



**Quality Products
Engineered to Last**

C-46 C-66 C-96 C-101 C-106 C-255

C-SERIES ENGINES & GENSETS

EPA CERTIFIED (C-46, C-66, C-96, C-101)

EPA CERTIFIABLE (C-106, C-255)



**A Tradition of Excellence
Since 1955**

C-SERIES ENGINES

Engineered to Last

Arrow's C-Series Engines are built to excel at one of the toughest, most demanding jobs - continuous operation in the oil-field. That's why they are the best you can buy...not only to power pump jacks, but to pump liquids, generate electricity and provide the "muscle" necessary for many other jobs. Arrow C-Series Engines utilize heavy flywheels to provide high internal momentum for smooth, high torque while running at constant low RPM. The advantages of low RPM are substantial: less wear, less maintenance, less repair and in the long run less frequent replacement. Compared to high RPM engines, the C-Series engine lasts many times longer and costs less to operate.

Continuous Duty

Arrow C-Series Engines are designed for continuous duty. They provide the dependability that is so essential to oil-field operation. Arrow's heavy duty design features a heavy flywheel, a governor speed control, and a pressurized full flow lubrication system to assure continuous operation.

Oilfield Tough

Over 100,000 Arrow engines are powering pump jacks in oil fields from the

frozen tundras of Canada, to the mountains of South America; from the deserts of the Middle East, to the jungles of Indonesia. Many of the original engines built in the 1940's are still running today.

Gas Fueled

Arrow engines run on a variety of low BTU gases: natural gas, methane, butane or propane. In many areas, locally available gas fuel frequently costs much less than bringing in liquid fuel or electric power.

Economical Operation

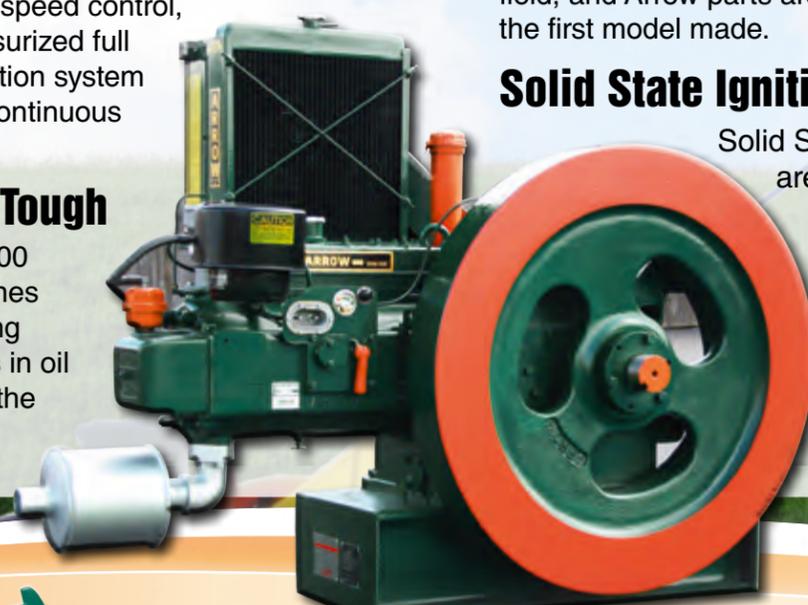
Studies performed in the U.S. have shown that operating costs for Arrow engines can be as low as half the cost for equivalent HP electric motors. Since every area is different, you owe it to yourself to compare the costs in your area.

Easy Maintenance

Arrow engines are designed for easy, quick field maintenance. Easy access enables replacing piston rings and wet cylinder sleeves in the field; and Arrow parts are interchangeable from the first model made.

Solid State Ignition

Solid State Ignition Systems are standard for Single Cylinder engines. Altronic ignition systems are also available as an option.



SPECIFICATIONS

Specifications	C-46	C-66	C-96	C-101	C-106	C-255
BHP Range	5-9 BHP	7-13 BHP	11-19 BHP	19-24.5 BHP	17-32 BHP	32-55 BHP
RPM Range	450-800 RPM	350-700 RPM	300-600 RPM	400-800 RPM	300-800 RPM	400-750 RPM
Continuous Duty RPM	9 HP 800 RPM	13 HP 700 RPM	19 HP 600 RPM	24.5 HP 800 RPM	32 HP 800 RPM	55 HP 750RPM
EPA Emissions Compliance	Certified	Certified	Certified	Certified	Certifiable	Certifiable
Bore and Stroke	5" x 6 1/4" 127x159mm	5 3/4" x 7 1/2" 146x190.5mm	7" x 8 1/2" 178x216mm	7 1/2" x 8 1/2" 190.5x216mm	7 1/2" x 8 1/2" 190.5x216mm	7 1/2" x 7 1/2" 190. x190.5mm
Displacement	122.7 CI 2 L	195 CI 3.3 L	327 CI 5.5 L	376 CI 6.4 L	376 CI 6.4 L	660 CI 10.8 L
Compression Ratio	4.8:1	5.2:1	4.8:1	6.2:1	6.2:1	7:1
WR²	290 LB FT ² 12.18 Kg-M ²	600 LB FT ² 25.20 Kg-M ²	1600 LB FT ² 67.20 Kg-M ²	1760 LB FT ² 73.92 Kg-M ²	1760 LB FT ² 73.92 Kg-M ²	1430 LB FT ² 60.06 Kg-M ²
PTO Shaft Size	1 7/16" 36.5 mm	2 1/4" 57.2 mm	2 1/4" 57.2 mm	2 1/4" 57.2 mm	2 1/4" 57.2 mm	3" 76 mm
Oil Capacity *	7 QT 6.6 L	7 QT 6.6 L	11 QT 10.4 L	11 QT 10.4 L	11 QT 10.4 L	25 QT 23.7 L
Water Capacity	12 QT 11.5 L	16 QT 15 L	20 QT 19 L	20 QT 19 L	20 QT 19 L	9 GAL 34 L
Spark Plug Size	18mm	18mm	18mm	18mm	18mm	18mm
Exhaust Connection	1 1/2" NPT	2" NPT	2 1/2" NPT	2 1/2" NPT	2 1/2" NPT	2 1/2" NPT
Fuel Gas Pipe Size	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1/2" NPT	3/4" NPT
MTG. Bolts: Qty - Size	4 - 3/4"	4 - 3/4"	4 - 1"	4 - 1"	4 - 1"	4 - 1"
Shipping Weight	1,433 LB 650 Kg	1,811 LB 821 Kg	2,790 LB 1,266 Kg	2,975 LB 1,349 Kg	2,975 LB 1,349 Kg	4,510 LB 2,046 Kg
Truck Load Quantity **	24	22	16	10	16	10
Safety Controls	Water Level and Oil Pressure standard					
Ignition	Solid State Ignition					
Fuel	Gaseous					
Lubrication	Full Pressure					
Oil Filtration	Replaceable Full Flow Filter					
Clutch PTO (Double Bearing)	C-107-SP-5-DB	C-110-HP-4	C-110-HP-3	SP-111-HP-3	SP-111-HP-3	SP-114-PO
Starting Equipment	12 Volt Ring Gear Starter standard					

* Oil Filter Changes add 1 QT
** 45' Truck Bed



A Tradition of Excellence

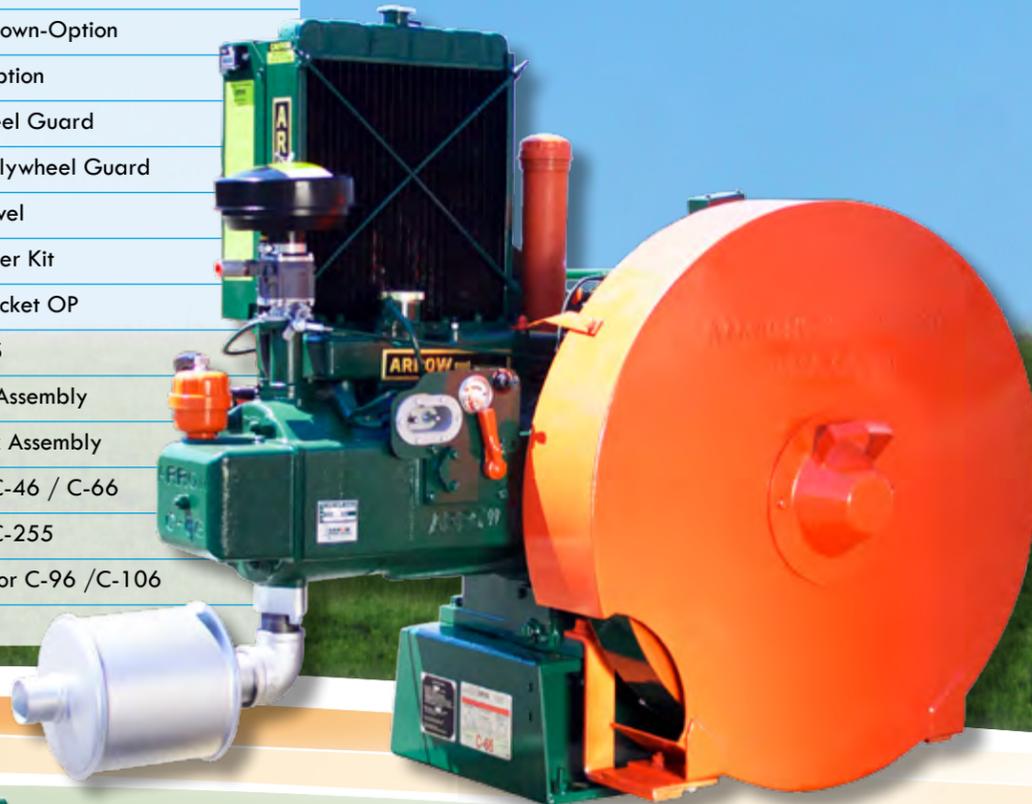
Since 1955

Arrow's C-Series Engines have been engineered to last since 1955. Today, the Arrow C-Series is still the #1 choice for industry pumping applications



OPTIONS & ACCESSORIES

Part Number	Description
15G-(36/56)	15 Gallon Tank with 36" or 56" Stand
30G-56-OP	30 Gallon Tank with 56" Stand
20-SD-250-OP	High Temp Shutdown-Option
332-TSK-46-1-OP	Thermosiphon Option
368-A-(46/66/96/101/106)-OP	Aluminum Flywheel Guard
368-ASE-(46/66/96)-OP	Shearer Plastic Flywheel Guard
512-K-OP	Regulator Oil Level
512-C-KIT-OP	Oil Level Equalizer Kit
ALT-(46/66/96/101/106)-OP	Alternator & Bracket OP
HBD-2459-F	Volume Tank - FS
HBD-2459-G	6" Volume Tank Assembly
HBD-2459-H	10" Volume Tank Assembly
VTHF10	Hose Assembly C-46 / C-66
VTHF13	Hose Assembly C-255
VTHF14	Hose Assembly for C-96 /C-106



PUMPING UNIT SIZING CHART

Production, bpd	Plunger Size	API Rod Size	Strokes Per Min	Hp	Engine	API Pumping Unit Size
2,000 Foot Well Depth						
100	1.5	55	14.0	2.6	C-46	25-53-30
200	1.75	55	17.3	5.3	C-46	40-89-36
300	2.0	55	14.9	6.0	C-46	80-109-48
400	2.0	55	17.3	10.6	C-66	80-119-54
500	2.25	55	17.6	13.3	C-66	114-133-54
600	2.25	55	15.0	16.0	C-96	160-143-74
800	2.5	755	16.5	21.3	C-106	160-143-74
1000	2.75	66	16.7	26.6	C-106/A-42	228-173-74
1250	2.75	66	17.5	33.3	C-255/A-42	320-218-86
1500	2.75	77	14.4	39.9	C-255/A-54	456-213-120
3,000 Foot Well Depth						
100	1.25	55	16.5	14.0	C-46	40-89-36
200	1.5	55	17.2	18.0	C-46	80-109-48
300	1.75	55	17.6	12.0	C-66	114-133-54
400	1.75	55	16.3	16.0	C-96	160-143-74
500	2.0	66	15.5	20.0	C-96	228-178-74
600	2.0	66	15.8	23.9	C-106/A-42	320-213-86
800	2.25	66	16.9	32.0	C-255/A-42	320-213-86
1,000	2.5	76	12.4	39.9	C-255/A-54	456-213-120
1,250	2.5	76	15.2	50.0	L-795/A-54	640-305-120
1,500	2.75	76	15.3	60.0	L-795/A-54	640-305-120
4,000 Foot Well Depth						
100	1.25	66	12.3	5.3	C-46	80-109-488
200	1.5	66	11.1	10.6	C-66	160-143-74
300	1.5	66	15.5	16.0	C-96	228-173-74
400	1.75	76	13.9	21.3	C-106	320-213-86
500	1.75	76	16.5	26.6	C-106/A-42	320-213-86
600	1.75	76	14.2	32.0	C-255/A-42	456-213-120
800	2.0	76	14.9	42.6	C-255/A-54	640-305-120
1000	2.5	86	10.6	53.2	L-795/A-54	912-365-144
5,000 Foot Well Depth						
100	1.5	75	11.3	6.7	C-46	80-133-48
200	1.5	75	12.1	13.3	C-66	228-173-74
300	1.75	76	11.3	20.0	C-96	320-213-86
400	1.75	76	15.0	26.7	C-106/A-42	320-213-86
500	1.75	85	12.6	33.4	C-255/A-42	640-305-120
600	1.75	86	14.2	40.0	C-255/A-42	640-305-120
6,000 Foot Well Depth						
100	1.25	75	10.6	8.0	C-46	114-143-64
200	1.25	75	16.6	16.0	C-96	228-173-74
300	1.5	76	14.9	24.1	C-106/A-42	320-213-86
400	1.75	86	10.5	32.0	C-106/A-42	640-305-120
500	1.75	85	13.1	40.0	C-255/A-54	640-305-120
600	1.75	86	12.2	47.9	L-795/A-54	942-365-144
7,000 Foot Well Depth						
100	1.25	75	9.9	9.3	C-46	160-173-74
200	1.25	75	16.0	18.6	C-96	228-173-74
300	1.5	76	15.6	27.9	C-106/A-42	320-213-86
400	1.75	85	12.1	37.2	C-255/A-42	640-305-120
500	1.75	85	14.1	46.6	C-255/A-54	640-305-120
600	1.75	86	9.2	55.9	L-795/A-54	942-365-144
8,000 Foot Well Depth						
100	1.25	85	8.6	13.3	C-66	320-256-100
200	1.25	85	11.0	26.7	C-106/A-42	456-256-120
300	1.25	96	10.5	39.9	C-255/A-54	912-365-168
9,000 Foot Well Depth						
100	1.25	85	8.7	14.6	C-96	320-256-100
200	1.25	85	8.5	29.3	C-106/A-42	640-305-168
300	1.25	96	9.3	43.9	C-255/A-54	280-427-192



GAS vs ELECTRIC

Prime Mover Selection

Selecting the right type of prime mover to fit the application is the most important aspect of managing rising production costs. The slow-speed natural gas engine was the workhorse of the industry well into the 1970's, and now the gas engine's time has come again. With more wells pumping continuously and electric rates skyrocketing, matching the right natural gas engine to the beam pumping application can deliver both operational and economic benefits.

Gas vs Electric Costs

On many wells, 50% or more of the lifting cost can be attributed to the electricity charges. When all factors are known about the well requirements, the prevailing electric rates, and the drop charges, it can be shown by cost analysis that the Arrow gas engine has the cost advantage. The higher the horsepower, the greater the savings. Arrow has developed an online utility to help you calculate your savings – visit www.ArrowEngine.com and click on "Toolbox."

Arrow Gas Engine Warranty

Arrow Engine Company offers its customers the best warranty in the industry. We are the only manufacturer that offers a 36 month limited warranty on many of our engines primary components. Contact our Customer Service Department and one of our team members will be happy to send you a copy of our engine warranty.

Maintenance & Tech Support

Arrow offers free phone support as well as a complete parts, operation, and maintenance manual for our engines.

Training

We also offer an exclusive 3-day Engine Service School designed to fully train field personnel in the maintenance and operation of Arrow gas engines. Arrangements may also be made to conduct training at your location.

Automation

Arrow offers an Auto-Start® System package for our engines as well as other brands. This flexible programmable system allows for different cycles for each day of the week as well as continuous monitoring of critical operating parameters and automatic shutdown when potentially hazardous conditions are detected. Some additional key features of the unit include automatic on/off cycle timing, oil circuit integrity monitoring, selectable speed ranges, programmable start-up sequence, and a built-in start attempt counter.

Call or go online today for more information.

ARROW ENGINE COMPANY
TULSA, OK, USA

ArrowGuard

Aluminum Safety Flywheel Guard

The ArrowGuard Aluminum Safety Flywheel Guard ensures maximum personnel safety and access for field service.

The aluminum guard is now standard equipment on all Arrow C-Series engines.

Benefits

- Servicing and adjustments can be performed safely
- Lightweight material
- Shields the flywheel to guard against accidental contact with service personnel or foreign objects
- Built to accommodate hand crank or removable power starter



Arrow Engine Company
2301 East Independence, Tulsa, Oklahoma 74110

www.ArrowEngine.com

toll free (800) 331-3662 local (918) 583-5711
local fax (918) 699-2202

C-SERIES GENSETS

SPECIFICATIONS

Engine Model #	Description	Engine RPM	Alternator RPM	Fuel Required*
C-46 GENSET-AC	GENSET 5KW	700	1800	2.2 MCF/D
C-46 GENSET-DC	GENSET 5KW DC	700	1800	2.2 MCF/D
C-66 GENSET-AC	GENSET 7.5KW	600	1800	3.0 MCF/D
C-96 GENSET-AC	GENSET 13.5 KW	600	1800	4.7 MCF/D
C-106 GENSET-AC	GENSET 22KW	700	1800	8.2 MCF/D

*Fuel rates are for 1000 BTU rated gas: BTU Rating x Engine Requirement x 0.001 = Fuel Rate

**Engine and Alternator 900 RPM Direct Coupled

The sheave drive on the engine is directly connected via V-belt to the alternator. Both the engine and alternator are mounted on a common steel base.

FEATURES

- Oil Bath Air Cleaner
- Full Flow Lube Oil Filtration
- Pressure Lubrication throughout Engine
- Starfire 600 Ignition
- Electrical Engine Speed Governor
- Safety Switches for:
 - Low Oil Pressure
 - Low Lube Oil
 - Low Coolant Level
- 12-Volt Electric Ring Gear Starter
- Synchronous 60Hz Alternator
- Remote Mounted Electrical Control Panel



Continuous Cathodic Protection

Cathodic protection, in simplest terms, means providing an electrical charge to reduce corrosion. To gas and oil professionals around the world, Cathodic protection is a real concern. If the countless miles of pipelines were not protected, the threat of leakage or failure would be greatly increased. In the U.S. the D.O.T. Office of Pipeline Safety states that pipelines operating at certain pressures must have cathodic protection installed. The installation of a cathodic protection system reduces or eliminates corrosion. In the corrosion process, minute metal particles are carried from the pipeline by the resulting current flow, which causes a pitting or weakening of the pipeline, ending in leakage or failure of the line.

Arrow Engine Company has a solution to the problem of cathodic protection for remote site locations along gas pipelines. Our single cylinder generator set GenSet can be strategically placed along the pipeline using natural gas to generate D.C. current to control the flow of current onto the pipeline structure. This process cuts down the wear and tear on the lines that carry millions of cubic feet of gas per day.

The Arrow C-255 Slow Speed Engine, powering a Global Power Systems InGen Induction Generator System in Northern Oklahoma.



Arrow Engine Company
2301 East Independence, Tulsa, Oklahoma 74110

www.ArrowEngine.com

toll free (800) 331-3662 local (918) 583-5711
local fax (918) 699-2202

AUTOMATION



AutoStart NS-2

Our new Autostart NS-2 for all Arrow engines is a simple, programmable system that allows for different cycles each day of the week as well as continuous monitoring of critical engine operating parameters and automatic shutdown. This system features a built in tachometer, hour meter and battery voltage meter. The automation can be set to real time, interval timing, manual mode or remote start, giving you everything you need to easily automate and monitor your oil field operations.

Features

- Tachometer
- Hour Meter
- Battery Voltage Meter
- Real-Time Clock
- Interval Timing
- Manual Mode
- Remote Start



Clutch Actuator for C-Series Engines

Arrow has introduced its new patented Clutch Actuator (CO-00) for C-Series and A-Series Engines. This new actuator features a simple 2 wire and 12V connection for ease of installation. All adjustments are made outside the unit on the linkage that connects the actuator to the clutch lever. This in conjunction with the New Style Auto Start (Autostart-NS) is the simplest and easiest to use and install electronic automation package available anywhere.

Features

- 2-wire 12-volt connection
- Easy Installation
- Simple to Use
- Compatible with Autostart NS-2





C-46



C-66



C-96



C-101



C-106



C-255

C-SERIES	C-46	C-66	C-96	C-101	C-106	C-255
A-SERIES	A-32	A-42	A-54	A-62 A-62 Turbo A-62 Genset	A-90 A-90 Turbo A-90 Genset	A-160 A-160 Turbo A-160 Genset
K-SERIES	K6					
L-SERIES	L-795					



GAS PRODUCTS	Meter Runs Meter Skids	Volume Tanks Coalescers Structural Skids	2 & 3-Phase Separators Fuel Gas Cond. Skid	Heater Treater Indirect Heater H2S Scavenger Unit	Dehydration Unit Liquid Stabilizer
CHEMICAL PUMPS	10 Series (beam operated)	430 Series (electric)	12, 500, & 510 Series (pneumatic)	Solar Chemical Pumps	OEM & Aftermarket Spare Parts



COMPRESSION PRODUCTS	Compressor Frames VRC-2 VRS-2 VRS-4 (Coming Soon)	CNG Compressor Frames & Packages VRC-CNG	Vapor Recovery Units VRU-1 VRU-2	Gas Lift Packages Electric HP Gas Engine (VR, A-Series, Cat)	Custom Compression Packages
-----------------------------	--	--	--	---	-----------------------------------



CATERPILLAR®	G379	G398	G399	G3304	G3306
WAUKESHA®	F2895 F3521 F5108	L5790 L7042	P9390	145G/F817 140G/F554	F18 H24 WAK/1197
FAIRBANKS®	ZC-118	ZC-208	ZC-503	ZC-739	ZC-346
AJAX®	5x 6½	EA-22, 6½ x 8 CMA EA30, 7½ x 10 CMA EA-30, 7¼ x 8 CMA E-42, 8½ x 10 CMA		DP-60, 9½ x 10 CMA DP-115/230, 13½ x 16 DP-70/80/160, 11 x 14 CMA	

Waukesha®, VHP®, and VGF® are registered trademarks of GE®, Caterpillar®, is a registered trademark of Caterpillar, Inc., Fairbanks Morse® is a registered trademark of Coltec Industries, Inc., and Ajax® is a registered trademark of Cameron International Corporation.

2301 East Independence • Tulsa, Oklahoma 74110
fax (918) 699-2202
local (918) 583-5711



toll free (800) 331-3662

www.ArrowEngine.com