CELEBRATING

RESCUE

10 YEARS

The Ultimate Truck Stock Motor™

US MOTORS

NIDEC MOTOR CORPORATION

What is a Rescue® Motor?

- Universal Replacement Motor for Condenser Fan and Direct Drive Blower Applications
- **Multi-Horsepower** PSC Motors
- Flexible Mounting Options

- Permanent Replacement Motors – There is no need to go back
- Designed to Allow Contractors to Stock Fewer Motor Models On Their Truck While Increasing the Service Level to Their Customers

RESCUE The Ultimate Truck Stock Motor™

How Does Multi Horsepower Work?

- A PSC Motor's output RPMs vary based upon the driven load.
  - Increases in loading will reduce the RPMs
  - Decreases in loading will increase the RPMs towards Synchronous
- Specifically Designed Motor Windings and Speed Taps to Match HP Requirements and Speed for Each Application.
- Each Motor has More Copper (Windings) and Iron (Rotor Core) to Prevent Overheating.
- This Makes RESCUE® Motors Stronger

Rescue® Condenser Fan Motor Applications

Condenser Fan Applications			
Catalog No. & Ambient Rating		HP	RPM
5464 5464H*	60° C (140° F) 70° C (158° F)	1/3	825
		1/4	
		1/5	
		1/6	
5462 5462H*	60° C (140° F) 70° C (158° F)	1/3	1075
		1/4	
		1/5	
		1/6	
5465 5465H*	60° C (140° F) 70° C (158° F)	1/2	1075
		1/3	
		1/4	
		1/6	
5482H*	70° C (158° F)	3/4	1075
		1/2	
		1/3	
		1/4	

70°C
Mojave®
Motors
EXTREME Ambient Rated
158°F
Reg. U.S. Pat. & Tm. Off.

*H Models Indicate Mojave® High Ambient Temperature Rated Models

Condenser Fan Motor Features

- Permanent Split Capacitor (PSC) Design
- Totally Enclosed Air Over (TEAO)
- Automatic Thermal Protector
- Ball Bearings
- Reversible Rotation
- 48 Inch Leads
- All Angle Mounting
- Mounts by Thru-bolts, Belly Band (with Kit), Four Holes in the Shell or Four Blind Holes in the end shield. (New Screws Incl.)
- 60° C (140° F) Ambient Rated
- Also Available: Mojave® Extreme 70° C (158° F) Ambient

RESCUE The Ultimate Truck Stock Motor™

Rescue® Direct Drive Blower Motor Applications

Direct Drive Blower Applications			
Catalog No. & Voltage		HP	RPM
5469	208-230V	1/3	825
		1/4	
		1/8	
5460 5461	115V & 208-230V	1/2	1075
		1/3	
		1/4	
		1/5	
		1/6	
5470 5471	115V & 208-230V	3/4	1075
		1/2	
		1/3	
		1/4	
		1/5	

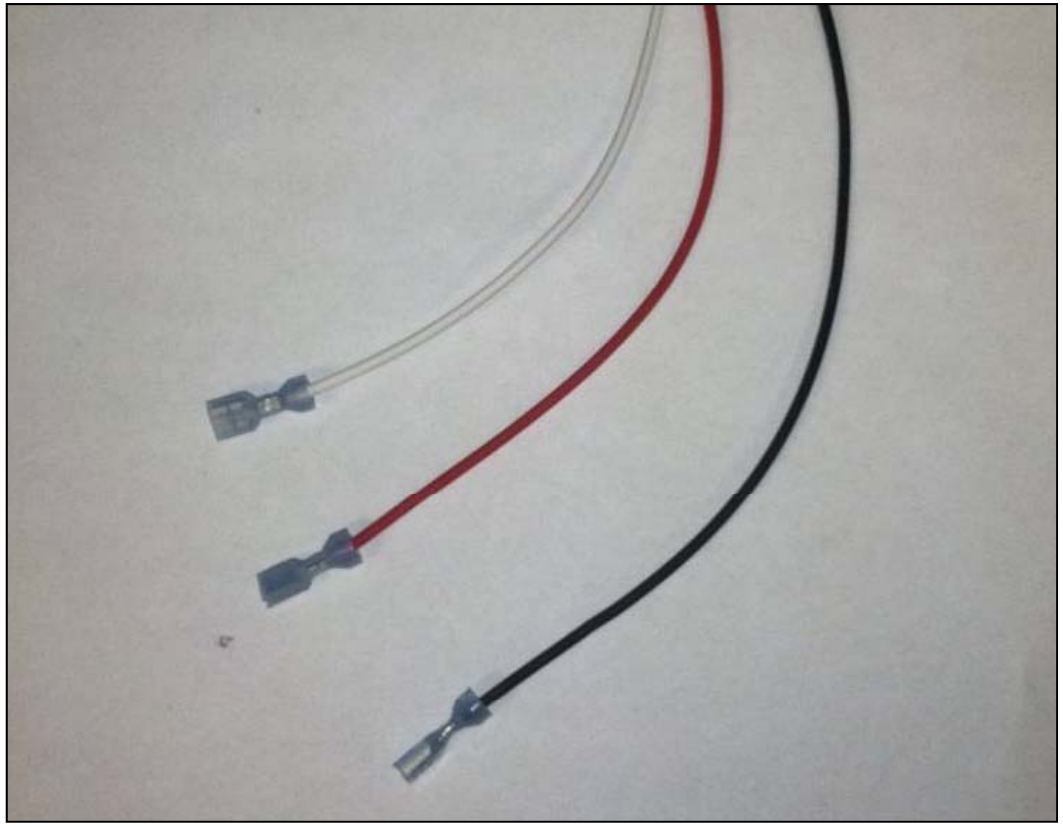
RESCUE The Ultimate Truck Stock Motor™

Direct Drive Blower Motor Features

- Permanent Split Capacitor (PSC) Design
- Open Air Over (OAO)
- Automatic Thermal Protector
- Self - Aligning Sleeve Bearing
- Reversible Rotation
- 36 Inch Leads
- All Angle Mounting – Vertical or Horizontal
- Mounts by Thru-bolts, Belly Band (With Kit), or Eight Holes in the Shell for Brackets, Including Rheem and Trane Special Mounting

RESCUE The Ultimate Truck Stock Motor™

Condenser Fan Motor Lead Wires



Lead Wires: 2 HP Taps & the Common

Black – High HP

Red – Low HP

White - Common

Capacitor Wires (Not Shown) are Standard Brown and Brown with White Stripe

RESCUE The Ultimate Truck Stock Motor™

Recommended Condenser Fan Motor Wiring

WIRING CHART Suggested Lead Color at Horsepower Shown			
Original Motor HP	Cat No. 5462/5464 5462H/5464H	Cat No. 5465 5465H/5480H	Cat No. 5481H 5482H
3/4 HP			BLACK
1/2 HP		BLACK	BLACK
1/3 HP	BLACK	BLACK	RED
1/4 HP	BLACK	RED	RED
1/5 HP	RED	RED	
1/6 HP	RED		

- **Condenser Fans Have 2 HP Taps:**
  - **Black = High HP**
  - **Red = Low HP**
- **"H" Models Indicate Mojave® High Ambient Temperature Rated Models**

Condenser Fan Example: Catalog 5462

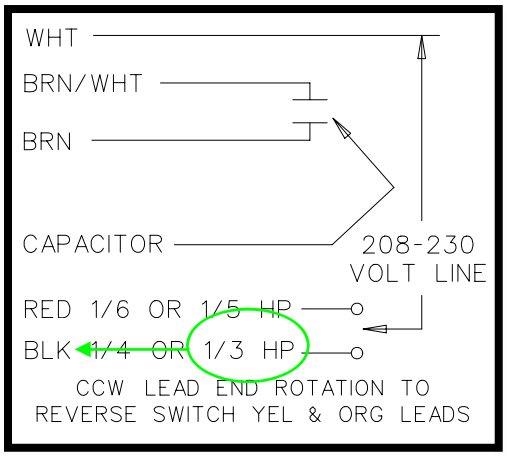
- 2 HP Taps: Black and Red
- Each Tap Adds Greater Resistance to the Winding Which Slows the Motor RPM to Match the Load

RPM's Per HP Tap At Load - Cat 5462		
Original Motor	**Lead**	**RPM**
1/3 HP	**BLACK**	**1110**
1/4 HP	**BLACK**	**1135**
1/5 HP	**RED**	**1110**
1/6 HP	**RED**	**1125**

RESCUE The Ultimate Truck Stock Motor™

Condenser Fan Example: Cat No. 5462 - 1/3HP

DP Contactor in Condensing Unit



Terminate and Tie Off Unused Lead

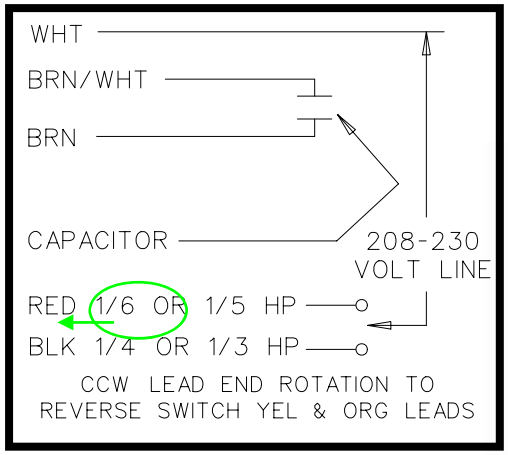
Capacitor Required:
5 or 7.5 MFD

Number of Speeds Used: 1

Approximate RPM's:
1110

Condenser Fan Example: Cat No. 5462 1/6HP

DP Contactor in Condensing Unit



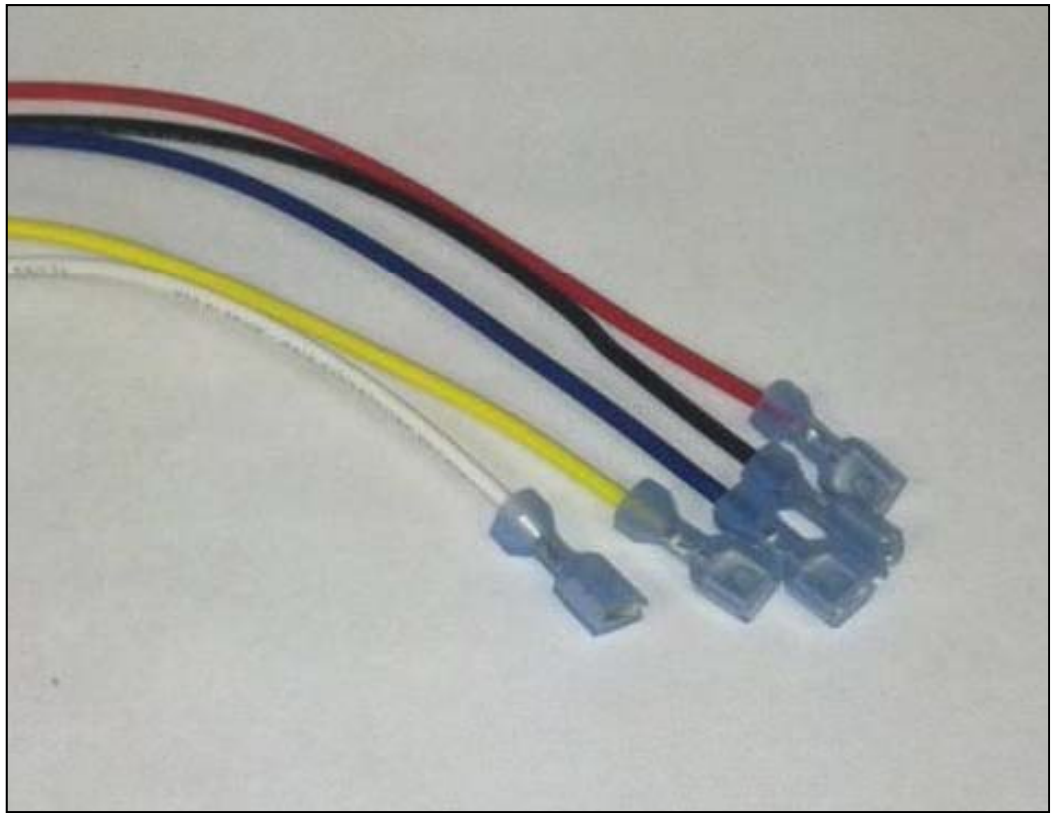
Terminate and Tie Off Unused Lead

Capacitor Required:
5 or 7.5 MFD

Number of Speeds Used: 1

Approximate RPM's:
1125

Direct Drive Blower Motor Lead Wires



Lead Wires: 4 HP Taps & the Common

Black – High HP

Blue – Medium High HP

Yellow – Medium Low HP

Red – Low HP

White - Common

Capacitor Wires (Not Shown) are Standard Brown and Brown with White Stripe

RESCUE The Ultimate Truck Stock Motor™

Recommended Direct Drive Blower Motor Wiring

WIRING CHART Suggested Lead Color at Horsepower Shown				
HP	Speed	Catalog No.	Catalog No.	Catalog No.
		5469	5460/5461	5470/5471
3/4 HP	COOL			BLACK
	HEAT			BLUE
1/2 HP	COOL		BLACK	BLACK
				BLUE
	HEAT		BLUE	BLUE
				YELLOW
1/3 HP	COOL	BLACK	BLACK	B;UE
			BLUE	YELLOW
	HEAT	BLUE	BLUE	YELLOW
			YELLOW	RED
1/4 HP	COOL	BLUE	BLUE	YELLOW
			YELLOW	
	HEAT	YELLOW	YELLOW	RED
			RED	
1/5 HP	COOL		YELLOW	YELLOW
				RED
	HEAT		RED	RED
1/6 or 1/8 HP	COOL	YELLOW	YELLOW	
			RED	
	HEAT	RED	RED	

- Blower Motors have 4 HP Taps:
  - **Black** = High
  - **Blue** = Med High
  - **Yellow** = Med Low
  - **Red** = Low
- **DO NOT** Wire Multiple Leads together.
- 5460 Example: 1/3HP Cool Recommendation is to start with **BLACK**, NOT to wire both **BLACK** and **BLUE** leads together. IF **BLACK** is too much CFM after testing, switch to **BLUE**

Direct Drive Blower Motor Example: Catalog No. 5460

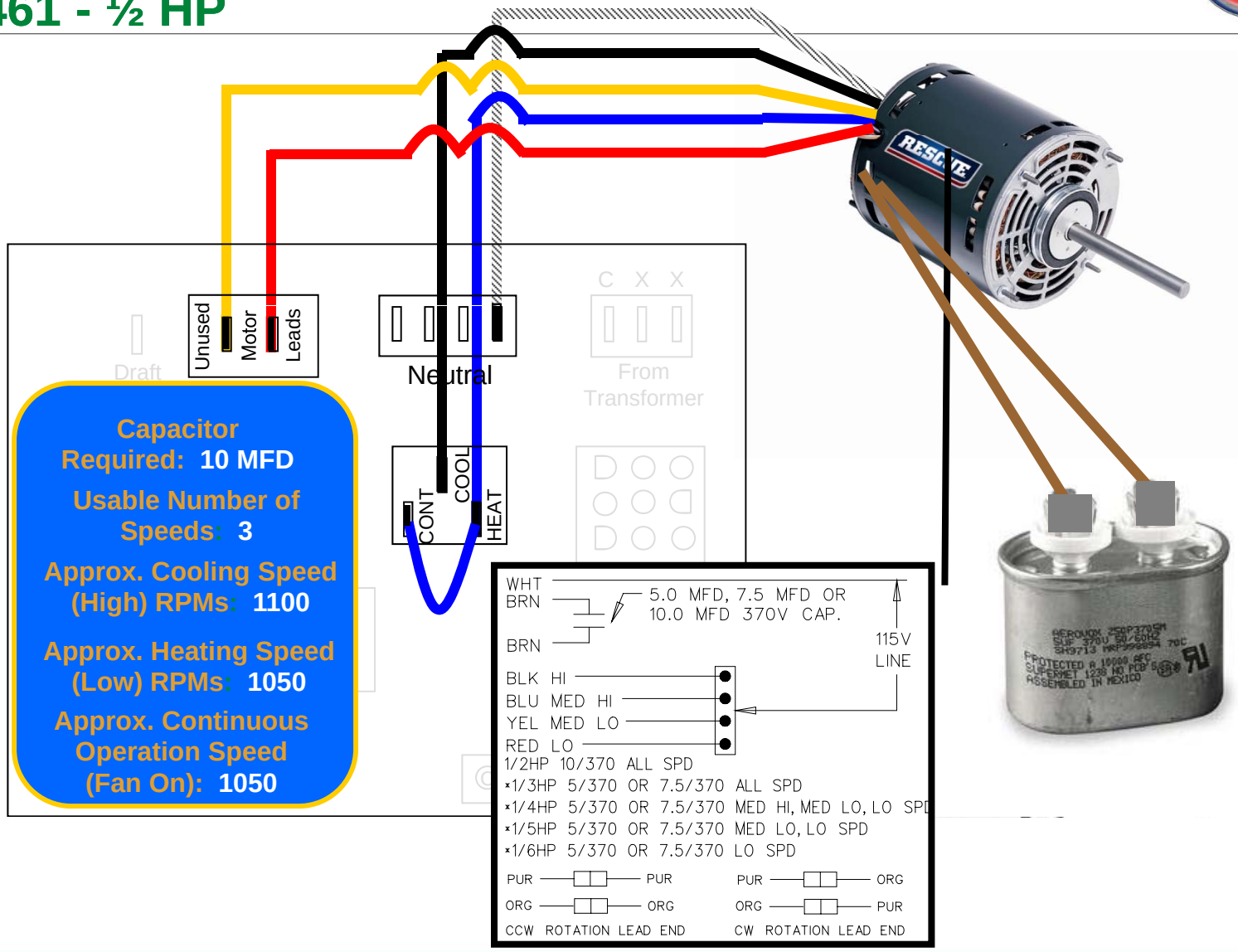
- 4 HP Taps: Black, Blue, Yellow, and Red
- Each Tap Adds Greater Resistance to the Winding Which Slows the Motor RPM to Match the Load

Speed Tap RPM's At Load - Cat 5460						
Original Motor HP	Cool	RPM	Heat	RPM	Capacitor	FLA
1/2 HP	BLACK	1100	BLUE	1050	10 MFD	7.3
1/3 HP	BLACK	1120	BLUE	1090	10 MFD	6.9
			YELLOW	1030		
1/4 HP	BLUE	1125	YELLOW	1090	10 MFD	5.5
	YELLOW	1090	RED	1010		
1/5 HP	YELLOW	1110	RED	1060	10 MFD	3.6
1/6 HP	YELLOW	1110	RED	1060	10 MFD	2.8
	RED	1060				

*RPM will vary based on actual load

RESCUE The Ultimate Truck Stock Motor™

Direct Drive Blower Motor Example: Catalog No. 5460 or 5461 - ½ HP



Contractor Scenario: 5460 ¼ HP

Scenario: 1/4 HP, 115V, Furnace Blower Motor fails and needs replacement. Contractor Joe stocks a Rescue 5460. Contractor Tom stocks a standard 1/3 HP 3-Speed Furnace Blower Motor 1864.

	Output RPMs		
Mode	Joe – 5460	Tom – 1864	
Cooling	1125 (Blue)	1185	10 RPMs
Heating	1010 (Red)	1175	
Continuous	1010 (Red)	1175	

115 RPMs

Rescue motor works. Standard Motor Does Not Deliver Much Speed Separation, Under Loading Can Lead to Capacitor Failure and Higher RPMs = More Noise

Contractor Scenario: 5460 ½ HP

Scenario: 1/2 HP, 115V, Furnace Blower Motor fails and needs replacement. Contractor Joe stocks a Rescue 5460. Contractor Tom stocks a standard 1/3 HP 3-Speed Furnace Blower Motor 1864.

		Output RPMs	
Mode	50 or 275 RPMs	Joe – 5460	Tom – 1864
Cooling		1100 (Black)	Overload
Heating		1050 (Blue) or 825 (Yellow)	Overload
Continuous		1050 (Blue) or 825 (Yellow)	Overload

Rescue Motor Works, Standard Motor Does Not Deliver the Required Horsepower! Protector kicks in and Contractor is Making a Return Trip for Free

Direct Drive Blower Motor Selection Process

1. Identify the OEM Motor Voltage, Amp Draw and Capacitor size.
   - OEM motors may be stronger than the HP shown on the nameplate.
   - Use Amperage as your guide for picking a RESCUE (or RESCUE EcoTech®) motor.
2. Using the chart on the next page, select the Amp range that the OEM motor falls within.
3. Note the typical capacitor size on the chart
4. If the capacitor is over 50% larger than typical…
   - …Select the next larger size HP motor for your replacement.

Always Watch your Amp Draw with OEM Motors

RESCUE The Ultimate Truck Stock Motor™

Direct Drive Blower Motor Selection Process

PSC Motor Nameplate Amps	PSC Motor Nameplate HP	Typical Capacitor MFD*	Standard PSC To Use	Rescue® To Use	Rescue EcoTech® To Use
115V Replacements					
2.5-5.5	1/4-1/3	5-7.5	1864	5460	5520ET
5.6-8.4	1/3-1/2	7.5-10	1865	5460	5530ET
8.5-10.5	1/2-3/4	10-15	8904	5470	5540ET
10.6+	3/4-1	15-20	8906		5550ET
208-230V Replacements					
1.5-2.7	1/4-1/3	5-7.5	1972	5461	5521ET
2.8-3.6	1/3-1/2	7.5-10	1973	5461	5531ET
3.7-5.0	1/2-3/4	10-15	8905	5471	5541ET
5.1+	3/4-1	20-25	8907		5551ET

Direct Drive Blower Motor Selection Process

Example:

1. OEM Motor has 8.0 Amp draw with 20 MFD capacitor (115V)
2. The 8 Amp Motor would typically fall into the 1/3 – 1/2 HP Range
3. Typical Capacitor Ratings for 8.0 Amps is 7.5 - 10 MFD
4. The OEM 40 MFD is Greater than 15 MFD (1.5 * 10MFD)
   - The Oversized Capacitor tells us to choose Catalog No. 5470 Rescue Motor.

Pay Attention to Oversized Capacitors!

Direct Drive Blower Motor Selection Process

Example:

- Large Heil & Lennox ½ HP 115V DDBs at ~7.8 Amps?

  - OEM motors ARE accurate on amps, they are NOT always accurate on HP
  - Do not use a RESCUE Cat. No. 5460 @ 7.3 amps, use Cat. No. 5470 with 8.1 amps.

Always Watch your Amp Draw with OEM Motors

Rescue Direct Drive Blower Motor Questions

- How are they different from other Direct Drives?
  - Most Standard Direct Drives have a big RPM gap between the high and low speeds.
  - Standard motors would not give you the correct speed (Due to speed/HP spacing) when applying to a non-rated load
- Bottom Line
  - Standard Motor Windings are Designed to Offer Multiple Speeds at a Fixed Load.
  - Rescue Motor Windings are Designed to Offer Multiple HP Ratings at the Correct RPM and Load

RESCUE The Ultimate Truck Stock Motor™

How does it help the contractor?

The Rescue® motor solves these problems!

- I have the wrong motor on my truck!
  - Wrong horsepower!
  - Wrong Enclosure!
  - Wrong Mounting!
    - No Rheem Side Shell Holes!
    - No Rheem/Trane Lead End Mounting Holes
  - Taking Extra Time to get the Right Motor

RESCUE The Ultimate Truck Stock Motor™

Flexibility Example: Cat 5462 1075RPMS

Mounting	1/6HP	1/5HP	1/4HP	1/3HP	1/2HP
Shaft Up	✓	✓	✓	✓	Use 5465
Shaft Down	✓	✓	✓	✓	Use 5465
Stud Mount	✓	✓	✓	✓	Use 5465
Band Mount	✓	✓	✓	✓	Use 5465
Holes Mount	✓	✓	✓	✓	Use 5465

One Motor: 5462 Replaces Twenty Ratings - Permanently!

Setting Up Your Truck Template

- Know Your Customers
  - Do your customers have Air Handlers or Mostly Furnaces
    - Now Choose 115V or 208-230V Blower Motors
    - Might be both in the south
  - Do your customers have multiple small units or one large one
    - Now Choose how high your HP needs to be on condenser and blower motors
  - Are you selling more and more 825 RPM condenser motors?
    - Many Contractors Are
  - Do you live in a HOT climate? Arizona?
    - Consider carrying the Mojave® H Model Condenser Motors

Most truck stock templates can cover the majority of calls with ONLY 3 or 4 different motors depending on the region

RESCUE The Ultimate Truck Stock Motor™

Setting Up Your Truck Template

- Example: Northern Climate, Very Few Heat Pumps, 115V Blowers, Both 825 and 1075 Condenser Fan Motors

- Probable Stock Template:
  - 5470 1/5 – 3/4HP, 115V Blower Motors
  - 5462 1/6 – 1/3 HP, 1075 RPM Condenser Fan Motors
  - 5464 1/6 – 1/3 HP, 825 RPM Condenser Fan Motors
  - Optional – 5471 208-230V Blower Motors

You Know Your Customers
but We Can Help You!

RESCUE The Ultimate Truck Stock Motor™

Rescue® Multi-Horsepower Motors

- Industry Leading Replacement Motors

- Benefits for the Contractor
  - Saves Time
  - Increased Efficiency
  - Hassle Avoidance
  - Financial Benefits

Seven motors can replace over 100 configurations – choose truck stock to fit your market!

RESCUE® The Ultimate Truck Stock Motor™