

EMS-HP-FBM-04

Blind-mate coupling, size 04, 316 stainless steel

Self-aligning coupling for a rack that slides onto the manifold; no installer access at the joint.

Blind mate (UQDB) in size 04, supplied in 316 stainless steel, for rack slides onto the manifold. Published with the rating band for its material group rather than one number for the family (Burst 3× MAWP minimum · ISO 18869:2017 leakage limits), and with the minimum burst requirement of 3× the maximum allowable working pressure that applies to the coupling as well as to the hose. Catalogued failure modes are thread stripping · o-ring deformation · leakage on disconnect · sleeve seizure.

ORDERING INFORMATION

Part number	EMS-HP-FBM-04
Family	Blind mate (UQDB)
Size	04 (coupling size designation, not a bore in mm)
Body material	316 stainless steel
Pressure rating basis	Per material group and per size band; Burst 3× MAWP minimum · ISO 18869:2017 leakage limits
Interface standard	ISO 18869:2017 · OCP UQD envelope
Typical position	rack slides onto the manifold
Packaging	Individually bagged with the model code on the label; batch leak-test record on request

RATINGS, MATERIALS AND INTERFACE

Parameter	Value	Notes
Model code	EMS-HP-FBM-04	Every code in this family carries the EMS-HP-prefix.
Family	Blind mate (UQDB)	Mating behaviour is fixed by the rack design, so the family is the first selection.
Size	04 (coupling size designation, not a bore in mm)	Size band for the rating. Ratings are published per material group and per size band.
Mating method	Self-aligning blind mate	The rack slides onto the manifold, so alignment is taken by the coupling rather than by the installer. Confirm the mating half and the float allowance on the rack drawing.
Body material	316 stainless steel	Confirmed per order line; the pressure band follows the material group actually supplied.
Maximum allowable working pressure / rating class	Burst 3× MAWP minimum · ISO 18869:2017 leakage limits	Valid per code, per body material and per size band; no single figure covers the whole coupling family. The 316 stainless steel body carries its own band, and the rating for this code is confirmed on the datasheet.
Minimum burst requirement	3× the maximum allowable working pressure	Open Compute Project practice, and it applies to the coupling as well as to the hose. No tested burst figure is published per code; the tested value for the delivered batch is issued with the datasheet.

Parameter	Value	Notes
Temperature band	Seal dependent	No single temperature band covers the family. EPDM 70 Shore A for water and glycol, FKM where the fluid or the temperature demands it; the seal sets the real ceiling. Coolant in service at the coupling runs roughly 60–80 °C in this category.
Sealing method	Elastomer seal at each coupling face; no clamp in the joint	The sealing element sets the temperature ceiling more often than the body material does.
Seal material	EPDM 70 Shore A, or FKM	EPDM 70 Shore A for water and glycol; FKM where the fluid or the temperature demands it. EPDM 70 is the standard compound designation by hardness.
Interface standard	ISO 18869:2017 · OCP UQD envelope	ISO 18869:2017 defines the performance and leakage limits for quick-disconnect couplings in liquid cooling. The standard designation is named; no certificate, registration or file number is published.
Failure modes catalogued	Thread stripping · O-ring deformation · leakage on disconnect · sleeve seizure	Catalogued from the pressure and endurance tests on quick disconnects in this category. Sleeve seizure sits in the same catalogue as the pressure failures.
Leak test	100 % helium leak testing at the coupling	A declared practice in this category. Ask for the batch test record.
Media	PG25 · PG50 · EG · deionised water · facility water · phosphate-ester fluids	EPDM is a non-polar hydrocarbon elastomer: good in water and glycol, poor in hydrocarbon oils.
Galvanic position	Couples with a copper cold plate through an ion-bearing glycol	Keep the anode-to-cathode area ratio favourable: a small aluminium anode against a large copper cathode corrodes first. Isolate with a polymer-body coupling where the loop allows, and control coolant conductivity.
Pressure test medium and method	Deionised water or PG25, air purged first	Purge all air, pressurise, then ramp in steps with holds to rupture or the specification limit.
Typical position	rack slides onto the manifold	Confirmed against the loop drawing before the order is released.

SELECTION AND INSTALLATION LIMITS

Parameter	Value	Notes
Rating validity	Material group, size band and gasket	One pressure rating for a whole fitting family is a specification error. Where only a class figure exists, the class is published and the rating is stated as material and size dependent.
Temperature against pressure	Separate limits	A rating taken at ambient is not valid at loop temperature; the de-rating curve belongs to the material group and the seal.
Coolant in service at the coupling	60–80 °C roughly	The band this category runs at; confirm against the loop's own temperature record.
Isolation where the loop allows	Polymer-body coupling	Breaks the metal couple against a copper cold plate. Where the loop does not allow it, control coolant conductivity and keep the anode area small.
Bare aluminium in a copper-bearing loop	Not permitted without an inhibitor package	A small aluminium anode against a large copper cathode corrodes first.

Parameter	Value	Notes
Mixed-standard protection	Standard printed beside the code	An adapter that matches on thread pitch and not on standard leaks; the standard is published with the code for that reason.
Commissioning	Pressure test before the loop is filled	Purge all air first. Sleeve seizure and leakage on disconnect are met at commissioning more often than at pressure.

APPLICATIONS

- Rack slides onto the manifold
- Rack-side connections where the mating behaviour is already fixed by the rack design
- Loop plumbing between manifold, pump, chiller and heat exchanger
- Replacement of a mixed-standard joint with a documented interface

COMPATIBLE WITH

- EMS-HP-E series EPDM hose in the matching dash size
- EMS-HP-J series jumper bundles terminated in the matching size band
- EPDM 70 Shore A or FKM seals specified per loop fluid
- PG25, PG50, EG, deionised water, facility water and phosphate-ester fluids

INCLUDED WITH THE COUPLING

- Datasheet carrying the material-group pressure band for the size ordered
- Dimensional drawing with the interface standard at each end
- Batch leak-test record on request

MODEL LADDER — QUICK DISCONNECT AND BLIND-MATE CODES

Parameter	Value	Notes
EMS-HP-FQD-02	UQD, latched · size 02 · 316 stainless steel	Small-bore branch take-off
EMS-HP-FQD-04	UQD, latched · size 04 · 316 stainless steel	Standard node connection
EMS-HP-FQD-08	UQD, latched · size 08 · 316 stainless steel	Higher-flow node
EMS-HP-FQDP-04	UQD, latched · size 04 · high-performance polymer	Weight-sensitive rack; removes the metal couple
EMS-HP-FBM-04	Blind mate (UQDB) · size 04 · 316 stainless steel	Rack slides onto the manifold
EMS-HP-FBM-08	Blind mate (UQDB) · size 08 · 316 stainless steel	Blind-mate manifold drop

MODEL LADDER — THREADED, FLANGED AND CAMLOCK CODES

Parameter	Value	Notes
EMS-HP-FJC-06	JIC 37° flare · -6 (3/8 in)	Pump, manifold port
EMS-HP-FJC-08	JIC 37° flare · -8 (1/2 in)	Pump, manifold port
EMS-HP-FBP-06	BSPP (G) · G3/8	European skid connection
EMS-HP-FCL-08	Camlock · 1 in	Fill and drain

Parameter	Value	Notes
EMS-HP-FCL-16	Camlock · 2 in	Facility water header
EMS-HP-FFL-25	Flange, Class 125/150 pattern · DN25	Pump, chiller, heat exchanger
EMS-HP-FFL-50	Flange, Class 125/150 pattern · DN50	Pump, chiller, heat exchanger
EMS-HP-FBT-06	Barbed tail with clamp · -6 (3/8 in)	Field-attachable repair
EMS-HP-FBT-08	Barbed tail with clamp · -8 (1/2 in)	Field-attachable repair

NOTES

- Ratings are published per material group and per size band. Where only a class figure exists, the class is published and the rating is stated as material and size dependent; one pressure rating for a whole fitting family is a specification error.
- The 3× maximum-allowable-working-pressure minimum burst requirement applies to the coupling as well as to the hose. No tested burst figure is published per coupling code; the tested value is issued with the datasheet.
- Temperature is a separate limit from pressure. A rating taken at ambient does not survive elevated-temperature de-rating unchanged.
- Scope: couplings and adapters only. No coolant distribution units and no cold plates are supplied.
- Standard and certification designations are named. No certificate, registration, patent or file number is published, and no third-party approval is stated or implied.
- Supplied by EMS-Trade Cooling, a Shenzhen trading house that integrates, inspects, stocks and ships. No manufacturing of this item is claimed, and no count of suppliers or production sites is published.

Full specification sheet and current pricing

EMS-Trade Cooling · ems-cool.com

Typical lead time confirmed on order acknowledgement.

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