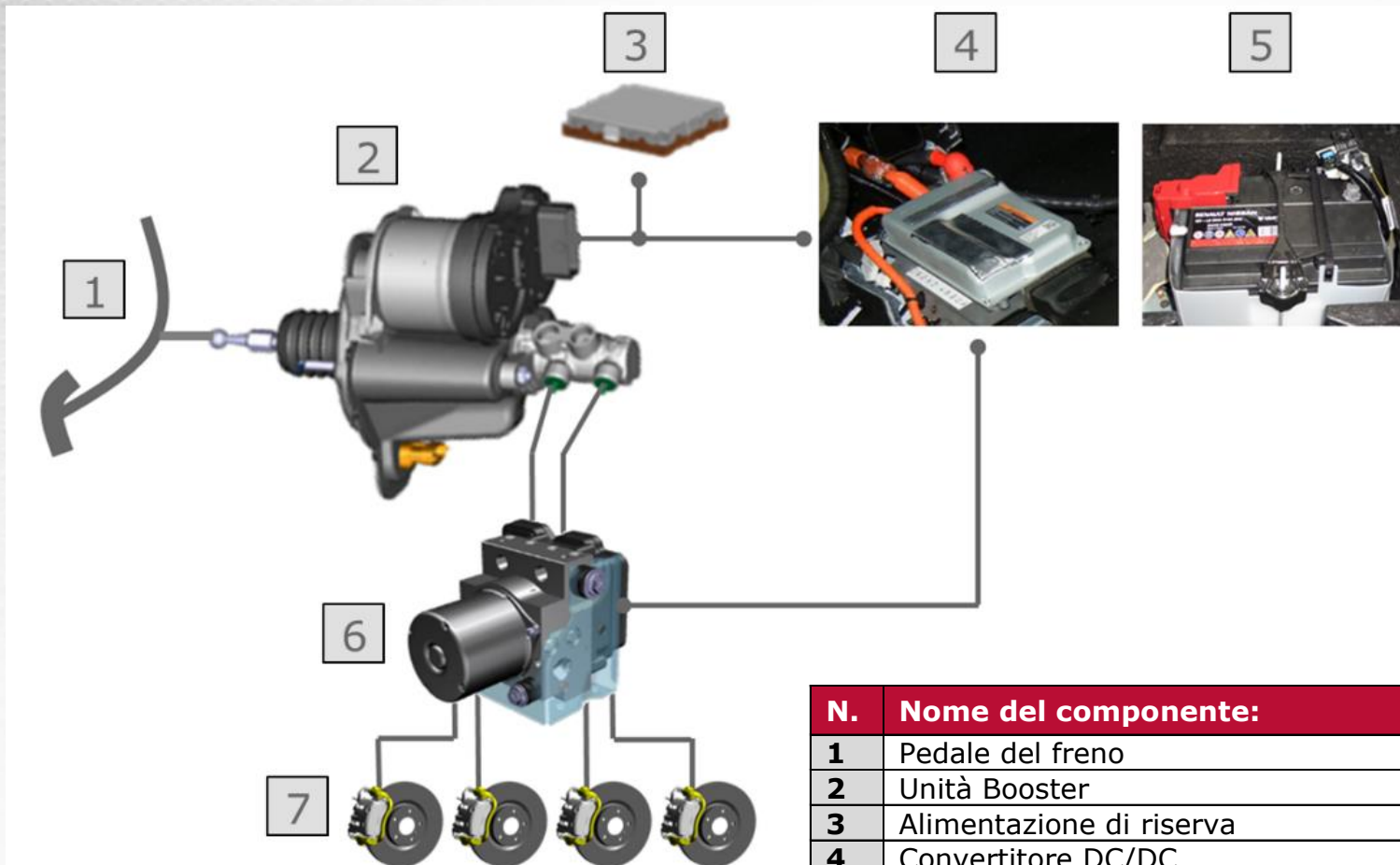


Servofreno Elettronico



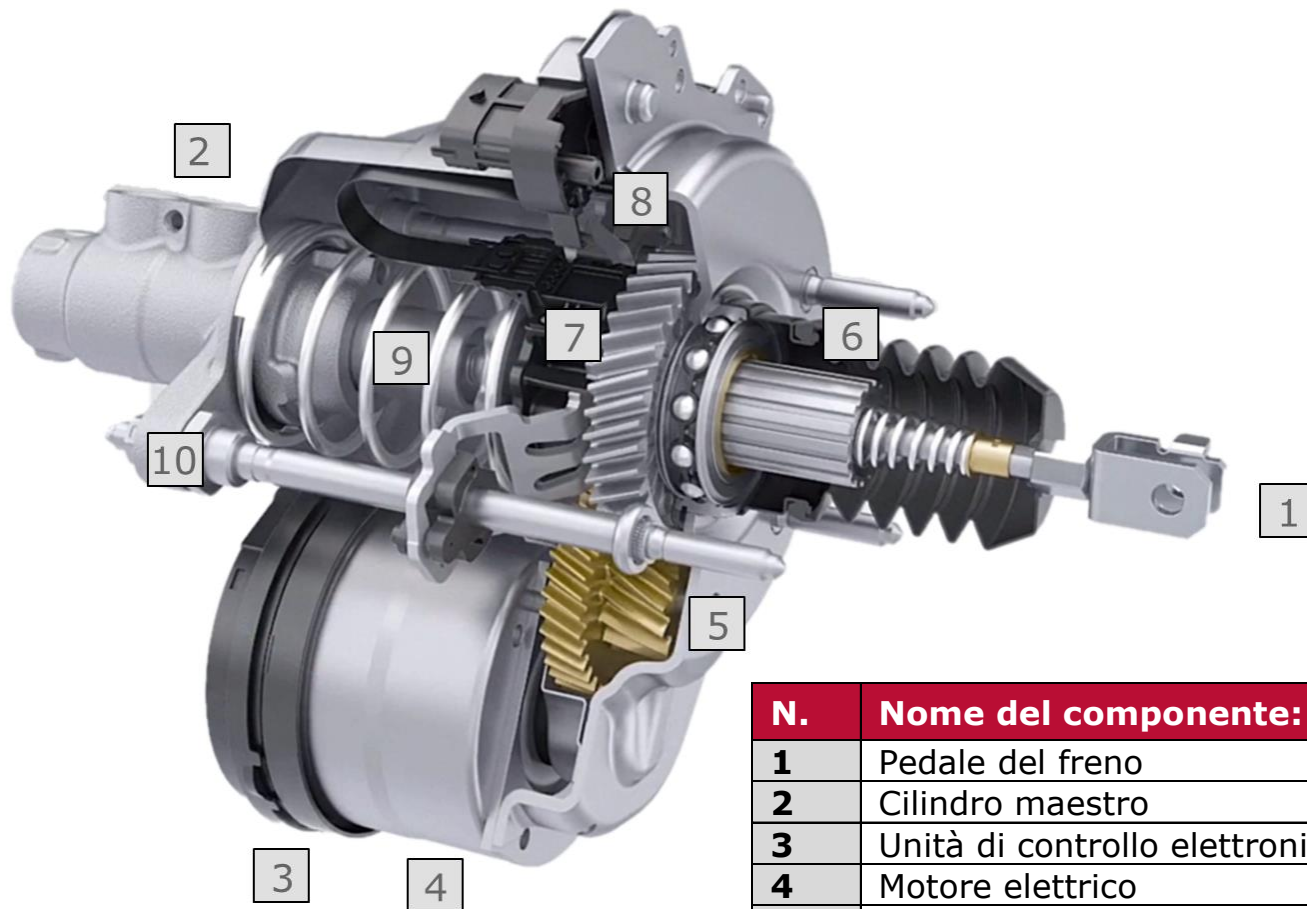
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Componenti del servofreno elettronico



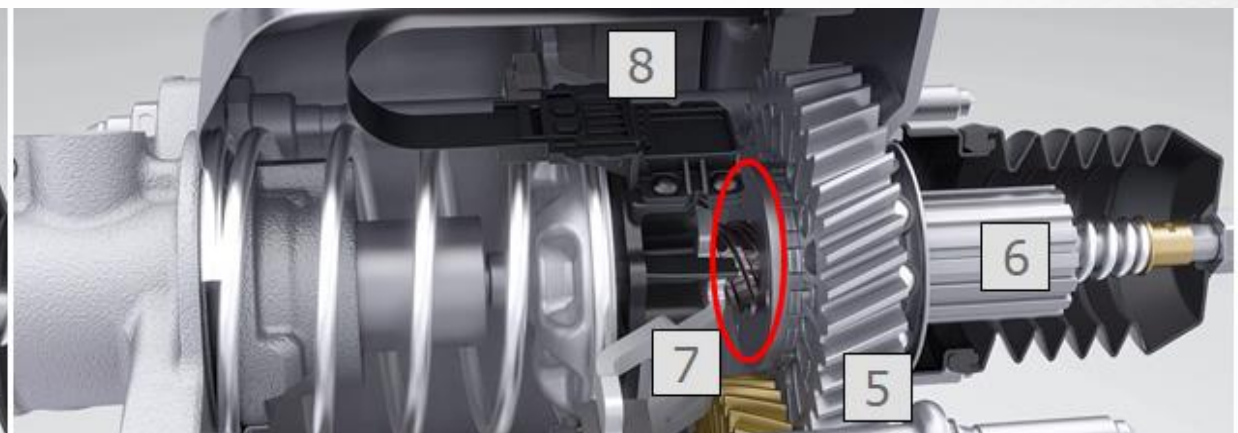
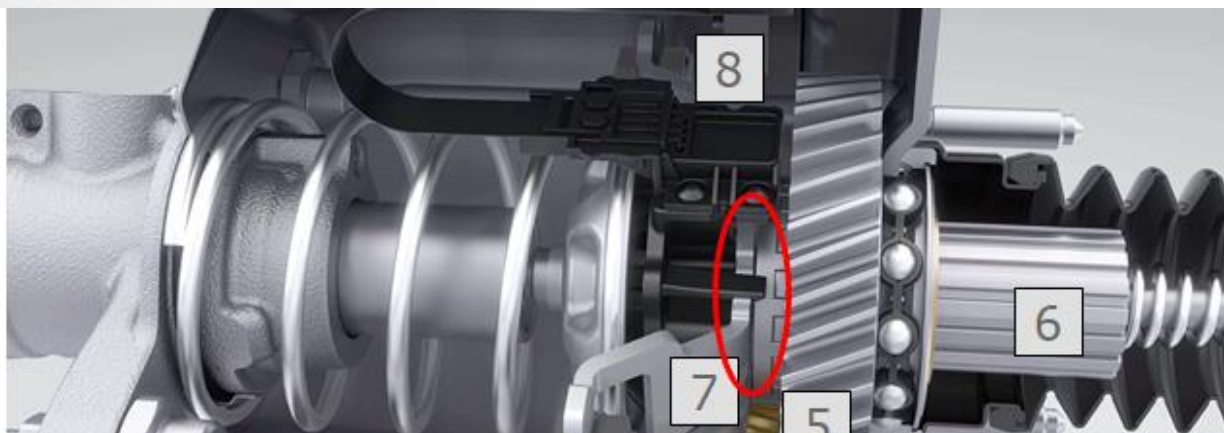
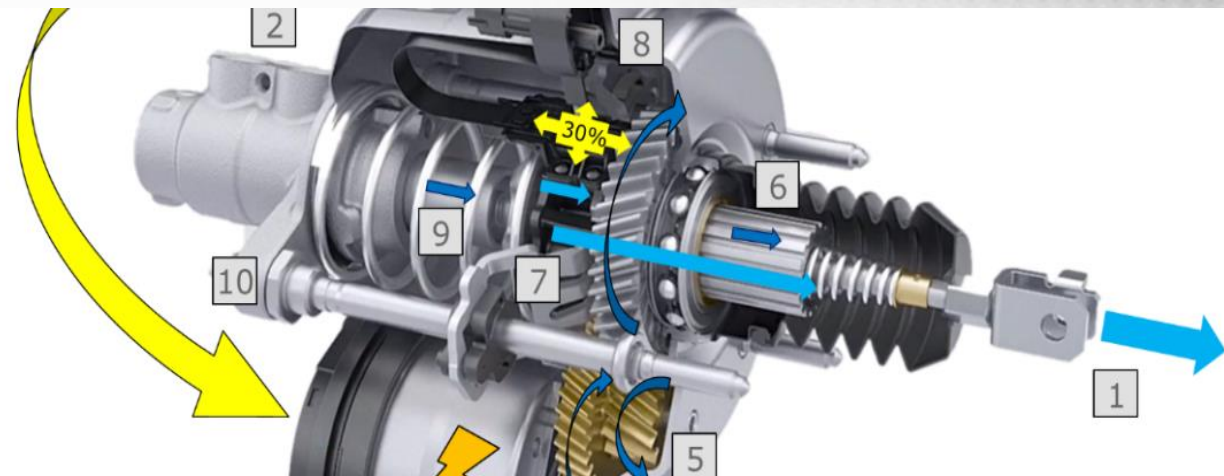
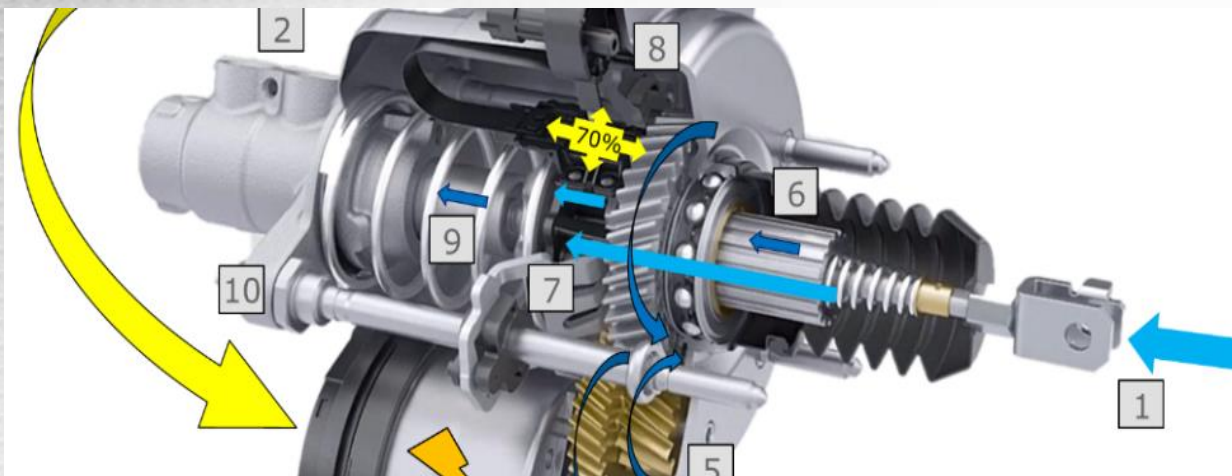
N.	Nome del componente:
1	Pedale del freno
2	Unità Booster
3	Alimentazione di riserva
4	Convertitore DC/DC
5	Batteria 12V
6	Centralina ABS ESP HEV
7	Pinze e dischi freno

Struttura interna del servofreno elettronico

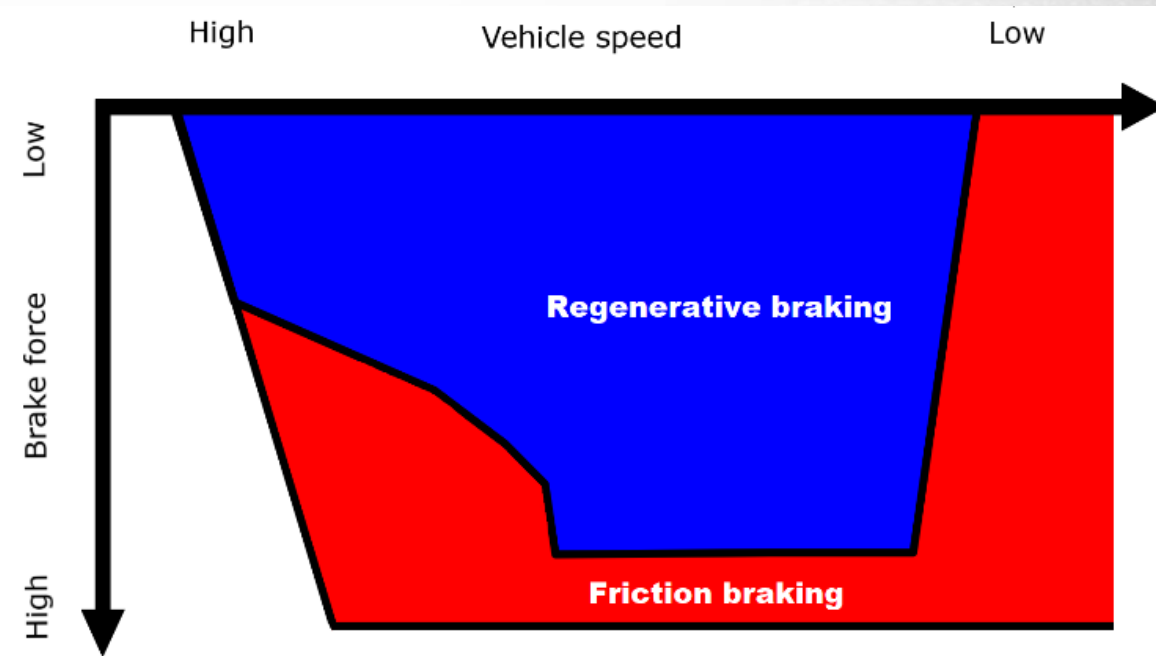
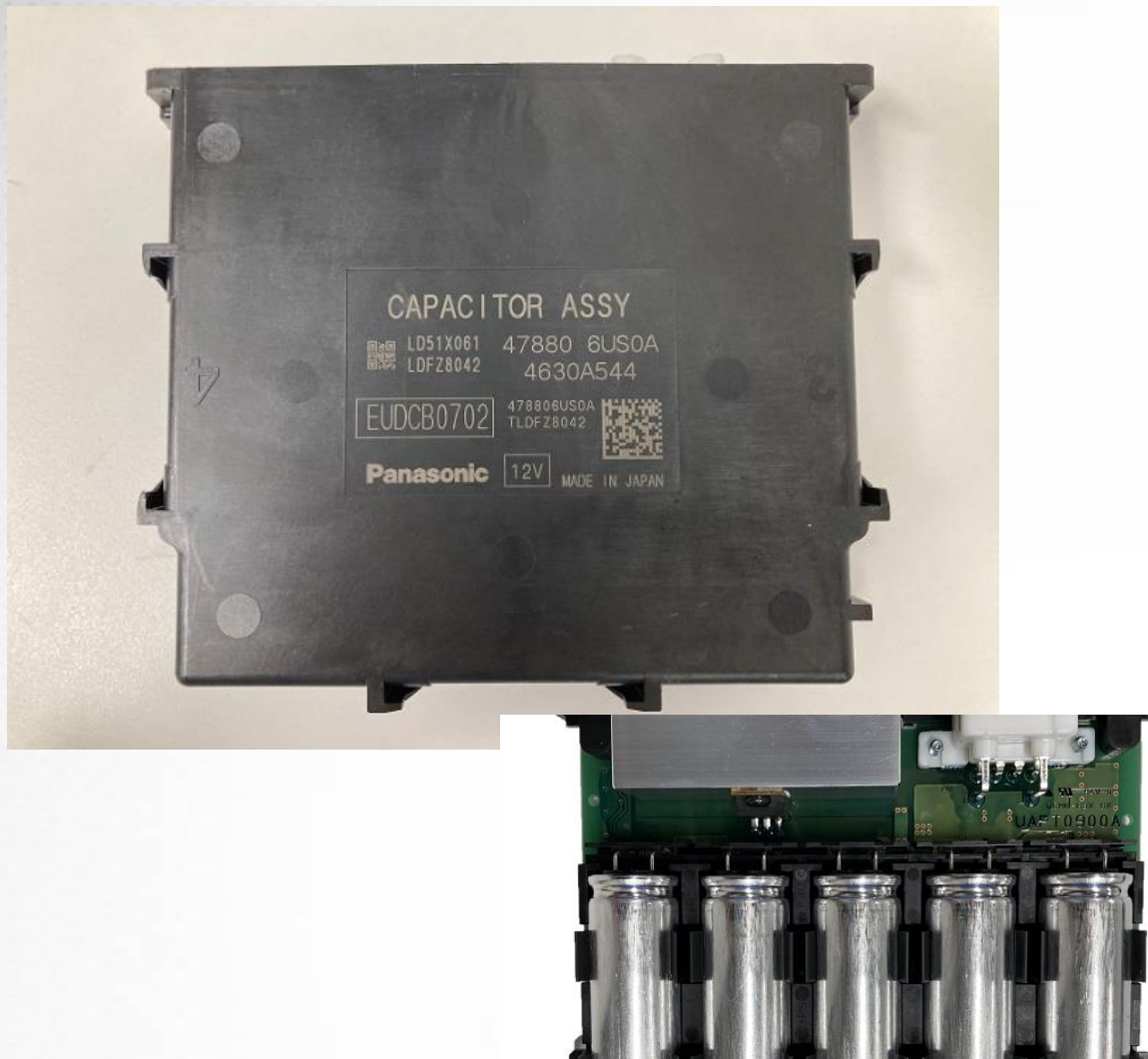


N.	Nome del componente:
1	Pedale del freno
2	Cilindro maestro
3	Unità di controllo elettronico
4	Motore elettrico
5	Riduttore a tre stadi
6	Ingranaggio del mandrino
7	Elemento magnete interno montato sull'albero dell'asta di ingresso
8	Sensore di corsa differenziale
9	Assi meccanici con giochi per il contatto meccanico
10	Perni di guida

Funzionamento del servofreno elettronico



Strategia di intervento e Fail Safe



Grazie per l'attenzione!



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