SERIES 150BMP AIR STARTERS WITH OVERHUNG PINION for Worldwide Engine Applications

Form E6525
Edition 1

Diesel Engines 500 to 900 cu. in. (8.19 to 14.75L)
Carbureted Engines 1000 to 1800 cu. in. (16.38 to 29.50L)

INTRODUCTION

Our line of 150BMP Air Starters is now being expanded to include an entirely new series that is especially designed for diesel engine applications requiring a Starter with an overhung pinion. Basically, the new Starters are a combination of our existing 150BMP motor and gearing (B and C ratios) with a new style drive housing and starter drive.

These new Starters offer several outstanding features and benefits of prime significance to our customers.

Features	Benefits
Time-proven Performance	The basic power unit and gearing have been on the market since April 1966. Their performance and durability have been proven to be outstanding on tens of thousands of installations. This is positive assurance of a highly acceptable product.
Choice of Mountings	Two different types of mounting are available—flange and cradle. This increases the application range to include practically any type diesel or carbureted engine in the worldwide market. OEM accounts are given total application selection from a single source.
Pre-engaged Pinion	Over the years our pre-engaged Starters have given unquestionable evidence of increased pinion and ring gear durability. For the user, this means less downtime and greatly reduced maintenance costs.
Overhung Pinion	The overhung pinion design greatly increases the application range to include many engines of international manufacture in addition to those of domestic manufacture.

CONSTRUCTION

Except for the drive housing and starter drive, the construction of the new Air Starters is the same as existing 150BMP Starters having the "C" gearing. We have expanded the application range by reinstating the "B" gearing to handle those engines where the higher speed of the Starter is more significant than the breakaway torque.

There are two major differences in the design of these new Starters over our current 150BMP's:

1. The new series use an overhung pinion. That is, the drive pinion is located outboard of the drive housing.
2. The drive housing for certain models is designed for cradle mounting instead of flange mounting.

In order to adequately support the drive pinion shaft on these new Starters, and to provide the strength necessary to accommodate the separation forces between the drive pinion and ring gear, the pinion drive shaft is more than adequate size to withstand the stresses involved and is supported on two widely spaced, heavy-duty ball bearings located in the forward end of the drive housing. A drive housing seal is pressed into the outer end of the drive housing bore to prevent the entrance of dirt, grit, etc. into the drive housing.

Ingersoll-Rand.

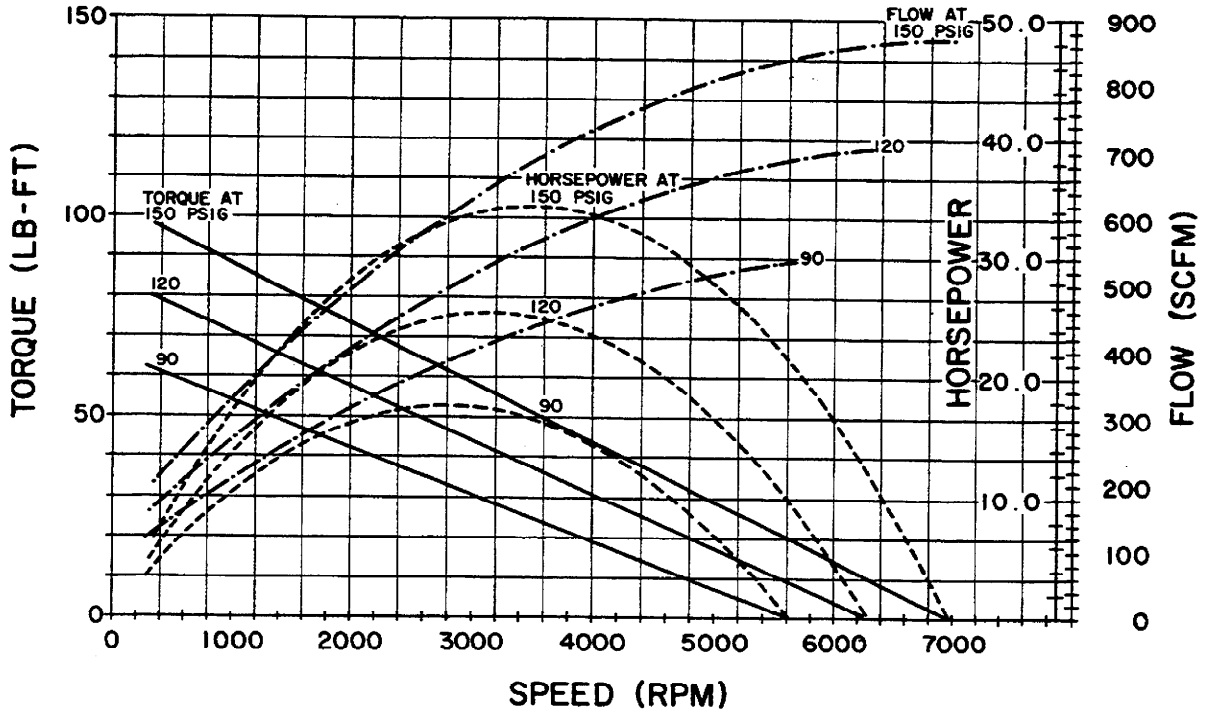
CONSTRUCTION (Continued)

Two different styles of drive housing are used in this new line of Starters—one style having an integral flange similar to our conventional flange-mounted Starters, and the other style having a pilot section on the outboard end and two widely spaced machined diameters on the body of the drive housing. This type of drive housing is used on those models where the Starter is cradle-mounted instead of flange-mounted.

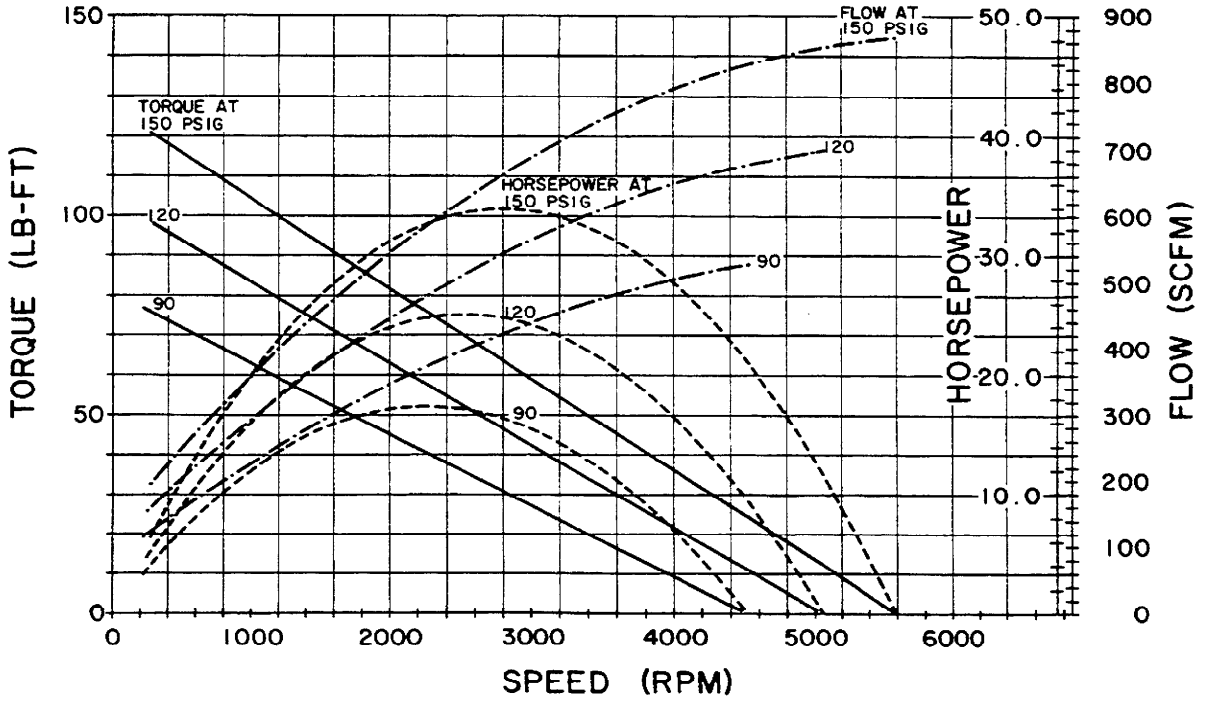
In a cradle mount, the Starter is secured in a cradle or bracket by two steel straps. Alignment of the Starter is maintained by the widely spaced machined diameters on the drive housing, and the pilot section on the end of the drive housing where it enters the flywheel housing. Since the radius of the cradle and the diameter of the pilot vary among different engine manufacturers, different drive housings are required for different Starter models. In addition, some Starter models are furnished with two cradle mounting adapters which are essentially large split rings which adapt a drive housing with a mounting diameter of 150 mm to a mounting diameter of 178 mm.

SPECIFICATIONS

Weight, lb:	
Models with SAE No. 1 Flange	43-3/4
Models with SAE No. 3 Flange	45
Models with 150 mm Cradle	48-1/4
Model with 178 mm Cradle	51
Weight, kg:	
Models with SAE No. 1 Flange	19.8
Models with SAE No. 3 Flange	20.4
Models with 150 mm Cradle	21.9
Model with 178 mm Cradle	23.1
Inlet and Exhaust Pipe Tap, NPT	1-1/4
Size Hose Recommended:	
in	1-1/4
mm	32



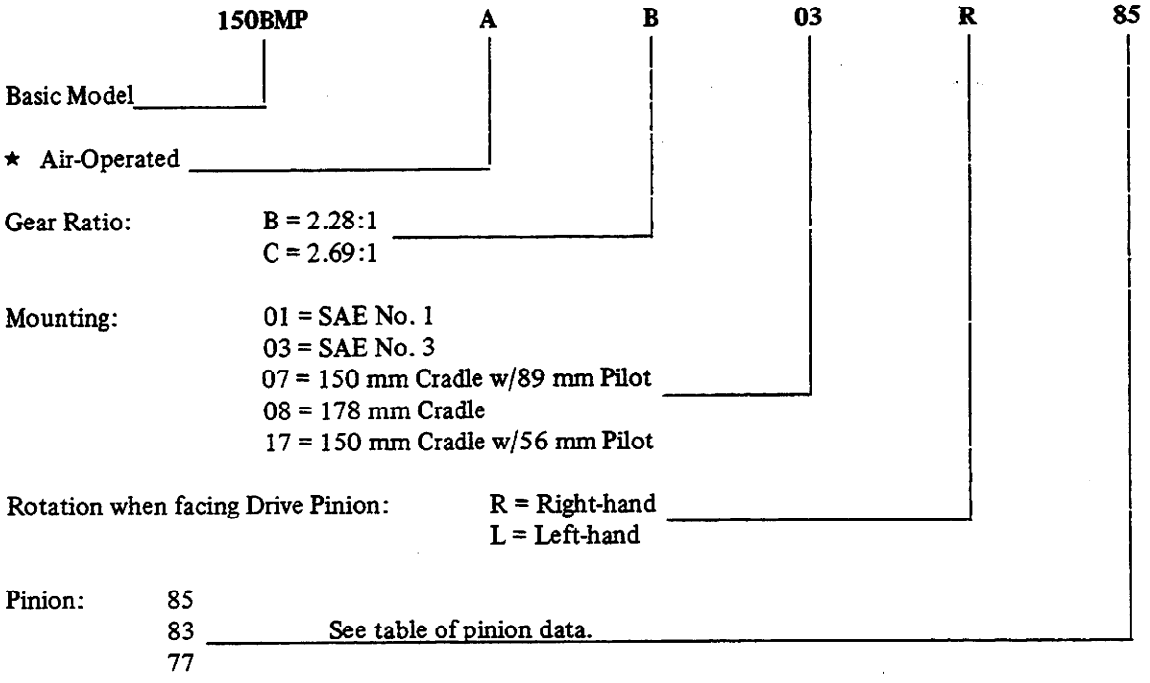
Performance of 150BMP "B" Ratio (2.28:1) **(Dwg. TPD653)**



Performance of 150BMP "C" Ratio (2.69:1) **(Dwg. TPD654)**

MODEL DESIGNATION

Because new models of these Starters will be added from time to time, and in order to assist in the selection of an existing model, following is an explanation of our model designations:



★ These Starters are not approved for installations using natural gas or other combustible gas as the power medium.

PINION DATA

Pinion No.	Teeth	Blank	Pitch	Pitch Dia.
150BMP-13-85	11	11.7	3 Mod.	1.382
150BMP-13-83	11	11.618	3.5 Mod.	1.605
150BMP-13-77	9	9.7	3 Mod.	1.146

HOW TO ORDER

Order a new Air Starter by one of the following Model designations:

Model	Communication Number
150BMPAB01R77	01189521
150BMPAB01R85	01189539
150BMPAB03R77	01191261
150BMPAB03R85	01189547
150BMPAB07R77	01189513
150BMPAC01R85	01189554
150BMPAC03R77	01189307
150BMPAC03R85	01189562
150BMPAC03R83	01191279
150BMPAC07R83	01189570
150BMPAC17R83	01190289
150BMPAC08R83	01189588

EQUIPMENT AVAILABLE AT EXTRA COST

Part Number	Communication Number	Description
HDL1	03604378	Lubricator
SRV125	03691102	Starter Relay Valve
150BM-A674	03607504	Muffler
150BM-A735	03606878	Road Splash Deflector

For additional information on Starter selection, refer to Form 6405 Air Starter Manual, Section 1.