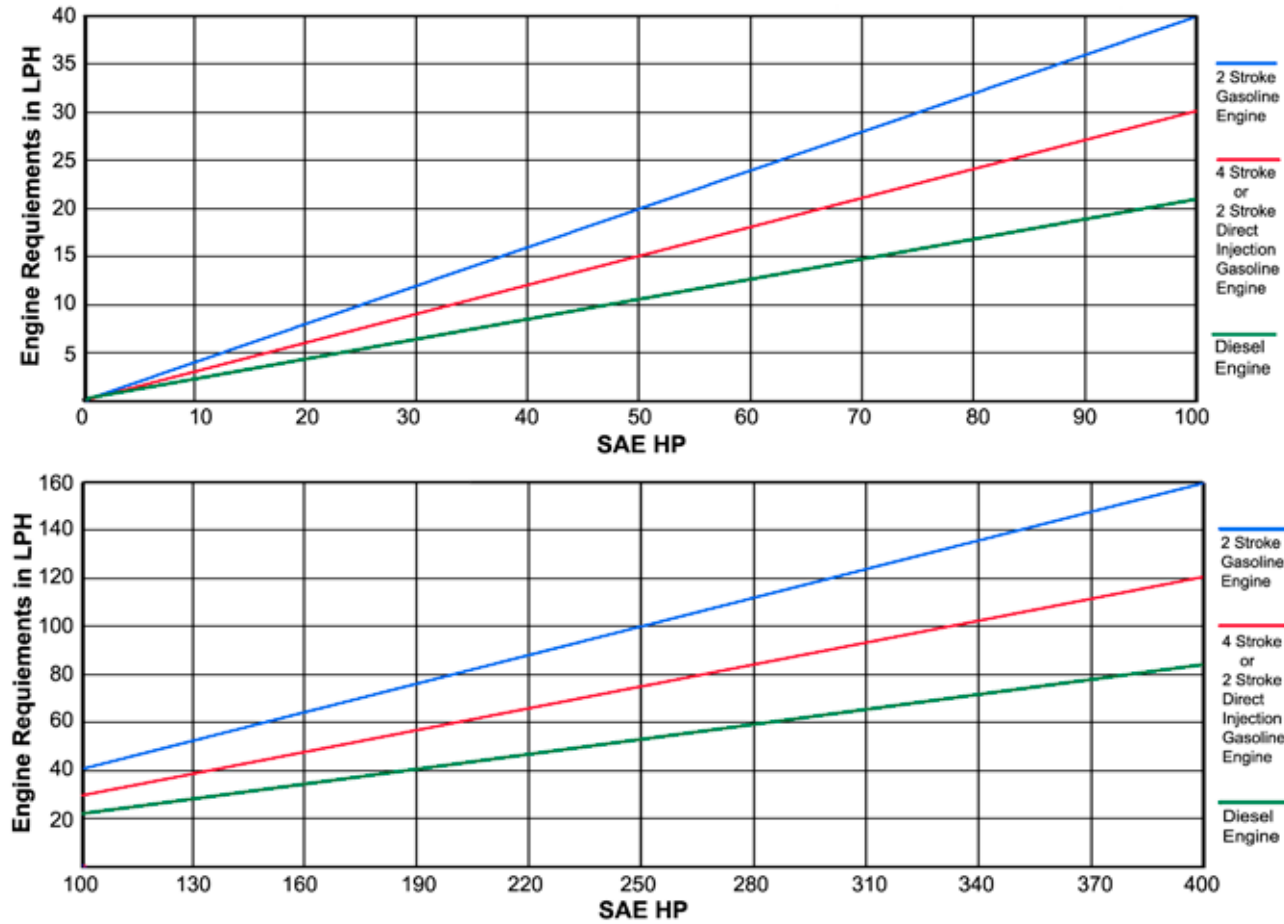


# WALBRO FUEL PUMPS

## FUEL PUMP SIZING GUIDELINES



To calculate pump size requirements:

- 1) Engine fuel requirements (in lph) shown in the above charts is an approximation based on the following calculation:
  - a. Two Stroke engines =  $(HP)(.40)$  (based on BSFC of  $.67\#/HP/HR$ )
  - b. Four stroke or direct injected two stroke engines =  $(HP)(.30)$  (based on BSFC of  $.50\#/HP/HR$ )
  - c. Diesel engines =  $(HP)(.25)$  (based on BSFC of  $.42\#/HP/HR$ )
- 2) Consider an additional hot fuel (for gasoline applications) allowance of up to 30% (application specific)
- 3) Consider an additional fuel allowance for injector pump cooling (diesel applications only)
- 4) Consider an additional safety allowance for certain applications where fuel lines, filters, etc. create abnormal pressure losses (confirmation by testing recommended)
- 5) For additional application assistance, contact Walbro Engine Management

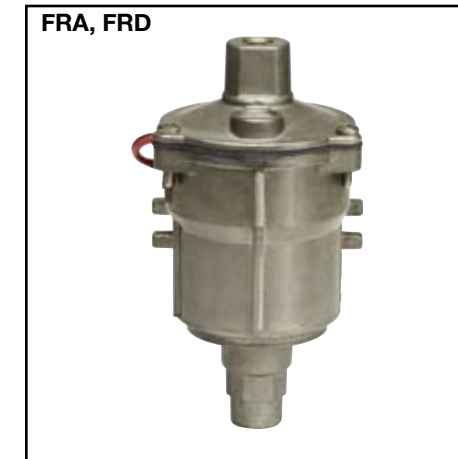


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# WALBRO RECIPROCATING FUEL PUMPS



## FRA MODEL UNIQUE FEATURES

- For applications where low cost and good durability are required
- Flow: to 190 lph (52 gph)
  - Continuous duty life (diesel fuel): >5000 hrs
  - Weight: 0.74 kg (1.63 lbs)
  - Pump cycles continuously when power is on

## FRD MODEL UNIQUE FEATURES

- For applications where battery life, low noise and better durability are important
- Flow: to 210 lph (55 gph)
  - Ampere hours: up to 70% less than FRA & FRC
  - Continuous duty life (diesel fuel): >10000 hrs
  - Weight: 0.75 kg (1.65 lbs)
  - Pump cycles only when fuel is demanded



## FRB MODEL UNIQUE FEATURES

- For applications where battery life, low noise and best durability are important and fuel quality is questionable
- Flow: to 225 lph (60 gph)
  - Ampere hours: up to 70% less than FRA & FRC
  - Continuous duty life (diesel fuel): >18000 hrs
  - Weight: 0.83 kg (1.83 lbs)
  - Pump cycles only when fuel is demanded
  - Replaceable filter

## FRC MODEL UNIQUE FEATURES

- For applications where low cost and better durability are important and fuel quality is questionable
- Flow: to 210 lph (55 gph)
  - Continuous duty life (diesel fuel): >10000 hrs
  - Weight: 0.83 kg (1.83 lbs)
  - Pump cycles continuously when power is on
  - Replaceable filter

## STANDARD FEATURES- ALL MODELS

- Current requirement: < 2 amps average
- Reverse polarity protected up to 60 minutes
- Self priming (dry lift) of more than 120cm (48")
- Dry run to four (4) hours
- Compatible with all commercially available pump grade gasoline, gasohol, diesel or bio-diesel
- Operating temperature: -40 ~ +70C (-40 ~ +155F)
- Transient voltage protected to 100 volts
- Tested per CFR Title 33: 183.590 Fire Test and 183.410 Ignition Protection (USCG)

# WALBRO RECIPROCATING FUEL PUMPS

## CONFIGURATION OPTIONS AVAILABLE

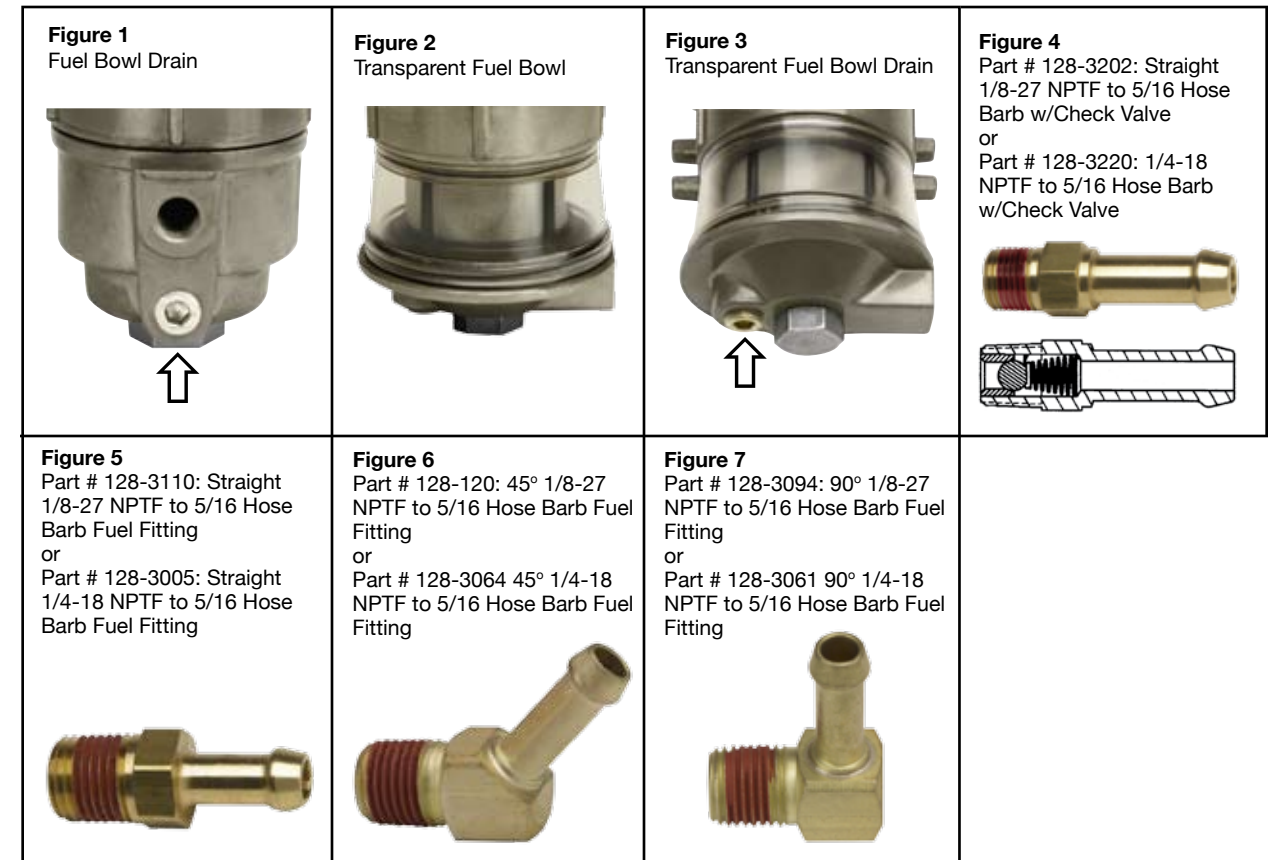
OPTION	FRA	FRB	FRC	FRD
12 volt	X	X	X	X
24 volt	X	X	X	X
Lead wires, connectors and electrical ground (see notes 1 & 2)	A, B, C	A	A, B, C	A
Output pressure: 20 kpa (3 psi)	X	X	X	X
Output pressure: 35 kpa (5 psi)	X	X	X	X
Output pressure: 50 kpa (7 psi)	X	X	X	X
Output pressure: 70 kpa (10 psi)	X	X	X	X
Output pressure: 90 kpa (13 psi)	X	X	X	X
Self priming (dry lift) of more than 305cm (120") (see note 3)	X	X	X	X
Standard external finish (meets ASTM B-117 (96) hr salt spray)	X	X	X	X
Marine external finish (meets ASTM B-117 (1000) hr salt spray)	X	X	X	X
Bowl drain (see Figures 1 and 3)		X	X	
Transparent fuel bowl- not USCG approved (see Figure 2)		X	X	
Inlet filter: 70 micron		X	X	
Inlet filter: 420 micron		X	X	
Magnetic trap		X	X	
Inlet fuel fitting thread- 1/8-27 NPSF	X	X	X	X
Inlet fuel fitting thread- 1/4-18 NPSF		X	X	
Outlet fuel fitting thread- 1/8-27 NPSF	X	X	X	X
Outlet fuel fitting thread- 1/4-18 NPSF	X	X	X	X
Internal outlet check valve (available with 1/8-27 NPSF only)	X	X	X	X
External outlet check valve - 1/8-27 NPSF (see Figure 4)	X	X	X	X
External outlet check valve - 1/4-18 NPSF (see Figure 4)	X	X	X	X
Straight fuel fitting: 1/8-27 NPSF to 5/16 hose barb (see Figure 5)	X	X	X	X
Straight fuel fitting: 1/4-18 NPSF to 5/16 hose barb (see Figure 5)	X	X	X	X
45° fuel fitting: 1/8-27 NPSF to 5/16 hose barb (see Figure 6)	X	X	X	X
45° fuel fitting: 1/4-18 NPSF to 5/16 hose barb (see Figure 6)	X	X	X	X
90° fuel fitting: 1/8-27 NPSF to 5/16 hose barb (see Figure 7)	X	X	X	X
90° fuel fitting: 1/4-18 NPSF to 5/16 hose barb (see Figure 7)	X	X	X	X
Mounting (see "MOUNTING AND FITTING LOCATIONS AND DETAILS")	F or G	F or G	F or G	F or G
Fitting location (see "MOUNTING AND FITTING LOCATIONS AND DETAILS")	H, J	H, K	H, K	H, J

### Notes:

- Lead wire and electrical ground options
  - Two wire: Must be battery or vehicle grounded by customer, does not have internal ground (Body must be externally grounded for gasoline applications)
  - Two wire: Must be battery or vehicle grounded by customer and includes internal ground (Suitable for gasoline)
  - One wire: Pump must be battery or vehicle grounded by customer and includes internal ground (Suitable for gasoline)
- Lead wire lengths and electrical connectors per customer requirement
- Requires standard inlet and outlet valves and an optional outlet check valve

# WALBRO RECIPROCATING FUEL PUMPS

## FIGURES- CONFIGURATION OPTIONS AVAILABLE



## OVERALL DIMENSIONS, MOUNTING DETAILS AND FITTING LOCATIONS

