ZEROSTART®

COLD WEATHER STARTING PRODUCTS

2011 Cold Weather Starting Products
Application Guide & Product Catalog

Weatherly Index #244

Due to our constant efforts to provide the most accurate and complete information possible, the information presented in this publication is subject to change. To be sure you have the most current information, visit our website **www.phillipsandtemro.com**

If there are any new product or application updates, you can download replacement pages and/or entire catalog files from the website. If you require additional information regarding Phillips & Temro Industries products and services, please check our website, or call Customer Service at the numbers below.

Phillips & Temro Industries

9700 West 74th Street
Eden Prairie, MN 55344
(800) 328-6108
(952) 941-9700 • Fax (952) 941-2285

QUALITY REGISTERED ISO/TS 16949:2002 FIRM

ENVIRONMENTALLY REGISTERED ISO 14001 FIRM

PHILLIPS & TEMRO INDUSTRIES
Eden Prairie, MN
Winnipeg, MB

CONTENTS

Applications Automotive 5-26

Listings begin on page #

Acura, AMC, Audi, BMW, Buick 6-8
Cadillac 8
Chevrolet 9-10
Chrysler 11
Dodge Light-Medium Duty Trucks & Vans 11-12
Daewoo, Eagle, Fiat, Ford/Mercury 12-14
Geo, Honda 14-15
Hummer, Hyundai, Infiniti 15-16
International by Navistar, Isuzu, Jaguar 16-17
Kia, Lada, Lexus 17-18
Mazda, Mercedes-Benz, Mini, Mitsubishi 18-20
Nissan, Oldsmobile 20-22
Pontiac, Porsche, Land Rover, Sab, Saturn 22-24
Scion, Smart, Subaru, Suzuki 24
Toyota 24-25
Volkswagen, Volvo 25-26
Automotive Footnotes 26

Applications Agricultural, Heavy Duty & Industrial App. 27-65

Allis Chalmers, Belarus, Bolens, ... 28-29
David Brown, Case IH/JI Case 29
Caterpillar 30-33
Chevrolet, Continental (Teledyne) 33-34
Cummins 33-37
Detroit Diesel 37-40
Deutz-Allis, FAHR, Fiat 40-41
Ford 41-44
Hercules, Hino, International by Navistar 44-48
Isuzu, Iveco 48-50
John Deere 50-51
Komatsu, Kubota 52-54
Lister-Petter, Lombardini, Mack 54-56
Massey & Massey Fergusson 56-57
Mercedes, Minneapolis Moline, Mitsubishi 57-58
Mitsubishi Fuso, MWM Murphy 59
Nissan 59-60
Oliver, Onan, Paccar, Perkins 60-62
Toyota 63
UD Trucks, Volkswagen, Volvo 64-65
Yanmar, Zetor 65

Product Information 66-86

Threaded Oil Pan Heaters, Threaded Coolant Immersion Heaters 66
Cab & Cargo Heaters 67-68
Cab Power System 69
. 70
Circulation Heaters 71-73
Battery Heaters 74
Cordsets & Accessories 75-78
Freeze Plug Replacement Cordsets 75
Heavy-Duty Immersion Heater Replacement Cordsets 75
Weatherproof Cordsets & Receptacles 76
Y-Cords & Thermostats 77
Indicator Light System 78
Integrated Indicator Light 79
Diesel Fuel Heaters 80
Diesel Starting Fluid Systems 81-84
Interior Warmers 84
Lower Radiator Hose Heaters 85
Magnetic Heaters 85
Radiant Heaters 85
Specialty Products - Vibra® Dump Body Vibrator 86
Engine Startability Chart 87
Technical Information 88
Warranty Information 89-90

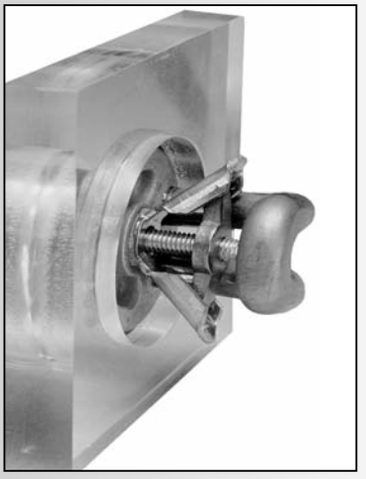
ZEROSTART®

COLD WEATHER STARTING PRODUCTS

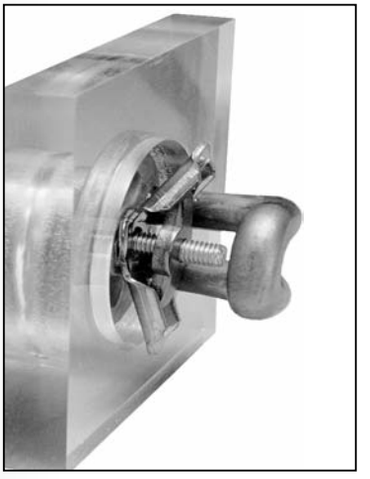
FREEZE PLUG HEATERS

The choice of professional installers

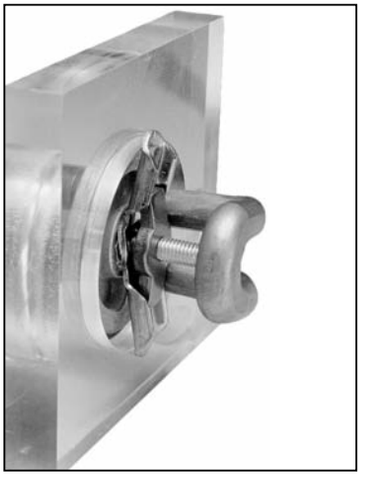
- Ensure quick winter starts - reduce engine wear
- Highest rated, most efficient type of heater
- V-Loc™ locking system provides quick, trouble-free installation
- Plated stamped-steel & forged brass adapters with copper heating element for maximum life and efficiency.
- Direct OEM replacement in many applications
- Replaceable cordset



V-Loc™ in fully open position, prior to tightening locking bolt.



V-Loc™ clamp spreads outward as locking bolt it tightened.



V-Loc™ in fully locked position. Heater is secured in engine block.

See pages 6-26 for Automotive Freeze Plug Applications and pages 27-65 for Agricultural, Heavy Duty, and Industrial Applications.
Replacement cordset information - see Automotive Applications and page 75.

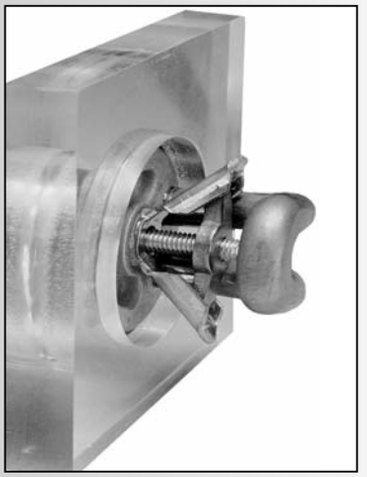
ZEROSTART®

PRODUITS DE DÉMARRAGE PAR TEMPS FROID

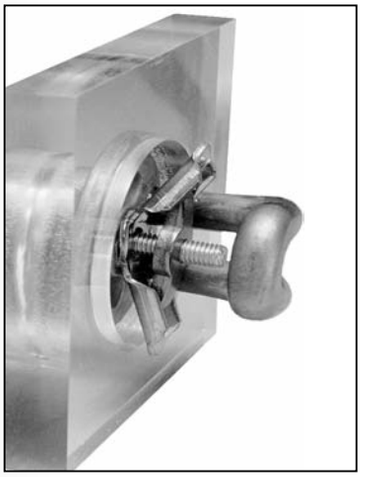
CHAUFFE-MOTEURS

Le choix des installateurs professionnels

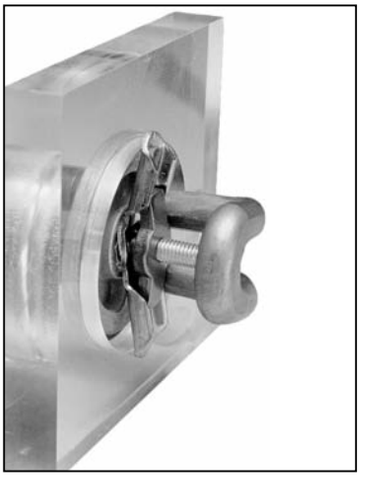
- Pour assurer des démarrages rapides en hiver et réduire l'usure du moteur
- Le réchauffeur le mieux coté et le plus efficace
- Le système de verrouillage V-Loc™ permet une installation simple et sans problème
- Adaptateurs en laiton forgé et en acier estampé plaqué avec élément chauffant en cuivre pour une durabilité et une efficacité maximales
- Remplacement direct d'équipement d'origine dans plusieurs applications
- Cordon amovible remplaçable



V-Loc™ en position ouverte avant de serrer le boulon d'arrêt.



La fixation V-Loc™ s'ouvre vers l'extérieur quand on serre le boulon d'arrêt.



V-Loc™ en position complètement verrouillé. Le réchauffeur est fixé au bloc-moteur.

Consultez les pages 6 à 26 pour connaître les applications du chauffe-moteur pour automobiles et les pages 27 à 65 pour les applications de machinerie agricole, lourde et industrielle.
Information sur le cordon amovible de rechange - consultez la rubrique applications pour automobiles et la page 75.

Agricultural, Heavy Duty & Industrial App.

See page 4 for Automotive and Light-Duty Truck Applications.

All Agricultural, Heavy Duty & Industrial Applications are CSA Approved (except where noted).

Agricultural, Heavy Duty, and Industrial listings appear as follows:

Manufacturer

MACK

E6 (672 CID 6 cyl.)

(Engines with smooth bore freeze plug. Example: EM6300, E6350, EM6237)

Part No.	Watt	Volt	Diameter	Type
8608748	1500	120	1-3/4"	Freeze Plug
8609772	150	**240**	1-3/4"	Freeze Plug

Engine diagram (if available)

Installation Information:

Replaces 1-3/4" freeze plug on side of engine.
Available Service Parts: O-ring and clamping device kit (3500003)

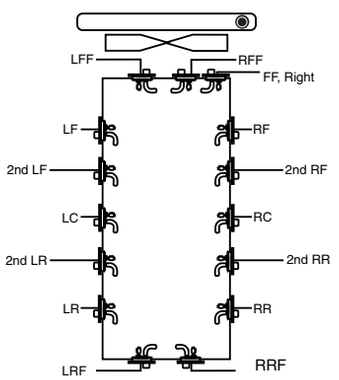
Product photo (if applicable)

Installation Information. See chart below for mounting location information.

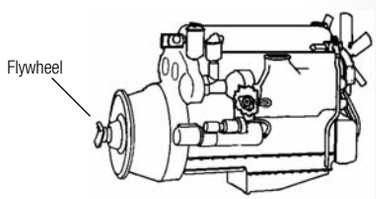
Part Number, Heater Wattage, Heater Voltage, Bore Diameter (if applicable), Heater Type. "Plate" indicates mounting plate installation.

Additional engine information, selection criteria

Engine Model and/or size, plus any descriptions



Heater installation locations are as viewed from flywheel end of engine.



Typical applications for engine:

Agricultural Use

Industrial Use

Heavy Duty Truck Use

CF.....Center Front
CR.....Center Rear
F.....Front
FF.....Front face of block
LC.....Left Center
LF.....Left Front
2nd LF.....2nd from left, front
LFF.....Front face, left cylinder
LLC.....Left side, lower center
LR.....Left Rear

2nd LR.....2nd from left, Rear
LS.....Left side
R.....Rear
RC.....Right center
Rear.....Rear face or side
RF.....Right front
2nd RF.....2nd from right front
RFF.....Front face, right cylinder head
RR.....Right Rear
RS.....Right side
2nd RR.....2nd Core plug from the right rear

ALLIS CHALMERS

170 Diesel

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100013	600	120	1-1/4"	Freeze Plug	3600022

Installation Information:

Install in Left, 2nd from Rear. Point element UP/DOWN.

180, 185, 200, 7000, 7010, 7020
(649, 649T, 2800, 2900 engines)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500014	1000	120	Plate	Immersion	3600024

Installation Information:

Install in Right Rear (RR). Point element forward.

7030, 7040, 7045, 7050, 7060, 7080, 7580
(D21, 210, 220, 3500 & 3700, 670T & 670I engines)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500013	1500	120	1" NPT	Immersion	3600008

Installation Information:

Install in Right Rear (RR).

W, WC, WD, WF, WR, WD-45

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3200003	600	120	1-1/2"	LRHH	3600047

Installation Information:

Lower Radiator Hose Heater (see page 84). Circulation heater is acceptable alternative (see pages 71-73).

XP-170, XP190

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3200004	600	120	1-3/4"	LRHH	3600047

Installation Information:

Lower Radiator Hose Heater (see page 84). Circulation heater is acceptable alternative (see pages 71-73).

XP180, XP210, XP220

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3200005	600	120	2"	LRHH	3600047

Installation Information:

Lower Radiator Hose Heater (see page 84). Circulation heater is acceptable alternative (see pages 71-73).

BELARUS

500, 800, 900 Series

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100093	400	120	3/4" NPT	Immersion	3600003

Installation Information:

Install in Right Front (RF). Use 1" x 3/4" bushing.

BOLENS

TS1910, TS3420 (2 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100067	400	120	1-3/4"	Freeze Plug	3600006

Installation Information:

Install in Left Side (LS). Point element DOWN.

G2102, 2104, 2702, 2704

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100067	400	120	1-3/4"	Freeze Plug	3600006

Installation Information:

Install in Left Center (LC). Point element UP.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

BOLENS - continued

TX1502, TX1504, TX1704

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100067	400	120	1-3/4"	Freeze Plug	3600006

Installation Information:
Install in Right Side (RS). Point element UP.

5117H (Mitsubishi L3A)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100049	400	120	40mm	Freeze Plug	3600006

Installation Information:
Install in Left Rear (LR). Point element 9 o'clock.

DAVID BROWN

All 900, 995, 1200, 1212

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100066	400	120	1-3/4"	Freeze PluG	3600006

Installation Information:
Install in Left Center (LC). Point element 12 o'clock.

CASE IH/JI CASE

4 & 6 cyl: 336, 401, 451, 504 CID, 1470TK, W2A (504 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500024	1000	120	2"	Freeze Plug	3600008

Installation Information:
Install in Right Rear (RR). Point element DOWN.

390 (4 cyl. 3.9L), 590 (6 cyl. 5.9L)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500030	750	120	58mm	Freeze Plug	3600008
8601666	750	**240**	58mm	Freeze Plug	8608377

Installation Information:
Installs in Right Side (RS). Point element DOWN. Circulation heater is acceptable alternative (see pages 71-73).

All 430, 730, 830 (188D, 251G, 267D, 284D, 310D)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500026	400	120	3/8" NPT	Immersion	N/A

Installation Information:
Install in Left Side (LS). Circulation heater (see pages 71-73) or #3200005 Lower Radiator Hose Heater are acceptable alternatives.

6 cyl: 675 (675TWV, TV140)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100112	750	120	1-1/2"	Freeze Plug	3600023

Installation Information:
2nd core hole from rear right side.

830 (6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8601860	1000	120	58mm	Freeze Plug	3600008
8601852	1000	**240**	58mm	Freeze Plug	8608377

Installation Information:
Install in Right Rear (RR). Point element 4 o'clock. Circulation heater is acceptable alternative (see pages 71-73)

930 (6 cyl. 377G, 401D)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500026	400	120	3/8" NPT	Immersion	N/A

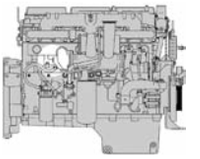
Installation Information:
Install in Left Side (LS). Two heaters are required. Circulation heater is acceptable alternative (see pages 71-73).

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

CATERPILLAR

C10, C12

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500013	1500	120	1" NPT	Immersion	3600008
3500031	1500	**240**	1" NPT	Immersion	8608377



Installation Information:

Replaces 1" NPT plug in rear of oil cooler. Engine may also accept the following oil pan heaters: 8609683, 8609659, 8609713 (requires 1" x 1/2" bushing to reduce port size. See threaded immersion heater page for specifications.

2004-2006 C11 ACERT, C13 ACERT, 2004-2006 C11, C13

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500075	1500	120	1-5/16" STOR	Immersion	3600008
3500074	1500	**240**	1-5/16" STOR	Immersion	8608377

Installation Information:

Replaces 1-5/16" threaded plug in rear of oil cooler. Engine may also accept the following oil pan heaters: 3500079, 3500078 (replaces 1-5/16" threaded plug).

2004-2006 ACERT C9, C15, C16

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500077	1500	120	1-3/16" THD	Immersion	3600008
3500076	1500	**240**	1-3/16" THD	Immersion	8608377

Installation Information:

Replaces 1-3/16" threaded plug in rear of oil cooler bonnet. Engine may also accept the following oil pan heaters: 3500079, 3500078 (replaces 1-5/16" threaded plug).

2007 & NEWER CAT C13 ACERT & C15 ACERT

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500111	1500	120	1-3/16" #14 STOR	Immersion	3600008

Installation Information:

Replaces 1-3/16" plug located in the rear of the oil cooler, on right hand side of engine.

C9, C15, C16

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600090	1000	120	1" NPT	Immersion	3600008
8600120	1000	**240**	1" NPT	Immersion	8608377
8605556	1500	120	1" NPT	Immersion	3600008
8600260	1500	**240**	1" NPT	Immersion	8608377

Installation Information:

Install in oil cooler rear bonnet.

1100 Series, 3100 Series

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8601518	1000	120	1-3/4"	Freeze Plug	3600008
8601577	1500	120	1-3/4"	Freeze Plug	8608377

Installation Information:

Replaces freeze plug. Available Service Parts: Hex Nut (8602999), Element Gasket (8603650).

1404 (163 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100088	400	120	2.125"	Freeze Plug	3600006

Installation Information:

Install in Left Center (LC) or Left Rear (LR). Point element 12 o'clock.

1670 (350 CID), **G/D 333** (525/638 CID), **1693, 1674** (638 CID)

Use Circulation heater (see pages 71-73)

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

CATERPILLAR - continued

1693 & D343 (893 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8601909	1500	120	Plate	Immersion	3600008

Installation Information:

Replaces water jacket access plate on side of engine. Available Service Parts: Hex Nut (8602999), Element Gasket (8603650).

1693T & 1693TA (893 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8601976	1500	120	Plate	Immersion	3600008

Installation Information:

Replaces water jacket access plate on side of engine. Available Service Parts: Hex Nut (8602999), Element Gasket (8603650).

3003 (3 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100016	400	120	35mm	Freeze Plug	3600006

Installation Information: Install in Left Front (LF). Point element 6 o'clock.

3013 (3 cyl.), 3024, 3014 (4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100049	400	120	40mm	Freeze Plug	3600006

Installation Information Install in Left Front (LF). Point element 6 o'clock.

3034 (4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100101	400	120	50mm	Freeze Plug	3600006

Installation Information: Install in back of head. Point element 4 o'clock.

3046 (5 Litre)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100078	400	120	35mm	Freeze Plug	3600006

Installation Information: Install 2nd Left Rear (LR). Point element 6 o'clock.

2004-2006 3054C, 3054E, C4.4

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500084	750	120	1-1/4"	Freeze Plug	3600008

Installation Information: Install Right Rear, Point element 3 o'clock.

3054, 3056

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100045	600	120	1-1/2"	Freeze Plug	3600007

Installation Information: Install in 1-1/2" core hole on Right Side of engine, between #1 and #2 cylinders, behind exhaust manifold.

3064, 3066

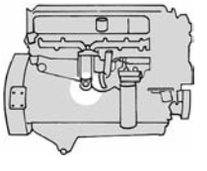
Use Circulation heater (see pages 71-73)

2004-2007 C7 ACERT, 3114 (4.4L), 3116 (6.6L), 3126 (7.2L), 3126B (7.2L),

All years for previous engines prior to 2004 **C7**(7.2L),

CFE (Caterpillar/Freightliner Engine)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500015	1000	120	44mm	Freeze Plug	3600048
3500016	1000	**240**	44mm	Freeze Plug	N/A
3500081	1500	120	44mm	Freeze Plug	3600048



Installation Information:

Replaces core plug on center of Right Side. Heater kit includes specia high temperature cordset.
Engine may also accept oil pan heater 3500006 (3116 only). See threaded immersion heater page for specifications.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

CATERPILLAR - continued

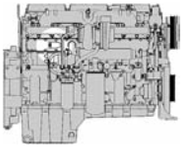
3150, 3160 (636 C.I.D.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8602816	600	120	44mm	Freeze Plug	3600008

Installation Information:

3150: Replaces rear freeze plug on right side of engine (requires one heater) **3160:** Replaces center freeze plug on side of engine (requires two heaters)
Available Service Parts: Hex nut (8602999), Element gasket (8603650)

3176 (10.2L)



Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8601267	1500	120	3/4" NPT	Immersion	3600008

Installation Instructions: Replaces 3/4" pipe plug on Right Rear Side of engine. Special high temperature cordset included in kit. Engine may also accept Oil Pan Heaters 8609683, 8609659, or 8609713 (requires 1" x 1/2" bushing to reduce port size). See threaded immersion heater page for specifications.

3196

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500013	1500	120	1" NPT	Immersion	3600008
3500031	1500	**240**	1" NPT	Immersion	8608377

Installation Information:

Replaces 1" NPT plug in rear of oil cooler. Engine may also accept the following oil panheaters: 8609683, 8609659, 8609713 (requires 1" x 1/2" bushing to reduce port size. See page 64 for oil pan heater specifications).

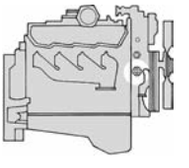
3204, 3208 (636 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8602816	600	120	44mm	Freeze Plug	3600008

Installation Information:

3204: Replaces Rear freeze plug on Right Side of engine (requires one heater). **3208**: Replaces center freeze plug on side of engine (requires two heaters).
Available Service Parts: Hex Nut (8602999), Element Gasket (8603650).

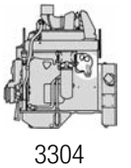
3208 (636 CID) Swivel style heater

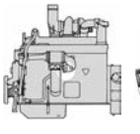


Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8602549	1000	120	3/4" NPT	Immersion	3600008
8602514	1000	**240**	3/4" NPT	Immersion	8608377
8602611	1500	120	3/4" NPT	Immersion	3600008
8602573	1500	**240**	3/4" NPT	Immersion	8608377

Installation Information: Replaces 3/4" pipe plug on Front of engine.

3304 (with oil cooler), 3306 (638 CID)





Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500043	1000	120	3/4" NPT	Immersion	3600008
8600988	1000	**240**	3/4" NPT	Immersion	8608377
8601011	1500	120	3/4" NPT	Immersion	3600008
8601054	1500	**240**	3/4" NPT	Immersion	8608377

3304 3306

Installation Information: Replaces 3/4" pipe plug at Rear of oil cooler on Left Side of engine.

2006 & newer, C6.6

Part No.	Watt	Volt	Diameter	Repl. Cord
3500087	1000	120	1-1/4"	3600008

Installation Information: Install in right rear.

3406 (Except 1998 models), 3406 (with BrakeSaver-through 1993 models), 3406E

Not for use with 1998 3406E or 15.8L 600 hp engine.

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600090	1000	120	1" NPT	Immersion	3600008
8600120	1000	**240**	1" NPT	Immersion	8608377
8605556	1500	120	1" NPT	Immersion	3600008
8600260	1500	**240**	1" NPT	Immersion	8608377

Installation Information: Without BrakeSaver: Replaces 1" pipe plug in oil cooler rear bonnet (pictured). Not available in Canada.
With BrakeSaver: Install in front bonnet. **Note: 8605580 not for use with BrakeSaver. Note: 8605580 not available in Canada.**

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

CATERPILLAR - continued

3406 (With BrakeSaver-1994 & newer)
Not for use with 1998 3406E or 15.8L 600hp models.

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500013	1500	120	1" NPT	Immersion	3600008

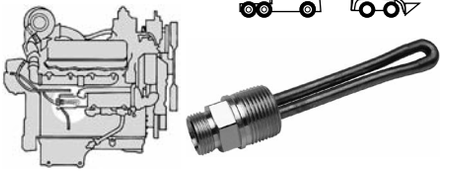
Installation Information: Replaces 1" pipe plug in oil cooler, front bonnet.

3406E, 3456, 15.8L (600 hp) (1998 models only)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500033	1500	120	1" NPT	Immersion	
3500034	1500	120	1" NPT	HTR-Only	N/A

Installation Information: Installs in oil cooler rear bonnet. Not interchangeable with 8605556 for this application due to unique 1998 engine design.

3408 (1099 CID)



Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600090	1000	120	1" NPT	Immersion	3600008
8600120	1000	**240**	1" NPT	Immersion	8608377
8605556	1500	120	1" NPT	Immersion	3600008
8600260	1500	**240**	1" NPT	Immersion	8608377

Installation Information: Replaces 1" pipe plug behind oil cooler on Right cylinder bank.

3412 (12 cyl.)

Use Circulation heater (see pages 71-73)

CHEVROLET

Forward & Tiltmaster, all gasoline engines

See Chevrolet Automotive/Light Truck gasoline applications - page 10.

CONTINENTAL (Teledyne)

F162, F163, Y112 (1981 & newer) 4 cyl.

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100053	400	120	1-5/8"	Freeze Plug	3600006

Installation Information:
Install in any Left Side (LS). Point element UP. Note: Heater for cup-type core hole only.

TM27, TMD27 4 cyl.

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100060	400	120	1-5/8"	Freeze Plug	3600006

Installation Information: Install in any Right Side (RS). Point element UP.

F227, F245 (1979 & newer)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100053	400	120	1-5/8"	Freeze Plug	3600006

Installation Information: Install in any Left Side (LS). Point element UP.

F227, F245 (1979 & newer - alternate wattage)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100057	600	120	1-5/8"	Freeze Plug	3600006

Installation Information: Install in any Left Side (LS). Point element UP.

CUMMINS

2007 & Newer, ISX, QSX (Beginning July 2007)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500107	1500	120	26mm	Immersion	3600008

Installation Information: Install in Right Side (RS).

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

CUMMINS - continued

Signature 600, ISX, APEX

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500108	1500	**240**	Plate	Immersion	8608377

Installation Information: Remove flat 2 - bolt cover on right side of block, near rear of water inlet casting. Install with element pointing toward front of engine. Re-use gasket from cover. NOTE: gasket not supplied.

Signature 600, ISX, QSX (15L - 915 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500038	1500	120	Plate	Immersion	3600008

Installation Information: Install in Right Side (RS). ***Reuse gasket from plate that was removed.*** Gasket not included.

N Series (855 CID-14 litre NT315, N14-330, N14-330E, N14-460, N14-460, etc.)
Big Cam IV, New Big Cam IV, 88NT, 444

(Engines without heater hose connection to rear plate or Full Flow Cooling)

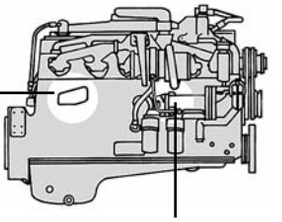
Replaces water jacket access plate

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8601003	1000	120	Plate	Immersion	3600008
8601046	1500	120	Plate	Immersion	3600008
8601062	1500	**240**	Plate	Immersion	8608377

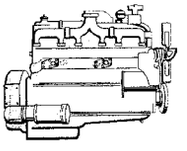
Installation Information:

Due to oil cooler provisions on 855 CID series engines, special applications which accommodate full flow cooling designs are necessary. Where there is interference,the heater required will depend upon the oil cooler and exhaust configuration. Thevarious installation options are shown here. Also see alternate installation below. Engine may accept oil pan heaters 8609683, 8609659, or 8609713 (requires 1" x 1/2"reducer bushing to reduce port size). See page 66 for oil pan heater specifications.

BIG CAM III, IV, New BIG CAM IV, 88NT & N14 install here



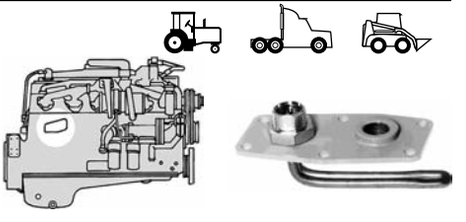
Engines without FULL FLOW COOLING - replaces Front or Rear water jacket access plate.



BIG CAM IV with heater hose connection to rear plate & pre-88NT engines install here

N Series, Big cam IV, New Big Cam IV, 88NT (alternate installation)

(Engines with one heater hose connection (1/2" NPT) to Rear plate.

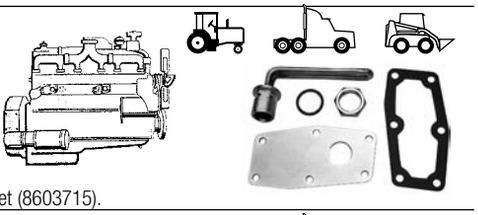


Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8601526	1500	120	Plate	Immersion	3600008

Installation Information: Replaces Rear access plate. Heater includes 1/2" NPT port for hose connection. Available Service Parts: Hex Nut (8602999), Element Gasket (8603650), Plate Gasket (8603359)

New Big Cam IV

(Forward plate installations with reverse bolt pattern - without single-pass oil cooler 1986-1988)

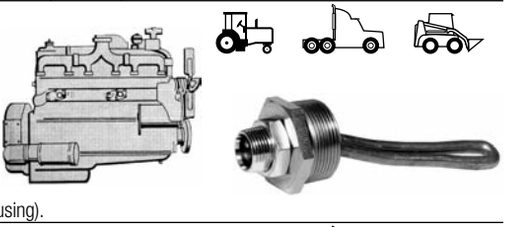


Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600627	1500	120	Plate	Immersion	3600008
8600651	1500	**240**	Plate	Immersion	8608377

Installation Information: Replaces forward side plate. Available Service Parts: Hex Nut (8602999), Plate Gasket (8603715).

855 CID (alternate installation)

(Rear plug location without aftercooler water connection.
Recommended as alternate location for cab-over vehicles only)



Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500036	1500	120	1-1/2" NPT	Immersion	3600008

Installation Information: Replaces 1-1/2" pipe plug on Rear face of engine, right side (above flywheel housing).

855 CID (alternate installation)

(1996 & newer engines with O-ring seal)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500023	1500	120	1-5/8" STOR	Immersion	3600008

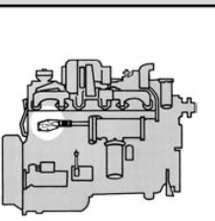
Installation Information:
Replaces 1-5/8" plug on Rear face of engine, right side (above flywheel housing).

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

CUMMINS - continued

855 CID (engines with full flow cooling, high-mount oil cooler)
(Uses hose and two clamps for water tube connection to casting.
Most engines manufactured from August 1975 to June 1982)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8601100	1500	120	Plate	Immersion	3600008

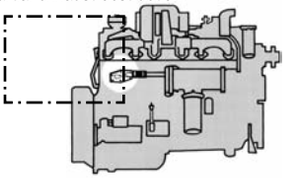


Installation Information: Replaces water jacket access plate on side of engine.
Available Service Parts: Hex Nut (8602999), Element Gasket (8603650), Plate Gasket (8603359)

855 CID (engines with full flow cooling, high-mount oil cooler-obstruction)
(Connected to Rear port which is partially blocked by exhaust)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8608741	1500	120	Plate	Immersion	3600008

partial exhaust obstruction



Installation Information: Replaces water jacket access plate on side of engine.
Available Service Parts: Plate Gasket (8603359)

855 CID (engines with full flow cooling, high-mount oil cooler - O-ring)
(Uses O-ring for water tube connection. Engines only produced prior to 1975)

Use Circulation heater (see pages 71-73)

855 CID (replacement element for existing 8602379 heater)
(Does NOT include casting. Cordset is included)

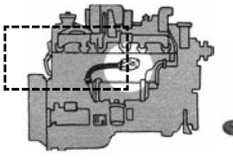
Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8602301	1500	120	Plate	Immersion	3600008

Installation Information: Replaces heating element in casting.
Available Service Parts: Hex Nut (8602999), Plate (8603138), Gasket (8603383)

855 CID (engines with full flow cooling, low-mount oil cooler)
(Connected to Front port, Rear port blocked by exhaust)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8608709	1500	120	Plate	Immersion	3600008

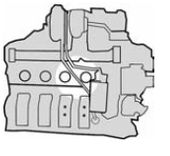
Complete exhaust obstruction



Installation Information: Replaces water jacket access plate on side of engine.
Available Service Parts: Hex Nut (8602999), Element Gasket (8603650), Plate Gasket (8603359)

2005-2006 ISB 02 200 HP

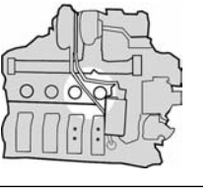
Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500096	750	120	58mm	Freeze Plug	3600008



Installation Information:
Replace freeze plug opening on Right front side of engine.
Must have threaded bolt holes in block for attaching mounting plate.

1987-2002 B Series: 4B3.9 & 4BT3.9 (3.9L 239 CID 4 cyl.) **(Through model year 2002)**
6B5.9 & 6BT5.9 (5.9L 359 CID 6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500030	750	120	58mm	Freeze Plug	3600008
8601666	750	**240**	58mm	Freeze Plug	8608377



Installation Information:
Replaces freeze plug on Right side on engine.
Available Service Parts: O-ring and clamp device (3500002)

2007 ISB 6.7L & QSB (6.7L & 4.5L)
ISB, QSB Series (3.9L & 5.9L 4/6 cyl.), (Encore)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500022	750	120	3/4" NPT	Immersion	3600008
3500110	750	**240**	3/4" NPT	Immersion	8608377

Installation Information: Installs in 3/4" NPT port to Rear of oil cooler.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

CUMMINS - continued

B 3.3T (3I3L)

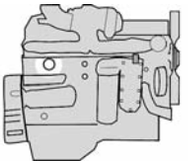
Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100046	400	120	40mm	Freeze Plug	3600006

Installation Information: Installs in Left Rear (LR).

C Series: 6C8.3 & 6CT8.3 (8.3L 505 CID), 6CTA8.3

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8601860	1000	120	58mm	Freeze Plug	3600008
8601852	1000	**240**	58mm	Freeze Plug	8608377

Installation Information:
Replaces freeze plug on Right rear side of engine.
Available Service Parts: O-ring and clamp device (3500002)



ISC, QSC Series (8.3L 505 CID), ISL Series (8.9L 543 CID)

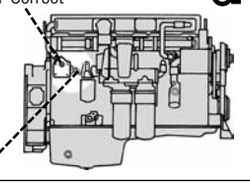
Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500032	1000	120	3/4" NPT	Immersion	3600008

Installation Information:
Installs in upper 3/4" NPT port, to front of oil cooler.

L10 (10L 611 CID 6 cyl.), M11, ISM Series, QSM11

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600015	1500	120	38mm thd	Immersion	3600008
8600031	1500	**240**	38mm thd	Immersion	8608377

Installation Information:
Install in heater casting on Right rear side of engine.Available
Service Parts: Hex Nut (8602999), Element Gasket (8603650)



M11 (11L) (2000 and newer)

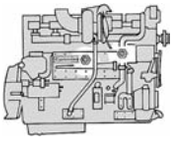
Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500042	1500	120	Plate	Immersion	3600008
3500109	1500	240	plate	immersion	8608377

Installation Information:
Install on Right rear side of engine.

K Series (KT19, KT450, KT1150, KTA525 - 1150 CID 6 cyl.), QSK Series

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500017	1500	120	1-3/4"-18 thd	Immersion	3600008

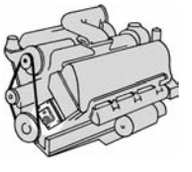
Installation Information:
Replaces large hex plug at either upper front or center thread position on oil cooler cover. Point element 6 o'clock or 12 o'clock position. Available Service Parts: Hex Nut (8602999), Element Gasket (8603650)



V903, VT903, VT350, Formula VT300 (903 CID)
V6-195, 200, 215, 280 (588 CID)
V8-235, 265, 300, 370 785 CID), 350 & 430 (950 CID)
(Replacement element only)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8607605	1500	120		Immersion	3600008

Installation Information:
Replacement element only. Circulation heater is acceptable alternative (see pages 71-73).



V903, VT903, VT350, Formula VT300 (903 CID) (Alternate installation)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8601267	1500	120	3/4" NPT	Immersion	3600008
8601054	1500	**240**	3/4" NPT	Immersion	8608377

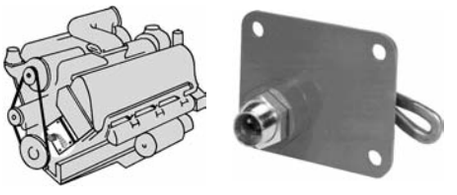
Installation Information: Replaces 3/4" pipe plug at bottom rear of oil cooler.
Check engine to be sure 3/4" pipe plug is available on engine before proceeding.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

CUMMINS - continued

V6-140 (352 CID), V6-155 (378 CID)
(Engines without alternator mounted over water jacket access plate)

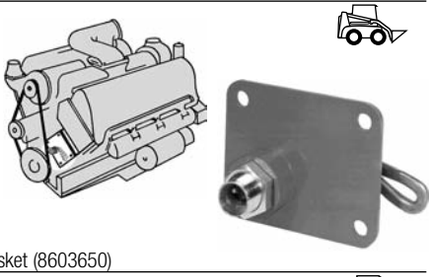
Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8601763	1000	120	Plate	Immersion	3600008
8601801	1000	**240**	Plate	Immersion	8608377
8601844	1500	120	Plate	Immersion	3600008



Installation Information: Replaces water jacket access plate on front left cylinder bank.
Available Service Parts: Hex Nut (8602999), Element Gasket (8603650)

170 & 185 (470 CID), 210 (504 CID), VT225, V555, VT555 (555 CID)
(Engines without alternator mounted over water jacket access plate)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8601763	1000	120	Plate	Immersion	3600008
8601801	1000	**240**	Plate	Immersion	8608377
8601844	1500	120	Plate	Immersion	3600008



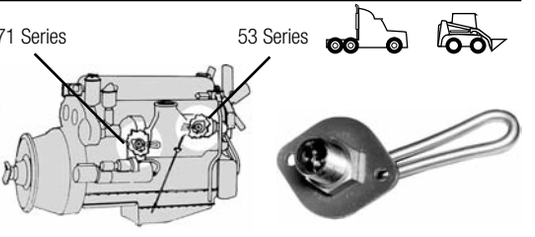
Installation Information:
Replaces water jacket access plate on front left cylinder bank. Available Service Parts: Hex Nut (8602999), Element Gasket (8603650)

C & J 160, 175 & 190 (464 CID)
Use Circulation heater (see pages 71-73)

DETROIT DIESEL

3-53, 4-53, 3-71, 4-71
(Engines without water cooled compressor)

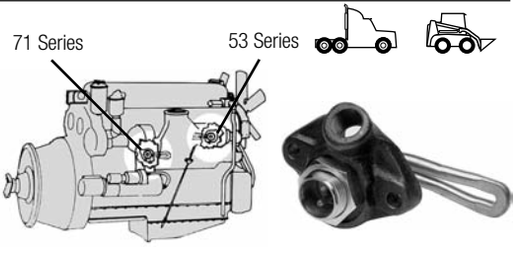
Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600295	750	120	Plate	Immersion	3600008
8600368	1000	120	Plate	Immersion	3600008



Installation Information: Replaces water jacket access plate on side of engine.
Note: Do not use 1000 watt heater on 3-53, 4-53, or 3-71 engines.
Available Service Parts: Hex Nut (8602999), Element Gasket (8603650)

3-53, 4-53, 3-71, 4-71
(Engines with water cooled compressor)

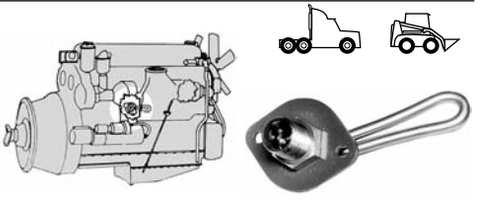
Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8601291	750	120	Plate	Immersion	3600008
8601305	1000	120	Plate	Immersion	3600008



Installation Information: Replaces water jacket access plate on side of engine.
Note: Do not use 1000 watt heater on 3-53, 4-53, or 3-71 engines.
Available Service Parts: Hex Nut (8602999), Element Gasket (8603650)

6-71
(Engines without water cooled compressor)

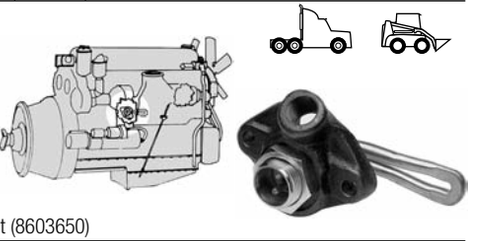
Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600368	1000	120	Plate	Immersion	3600008
8600422	1500	120	Plate	Immersion	3600008



Installation Information:
Replaces water jacket access plate on side of engine. Available Service Parts: Hex Nut (8602999), Element Gasket (8603650)

6-71
(Engines with water cooled compressor)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8601305	1000	120	Plate	Immersion	3600008
8601372	1500	120	Plate	Immersion	3600008



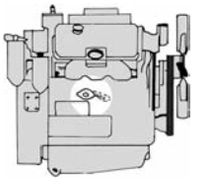
Installation Information:
Replaces water jacket access plate on side of engine. Available Service Parts: Hex Nut (8602999), Element Gasket (8603650)

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

DETROIT DIESEL - continued

6V-53
(Vehicles with or without automatic transmission)

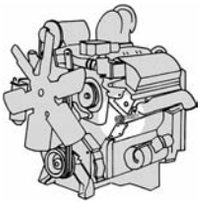
Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500021	1000	120	Plate	Immersion	3600008



Installation Information:
Replaces water jacket access plate on side of engine.
Available Service Parts: Hex Nut (8602999), Element Gasket (8603650)

6V-71, 8V-71 (Vehicles without power steering and/or air conditioning)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600090	1000	120	1" NPT	Immersion	3600008
8600120	1000	**240**	1" NPT	Immersion	8608377
8605556	1500	120	1" NPT	Immersion	3600008
8600260	1500	**240**	1" NPT	Immersion	8608377



Installation Information:
Replaces 1" pipe plug on front face of Left cylinder bank.

8.2 Litre (501 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500043	1000	120	3/4" NPT	Immersion	3600008
8600996	1000	**240**	3/4" NPT	Immersion	8608377

Installation Information: Replaces 3/4" pipe plug on Right front side of engine.

8V-53
Use 1500 or 2250 Watt Circulation heater (see pages 71-73)

D638 (3.8L 6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8604967	600	120	3/4" NPT	Immersion	N/A

Installation Information:
Install in Right Side (RS) of engine.

Series 30

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100045	600	120	1-1/2"	Freeze Plug	3600007

Installation Information:
Install in Right Side (RS). Point element UP.

Series 40 (466 CID) (Engines manufactured prior to September 1993)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8608512	1250	120	1-1/4"	Freeze PluG	3600008
8608539	1250	**240**	1-1/4"	Freeze Plug	8608377

Installation Information: Replaces 3rd or 4th freeze plug on Left side of engine.
Available Service Parts: O-ring and clamp device (3500004)

Series 40 (6.7L 408 CID, 7.6L 466 CID, 8.7L 530 CID)
(Engines manufactured after August 1993)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500044	1250	120	1-1/4"	Freeze Plug	3600008
8608911	1250	**240**	1-1/4"	Freeze Plug	8608377

Installation Information:
Replaces 1-1/4" plug in boss on Left side of engine.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

DETROIT DIESEL - continued

Series 50 (Except low-mount turbo)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600090	1000	120	1” NPT	Immersion	3600008
8605556	1500	120	1" NPT	Immersion	3600008

Installation Information: Replaces 1" NPT plug in oil cooler casting.
Engine may also accept oil pan heater 8603243. See threaded immersion heater page for specifications.

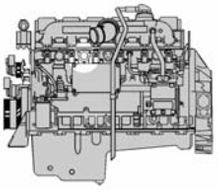
Series 50
(Including low-mount turbo)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500007	1000	120	1-1/2"	Freeze Plug	3600008

Installation Information:
Install in core plug behind oil cooler. Engine may also accept oil pan heater 8603243.
See threaded immersion heater page for specifications.

Series 55

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500008	1500	120	Plate	Immersion	3600008
3500009	1500	**240**	Plate	Immersion	8608377



Installation Information:
Replaces water jacket access plate on Left side of engine.

2008 & Newer (DD15, 14.8L)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500095	1500	120	27mm	Immersion	3600008

Installation Information:
Right side. M27 port in the oil module below intake.

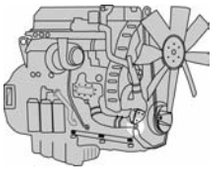
2007 & Newer Series 60

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500077	1500	120	1-3/16” STOR	Immersion	3600008

Installation Information:
Upper hex port of oil cooler. Right side of engine.

Series 60 (11.1L 677 CID, 12.7L 775 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8605556	1500	120	1" NPT	Immersion	3600008
8600260	1500	**240**	1" NPT	Immersion	8608377

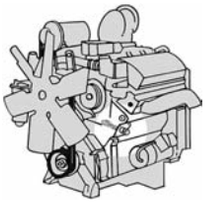


Installation Information:
Pre 1991 engines - Replaces 1" NPT plug in water pump outlet casting on Right front side of engine.
1991 & Newer replaces 1" pipe plug near top front of oil cooler.
May also accept oil pan heater 8603243. See threaded immersion heater page for specifications.

Silver Series (6V-92, 8V-92),

6V-71, 8V-71, 12V-71, 16V-71, 6V-92, 8V-92, 12V-92, 16V-92
(Engines without air conditioner compressor mounted next to water jacket access plate)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8601631	1000	120	Plate	Immersion	3600008
8601704	1500	120	Plate	Immersion	3600008



Installation Information:
Replaces water jacket access plate on Left front cylinder bank. Available Service
Parts: Hex Nut (8602999), Element Gasket (8603650), Plate Gasket (8606854).

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

DETROIT DIESEL - continued

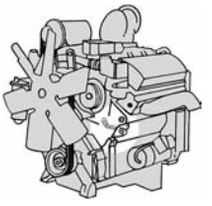
6V-71, 8V-71, 12V-71, 16V-71, 6V-92, 8V-92, 12V-92, 16V-92

(Engines with air conditioner compressor mounted next to water jacket access plate, except for GMC General with 92 Series engine)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8601658	1000	120	Plate	Immersion	3600008
8601712	1500	120	Plate	Immersion	3600008

Installation Information:

Replaces water jacket access plate on Left front cylinder bank.
Available Service Parts: Hex Nut (8602999), Plate Gasket (8606854



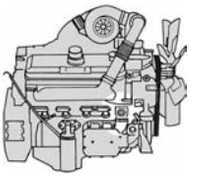
Silver Series (6V-92, 8V-92),
12V-71, 16V-71, 12V-92, 16V-92, GMC General (with 92 Series engine)

(Alternate installation)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500043	1000	120	3/4" NPT	Immersion	3600008
8602514	1000	**240**	3/4" NPT	Immersion	8608377
8602611	1500	120	3/4" NPT	Immersion	3600008
8602573	1500	**240**	3/4" NPT	Immersion	8608377

Installation Information:

Replaces 3/4" pipe plug in oil cooler elbow on right side of engine. Check engine carefully - 3/4" pipe plug not available on all engines.



DEUTZ

F3L912, F3L913 (3 cyl)

(Oil pan heater only)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8603146	150	120	48mm thd	Immersion	3600024

Installation Information: Replaces 48mm plug in oil pan. Check engine carefully - 48mm plug not available on all oil pans. Available Service Parts: Hex Nut (8602999), Element Gasket (8603650)

BF4L913 (4 cyl.)

(Oil pan heater only)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8603170	325	120	48mm thd	Immersion	3600024

Installation Information: Replaces 48mm plug in oil pan. Check engine carefully - 48mm plug not available on all oil pans. Available Service Parts: Hex Nut (8602999), Element Gasket (8603650)

F6L913, BF6L913 (6 cyl.)

(Oil pan heater only)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8603170	325	120	48mm thd	Immersion	3600024

Installation Information:

Dual kit - purchase two heaters and cordsets. Replaces 48mm plugs in oil pan.
Check engine carefully - 48mm plugs not available on all oil pans.
Available Service Parts: Hex Nut (8602999), Element Gasket (8603650)

1012, 1013, 2013

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500019	750	120	Plate	Immersion	3600020

Installation Information:

Install in oil cooler housing. Check engine - heater port not available on all engines.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

FAHR

1012, 1013, 2013

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500055	750	120	Plate	Immersion	3600008

Installation Information:

Install in oil cooler housing. Check engine - heater port not available on all engines.
available on all oil pans. Available Service Parts: Hex Nut (8602999), Element Gasket (8603650)

FIAT

8060, 8061, 8065 (5.5L 335 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600333	1000	120	42mm thd	Immersion	3600008

Installation Information:

Install in 42mm threaded opening on Right rear of engine.
Available Service Parts: Hex Nut (8602999), Element Gasket (8603650)

8360, 8361 (8.1L 494 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600090	1000	120	1" NPT	Immersion	3600008
8600120	1000	**240**	1" NPT	Immersion	8608377

Installation Information:

Replaces 1" pipe plug in coolant elbow casting on Front left side.

FORD

KSG411 (67 CID 4 cyl.), KSG416 (98 CID 4 cyl.)

(Engines with distributor)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100053	400	120	1-5/8"	Freeze Plug	3600006

Installation Information:

Install in Left Side (LS). Point element UP/DOWN.

VSG411 (67 CID 4 cyl.), VSG413 (79 CID 4 cyl.)

(Engines without distributor)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100085	400	120	1-5/8"	Freeze Plug	3600006

Installation Information:

Install in back of head. Point element 3 o'clock.

091PV (91 CID 4 cyl.), GSG417 (104 CID 4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100036	400	120	1-1/2"	Freeze Plug	3600003

Installation Information:

Install in Right front face of cylinder head.
Point element UP or DOWN.

134, 172, 192 CID (Engines used in tractors)

NAA, NAB, 500, 600, 700; 800, 900, 901, 1800 G/D;
2000, 2100, 4000 G/D, 4110D, 4120, 4121

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100087	600	120	2.06"	Freeze Plug	3600006

Installation Information:

Install in any Left Side (LS). Point element UP or DOWN.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

FORD - continued

2000, 3000, 4000, 5000, 6000 (3, 4, 6 cyl.)
(Engines manufactured up to 1967)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3200004	600	120	1-3/4"	LRHH	3600047

Installation Information:

Lower radiator hose heater (see page 64).
Circulation heater is acceptable alternative (see pages 71-73).

3000, 4000, 5000, 8000, 9000 Series
(Engines manufactured 1968-1970)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100065	600	120	1-3/4"	Freeze Plug	3600006

Installation Information:

Install in 4th & 5th Right Side (RS). Two heaters required. Point element DOWN. Circulation heater or LRHH are acceptable alternative (see pages 71-73, 84).

3000, 4000, 5000, 7000, 8000, 9000 Series
(Engines manufactured in 1971 and later)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100112	750	120	1-1/2"	Freeze Plug	3600023

Installation Information:

Install in 4th and 5th Right Side (RS). Two heaters are required. Point element DOWN. Circulation heater or LRHH are acceptable alternatives (see pages 71-73, 84).

LSG423 (140 CID 4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100039	600	120	1-1/2"	Freeze Plug	3600006

Installation Information:

Install in Right rear. Point element UP/DOWN.

LRG423 (140 CID 4 cyl.), LRG425 (152 CID 4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100084	400	120	1-1/2"	Freeze Plug	3600006

Installation Information:

Install in Left Rear (LR). Point element 3 o'clock.

DSD & ESD442 (254 CID 4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100061	600	120	1-5/8"	Freeze Plug	3600036

Installation Information:

Install in Left Center (LC). Point element UP.

LSG633 (200 CID 6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100065	600	120	1-3/4"	Freeze Plug	3600006

Installation Information:

Install in Right Front (RF) or Right Center (RC). Point element UP or DOWN.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

FORD - continued

CSG649 (300 CID 6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100054	600	120	1-5/8"	Freeze Plug	3600006

Installation Information:
Install 2nd Right Side. Point element UP.

SSD655 (335 CID 6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600333	1000	120	42mm thd	Immersion	3600008

Installation Information:
Install in Right Rear (RR). Point element UP/DOWN.

DSD & ESD659 (362 CID 6 cyl.), **660** (363 CID 6 cyl.), **680** (380 CID 6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100061	600	120	1-5/8"	Freeze Plug	3600036

Installation Information:
Install 2nd and 3rd Left side. Point element UP or DOWN.
Two heaters are recommended.

BSD666 (401 CID 6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100112	750	120	1-1/2"	Freeze Plug	3600023

Installation Information:
Install in 4th and 5th Right side. Point element DOWN.
Two heaters are recommended.

WSG858 (351W V-8), **255** (V-8), **302** (V-8)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100039	600	120	1-1/2"	Freeze Plug	3600006

Installation Information:
Install in Left Rear (LR) or Right Rear (RR). Point element DOWN.

LSG861 (370 CID V-8), **LSG870** (429 CID V-8), **LSG875** (460 CID V-8)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100039	600	120	1-1/2"	Freeze Plug	3600006

Installation Information:
Install in Right Side (RS) or Left Side (LS). Point element UP.

401 CID (V-8), **477 CID** (V-8), **534 CID** (V-8)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8601518	1000	120	1-3/4"	Freeze Plug	3600008

Installation Information:
Install in any 1-3/4" freeze plug.

6.6L (401 CID), **7.8L** (474 CID)
(Engines manufactured in August 1989 and later featuring plate type heater)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500048	1000	120	Plate	Immersion	3600008
8606331	1250	120	Plate	Immersion	8608377

Installation Information: Replaces 2nd freeze plug from rear - right side. (Diameter of element in plate 1.5")

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

FORD - continued

6.6L (401 CID), **7.8L** (474 CID)
(Engines manufactured prior to August 1989 featuring freeze plug type heater)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
2207044	1000	120	1-1/2"	Freeze Plug	3600008
8601984	1500	120	1-1/2"	Freeze Plug	3600008
8601968	1500	**240**	1-1/2"	Freeze Plug	8608377

Installation Information:

Replaces 2nd freeze plug from rear - right side.

1060 (5.9L 359 CID 6 cyl. - Cummins B Series)

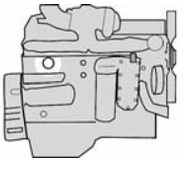
Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500030	750	120	58mm	Freeze Plug	3600008
8601666	750	**240**	58mm	Freeze Plug	8608377

Installation Information:

Replaces freeze plug on Right side of engine.
Available Service Parts: (O-ring & clamp device kit (3500002).

1460 (8.3L 505 6 cyl. - Cummins C Series)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8601860	1000	120	58mm	Freeze Plug	3600008
8601852	1000	**240**	58mm	Freeze Plug	8608377

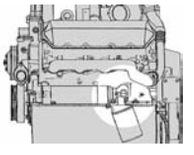


Installation Information:

Replaces freeze plug on Right rear side of engine.
Available Service Parts: O-ring & clamp device kit (3500002)

7.3L (445 CID V-8 - Navistar T444E engine)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500043	1000	120	3/4" NPT	Immersion	3600008
8600996	1000	**240**	3/4" NPT	Immersion	8608377
8602611	1500	120	3/4" NPT	Immersion	3600008



Installation Information:

Replaces 3/4" NPT threaded plug in oil cooler.

6.9L (421 CID V-8), **7.3L** (445 CID V-8)
(Except Navistar T444E engine)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100043	1000	120	1-1/2"	Freeze Plug	3600010

Installation Information:

Replaces freeze plug on Right rear of engine. Point element 11 o'clock.

HERCULES

G1600 (2.7L 163 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100088	400	120	2.135"	Freeze Plug	3600006

Installation Information:

Install in Left Center (LC) or Left Rear (LR). Point element UP or DOWN.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

HERCULES - continued

G/D3400 & 3400T (339 CID)
(Engines manufactured up to 1982)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100039	600	120	1-1/2"	Freeze Plug	3600006

Installation Information: Replaces freeze plug on Right side of engine.

G/D2300, DT3.7 (226 CID), 5.8L (339 CID), G/D3400 (1983+ engines), GT & DT 5.6

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100027	600	120	35mm	Freeze Plug	3600006

Installation Information: Replace freeze plug on Right side of engine.

G/D4800 (7.8L 478 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500025	1000	120	2"	Freeze Plug	3600024

Installation Information: Replaces freeze plug on Right side - near rear.

HINO

W04C, W06E, H06C-T, H07C-B (3.8L, 5.7L, 6.0L, 6.4L, 6.7L)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500043	1000	120	3/4" NPT	Immersion	3600008
8600988	1000	**240**	3/4" NPT	Immersion	8608377

Installation Information: Replaces 3/4" plug in water transfer casting/oil cooler cover.

J Series: J05C (5.3L 4 cyl.), J08C (8.0L 6 cyl)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500018	1000	120	50mm	Freeze Plug	3600008

Installation Information:
Replace core plug on Right front side of engine.

INTERNATIONAL / NAVISTAR

Cub Lo-Boy

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3200004	600	120	1-3/4"	LRHH	3600047

Installation Information:
Lower radiator hose heater (see page 84).
Circulation heater is acceptable alternative (see pages 71-73).

460, 560, 660, 706, TD62, TD92 (All models)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100061	600	120	1-5/8"	Freeze Plug	3600036

Installation Information:
Install in 3rd Right Side (RS). Point element DOWN, if no interference w/throttle rod. Use 12 o'clock for other installations.
Circulation heater or LRHH are acceptable alternatives (see pages 71-73, 84).

806, 1206, 1256 (1963-67), 856, C152, C175, C200, C221, C263, C282, C291, C301, D166, D188, D236, D282, D301, D361, D407, DT407
(Can be used on gas or diesel engines)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100061	600	120	1-5/8"	Freeze Plug	3600036

Installation Information: Install in 1st, 2nd, or 5th freeze plug on Right side. Point element DOWN.
Circulation heater or LRHH are acceptable alternatives (see pages 71-73, 84).

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

INTERNATIONAL / NAVISTAR - continued

504 (153G), **606** (221G)

(Engines manufactured in 1964 and later)
(Can be used on gas or diesel engines)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100054	600	120	1-5/8"	Freeze Plug	3600006

Installation Information: Install in Right Center (RS). Point element DOWN.
Circulation heater is acceptable alternative (see pages 71-73).

966, 1066, 1086, 1466

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100013	600	120	1-1/4"	Freeze Plug	3600022

Installation Information: Installs in 3rd and 4th Left Side (LS). Two heaters required.
Circulation heater is acceptable alternative (see pages 71-73).

966, 1066, 1086, 1466

(Alternate installation)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8608512	1250	120	1-1/4"	Freeze Plug	3600008

Installation Information: Install in Left side.

MV, 404, 446, 485 engines

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100044	600	120	1-1/2"	Freeze Plug	3600006

Installation Information:
Install in any Left Side (LS) or Right Side (RS). Point element between cylinders.
Circulation heater is acceptable alternative (see pages 71-73).

All with Neuss engine (179, 206, 239, 246, 268, 310, 358 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500012	1000	120	1-1/4"	Freeze Plug	3600024

Installation Information: Install in Left Side (LS).
Circulation heater is acceptable alternative (see pages 71-73).

6.9L (421 CID), **7.3L** (445 CID)

(Not for use with T444E engine)

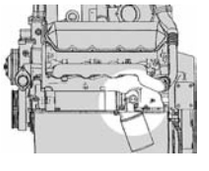
Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100043	1000	120	1-1/2"	Freeze Plug	3600010

Installation Information:
Replaces freeze plug on Right rear of engine. Point element 11 o'clock.
Available Service Parts: O-ring and clamp device (3500005)

T444E (7.3L V-8)

(Engines manufactured in 1994 and later)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500043	1000	120	3/4" NPT	Immersion	3600008
8600996	1000	**240**	3/4" NPT	Immersion	8608377



Installation Information:
Replaces 3/4" threaded plug in oil cooler.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

INTERNATIONAL / NAVISTAR - continued

D150, D170, D190 (461 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100038	600	120	1-1/2"	Freeze Plug	3600006

Installation Information:
Replaces any freeze plug. Point element UP.

D312, D414, DT414, D436, DT436, DTA466
(Engines manufactured prior to 1994)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8608512	1250	120	1-1/4"	Freeze Plug	3600008
8608539	1250	**240**	1-1/4"	Freeze Plug	8608377

Installation Information:
Replaces 3rd or 4th freeze plug on Left side of engine.

2001-2003 DT466 High Torque, DT466, DT466E, HT 530, DT530

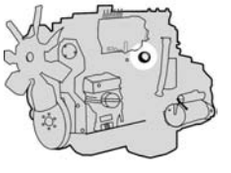
Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500054	1250	120	1-1/4"	Immersion	3600008

Installation Information:
Left side, protruding boss above engine oil dipstick. Element direction 12 o'clock

2004-2006 DT466 & DT570
1994-2000 DT408, DT466, DT466E, 530, 570

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500044	1250	120	1-1/4"	Freeze Plug	3600008
8608911	1250	**240**	1-1/4"	Freeze Plug	8608377

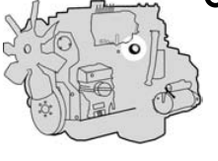
Installation Information:
Replaces 1-1/4" freeze plug in boss on Left side of engine.



2007 & Newer MaxxForce DT, MaxxForce 9 & 10

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500098	1250	120	1-1/4"	Freeze Plug	3600008

Installation Information:
Replaces 1-1/4" freeze plug in boss on Left side of engine.



D550 (549 CID), 9L (551 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100044	600	120	1-1/2"	Freeze Plug	3600006

Installation Information:
Replace any freeze plug. Point element between cylinders.

DT360, DTA360

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8608601	1000	120	1-1/4"	Freeze Plug	3600008

Installation Information:
Replace 3rd or 4th freeze plug on Left side of engine.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

INTERNATIONAL / NAVISTAR - continued

V800 (798 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8605556	1500	120	1" NPT	Immersion	3600008
8600260	1500	**240**	1" NPT	Immersion	8608377

Installation Information:

Replace 1" pipe plug in oil cooler bonnet.

2007 & Newer, MaxxForce 5 & 7 VT365, VT275

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500069	1000	120	27mm THD	Immersion	3600008

Installation Information: Right rear.

817 (817 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600759	1500	120	1-1/2" NPT	Immersion	3600008

Installation Information:

Replace 1-1/2" pipe plug on side of engine.

400, 500, 600, 700, 900

(Engines built in 1986 and later)

See UD Truck listings - page 62

MaxxForce 11 & 13

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500095	1500	120	27mm THD	Immersion	3600008

Installation Information:

Lower right front.

ISUZU

4BD1 (3.9L 4 cyl.), 6BD1 (5.8L 6 cyl.), 6BG1 (6.5L 6 cyl.), 6HE1 (7.1L 6 cyl.), 6HK1 (7.8L), 6SA1 (8.4L 6 cyl.)

Heavy Duty Applications

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100089	600	120	1" NPT	Immersion	3600006

Installation Information:

Installs in Left rear 1" threaded opening, except for 6SA1, which installs in Right side 1" threaded opening. Two heaters recommended for 6SA1.

4BD1 (3.9L 4 cyl.), 6BD1 (5.8L 6 cyl.), 6BG1 (6.5L 6 cyl.), 6HK1 (7.1L 6 cyl.), 6SA1 (8.4L 6 cyl.) QD-100 (3.9L), QD-145 (5.8L), 4BGI, 4BGIT, 4BGITC

Industrial Applications

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100065	600	120	45mm	Freeze Plug	3600006

Installation Information: Replaces 45mm freeze plug in the back of head. Install element 1 o'clock.

2 Cylinder: QD-27 (2AB1), QT-15 (2KC1), 2AA1

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100067	400	120	45mm	Freeze Plug	3600006

Installation Information:

All except QT-15: Install Left Side (LS). Point element UP.
QT-15: Install in back of head. Point element 10 o'clock.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

ISUZU - continued

3 Cylinder: QD-40 (3AB1 108 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100068	400	120	45mm	Freeze Plug	3600006

Installation Information:
Install in Left Side (LS). Point element 6 o'clock.

3 Cylinder: QT-23 (3KC-1 87 CID), QT-35 (3KR-1-60 87 CID), 3AA

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100067	400	120	45mm	Freeze Plug	3600006

Installation Information:
All except 3AA: Install in back of head. Point element 10 o'clock.
3AA: Install in Left Side (LS). Point element 6 o'clock.

QT-23 (3KC-1)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100026	400	120	35mm	Freeze Plug	3600006

Installation Information:
Install in Left Front (LF). Point element 9 o'clock.

3LD1 & 3LD2 (3 cyl.), 4LE1 & 4LE2 (4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100094	400	120	35mm	Freeze Plug	3600005

Installation Information:
Install in any Left side. Point element 9 o'clock.

3LB1 (3 cyl.), 4LC1 (4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100098	400	120	35mm	Freeze Plug	3600006

Installation Information:
Install in any Left side. Point element 9 o'clock.

QD-60, C240, C201, C223 (144, 137 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100068	400	120	45mm	Freeze Plug	3600006

Installation Information:
Install in Left Side (LS). Position element 6 o'clock.

QD-90, 4BB1 (219 CID 4 cyl.)

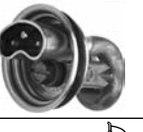
Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100065	600	120	45mm	Freeze Plug	3600006

Installation Information:
Install in back of head. Point element 1 o'clock.

4FB1 (111 CID 4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100018	400	120	35mm	Freeze Plug	3600006

Installation Information: Install in Right Rear (RR). Point element UP.



4JB1, 4JG (4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100069	400	120	45mm	Freeze Plug	3600006

Installation Information:
Install in Left Rear (LR). Point element 6 o'clock.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

ISUZU - continued

QD-130 (6BB1 329 CID 6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100065	600	120	45mm	Freeze Plug	3600006

Installation Information: Install in back of head. Point element 1 o'clock.

6SA1, 6SA1-T, 6SD1, QD-170 & QD-170T (8.4L 6 cyl.)

Use circulation heater (see pages 71-73)

E-120 (733 CID 6 cyl.), **6RB-1** (839 CID 6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8602220	1250	120	45mm	Freeze Plug	3600008

Installation Information: Replace 45mm plug on Rear face or back - right side. Point element DOWN.

IVECO

Z100 (F5L-912 Deutz air cooled engine)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3400014	500	120	6" x 6" (15.2cm^2)	Clamp-on	3600001

Installation Information:

Clamp-on type heater. Engine may also use 22mm threaded oil pan heater - see page 84.

Z110, Z120, Z220, Z340 (335 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600333	1000	120	m42 x 1.5	Immersion	3600008

Installation Information: Install in 42mm threaded opening on Right rear of engine. Available Service Parts: Hex Nut (8602999), Plate Gasket (8603650)

JOHN DEERE

All 50, 60, 70, 730 Series A, B, D, G

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100093	400	120	3/4" NPT	Immersion	3600003

Installation Information: Install in bottom of water jacket. Circulation heater is acceptable alternative (see pages 71-73).

3029

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100093	400	120	3/4" NPT	Immersion	3600003

Installation Information: Replaces 3/4" pipe plug on rear face of engine.

All 4230, 4430, 4630, 6030, 7020, 7520

(Tractors manufactured prior to 1976 without large hex plug)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8602050	1000	120	2"	Freeze Plug	3600024

Installation Information: Install in Left Side (LS). Point element UP. Circulation heater is acceptable alternative (see pages 71-73).

6404, 6466, 6619

(Engines featuring smooth bore core hole - engines manufactured prior to 1976)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8602050	1000	120	2"	Freeze Plug	3600024

Installation Information: Replace 2" diameter core hole on Left side of engine.

2010 (All)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3200003	600	120	1-1/2"	LRHH	3600047

Installation Information:

Lower radiator hose heater (see page 84). Circulation heater is acceptable alternative (see pages 71-73).

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

JOHN DEERE - continued

1020, 2020, 3010, 3020, 4000, 4010, 4020 (All)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3200004	600	120	1-3/4"	LRHH	3600047

Installation Information:

Lower radiator hose heater (see page 84). Circulation heater is acceptable alternative (see pages 71-73).

All tractors (manufactured 1977 and later featuring large hex plug on side of engine)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500029	1000	120	1-5/8" thd	Immersion	3600008

Installation Information: Install in Left Side (LS). Point element UP. Circulation heater is acceptable alternative (see pages 71-73).

Power Tech: 4045, 6068

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500020	1000	120	1-5/8" thd	Immersion	3600008

Installation Information: Replace 1-5/8" threaded plug on Right side of engine.

6105, 6125

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500013	1500	120	1" NPT	Immersion	3600008

Installation Information: Installs in oil cooler housing.

Series 250 PowerTech: 4024 PowerTech (2.4L, 4 Cyl.) & 5030 PowerTech (3.0L, 5 Cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500089	600	120	1.25”	Freeze Plug	N/A

Installation Information:

Replace 1.25" diameter core hole on Left side of engine, near the starter.

Series 300 (3164, 3179, 4039, 4045, 4219, 4239, 4276, 6059, 6068, 6329, 6359, 6414)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8603596	1000	120	3/4" NPT	Immersion	3600024

Installation Information: Replace 3/4" pipe plug on rear face of engine. Some engines (manufactured in 1987 and later) may require a 1" x 3/4" reducer bushing.

Series 300: 3164, 4039, 4045, 4219, 4239, 4276, 6329, 6359, 6414, 6059, 6068
Series 400: 6076, 6081, 6101, 6414, 6466, 6619

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500029	1000	120	1-5/8" thd	Immersion	3600008

Installation Information: Replaces 1-5/8" threaded plug on Left side of engine.

Series 300 (3029, etc.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500045	1000	120	1" NPT	Immersion	3600008

Installation Information: Install in Left rear face of block.

Series 350 PowerTech Plus iT4 (Interim Tier 4): 4045 PowerTech Plus iT4 (4.5L, 4 Cyl.) & 6068 PowerTech Plus iT4 (6.8L, 6 Cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500069	1000	120	27mm	Immersion	3600008

Installation Information: Right Rear

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

KOMATSU

SA6D125 (624 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600880	1500	120	1-3/4" THD	Immersion	3600008
8600813	1000	120	1-3/4" THD	Immersion	3600008

Installation Information: Replaces threaded core plug on Right side of engine.

S4D106-1

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100003	400	120	1" NPT	Freeze Plug	3600001

Installation Information: Install in left center.

S6D-95L & SA6D-95L (298 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100082	600	120	40mm	Freeze Plug	3600006
3100010	600	120	30mm	Freeze Plug	3600005

Installation Information: 3100082: Install in Left Rear (LR). Point element UP. 3100010: Insert at 3 o'clock and rotate to 4 o'clock.

4D95 (2.9L 164 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100046	400	120	40mm	Freeze Plug	3600006

Installation Information: Replace 40mm core plug on Left rear of engine. Note: May not fit all engines due to block thickness. Maximum 5/18" (15.8mm) thickness.

S6D140, SA6D140

(Example: WA500 loader)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8605602	1500	120	1-3/8"	Immersion	3600008
8600880	1500	120	1-3/4" THD	Immersion	3600008

(8600880)

(8605602)

Installation Information:

8605602: Replace 3rd core plug on right side of engine. 2001 and newer used 8600880: Replaces threaded core plug on right side of engine.

S6D170, SA6D170

(Example: WA600 loader)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8602301	1500	120	Plate	Immersion	3600008

Installation Information: Install in rectangular water jacket access plate (6-bolt) located on the Right side of engine - rear. Requires removal of engine side plate and hole to be drilled for heater installation.

KUBOTA

M Series (3 & 4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100093	400	120	3/4" NPT	Immersion	3600003

Installation Information: Install in front.

B Series

(Except 2 cylinder)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100093	400	120	3/4" NPT	Immersion	3600003

Installation Information: Install in Right Front (RF). Use 1" x 3/4" pipe bushing.

L Series

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100093	400	120	3/4" NPT	Immersion	3600003

Installation Information:

Install in Right Front (RF). Use 1" x 3/4" pipe bushing.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

KUBOTA - continued

Z400, Z482, D722
(Super Mini/New Super Mini 2 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100099	400	120	30mm	Freeze Plug	3600004

Installation Information: Install in back of head.

Z600 & ZH600
(Super Mini/New Super Mini 2 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100093	400	120	3/4" NPT	Immersion	3600003

Installation Information: Install Right Front (RF). Use 1" x 3/4" pipe bushing.

D600, D640, WG600, D662, D722, DG750, DF750, WG750
(Super Mini/New Super Mini 3 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100099	400	120	30mm	Freeze Plug	3600004

Installation Information: Install in back of head.

V800
(Super Mini/New Super Mini 4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100099	400	120	30mm	Freeze Plug	3600004

Installation Information: Install in back of head.

D905, DH905, D1005, DH1005, D1105, V1205, VH1205, V1305, VH1305, V1505
(Super 5 Series)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100003	400	120	1" NPT	Immersion	3600001

Installation Information: Install in Left Front (LF).

D3000B, D3200B
(3 cylinder)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100003	400	120	1" NPT	Immersion	3600001

Installation Information: Install in front.

D1102, D1302, D1402, D1403, D1703, S2800
(3 cylinder)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100025	400	120	35mm	Freeze Plug	3600006

Installation Information: Install in back of head. Point element 2 o'clock.

D650, D750, D850, DH850, D950
(3 cylinder)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100093	400	120	3/4" NPT	Immersion	3600003

Installation Information: Install in Right Front (RF). Use 1" x 3/4" pipe bushing.

V4000B, V4300B
(3 cylinder)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100003	400	120	1" NPT	Immersion	3600001

Installation Information: Install in front.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

KUBOTA - continued

V1100, VH1100, V1200
(4 cylinder)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100093	400	120	3/4" NPT	Immersion	3600003

Installation Instructions: Install in Right Front (RF). Use 1" x 3/4" pipe bushing.

V1702, V1703, V1902, V1903, V2003, V2003T, V2203
(4 cylinder)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100025	400	120	35mm	Freeze Plug	3600006

Installation Information: Install in back of head. Point element 2 o'clock.

V3300

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100093	400	120	3/4" NPT	Immersion	3600003

Installation Information: Install in Right Front (RF). Use 1" x 3/4" pipe bushing.

S2800 (6 cyl.), F2803 (5 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100025	400	120	35mm	Freeze Plug	3600006

Installation Information: Install in back of head.

LISTER-PETTER

LPW Series (1994 & newer 56 CID 2 cyl., 85 CID 3 cyl., 113 CID 4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100077	400	120	1-1/4"	Freeze Plug	3600004

Installation Information:
Install between cylinders. Point element UP or DOWN.

LOMBARDINI

LDW602, LDW702 (2 cyl.), LDW903, LDW1003 (3 cyl.), FOCS Series 1204, LDW1404, LDW1204T (4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3200002	375	120	1-1/4"	LRHH	3600047

Installation Information: Lower radiator hose heater (see page 84).

CHD Series: LDW1503, LDW1603 (3 cyl.), LDW2004, LDW2204, LDW2004T (4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100096	400	120	30mm	Freeze Plug	3600004

Installation Information: Install in Left Side (LS). Point element 3 or 9 o'clock.

MACK

865 Series, 866 & 1000 Series, EM9-400 (998 CID), E9

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500043	1000	120	3/4" NPT	Immersion	3600008
8600988	1000	**240**	3/4" NPT	Immersion	8608377
8601011	1500	120	3/4" NPT	Immersion	3600008
8601054	1500	**240**	3/4" NPT	Immersion	8608377

Installation Information:

Installs in oil cooler casting. Two heaters are required. Engine may also accept oil pan heater 8609683, 8609659, 8609713 (requires 1" x 1/2" bushing to reduce port size). See threaded immersion heater page for specifications.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

MACK - continued

Midliner: E3 (5.5L 335 CID, 6.2L), E5 (8.8L 537 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600317	1000	120	Plate	Immersion	3600008
8600384	1500	120	Plate	Immersion	3600008
8600414	1500	**240**	Plate	Immersion	8608377

Installation Information: E3: Replace plug in rear face of block (MS200 serial numbers 1915 and higher).
E5: Install in oil cooler water feed pipe (MS300 serial numbers 60131 and higher). Available Service Parts: Hex Nut (8602999), Element Gasket (8603650)

E6 (672 CID 6 cyl.)

(Engines with smooth bore freeze plug. Example: EM6300, E6350, EM6237)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8609748	1500	120	1-3/4"	Freeze Plug	3600008
8609772	1500	**240**	1-3/4"	Freeze Plug	8608377

Installation Information:

Replaces 1-3/4" freeze plug on side of engine. Available Service Parts: O-ring and clamping device kit (3500003)

E6, EM6 (threaded freeze plug models manufactured prior to August 1981)
END465 (1957 & later), 711, EN438, 504, 707, 673, 675, 676 Series

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600813	1000	120	1-3/4"	Immersion	3600008
8600880	1500	120	1-3/4"	Immersion	3600008
8600910	1500	**240**	1-3/4"	Immersion	8608377

Installation Information:

Replaces 1-3/4" threaded plug on side of engine. Available Service Parts: Hex Nut (8602999), Element Gasket (8603650)

2004-2006 ASET Engine Series (AI, AC + AMI) (12.0L)
E7 & EM7 (12.0L)

(Example: EM7-300, E7-350)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8607206	1500	120	1-3/8"	Freeze Plug	3600008
8607184	1500	**240**	1-3/8"	Freeze Plug	8608377

Installation Information: Replace 1-3/8" core plug on Right side of block - front or rear face. Available Service Parts: O-Ring (3600059) 10 pack.

END465 (1953-56), 672, 673, 711, EN438, 540, 707

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600759	1500	120	1-1/2" NPT	Immersion	3600008

Installation Information: Replace 1-1/2" pipe plug on side of engine.

E-Tech (water pump mount)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500051	1500	120	1-3/8"	Immersion	3600008
3500052	1500	**240**	1-3/8"	Immersion	8608377
3500070	1500	120	1-3/8"	Immersion	3600008

Installation Information : Mount in water pump. Available Service Parts: O-Ring (3600059) 10 Pack. 3500070 includes 84" weatherproof cord and receptacle.

MP7 (10.8L)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500099	1000	120	25mm	Immersion	3600085
3500100	1500	120	25mm	Immersion	3600085
3500101	1500	**240**	25mm	Immersion	3600086

Installation Information : Right rear

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

MACK - continued

MP8 (12.8L)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500102	1500	**240**	25mm	Immersion	3600086
3500103	1500	120	25mm	Immersion	3600085
3500104	1000	120	25mm	Immersion	3600085

Installation Information : Right front, in coolant pipe.

MP10 (16.1L)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500105	1500	120	62mm	Immersion	3600085
3500106	1000	120	62mm	Immersion	3600085

Installation Information : Right front

MASSEY & MASSEY FERGUSSON

All 445P, 333, 444, 555, 88

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100054	600	120	1-5/8"	Freeze Plug	3600006

Installation Information:

Install in Right Front (RF). Circulation heater is acceptable alternative (see pages 71-73).

1100

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3200005	600	120	2"	LRHH	3600047

Installation Information:

Lower radiator hose heater (see page 84). Circulation heater is acceptable alternative (see pages 71-73).

All MF-35, 40, 50, 150, 203, 205, 235, 2135 & 2200 (AD3-152)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100013	600	120	1-1/4"	Freeze Plug	3600022

Installation Information: Install in Right Side (RS). Point element DOWN. Circulation heater is acceptable alternative (see pages 71-73).

All MF-65, 165, 255, 302, 304, 365 & 3165 (AD4-203)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100093	400	120	3/4" NPT	Immersion	3600003

Installation Information: Install in Left Side (LS). Circulation heater is acceptable alternative (see pages 71-73).

All MF-175, 180 & 265 (AD4-236)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100013	600	120	1-1/4"	Freeze Plug	3600022

Installation Information:

Install in Left, 2nd from rear. Point element UP/DOWN. Circulation heater is acceptable alternative (see pages 71-73).

MF-90, 1080, 1085 & 285 (A4-300)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100093	400	120	3/4" NPT	Immersion	3600003

Installation Information: Replaces existing heater. Circulation heater is acceptable alternative (see pages 71-73).

MF-1100, 1105, 1130 & 1135 (A6-354)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100013	600	120	1-1/4"	Freeze Plug	3600022

Installation Information: Install in Left, 2nd from rear. Point element UP. Circulation heater is acceptable alternative (see pages 71-73).

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

MASSEY & MASSEY FERGUSSON - continued

MF-1150, 1155 (AV510, 540)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100003	400	120	1" NPT	Immersion	3600001

Installation Information:
Install one heater in each side (two heaters required). Circulation heater is acceptable alternative (see pages 71-73).

MF-1140 & MF-1145 (1120, 1125 - 1240, 1250, 1260 Mfg. prior to mid '90's before serial # E50101

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100066	400	120	1-3/4"	Freeze Plug	3600006

Installation Information: Install in Left Front (LF). Point element 3 o'clock.

MF-3120, MF-3140

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100045	600	120	1-1/2"	Freeze Plug	3600007

Installation Information: Install in Right Rear (RR) or Right Front (RF). Point element 12 o'clock. Circulation heater is acceptable alternative (see pages 71-73).

MERCEDES

MBE900 Series: OM904 & OM906

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500046	1000	120	60mm	Immersion	3600008

Installation Information: Installation in Right Rear (RR) core hole. Point element down, 6 o'clock.

MBE4000 Series / OM460

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500080	1500	120	Plate	Immersion	3600008
3500053	1500	120	Plate	Immersion	3600008

Installation Information: 3500080- replace plate on right side (center). Point element 9 o'clock. 3500053 - replace plate on left side.

MBE-HDEP 15.2 L

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500095	120	120	27mm THD	Immersion	3600008

Installation Information: Installation in Right Rear (RR) core hole. Point element down, 6 o'clock.

2004 & Newer MBE4000 Series/OM460

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500082	1500	120	Plate	Immersion	3600008
3500083	1500	**240**	Plate	Immersion	8608377

Installation Information:
Replaces plate on right side (center). Point element, 3 o'clock.

2.7L Freightliner Sprinter Van

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100105	500	120	38mm THD	Freeze Plug	N/A

Installation Information: Right rear. May need to heat existing plug to remove.

MINNEAPOLIS MOLINE

JetStar 3 (gas & diesel 206 CID), U302 (gas 220 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500026	400	120	3/8" NPT	Immersion	N/A

Installation Information: Replaces existing heater. Circulation heater is acceptable alternative (see pages 71-73).

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

MINNEAPOLIS MOLINE - continued

M602, 604, 670, G705, 706, 900, 1000

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100038	600	120	1-1/2"	Freeze Plug	3600006

Installation Information: Replaces existing heater. Circulation heater is acceptable alternative (see pages 71-73).

MITSUBISHI

L3A (3 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100049	400	120	40mm	Freeze Plug	3600006

Installation Information: Install in Right Rear (RR). Point element 9 o'clock.

K3A & K3B (3 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100067	400	120	1-3/4"	Freeze Plug	3600006

Installation Information: Install in Right Side (RS). Point element UP.

4G32 & 4G33 (4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100016	400	120	35mm	Freeze Plug	3600006

Installation Information:

4G32: Install in Left Center (LC). Point element 9 o'clock.
4G33: Install in Left Center (LC). Point element UP.

4G52, 4G53, 4G54 (4 cyl. engines)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100071	400	120	50mm	Freeze Plug	3600006

Installation Information:

Install in Right Center (RS). Point element 3 o'clock.

S4L2 (4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100078	400	120	35mm	Freeze Plug	3600006

Installation Information:

Install Right Rear (RR). Point element 11 o'clock.

4G63 (2.0L 4 cyl.), 4G64 (2.4L 4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100021	400	120	35mm	Freeze Plug	3600006

Installation Information:

Install in Left Front (LF). Point element 3 o'clock.

S6E & S6E2 (6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100078	400	120	35mm	Freeze Plug	3600006

Installation Information:

Install in Left Rear (LR). Point element 3 o'clock.

6G72 (3.0L)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100055	600	120	1-5/8"	Freeze Plug	3600006

Installation Information:

Install in Right Rear (RR). Point element 9 o'clock.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

MITSUBISHI FUSO

4D31 (201 CID), 6D14 (400 CID), 6D31 (302 CID), 6D16 (460 CID)
4M40 (2835cc SOHC), **4D36** (3567cc)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8604967	600	120	3/4" NPT	Immersion	N/A

Installation Information: Replaces 3/4" threaded plug on Left rear side of engine.

MWM MURPHY

D225 & D226 Series (2, 3, 4, 6 cylinder)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100071	400	120	50mm	Freeze Plug	3600006

Installation Information:
Replaces any freeze plug on Right side. Point element UP or DOWN.

NISSAN

H20, SD22, SD4-47 (2.2L), **SD-25, A12** (1.2L), **A15** (1.5L) (4 cylinder engines)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100016	400	120	35mm	Freeze Plug	3600006

Installation Information:
H20: Install in Left Front (LF) or Left Rear (LR). Point element UP.
SD-22, SD4-47, SD-25: Install in Left Front (LF). Point element DOWN.
A15 install left front or left rear and point element 12 o'clock.

H20-2, H25 (4 cylinder engines)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100019	400	120	35mm	Freeze Plug	3600006

Installation Information: Install in Left Rear (LR). Point element 3 o'clock.

Z24 (4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100048	400	120	40mm	Freeze Plug	3600006

Installation Information: Install in Left Front (LF). Point element 12 o'clock.

TD42 (4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100090	600	120	35mm	Freeze Plug	3600006

Installation Information: Install in Right Center (RC). Remove 3-bolt plate.

SD-33 & SD6-72 (3.2L 6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100023	400	120	35mm	Freeze Plug	3600006
3100108	400	120	35mm	Freeze Plug - 12" Cord	3600036

Installation Information: Install in 2nd and 4th Left side. Two heaters are required. Point element 12 o'clock.

P Series (4.0L 6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100049	400	120	40mm	Freeze Plug	3600006

Installation Information: Install in Right Front (RF).

LD-28 (2.8L 6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100016	400	120	35mm	Freeze Plug	3600006

Installation Information: Install in 5th, Left side. Point element 12 o'clock.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

NISSAN - continued

FD6 (5.6L 6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100049	400	120	40mm	Freeze Plug	3600006

Installation Information:
Install in Right Front (RF). Point element 3 o'clock.

OLIVER

All (except 1265, 1365, 1900)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500043	1000	120	3/4" NPT	Immersion	3600008

Installation Information:
Install in cast elbow at front of engine - between radiator and engine block.

PACCAR

2007 PX-6 (6.7L)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500022	750	120	3/4" NPT	Immersion	3600008

Installation Information: Installs in 3/4" NPT port to rear of oil cooler.

2007 PX-8 (8.3L)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500032	1000	120	3/4" NPT	Immersion	3600008

Installation Information: Installs in upper 3/4" port to front of oil cooler.

2011 MX (12.9L)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500113	1500	120	M27	Immersion	3600103

Installation Information: TBD

PERKINS

103.06 (KB 3 cyl.), **103.07** (KL 3 cyl.), **103.09** (KC 3 cyl.), **103.10** (KD 3 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100016	400	120	35mm	Freeze Plug	3600006

Installation Information: Install in Left Front (LF). Point element 6 o'clock.

103.12 (KG 3 cyl.), **103.13** (KH 3 cyl.), **103.15** (KE/KJ 3 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100049	400	120	40mm	Freeze Plug	3600006

Installation Information: Install in Left Front (LF). Point element 6 o'clock.

3-152 (C Series 3 cyl.), **900 Series** (CN)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100013	600	120	1-1/4"	Freeze Plug	3600022

Installation Information: Install in Right Side (RS). Point element 6 o'clock.

104.19 (KF/KK 4 cyl.), **104.22** (KR 4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100049	400	120	40mm	Freeze Plug	3600006

Installation Information: Install in Left Front (LF). Point element 6 o'clock.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

PERKINS - continued

4-108 (E Series 4 cyl.), **4-236** (LD 4 cyl.), **4-248** (LF 4 cyl.), **4-248-2** (LG 4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100013	600	120	1-1/4"	Freeze Plug	3600022

Installation Information: Install in Left, 2nd from rear. Point element UP or DOWN.

4-236 (4 cyl.) (Engines with larger core hole)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100027	600	120	35mm	Freeze Plug	3600006

Installation Information: Install in Left side - 2nd from rear.

4-135 (GB Series 4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100023	400	120	35mm	Freeze Plug	3600006
3100108	400	120	35mm	Freeze Plug - 12" Cord	3600036

Installation Information: Install in Right Side (RS). Point element UP or DOWN.

4-154 (4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100010	400	120	30mm	Freeze Plug	3600005

Installation Information: Install in Left Side (LS). Point element UP or DOWN.

200 Series: 204.25 (GD 4 cyl.), **204.30** (GE 4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100086	400	120	30mm	Freeze Plug	3600004

Installation Information: Install in Left Side (LS).

400 Series (4.41, T4.40), **4.0L**

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100045	600	120	1-1/2"	Freeze Plug	3600007

Installation Information: Right side, point element up.

4-203 (J Series 4 cyl.)
(Engines with no starter obstructions)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100093	400	120	3/4" NPT	Freeze Plug	3600003

Installation Information: Install in Left Side (LS). Point element up or down.

1004 (A Series 4 cyl.) (D Series 4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100045	600	120	1-1/2"	Freeze Plug	3600007

Installation Information: Install in Right Rear (RR) or Right Front (RF). Point element 12 o'clock.

1104 (C Series 4 cyl.) (D Series)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500084	750	120	1-1/4"	Freeze Plug	3600008

Installation Information: Install in Right Rear (RR) or Right Front (RF). Point element 3 o'clock.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

PERKINS - continued

700 Series 704.30 (4A 4 cyl), 704.30T (4C 4 cyl.), 704.26 (4C 4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100101	400	120	50mm	Freeze Plug	3600006

Installation Information:
Install in back of head. Point element 4 o'clock.

N Series: 4-300 (4 cyl.), 4-318 (4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100093	400	120	3/4" NPT	Freeze Plug	3600003

Installation Information:
Install in Left Side (LS).

T Series: 6-354 (6 cyl.), 6-354.4 (4 cyl.), 6-372 (4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100013	600	120	1-1/4"	Freeze Plug	3600022

Installation Information:
Install in Right Rear (RR). Point element 12 o'clock.

6-354 (alternate), NA-120 (6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500027	750	120	Plate	Immersion	3600008

Installation Information:
Install in back of head.

1006 (Y Series 6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100045	600	120	1-1/2"	Freeze Plug	3600007

Installation Information:
Install in Right Rear (RR), or Right Front (RF). Point element 12 o'clock.

540 (8 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100003	400	120	1" NPT	Immersion	3600001

Installation Information:
Install one heater in each side.

640 (Z Series 8 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8605556	1500	120	1" NPT	Immersion	3600008

Installation Information:
Install in Left Rear.

2006 and Newer, 1106D

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500087	1000	120	1-1/4"	Immersion	3600008

Installation Information: Install in Right Rear.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

TOYOTA

5R (1.9L 4 cyl.), **2J** (2.5L diesel)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100071	400	120	50mm	Freeze Plug	3600006

Installation Information:

Install in Left Front (LF) or Left rear (LR). Point element 12 o'clock.

4Y (2.2L 4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100019	400	120	35mm	Freeze Plug	3600006

Installation Information:

Install in Left Rear (LR). Point element 3 or 9 o'clock.

2F (4.2L 6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100071	400	120	50mm	Freeze Plug	3600006

Installation Information:

Install in Left Rear (LR). Point element 9 o'clock.

3F

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100101	400	120	50mm	Freeze Plug	3600006

Installation Information:

Install in Left Rear (LR). Point element at 45º angle.

UD TRUCK

FD35T (3.5L 6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100012	600	120	30mm	Freeze Plug	3600004

Installation Information:

Replaces 30mm freeze plug on Right front of engine. Install element 3 o'clock.

FE6 & FE6T (6.9L 6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8602441	1000	120	40mm	Freeze Plug	3600008

Installation Information:

Replaces 40mm freeze plug on Right side of engine - 2nd from rear. Install element 5 o'clock.

NE6 & NE6T (7.4L 6 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8602492	1500	120	50mm	Freeze Plug	3600008

Installation Information:

Replaces 50mm freeze plug on Left rear of engine.

FD46TA

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100103	400	120	40mm	Freeze Plug	3600006

Installation Information:

Install in Left Rear (LR) (above fuel pump).

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

UD TRUCK

TD42T

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100090	600	120	35mm	Immersion	3600006

Installation Information:

Install in Right center of oil cooler. Remove 3-hole plate.

VOLKSWAGEN

1588cc (049.6 & 068.5 4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100034	400	120	36.5mm	Freeze Plug	3600016

Installation Information:

Install in Right Center (RC). Point element 6 o'clock.

VOLVO

TD60 & TD61 (334 CID), TD70 & TD71 (409 CID), TD73(427 CID), TD100 & TD101, VE10 (586 CID), TD120, TD121, TD122, TD123 (732 CID)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
8600252	1000	120	44mm	Immersion	3600008
8600287	1500	120	44mm	Immersion	3600008
8600309	1500	**240**	44mm	Immersion	8608377

Installation Information:

Replaces 44mm threaded plug on Left front of engine. Point element at 4 or 5 o'clock.

2002 & Newer VED-12

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500090	1000	120	Plate	Immersion	3600008
3500091	1500	120	Plate	Immersion	3600008

Installation Information:

Mount below turbocharger at the Right center of engine.

VED-12(Engines manufactured prior to 2002)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500039	1000	120	Plate	Immersion	3600008
8607702	1500	120	Plate	Immersion	3600008

Installation Information: Mount below turbocharger at the Right center of engine.

VE-D7

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500041	1500	120	1-3/4"-18	Immersion	3600008

Installation Information: Replace plug on Left rear of engine. Reuse existing seal. Point element at 1 o'clock.

D11 (10.8L)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500099	1000	120	25mm	Immersion	3600085
3500100	1500	120	25mm	Immersion	3600085
3500101	1500	**240**	25mm	Immersion	3600086

Installation Information : Right rear

(Contact Volvo dealer for Replacement O'Ring P/N 975664).

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

VOLVO - continued

D13 (12.8L)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500102	1500	**240**	25mm	Immersion	3600086
3500103	1500	120	25mm	Immersion	3600085
3500104	1000	120	25mm	Immersion	3600085

Installation Information : Right front, in coolant pipe.
(Contact Volvo dealer for Replacement O'Ring P/N 975664).

D16 (16.1L)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500105	1500	120	62mm	Immersion	3600085
3500106	1000	120	62mm	Immersion	3600085

Installation Information : Right front

YANMAR

3T72HLE (3 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100003	400	120	1" NPT	Immersion	3600001

Installation Information:
Install in Left Front (LF).

3TN66, 3TN72 (3 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3500001	400	120	Plate	Immersion	3600003

Installation Information:
Install in Right Rear (RR).

4TN82E & 4TNE98 (4 cyl.)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100003	400	120	1" NPT	Immersion	3600001

Installation Information:
Install in Left Center (LC).

YYDXL4.4 1 D4T

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100003	400	120	1" NPT	Freeze Plug	3600001

Installation Information:
Install in Left Center (LC).

ZETOR

All - except 278 (4.5L) & 417 (6.8L)

Part No.	Watt	Volt	Diameter	Type	Repl. Cord
3100065	600	120	1-3/4"	Freeze Plug	3600006

Installation Information:
Install in Left Rear (LR). Point element UP.

NOTE: See next page (p. 66) for Universal Coolant Heater and Oil Pan Heater applications.

Lower Radiator Hose Heater information - page 84 • Circulation Heater information - pages 71-73

THREADED OIL PAN HEATERS (STAINLESS)

See page 76-77 for replacement cordset information

Oil Heaters:

- Easy to spec: Not engine model specific!
- **10 watts of power per quart of oil**
- Keeps oil warm and free flowing for instant lubrication
- Stainless steel low watt density heating elements for long life in oil and hydraulic fluid applications
- Can be used in oil pans, transmissions, hydraulic systems, etc.

All 120V Immersion heaters CSA approved

For oil heater selection, measure space and determine threading at installation location.

Note: To prevent potential damage to heater and fluid, oil pan heaters should only be used to keep warm oil warm. Do not use with cold oil.

ACCESSORY: 8602824; 1/2" NPT Adapter Bushing. For use on steel pans only. *1/2" NPT oil pan heaters are supplied with weld or braze-in adapter.*

WATTAGE	VOLTAGE	THREAD SIZE	ELEMENT LENGTH	FOR USE IN	WITHOUT THERMOSTAT	WITH THERMOSTAT	ELEMENT CONSTRUCTION
150	120	M22 x 1.5	7" (17.8cm)	Water/Oil	**3500047**	—	Stainless Steel
150	120	M25 x 1.5	3-1/2" (8.9cm)	Water/Oil	**3500071**	—	Stainless Steel
150	120	1/2" NPT	5" (12.7cm)	Water/Oil	**8609624**	—	Stainless Steel
150	120	1/2" NPT	7-3/4" (19.5cm)	Water/Oil	**2201712**	—	Stainless Steel
150	120	M22 x 1.5	3-1/2" (8.9cm)	Water/Oil	**8602859**	**8602794**	Stainless Steel
150	120	1" NPT	5-5/8" (14.2cm)	Oil	**2200635**	—	Stainless Steel
150	120	1" NPT	6" (15.2cm)	Water/Oil	**8609802**	**8609845**	Stainless Steel
150	120	1" NPT	6-5/8" (16.6cm)	Oil	**2204274****	—	Stainless Steel
150	240	1" NPT	6" (15.2cm)	Water/Oil	**8609837**	—	Stainless Steel
150	120	1-1/16" - 12 STOR	5" (12.7cm)	Water/Oil	**3500006**	—	Stainless Steel
150	120	1-5/16" 12 STOR	5" (12.7cm)	Water/Oil	**3500085**	—	Stainless Steel
150	240	1-5/16" 12 STOR	5" (12.7cm)	Water/Oil	**3500086**	—	Stainless Steel
150	120	M27 STOR	3-1/2" (8.9cm)	Water/Oil	**3500094**	—	Stainless Steel
300	120	1/2" NPT	5" (12.7cm)	Water/Oil	**8609683**	—	Stainless Steel
300	240	1/2" NPT	5" (12.7cm)	Water/Oil	**8609659**	—	Stainless Steel
300	120	3/4" NPT	11-1/8" (28.2cm)	Oil	**2201968**	—	Stainless Steel
300	120	M22 x 1.5	5-1/2" (13.9cm)	Water/Oil	**8602913**	**8602905**	Stainless Steel
300	120	3/4" NPT	5-1/2" (13.9cm)	Water/Oil	**8603243**	—	Stainless Steel
300	120	1" NPT	6" (15.2cm)	Oil	**2202662**		Stainless Steel
300	120	1" NPT	6" (15.2cm)	Water/Oil	**8609861**	**8609853**	Stainless Steel
300	120	1-5/16" STOR	5" (12.7cm)	Water/Oil	**3500079**	—	Stainless Steel
300	240	1-5/16" STOR	5" (12.7cm)	Water/Oil	**3500078**	—	Stainless Steel
300	120	M27 STOR	5-1/2" (13.9cm)	Water/Oil	**3500093**	—	Stainless Steel
450	120	1/2" NPT	7-1/2" (19cm)	Water/Oil	**8609713**	—	Stainless Steel
450	120	M27 STOR	7-1/4" (18.4cm)	Water/Oil	**3500049**	—	Stainless Steel
1000	120	1" NPT	9-1/2" (24cm)	Water/Oil	**8609098**	—	Stainless Steel

Note: Not all oil pans are equipped with ports. Inspect oil pan carefully before ordering to determine available ports. When no pre-threaded port exists, contact the engine manufacturer for proper installation procedure.

THREADED COOLANT IMMERSION HEATERS (COPPER)

WATTAGE	VOLTAGE	THREAD SIZE	ELEMENT LENGTH	FOR USE IN	WITHOUT THERMOSTAT	WITH THERMOSTAT	ELEMENT CONSTRUCTION
400	120	3/8" NPT	2-3/4" (6.9cm)	Water	**3500026**	—	Copper
400	120	3/4" NPT	1" (2.5cm)	Water	**3100093**	—	Copper
400	120	1" NPT	1" (2.5cm)	Water	**3100003**	—	Copper
600	120	3/4" NPT	1-3/8" (3.4cm)	Water	**8604967**	—	Copper
750	120	3/4" NPT	2-7/8" (7.1cm)	Water	**3500022**[1]	—	Copper
1000	120	3/4" NPT	4" (10.1cm)	Water	**8602549**[1]	—	Copper
1000	240	3/4" NPT	4" (10.1cm)	Water	**8602514**[1]	—	Copper
1000	240	3/4" NPT	4-1/2" (11.4cm)	Water	**8600988**	—	Copper
1000	120	1" NPT	4-1/4" (10.6cm)	Water	**8600090**	—	Copper
1000	240	1" NPT	4-1/4" (10.8cm)	Water	**8600120**	—	Copper
1000	120	3/4" NPT	3-3/8" (8.5cm)	Water	**3500032**	—	Copper
1000	120	3/4" NPT	3-7/8" (9.7 cm)	Water	**3500043**[1]	—	Copper
1500	120	3/4" NPT	4-3/4" (12cm)	Water	**8602611**[1]	—	Copper
1500	240	3/4" NPT	4-3/4" (12cm)	Water	**8602573**[1]	—	Copper
1500	120	3/4" NPT	5-1/4"(13.3cm)	Water	**8601011**	—	Copper
1500	240	3/4" NPT	5-1/4" (13.3cm)	Water	**8601054**	—	Copper
1500	120	1" NPT	5" (12.7cm)	Water	**8605556**	—	Copper
1500	240	1" NPT	5" (12.7cm)	Water	**8600260**	—	Copper
1500	120	1" NPT	3-3/4" (9.5cm)	Water	**3500013**	—	Copper
1500	240	1" NPT	3-3/4" (9.5cm)	Water	**3500031**	—	Copper

**Welding flange included. Designed for Caterpillar 3406 with BrakeSaver

[1]Element does not turn during installation.

- Ideal as a secondary heat source in trucks, station wagons, sleeper cabs, etc.
- 2-speed reversible fan motors
- 14-gauge construction - (models 200 and 300)
- 20-gauge construction (models 100, 400, and 500)
- Installation kit included
- Custom fabrication available - contact Customer Service for more information

*** Outlet direction featured in photo.**

Model 100
(150 CFM Max)

PART NO.	VOLT	CAPACITY (BTU/HR)	AIRFLOW (CFM)	CURRENT (AMPS)	DIMENSIONS (H X W X D)	OUTLET DIAMETER	OUTLET DIRECTION	WT. (LBS)
7000101	12	17,500	150	3.9	7.5 x 8.6 x 7.7" (191 x 219 x 196mm)	5/8" (16mm)	Rear Top	10.0
7000102	12	17,500	150	3.9	7.5 x 8.6 x 7.7" (191 x 219 x 196mm)	3/4" (19mm)	Rear Top	10.0
7000103	24	17,500	150	2.0	7.5 x 8.6 x 7.7" (191 x 219 x 196mm)	5/8" (16mm)	Rear Top	10.0
7000104	24	17,500	150	2.0	7.5 x 8.6 x 7.7" (191 x 219 x 196mm)	3/4" (19mm)	Rear Top	10.0

Model 200
(7000202, 7000205, 7000208)
(250 CFM Max)

MODEL 200								
7000201	12	30,000	250	9.4	9.3 x 11.5 x 10.6" (237 x 292 x 270mm)	5/8" (16mm)	Rear left	26.5
7000202	12	30,000	250	9.4	9.3 x 11.5 x 10.6" (237 x 292 x 270mm)	5/8" (16mm)	Left *	26.5
7000203	12	30,000	250	9.4	9.3 x 11.5 x 10.6" (237 x 292 x 270mm)	5/8" (16mm)	Right	26.5
7000205	12	30,000	250	9.4	9.3 x 11.5 x 10.6" (237 x 292 x 270mm)	3/4" (19mm)	Left *	26.5
7000206	12	30,000	250	9.4	9.3 x 11.5 x 10.6" (237 x 292 x 270mm)	3/4" (19mm)	Right	26.5
7000207	24	30,000	250	4.7	9.3 x 11.5 x 10.6" (237 x 292 x 270mm)	5/8" (16mm)	Rear Left	26.5
7000208	24	30,000	250	4.7	9.3 x 11.5 x 10.6" (237 x 292 x 270mm)	5/8" (16mm)	Left *	26.5

Model 300
(7000302, 7000305, 7000308, 7000311)
(325 CFM Max)

MODEL 300								
7000301	12	40,000	325	8.9	7.7 x 17.4 x 9.4" (196 x 442 x 239mm)	5/8" (16mm)	Rear Left	28.3
7000302	12	40,000	325	8.9	7.7 x 17.4 x 9.4" (196 x 442 x 239mm)	5/8" (16mm)	Left *	28.3
7000303	12	40,000	325	8.9	7.7 x 17.4 x 9.4" (196 x 442 x 239mm)	5/8" (16mm)	Right	28.3
7000305	12	40,000	325	8.9	7.7 x 17.4 x 9.4" (196 x 442 x 239mm)	3/4" (19mm)	Left *	28.3
7000306	12	40,000	325	8.9	7.7 x 17.4 x 9.4" (196 x 442 x 239mm)	3/4" (19mm)	Right	28.3
7000308	24	40,000	325	4.5	7.7 x 17.4 x 9.4" (196 x 442 x 239mm)	5/8" (16mm)	Left *	28.3
7000309	24	40,000	325	4.5	7.7 x 17.4 x 9.4" (196 x 442 x 239mm)	5/8" (16mm)	Right	28.3
7000311	24	40,000	325	4.5	7.7 x 17.4 x 9.4" (196 x 442 x 239mm)	3/4" (19mm)	Left *	28.3

Model 400
(130 CFM Max)

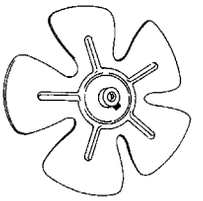
MODEL 400								
7000401	12	13,500	130	4.3	3.1 x 13.0 x 9.0" (79 x 331 x 229mm)	5/8" (16mm)	Bottom	10.4
7000403	24	13,500	130	2.2	3.1 x 13.0 x 9.0" (79 x 331 x 229mm)	5/8" (16mm)	Bottom	10.4

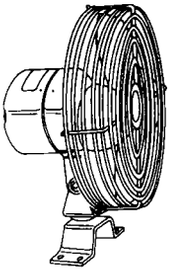
Model 500
(7000502, 7000504, 7000506, 7000508)
(150 CFM Max)

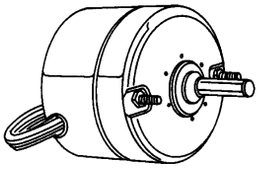
MODEL 500								
7000501	12	17,500	150	4.4	7.6 x 8.5 x 4.3" (193 x 216 x 109mm)	5/8" (16mm)	Bottom Rt.	7.4
7000502	12	17,500	150	4.4	7.6 x 8.5 x 4.3" (193 x 216 x 109mm)	5/8" (16mm)	Rear Right *	7.4
7000503	12	17,500	150	4.4	7.6 x 8.5 x 4.3" (193 x 216 x 109mm)	3/4" (19mm)	Bottom Rt.	7.4
7000504	12	17,500	150	4.4	7.6 x 8.5 x 4.3" (193 x 216 x 109mm)	3/4" (19mm)	Rear Right *	7.4
7000505	24	17,500	150	2.2	7.6 x 8.5 x 4.3" (193 x 216 x 109mm)	5/8" (16mm)	Bottom Rt.	7.4
7000506	24	17,500	150	2.2	7.6 x 8.5 x 4.3" (193 x 216 x 109mm)	5/8" (16mm)	Rear Right *	7.4
7000508	24	17,500	150	2.2	7.6 x 8.5 x 4.3" (193 x 216 x 109mm)	3/4" (19mm)	Rear Right *	7.4

Cab & Cargo Heater Replacement Parts

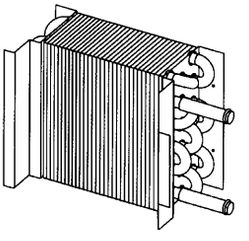
PART NO.	SAME AS:	FOR USE IN MODEL NO.S	DESCRIPTION
INSTALLATION KIT			
7100001	—	—	Installation Kit (includes on/off switch, electrical terminals)
FAN BLADES & DEFROSTER FAN			
7100002	—	100, 300, 400, 500	7" (17.6cm) Fan Blade
7100003	—	200	8" (20.1cm) Fan Blade
7100025	—	Model 7009001	6" (15.5cm) Fan Blade
7602855	—		12 Volt - Defroster Fan - 2 Speed
7602891	—		24 Volt - Defroster Fan - 2 Speed
7670036	—		Replacement 2-Speed Switch
7675755	—		Replacement Front Fan Guard
7675771	—		Replacement Rear Fan Guard
MOTORS			
7100004	—	100, 300, 400, 500, and 7009001	12-Volt Motor (short)
7100005	—	200	12-Volt Motor (long)
7100006	—	100, 300, 400, 500	24-Volt Motor (short)
7100007	—	200	24-Volt Motor (long)
HEAT EXCHANGERS			
7100022	Model 100 Heat Exchanger (3/4" R top)		
7100023	Model 100 Heat Exchanger (5/8" R top)		
7100012	Model 200 Heat Exchanger (3/4" side)		
7100013	Model 200 Heat Exchanger (5/8" side)		
7100014	Model 200 Heat Exchanger (3/4" rear)		
7100015	Model 200 Heat Exchanger (5/8" rear)		
7100016	Model 300 Heat Exchanger (3/4" side)		
7100017	Model 300 Heat Exchanger (5/8" side)		
7100020	Model 400 Heat Exchanger (3/4" bottom)		
7100021	Model 400 Heat Exchanger (5/8" bottom)		
7100008	Model 500 Heat Exchanger (3/4" bottom)		
7100009	Model 500 Heat Exchanger (3/4" rear)		
7100010	Model 500 Heat Exchanger (5/8" bottom)		
7100011	Model 500 Heat Exchanger (5/8" rear)		







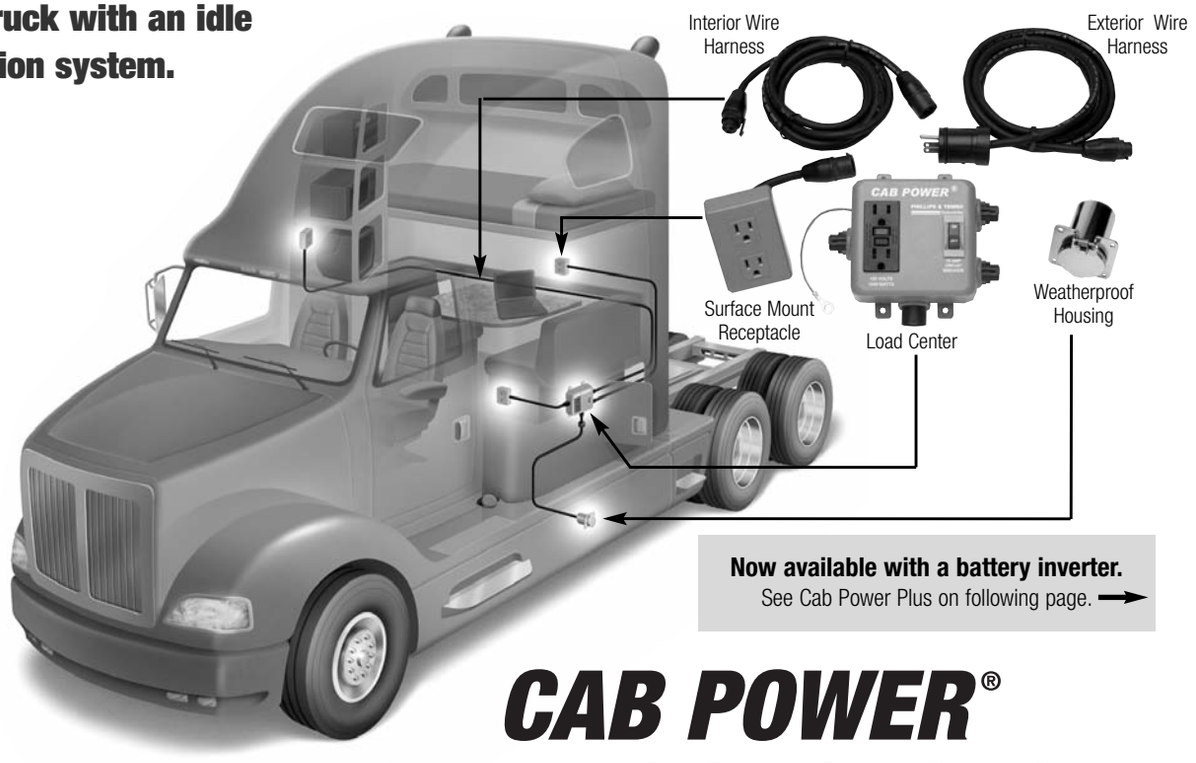
Note: 12/24 Volt Motor SHORT — Shaft Size .3122" x 1.44"
Note: 12/24 Volt Motor LONG — Shaft Size .3122" x 1.88"



Reduce Idling
Increase Cab Comfort & Convenience

Ask for the *Cab Power*® brand when spec'ing your truck with an idle reduction system.

PART #: 8500633 - BASIC KIT



Now available with a battery inverter.
See Cab Power Plus on following page. →

CAB POWER®

Long-haul Trucking Convenience Products

THE *CAB POWER*® SYSTEM is a series of pre-wired, modular components for cabs and sleepers of over-the-road trucks and service vehicles. The system allows for "living room" electrical convenience without the need to keep the truck engine idling by distributing power from APU's, inverters and land based electrical grids (Shore Power).

Features and Benefits:

- Accommodates standard household appliances and office equipment.
- Eliminates engine idling for electrical power generation reducing air and noise pollution.
- Idling reduction results in fuel cost savings and less engine wear.
- Quick and simple installation (less than two hours).
- Adaptable, modular design features quick connect wires, and unique mounting system.
- Easy to customize to all truck makes. Harnesses can be routed to fit all interior cab configurations.
- System components are weatherproof, durable, and resistant to adverse over-the-road trucking conditions.
- Can be factory installed or added as an aftermarket enhancement..

CAB POWER ACCESSORIES

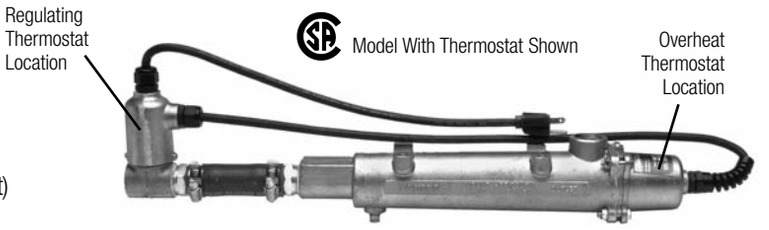
PART NO.	DESCRIPTION
8500634	Surface Mount Outlet/Receptacle
8500635	Flush Mount Outlet/Receptacle
8500637	Weatherproof Housing w/Cab Power Insignia
8500640	85" Exterior Wire Harness (to housing)
8500641	54" Interior Wire Harness (to outlet)
8500638	96" Interior Wire Harness (to outlet)
8500639	163" Interior Wire Harness (to outlet)
8606048	Mounting Bracket For Weatherproof Housing
8500642	Inverter Outlet Extension Cord, 54"
8500643	Inverter Outlet Extension Cord, 96"
8500644	Inverter Outlet Extension Cord, 163"
8500647	Inverter, Panel-Mount Connector Kit (AC-in + AC-out)

* NOTE: Load center not available individually.

HIGH WATTAGE heavy duty engine pre-heater for use on industrial applications.
Our most powerful engine heater!

All Circulation Heaters feature:

- Low Watt-Density (replaceable) heating elements (60-105 w/inch^2) for long life
- 205°F (96°C) overheat thermostat
- NRTL/C approval (complies with UL/CSA)
- Thermally isolated regulating thermostat (models with t-stat)
- Four-bolt flange for easy element replacement
- 14 gauge SJOW cord (16 in. length - 40.6cm) is abrasion, oil, and grease resistant
- Nylon check valve
- Premium grade tin-plated phosphor bronze blade connections
- 1 inch NPT inlet and outlet
- 1/4 inch NPT drain
- 3° tapered, permanent-mold aluminum housing
- High capacity circulation heater w/indicator light available on page 78



Mounting space requirements (including thermostat):
27.5" (69.8cm) length x 3" (7.6cm) width x 6.5" (16.5cm) height.

REPLACEABLE THERMOSTATS	THERMOSTAT RANGES
3300094	Range A: 80ºF ON - 100ºF OFF (27°C ON - 38°C OFF)
3300095	Range B: 100ºF ON - 120ºF OFF (38°C ON - 49°C OFF)
3300096	Range C: 120ºF ON - 140ºF OFF (49°C ON - 60°C OFF)

High-Capacity Circulation Heaters - Complete kits, Ready to install

- Furnished with cord & molded plug (4000w Model features detachable plug)

HIGH WATTAGE BASIC HEATER	HEATER WITH THERMOSTAT RANGE A	HEATER WITH THERMOSTAT RANGE B	HEATER WITH THERMOSTAT RANGE C	WATTS	VOLTS	AMPS	REPLACEMENT ELEMENT	PLUG CONFIGURATION
3300001	3300011	3300021	3300031	1500	120	12.5		**(A)**
3300002	3300012	3300022	3300032	2000	120	16.7		**(C)**
3300005	3300015	3300025	3300035	2250	120	18.8		**(C)**
—	—	—	—	2250	240	9.4		**(B)**
3300007	—	—	3300037	2500	240	10.4		**(B)**
—	3300018	—	—	3000	240	12.5		**(B)**
—	—	—	3300039	3500	240	14.6		**(B)**
—	—	3300030	—	4000	240	16.6	3300060	**(D)**

(A) Furnished with standard 120V male plug.
(B) Furnished with standard 240V male plug.
(C) Furnished with high-current 120V male plug. 20 Amp electrical service required.
(D) Plug not attached. High-current 240V detachable male plug is provided. 20 Amp electrical service required.

PLUG CONFIGURATIONS	(A)	(B)	(C)	(D)
	125 Volt 15 Amp	240 Volt 15 Amp	125 Volt 20 Amp	240 Volt 20 Amp
Standard Plug				
Weatherproof Plug				

A Note About Extension Cord Selection and Usage:

When using an extension cord with one or more heating devices, it is important that the TOTAL current draw of all devices not exceed the capacity of the extension cord or the AC circuit. Use only 3-wire GROUNDED extension cords. Ground Fault Interrupter (GFI) service is also recommended. See page 88 for more information on proper cord length and gauge.

NOTE: All circulation heaters on pages 71-73 are equipped with different male plugs depending on the wattage and voltage requirements of the heater. This diagram shows the plug configuration for the three wattage/voltage combinations that are used. Vehicles with heater hose connected to radiator cannot use circulation type heaters.

CIRCULATION HEATERS

BASIC HEATERS—for custom installations

Heaters not furnished with regulating thermostat. Power cord is unfinished (not supplied with plug).

Mounting space requirements:
22.5 in. (57.1cm) length x 3 in. (7.6cm) width x 4.5 in. (11.4cm) height.

Complete Unit Shown

Optional Thermostat

(for use with basic heater only)

PART NO.	OPERATING RANGE
3300061	80°F ON - 100°F OFF (27°C ON - 38°C OFF)
3300062	100°F ON - 120°F OFF (38°C ON - 49°C OFF)
3300063	120°F ON - 140°F OFF (49°C ON - 60°C OFF)

BASIC HEATER	WATTAGE	VOLTAGE	AMPS	REPLACEMENT ELEMENT
3300041	1500	120	12.5	3300051
3300042	2000	120	16.7	3300052
3300045	2250	120	18.8	3300055

Industrial Tank Heater - Series 41

- Thermostatically protected: opens at 190°F (88°C), closes at 151°F (66°C)
- Vertical installation only
- Heavy Duty 3-wire 5 ft. (1.52m) attached cord, 2000W heater has 22" attached cord.
- 5/8" inlet and outlet
- Dimensions: 2-3/4" x 8-1/2" (7cm x 21.6cm)
- Replaceable element and thermostat

Series 41 Heaters & Replacement Parts

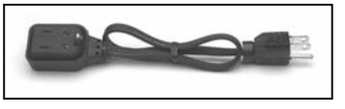
HEATER	WATTAGE	VOLTAGE	ELEMENT	THERMOSTAT
2204010	750	120	2204061	2204266
2204029	1000	120	2204088	2204266
2204037	1500	120	2204096	2204266
3300091	2000	120	3300093	2204266
*	1000	**240**	—	2204266
*	1500	**240**	2204126	2204266

* Replacement element and thermostat only.

CIRCULATION HEATERS Series 8000 Tank/Circulation Engine Heaters

Light-duty, off road, industrial and agricultural applications.

- Cylindrical design of heater and universal mounting strap allow for convenient, new or retrofit applications.
- Integral check valve supports extensive range of plumbing configurations.
- New top-side location of power cord connection provides damage protection from road debris and chemicals.
- Rugged diecast aluminum construction is corrosion and impact resistant.
- New detachable power cord enhances ease of installation.
- Copper heating element provides excellent heat transfer.
- Temperature sensing thermostat provides overheat protection.



Replacement Cord - Part No. 3309001 - 18"
Part No. 3309002 - 60"

PART NO.	WATTS	VOLTAGE	HOSE CONNECTION DIAMETER
3308001	750	120	5/8"
3308002	1000	120	5/8"
3308003	1500	120	5/8"

NOTE: Use Series 41 Heater for 2000 Watt Applications.

INDUSTRIAL TANK/CIRCULATION ENGINE HEATER offers dependable engine starts in all temperatures. By circulating warmed coolant through an engine, it assures a quick start, reduces time to reach operating speed and enhances immediate full-load acceptance.

- Rugged diecast aluminum construction is corrosion and impact resistant
- Low watt density copper heating element provides optimum performance
- Temperature sensing thermostat provides overheat protection. Regulating thermostats included in three heat ranges
- Temperature and oil resistant, permanently connected 5 ft. (1.52m) power cord with strain relief is flame retardant
- Water resistant terminal end cap protects against harsh chemicals
- Unique mounting system protects against road vibration
- Lead-free heater utilizes recyclable aluminum, plastic and copper to help protect the environment

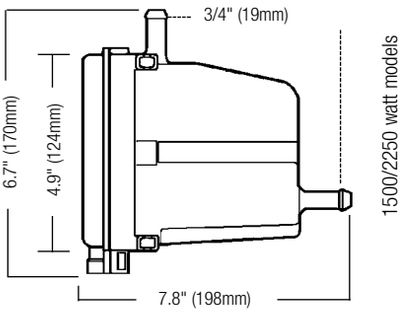
Heavy-Duty Industrial Series Heaters

REGULATING THERMOSTAT RANGE						
ON/OFF 60°/80°F (10°/27°C)	ON/OFF 80°/100°F (27°/38°C)	ON/OFF 100°/120°F (38°/49°C)	MALE PLUG	VOLTS	AMPS	INLET/OUTLET SIZE
Heavy Duty/Industrial Series, Small Body Tank - 750 Watt						
3305028	3305032	3305036	Yes (A)	120	6.3	5/8"
—	3305034		No	240	3.1	5/8"
Heavy Duty/Industrial Series, Small Body Tank - 1000 Watt						
3305040	3305044	3305048	Yes (A)	120	8.3	5/8"
Heavy Duty/Industrial Series, Large Body Tank - 1500 Watt						
3305052	3305056	3305060	Yes (A)	120	12.5	3/4"
—	3305058	3305062	No	240	6.3	3/4"
Heavy Duty/Industrial Series, Large Body Tank - 2250 Watt						
3305064	3305068	3305072	No	120	18.8	3/4"
—	3305070	—	No	240	9.4	3/4"

PART NUMBER	WATTAGE	MALE PLUG	VOLTS	AMPS	INLET/OUTLET SIZE	TANK SIZE
3305004	2250	Yes (C)	120	18.8*	3/4"	Large Body

NOTE: 3305004 does not include regulating thermostat

Dimensions



PLUG CONFIGURATIONS		
125 Volt 15 Amp	250 Volt 15 Amp	125 Volt 20 Amp
A	B	C

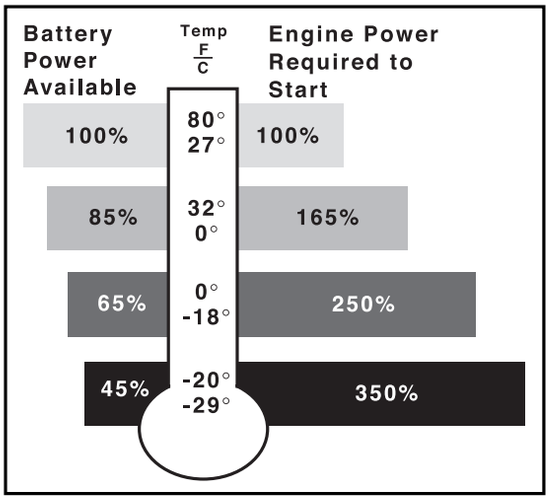
For additional product information, refer to Circulation Data Sheet #LIT0311196.

The small size of some engine compartments, especially vehicles with transverse engines, may make circulation heater installation difficult even though it may be listed as a heating option. The following accessories are available for use with circulation heaters:

Part #3300085
5/8" (15.8mm) x 3/4" (19mm)
Metal "T" fitting

Part #3300086
1/4" NPT (6mm)
"A" Adapter to
5/8" (15.8mm) hose

Part #3300090
5/8" (15.8 mm) x 3/4" (19mm)
Plastic "Y" fitting



At 20° below zero, your battery (with less than half the normal available power) must start an engine that requires 350% more starting power.

Two types of battery heaters boost battery power as much as 75%

Blanket Style Battery Heaters

- 120 Volt AC operation
- Blanket style heater warms battery core to 60° - 70° above ambient temperature for quick starts
- Thinsulate™ thermal insulation helps maintain battery temperature in warm or cold weather
- Complete with 30 inch (76cm) grounded cord
- All battery blanket heaters are 5 in. (12.7cm) tall, 1/2 in. (1.1cm) thick

PART NO.	LENGTH	WATTAGE	BATTERY SIZE
2800055	28" (71cm)	50	Series 26, 26R, 70
2800063	36" (91.5cm)	80	Series 24, 24F, 27, 27F, 74
2800071	72" (183 cm)	160	Truck batteries. Series-parallel systems.

™Thinsulate is a registered trademark of 3M corporation.

Battery Box Heater

- 200 Watt - 120 Volt AC or 240 Volt AC model available
- Preset thermostat maintains 80°F (27°C) battery warmth for quick starts
- Complete with 8 ft. (2.4m) grounded cord
- Dimensions: 9" (22.8cm) Length x 6" (15.1cm) Width x 3/4" (1.8cm) Height

Note: This product not available in Canada (CSA approved model not available)

Part No. 8500320 (120V)
Part No. 8500339 (240V)

CAUTION: Battery heaters are not recommended for nickel cadmium batteries.

Freeze Plug Replacement Cordsets

If you cannot locate a replacement freeze plug cordset part number from the application section of this publication, try matching the old cordset to the photos below to identify the correct replacement cordset.

Fig A | Fig B | Fig C | Fig D (For Aluminum & Brass Heaters) | Fig E (For Steel Heaters) | Fig F | Fig G | Fig H | Fig I | Fig J

FIG	PART NO.	LENGTH	DESCRIPTION
A	3600001	5 ft. (1.52m)	Silicone cord w/right angle connector
A	3600002	5 ft. (1.52m)	Radiant heater replacement cord
C	3600003	5 ft. (1.52m)	Silicone cord with straight connector
H	3600004	5 ft. (1.52m)	Silicone cord with right angle connector (brass and aluminum heaters)
D	3600005	5 ft. (1.52m)	Silicone cord with straight connector
E	3600006	5 ft. (1.52m)	Silicone cord with 90° connector (steel heaters)
F	3600007	5 ft. (1.52m)	Reverse freeze plug cord
B	3600010	7.5 ft. (2.29m)	Silicone cord
G	3600016	6 ft. (1.83m)	Silicone cord with 90° connector
B	3600019	3 ft. (.9 m)	Replacement cord
E	3600021	94 in. (2.4m)	Silicone cord with 90° connector
E	3600036	1 ft. (30.3cm)	Replacement cordset with silicone connectors (steel heaters)
H	3600022	1 ft. (30.3cm)	Replacement cordset with silicone connector (brass and aluminum heaters)
A	3600023	1 ft. (30.3cm)	Replacement cordset with silicone connector (brass and aluminum heaters)
I	3600080	5 ft. (1.52m) Pyroil	Replacement Cordset with silicone connector (use with all Pyroil Freeze plug heaters)
J	3600082	5 ft. (1.52m)	GM Replacement Cordset with thermostat
J	3600083	5 ft. (1.52m)	GM Replacement Cordset with silicone connector (No t-stat)

NOTE: 3600082 must be used in all 2006 and newer GM passenger cars to avoid a Check Engine Light.

Heavy-Duty Immersion Heater Replacement Cordsets

Most “860” & "350" series heaters will use the following standard replacement cordsets: Most 120 Volt heaters ship with cord #3600008. Most 240 Volt heaters ship with #8608377.

PART NO.	DESCRIPTION	VOLTAGE	LENGTH	GA.
3600008	Heavy duty replacement cord	120	6 ft. (1.8m)	16
8608377	Heavy duty replacement cord	**240**	6 ft. (1.8m)	16
3600048	Hi-temp silicone repl. cord	120	6 ft. (1.8m)	16
3600015	Heavy duty replacement cord	120	5 ft. (1.5m)	16
3600024	Heavy duty replacement cord	120	1 ft. (30.1cm)	16
3600085	Hi-temp replacement cord - Volvo	120	6 ft. (1.8m)	14
3600086	Hi-temp replacement cord - Volvo	**240**	6 ft. (1.8m)	14

Accessories

Also see “Y-Cord” thermostat kits - page 77

Part No. 3600012 - Plug Protector

- Prevents freeze up - keeps moisture out
- Keeps plug contacts clean for optimum power and safety

Part No. 3600018

Low-profile, 2 piece, Through-The-Grille Cordset
Avoid ugly plugs hanging from the grille

- Prevents plug from being visible
- Fits all vehicles
- 1500 Watt rating - 120 Volt AC
- Required for routing through narrow grille openings (1/3" x 1" [7, 62mm x 25, 4mm) minimum clearance)
- Cord length: 6 ft. (1.8m)

Part No. 3600040

3-Way Connector

Narrow plug provides easy installation in tight grille areas

- Use multiple cold weather products with one common cord
- 14 gauge 3-wire grounded cord
- Cord length: 23 in. (59cm)

Note: This product not available in Canada
(CSA approved model not available)

Part No. 3600045 - Cord Holder

Weatherproof Receptacles

- One-piece molded cordset with labor-saving QuickConnect™ receptacles
- Molded connector end snaps into receptacle housing, screws into heater - forming a positive weatherproof seal at both ends
- Round and square weatherproof housings available
- Receptacle enhances vehicle appearance - eliminating messy cords
- Field-wired model allows for custom installations
- Most models CSA approved except 3600041
- Housing dimensions: 2.5" (6.2cm) x 2.5" (6.2cm), mounting hole required: 1-5/8" (4.1cm)

*240V/15A

Weatherproof Cordsets & Accessories

Also see page 78 for NEW indicator light weatherproof cordset system.

FIG	PART NO.	DESCRIPTION	VOLTAGE	CORD LENGTH	WIRE GAUGE	RECEPTACLE SPECIFICATIONS
A	3600046	Weatherproof Cordset with frost plug connector	120	6 ft. (1.8m)	18	—
B	8605688	Weatherproof Field-wired receptacle—chrome plated	120	—	—	4-hole square
C	8605505	Weatherproof Field-wired receptacle—zinc plated	120	—	—	3-hole round
D	8605645	Replacement rubber boot for WP receptacle	—	—	—	
E	8605254	Replacement male plug for WP receptacle kit	120	—	—	
F	8606005	WP Silicone Cordset & chrome plated receptacle	120	6 ft. (1.8m)	16	4-hole square
F	8606013	WP Silicone Cordset & chrome plated receptacle	120	10 ft. (3.1m)	16	4-hole square
G	8606048	Mounting bracket—chrome plated	—	—	—	2 & 4 hole square
H	8606080	Receptacle only—chrome plated	—	—	—	4-hole square
N	3600088	Receptacle only—black	—	—	—	4-hole square
I	3600028	Weatherproof Cordset with Receptacle	120	8 ft. (2.4m)	16	2-hole square
I	3600014	Weatherproof Cordset with Receptacle	120	12 ft. (3.6m)	16	2-hole square
J	8608652	Weatherproof Cordset with Silicone connector	120	7 ft. (2.2m)	14	—
J	8605122	Weatherproof Cordset with Silicone connector	**240***	7 ft. (2.2m)	14	—
J	8608814	Weatherproof Cordset with Silicone connector	120	10 ft. (3.1m)	14	—
J	8608849	Weatherproof Cordset with Silicone connector	120	5.5 ft. (1.7m)	14	—
J	8608857	Weatherproof Cordset with Silicone connector	120	12 ft. (3.6m)	14	—
J	8608865	Weatherproof Cordset with Silicone connector	120	14 ft. (4.3m)	14	—
K	8602891	Weatherproof Cordset & zinc-plated receptacle	120	6 ft. (1.8m)	16	3-hole round
K	8602921	Weatherproof Cordset & zinc-plated receptacle	**240***	6 ft. (1.8m)	16	3-hole round
K	8602948	Weatherproof Cordset & zinc-plated receptacle	120	10 ft. (3m)	16	3-hole round
L	3600041	3-way connector w/chrome plated receptacle *(not CSA approved)*	120	5 ft. (1.5m)	14	4-hole square
	8608032	Square receptacle				2-hole w/gasket
	8605149	Square receptacle only				2-hole w/o gasket
	3600056	Round receptacle				3-hole w/gasket
C	8605513	Weatherproof field-wired receptacle - zinc plated	**240***			3-hole round
M	8606056	Mounting bracket				3-hole round

Fig A

Fig B

Fig C

Fig D

Fig E

Fig F

Fig G

Fig H

Fig I

Fig J

Fig K

Fig L

Fig M

Fig N

Now offering more thermostat models for increased application coverage.

Thermostatically Controlled Engine Immersion Heater Systems

- Saves money by reducing engine heater operating hours
- For new installations or replacement use
- For more economy use lower thermostat temperature settings

Parallel Weatherproof "Y" Cord Assemblies (for use with weatherproof housing)

Use PARALLEL Y-cords with two heaters.

FIG	PART NO.	DESCRIPTION	VOLTS	LENGTH	GA.	CHARACTERISTICS
B	8607311	Weatherproof Y-Cord Parallel	120	7/9 ft.	14	Includes 4-hole receptacle
C	8607990	Weatherproof Y-Cord Parallel	120	7/7 ft.	14	Two 7' (2.1m) lengths
C	8608059	Weatherproof Y-Cord Parallel	120	7/10 ft.	14	One 7' (2.1m) One 10' (3m)
C	8608423	Weatherproof Y-Cord Parallel	120	14/14 ft.	14	Two 14' (4.3m) lengths
D	8608768	Weatherproof Y-Cord Parallel with AC outlet	120	1/7 ft.	14	One 12" (30cm) (AC) One 7'
D	8608792	Weatherproof Y-Cord Parallel with AC outlet	120	1/10 ft.	14	One 12" (30cm) (AC) One 10'
—	3600094	Weatherproof W-Cord Parallel				

Series Y-Cords & Thermostats - *See page 80 for engine applications chart*

Use SERIES Y-cords with one thermostat and one heater.

FIG	PART NO.	DESCRIPTION	VOLTS	LENGTH	GA.	CHARACTERISTICS
C	3600064	Series Weatherproof Y-Cord	120	6/6 ft. (1.8m)	16	Two 6 ft. (1.8m) lengths — Flat Wire
C	3600089	Series Weatherproof Y-Cord	120	8.5 ft. (2.6m) / 14 ft. (4.3m)	14	One 8.5 ft. (2.6m) & one 14 ft. (4.3m) lengths
F	3600065	Series Y-Cord (standard plug)	120	6/6 ft. (1.8m)	16	Two 6 ft. (1.8m) lengths
G	3600081	#8 STOR thermostat only				40°F ON/55°F OFF
A	3600057	1/2" NPT thermostat only				100°F ON/120°F OFF
A	3600058	1/2" NPT thermostat only				55°F ON/75°F OFF
A	3600066	3/4" NPT thermostat Only				40°F ON/55°F OFF
A	3600068	1/2" NPT thermostat Only				40°F ON/55°F OFF
A	3600073	M22 x 1.5 thermostat only				40°F ON/55°F OFF
E	8604037	Series Y-Cord with thermostat	**240**	6/6 ft. (1.8m)	16	100°F ON/120°F OFF
—	3600087	M27 thermostat only				40° ON/55°F OFF
E	3600054	Series Y-Cord with thermostat	120	6 ft. (1.6m) / 6 ft. (1.6m)	16	

Fig A

Fig B

Fig C

Fig D

Fig E

Fig F

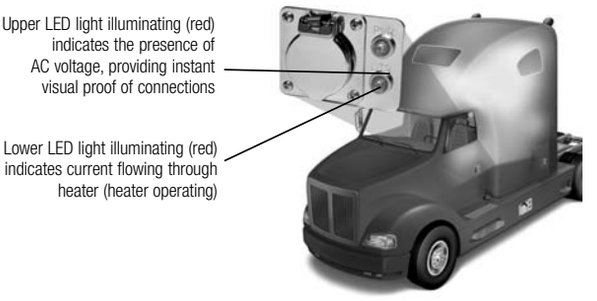
Fig G

ENGINE IMMERSION HEATER LED INDICATOR LIGHT SYSTEM

Specially designed wire harness with two-light system allows operators or fleet personnel to quickly determine both power availability and heater operation.

- Indicator lights visible up to 150 ft. (50m)!
- 120 Volt - 15 Amp rating
- Minimum wattage required is 150W
- Chrome plated, four-hole mount square flanged weatherproof receptacle with gasket
- Mounting plate dimensions: 3.56" (90mm) (W) x 2.56" (65mm) (H)

Also see page 76 for standard weatherproof cordsets and accessories.



Standard Kit
(Includes weatherproof housing and cord)

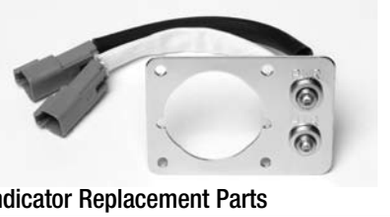
PART NO.	CORD LENGTH
3600049	6 ft. (1830mm)
3600051	12 ft. (3660mm)

Weatherproof Series Y-Cord for Thermostat Option

PART NO.	CORD LENGTH
3600079	Weatherproof Series Y-Cord Only, 72”x72”
3600090	Weatherproof Series Y-Cord Only, 55”x110”
3600091	Weatherproof Series Y-Cord Only, 100”x168”
3600097	Weatherproof Series Y-Cord Only, 168”x168”

See page 79 for Indicator Light information

PART NO.	DESCRIPTION
3600098	Single Indicator Light (Harness Only) (7.8 ft / 2.4m)
3600099	Single Indicator Light (Harness) with Weatherproof Housing (7.8 ft / 2.4m)



Indicator Replacement Parts

PART NO.	DESCRIPTION
3600060	Chrome Replacement Indicator Light Plate, 120V
3600077	Black Replacement Indicator Light Plate
3600062	Indicator Light System Cord, 6 ft.
3600078	Indicator Light System Cord, 12 ft.
3600067	Replacement LED Light
8606080	Receptacle only, chrome plated (4-hole)

Indicator Light Kit

PART NO.	DESCRIPTION
3600061	Dual Heater Sensing Indicator Light Kit 84” x 120”, 120V, Parrallel Y-Cord

DON'T GET LEFT OUT IN THE COLD

Eliminate no starts with an Integrated Indicator Light for your Engine Block Heater

Confirm engine block heater operation at a glance and ensure cold weather starts with Phillips & Temro's Integrated Indicator Light.

When the bright red LED light is on, it indicates that:

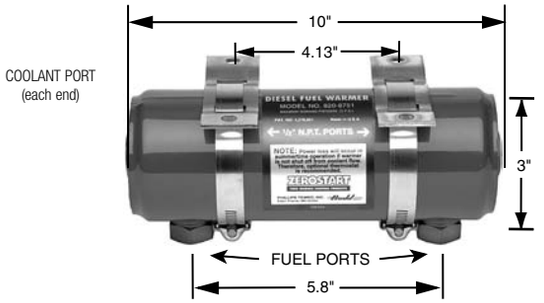
- Utility power is functional
- Your block heater is operating

Part No. 3600098, 3600099

Lower operating costs by using #2 fuel all year

- Transfers heat from engine coolant to the fuel just before the fuel filter for maximum efficiency
- Eliminates clogged fuel filters when temperatures are below 10°F (-12°C)
- Exclusive stainless steel construction with no internal welds prevents coolant from leaking into fuel
- Minimal pressure drop
- Can be used as a heat exchanger in some hydraulic applications
- Port size: 1/2 - 14 NPT (Heavy-Duty)

Heavy Duty Model
Part No. 8208751



Specifications

Pressure Drop .....less than 0.05 psi
Maximum operating pressure .....75 psi
Maximum operating temperature .....350°F (177°C)
Test pressure .....100 psi
Weight (without bracket) .....2 lbs. (907g)

INLET FUEL TEMP. °F/°C	TEMPERATURE RISE OUTLET FUEL TEMP FUEL FLOW RATE 2-1/2 GPM	1-1/2 GPM	1/2 GPM
-30/-34	+32/0	+38/3	+52/11
-10/-23	+39/4	+45/7	+55/13
+10/-12	+47/8	+53/12	+59/15
+30/-1	+60/16	+62/17	+67/19
+50/10	+71/22	+74/23	+77/25
+70/21	+85/29	+87/31	+88/31

Based on a 140°F (60°C) coolant temperature.

ENGINE	PART NO.	DESCRIPTION
CATERPILLAR		
3406E	3600066	3/4" NPT
C9	3600081	#8 STOR
C11 & C13	3600081	#8 STOR
C15 & C16	3600081	#8 STOR
CUMMINS		
ISB	3600066	3/4" NPT
ISC	3600066	3/4" NPT
ISM	3600068	1/2" NPT
ISX	3600087	M27
DETROIT DIESEL		
Series-60	3600066	3/4" NPT
DD15	3600087	M27
INTERNATIONAL		
DT-466 (Non-EGR 1998-2005)	3600068	1/2" NPT
DT 5 & 7	3600087	M27
DT 11 & 13	3600087	M27
MACK		
E-Tech	3600068	1/2" NPT
PACCAR		
PX-6	3600066	3/4" NPT
PX-8	3600066	3/4" NPT

- Pre-heats combustion chamber in diesel engines for quick starts
- Measured/metered shot system limits the amount of starting fluid that can enter an engine—provides for optimum starting with less chance of waste or engine damage
- Convenient, one person operation
- Economical—about 16# per start
- High pressure replacement cylinders meet D.O.T. standards
- Available in 12 and 24 volt electrical and mechanically operated models
- Uses standard 1 inch cylinders

NOTE: Diesel Starting Fluid Systems are NOT for use with engines equipped with glow plug or flame thrower systems, or engines equipped with intake air heater.

E-Z Stock, E-Z Mount Electrical Kit (12 Volt) - Part No. 8203237

One part number covers most class 7 and 8 vehicles. Kit includes: 3 atomizers (8202966, 8202974, 8202982), switch, valve fitting, 48" nylon tube, dash decal, 16 gauge wire, valve & mounting brackets, surface-mount thermostat. Starting fluid cylinder NOT included.

Note: To change to 24V system - you need to purchase 8204020 Bracket/Valve assembly. All other components are compatable.

E-Z Mount Electrical Kit (12/24 Volt) (See page 79 for applications)

Replace existing systems, or custom design your own. Kit includes: Valve & mounting bracket, switch, valve fitting, dash decal, 48" nylon tubing. Atomizer not included - see page 82.

Mini E-Z Mount Electrical Kit (12 Volt) - Part No. 8200001

Provides the benefits of our full-size measured shot system in a compact design—for use with 250-500 CID applications. Includes: Mini valve with mounting bracket, pushbutton switch, valve fitting, 48" nylon tubing, dash decal. See page 79 for applications. Atomizer not included - see page 82 for information.

Standard Electrical Kit (12/24 Volt) (See page 81 for applications)

Direct replacement for some factory installed systems. Kit includes: Valve, switch, cylinder clamp, valve fitting, dash decal, 48" nylon tubing. Atomizer not included - see page 82.

Mechanical Kit (See page 81 for applications)

A simple, economical way to add ether injection. Kit includes: Valve, cylinder clamp, 84" control cable, valve fitting, dash decal, 48" nylon tubing. Atomizer not included - see page 82.

Aerosol Starting Fluid Valve (12 Volt) Part No. 5801001

Continuous flow system for replacement of industrial and agricultural applications. Uses standard 7.5 - 8.5 oz. spray can (not included). Leak-proof seal and easy one-hand installation of starting fluid can simplify use. Kit includes ether valve and elbow connection.

DIESEL STARTING FLUID SYSTEMS

GENERAL APPLICATIONS (SPECIFIC ENGINES LISTED BELOW)

		EZ-MOUNT ELECTRICAL		STANDARD ELECTRICAL		MECHANICAL
Engine Size	Shot Size	12V	24V	12V	24V	
Under 250 CID (4L)	1.5 cc	8204136	N/A	8204179	N/A	N/A
250-500 CID (4-8L)	3 cc	8203938	8203946	8200106	8200165	8200211
450-950 CID (8-15.5L)	6 cc	8203954	8203962	8200157	8200238	8200270
Over 900 CID (14-7L)	12 cc	8203970	8203989	N/A	8200602	8200432

REPLACEMENT PARTS

		EZ-MOUNT ELECTRICAL		STANDARD ELECTRICAL		MECHANICAL
Engine Size	Description	12 V	24 V	12 V	24 V	
Under 250 CID	Valve Only	N/A	N/A	8204101	N/A	N/A
250-500 CID	Valve Only	8203997	N/A	8202427	N/A	8202397
450-950 CID	Valve Only	8204012	N/A	8202435	8202478	N/A
Over 900 CID	Valve Only	8204039	N/A	8202443	N/A	8202419
	Cylinder Clamp	N/A	N/A	8202575	8202575	N/A
	Switch	8202699	8202699	8202699	8202699	N/A
	84" Control Cable	N/A	N/A	N/A	N/A	8202559
	Wirestop	N/A	N/A	N/A	N/A	8202567
	Valve fitting	8202532	8202532	8202532	8202532	8202532
	48" Nylon tube	8202540	8202540	8202540	8202540	8202540
	Dash decal	8202583	8202583	8202583	8202583	8202583

Note: All starting fluid kits, except mini-ether kits, use starting fluid cylinder #8200327 (not included). All kits, except for #8203237 require atomizer. See page 80 for atomizer information.

ENGINE SPECIFIC APPLICATIONS

STARTING FLUID SYSTEMS APPLICATIONS

Make & Engine Model	E-Z Stock E-Z Mount	E-Z Mount Electrical 12 V	E-Z Mount Electrical 24 V	Standard Electrical 12 V	Standard Electrical 24 V	Mechanical	Atomizer
CATERPILLAR							
1100, 3208, 3306, others over 500 cid[1]	8203237	8203954	8203962	8200157	8200238	8200270	8202982
3406, 3408, 1693, D3461	8203237	8203954	8203962	8200157	8200238	8200270	8202966[1]
3406B turbo[1]	—	8203954	8203962	8200157	8200238	8200270	8203067[1]
31761	8203237	8203954	8203962	8200157	8200238	8200270	8202982[1]
CUMMINS							
855 CID series, all turbo over 400 cid	8203237	8203954	8203962	8200157	8200238	8200270	8202982
B Series - 4 cylinder	[4]	8204136	—	8204179	—	—	8202931
B Series - 6 cylinder	[4]	8203938	8203946	8200106	8200165	8200211	8202931
C Series	—	8203954	8203962	8200157	8200238	8200270	8202931
10 Litre, 11 Litre	8203237	8203954	8203962	8200157	8200238	8200270	8202982
DETROIT DIESEL							
3-53, 4-53, 3-71, 4-71	[4]	8203938	8203946	8200106	8200165	8200211	[2, 3]
6-71, 6V-53, 8V-53, 6V-71, 6V-92	8203237	8203954	8203962	8200157	8200238	8200270	[2, 3]
8V-71, 8V-92	—	8203970	8203989	8200548	8200602	8200432	[2, 3]
8.2 Litre	—	8203954	8203962	8200157	8200238	8200270	8202958
Series 60 (677 & 774 CID)	—	8203954	8203962	8200157	8200238	8200270	8202966
FORD							
6.6L, 7.8L	8203237	8203938	8203946	8200106	8200165	8200211	8202974
INTERNATIONAL							
D150 (461 CID), D170, D190	8203237	8203954	8203962	8200157	8200238	8200270	[2, 3]
D550 (549 CID), V800 (798 CID)	8203237	8203954	8203962	8200157	8200238	8200270	[2, 3]
817 (817 CID), 9 Litre	8203237	8203954	8203962	8200157	8200238	8200270	[2, 3]
D, DT31—DT312, DT360, DT436, DT466	[4]	8203938	8203946	8200106	8200165	8200211	8202974
MACK							
Midliner	—	8203938	8203946	8200106	8200165	8200211	8203016
ALL 6 Cylinder	—	8203954	8203962	8200157	8200238	8200270	8202990
864, 865 & 866 V-8 series	—	8203954	8203962	8200157	8200238	8200270	8202982
MERCEDES TRUCK							
ALL	—	8203938	8203946	8200106	8200165	8200211	8202958
PERKINS							
ALL	[4]	8203938	8203946	8200106	8200165	8200211	8202982

If your engine is not under "Specific Applications", then choose a kit based on the engine size.

[1]Air-to-air aftercooled engines (ATAAC) generally will use an 8202982 atomizer installed in pipe between discharge side of aftercooler and engine manifold.

[2]Use 8202966 if installed in blower box or manifold.

[3]Use 8202982 if installed in air intake horn.

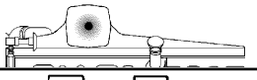
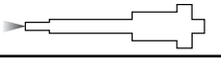
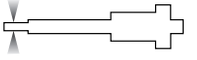
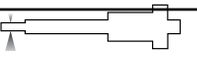
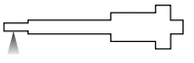
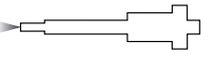
[4]Mini ether system (#8200001) may be used for this application.

Starting Fluid System Atomizers

- Designed for most engines with 1/8" or 1/4" NPT opening
- Provides proper direction and atomization of pressurized fluid
- Sintered bronze filter maintains purity of intake air
- Spray pattern clearly marked for easy installation

Dual Atomizer Kit
(for use with "V' engines)
#8203091

Atomizer Applications

PART NO. ORIFICE/SIZE	APPLICATIONS	LOCATION	SPRAY PATTERN
8203067 .018	Caterpillar 3406B Turbo	Pre-tapped hole in aftercooler 	
8202931 .011	Cummins B & C Series	Pre-tapped manifold	
8202966* .018 Blue	Cummins Non-Turbo & other manifolds over 2"	Center intake manifold	
	Detroit Diesel blower box	Center blower box	
8202990 .018	Mack in-line 6	Pre-tapped hole between cylinders #5 & #6	
8203016 .013	Mack Midliner	Air intake pipe or intake manifold	
Under 500 CID **8202974*** .013 Yellow	Ford 6.6/7.8L, Cummins & Perkins in-line, all Turbocharged engines	Direct ether flow against flow of incoming air	
8200003 .018	Cummins 600 Swivel Style		
8200004 .013	Cummins 600 Swivel Style		
Over 450 CID **8202982*** .018 Red	(Pressure side of turbo), DDA or IH Air Intake Horn		
8202958 .013	DDA 8.2 Litre	Pre-tapped hole in air cleaner adapter	
8203008 .018	Ford industrial diesel	Direct flow of starting fluid into air stream, not directly into cylinder.	

*Included in kit 8203237 Note: All atomizers 1/8" NPT.

Diesel Starting Fluid System Thermostats

- Locks out electrical valve operation at specified engine temperatures
- Surface mount installs without draining engine coolant
- Threaded 1/2" NPT installs directly in any 1/2" NPT opening in water jacket

Surface Mount

PART NO.	TYPE	TEMP ON	TEMP OFF
8200386	Surface Mount	60°F (16°C)	85°F (29°C)
8202281	Threaded	45°F (7°C)	65°F (18°C)
8291837	Threaded	70°F (21°C)	100°F (38°C)

Threaded Style

DIESEL STARTING FLUID

8200327 8201277

D.O.T. Approved Replacement Starting Fluid Cylinders

PART NO.	DESCRIPTION	SIZE	NOZZLE
8200327	18 oz. 1" neck (Used with most kits)	3" x 11"	1" - 20
8201277	21 oz. 1" neck (Fits Dieselmatic® kits	4" x 8"	1" - 20
8203903	1" standard gaskets (cork gasket flat)	Pkg. of 50	

NOTE: All ZeroStart® Diesel Starting Fluid kits require cylinder #8200327.
Gaskets are not included with cylinders.

MINIMUM QUANTITY OF STARTING FLUID THAT CAN BE SHIPPED IS 1 COMPLETE CASE (12 CYLINDERS).

STARTING FLUID CYLINDERS ARE NOT RETURNABLE.

NOTE: A disposal fee will be charged for each cylinder included in a product return.

LITTLE BUDDY® INTERIOR WARMER

Part No. 2600900

- Ideal for use in passenger, light-duty, and recreational vehicles
- 900 Watts - 120 Volt AC
- Mounts on floor or under dash. Mounting bracket included
- Compact size: 7” (17.6 cm) (L) x 4.5” (11.3 cm) (W) x 2.75” (7 cm (H)
- Cord length: 7.5 ft. (2.3 m)

Part No. 3600055

Car Warmer Replacement Cord

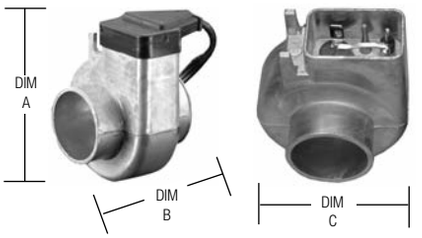
LOWER RADIATOR HOSE HEATERS

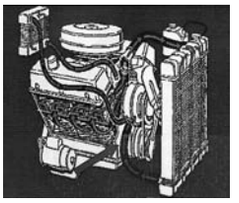
Efficient engine heating from die-cast aluminum design

- Installs in minutes in non-corrugated lower radiator hose
- Available in five hose sizes for best coverage
- Thermostatically protected (245°F/118°C maximum heater temperature)
- Replaceable cordset
- Consult application section for size/use information

PART NO.	FITS HOSE SIZE	WATT	VOLT	DIM A	DIM B	DIM C
3200001	1" (2.4cm)	375	120	3.5" (8.6cm)	3" (7.5cm)	2.5" (6.4cm)
3200002	1-1/4" (3.1cm)	375	120	3.5" (8.6cm)	3" (7.5cm)	2.5" (6.4cm)
3200003	1-1/2" (3.7cm)	600	120	4" (10cm)	3" (7.5cm)	3" (7.5cm)
3200004	1-3/4" (4.3cm)	600	120	4" (10cm)	3" (7.5cm)	3" (7.5cm)
3200005	2" (5cm)	600	120	4.25" (10.5cm)	3" (7.5cm)	3.25" (8cm)

Note: All dimensions reflect approximate installation space requirements, not exact product measurements. Dimension "A" includes cord.

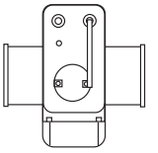




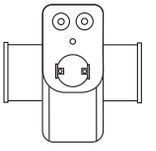
Lower Radiator Hose Heater
Hose must have a minimum 15° rise
Must be installed in smooth, molded hose
Must have direct access to engine water jacket

Replacement Cordsets
120 Volt AC, 42" (112cm)

For heaters with this configuration.
Heater stamped with Model C (example 150C) on bottom of unit.
Part No. 3600009



For heaters with this configuration.
Heater stamped with Model D (example 150D) on bottom of unit.
Part No. 3600047



Tube type hose heater replacement cord
Part No. 3600017

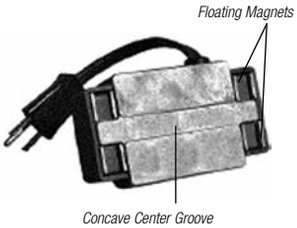
MAGNETIC HEATERS

Magnetic utility heater provides heat when and where you need it.

Super Heat Magnet®

- 200 Watt - 120 Volt AC
- Built-in thermostat maintains optimum temperature—will not exceed 250°F (121°C)
- Quick grip handle protects hands from heat
- Dimensions - Length: 4-3/8" (11cm), Width: 2-1/2" (6.3cm), Height: 3" (7.5cm) (including handle)

PART NO.	DESCRIPTION
3400017	UL/CSA Approved Model - 6 in. (15cm) cordset



RADIANT HEATERS

Bolt-on Radiant Heaters

- For applications with no core plug or core plug access
- Heating element conducts heat directly
- Universal mounting clamp included

PART NO.	DIMENSIONS	WATTS	VOLT	REPLACEMENT CORDSET
3400014	6" x 6" (15.2cm x 15.2cm)	500	120	3600002
3400011	4" x 4" (10.1cm x 10.1cm)	300	120	3600002

VIBRA® Dump Body Vibrators

Vibra® Dump Truck Body Vibrators deliver fast, complete and clean discharge of sticky, compacted or frozen materials from dump truck bodies and dump trailers. Welded to the underside of the dump box, Vibra® Dump Truck Body Vibrators use vibrating thrust to dislodge materials from the dump body. (90-Day Warranty)

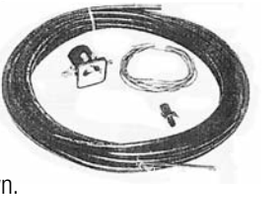
VIBRA® 2000 Designed for use on single-drive axle vehicles with dump bodies 10 feet (3m) in length and shorter, and for use on drop-in hoppers (asphalt and cement contractors, landscapers and anyone using smaller dump truck/tipper bodies).

VIBRA® 3000 Designed for use on tandem, tri-axle dump trucks and end-dump trailers with dump bodies ranging from 10 feet (3m) to 40 feet (12m) in length (bottom dump trailers, roll-off containers, hoppers and rubbish haulers).

VIBRA® 3000-I Designed for severe service applications with large, heavy, rigid dump boxes. Designed for use on tandem, tri-axle dump trucks and end-dump trailers with dump bodies ranging from 10 feet (3m) to 40 feet (12m) in length (bottom dump trailers, roll-off containers, hoppers, larger tipper/dump boxes and rubbish haulers), (formerly Vibra 4000). **LTL shipping required, no exceptions.**

Electric Kit includes:

- 34 ft. cable
- Switch
- Magnetic Relay
- Primary Wire
- Connectors



* 12 volt version shown.
24 volt is a sealed solenoid.

PART NO.	SERIES	TYPE	POWER REQUIREMENTS	THRUST IMPACT FORCE	DIMENSIONS	OPERATING TEMPERATURE	INSTALLATION KIT	SHIPPING WEIGHT
8000581	V2000	Electric	12 volt 380 amp	2000 lbs (907 kg)	35" x 9" x 6-5/8" (890 x 230 x 168mm)	-30° to +140° F (-34° to +60° C)	Included (Underhood)	110 lbs. (50 kg)
8000905	V2000	Electric	12 volt 380 amp	2000 lbs (907 kg)	35" x 9" x 6-5/8" (890 x 230 x 168mm)	-30° to +140° F (-34° to +60° C)	Included[1] (Underhood)	103 lbs. (47 kg)
8000875	V3000	Electric	12 volt 380 amp	3000 lbs (1360 kg)	35" x 9" x 6-5/8" (890 x 230 x 168mm)	-30° to +140° F (-34° to +60° C)	Included[3] (Underhood)	104 lbs. (52 kg)
8000867	V3000	Electric	12 volt 380 amp	3000 lbs (1360 kg)	35" x 9" x 6-5/8" (890 x 230 x 168mm)	-30° to +140° F (-34° to +60° C)	Included[1] (Underhood)	100 lbs. (45 kg)
8001014	V3000	Electric	12 volt 380 amp	3000 lbs (1360 kg)	35" x 9" x 6-5/8" (890 x 230 x 168mm)	-30° to +140° F (-34° to +60° C)	Included[2] (Underhood)	108 lbs. (45 kg)
8000883	V3000	Electric	24 volt 380 amp	3000 lbs (1360 kg)	35" x 9" x 6-5/8" (890 x 230 x 168mm)	-30° to +140° F (-34° to +60° C)	Included (Underhood)	115 lbs. (52 kg)
8000840	V3000	Hydraulic	5.5 Gpm@ 1800 PSI	3000 lbs (1360 kg)	35" x 9" x 6-5/8" (890 x 230 x 168mm)	-30° to +140° F (-34° to +60° C)	Not Included	115 lbs. (52 kg)
8003301	V3000-I	Electric	12 volt 380 amp	3000 lbs (1360 kg)	35" x 9" x 6-5/8" (890 x 230 x 168mm)	-30° to +140° F (-34° to +60° C)	Included[2] (Underhood)	115 lbs. (52 kg)
8003302	V3000-I	Electric	12 volt 380 amp	3000 lbs (1360 kg)	35" x 9" x 6-5/8" (890 x 230 x 168mm)	-30° to +140° F (-34° to +60° C)	Included[1] (Underhood)	100 lbs. (45 kg)
8003303	V3000-I	Electric	12 volt 380 amp	3000 lbs (1360 kg)	35" x 9" x 6-5/8" (890 x 230 x 168mm)	-30° to +140° F (-34° to +60° C)	Included[3] (Underhood)	115 lbs. (52 kg)
8003304	V3000-I	Electric	24 volt 380 amp	3000 lbs (1360 kg)	35" x 9" x 6-5/8" (890 x 230 x 168mm)	-30° to +140° F (-34° to +60° C)	Included (Underhood)	115 lbs. (52 kg)

[1]Switch, solenoid wiring hardware only - power cable not included
[2]Includes standard installation kit with 44 ft. (13.4m) cable
[3]Includes standard installation kit with 34 ft. (10.3m) cable

Standard Installation Kits include 34 ft. (10m) #4 AWG cable

Dump Body Vibrator Accessories

MODEL NO.	DESCRIPTION
8000980	Aluminum mounting plate
8000956	Accessory Package - V3000

Dump Body Vibrator Replacement Parts

MODEL NO.	SHAFT BEARING	COUPLING WITH RUBBER INSERT	STEEL HOOD COVER	END CAP (2)	INSERT ONLY (FOR COUPLING)	MOTOR	SOLENOID	SWITCH
8000581	8001081	8001154	8001367	8001006	8001200	8001030	8001251	8001316
8000905	8001081	8001154	8001367	8001006	8001200	8001030	8001251	8001316
8000875	8001081	8001154	8001367	8001006	8001200	8001030	8001251	8001316
8000867	8001081	8001154	8001367	8001006	8001200	8001030	8001251	8001316
8000883	8001081	8001154	8001367	8001006	8001200	8000964	8000948	8001316
8000840	8001081	8003305	8001367	8001006	8001200	8000859	8000948	8001315
8003301	8001170	8001154	8001367	8001006	8001200	8001030	8001251	8001316
8003302	8001170	8001154	8001367	8001006	8001200	8001030	8001251	8001316
8003303	8001170	8001154	8001367	8001006	8001200	8001030	8001251	8001316
8003304	8001170	8001154	8001367	8001006	8001200	8000964	8000948	8001316

90% of Maximum Temperature rise of engine will be reached in 5 hours of operation, but heater is designed for continuous overnight use.

TEMP °F/°C	Starting System	Engine Class			
		Small Diesels 150 to 350 CID (2.4 to 5.7 liters)	**Medium Duty Diesels** to approx. 550 CID (9.0 liters)	**Heavy Duty Diesels** to approx. 1150 CID (18.8 liters)	**Large Duty Diesels** Industrial/Off Highway
40/4 ↓ **0/-18**	**Coolant Heater**	400 to 750 Watt Immersion, 1000 Watt Circulation Heater	750 or 1000 Watt Immersion, 1500 Watt Circulation Heater	1500 Watt Immersion, 1500 Watt Circulation Heater,	2500 Watt Tank, 2250-2500 Watt Circulation Heater,
	Oil Pan Heater	150 Watt Immersion with thermostat	150 Watt Immersion or 300 Watt Clamp-on	300 Watt Immersion or 500 Watt Clamp-on	300 Watt Immersion
	Additional Products	Measured Shot Ether Kit, Battery Warmer	Measured Shot Ether Kit, Battery Warmer	Measured Shot Ether Kit, Battery Warmer	Measured Shot Ether Kit, Battery Warmer
0/-18 ↓ **-30/-34**	**Coolant Heater**	600 or 750 Watt Immersion, 1000 Watt Circulation Heater	1000 Watt Immersion, Circulation Heater,	1500 Watt Immersion, 2000 Watt Tank, 2000-2250 Watt Circulation Heater	2500 Watt Tank, 2250-3500 Watt Circulation Heater
	Oil Pan Heater	150 Watt Immersion with thermostat	150 Watt Immersion or 300 Watt Clamp-On	300 Watt Immersion or 500 Watt Clamp-On	450 Watt Immersion
	Additional Products	Measured Shot Ether Kit, Battery Heater	Measured Shot Ether Kit, Battery Heater	Measured Shot Ether Kit, Battery Heater	Measured Shot Ether Kit, Battery Heater
-30/-34 ↓ **-60/-51**	**Coolant Heater**	750 Watt Immersion, Circulation Heater	1500 Watt Immersion, 2000-2250 Watt Circulation Heater	2000 Watt Immersion, 2500-3500 Watt Circulation Heater	(2) 2500 Watt Circulation, (2) 2500-3500 Watt Circulation Heaters
	Oil Pan Heater	150 Watt Immersion with thermostat	300 Watt Immersion or 500 Watt Clamp-on	450 Watt Immersion	450 Watt Immersion
	Additional Products	Measured Shot Ether Kit, Battery Heater	Measured Shot Ether Kit, Battery Heater	Measured Shot Ether Kit, Battery Heater	Measured Shot Ether Kit, Battery Heater

Recommended Wire Gauges for Long-Length Power Supply Cords

LENGTH (FT)	CURRENT CARRYING CAPACITY (IN AMPERES)									
	4	6	8	10	12	14	16	18	20	25
15	18	18	16	16	16	16	14	14	12	12
25	18	18	16	16	14	14	12	12	12	10
50	18	18	16	16	14	14	12	12	12	10
100	16	16	14	14	14	14	12	12	10	10
150	16	14	12	12	12	12	10	10	10	8

Recommended Wire Gauge

Current Used on Heaters of Various Wattages and Voltages

WATTS	AMPERES @ 120 VOLTS	AMPERES @ 240 VOLTS	COST PER HOUR*
75	0.63	0.31	.008
100	0.83	0.42	.010
150	1.25	0.63	.015
200	1.67	0.84	.020
300	2.50	1.25	.030
450	3.75	1.88	.045
500	4.17	2.08	.050
750	6.25	3.12	.075
850	7.08	3.54	.085
1000	8.33	4.16	.100
1500	12.50	6.25	.150
2000	16.67	8.34	.200
2500	20.83	10.42	.250

*** Based on 10¢ per KWH**

This limited warranty is expressly limited to the Company's products that have been purchased by the original consumer purchaser or for purposes of resale or use in the ordinary course of the purchaser's business. The term original consumer purchaser is defined as a person who purchases Company products for personal, family, or household use.

The Company's products are warranted against defects in materials and workmanship for a period of one year from date of purchase by purchaser. Sales receipt or proof of purchase must accompany product when returned to location of purchase. The exclusive remedy for any product found to be defective under this limited warranty consists of the repair or replacement of the defective product. This limited warranty does not apply to defects which arise from normal wear and tear, accident, misuse, abuse, neglect, mishandling, misapplication, faulty installation, modification, improper or extraordinary use or use inconsistent with any instruction or recommendation issued by the Company.

The foregoing limited warranty is exclusive and in lieu of all other warranties, whether written or oral, express, implied or statutory.

*** EXCLUDES DUMP BODY VIBRA — 90 DAY WARRANTY ***

NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY. THE LIMITED WARRANTY CONTAINED HEREIN DOES NOT EXTEND TO INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF A BREACH OF THIS WARRANTY.

To obtain performance of this limited warranty, the alleged defective product must be returned, together with reasonable proof of purchase, postage or freight prepaid, directly to:

In U.S.A.
Warranty Department
Phillips & Temro Industries Inc.
9700 West 74th Street
Eden Prairie, MN 55344

In CANADA
Warranty Department
Phillips & Temro Industries Ltd.
100 Paquin Road
Winnipeg, Manitoba R2J 3V4

The Company will return the repaired or replaced product, postage or freight prepaid. Final determination of defects shall be made in accordance with procedures established by the Company.

This limited warranty gives the original consumer purchaser specific rights. You may have other rights which vary from state to state or province to province depending upon the location of your residence. Some states do not allow the exclusion or limitation of incidental or consequential damages.

Manufacturer's rights retained:

The Company reserves the right to make changes in design, additions or improvements to any of its products at any time without incurring any obligation whatsoever to install or replace the same or improve upon products previously manufactured.

NOTE: Credit will be issued at previous years price.

GARANTIE

Cette garantie limitée est expressément réservée aux produits de la Société qui ont été achetés par le consommateur-acheteur d'origine ou aux fins de revente ou d'utilisation dans le cours normal des affaires de l'acheteur. Le terme « consommateur-acheteur d'origine » se définit comme la personne ayant fait l'acquisition des produits de la Société à des fins personnelles, familiales ou domestiques.

Les produits de la Société sont garantis contre tout défaut matériel et vice de fabrication pendant une période d'un an à partir de la date d'achat par l'acheteur. Un reçu de caisse ou une preuve d'achat doit accompagner le produit lorsqu'il est retourné au lieu de l'achat. Le recours exclusif offert pour tout produit qui se révélera défectueux en vertu de cette garantie limitée consiste à réparer ou à remplacer le produit défectueux. Cette garantie limitée ne s'applique pas aux défauts découlant d'une usure normale, d'un accident, d'un mauvais emploi, d'un abus, d'une négligence, d'une mauvaise manutention, d'une mauvaise utilisation, d'une mauvaise installation, d'une modification, d'une utilisation inadéquate ou inhabituelle et d'une utilisation contraire aux instructions ou aux recommandations fournies par la Société.

La garantie limitée ci-dessus est exclusive et remplace toute autre garantie, qu'elle soit écrite ou orale, expresse, tacite ou statutaire.

*** N'inclus pas le ' ' Dump Body Vibra ' ' 90 jours de garantie. ***

AUCUNE GARANTIE IMPLICITE DE QUALITÉ MARCHANDE ET DE CONVENANCE PRÉCISE N'EST APPLICABLE. LA GARANTIE LIMITÉE CONTENUE AUX PRÉSENTES NE S'APPLIQUE PAS AUX DOMMAGES INDIRECTS CAUSÉS PAR L'UTILISATION DE CE PRODUIT OU SURVENANT EN RAISON D'UNE VIOLATION DE CETTE GARANTIE.

Pour obtenir l'exécution de cette garantie limitée, le produit présumé défectueux doit être retourné accompagné d'une preuve d'achat raisonnable et l'affranchissement ou le fret payé d'avance, directement à :

Aux États-Unis
Service de la garantie
Phillips & Temro Industries inc.
9700 West 74th Street
Eden Prairie, MN 55344

Au Canada
Service de la garantie
Phillips & Temro Industries ltée
100 Paquin Road
Winnipeg (Manitoba) R2J 3V4

La Société retournera le produit réparé ou remplacé sans frais d'expédition. La décision définitive quant aux défauts sera prise conformément aux procédures établies par la Société.

Cette garantie limitée donne au consommateur-acheteur d'origine des droits particuliers. Vous pouvez bénéficier d'autres droits qui varient selon votre état ou votre province de résidence. Certains états n'autorisent pas l'exclusion ou la limitation des dommages indirects.

Droits retenus par le fabricant :

La Société se réserve le droit de modifier ses produits, de faire des ajouts ou d'apporter des améliorations en tout temps et sans aucune obligation d'installer ou de remplacer lesdits produits ou les produits améliorés fabriqués ultérieurement.

REMARQUE : le crédit accordé correspondra au prix des années antérieures.