



SERIES: GR MULTICOUPLINGS

INTERCHANGE: Stucchi internal specification

MAIN APPLICATIONS

- Vehicles
- Mobile construction equipment
- Agricultural equipment
- Drilling rigs
- Industrial equipment

“GR” is the manual multicouplings series that offer a wide range of solutions for any application requiring connection and disconnection of several hydraulic, electrical and pneumatic lines.

Up to ten lines can be simultaneously connected and disconnected by a safe, simple and quick movement requiring low effort. The lines can all have the same size or each line can be different from the others according to the application.



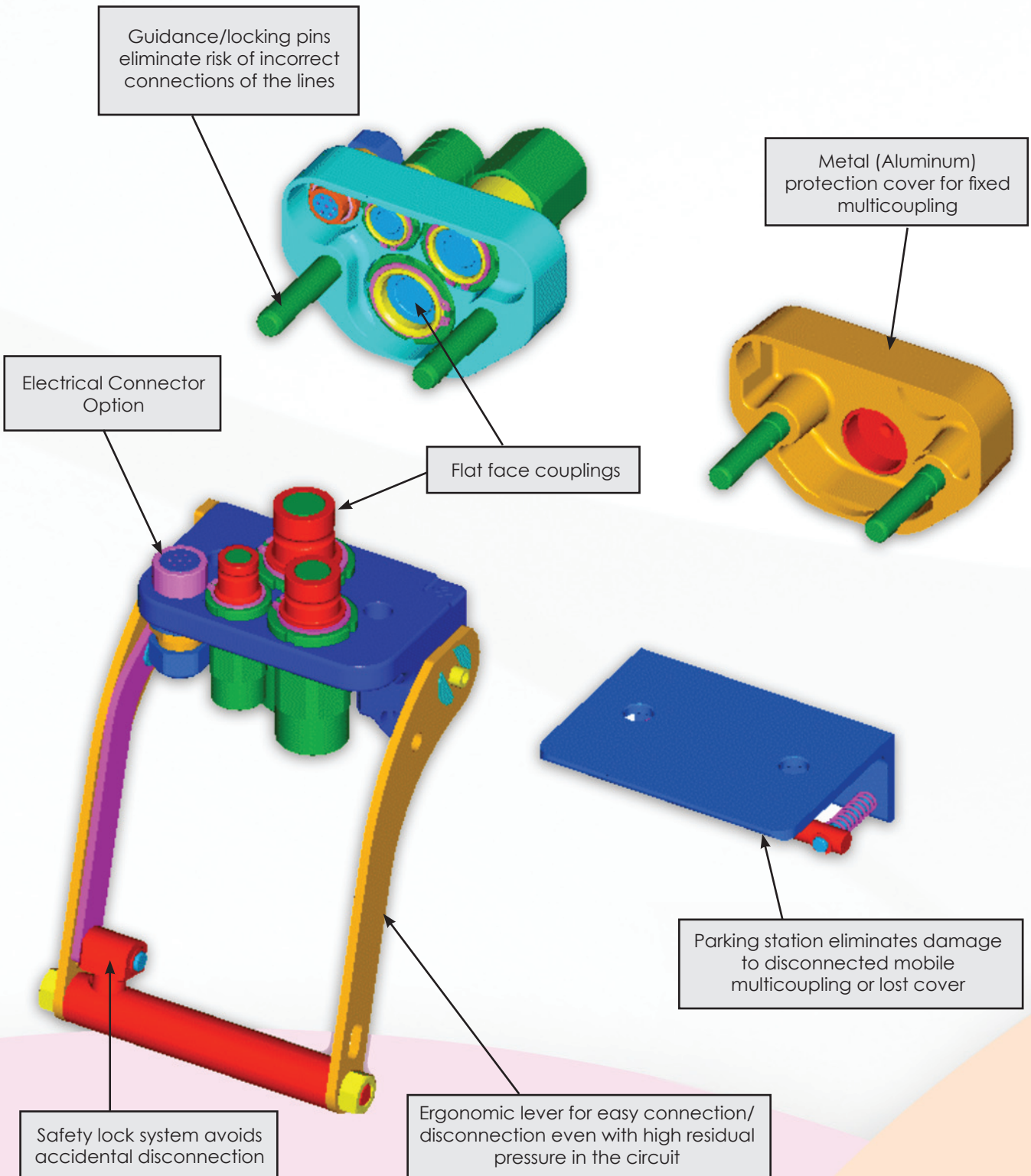
Stucchi[®]

A CONSTANT FLOW OF SOLUTIONS

SERIES: GR MULTICOUPLINGS

TECHNICAL FEATURES AND OPTIONS

- Interchangeability: Stucchi internal specification
- Mechanical connection: Internal cams and locking pins
- Connection system: Rotating the lever
- Disconnection system: Rotating the lever
- Construction material and surface treatment: Body plates in brass nickel plated. Cams and pins in high resistance carbon steel with nitriding + oxidation (QPQ) treatment. Others components in carbon steel with zinc plating or zinc iron (black) treatment.



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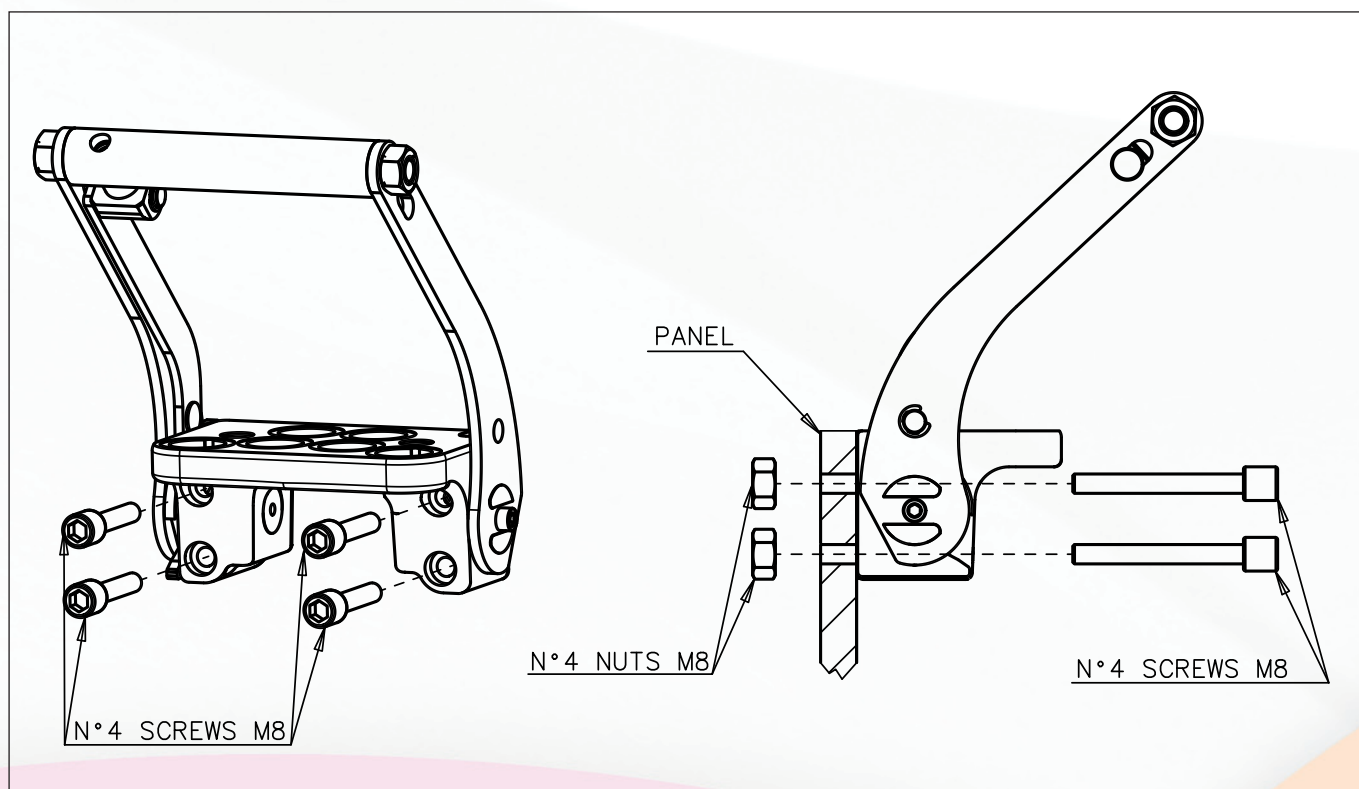
BENEFITS

- Quick connection and disconnection of up to ten hydraulic, electrical and pneumatic lines without any risk to incorrect connection of the lines.
- Flat face couplings: Easy to clean avoiding contamination of circuit. No fluid loss to the environment.
- Couplings mounted on the plates with threaded sleeves or seeger/snap rings for easy installation or replacement.
- Using FAP couplings with triple valve system, it is possible connect and disconnect with high residual pressure in the circuit.
- Singles female couplings can be connected manually to the male couplings on the fixed half. This can be very useful for the connection of auxiliary lines that are not fitted in the mobile half.
- Possibility to fit electrical connector for electronic control system on the equipment.
- Mechanical connection by internal cams and locking pins eliminates brinelling effect on the couplings.
- Safety lock on handle allows a single hand operation.
- Compact design.
- Easy to install also on pre-existent system. Safe and simple to use.

HOW TO USE

INSTALLATION:

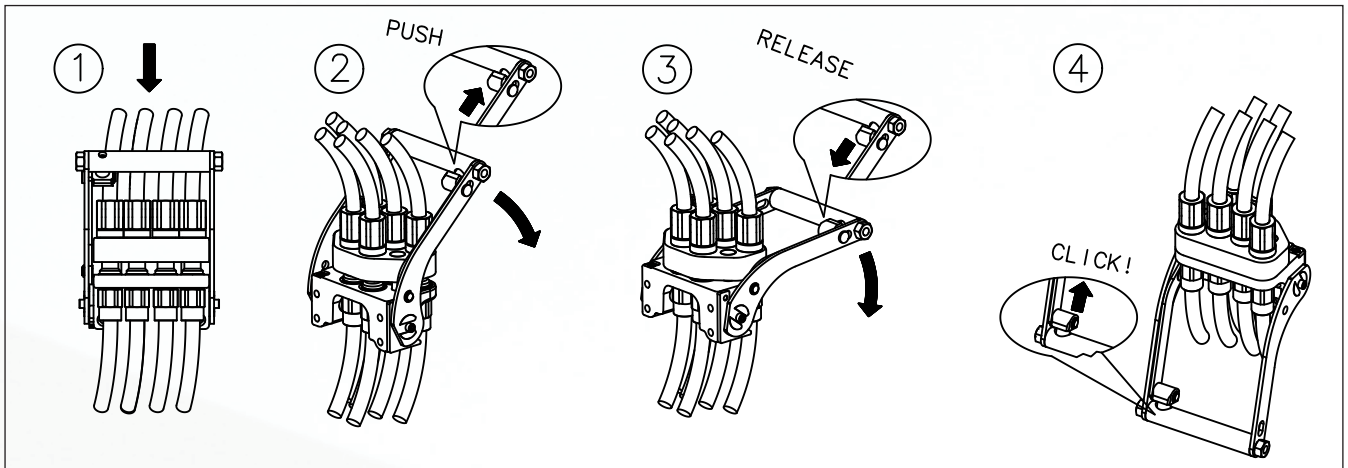
- Fix the fixed multicoupling on the machine using fixing screws as indicated in the drawing here below.
- After having assembled the couplings on the hoses, place them in the holes of the multicouplings and lock them using proper threaded sleeve and/or seeger/snap rings.



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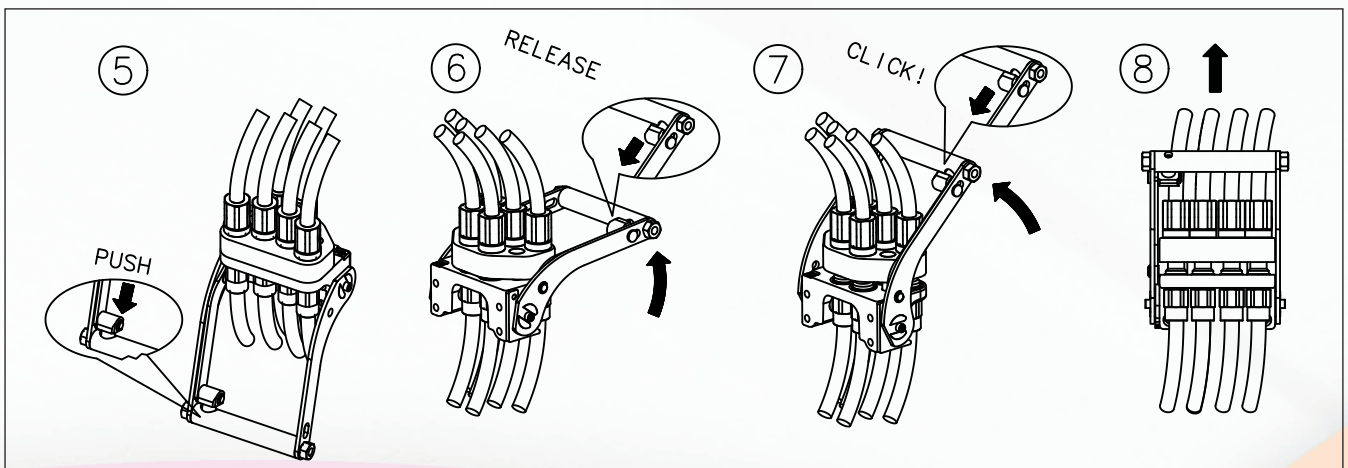
TO CONNECT:

- Before to couple clean the flat mating surface of the couplings to avoid the inclusion of dirty in the circuit.
- Insert the guidance pins of the mobile multicoupling in the holes of the fixed multicoupling and move the mobile half till the contact of the couplings faces (fig. 1).
- Push the red safety button, at the same time acting on the handle turn the lever in the direction of the fixed multicoupling (fig. 2).
- After a short rotation release the red button (fig. 3).
- Continue to rotate till the safety lock automatically engage itself (fig. 4).
- Now the multicoupling is coupled and ready to work.
- In case of connection with residual pressure in the circuit, the maximum force is required only for the last third of the connection.



TO DISCONNECT:

- Push the red safety button, at the same time acting on the handle turn the lever in the direction of the mobile multicoupling (fig. 5).
- After a short rotation release the red button (fig. 6).
- Continue to rotate till the safety lock automatically engage itself (fig. 7).
- Now the multicoupling is uncoupled and it is possible to pull out the mobile half (fig. 8).
- When the fixed multicoupling is mounted upside down, the mobile multicoupling must be supported in order to avoid it fall down causing damage.
- In case of disconnection with residual pressure in the circuit, the maximum force is required only for the first third of the disconnection.



WARNING !

- Do not force the lever without pushing the red safety button.
- Do not use extensions or other tools to ease the rotating of the lever.
- Do not connect the fixed half with the mobile half if dirt or other material is between them.
- When the multicoupling is disconnected, it is suggested to use the protection cover for the fixed half and the parking station for the mobile half.

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PERFORMANCE

All the Stucchi multicouplings have been tested at their maximum resistance by impulse pressure test. The maximum resistance (N) for each multicoupling model, is indicated in the data sheets below.

The force applied to multicoupling coupled, depends on the number of couplings under pressure at the same time, on their operating pressure and on their size.

For a correct use of the multicoupling is necessary to verify that the force is not greater to the maximum resistance of the multicoupling.

$$F = [(P1/4 \times S1/4) + (P3/8 \times S3/8) + (P1/2 \times S1/2) + (P5/8 \times S5/8) + (P3/4 \times S3/4) + (P1 \times S1)] \times 9.8$$

F = Force applied to multicoupling (N)

P = Total amount of operating pressure coupled in the couplings with same size (bar)

S = Hydrostatic pushing area coupled (cm²)

The operating pressure for a single coupling must not be greater to the maximum operating pressure coupled indicated in table.

Coupling size	Hydrostatic pushing area coupled	Maximum operating pressure coupled for FAP couplings
1/4	S1/4= 0,723 cm ²	42 Mpa (420 bar)
3/8	S3/8= 1,226 cm ²	35 Mpa (350 bar)
1/2	S1/2= 1,893 cm ²	33 Mpa (330 bar)
5/8	S5/8= 2,404 cm ²	33 Mpa (330 bar)
3/4	S3/4= 3,298 cm ²	33 Mpa (330 bar)
1	S1 = 4,335 cm ²	30 Mpa (300 bar)

EXAMPLE:

Max. resistance of GRM6 multicoupling is 23000 N.

To verify if GRM6 multicoupling resists to operating condition of following application:

One line size 3/8 with max. operating pressure coupled of 30 Mpa (300 bar)

One line size 3/8 with max. operating pressure coupled of 15 Mpa (150 bar)

One line size 5/8 with max. operating pressure coupled of 25 Mpa (250 bar)

One line size 5/8 with max. operating pressure coupled of 10 Mpa (100 bar)

One line size 3/4 with max. operating pressure coupled of 20 Mpa (200 bar)

One line size 3/4 with max. operating pressure coupled of 5 Mpa (50 bar)

It is necessary verify that F (force applied to multicoupling) is not greater than max. multicoupling resistance:

$$P_{3/8} = 300 \text{ bar} + 150 \text{ bar} = 450 \text{ bar}$$

$$P_{5/8} = 250 \text{ bar} + 100 \text{ bar} = 350 \text{ bar}$$

$$P_{3/4} = 200 \text{ bar} + 50 \text{ bar} = 250 \text{ bar}$$

$$F = [(P_{3/8} \times S_{3/8}) + (P_{5/8} \times S_{5/8}) + (P_{3/4} \times S_{3/4})] \times 9.8 =$$

$$F = [(450 \times 1,226) + (350 \times 2,404) + (250 \times 3,298)] \times 9.8 =$$

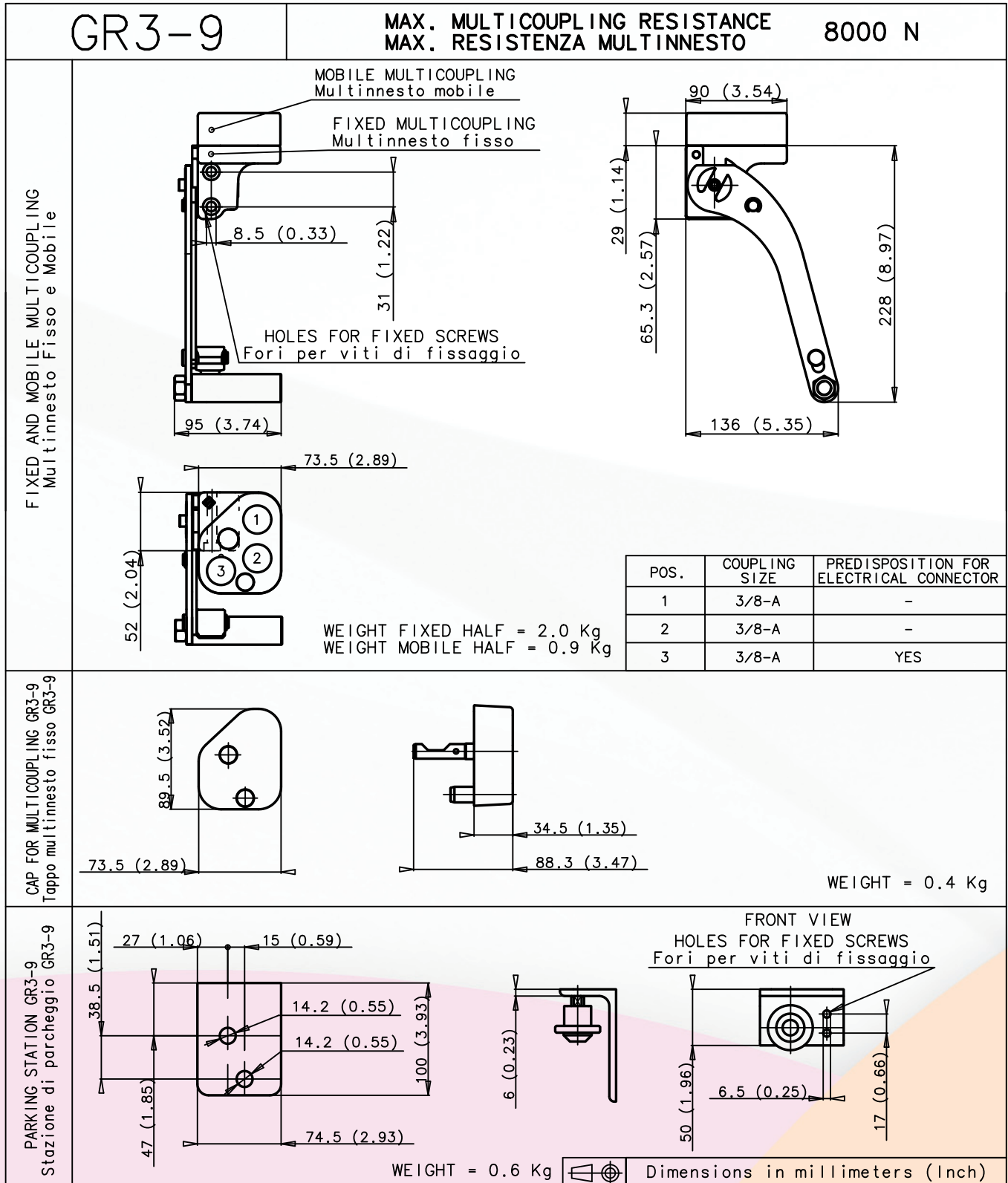
$$F = [551.7 + 841.4 + 824.5] \times 9.8 = 21732 \text{ N}$$

Being F (21732 N) lower than max. multicoupling resistance (23000 N), the GRM6 multicoupling is suitable for this application.

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GR3-9 MULTICOUPLING

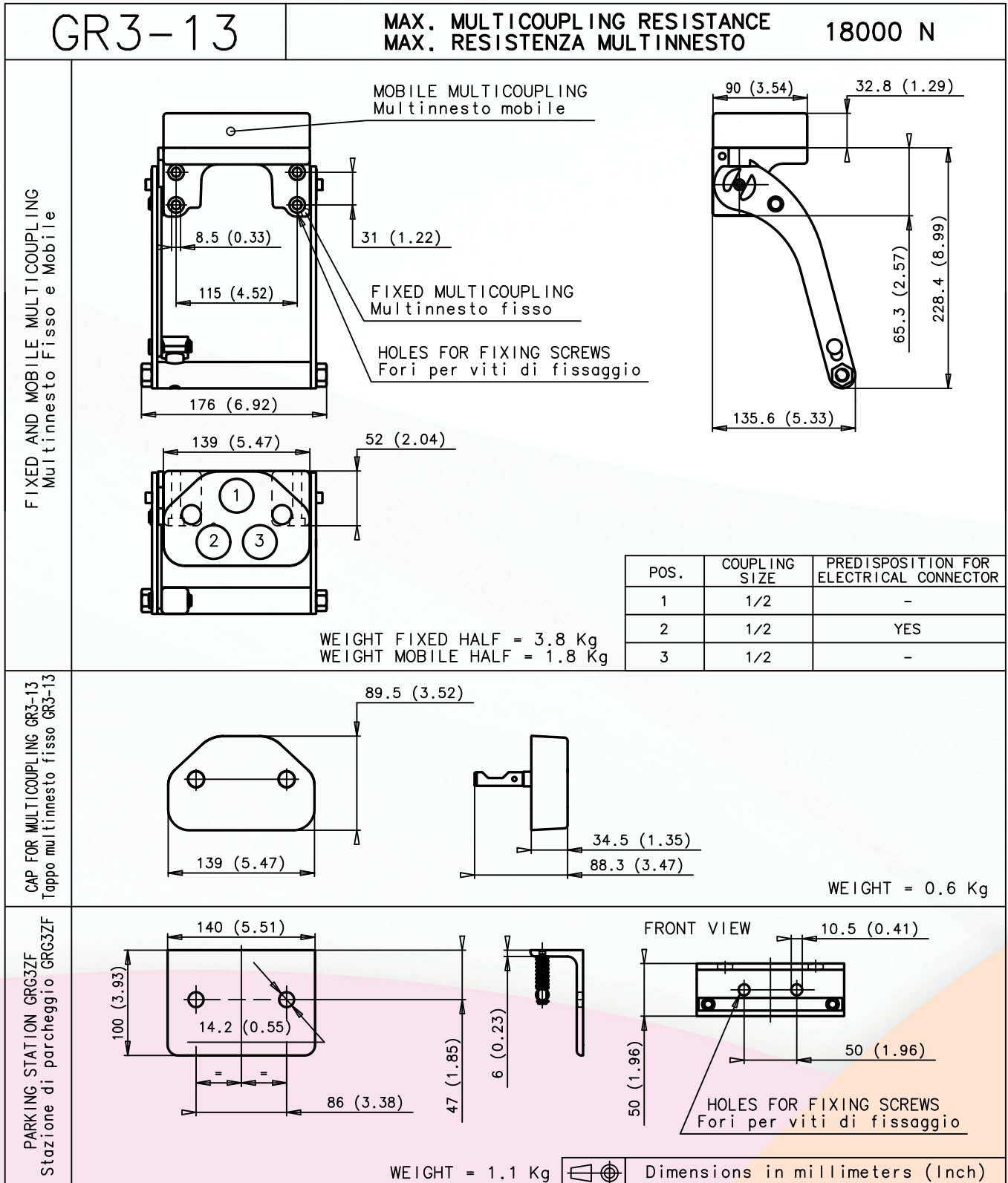
- Three lines size 3/8
- One line predisposed for electrical connector
Female EC..., Male EC...
- On request other line predisposed for electrical connector



SERIES: GR MULTICOUPLINGS

GR3-13 MULTICOUPLING

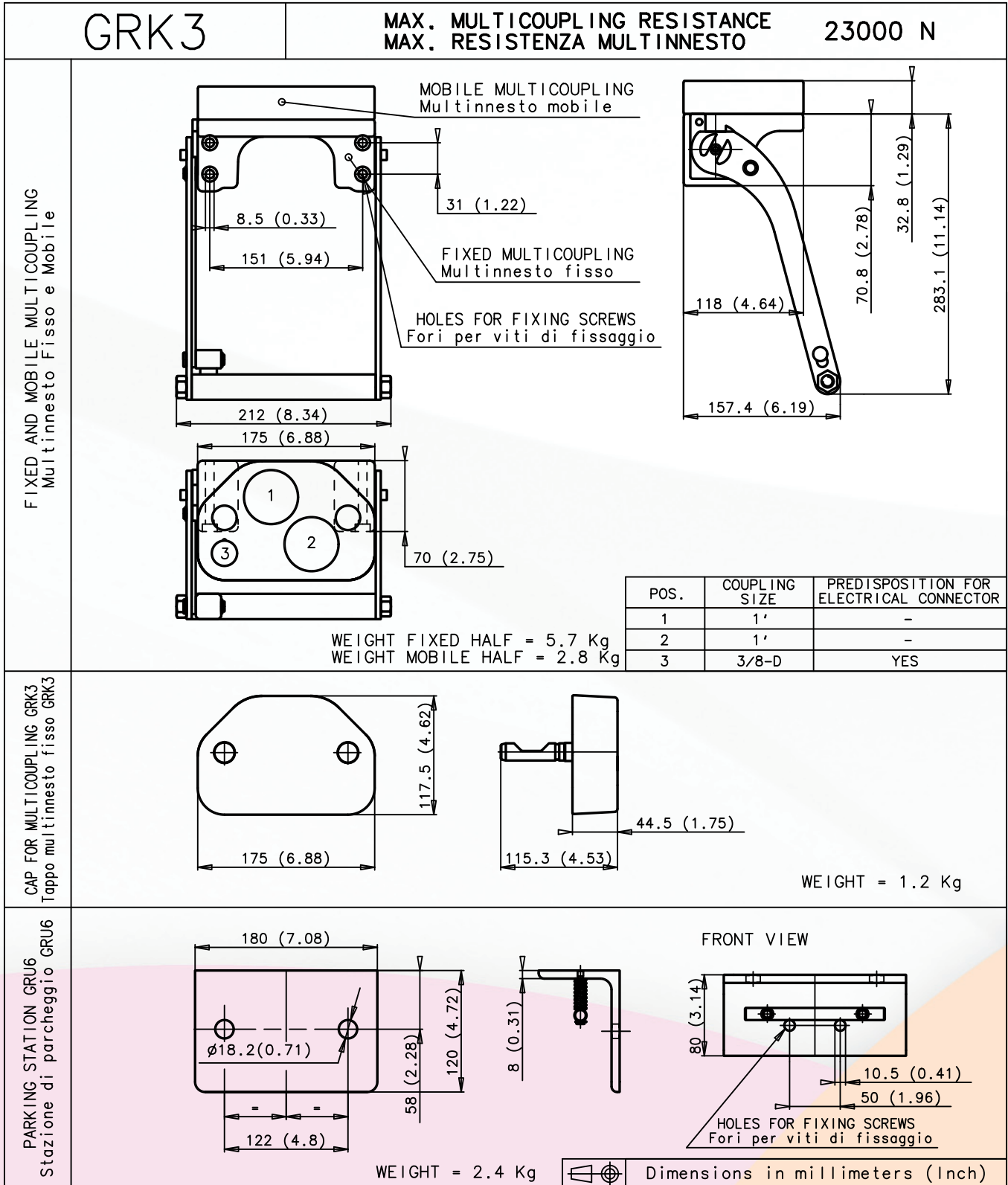
- Three lines size 1/2
- One line predisposed for electrical connector
Female EC...-13, Male EC...-13
- On request other line predisposed for electrical connector



SERIES: GR MULTICOUPLINGS

GRK3 MULTICOUPLING

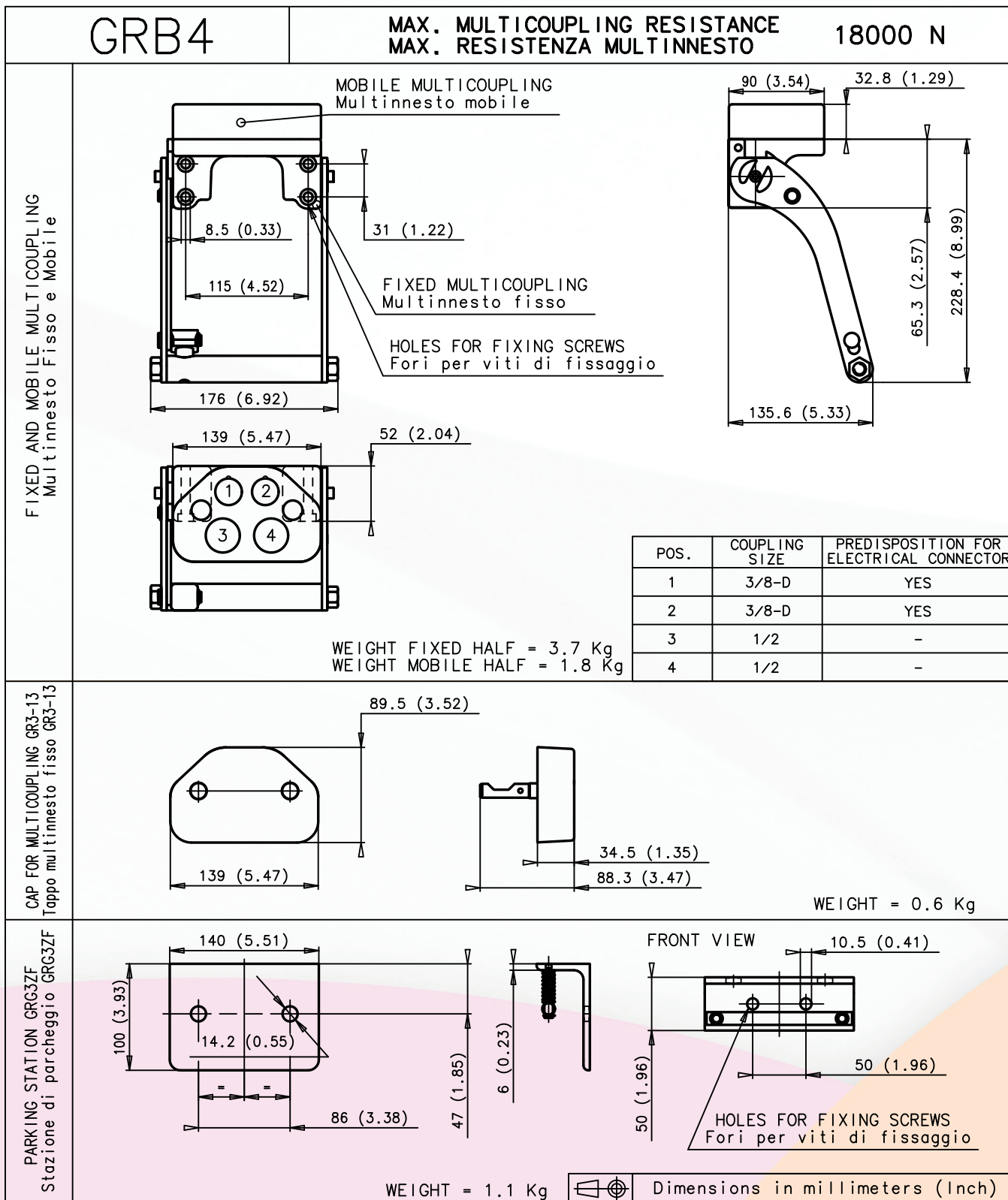
- Two lines size 1
- One line size 3/8
- One line predisposed for electrical connector
Female EC., Male EC..D



SERIES: GR MULTICOUPLINGS

GRB4 MULTICOUPLING

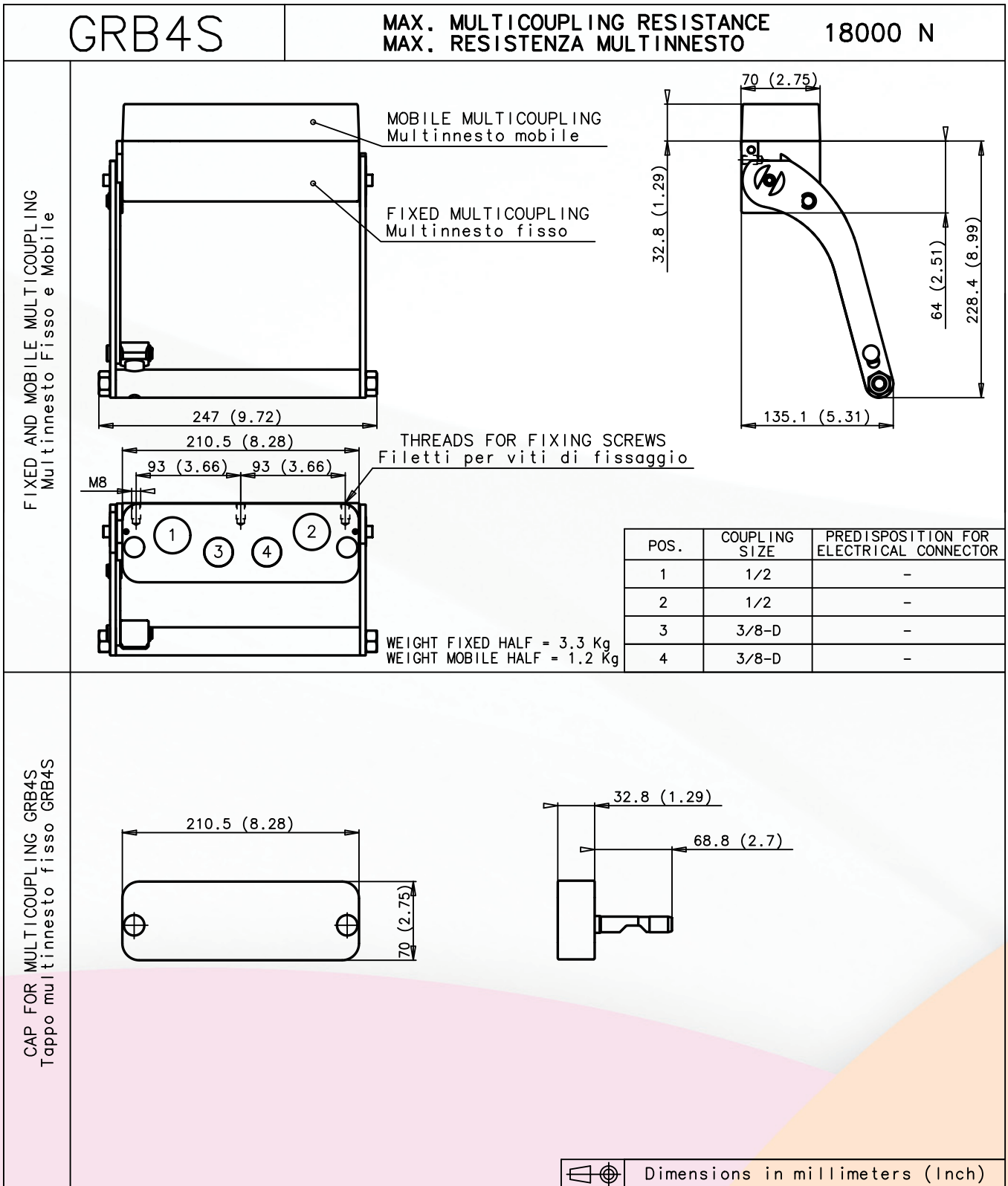
- Two lines size 1/2
- Two lines size 3/8
- Two lines predisposed for electrical connector
Female EC..., Male EC..D



SERIES: GR MULTICOUPLINGS

GRB4S MULTICOUPLING

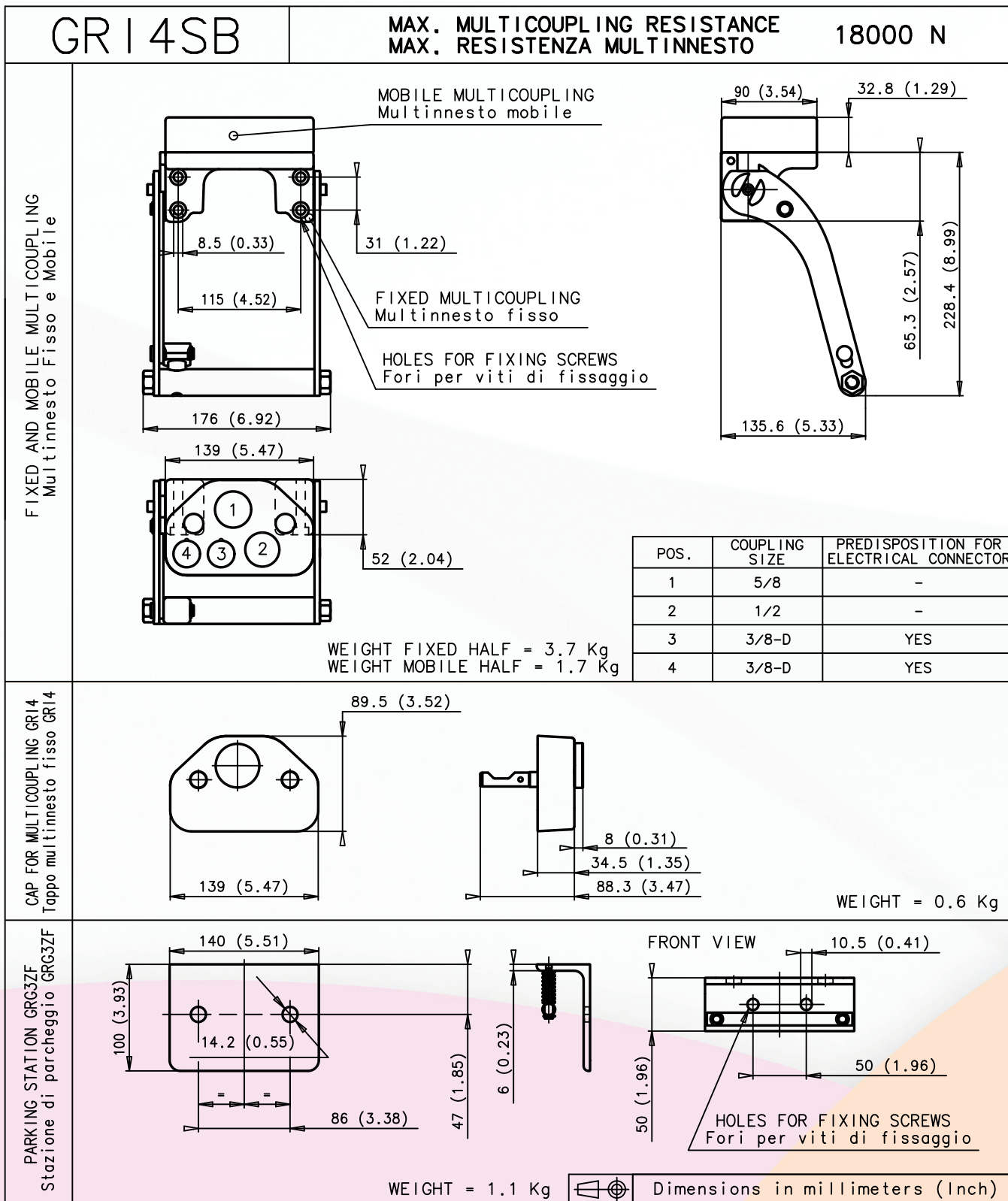
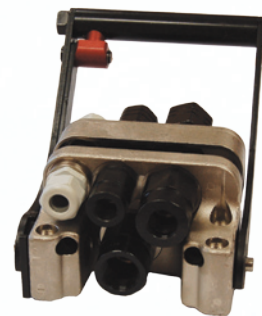
- Two lines size 1/2
- Two lines size 3/8
- On request lines predisposed for electrical connector



SERIES: GR MULTICOUPLINGS

GRI4SB MULTICOUPLING

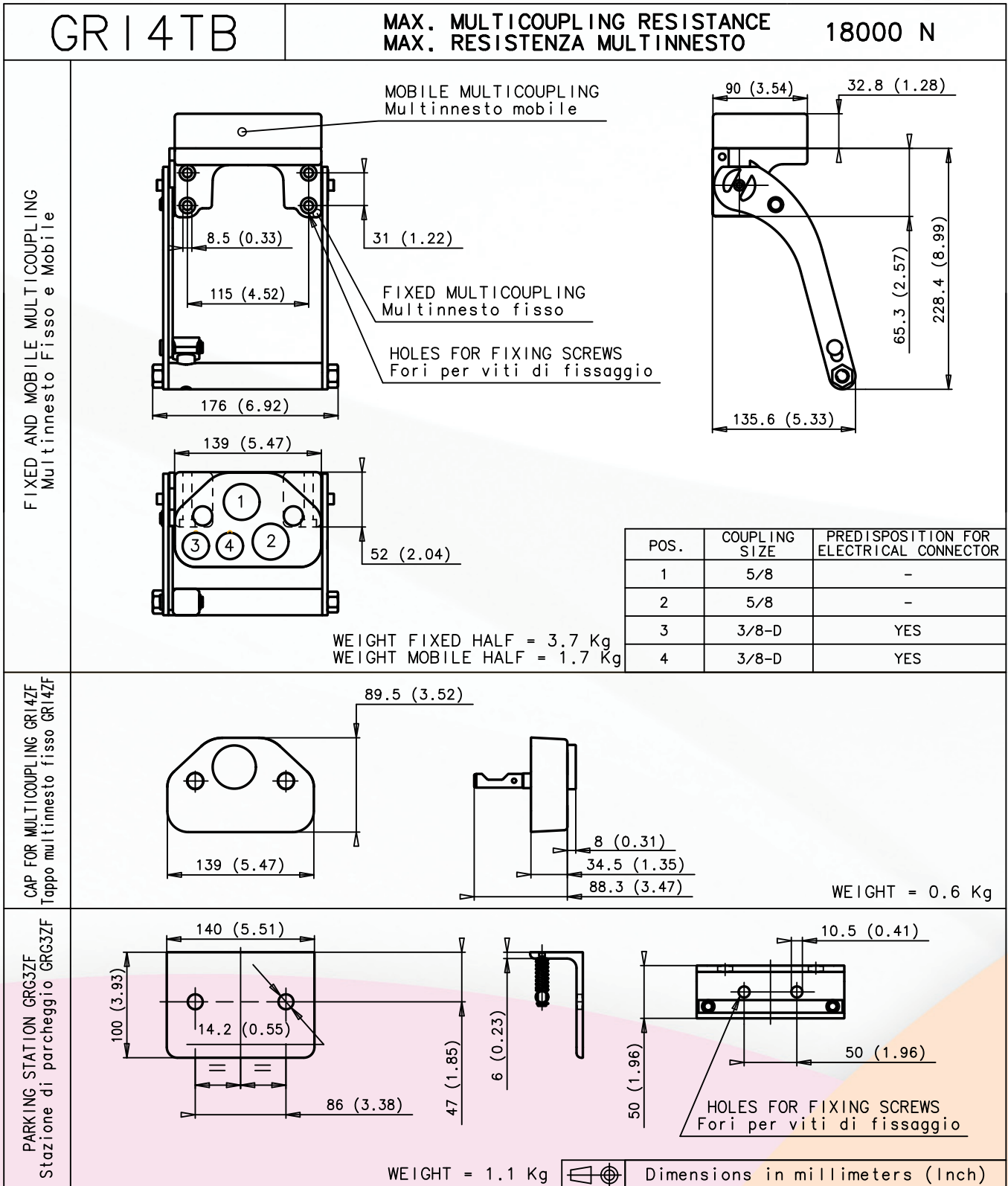
- One line size 5/8
- One line size 1/2
- Two lines size 3/8
- Two lines predisposed for electrical connector
Female EC., Male EC..D



SERIES: GR MULTICOUPLINGS

GRI4TB MULTICOUPLING

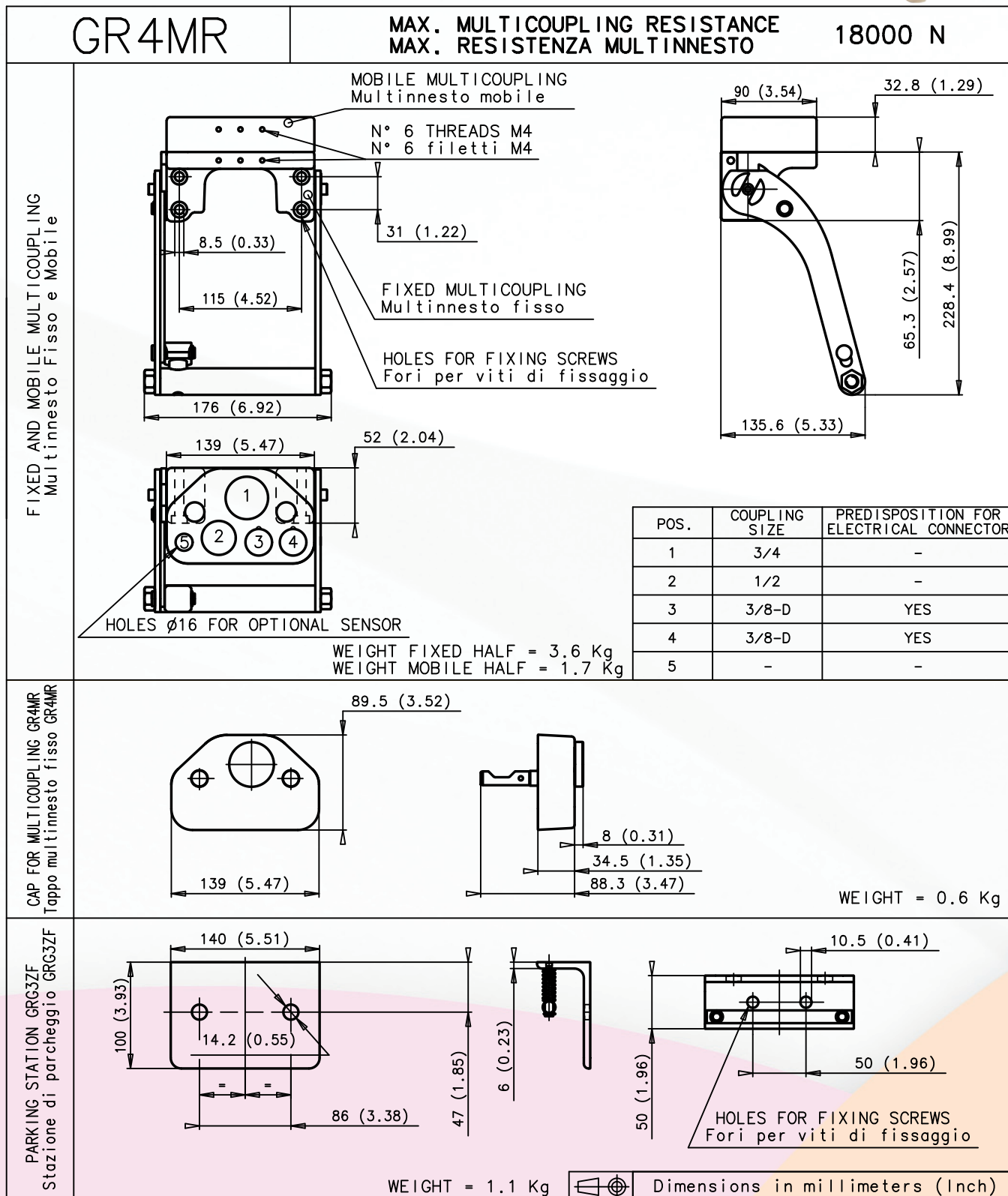
- Two lines size 5/8
- Two lines size 3/8
- Two lines predisposed for electrical connector
Female EC., Male EC..D



SERIES: GR MULTICOUPLINGS

GR4MR MULTICOUPLING

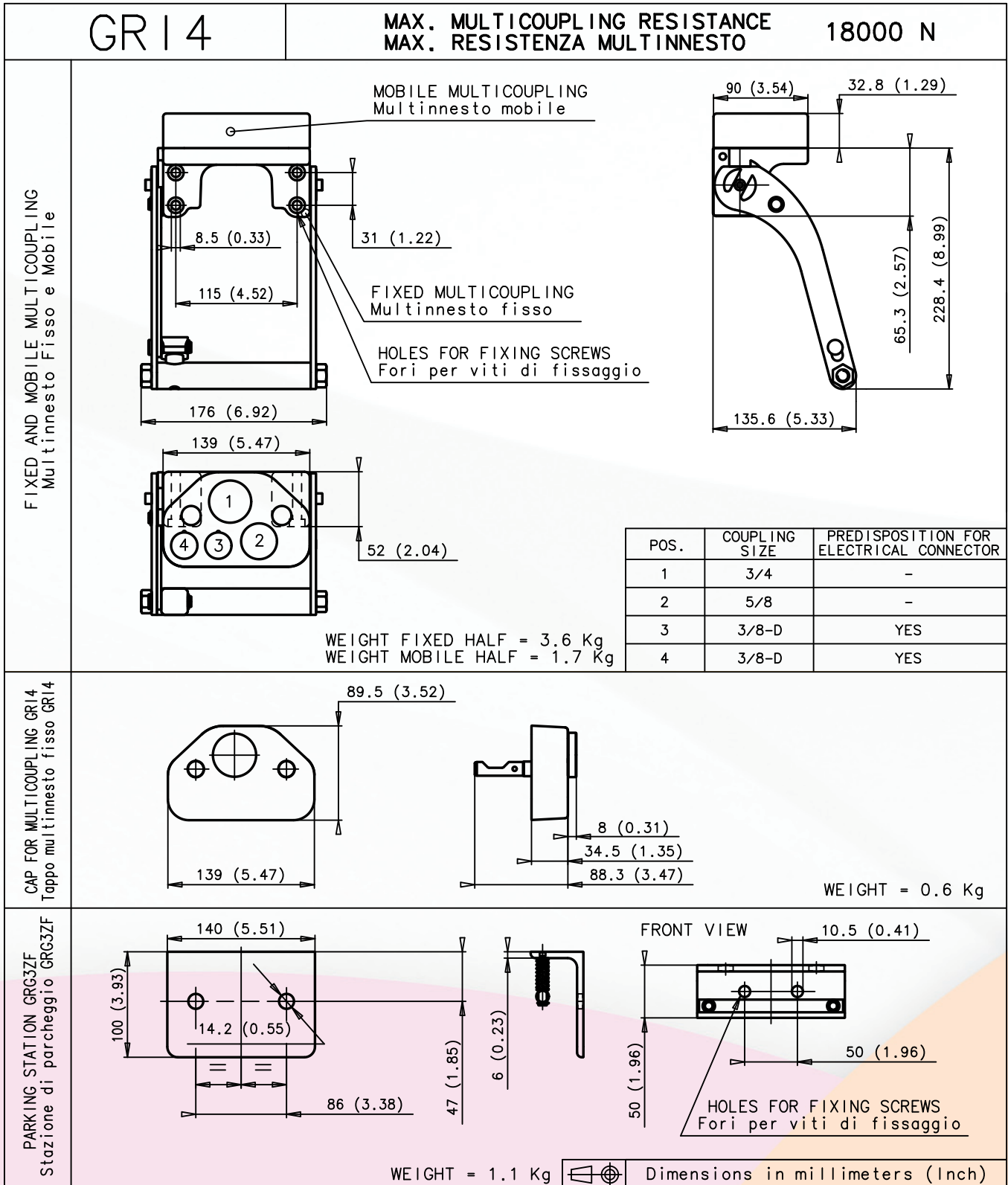
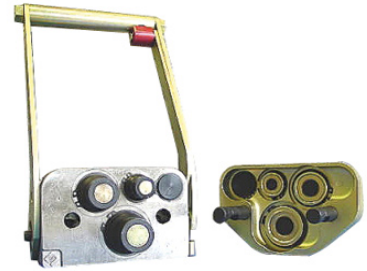
- One line size 3/4
- One line size 1/2
- Two lines size 3/8
- Two lines predisposed for electrical connector
Female EC., Male EC..D
- One hole for optional sensor



SERIES: GR MULTICOUPLINGS

GR14 MULTICOUPLING

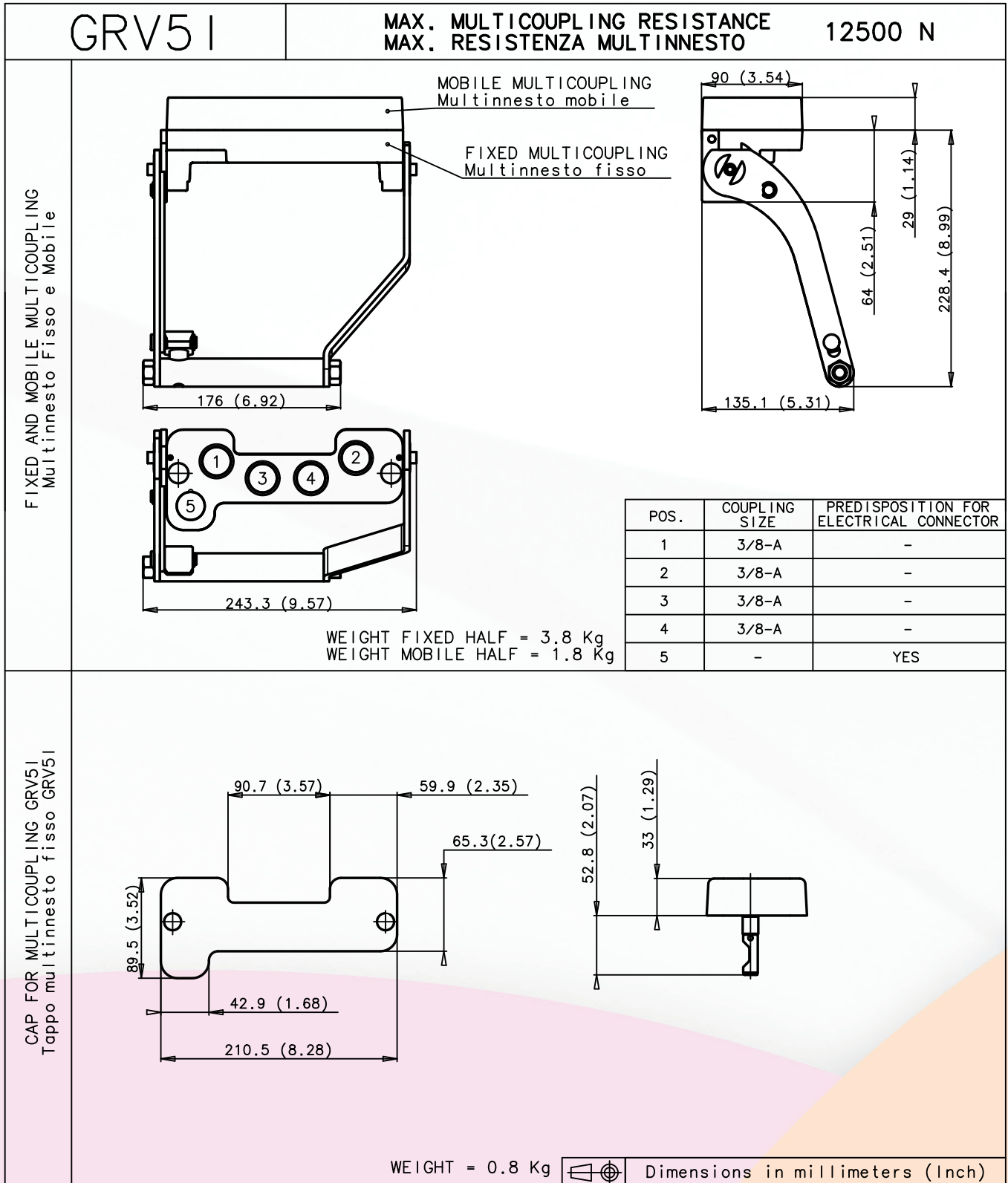
- One line size 3/4
- One line size 5/8
- Two lines size 3/8
- Two lines predisposed for electrical connector
Female EC., Male EC..D



SERIES: GR MULTICOUPLINGS

GRV51 MULTICOUPLING

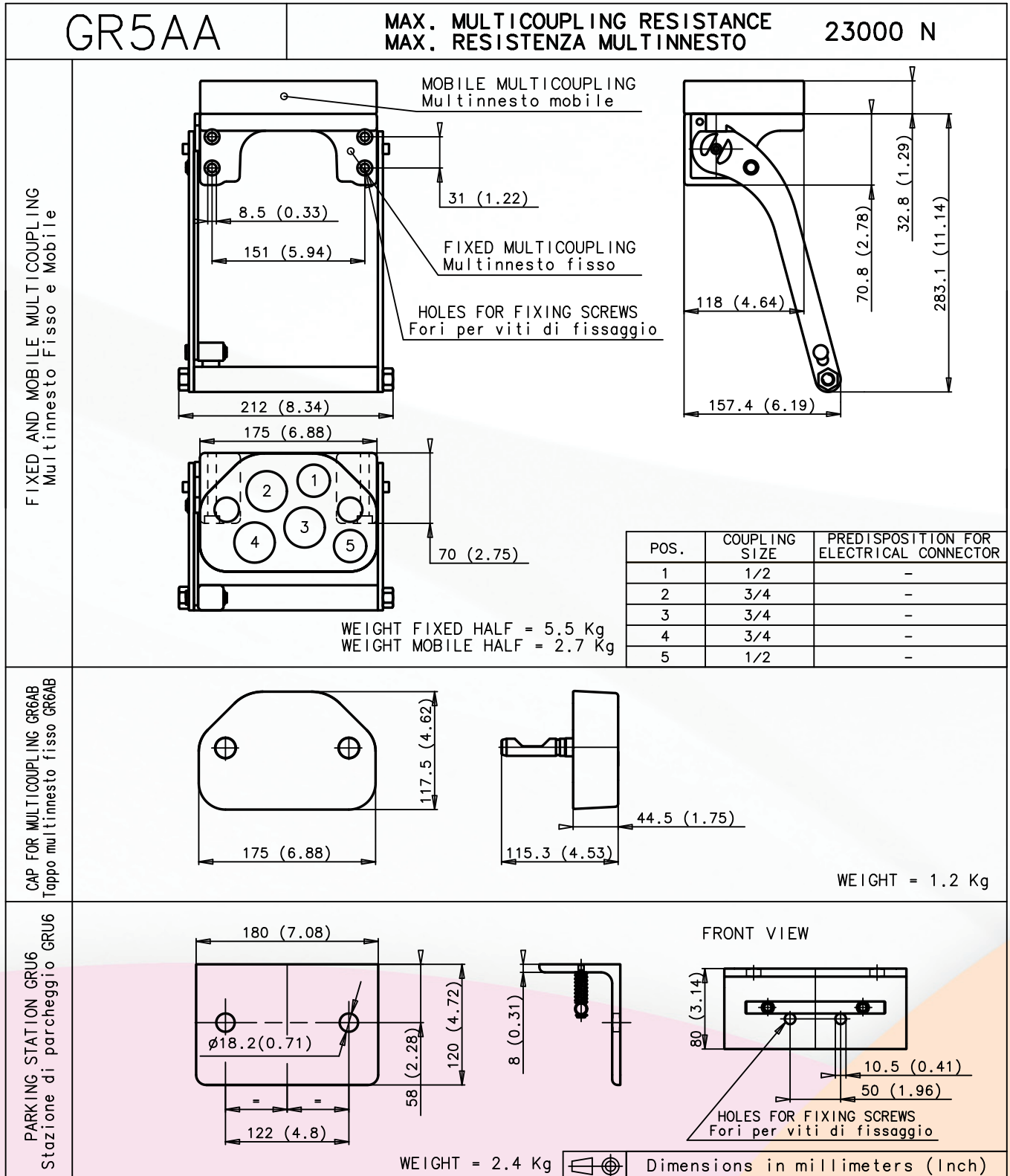
- To assemble directly on distributor valve
Walvoil SDM143/DLM142, Nimco CV452
- Five lines size 3/8
- One line predisposed for electrical connector
Female EC., Male EC..



SERIES: GR MULTICOUPLINGS

GR5AA MULTICOUPLING

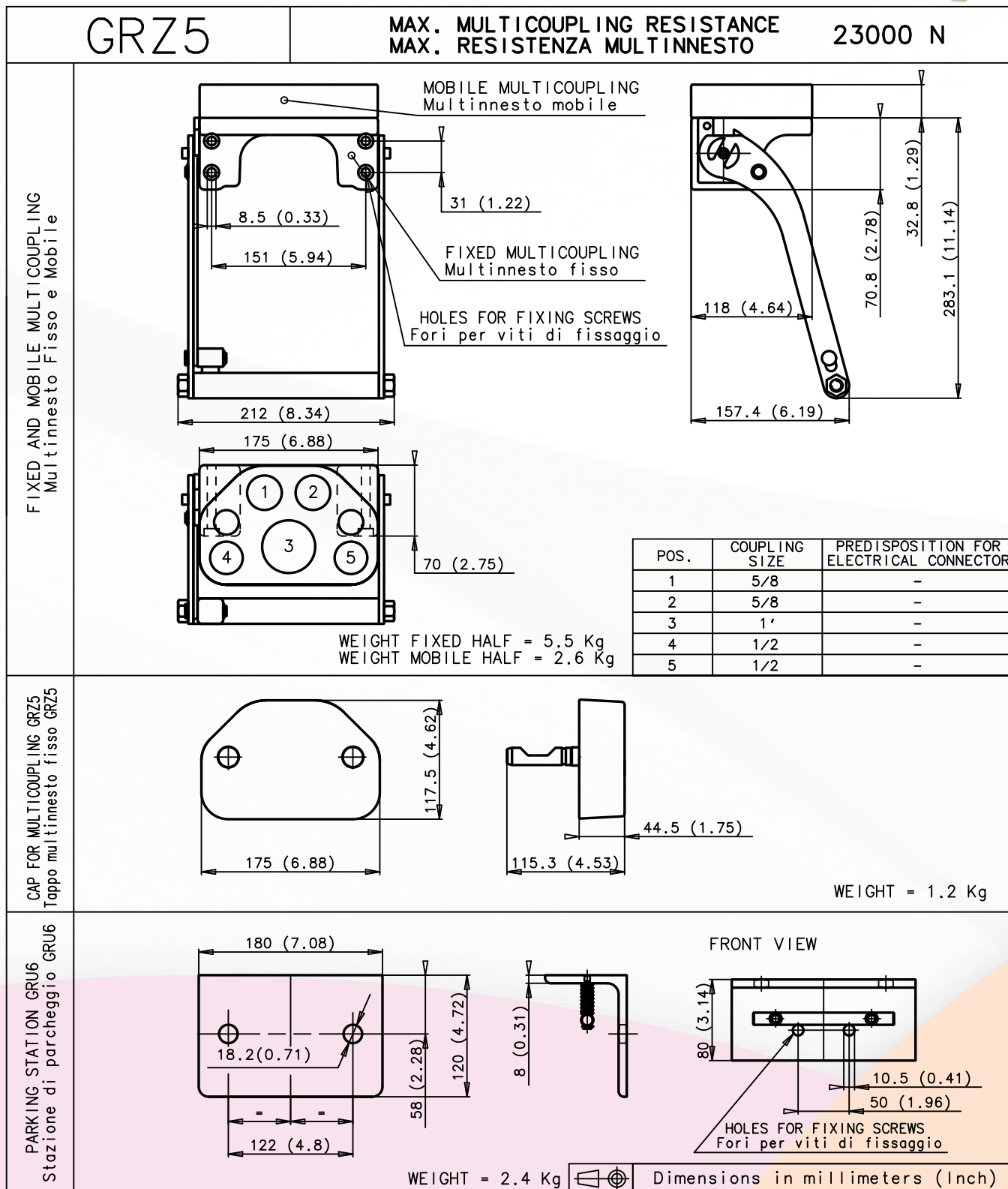
- Three lines size 3/4
- Two lines size 1/2
- On request lines predisposed for electrical connector



SERIES: GR MULTICOUPLINGS

GRZ5 MULTICOUPLING

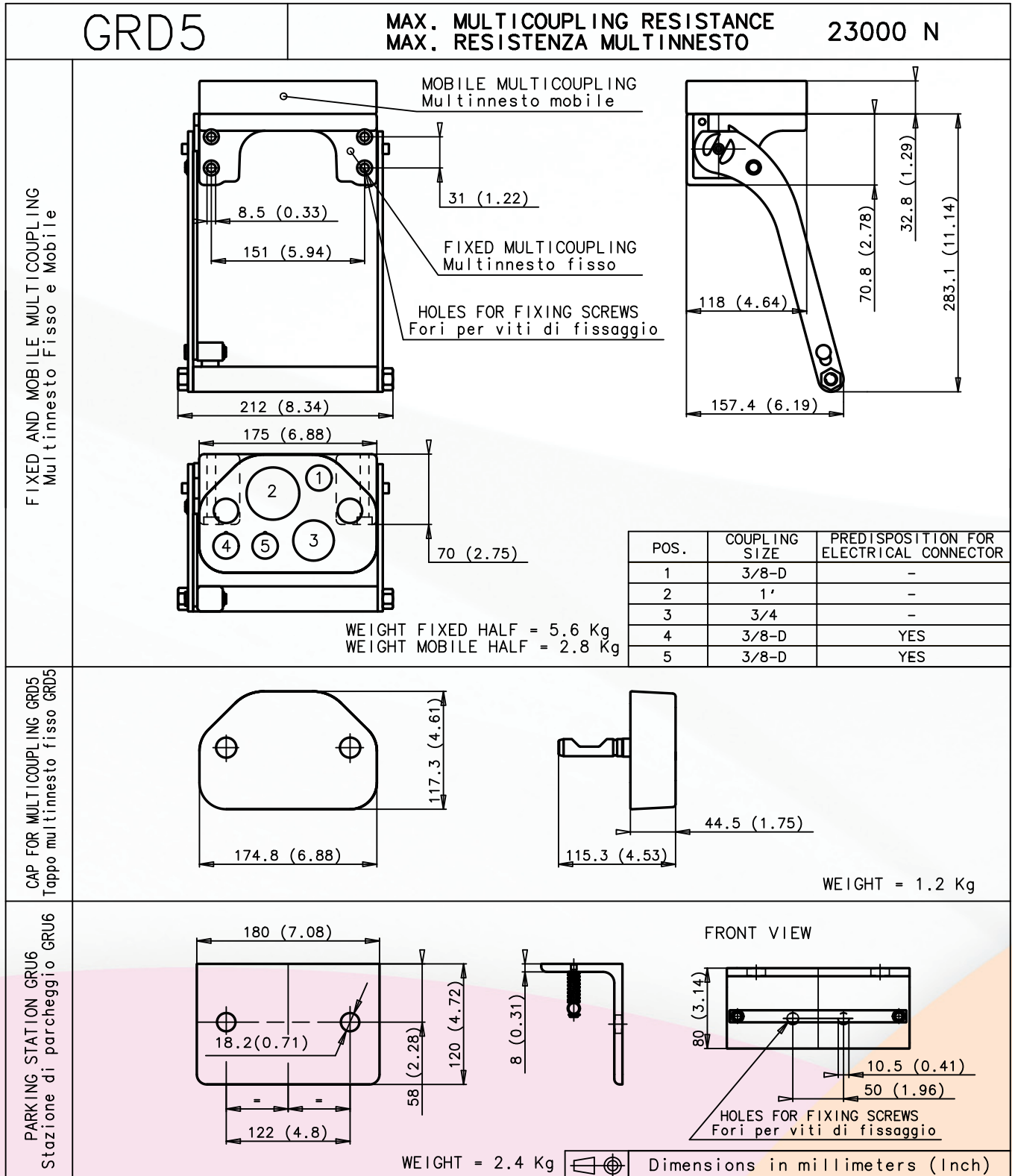
- One line size 1
- Two lines size 5/8
- Two lines size 1/2
- On request lines predisposed for electrical connector



SERIES: GR MULTICOUPLINGS

GRD5 MULTICOUPLING

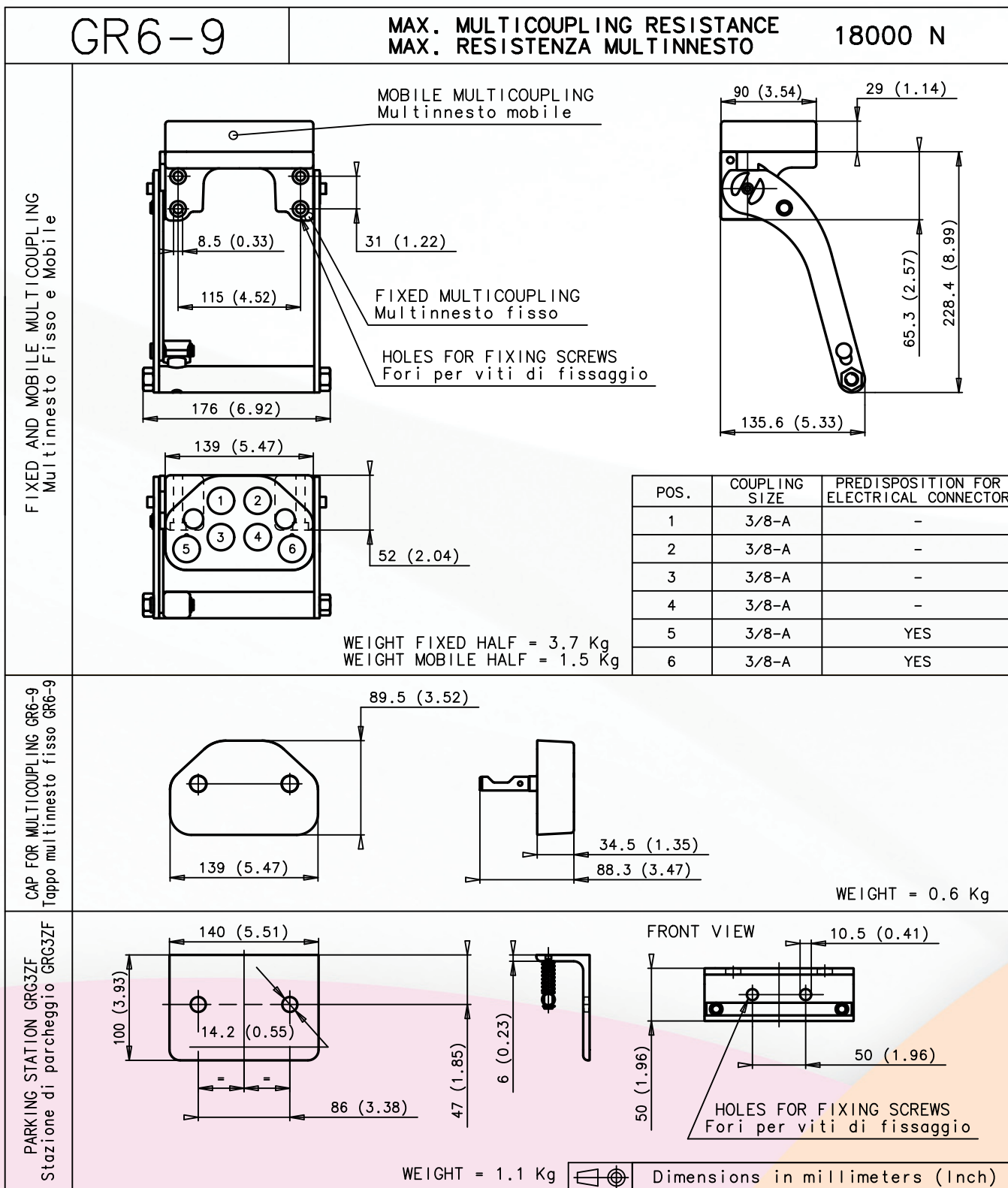
- One line size 1
- One line size 3/4
- Three lines size 3/8
- Two lines predisposed for electrical connector
Female EC., Male EC..D



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GR6-9 MULTICOUPLING

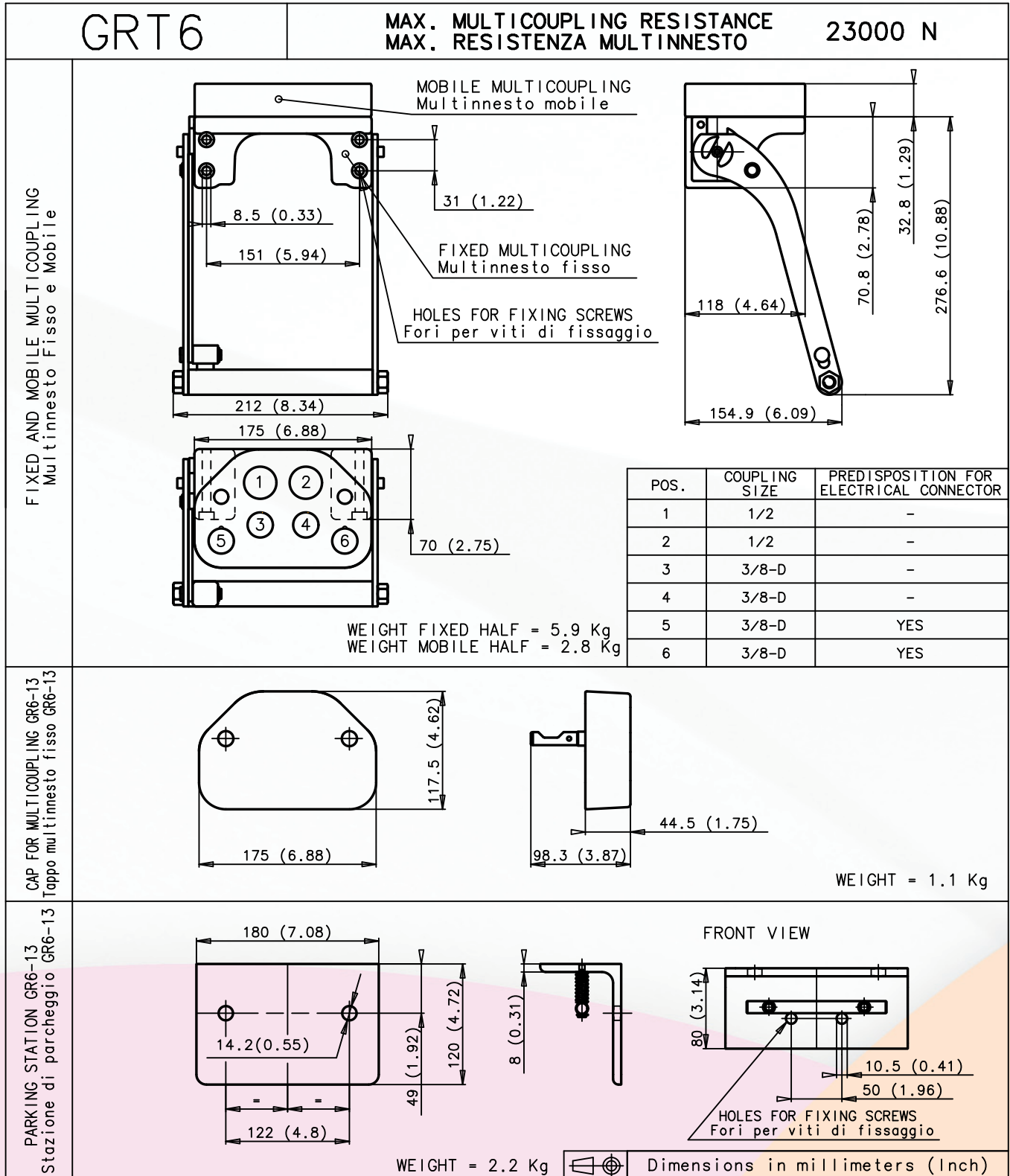
- Six lines size 3/8
- Two lines predisposed for electrical connector
Female EC..., Male EC..
- On request others lines predisposed for electrical connector



SERIES: GR MULTICOUPLINGS

GRT6 MULTICOUPLING

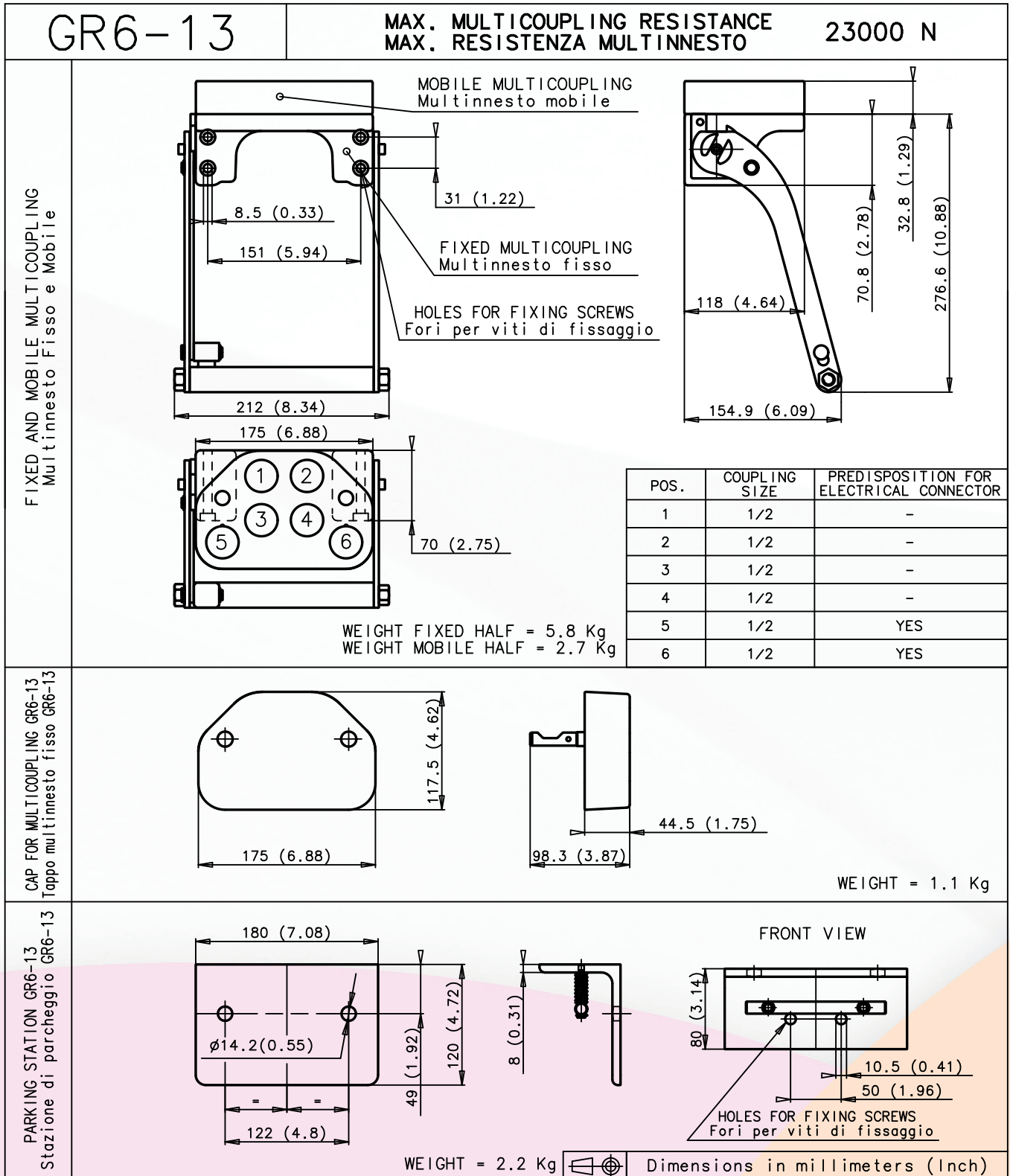
- Two lines size 1/2
- Four lines size 3/8
- Two lines predisposed for electrical connector
Female EC., Male EC..D
- On request others lines predisposed for electrical connector



SERIES: GR MULTICOUPLINGS

GR6-13 MULTICOUPLING

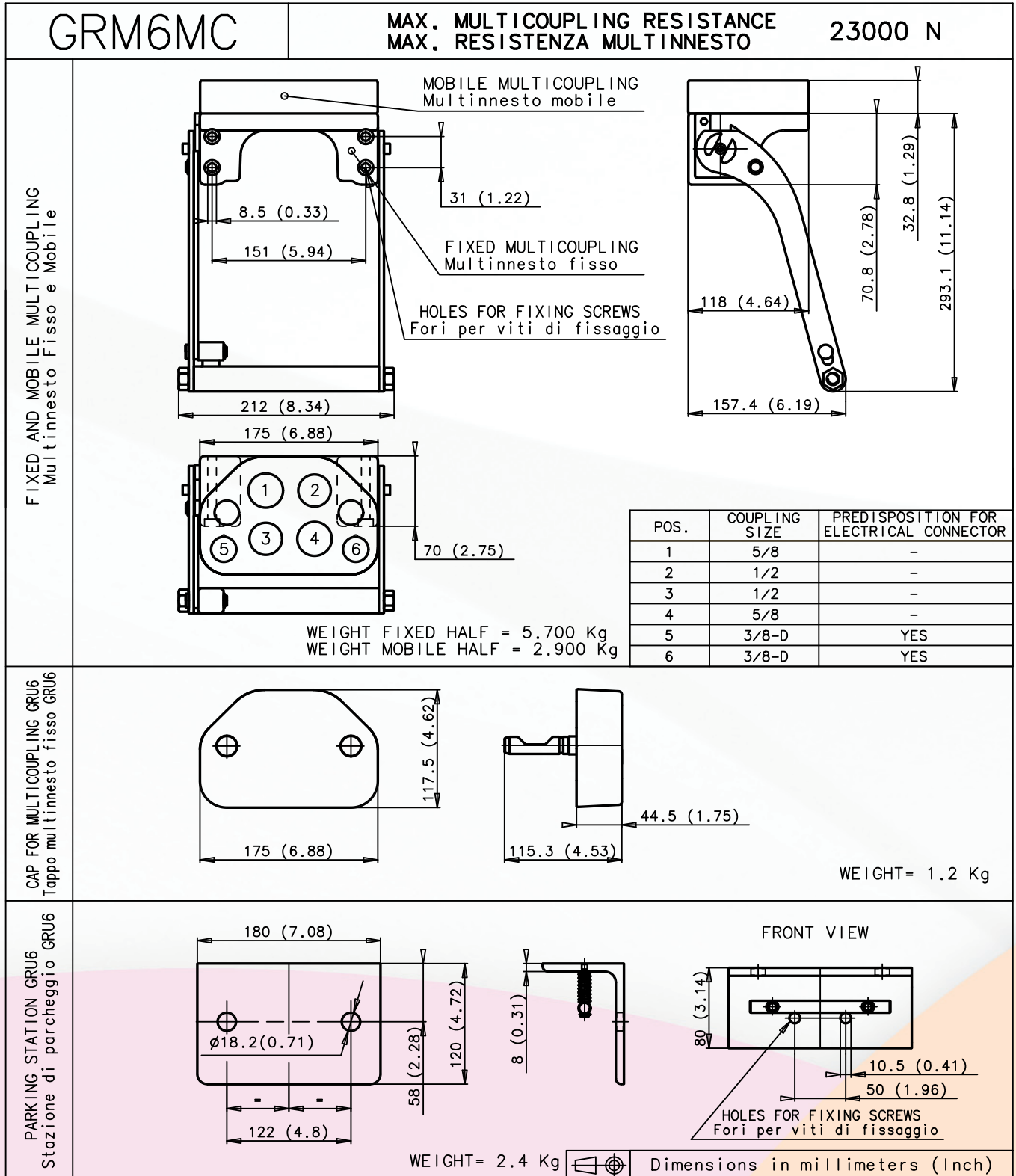
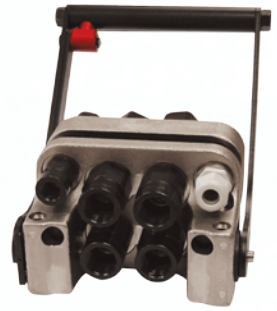
- Six lines size 1/2
- Two lines predisposed for electrical connector
Female EC...-13, Male EC...-13
- On request others lines predisposed for electrical connector



SERIES: GR MULTICOUPLINGS

GRM6MC MULTICOUPLING

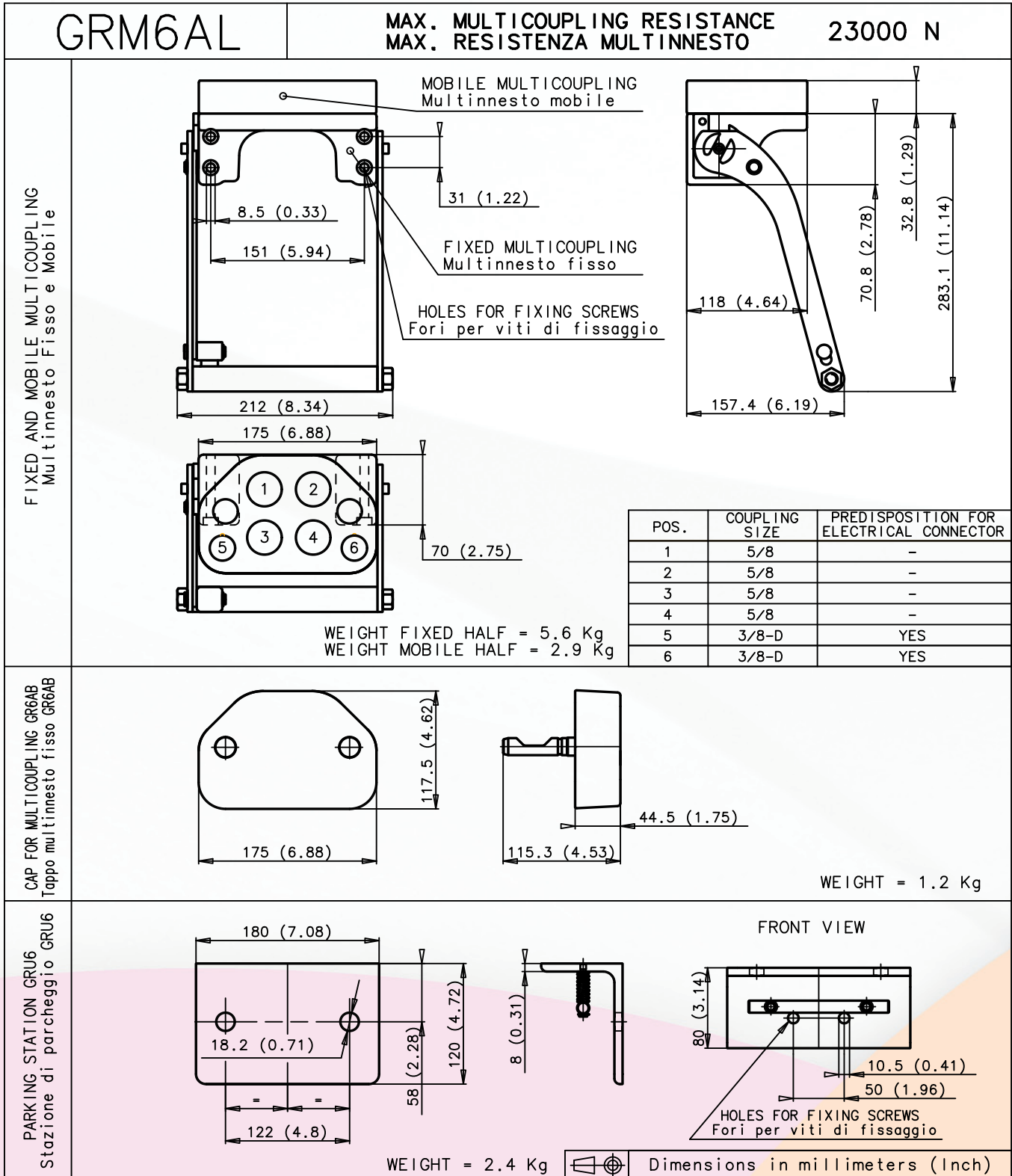
- Two lines size 5/8
- Two lines size 1/2
- Two lines size 3/8
- Two lines predisposed for electrical connector
Female EC., Male EC..D
- On request others lines predisposed for electrical connector



SERIES: GR MULTICOUPLINGS

GRM6AL MULTICOUPLING

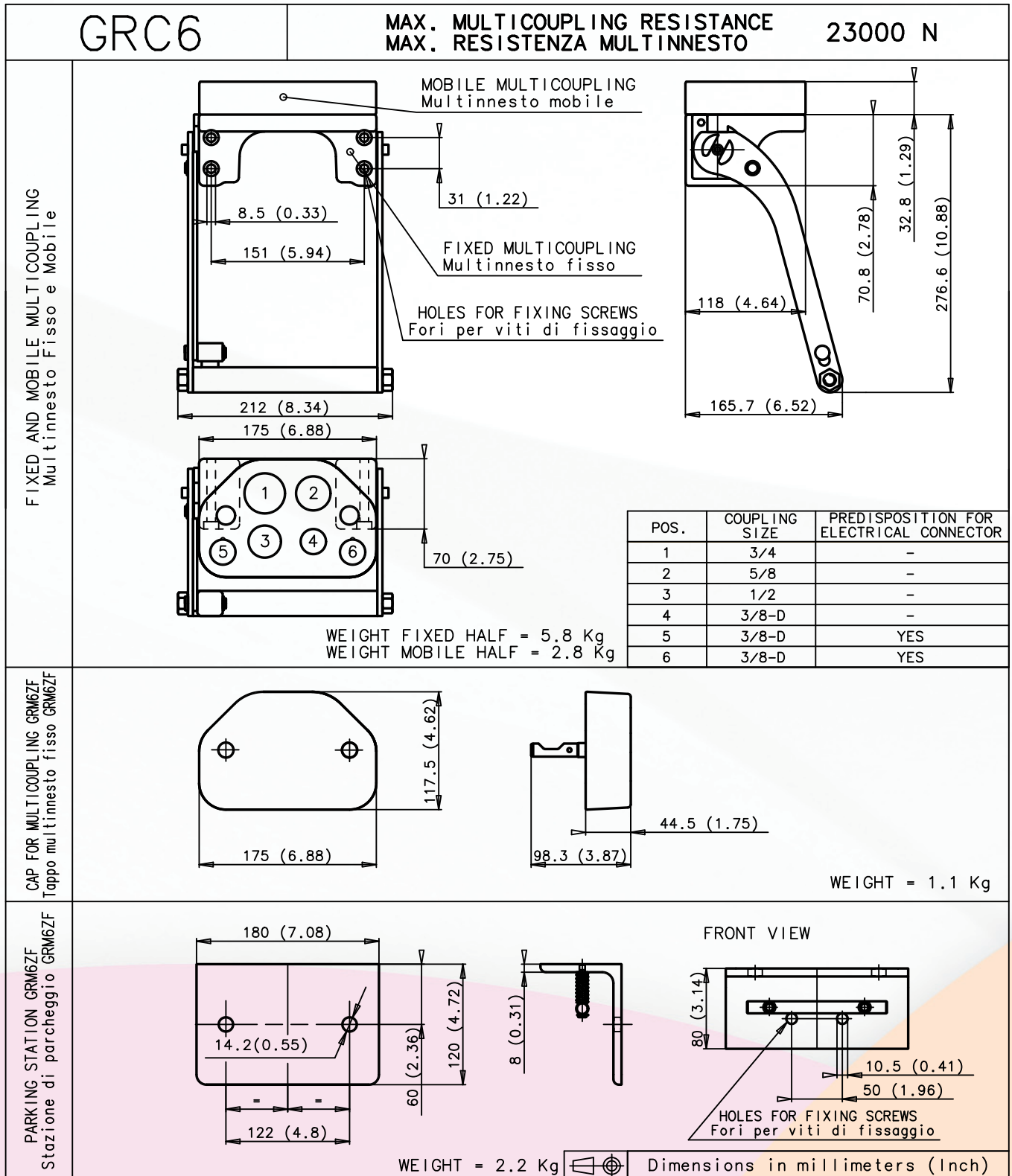
- Four lines size 5/8
- Two lines size 3/8
- Two lines predisposed for electrical connector
Female EC..., Male EC..D



SERIES: GR MULTICOUPLINGS

GRC6 MULTICOUPLING

- One line size 3/4
- One line size 5/8
- One line size 1/2
- Three lines size 3/8
- Two lines predisposed for electrical connector
Female EC..., Male EC..D
- On request others lines predisposed for electrical connector

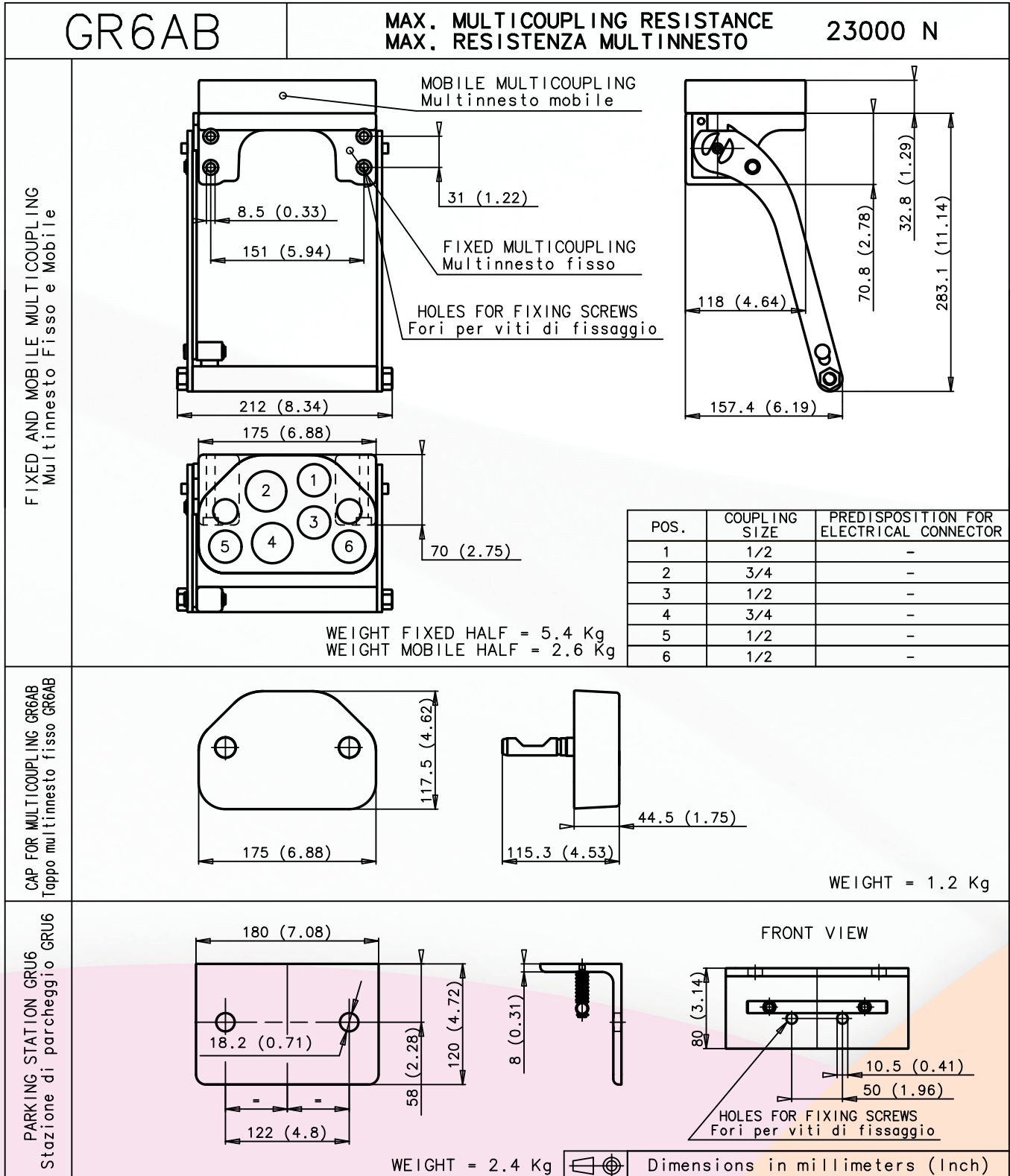


SERIES: GR MULTICOUPLINGS

GR6AB MULTICOUPLING

Two lines size 3/4

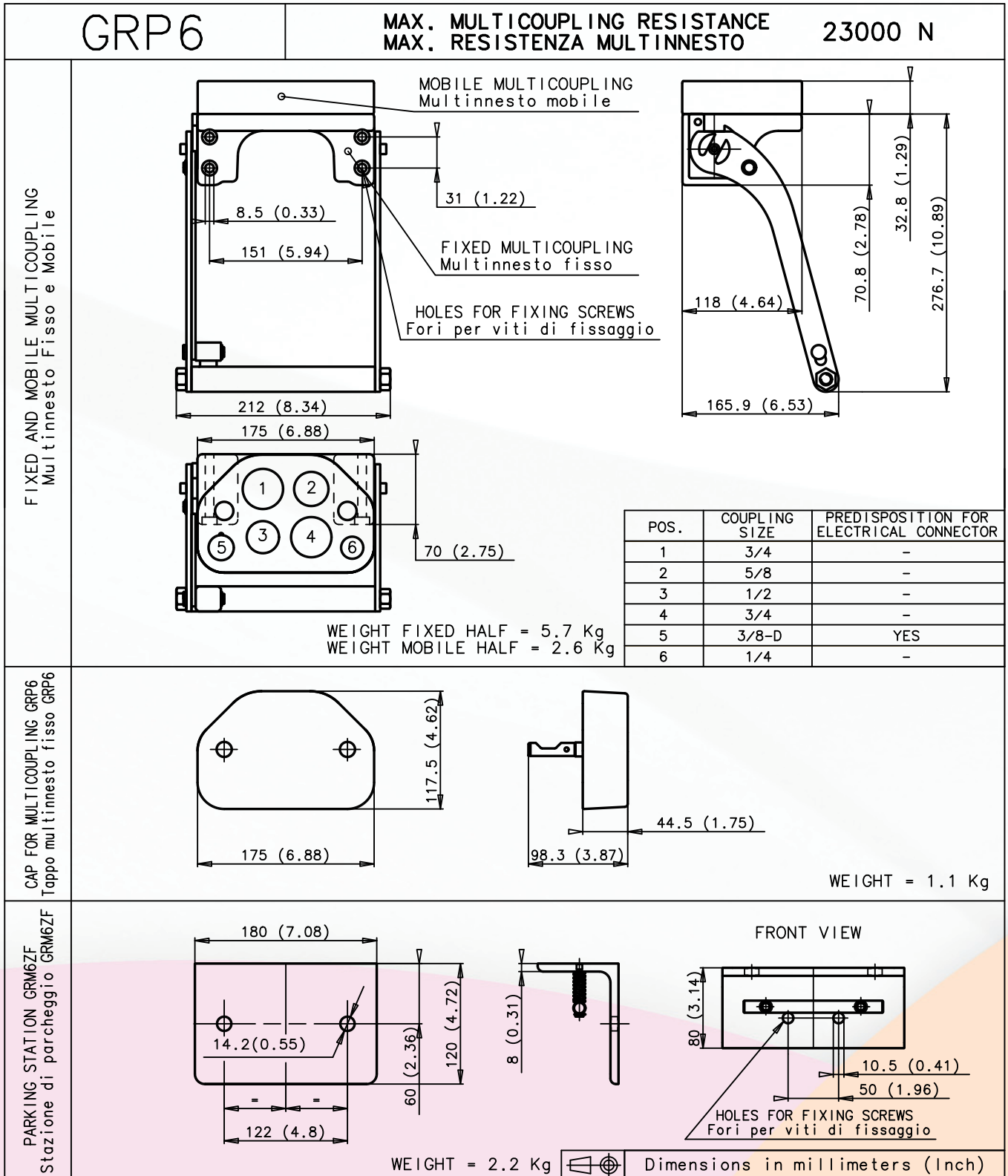
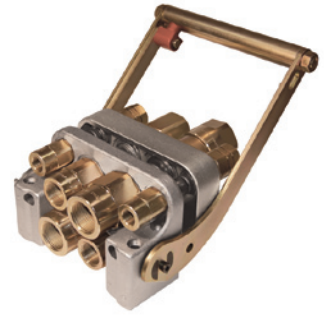
- Four lines size 1/2
- On request lines predisposed for electrical connector



SERIES: GR MULTICOUPLINGS

GRP6 MULTICOUPLING

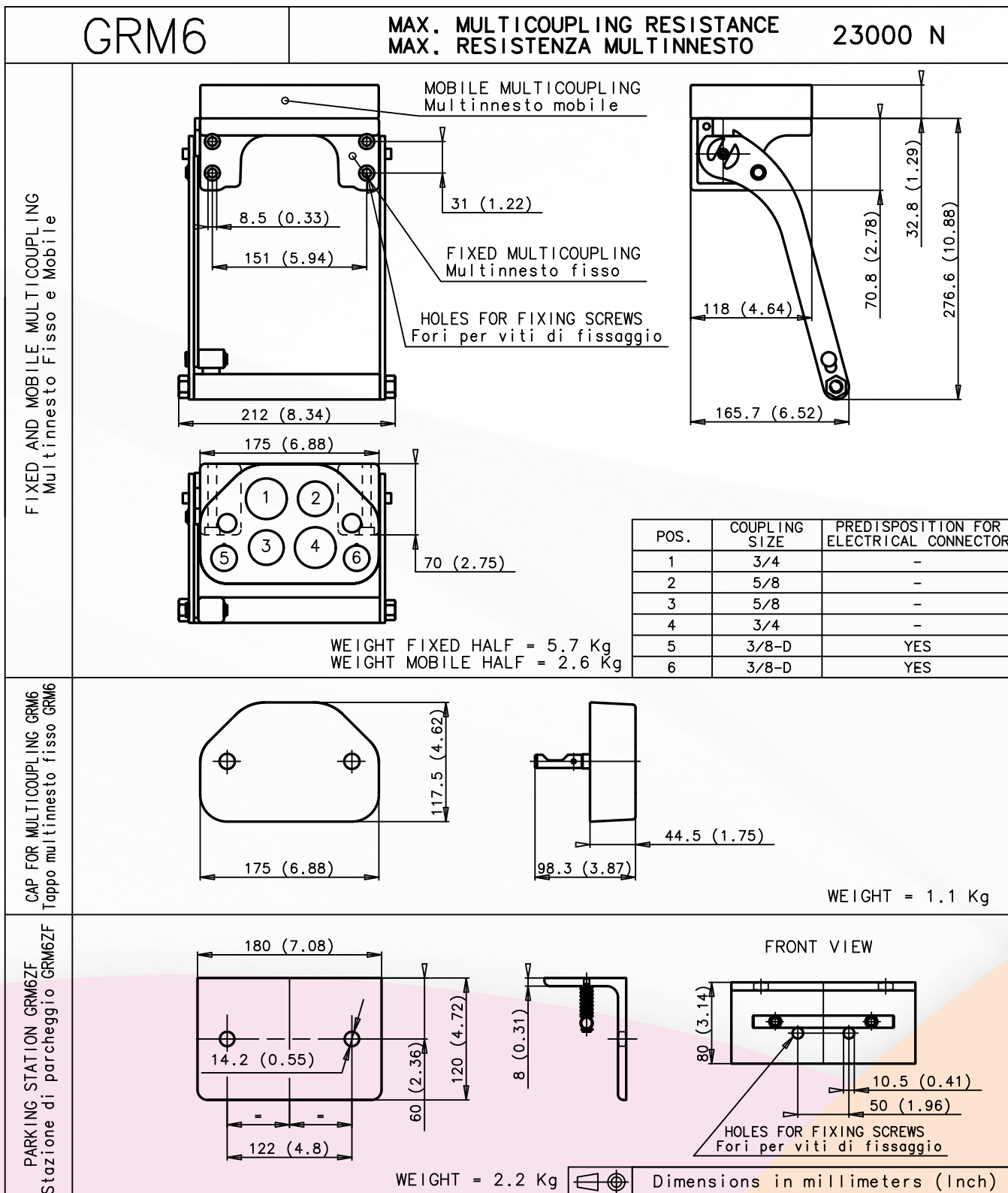
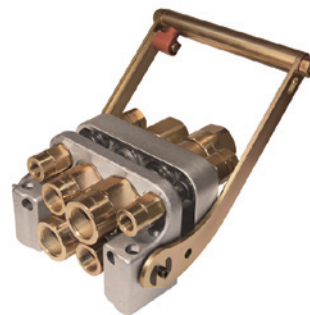
- Two lines size 3/4
- One line size 5/8
- One line size 1/2
- One line size 3/8
- One line size 1/4
- One line predisposed for electrical connector
Female EC..., Male EC..D



SERIES: GR MULTICOUPLINGS

GRM6 MULTICOUPLING

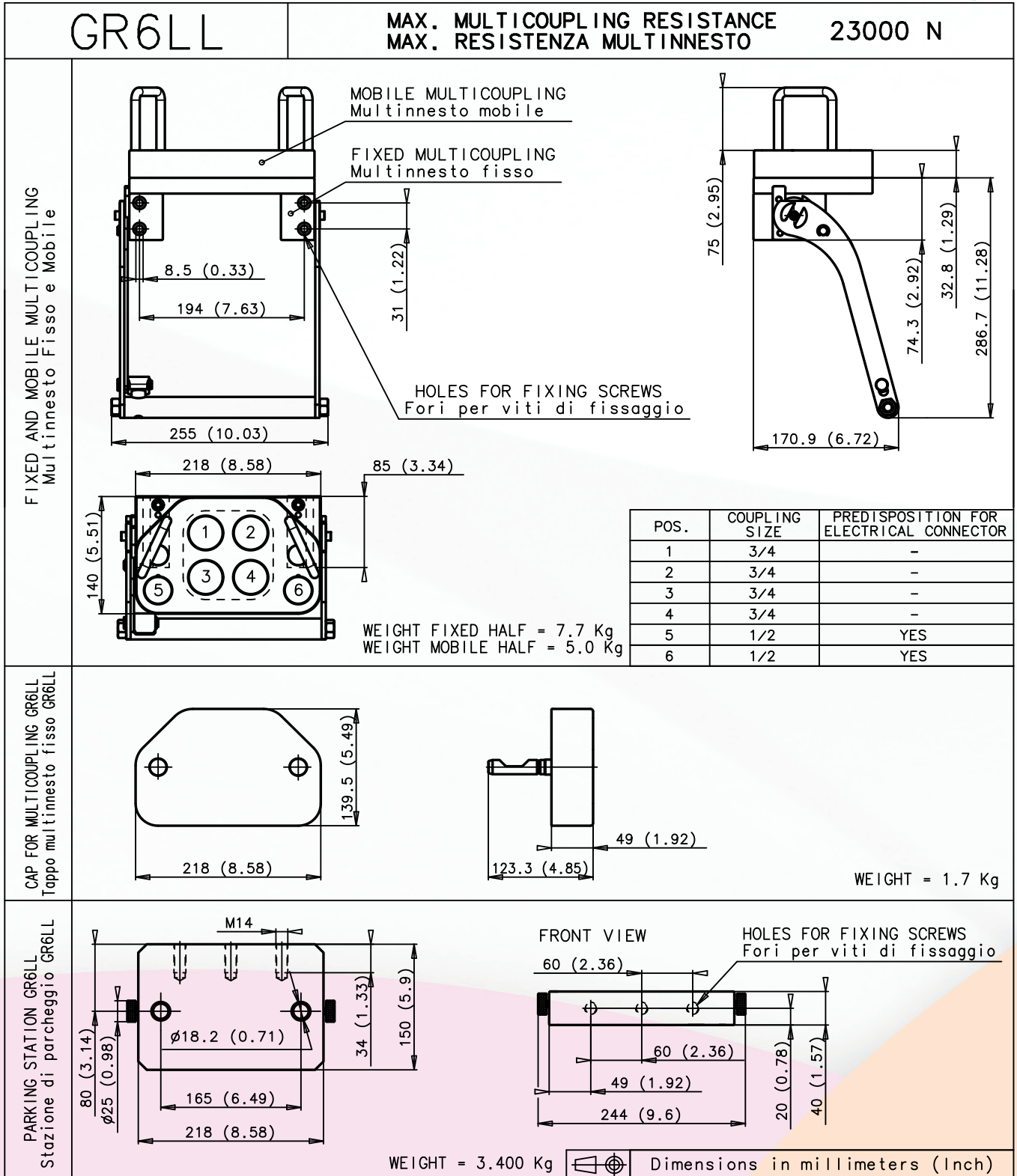
- Two lines size 3/4
- Two lines size 5/8
- Two lines size 3/8
- Two lines predisposed for electrical connector
Female EC., Male EC..D



SERIES: GR MULTICOUPLINGS

GR6LL MULTICOUPLING

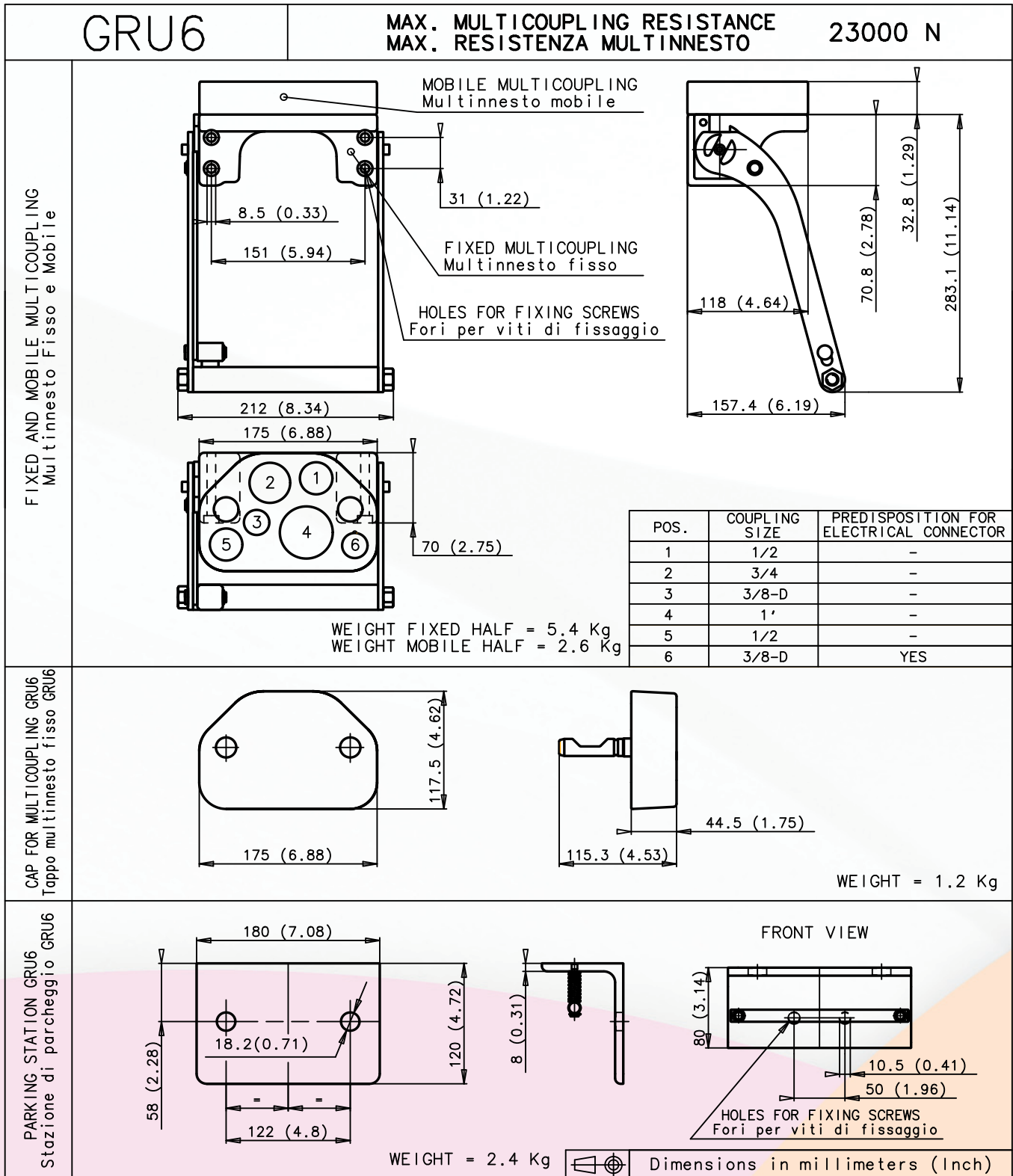
- Four lines size 3/4
- Two lines size 1/2
- Two lines predisposed for electrical connector
Female EC..-13, Male EC..-13



SERIES: GR MULTICOUPLINGS

GRU6 MULTICOUPLING

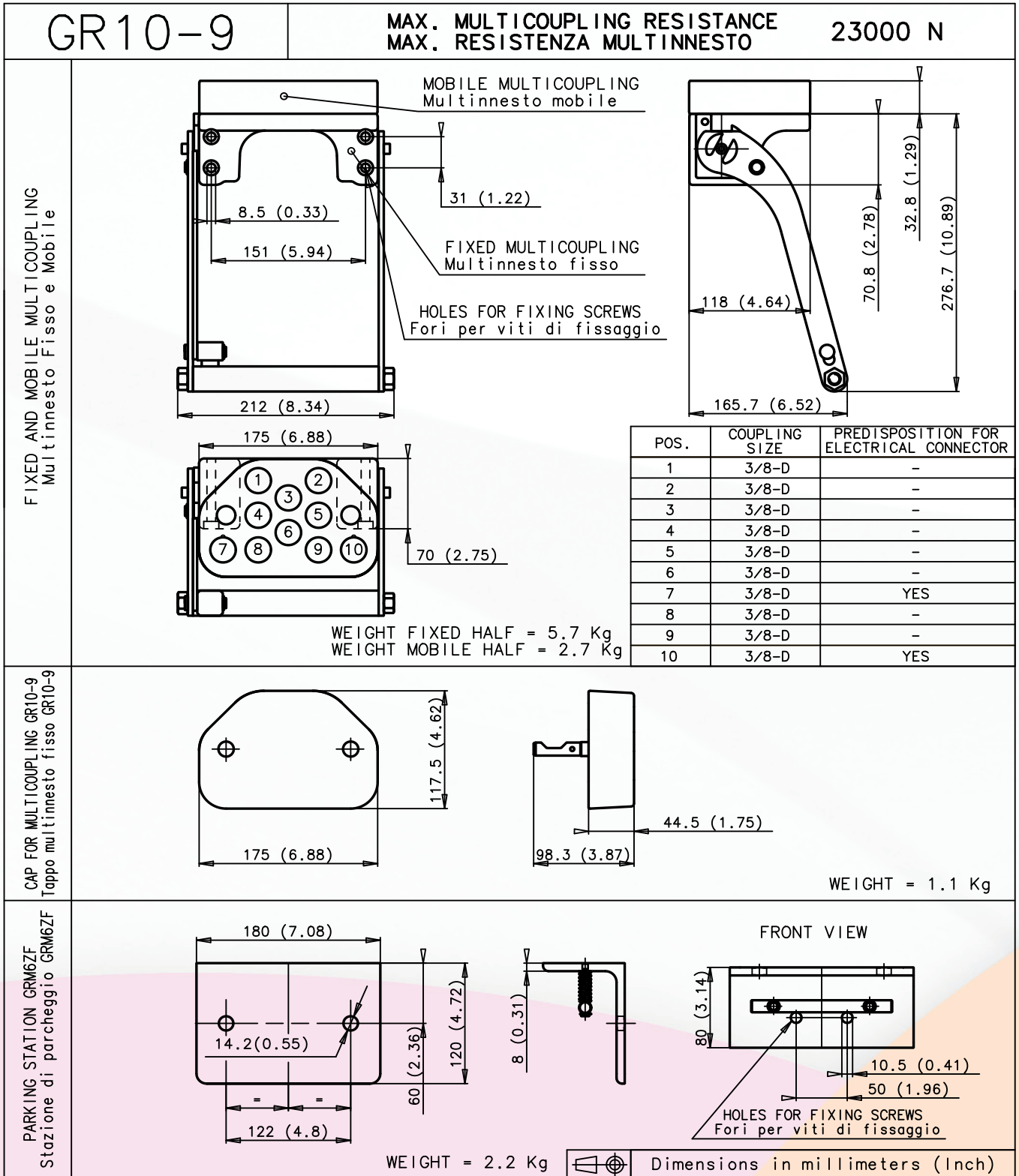
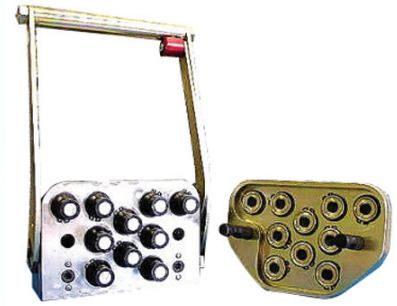
- One line size 1
- One line size 3/4
- Two lines size 1/2
- Two lines size 3/8
- One line predisposed for electrical connector
Female EC., Male EC..D
- On request others lines predisposed for electrical connector



SERIES: GR MULTICOUPLINGS

GR10-9 MULTICOUPLING

- Ten lines size 3/8
- Two lines predisposed for electrical connector
Female EC., Male EC..D
- On request others lines predisposed for electrical connector



SERIES: GR MULTICOUPLINGS

GR10-13 MULTICOUPLING

- Ten lines size 1/2
- Two lines predisposed for electrical connector
Female EC...-13, Male EC...-13
- On request others lines predisposed for electrical connector

