

Cyclo[®] BBB 4 Series: Taconite Seal Option

Introduction

Taconite is a low-grade iron ore found as a hard rock. Initially considered non-viable, Taconite became viewed as a resource as the supply of high-grade natural ore gradually diminished through the 1900's. Within the continental United States, Taconite mines may be found primarily in the north central states of Wisconsin and Minnesota. As part of the initial mining process, the taconite is processed into small pellets so as to ease its transportation to steel making facilities.



Figure 1: Taconite as Mined



Figure 2: Taconite Pellets

During this initial pulverization process, a fine and extremely abrasive taconite dust is formed. If not filtered from the atmosphere, this dust will eventually work its way into all nearby processing equipment - including gearboxes. Given the abrasive nature this dust, the life expectancy of rotating process machinery is decreased as it accumulates and works its way into critical components such as oil seals, bearings and gearing.

To minimize the impact of these extremely abrasive particles, a variety of options have been developed for incorporation into related process machinery. One such option is the utilization of grease lubricated **taconite seals** on the output shaft/hub of the process gearboxes. Given its nature, grease inherently acts as an effective dust/particle barrier and, as such, it can be used to prevent the ingress of the taconite dust (or other potential particle contaminants) into a gearbox. To this end, a taconite seal option has been developed for the new 4 Series Bevel Buddybox[®].

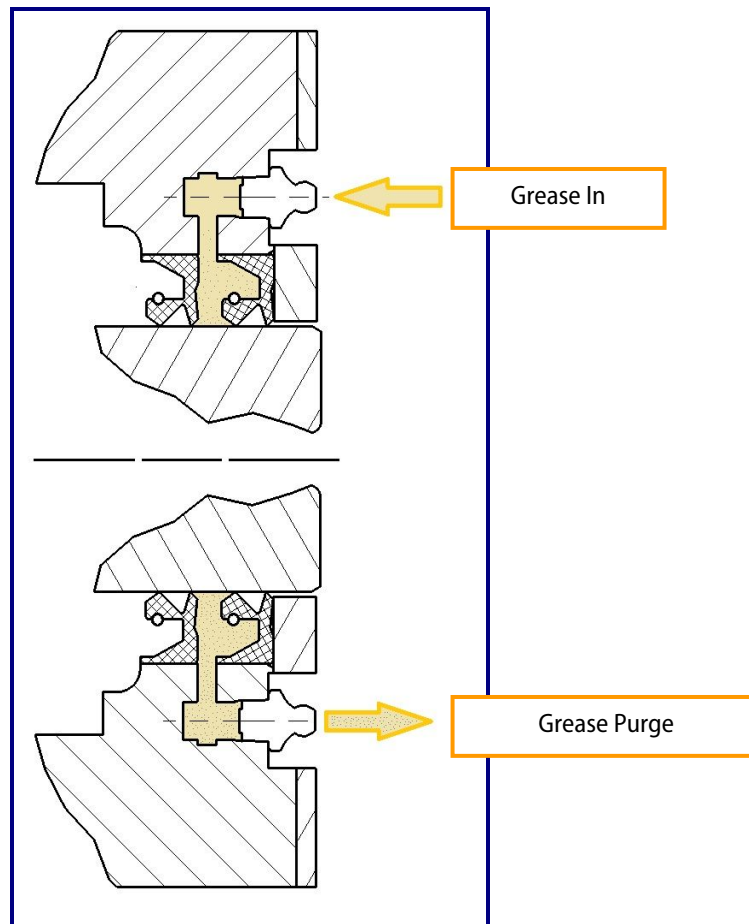
Option Notes

1. This option may be utilized for all applications where fine/abrasive particulates are present. It is NOT limited to only Taconite Mining applications.
2. The Taconite Seal design applies to the 4-Series Bevel Buddybox[®]. This option is NOT available for the 5-Series family of Bevel Buddyboxes.
3. Option SSC code is: B30.
4. With the exception of size 4F, this option does not change the overall width of the units.

Cyclo[®] BBB 4 Series: Taconite Seal Option (Continued)

Operating Principle

The taconite seal option is relatively straight-forward in its operating principle. Grease of NLGI Grade #2 is pumped into the grease inlet where it flows between the inner and outer oil seals. In doing so, it collects the fine, abrasive particulates which have accumulated around the output seal area through unit operation. As it continues to be pumped, the grease is expelled through the **purge fitting** thereby removing the abrasive particles accumulated within it from the seal area.



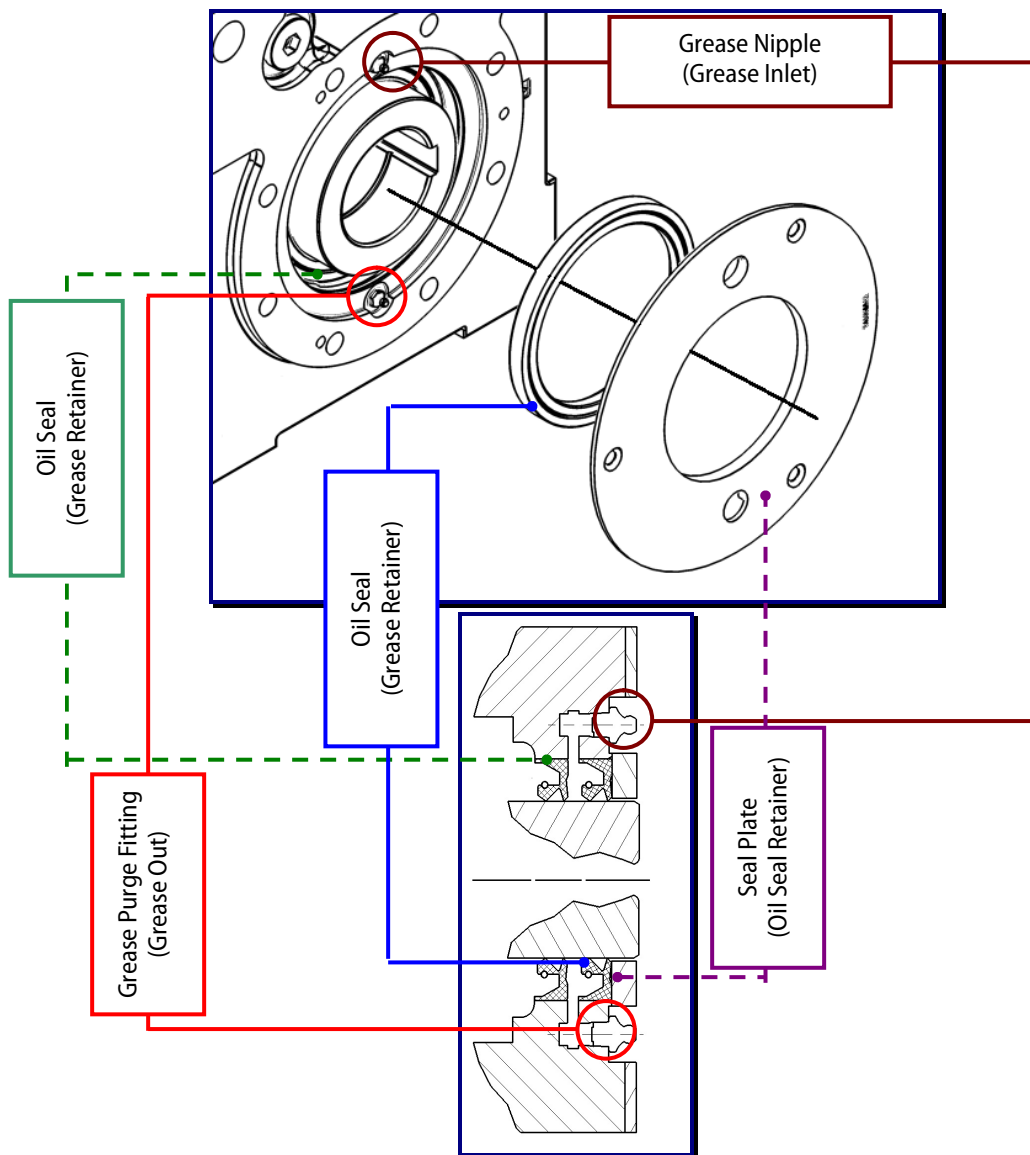
Maintenance Instructions

Please refer to **EDOC1-12-024, Cyclo BBB 4 Series Taconite Seal Lubrication Procedure**, for instructions detailing replenishment method along with replenishment intervals and recommended grease type.

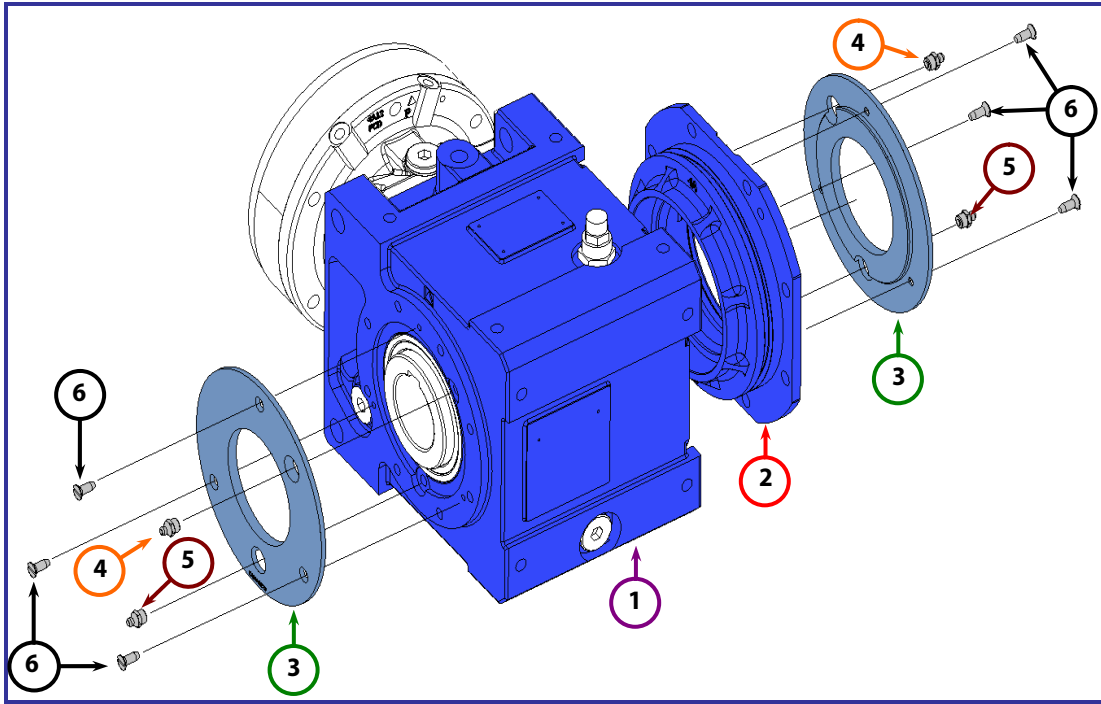
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Part Description/Part List

The components and associated function of the 4-Series BBB taconite seal design is described as follows:



Cyclo® BBB 4 Series: Taconite Seal Option (Continued)



Item	Description	4A	4B	4C		4D	4E	4F	Quantity
		SSC BOM							
		SSCB30-4A-Y1--LHYM	SSCB30-4B-Y1--LHYM	SSCB30-4C-Y1--LYHM	SSCB30-4C-Y2--LYHM	SSCB30-4D-Y1--LYHM	SSCB30-4E-Y1--LYHM	SSCB30-4F-Y1--LYHM	
1	Casing	TDRL9798	TDRM1571	TDRM1579	TDRM1577	TDRM1580	TDRL9804	TDRL9795	1
2	Cover	TARL9799	TARL9802	TARL8523	TARL9218	TARL9813	TARL9811	TARL9793	1
3	Seal Cover	TAMA8229	TAMA8222	TAMA8223	TAMK0912	TAMA7987	TAMA7973	TAMK1252	2
4	Grease Fitting	480C002P---NG	480C002P---NG	480C002P---NG	480C002P---NG	480C002P---NG	480C002P---NG	480C002P---NG	2
5	Relief Fitting	485C002P005NG	485C002P005NG	485C002P005NG	485C002P005NG	485C002P005NG	485C002P005NG	485C002P005NG	2
6	Screw	082C006R016NG	082C008R016NG	082C008R016NG	082C008R016NG (3) 000H008A016NG (3)	082C008R016NG	082C006R016NG	082C006R016NG	6
7	Oil Seal	531N8511010-G	531N10012510G	531N12015012G	531N12015012G	531N14017012G	531N16019013G	531N18021014G	4