

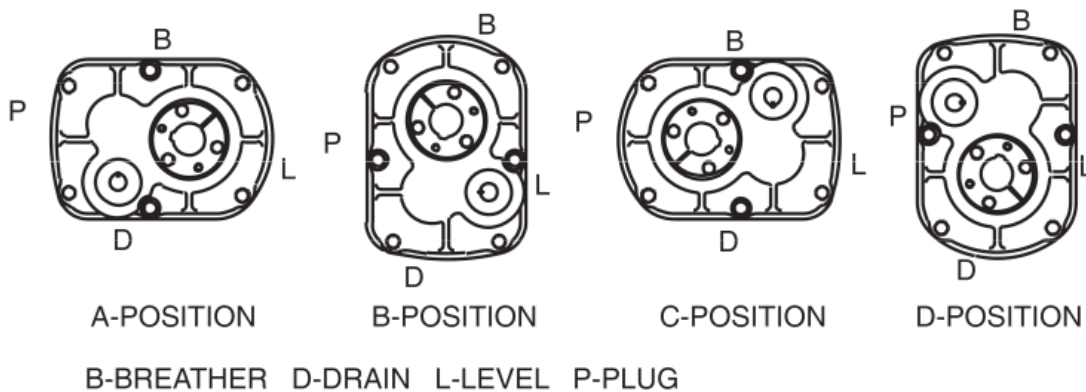


## SHAFT MOUNT REDUCER

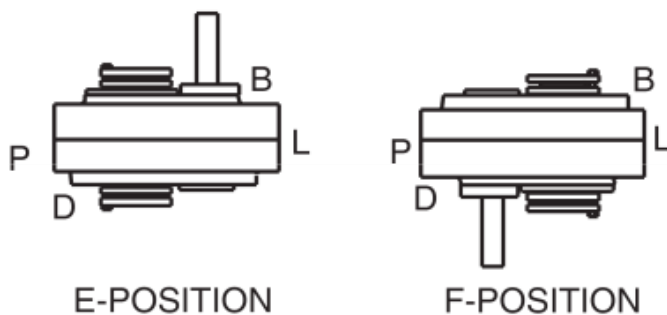
### 1. Installation

- a. Use lifting ring to lift reducer into place whenever possible.
- b. Mount reducer either horizontally or vertically.
  - i. For HORIZONTAL applications, mount drain plug in bottom most position, the ventilation plug goes nearest the top of the box. The lowest remaining plug location on the side becomes the minimum oil level plug.
  - ii. For VERTICAL applications, the plug on the bottom face remains plugged. Install the drain plug on the side of the unit in the lowest position available. The plug on the upper face requires the ventilation plug.
- c. Mount reducer on driven shaft.
- d. Install sheave on input shaft as close to the gearbox as possible to reduce overhung load.
- e. Install motor and belt drive so belt will be at approximately 90° from the centerline of the input and output shafts to allow for tensioning of the belt drive with the torque arm. Belt drive can however be installed at any angle.
- f. Torque arm should be installed at a 90° angle to the centerline between the connection to the box and the driven shaft. This angle can vary by 30°.
- g. Make sure there is sufficient take-up in torque arm to allow for belt tensioning when installing it.
- h. ***Fill NBS box with oil per table 1.1***

## Horizontal Applications



## Vertical Applications



**CAUTION:**  
North American Electric NBS shaft mount reducers are **shipped without oil**. Reducer must be filled with appropriate amount of oil per table 1.1. Failure to do so could result in failure of gearbox and damage to associated equipment.

Table 1.1

Model Number Position	Approximate Capacity (Quarts & Liters)					
	A	B	C	D	E	F
NBS-115-2	0.875 Quarts	1 Quarts	0.625 Quarts	1 Quarts	1.625 Quarts	1.75 Quarts
	0.83 Liters	0.95 Liters	0.59 Liters	0.95 Liters	1.54 Liters	1.66 Liters
NBS-203-3	1.5 Quarts	1.5 Quarts	0.75 Quarts	2.25 Quarts	2.625 Quarts	3 Quarts
	1.42 Liters	1.42 Liters	0.71 Liters	2.13 Liters	2.48 Liters	2.84 Liters
NBS-207-4	1.875 Quarts	2.2 Quarts	1.25 Quarts	1.75 Quarts	3.375 Quarts	4.25 Quarts
	1.77 Liters	2.13 Liters	1.18 Liters	1.66 Liters	3.19 Liters	4.02 Liters
NBS-215-5	3.25 Quarts	4 Quarts	3.25 Quarts	4 Quarts	7 Quarts	8.625 Quarts
	3.08 Liters	3.79 Liters	3.08 Liters	3.79 Liters	6.62 Liters	8.04 Liters
NBS-307-6	4.25 Quarts	5 Quarts	4.25 Quarts	5 Quarts	8.625 Quarts	9.125 Quarts
	4 Liters	4.7 Liters	4 Liters	4.7 Liters	8.2 Liters	8.6 Liters
NBS-315-7	6.5 Quarts	8 Quarts	7.25 Quarts	9.25 Quarts	15.375 Quarts	16.375 Quarts
	6.1 Liters	7.57 Liters	6.86 Liters	8.75 Liters	14.55 Liters	15.5 Liters
NBS-407-8	8.5 Quarts	11 Quarts	10.5 Quarts	8.5 Quarts	19.125 Quarts	19.125 Quarts
	8 Liters	10.4 Liters	9.94 Liters	8 Liters	18.10 Liters	18.1 Liters
NBS-415-9	13 Quarts	13 Quarts	12.5 Quarts	14.25 Quarts	25.375 Quarts	25.375 Quarts
	12.3 Liters	12.3 Liters	11.83 Liters	13.48 Liters	24 Liters	24 Liters
NBS-507-10	23 Quarts	14 Quarts	15.8 Quarts	18.8 Quarts	41 Quarts	41 Quarts
	21.8 Liters	13.3 Liters	15 Liters	17.9 Liters	38.8 Liters	38.8 Liters

## 2. Ratios

- a. NBS shaft mount reducers come in nominal ratios of either 15:1 or 25:1. Actual ratios will vary slightly by box size and are shown in table 2.1 below.

Table 2.1

MODEL NUMBER	Nominal Ratio 15:1		Nominal Ratio 25:1	
	Actual Ratio	Maximum Input Speed	Actual Ratio	Maximum Input Speed
NBS-115-2	14.04	1974	23.37	1994
NBS-203-3	14.87	2083	24.75	2100
NBS-207-4	15.13	2118	24.38	2072
NBS-215-5	15.4	1925	25.56	2044
NBS-307-5	15.34	1916	25.14	2010
NBS-315-6	15.23	1827	24.84	1844
NBS-407-8	15.08	1809	24.62	1847
NBS-415-9	15.12	1814	25.66	1925
NBS-507-10	15.53	1807	24.33	1840

### 3. Bearing and Seal Sizes

- a. For replacement of input and output bearings and seals, below are tables 3.1 and 3.2 listing bearing sizes and seal dimensions.

**Table 3.1 – Bearings**

Model Number	Input Shaft Input Side	Input Shaft Output Side	Intermediate Shaft Input Side	Intermediate Shaft Output Side	Output Hub Input Side	Output Hub Output Side
NBS-115-2	6206	6305NR	6305	6305	6013	6013
	1.18*2.44*0.63	0.984*2.44*0.669	0.984*2.44*0.669	0.984*2.44*0.669	2.559*3.937*0.708	2.559*3.937*0.708
NBS-203-3	LM48548A/LM48510	15102/15245	15102/15245	15102/15245	LM814849/LM814810	LM814849/LM814810
	1.375*2.563*0.71	(1*2.44*0.75)	(1*2.44*0.75)	(1*2.44*0.75)	3.062*4.625*1	3.062*4.625*1
NBS-207-4	32208J	30306J	32206J	32206J	32017XJ	32017XJ
	1.575*3.15*0.974	1.18*2.835*0.817	1.18*2.44*0.837	1.18*2.44*0.837	3.346*5.118*1.142	3.346*5.118*1.142
NBS-215-5	32210J	30308J	32208J	32208J	32019XJ	32019XJ
	1.968*3.543*0.974	1.575*3.543*0.994	1.575*3.15*0.974	1.575*3.15*0.974	3.74*5.708*1.26	3.74*5.708*1.26
NBS-307-5	32212J	30310J	32309J	32309J	32022XJ	32022XJ
	2.362*4.331*1.171	1.968*4.331*1.15	1.772*3.937*0.506	1.772*3.937*0.506	4.331*6.693*1.496	4.331*6.693*1.496
NBS-315-6	33113J	30310J	32309J	32309J	32024XJ	32024XJ
	2.559*4.331*1.339	1.968*4.331*1.15	1.772*3.937*0.506	1.772*3.937*0.506	4.724*7.087*1.496	4.724*7.087*1.496
NBS-407-8	32214J	30312J	33213J	33213J	32928	32928
	2.756*4.921*1.309	2.362*5.118*1.319	2.559*4.724*1.614	2.559*4.724*1.614	5.512*7.48*1.26	5.512*7.48*1.26
NBS-415-9	32313J	30313J	30314J	30314J	32934	32934
	2.559*5.118*2.008	2.559*5.118*1.417	2.756*5.905*1.496	2.756*5.905*1.496	6.693*9.055*1.496	6.693*9.055*1.496
NBS-507-10	32314	32313	32313	32313	32936	32936
	5.906 *2.756*2.126	5.512*2.559*2.008	5.512*2.559*2.008	5.512*2.559*2.008	9.843*7.087*1.772	9.843*7.087*1.772

**Table 3.2 – Seals**

Model Number	Input Shaft (1 Required)			Output Shaft (2 Required)		
	Housing Diameter	Shaft Diameter	Width	Housing Diameter	Shaft Diameter	Width
NBS-115-2	2.44	1.18	0.315	3.937	2.56	0.39
				3.543	2.56	0.47
NBS-203-3	2.204	1.26	0.39	3.74	2.952	0.39
NBS-207-4	2.165	1.496	0.315	4.724	3.149	0.39
				4.724		
NBS-215-5	2.953	1.968	0.39	4.724	3.74	0.39
NBS-307-6	3.74	2.362	0.39	6.3	4.33	0.47
NBS-315-7	3.74	2.362	0.39	6.3	4.724	0.512
NBS-407-8	3.937	2.56	0.39	6.693	5.512	0.47
NBS-415-9	3.937	2.56	0.39	7.48	6.496	0.512
NBS-507-10	3.937	2.56	0.39	9.055	6.89	0.79

**Table 3.3 – Lubrication: (See Chart Below or Use Equivalent)**

Model Number	15° To 60°F (-9° To 16°C)		50° To 125°F (10° To 50°C)	
	Mobil SHC 629	Mobil SHC 630	Mobil SHC 630	Mobil SHC 632
<b>AGMA Rating</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>6</b>
<b>ISO Grade</b>	<b>150</b>	<b>220</b>	<b>220</b>	<b>320</b>
NBS-115-2	N/A	1-400 RPM	N/A	1-400 RPM
NBS-203-3	151-400 RPM	1-150 RPM	151-400 RPM	1-150 RPM
NBS-207-4	126-400 RPM	1-125 RPM	126-400 RPM	1-125 RPM
NBS-215-5	101-400 RPM	1-100 RPM	101-400 RPM	1-100 RPM
NBS-307-6	41-400 RPM	1-40 RPM	41-400 RPM	1-40 RPM
NBS-315-7	41-400 RPM	1-40 RPM	41-400 RPM	1-40 RPM
NBS-407-8	41-400 RPM	1-40 RPM	41-400 RPM	1-40 RPM
NBS-415-9	41-400 RPM	1-40 RPM	41-400 RPM	1-40 RPM
NBS-507-10	41-400 RPM	1-40 RPM	41-400 RPM	1-40 RPM

## 4. Limited Warranty – Warranty Policy

All NBS shaft mount reducers sold by North American Electric, Inc. are warranted to be free from defects in material and workmanship. The warranty period is 24 months from the date of manufacture, or one year from the date the reducer is installed (put into service).

North American Electric, Inc. shall, at its option and expense, either repair or replace any failed reducer or part, which is defective, within the warranty period. To be covered under warranty, the reducer must have, at all times, been operated or used under normal operating conditions for which the reducer was designed. In the event of warranty claims, North American Electric, Inc. must be notified promptly following any reducer failure. The reducer should be sent to a North American Electric, Inc. authorized service center to determine the cause of failure and the warranty procedure outlined below must be strictly followed. After the examination, a determination will be made if the failure was due to defective material and/or workmanship. If the failure was due to defective material and/or workmanship, North American Electric, Inc. will replace or repair the reducer.

North American Electric's liability under this warranty or any other warranty whether expressed or implied in law or fact shall be limited to the repair or replacement of defective material and workmanship, and in no event shall North American Electric, Inc. be liable for consequential or indirect damages, including freight.

## WARRANTY PROCEDURE

In order to ensure that your claim is processed in a timely manner, please follow the following steps in the event of a warranty.

### STEP 1.

Have the reducer inspected by a qualified service shop, approved by North American Electric, Inc., to determine if the problem is a result of defects in materials and/or workmanship. North American Electric, Inc. will pay a reasonable inspection fee for the inspection that will include a written warranty report that describes the cause of failure along with photographs that show in detail what is described in the warranty report.

### STEP 2.

Contact our warranty department (662-429-8049 or Toll Free 1-800-884-0404) and provide the following information:

- 1.) Serial Number
- 2.) Model Number
- 3.) Inspection Report (From NAE, Inc. approved Service Center)
- 4.) Photographs showing the cause of failure
- 5.) Estimated cost of repair

### STEP 3.

Our warranty department will determine whether to replace or repair the defective shaft mount reducer. DO NOT repair any shaft mount reducer without prior written approval from North American Electric, Inc. Always, be sure to take clear photographs showing the cause of motor failure before beginning any repair work.

## CONTACT INFORMATION:

North American Electric, Inc.

Phone: 662-429-8049

Toll Free (800) 884-0404

Fax: (662) 429-8546

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