



# MTR Centrifugal Jet Pump 3-phase TEFC Motors

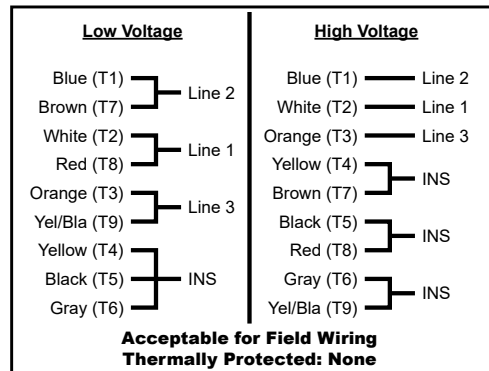
## Features

- 1/3 - 3 HP
- 3600 RPM
- 208-230/460 volt
- Totally Enclosed Fan Cooled (TEFC) Enclosure
- 1.15 SF
- Class F insulation
- C-face with Removable Base
- Vacuum Pressure Impregnation (VPI) System
- Anti-rust film applied to rotor
- Improved shaft seal on drive-end protects drive-end bearing from moisture and contaminants
- 56J - Threaded Shaft
- IP43 Protection

## Applications

- Typical uses include: jet pumps and jet pump motor replacements.

## Wiring Diagram



**MTRJ-P33-3BD36J**

## Motor Specifications – 3-phase

| Part Number                                 | Price    | HP*       | Base<br>RPM * | Volts*                       | Encl. | NEMA<br>Frame | Service<br>Factor* | F.L. Amps*            | Sound<br>Power (dB) | Weight<br>(lb) | Drawing<br>Links           |
|---------------------------------------------|----------|-----------|---------------|------------------------------|-------|---------------|--------------------|-----------------------|---------------------|----------------|----------------------------|
| Removable Rigid Base With C-face - 3600 RPM |          |           |               |                              |       |               |                    |                       |                     |                |                            |
| <a href="#"><u>MTRJ-P33-3BD36J</u></a>      | \$167.00 | 1/3 (1/4) | 3600 (3000)   | 230/460 VAC<br>(190/380)     | TEFC  | 56J           | 1.15<br>(1.15)     | 1.3 / 0.65 (1.2/0.6)  | 80 dB(A)            | 18             | <a href="#"><u>PDF</u></a> |
| <a href="#"><u>MTRJ-P50-3BD36J</u></a>      | \$173.00 | 1/2 (1/3) |               |                              |       |               |                    | 1.7 / 0.85 (1.5/0.75) |                     | 19             | <a href="#"><u>PDF</u></a> |
| <a href="#"><u>MTRJ-P75-3BD36J</u></a>      | \$189.00 | 3/4 (1/2) |               |                              |       |               |                    | 2.4 / 1.2 (1.96/0.98) |                     | 22             | <a href="#"><u>PDF</u></a> |
| <a href="#"><u>MTRJP-001-3BD36J</u></a>     | \$205.00 | 1 (3/4)   |               | 208-230/460 VAC<br>(190/380) |       |               |                    | 3.00/1.50 (2.76/1.38) | 85 dB(A)            | 23             | <a href="#"><u>PDF</u></a> |
| <a href="#"><u>MTRJP-1P5-3BD36J</u></a>     | \$259.00 | 1 1/2 (1) |               |                              |       |               |                    | 3.96/1.98 (3.42/1.71) |                     | 31             | <a href="#"><u>PDF</u></a> |
| <a href="#"><u>MTRJP-002-3BD36J</u></a>     | \$271.00 | 2 (1)     |               |                              |       |               |                    | 5.22/2.61 (4.78/2.39) |                     | 33             | <a href="#"><u>PDF</u></a> |
| <a href="#"><u>MTRJP-003-3BD36J</u></a>     | \$346.00 | 3 (2)     |               |                              |       |               |                    | 7.38/3.69 (6.32/3.16) |                     | 39             | <a href="#"><u>PDF</u></a> |

\*@ 60Hz (@ 50Hz)

## Performance Data – 3-phase

| Part Number                                 | HP*       | F.L. RPM*   | NEMA Design | F.L. Effic. % | Current        |                   |                 | Torque            |                  |           |         | F.L. Power Factor | Moment of Inertia (lb-ft <sup>2</sup> ) |
|---------------------------------------------|-----------|-------------|-------------|---------------|----------------|-------------------|-----------------|-------------------|------------------|-----------|---------|-------------------|-----------------------------------------|
|                                             |           |             |             |               | Full Load Amps | Locked Rotor Amps | No Load Current | Full Load (lb-ft) | Locked Rotor     | Breakdown | Pull Up |                   |                                         |
|                                             |           |             |             |               |                |                   |                 |                   | % of F.L. Torque |           |         |                   |                                         |
| Removable Rigid Base With C-face - 3600 RPM |           |             |             |               |                |                   |                 |                   |                  |           |         |                   |                                         |
| <a href="#"><u>MTRJ-P33-3BD36J</u></a>      | 1/3 (1/4) | 3450 (2850) | B           | 62.0          | 1.3 / 0.65     | 3.63              | 0.44            | 0.51              | 180              | 355       | 215     | 79.00             | 0.0245                                  |
| <a href="#"><u>MTRJ-P50-3BD36J</u></a>      | 1/2 (1/3) |             |             | 66.0          | 1.7 / 0.85     | 3.85              | 0.43            | 0.76              | 150              | 255       | 155     | 86.00             |                                         |
| <a href="#"><u>MTRJ-P75-3BD36J</u></a>      | 3/4 (1/2) |             |             | 74.0          | 2.4 / 1.2      | 8.27              | 0.69            | 1.12              | 230              | 380       | 275     | 81.00             |                                         |
| <a href="#"><u>MTRJP-001-3BD36J</u></a>     | 1 (3/4)   | 3500 (2915) |             | 77.0          | 3.00/1.50      | 11.37             | 0.78            | 1.51              | 255              | 325       | 220     | 83.00             | 0.0342                                  |
| <a href="#"><u>MTRJP-1P5-3BD36J</u></a>     | 1 1/2 (1) |             |             | 84.0          | 3.96/1.98      | 25.1              | 1.08            | 2.21              | 495              | 600       | 485     | 82.00             | 0.0473                                  |
| <a href="#"><u>MTRJP-002-3BD36J</u></a>     | 2 (1)     |             |             | 85.5          | 5.22/2.61      | 27.38             | 1.12            | 3.02              | 385              | 415       | 315     | 85.00             | 0.0561                                  |
| <a href="#"><u>MTRJP-003-3BD36J</u></a>     | 3 (2)     |             |             | 86.5          | 7.38/3.69      | 44.55             | 1.77            | 4.50              | 430              | 450       | 300     |                   | 0.0691                                  |

\*@ 60Hz (@ 50Hz)



# AC Motor Selection – IronHorse® General Purpose Motors

| IronHorse® 3-Phase Motor Selection         |                                  |                                 |                                         |                                                 |                                                                        |
|--------------------------------------------|----------------------------------|---------------------------------|-----------------------------------------|-------------------------------------------------|------------------------------------------------------------------------|
| Motor Series                               | MTR2/MTRP                        | MTRJ/MTRJP                      | MTDP                                    | MTSP/MTSN                                       | MTCP2                                                                  |
| Paint Color                                | Black                            | Black                           | Blue                                    | Stainless                                       | Gray                                                                   |
| Main Characteristics                       | General Purpose<br>Rolled Steel  | Jet Pump                        | Rolled Steel<br>Open Drip Proof         | Stainless Steel<br>Premium Efficiency<br>IP69K  | Cast-Iron<br>Hazardous Duty                                            |
| Electrical Characteristics                 |                                  |                                 |                                         |                                                 |                                                                        |
| Horsepower range                           | 1/3 - 3                          | 1/3 - 3                         | 1 - 50                                  | 1 - 20                                          | 1 - 300(T)<br>1 - 30(TC)                                               |
| Base speed                                 | 1800; 3600                       | 3600                            | 1800; 3600                              | 1200; 1800; 3600                                | 1200; 1800; 3600                                                       |
| Standard Voltage                           | 208–230/460 VAC;<br>230/460 VAC  | 208–230/460 VAC;<br>230/460 VAC | 208–230/460 VAC                         | 208–230/460 VAC                                 | 208-230/460 VAC; 460VAC                                                |
| Phase / Base Frequency (Hz)                | 3-phase / 60 Hz                  |                                 |                                         |                                                 |                                                                        |
| Service Factor                             | 1.15                             | 1.15                            | 1.15 (sine), 1.0 (drive)                |                                                 | 1.25 (1-200)<br>1.15 (250-300)<br>1.0 (all w/ drive)                   |
| Design Code (NEMA)                         | B                                |                                 |                                         |                                                 |                                                                        |
| Insulation Class                           | Class F                          |                                 |                                         |                                                 |                                                                        |
| Insulation System                          | Dip and Bake                     | Dip and Bake Twice              | VPI                                     | Dip and Bake                                    | Vacuum Impregnation                                                    |
| Duty Cycle                                 | Continuous                       |                                 |                                         |                                                 |                                                                        |
| Thermal protection                         | None                             |                                 |                                         |                                                 |                                                                        |
| Hazard Classification                      | None                             |                                 |                                         | Class 1 / Div 2                                 |                                                                        |
| Mechanical Characteristics                 |                                  |                                 |                                         |                                                 |                                                                        |
| Frame size                                 | 56C or HC - 326T                 | 56J                             | 56C - 326T                              | 56C - 256TC                                     | 143T/TC - 449T                                                         |
| Enclosure                                  | ODP / TEFC                       | TEFC                            | ODP / TEFC                              | TEFC / TENV                                     | TEFC                                                                   |
| Enclosure Rating                           | IP43                             |                                 | IP23                                    | IP69K                                           | IP55                                                                   |
| Frame material                             | Rolled steel                     |                                 | Rolled steel                            | 304 Stainless steel                             | Cast iron                                                              |
| End bracket material                       | Aluminum                         | Aluminum                        | ≤256 frame- Aluminum<br>>256- Cast iron | 304 Stainless steel                             | Cast iron                                                              |
| Junction box material                      | Steel                            | Steel                           | Steel                                   | 304 Stainless steel                             | Cast iron                                                              |
| Fan guard material                         | Steel                            | Steel                           | N/a                                     | 304 Stainless steel                             | Steel                                                                  |
| Fan material                               | Polypropylene plastic            | Plastic                         | N/a                                     | Heat-Resistant Polyethylene                     | Plastic                                                                |
| Lead termination                           | Junction Box                     |                                 |                                         |                                                 |                                                                        |
| standard mounting                          | C-face with removable rigid base |                                 | Rigid base                              | C-face round body and<br>C-face with rigid base | Rigid base, c-face with rigid base<br>(1-100 hp)                       |
| Drive end shaft slinger                    | Yes                              | Yes                             | None                                    | Yes                                             | Yes                                                                    |
| Bearings                                   | Ball                             |                                 |                                         |                                                 | 1-300 hp - 2p, 1-75 hp - 4p & 6p: Ball<br>100-300 hp - 4p & 6p: Roller |
| Grease                                     | Mobil Polyrex EM                 |                                 | NS7 ENS                                 | Mobil Polyrex EM                                |                                                                        |
| Standard junction box<br>assembly position | F1                               |                                 |                                         |                                                 | F1 (field convertible F2)                                              |
| Performance Characteristics                |                                  |                                 |                                         |                                                 |                                                                        |
| Constant Torque speed range                | 4:1                              | 4:1                             | 10:1                                    | 10:1                                            | 10:1                                                                   |
| Variable Torque speed range                | 10:1                             | 10:1                            | 20:1                                    | 20:1                                            | 20:1                                                                   |
| Constant Horsepower speed<br>range         | 1.5:1                            | 1.5:1                           | 1.5:1                                   | 1.5:1                                           | 1.5:1                                                                  |
| Temperature rise                           | B                                |                                 |                                         |                                                 |                                                                        |
| Encoder provisions                         | None                             |                                 |                                         |                                                 |                                                                        |
| Other Characteristics                      |                                  |                                 |                                         |                                                 |                                                                        |
| Warranty*                                  | 2 years                          | 2 years                         | 2 years                                 | 1 year                                          | 2 years                                                                |
| Agency Approvals **                        | CSA, CE                          | CSA,CE                          | CSA                                     | NEMA, CSA, UR, CE, BISCC                        | CSA, ISO9001, CE                                                       |

\* See Terms and Conditions for motor warranty explanation.

1) For warranty on IronHorse motors below 50hp, warranty service can be arranged through AutomationDirect.

2) For warranty on IronHorse motors 50hp and above, motors must be inspected by a local EASA motor repair or service center; (see AutomationDirect Terms & Conditions).

\*\* To obtain the most current agency approval information, see the Agency Approval Checklist on the specific part number's web page.

\*\*\* 56HC motors are capable of 56C C-face mounting, and are also compatible with 56, 143T, and 145T foot mounting dimensions.