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## Air Cleaner Group, Special Tri-Phase And Cyclopac By Engine Model

MODEL	DESCRIPTION	PART NO.
AA, AB, ABS	Oil bath (Repl. by LO113A) .....	LO28
ABN	Oil bath (Repl. by LO113A) .....	LO28
ABN	Oil bath .....	LO113A
ABN	Oil bath, upright .....	LO87
ACN, BKN	Oil bath, upright .....	LO87
ACN, BKN	Oil bath .....	LO113A
ACN, BKN	Tri-Phase, dry .....	LO187S2
ADH, AE, AEH, AEHS	Oil bath A/C mounting .....	LO24
AFH, AGH, AHH	Oil bath A/C mounting .....	LO24
AENL	Dry element .....	LO175
AENL	Oil bath .....	LO24
AENL	Tri-Phase, dry .....	LO187S5
AK, AKS	Oil bath .....	LO113A
AKN	Oil bath .....	LO113A
AKN	Oil bath, upright .....	LO87
AGND	Oil bath .....	LO24
AGND	Tri-Phase, dry .....	LO187S5
S7D	Oil bath .....	LO87
S7D	Dry element .....	LO173
S8D	Oil bath .....	LO87
S8D	Dry element .....	LO173
S8D	Tri-Phase, dry .....	LO187S3
S8D	Dry element .....	LO194
S10D	Oil bath, dry element .....	LO24/LO175
S10D	Tri-Phase, dry .....	LO187S4
S12D	Dry element .....	LAA138
S12D	Oil bath/dry element .....	LO24/LO175
S12D	Tri-Phase, dry .....	LO187S4
S14D	Oil bath/dry element .....	LO24/LO175
S14D	Dry element .....	LAA138
TE, TF, TFD	Oil bath type .....	LO83BS1
TE, TF, TFD	Tri-Phase, dry .....	LO187S6
TH, THD, TJD	Oil bath .....	LO83BS1
TH, THD, TJD	Tri-Phase, dry .....	LO187S6

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## Air Cleaner Group, Special Tri-Phase And Cyclopac By Engine Model (Cont.)

MODEL	DESCRIPTION	PART NO.
TH, THD, TJD	Dry element .....	LO187S1
TRA10D, TR10D	Dry element .....	LO173
TRA12D	Dry element .....	LO194
VE4D, VF4D	Oil bath, open engine .....	LO157-1S1
VE4D, VF4D	Obsolete, use LO157-1S1 .....	LO64
VE4D, VF4D	Oil bath, power unit .....	LO158S2
VE4D, VF4D	Obsolete, use LO158S2 .....	LO66S1
VE4D, VF4D	Cyclopac .....	LO176S2
VE4D, VF4D	Tri-Phase, dry, with dust unloader .....	LO163S1
VG4D	Side mount oil bath .....	LAA100
VG4D	Side mount oil bath .....	LAA101
VG4D	Cyclopac .....	LO176S3
VG4D	Tri-phase, dry, with dust unloader .....	LO163S2
VH4D	Side mount oil bath .....	LAA102
VH4D	Side mount oil bath .....	LAA103
VH4D	Cyclopac .....	LO176S2
VH4D	Tri-Phase, dry, with dust unloader .....	LO163S1
V460, V461D	Oil bath .....	LO159-4S1
V460, V461D	Cyclopac .....	LO189S2
V460, V461D	Tri-Phase, dry, with dust unloader .....	LO163S2
V465D	Oil bath .....	LO185S1
V465D	Cyclopac .....	LO189S2
W2-1230, W2-1235	Dry element .....	LAA184
W2-1230, W2-1235	Heavy duty, oil bath .....	LAA187
W2-1230, W2-1235	Heavy duty, dry .....	LAA189
W2-1250	Dry element .....	LAA206
W2-1250	Heavy duty, dry element .....	LAA189
W2-880	Dry element .....	LO194A
W2-880	Housing .....	LO194F
W2-880	Adapter .....	LO194H
W4-1770	Side mount, oil bath .....	LAA185

## Air Cleaner Group, Special Tri-Phase And Cyclopac By Part Number

PART NO.	DESCRIPTION	MODEL
LAA100	Side mount, oil bath .....	VG4D
LAA101	Side mount, oil bath .....	VG4D
LAA102	Side mount, oil bath .....	VH4D
LAA103	Side mount, oil bath .....	VH4D
LAA184	Dry element .....	W2-1230, W2-1235
LAA206	Dry element .....	W2-1250
LAA138	Dry element .....	S12D, S14D
LAA185	Side mount, oil bath .....	W4-1770
LAA187	Heavy duty, oil bath .....	W2-1230, W2-1235
LAA189	Heavy duty, dry element .....	W2-1230, W2-1235, W2-1250
LO24	Oil bath A/C mounting .....	ADH, AE, AEH, AEHS
LO24, LO175	Oil bath and dry element .....	S10D, S12D, S14D
LO24	Oil bath type .....	AFH, AGH, AHH
LO28	Oil bath type .....	AA, AB, ABS, ABN
LO87	Oil bath, upright .....	ACN, BKN, ABN, AKN
LO113A	Oil bath .....	AKS, AK, AKN, ABN, BKN, ACN
LO157-1	Oil bath, open engine .....	VE4D, VF4D
LO64	Obsolete; use LO157-1 .....	VE4D, VF4D
LO158S2	Oil bath, power unit .....	VE4D, VF4D
LO66S1	Obsolete; use LO158S2 .....	VE4D, VF4D
LO159-4S1	Oil bath .....	V460D, V461D
LO185S1	Oil bath .....	V465D
LO173	Dry element .....	TRA10D, TR10D
LO194	Dry element .....	TRA12D
LO87	Oil bath .....	S7D, S8D
LO173	Dry element .....	S7D, S8D
LO175	Dry element .....	AGND, AENL
LO24	Oil bath type .....	AGND, AENL
LO83BS1	Oil bath type .....	TE, TF, TFD, TH, THD, TJD
LO187S6	Dry type, Tri-Phase .....	TE, TF, TFD, TH, THD, TJD
LO83BS1	Oil bath .....	TH, THD, TJD
LO187S1	Dry element .....	TH, THD, TJD
LO194	Dry element .....	S8D
LO194A	Dry element .....	W2-880

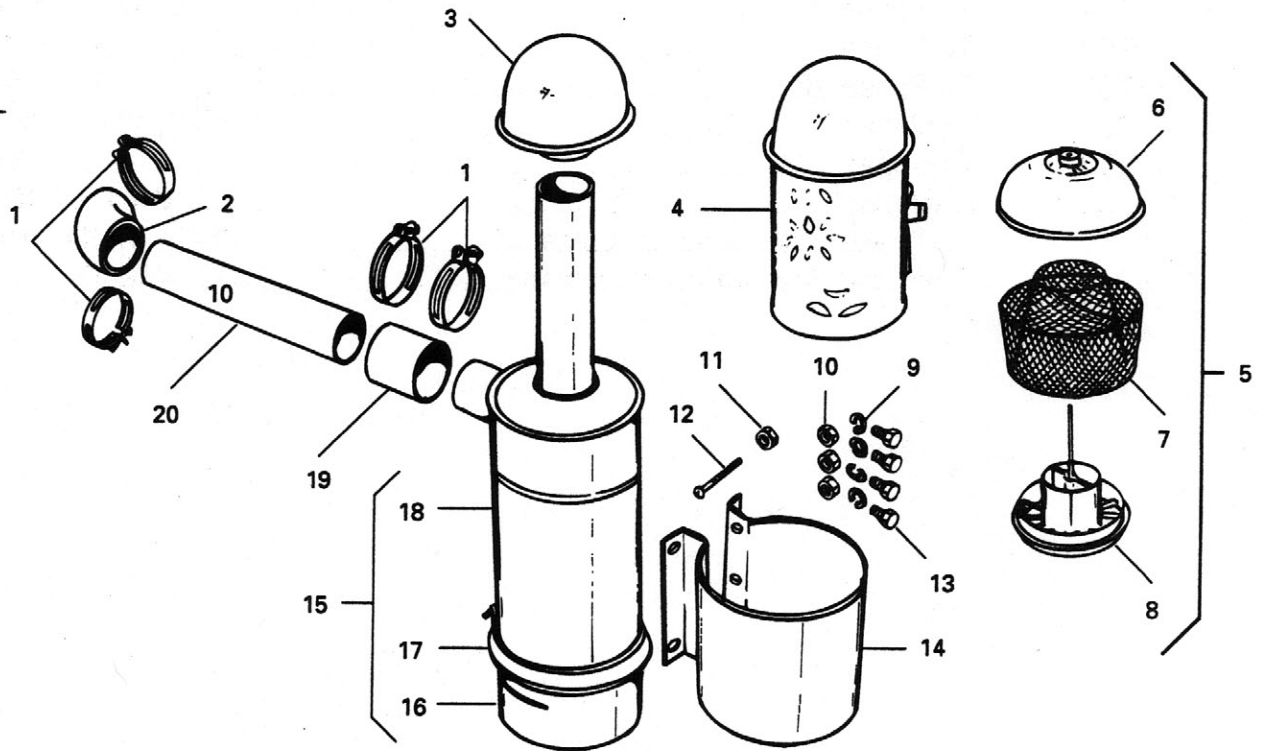
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**Air Cleaner Group, Special Tri-Phase And Cyclopac  
By Part Number (Cont.)**

<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>MODEL</b>
LO194F	Housing .....	W2-880
LO194H	Adapter .....	W2-880
LO187S2	Tri-Phase, dry .....	ACN, BKN
LO187S3	Tri-Phase, dry .....	S8D
LO187S4	Tri-Phase, dry .....	S10D, S12D
LO187S5	Tri-Phase, dry .....	AENL, AGND
LO187S6	Tri-Phase, dry .....	THD, TJD
LO176S2	Cyclopac .....	VE4D, VF4D, VH4D
LO176S3	Cyclopac .....	VG4D
LO189S2	Cyclopac .....	V461D, V465D
LO163S1	Tri-Phase, dry, with dust unloader .....	VE4D, VF4D, VH4D
LO163S2	Tri-Phase, dry, with dust unloader .....	VG4D, V460D, V461D

# LAA100, LAA101 Side Mount Air Cleaner Assemblies

- OPTIONAL PRE-CLEANERS -



## LAA100, LAA101 Side Mount Air Cleaner Assemblies

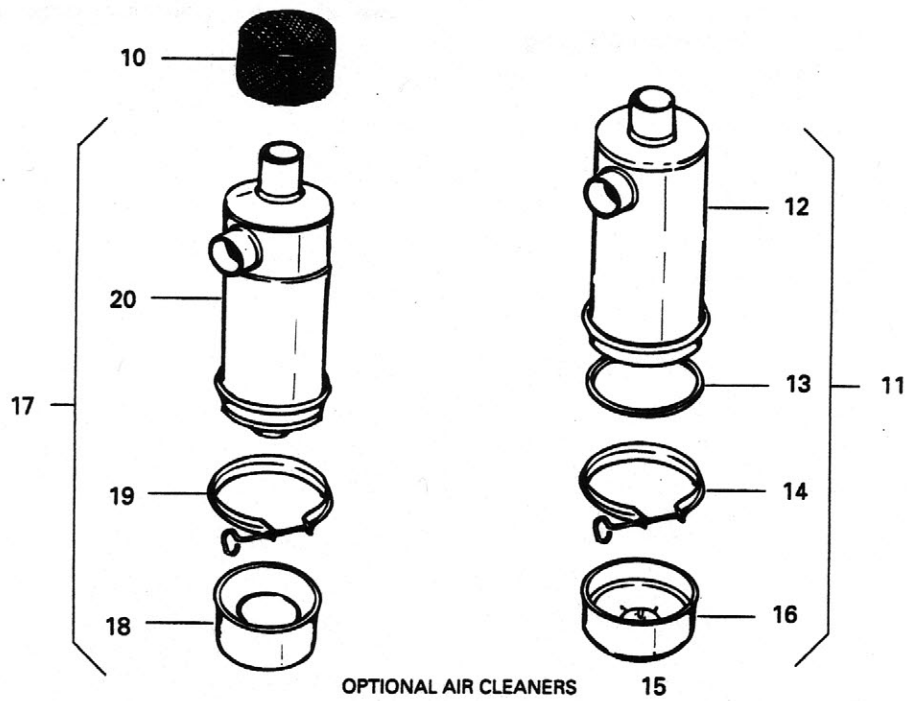
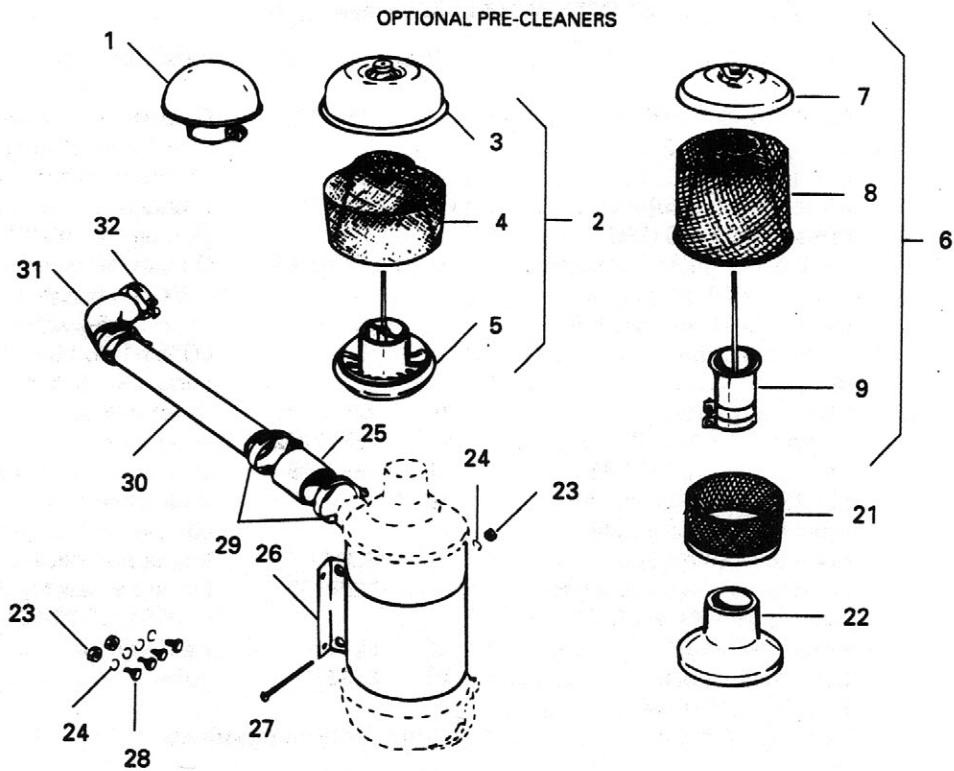
USE WITH MODEL VG4D (see pg. 1)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	LK9	Hose clamp, 2-3/8" I.D. ....	3	15	LO159S1	Oil bath air cleaner, 7-1/4" stack (Donaldson no. FGA05-2521) (replaces LO90S1) (service parts include 5-8, 16-18) .....	1
-	LK24	Clamp, 2-1/4" I.D. ....	1				
2	LL89	Rubber elbow .....	1				
3	LO62	Air stack cap (LAA100) .....	1				
4	† LO82A	Pre-screener (LO159S1) .....	1				
5	LO115A	Pre-cleaner, plastic collector type (LAA101) (optional) (service parts include 6-8) .....	1	-	† LO159-4S1	Oil bath air cleaner, 2-3/4" stack (Donaldson no. FGA05-2522) (replaces LO159-1S1, LO90-1S1) (service parts include 5-8, 16-18) .....	1
6	22P20116	Cover assembly					
7	22P20115	Body .....	1				
8	22P103589	Sleeve assembly (replaces P20122) (NLA) .....	1	16	22P17244	Outer oil cup .....	1
-	† LO147A	Pre-screener (LO159-4S1, LO115A) (not illustrated) .....	1	-	22P17242	Inner oil cup .....	1
-	† LO171	Pre-cleaner, 9" diameter, dry type (United Spec. no. N1B13S) (service parts include 81-250A6, SD161) (not illustrated) .....	1	17	22P2706	Oil cup clamp assembly .....	1
9	PE4	Lock washer, 5/16" .....	4	18	* - - -	Body assembly (order complete air cleaner) .....	1
10	PD78	Nut, 5/16"-18 thread .....	3	-	SD161	Instruction decal .....	1
11	PD198	Nut, 1/4"-20 thread .....	2	-	22P8723	Oil cup assembly (for obsolete LO90S1, LO90-1S1)	
12	XA74	Screw, 1/4"-20 thread x 2-1/4" long .....	2	19	LL18	Rubber hose .....	1
13	XD14	Screw, 5/16"-18 thread x 5/8" long .....	1	20	LJ131	Tube .....	1
14	PG512	Strap .....	1				

\* Not serviced separately.

† LO82A, LO159-4S1, LO147A, LO171 not included in assemblies but available as options.

# LAA102, LAA103 Side Mount Air Cleaner Assemblies



## LAA102, LAA103 Side Mount Air Cleaner Assemblies

USE WITH MODEL VH4D (see pg. 3)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	LO96	Stack cap, United Specialties air cleaner .....	1	18	22P14889	Outer oil cup .....	1
—	LO86	Stack cap, Donaldson air cleaner .....	1	—	22P15463	Inner oil cup .....	1
2	LO114	Pre-cleaner, collector type (service parts include 3-5) (optional) .....	1	19	22P2846	Clamp assembly .....	1
3	22P20116	Cover assembly .....	1	20	* — — —	Body (order complete air cleaner) ....	1
4	22P20115	Body .....	1	21	LO134	Pre-screener (LO109) .....	1
5	22P20120	Sleeve assembly .....	1	22	LO133	Base (for United Specialties pre-screener) (NLA) .....	1
6	LO109	Pre-cleaner, collector type (service parts include 7-9) (optional) (NLA) .....	1	23	PD77	Nut, 1/4"-20 thread .....	4
7	81A16380	Cap assembly .....	1	24	PE3	Lock washer, 1/4" .....	6
8	81B16382	Body assembly .....	1	25	LL27	Rubber hose .....	1
9	81A16370	Sleeve assembly .....	1	26	PG291	Strap .....	1
10	LO147A	Pre-screener (LO114) .....	1	27	XA74	Screw, 1/4"-20 thread x 2-1/4" long .....	2
11	LO121S1	Air cleaner, United Specialties no. 45D4 (for replacement order LO157-1S1) (service parts include 12-16) (obsolete) (optional) .....	1	28	XD4	Screw, 1/4"-20 thread x 1/2" long .....	4
12	* — — —	Body assembly .....	1	29	LK8	Hose clamp, 2-1/8" I.D. ....	3
13	81-615A6	Gasket .....	1	30	LJ120	Tube .....	1
14	81-214B1K011	Clamp assembly .....	1	31	LL67	Rubber elbow .....	1
15	81-415B1K11	Baffle .....	1	32	LK10	Hose clamp, 2" I.D. ....	1
16	81-496B1K111	Oil cup (order baffle separately) .....	1				
17	LO157-1S1	Air cleaner, 2-1/2" stack (service parts include 18-20) (replaces LO119AS1) (22P14818 oil cup assembly must be used for service on LO119AS1) (optional) .....	1				

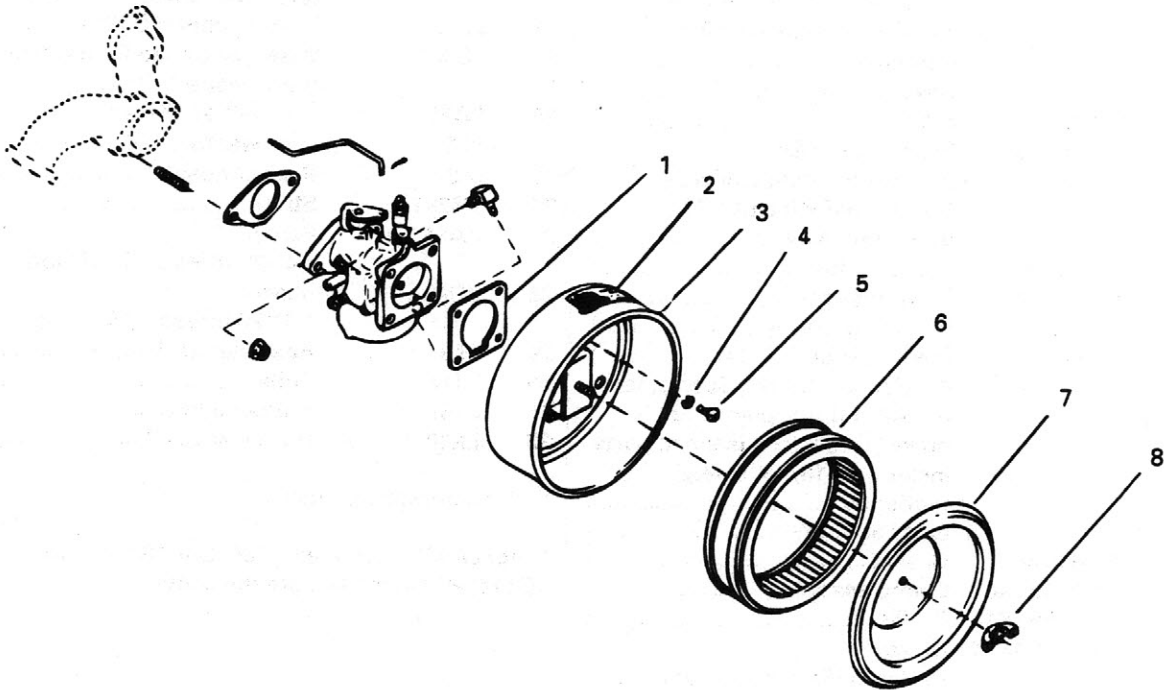
\* Not serviced separately.

Note: LAA102 includes LO86, LAA103 includes LO114; all other parts are the same.



## LAA184, LAA206 Air Cleaner Assemblies

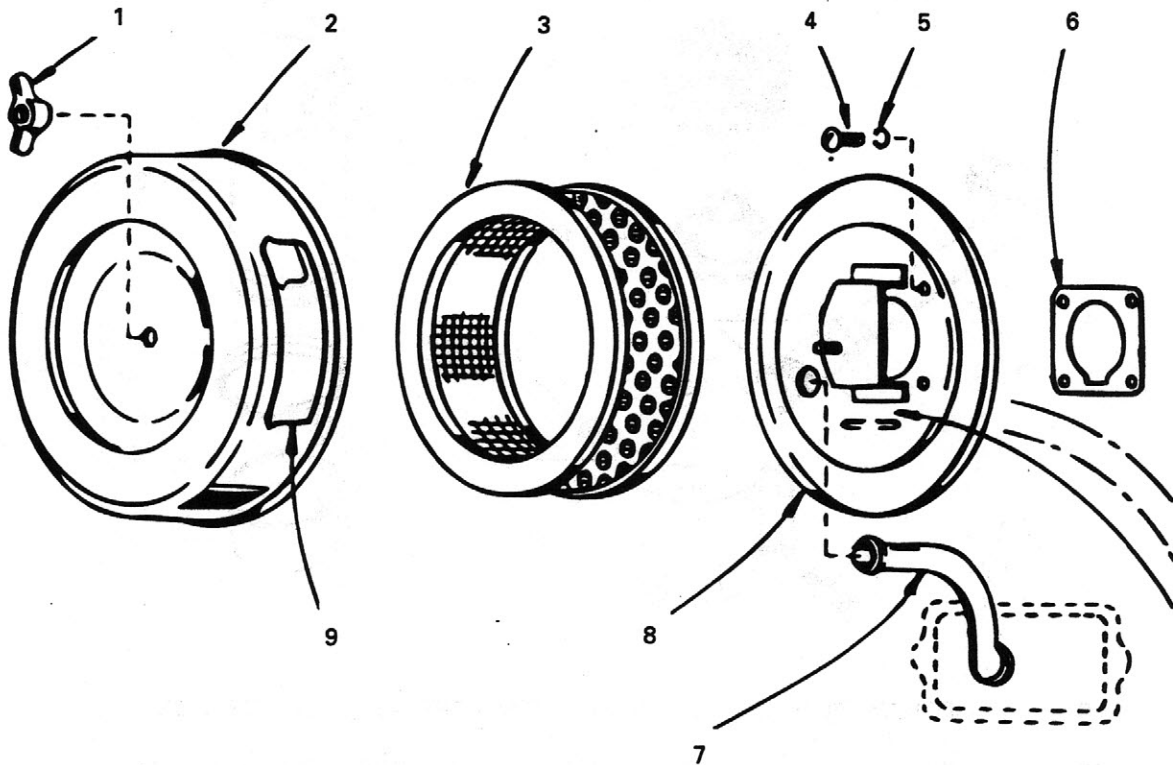
USE WITH MODELS W2-1230, W2-1235 (LAA184); W2-1250 (LAA206)



ITEM	PART NO.	DESCRIPTION	QTY
1	QD860	Gasket (W2-1230, W2-1235) .....	1
-	QD860B	Gasket (W2-1250) .....	1
2	SD308	Decal .....	1
3	LO203	Adapter .....	1
4	PE14	Lock washer, no. 10 .....	2
5	XA7	Screw, no. 10-32 thread x 3/8" long .....	2
6	LO194A	Air cleaner element .....	1
7	LO204	Cover .....	1
8	PK147	Nut .....	1

## LAA138 Air Cleaner Assembly

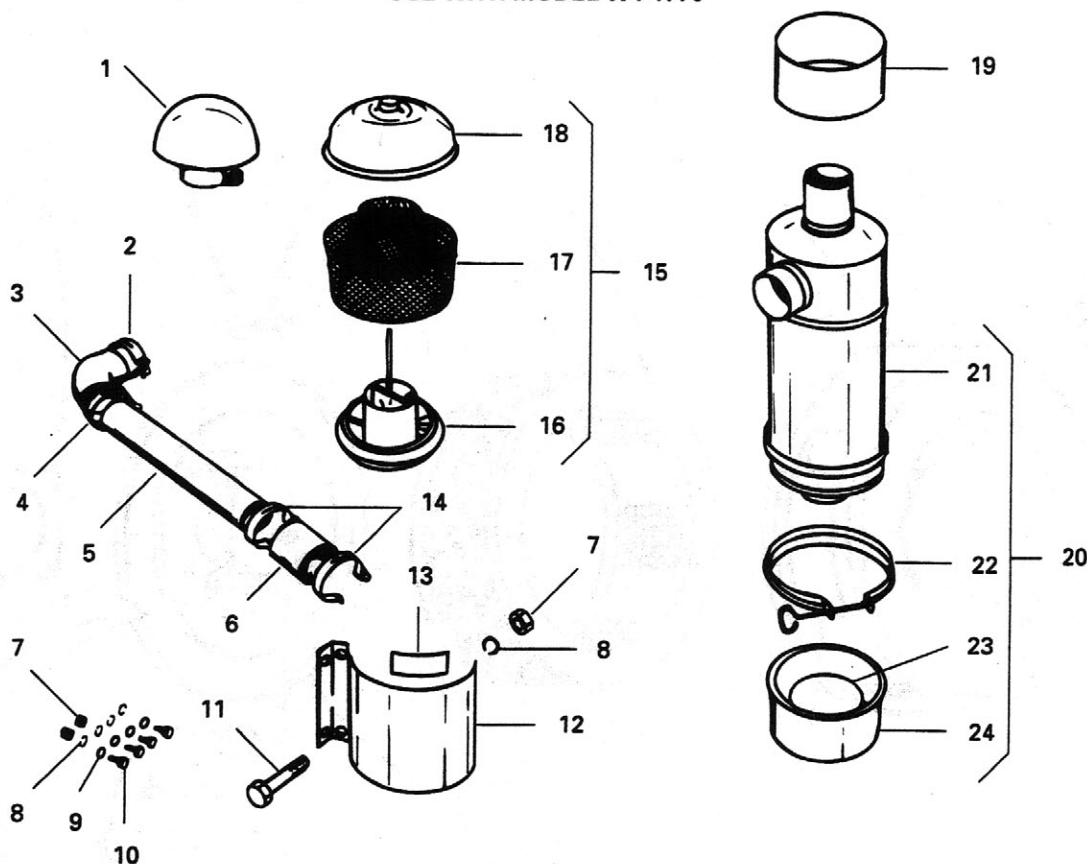
USE WITH MODELS S12D, S14D (Beginning with engine serial no. 5,675,598)



ITEM	PART NO.	DESCRIPTION	QTY
1	PD147	Wing nut .....	1
2	LO194F	Air cleaner housing .....	1
3	LO194A	Air cleaner element .....	1
4	XA7	Screw, no. 10-32 thread x 3/8" long .....	4
5	PE14	Lock washer, no. 10 .....	4
6	QD860	Gasket .....	1
7	LL201	Breather tube .....	1
8	LO194H	Adapter plate .....	1
9	SD308	Decal .....	1

# LAA185 Side Mount Air Cleaner Assembly

USE WITH MODEL W4-1770

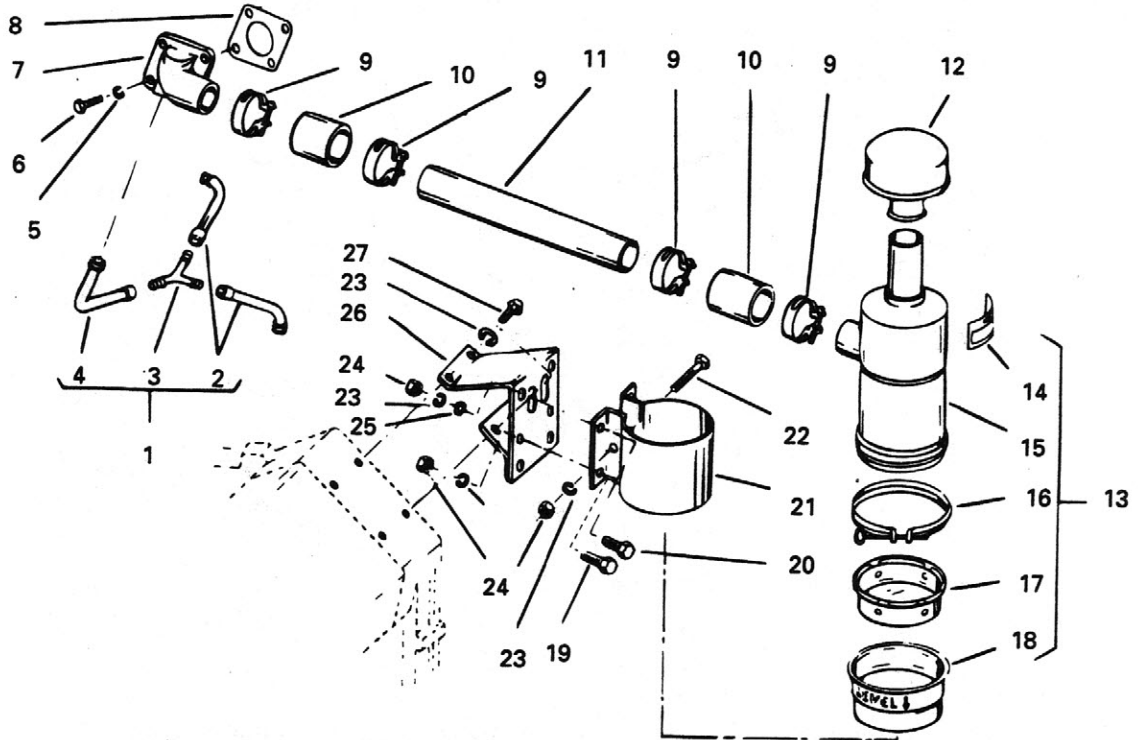


ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	LO62	Cap .....	1	16	22P10-3589	Sleeve assembly .....	1
2	LK8	Hose clamp, 2-1/8" I.D. ....	1	17	22P20115	Body .....	1
3	LL89	Elbow .....	1	18	22P10-3587	Cover assembly .....	1
4	LK9	Hose clamp, 2-3/8" I.D. ....	1	19	LO147A	Pre-screener (LO115A)	
5	LJ462	Tube .....	1			(optional) .....	1
6	LL30A	Connection .....	1	20	LO159-4S1	Air cleaner, 2-3/4" stack	
7	PD77	Nut, 1/4"-20 thread .....	4			(service parts include	
8	PE3	Lock washer, 1/4" .....	6			13, 21-24) .....	1
9	PH196	Washer, 1/4" .....	4	21	* — — —	Body	
10	XD5	Cap screw,				(order complete air cleaner) ....	1
		1/4"-20 thread x 5/8" long .....	4	22	22P2706	Clamp assembly .....	1
11	XA74	Screw,		23	22P17242	Inner oil cup .....	1
		1/4"-20 thread x 2-1/4" long .....	2	24	22P17244	Outer oil cup .....	1
12	PG512	Strap .....	1				
13	SD161	Instruction decal .....	1				
14	LK24	Hose clamp, 2-1/4" I.D. ....	2				
15	LO115A	Pre-cleaner, collector type					
		(service parts include 16-18)					
		(optional) .....	1				

\* Not serviced separately.

# LAA187 Air Cleaner Assembly (Heavy Duty Oil Bath Type)

USE WITH MODELS W2-1230, W2-1235

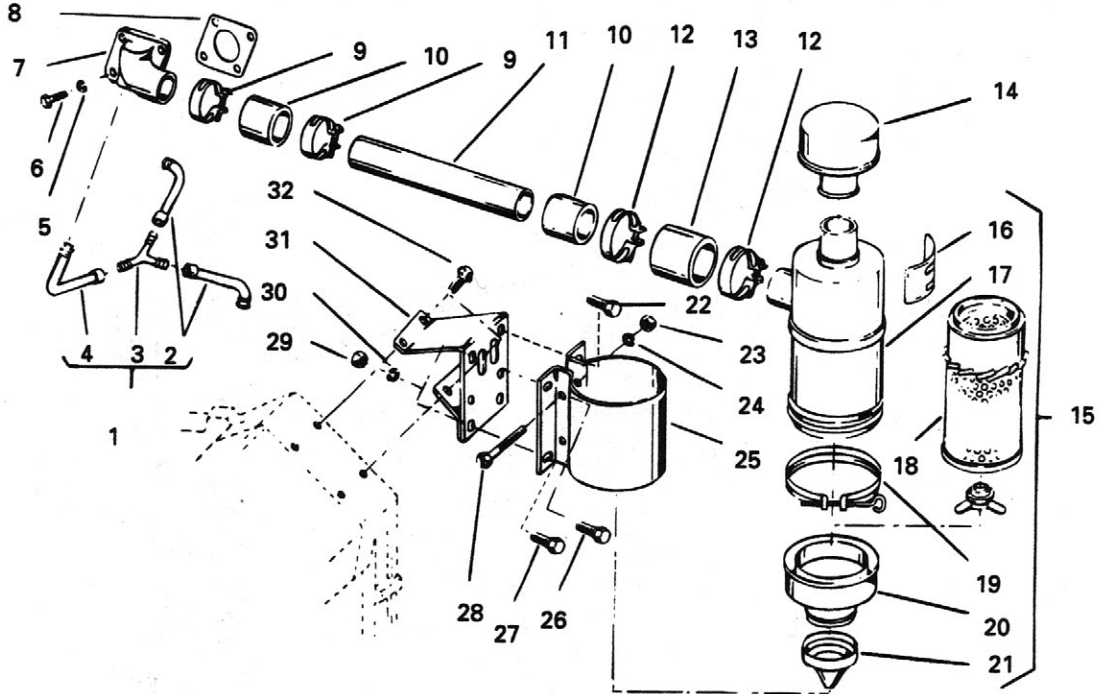


ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
—	RP978	Breather assembly (not part of LAA187 assembly) (includes 1-8) .....	1	15	* ———	Body (order complete air cleaner) ....	1
1	LL204A	Breather line assembly (includes 2-4) .....	1	16	22P2846	Clamp assembly .....	1
2	LL204-1	Tube to breather .....	2	17	22P15463	Inner oil cup .....	1
3	RF1535	Y fitting .....	1	18	22P14889	Outer oil cup .....	1
4	LL209-2	Tube to air intake .....	1	19	XD7	Cap screw, 1/4"-20 thread x 1" long .....	1
5	PE14	Lock washer, no. 10 .....	4	20	XD5	Screw, 1/4"-20 thread x 5/8" long .....	3
6	XD158	Screw, no. 10-32 thread x 1/2" long .....	4	21	PG291	Strap .....	1
7	BI392	Elbow .....	1	22	XA74	Screw, 1/4"-20 thread x 2-1/4" long .....	1
8	QD860A	Gasket .....	1	23	PE3	Lock washer, 1/4" .....	5
9	LK8	Hose clamp, 2-1/8" I.D. ....	4	24	PD77	Nut, 1/4"-20 thread .....	5
10	LL27	Connection .....	2	25	PH27A	Washer, 1/4" I.D. ....	2
11	LJ464A	Tube .....	1	26	BI394	Bracket .....	1
12	LO86	Cap .....	1	27	XD189	Screw, 1/4"-20 thread x 3/4" long .....	4
13	LO157-1S1	Air cleaner, 2-1/2" stack (service parts include 14-18) ....	1				
14	SD161	Instruction decal .....	1				

\* Not serviced separately.

# LAA189 Air Cleaner Assembly (Heavy Duty Dry Element)

USE WITH MODELS W2-1230, W2-1235, W2-1250

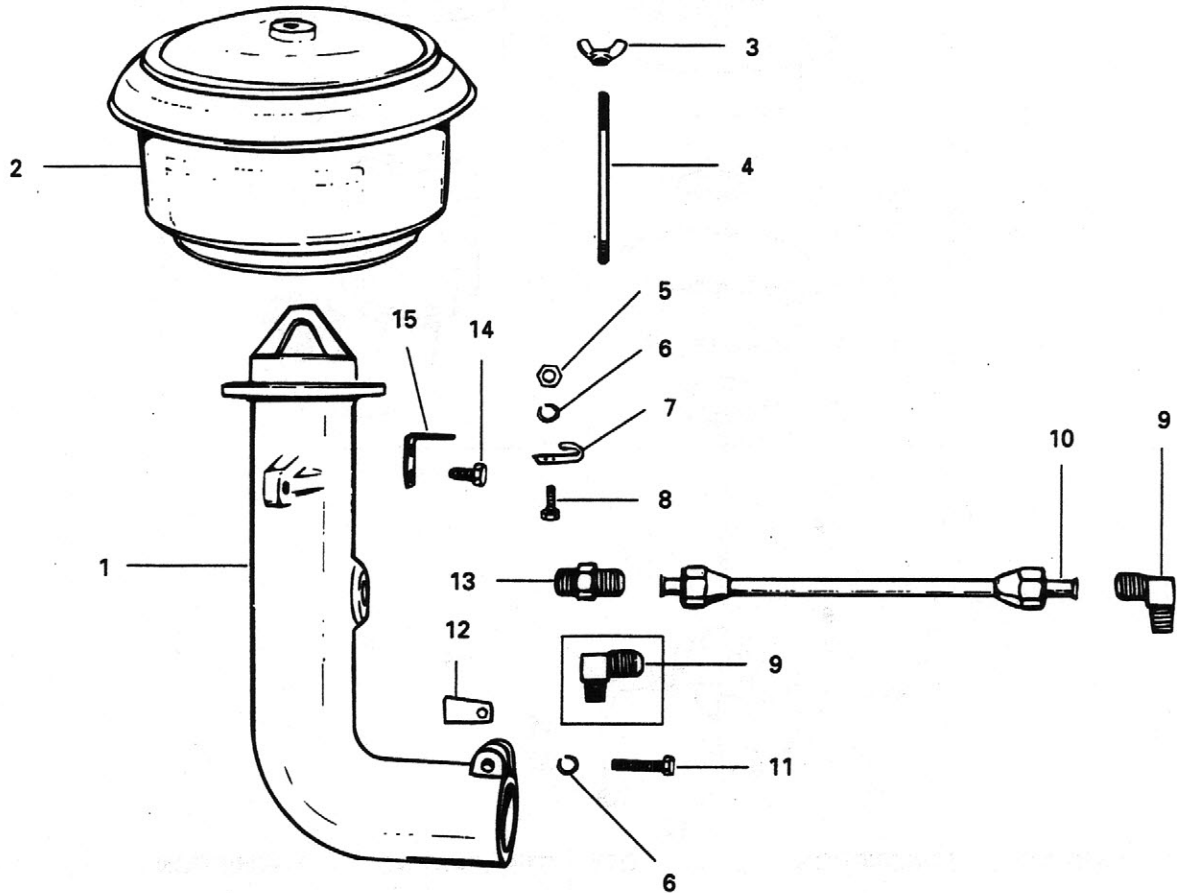


ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
—	RP978A	Breather assembly (not part of LAA189 assembly) (includes 1-8) .....	1	18	LO177	Filter element .....	1
1	LL204A	Breather line assembly (includes 2-4) .....	1	19	22P2904	Clamp assembly .....	1
2	LL204-1	Tube to breather .....	2	20	22P10-3835	Cup assembly .....	1
3	RF1535	Y fitting .....	1	21	LL192	Discharge valve .....	1
4	LL209-2	Tube to air intake .....	1	22	XD14	Screw, 5/16"-18 thread x 5/8" long .....	1
5	PE14	Lock washer, no. 10 .....	4	23	PD77	Nut, 1/4"-20 thread .....	2
6	XD166	Screw, no. 10-32 thread x 3/4" long .....	4	24	PE3	Lock washer, 1/4" .....	2
7	BI392-4	Elbow .....	1	25	PG512	Strap .....	1
8	QD860B	Gasket .....	1	26	XD17	Screw, 5/16"-18 thread x 1" long .....	1
9	LK8	Hose clamp, 2-1/8" I.D. .....	2	27	XD15	Screw, 5/16"-18 thread x 3/4" long .....	2
10	LL27	Connection, 1-3/4" I.D. .....	2	28	XA74	Screw, 1/4"-20 thread x 2-1/4" long .....	2
11	LJ464A	Tube .....	1	29	PD78	Nut, 5/16"-18 thread .....	4
12	LK9	Hose clamp, 2-3/8" I.D. .....	2	30	PE4	Lock washer, 5/16" .....	4
13	LL18	Connection, 2" I.D. .....	1	31	BI394	Bracket .....	1
14	LO62	Cap .....	1	32	XD189	Screw, 1/4"-20 thread x 3/4" long .....	4
15	LO176S1	Air cleaner (includes 16-21) .....	1				
16	SD296	Instruction decal .....	1				
17	* — — —	Body (order complete air cleaner) .....	1				

\* Not serviced separately.

## LO24 Oil Bath Air Cleaner Mounting

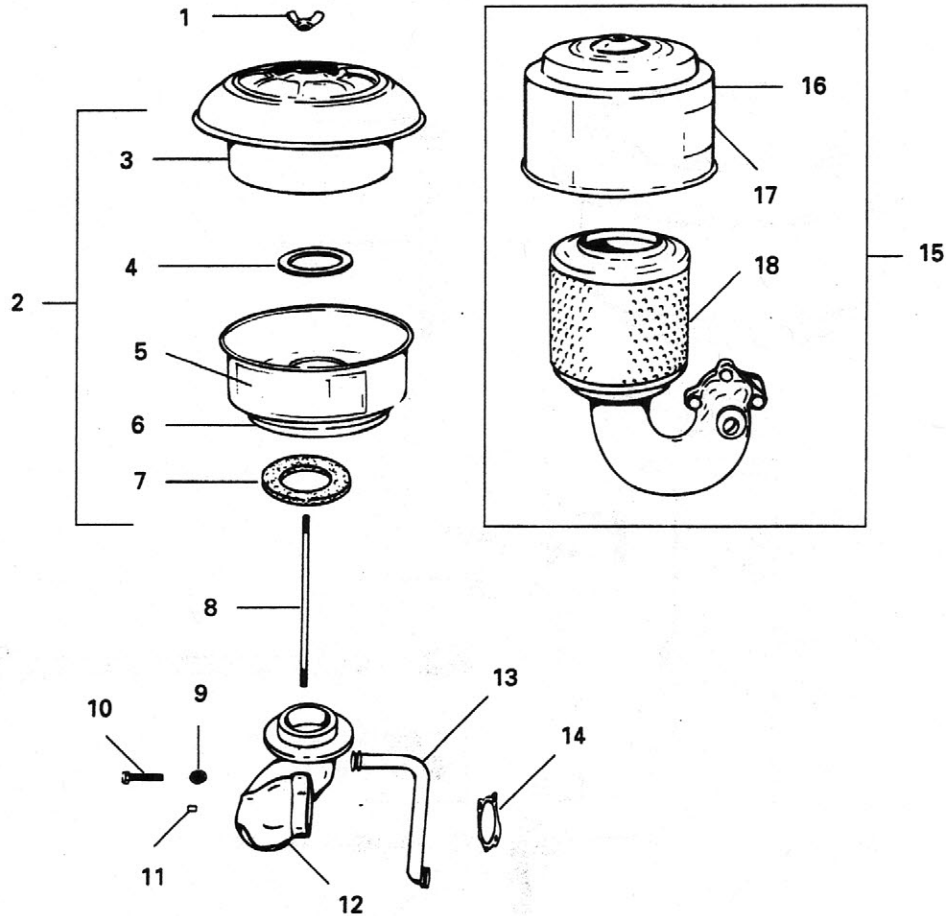
USE WITH MODELS ADH, AE, AEH, AEHS



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	BI268S1	Air cleaner bracket assembly (includes 11, 12; includes BI268) .....	1	9	RF296	Elbow .....	1
2	LO24	Air cleaner, United Specialties no. T12B1 (service parts include 179B1, 176B1K01, QD540) .....	1	10	RM469	Breather line, for engines with Zenith carburetor .....	1
3	PD147	Wing nut, 1/4"-20 thread .....	1	—	RM494	Breather line, for engines with Stromberg carburetor .....	1
4	PC372A	Stud (replaces PC372) .....	1	11	XA38	Screw, 1/4"-20 thread x 1" long (replaces XB20) .....	1
5	PD77	Nut, 1/4"-20 thread .....	1	12	QD647	Gasket .....	1
6	PE3	Lock washer, 1/4" .....	1	13	RF295	Straight fitting .....	1
7	PG430	Clip .....	1	14	PB160	Screw, 1/4"-28 thread x 1/2" long .....	1
8	XD4	Screw, 1/4"-20 thread x 1/2" long .....	1	15	PG343	Brace .....	1

## LO24, LO175, LO175C Air Cleaner Groups

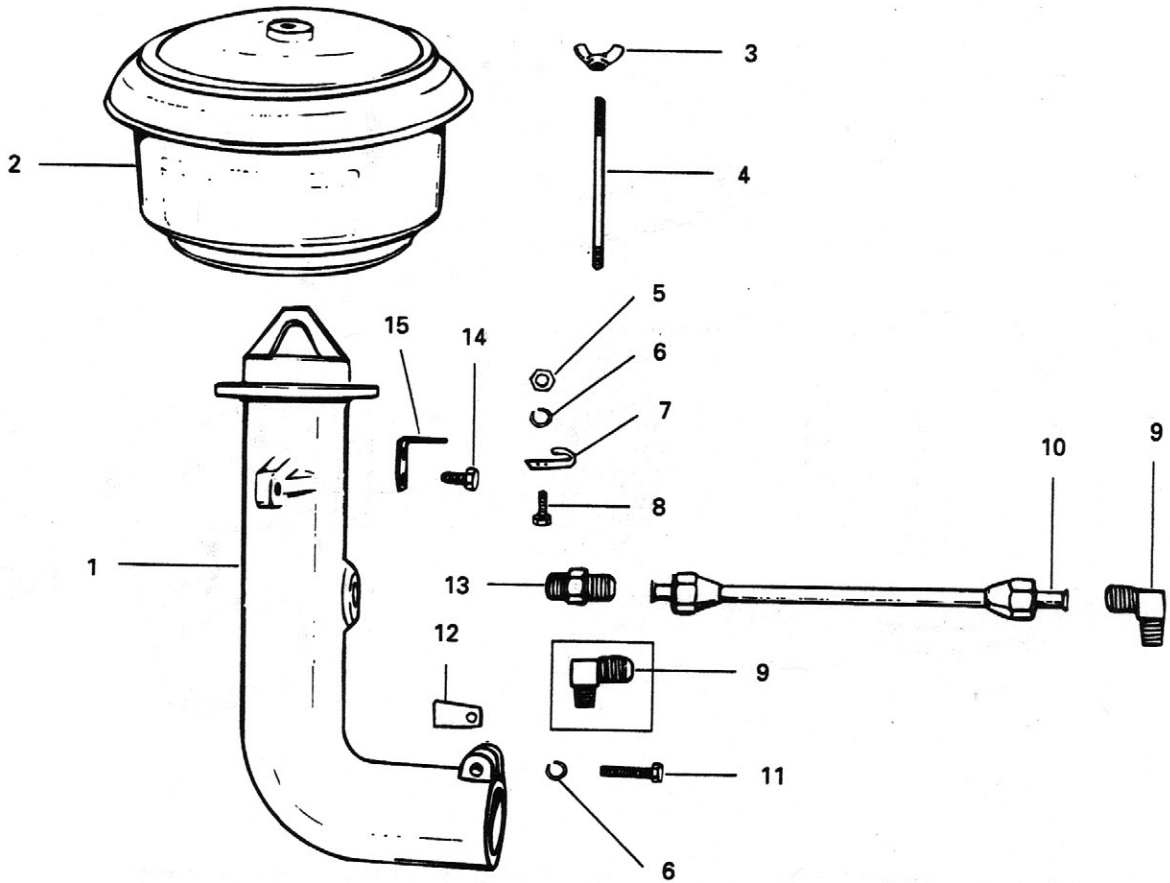
USE WITH MODELS S10D, S12D, S14D (Previous to engine serial no. 5,675,598)



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PD147	Wing nut .....	1	—	BI383A	Air cleaner bracket, for Zenith carburetor .....	1
2	LO24	Air cleaner, oil bath type (service parts include 3-7) .....	1	13	LL168	Breather tube, standard .....	1
3	81-179B1	Cap and filter assembly .....	1	—	LL168B	Breather tube, for horizontal mounted air cleaner .....	1
4	81-615A1	Filter gasket .....	1	14	QD828	Gasket, for Zenith carburetor ...	1
5	SD165	Instruction decal .....	1	15	LO175	Air cleaner, dry element type (includes 16-18) .....	1
6	81-176B1K01	Oil cup .....	1	16	— — —	Cover .....	1
7	QD540	Base gasket, Wisconsin part no. ....	1	17	SD295	Instruction decal .....	1
8	PC591	Stud, 7-7/16" long .....	1	18	LO175B	Element .....	1
9	PE45	Lock washer, no. 10 (replaces PH312) .....	3	—	LO175C	Air cleaner, horizontal mounted .....	1
10	XD166	Screw, no. 10-32 thread x 3/4" long .....	3	—	SA137	Cap (not illustrated) .....	1
11	PF18	Plug, 1/8" pipe .....	1	—	SA154	Cover (replaces SA144) (not illustrated) .....	1
12	BI374A	Air cleaner bracket (includes RD142) .....	1				

## LO24 Oil Bath Air Cleaner Mounting Group

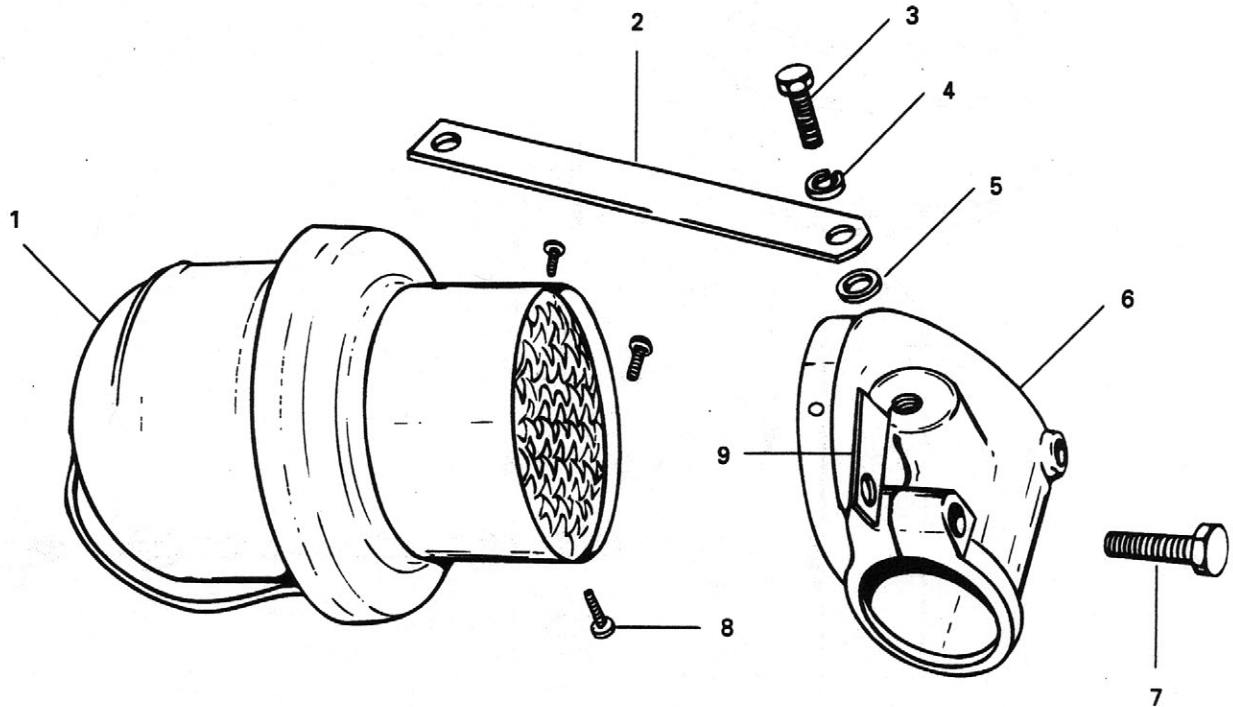
USE WITH MODELS AFH, AGH, AHH



ITEM	PART NO.	DESCRIPTION	QTY
1	BI266S1	Air cleaner bracket assembly (includes 11, 12; includes BI266) .....	1
2	LO24	Air cleaner, United Specialties (service parts include: 81-179B1 Gap & filterassy. 81-176B1K01 Oil Cup 81-615A1 Filter Gasket QD540 Base Gasket SD165 Instr. decal) .....	1
3	PD147	Wing nut, 1/4"-20 thread .....	1
4	PC372A	Stud (replaces PC372) .....	1
5	PD77	Nut, 1/4"-20 thread .....	1
6	PE3	Lock washer, 1/4" .....	1
7	PG430	Clip .....	1
8	XD4	Screw, 1/4"-20 thread x 1/2" long .....	1
9	RF296	Elbow .....	2
10	RM457	Breather line .....	1
11	XA38	Screw, 1/4"-20 thread x 1" long (replaces XB20) .....	1
12	QD647	Gasket .....	1
13	RF295	Straight fitting .....	1
14	PB160	Screw, 1/4"-28 thread x 1/2" long .....	1
15	PG343	Brace .....	1



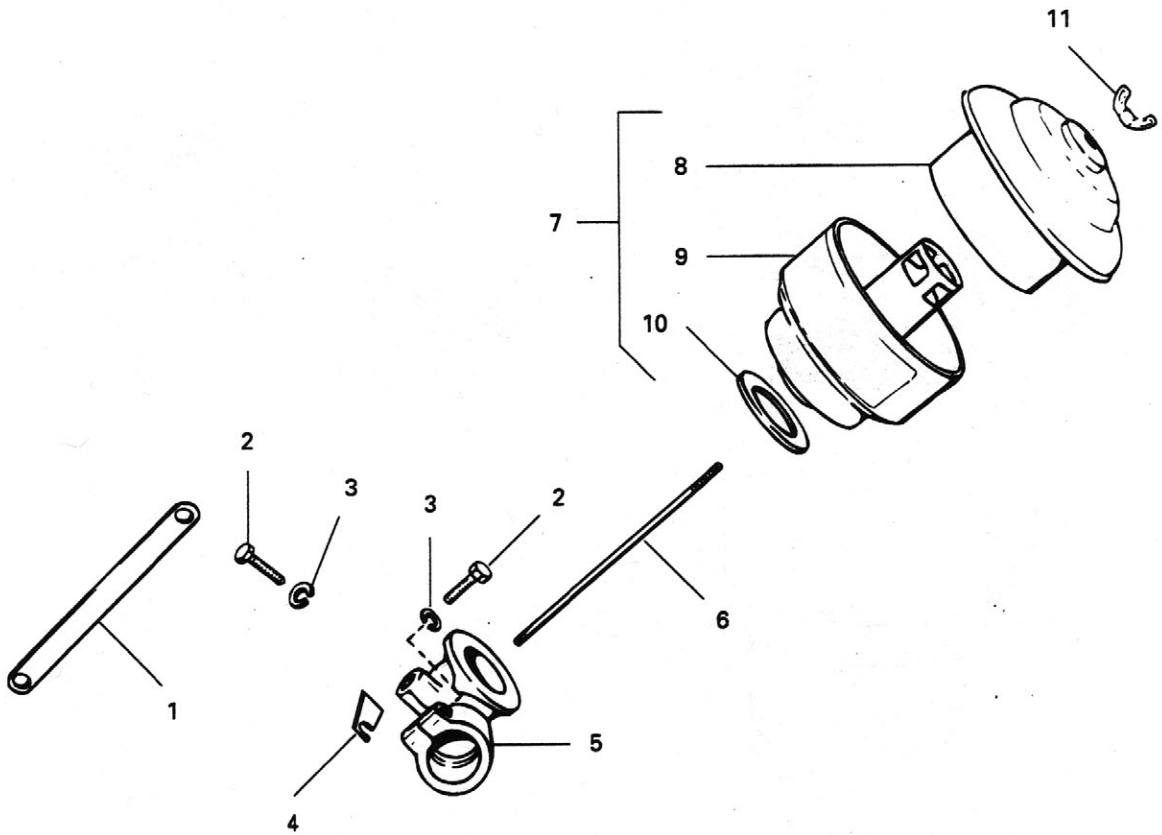
**LO28 Oil Bath Air Filter**  
**USE WITH MODELS AA, AB, ABS, ABN**



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	LO113A	Air filter, United Specialties no. T030-6325 (includes: 6263 Body assembly, A6329 Baffle, B6331 Cup fastener, 6332 Filter element, A6333 Filter screen, 9834 Oil cup assembly, A6339 Decal) (replaces LO28) .....	1	5	† HF276	Spacer, 3/16" long .....	1
2	PG1242	Support strap, flat (replaces PG287) .....	1	—	†† HF363	Spacer, 9/16" long .....	1
3	† XD6	Screw, 1/4"-20 thread x 3/4" long .....	1	6	† BI298AS1	Bracket assembly (replaces BI298S1) (includes 7-9) .....	1
—	†† XD8	Screw, 1/4"-20 thread x 1-1/4" long .....	1	—	†† BI298A1S1	Bracket assembly (replaces BI298-1S1) (includes 7-9) .....	1
4	PE3	Lock washer, 1/4" .....	1	7	XB20	Screw, 1/4"-20 thread x 1" long .....	1
				8	XA86	Screw, type "Z", no. 6 x 3/8" long .....	3
				9	QD647	Gasket .....	1
					†	With Marvel-Schebler or Stromberg carburetors, 1-3/16" diameter air horn.	
					††	With Zenith carburetor, 1-5/16" diameter air horn.	

## LO87 Upright Oil Bath Air Cleaner

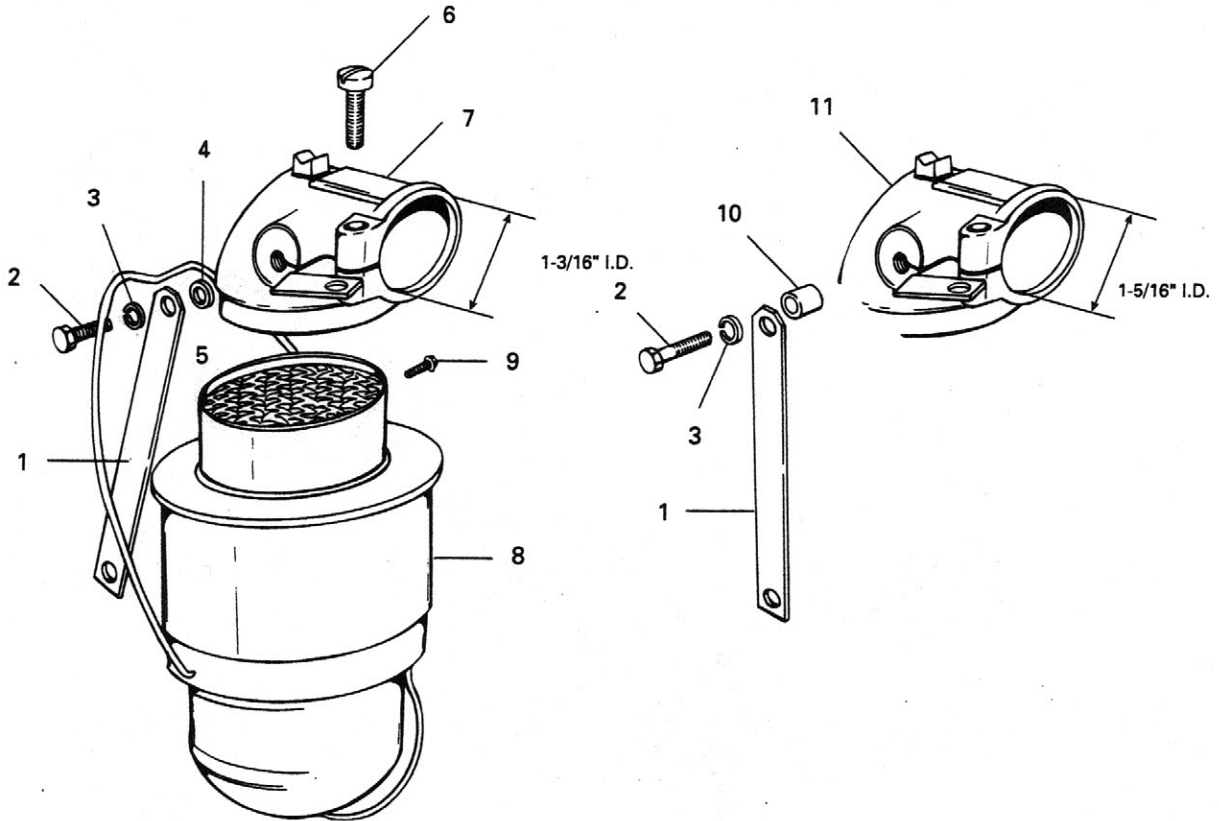
USE WITH MODELS ABN, ACN, AKN, BKN



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PG1242	Support strap, flat (with Marvel-Schebler carburetor) (replaces PE287) .....	1	6	PC445	Stud .....	1
2	XA38	Screw, 1/4"-20 thread x 1" long .....	1	7	LO87	Air cleaner, United Specialities no. 11A1 (includes 8-10) .....	1
3	PE3	Lock washer, 1/4" .....	2	8	10187K01	Upper half and filter assembly .....	1
4	QD647	Gasket .....	1	9	A10186K01	Body and center tube assembly (includes SD165) .....	1
5	BI289S1	Air cleaner bracket assembly, 1-3/16" air horn (for Marvel-Schebler carburetor) (includes 2-4, 6; includes BI289) .....	1	10	A10153	Gasket, Wisconsin no. QD744A .....	1
—	BI289-1S1	Air cleaner bracket assembly, 1-5/16" air horn (for Zenith carburetor) .....	1	11	PD147	Wing nut, 1/4"-20 thread .....	1

## LO113A Standard Oil Bath Air Cleaner

USE WITH MODELS ACN, AK, AKS, AKN, BKN



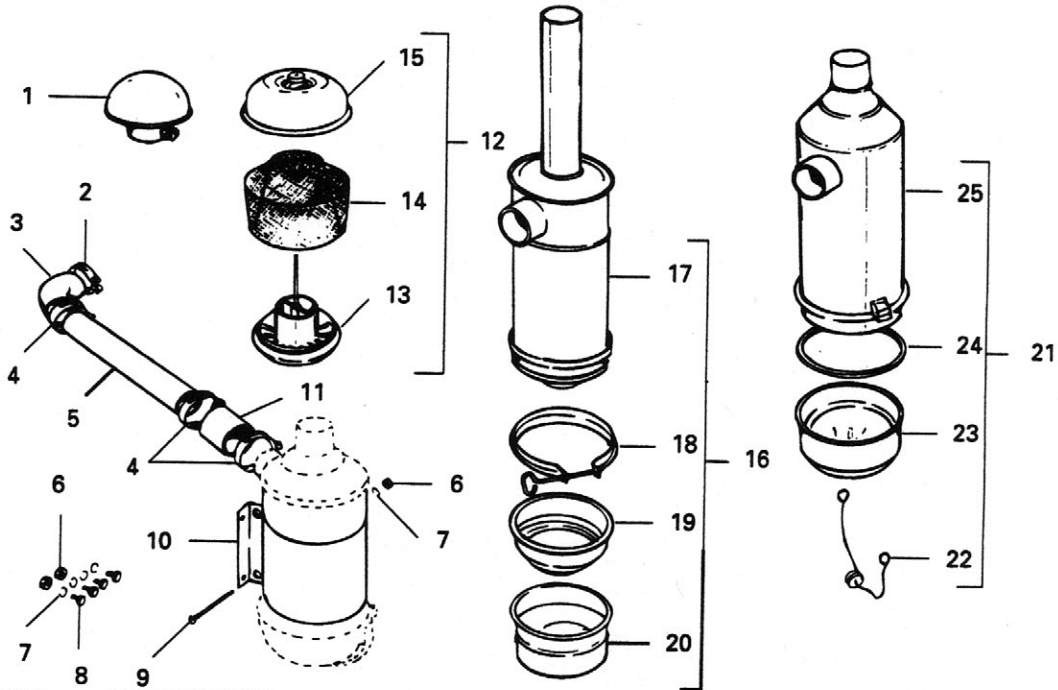
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PG1242	Support strap, flat (replaces PG287) .....	1	8	LO113A	Air filter (includes 81-1316B1K01 Body 81-417A1K10 Baffle 81-1317B1 Oil Cup w/decals 81-B6331 Cup fastener 81-A6339 Decal 81-229B7K01 Body bail) (replaces LO113, but remove body bail wire and use 3 XA86 screws for mounting) .....	1
2	XD6	Screw, 1/4"-20 thread x 3/4" long .....	2	9	XA86	Screw, no. 6 x 3/8" long (LO113, Type Z) (for mounting without body bail wire) .....	3
—	†† XD8	Screw, with spacer, 1/4"-20 thread x 1-1/4" long .....	2	10	†† HF363	Spacer, 9/16" long (obsolete) ...	1
3	PE3	Lock washer, 1/4" .....	2	11	†† BI298A1S1	Bracket assembly (includes 5, 6) (replaces BI2981S1) .....	1
4	† PH84	Spacer, 1/16" long (obsolete) ...	1				
5	QD647	Gasket .....	1				
6	XA38	Screw, 1/4"-20 thread x 1" long .....	1				
7	† BI298AS1	Bracket assembly (includes 5,6) (replaces BI298S1) .....	1				

† With Marvel-Schebler or Stromberg carburetors, 1-3/16" diameter air horn.

†† With Zenith carburetor, 1-5/16" diameter air horn.

# LO157-1, LO64 (Obsolete) Side Mount Air Cleaners

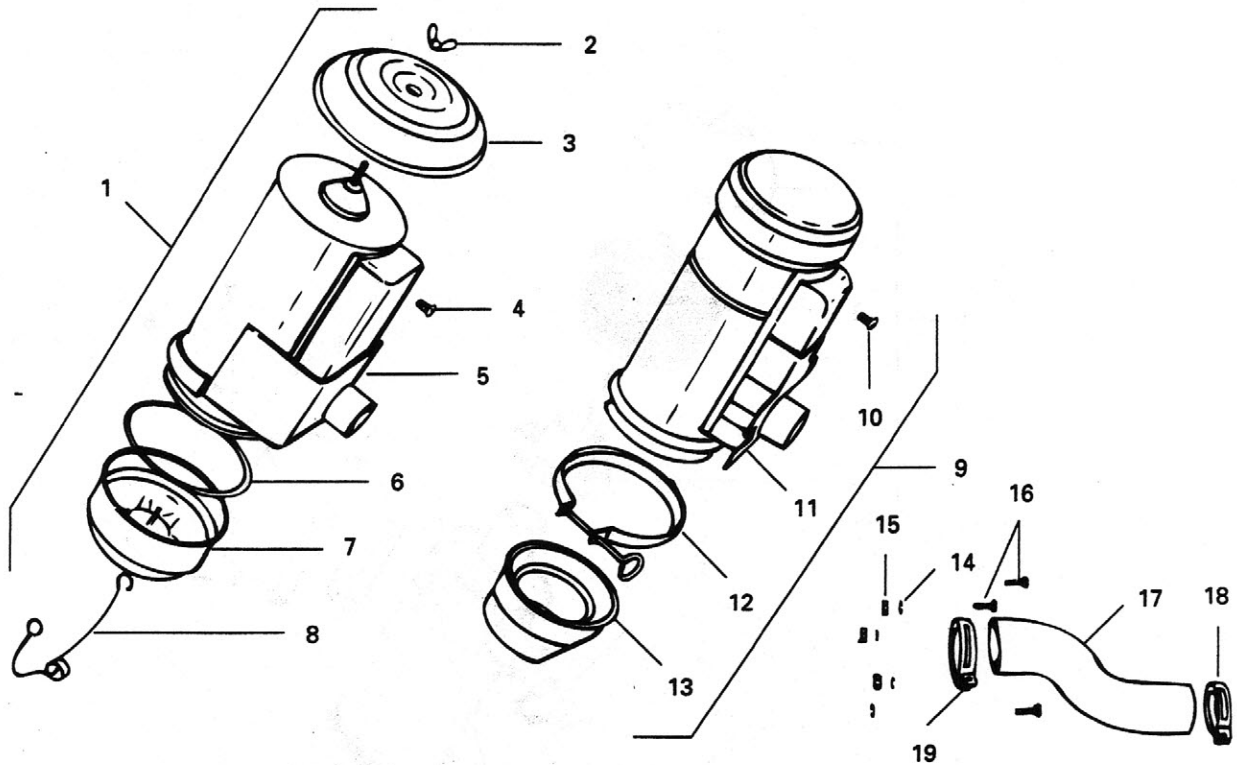
USE WITH MODELS VE4D, VF4D



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	LO96	Stack cap, for United Specialties air cleaner .....	1	14	P20115	Body .....	1
—	LO86	Stack cap, for Donaldson air cleaner .....	1	15	P20116	Cover assembly .....	1
2	LK11	Hose clamp, 1-7/8" I.D. ....	1	16	LO157-1S1	Air cleaner, 2-1/2" stack (optional) (Donaldson no. FGA04-2511) (replaces LO85-1) (service parts include 17-20) ....	1
3	LL67	Rubber elbow .....	1	17	LO157-1S1	Body (order complete air cleaner) .....	1
4	LK8	Hose clamp, 2-1/8" I.D. ....	3	18	P2846	Clamp assembly .....	1
5	LJ120	Tube .....	1	—	P3507	Oil cup assembly (must be used for service on LO85, LO85-1) .....	1
6	PD77	Nut, 1/4"-20 thread .....	4	19	P15463	Inner oil cup .....	1
7	PE3	Lock washer, 1/4" .....	6	20	P14889	Outer oil cup .....	1
8	XD4	Screw, 1/4"-20 thread x 1/2" long .....	4	21	LO64S1	Air cleaner (Obsolete) (United Specialties no. CT50-14920) (for complete replacement order LO157-1S1) (service parts include 22-25) (optional) .....	1
9	XA74	Screw, 1/4"-20 thread x 2-1/4" long .....	2	22	B9982	Roller and bail assembly .....	1
10	PG328	Strap, 5" I.D. (for United Specialties air cleaner) .....	1	23	B10141	Oil cup and baffle assembly ....	1
—	PG291	Strap, 4-3/8" I.D. (for Donaldson air cleaner) .....	1	24	A9986	Gasket .....	1
11	LL27	Rubber hose .....	1	25	15114	Body assembly (less fittings) ...	1
12	LO114	Pre-cleaner, collector type (Donaldson no. PBH00-0215, replaces Donaldson no. H215) (service parts include 13-15) (optional) .....	1				
13	P20120	Sleeve assembly .....	1				

## LO158S2, LO66S1 (Obsolete) Air Cleaners

USE WITH MODELS VE4D, VF4D

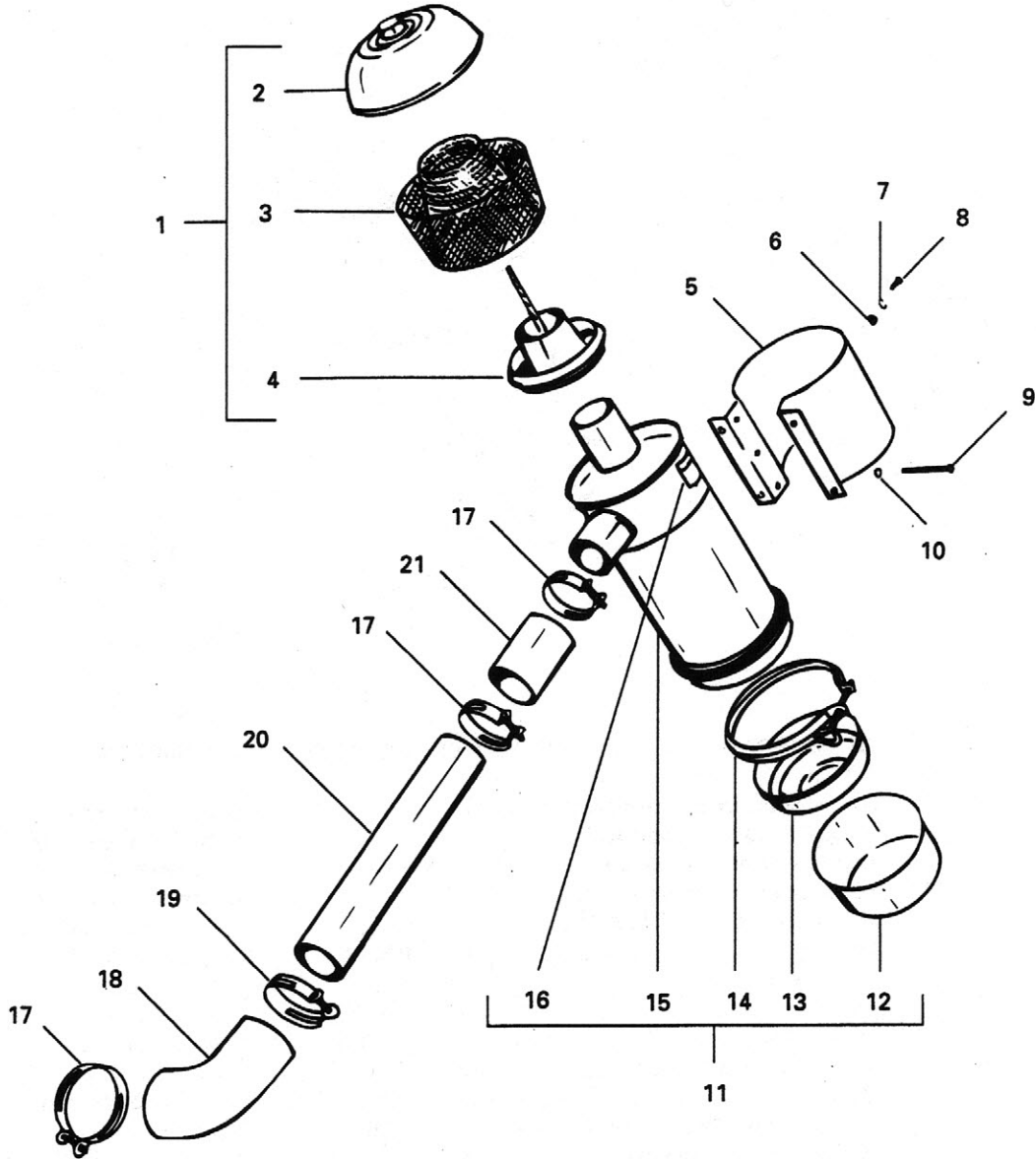


ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	LO66S1	Air cleaner, United Specialties no. CT50-10505 (optional) (service parts include 2-8) (Obsolete) (for complete replacement use LO158S2) .....	1	10	----	Support screw, 5/16"-18 thread x 1/2" long .....	1
2	A1317	Wing nut .....	1	11	* ----	Body assembly (order complete air filter) .....	1
3	A10713	Top cap and screw assembly .....	1	12	P9595	Clamp assembly .....	1
4	A10962	Screw .....	1	—	P10498	Oil cup assembly (must be used on LO97 for service) .....	1
5	C10724	Body assembly (less fittings) ...	1	—	P15463	Inner oil cup .....	1
6	A9986	Gasket .....	1	13	P14889	Outer oil cup .....	1
7	A10141	Oil cup and baffle assembly ....	1	14	PE3	Lock washer, 1/4" .....	1
8	B9982	Roller and bail assembly .....	1	15	PD77	Nut, 1/4"-20 thread .....	4
9	LO158S2	Air cleaner, 4-3/8" diameter (optional) (Donaldson no. FGA04-2512) (service parts include 10-13) (replaces LO97; interchangeable) .....	1	16	XD6	Screw, 1/4"-20 thread x 3/4" long .....	4
				17	LL64	Rubber elbow .....	1
				18	LK11	Hose clamp, 1-7/8" I.D. ....	1
				19	LK8	Hose clamp, 2-1/8" I.D. ....	1

\* Not serviced separately.

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**LO159-4S1, LO185S1 Air Cleaner Groups**



## LO159-4S1, LO185S1 Air Cleaner Groups

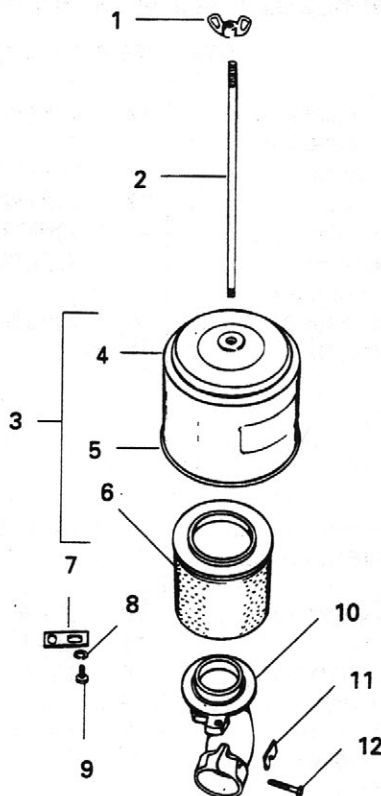
USE WITH MODELS V465D, V460D, V461D (see pg. 18)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	LO115A	Pre-cleaner, Donaldson no. PBH00-0453 (V460D, V461D) (service parts include 2-4) .....	1	12	22P17244	Outer oil cup (V460D, V461D) .....	1
—	LO127A	Pre-cleaner, Donaldson no. PBH00-0234 (V465D) (service parts include 2-4) .....	1	—	22P17703	Outer oil cup (V465D) .....	1
2	22P20648	Cover assembly (V465D) .....	1	13	22P17242	Inner oil cup (V460D, V461D) ...	1
3	22P20115	Body (V460D, V461D) .....	1	—	22P17702	Inner oil cup (V465D) .....	1
—	22P20227	Body (V465D) .....	1	14	22P2706	Clamp assembly (V460D, V461D) .....	1
4	22P10-3589	Sleeve assembly (V460D, V461D) .....	1	—	22P2691	Clamp assembly (V465D) .....	1
5	PG512	Strap (V460D, V461D) .....	1	15	* — — —	Body assembly (LO90-5S1 air cleaner, no. A552, for V460D, V461D engines previous to serial no. 3477983, replaced by LO159-4S1; interchangeable) .....	1
—	PG456B	Strap (V465D) .....	1	—	22P8723	Oil cup assembly (must be used on LO90-5S1 for service) .....	1
6	PD78	Nut, 5/16"-18 thread .....	3	16	SD161	Decal .....	1
7	PE4	Lock washer, 5/16" .....	4	17	LK24	Hose clamp, 2-1/4" I.D. ....	3
8	XD14	Screw, 5/16"-18 thread x 5/8" long .....	4	18	LL89	Rubber elbow .....	1
9	XA74	Screw, 1/4"-20 thread x 2-1/4" long (2 required for V461D) .....	3	19	LK9	Hose clamp, 2-3/8" I.D. ....	1
10	PD198	Lock nut, 1/4"-20 thread (2 required for V461D) .....	3	20	LJ131	Tube .....	1
11	LO159-4S1	Oil bath air cleaner, Donaldson no FGA05-2522 (V460D, V461D) (service parts include 12-16) ....	1	21	LL30A	Rubber hose .....	1
—	LO185S1	Oil bath air cleaner, Donaldson FGA06-0022 (V465D) (service parts include 12-16) .....	1				

\* Not serviced separately.

## LO173, LO194 Air Cleaner Groups

USE WITH MODELS TRA10D, TR10D, TRA12D

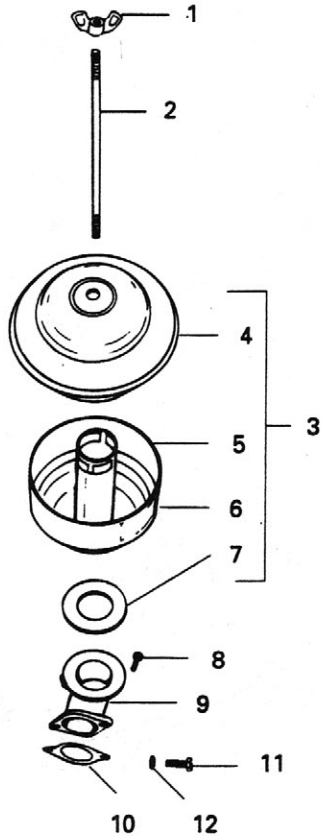


ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1.	PD147	Wing nut .....	1	8	PE3	Lockwasher, 1/4"	
2	PC598	Stud, 8-7/8" long (TRA10D, TR10D) .....	1	—	PE4	Lock washer, 5/16"	1
3	LO173	Air cleaner (TRA10D, TR10D) (includes 4-6) .....	1	9	PB160	Screw, 1/4"-28 thread x 1/2" long (TRA10D, TR10D) .....	2
—	LO194	Air cleaner (TRA12D) (includes 4-6; includes LO194C, LO194E, QF119)	1	10	BI375CS1	Air cleaner bracket assembly (TRA10D, TR10D, optionally furnished on TRA12D) (includes 1, 2, 7-9, 11, 12; includes LL178-4) (replaces BI375AS1) .....	1
4	LO173A	Housing (TRA10D, TR10D) (obsolete) .....	1	11	QD647	Gasket (TRA10D, TR10D) .....	1
—	LO194D	Housing (TRA12D) (obsolete) .....	1	12	XD8	Screw, 1/4"-20 thread x 1-1/4" long (TRA10D, TR10D) ...	1
5	SD276	Instruction decal (TRA10D, TR10D) .....	1				
—	SD308	Instruction decal (TRA12D) .....	1				
6	LO173B	Element (TRA10D, TR10D) .....	1				
—	LO194A	Element (TRA12D) .....	1				
7	PG1156	Brace (TRA10D, TR10D) (TRA12D with Zenith carburetor) .....	1				



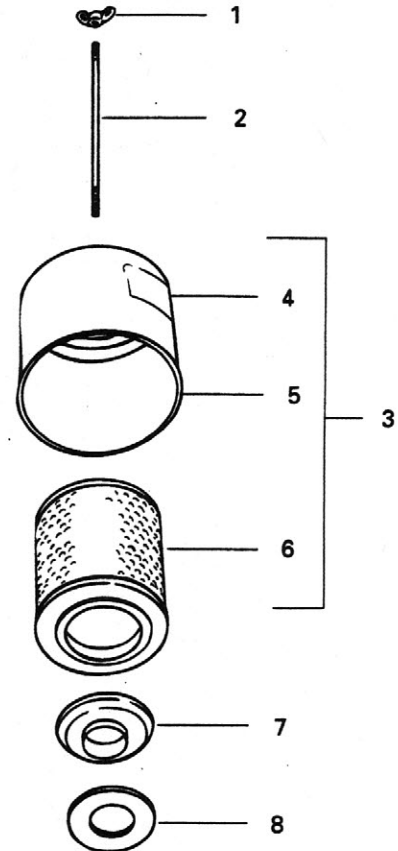
## LO87 Air Cleaner (Obsolete)

USE WITH MODELS S7D, S8D



## LO173 Air Cleaner

USE WITH MODELS S7D, S8D

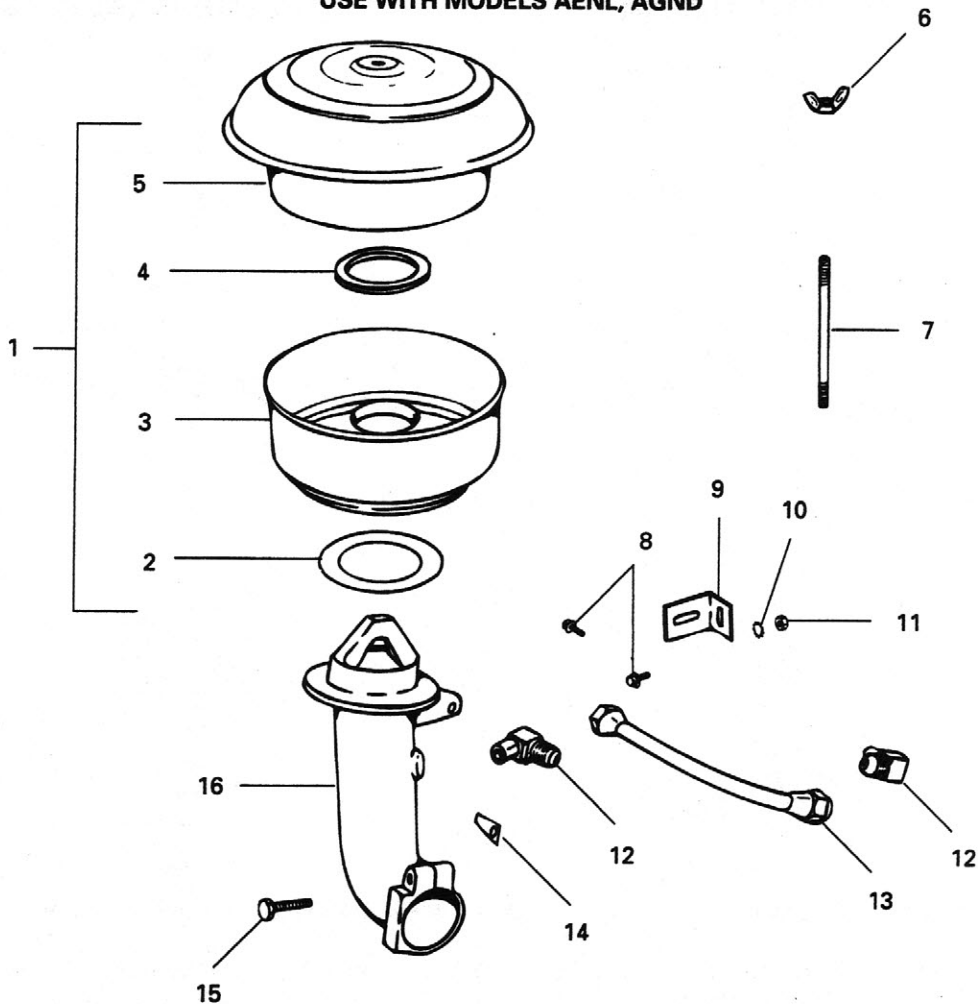


ITEM	PART NO.	DESCRIPTION	QTY
1	PD147	Wing nut .....	1
2	PC561	Stud, 6-7/16" long .....	1
3	LO87	Air cleaner, oil bath type (used with Zenith carburetor) (obsolete) (includes 4-7) .....	1
4	81A10187K01	Cover and element assembly .....	1
5	81A10186K01	Body and tube assembly .....	1
6	SD165	Instruction decal .....	1
7	QD744A	Gasket .....	1
8	XA9	Screw, no. 10-32 thread x 5/8" long .....	2
9	BI364CS3	Bracket (for Zenith carburetor) (includes BI364C, LL178-7) .....	1
10	QD800	Gasket (with Zenith carburetor) .....	1
11	XD6	Screw, 1/4"-20 thread x 3/4" long .....	2
12	PE3	Lock washer, 1/4" .....	2

ITEM	PART NO.	DESCRIPTION	QTY
1	PD147	Wing nut, 1/4"-20 thread .....	1
2	PC600	Stud, 7" long .....	1
3	LO173	Air cleaner, dry element type (used with Zenith carburetor) (includes 4-6) .....	1
4	SD276	Instruction decal .....	1
5	LO173A	Cover .....	1
6	LO173B	Element .....	1
7	BI377	Adapter, for Zenith carburetor dry element air cleaner .....	1
8	QD744A	Gasket, Zenith carburetor .....	1

## LO175, LO24 Air Cleaner Assemblies

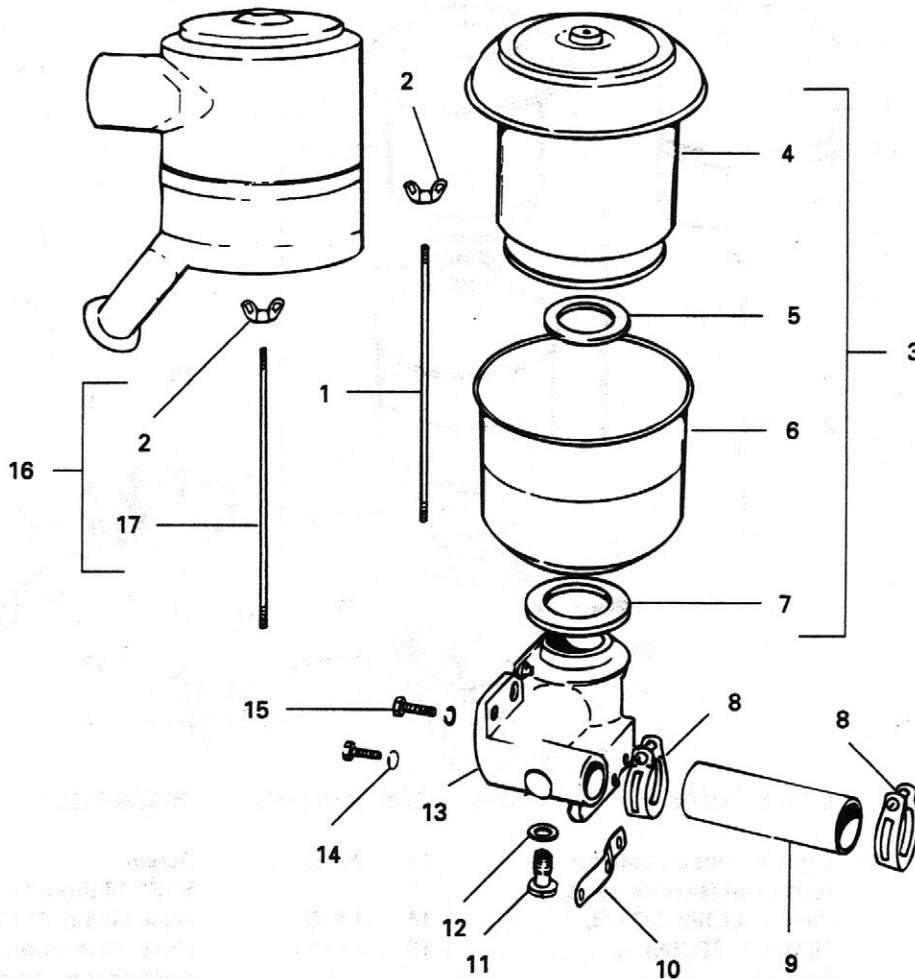
USE WITH MODELS AENL, AGND



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	LO24	Air cleaner, oil bath type (optional) (service parts include 2-5) .....	1	11	PD9	Nut, 1/4"-28 thread .....	1
2	QD540	Base gasket .....	1	—	PD77	Nut, 1/4"-20 thread (was PD9 used with PB184) .....	1
3	81-176B1K01	Oil cup .....	1	12	RF296	Elbow .....	2
4	81-615A1	Filter gasket .....	1	13	RM494	Breather line .....	1
5	81-179B1	Cap and filter assembly .....	1	14	QD647	Gasket .....	1
6	PD147	Wing nut, 1/4"-20 thread .....	1	15	XD8	Screw, 1/4"-20 thread x 1-1/4" long (replaces XB20) .....	1
7	PC372A	Stud .....	1	16	BI291-6S1	Air cleaner bracket assembly, 1-5/8" O.D. (includes 14, 15; includes BI291-6) (replaces BI291S1, not interchangeable unless carburetor is changed) .....	1
8	PB184	Screw, 1/4"-26 thread x 5/8" long .....	1				
—	XA123	Screw, 1/4"-20 thread x 3/4" long .....	1				
9	PG343C	Support clip .....	1				
10	PE74	Lock washer, 1/4" .....	1				

## LO183BS1, LO187S Air Cleaner Groups

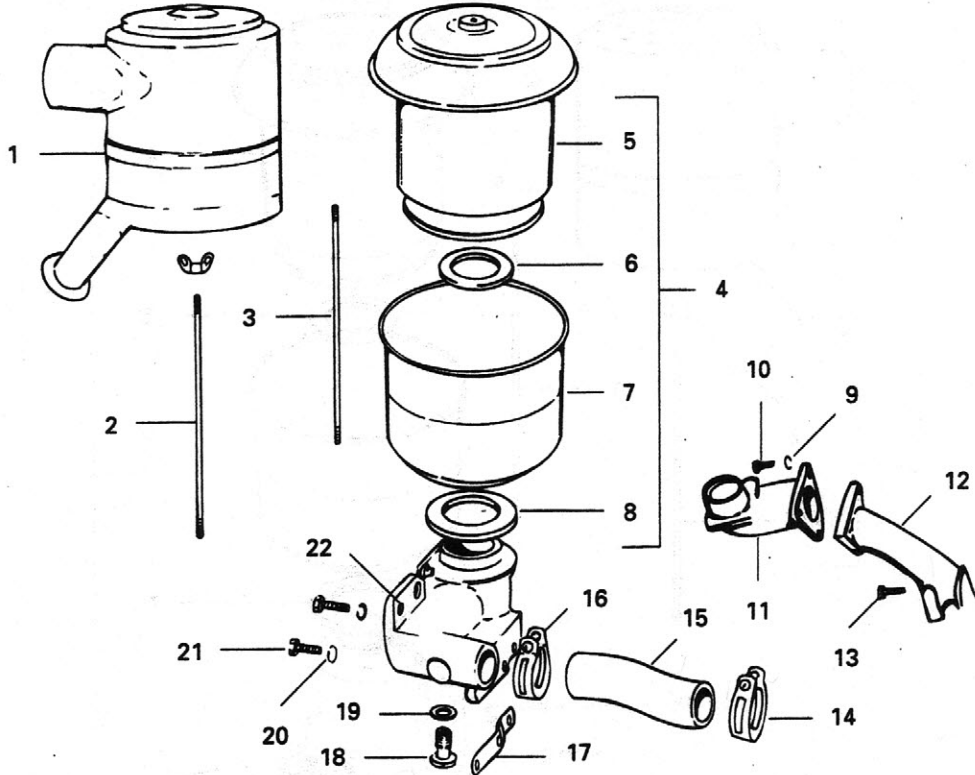
USE WITH MODELS TE, TF, TFD



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PC447	Stud .....	1	12	QD669	Gasket .....	1
2	PD147	Wing nut, 1/4"-20 thread .....	1	13	BI286S1	Air cleaner bracket assembly (includes 1, 11; includes BI286) .....	1
3	LO83BS1	Oil bath air cleaner, United Specialties no. T72B21 (service parts include 4-7) .....	1	14	PE4	Lock washer, 5/16" .....	2
4	179B4	Cap and filter assembly .....	1	15	XD17	Screw, 5/16"-18 thread x 1" long .....	2
5	615A1	Filter gasket .....	1	16	LO187S6	Dry type Tri-Phase air cleaner (optional) (includes 2, 17; includes LL189, LO188, QD546, SD258) .....	1
6	176B18K01	Oil cup assembly .....	1	17	PC468	Stud .....	1
7	QD540	Mounting gasket .....	1				
8	LK5	Hose clamp, 1-5/8" I.D. ....	2				
9	LL92	Hose connection .....	1				
10	PC667	Gasket .....	1				
11	LO84C	Breather assembly (includes item 12) (replaces LO84) .....	1				

## LO83BS1, LO187S1 Air Cleaner Groups

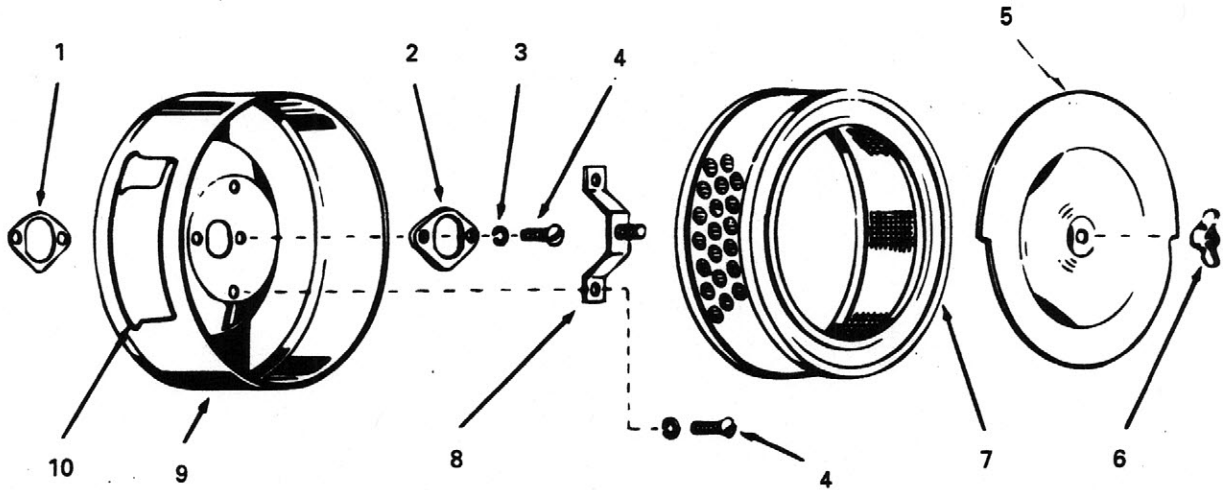
USE WITH MODELS TH, THD, TJD



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	LO187S1	Dry element air cleaner (optional) (service parts include LL189, LO188, QD540A, SD258) .....	1	13	XD19	Screw, 5/16"-18 thread x 1-1/4" long ....	1
2	PC598	Stud, 8-7/8" long .....	1	14	LK10	Hose clamp, 2" I.D. ....	1
3	PC447	Stud, 8-3/8" long .....	1	15	LL125	Hose connection, for open engine air cleaner .....	1
4	LO83BS1	Oil bath air cleaner (service parts include 5-8) .....	1	—	LL126	Hose connection, for power unit .....	1
5	81-179B4	Cap and filter unit .....	1	16	LK11	Hose clamp, 1-7/8" I.D. ....	1
6	81-615A1	Filter gasket .....	1	17	QD667	Gasket .....	1
7	81-176B18	Oil cup assembly .....	1	18	LO84C	Breather assembly (TH, THD) (includes item 19) .....	1
8	QD540	Base gasket .....	1	19	QD669	Gasket .....	1
9	PE4	Lock washer, 5/16" .....	3	20	PE4	Lock washer, 5/16" .....	2
10	XD17	Screw, 5/16"-18 thread x 1" long .....	3	21	XD17B	Screw, 5/16"-18 thread x 1" long .....	2
11	BI176-5	Bracket .....	1	22	BI286S1	Bracket assembly, oil bath air cleaner (TH, THD) (includes item 3) (for dry element air cleaner, substitute PC598 for PC447) .....	1
12	BI292S1	Air cleaner connection assembly (TH, THD) (includes item 18; includes BI292, SA52) .....	1	—	BI286-27S1	Bracket assembly (TJD)	1
—	BI292-4S1	Connection assembly (TJD) (includes BI292, SA52) .....	1				

## LO194 Air Cleaner Group

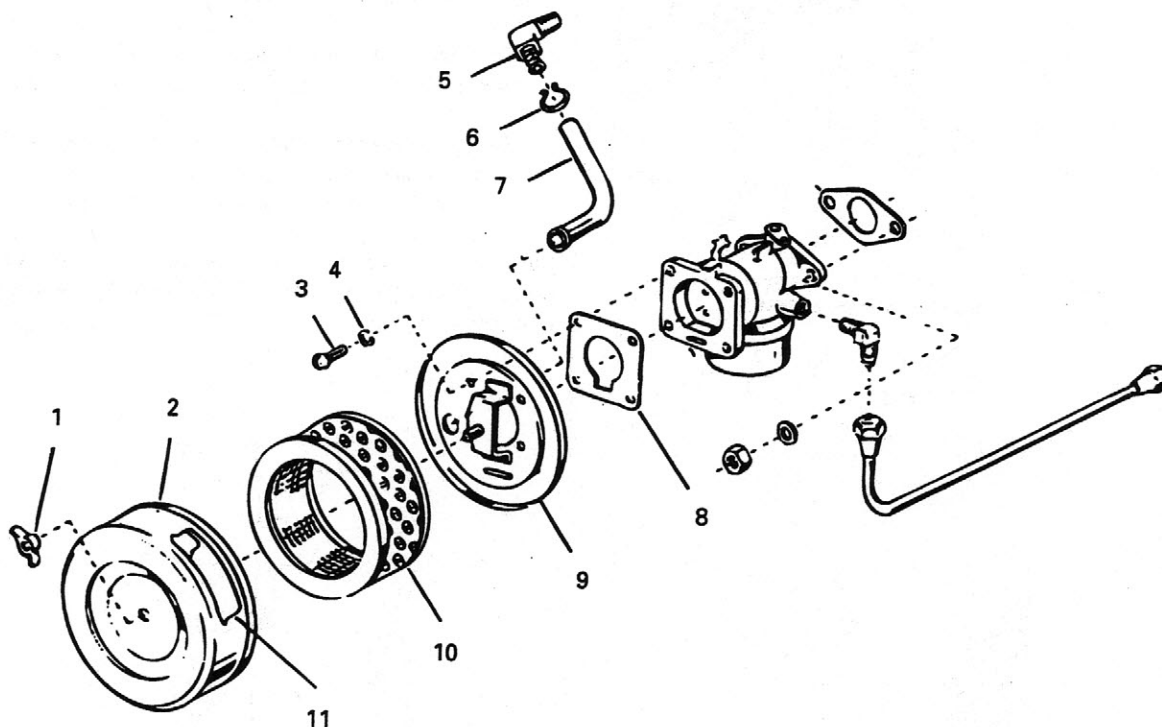
USE WITH MODEL S8D (Beginning with engine serial number 5558441)



ITEM	PART NO.	DESCRIPTION	QTY
1	QD849	Gasket .....	1
2	QF119	Spacer .....	1
3	PE14	Lock washer, no. 10 .....	4
4	XA7	Screw, no. 10-32 thread x 3/8" long .....	4
5	LO194C	Cover .....	1
6	PD147	Wing nut .....	1
7	LO194A	Element .....	1
8	LO194E	Bracket .....	1
9	LO194D	Housing .....	1
10	SD308	Instruction decal .....	1

## LO194A, LO194F, LO194H Air Cleaner Groups

USE WITH MODEL W2-880



ITEM	PART NO.	DESCRIPTION	QTY
1	PD147	Nut .....	1
2	LO194F	Housing .....	1
3	XA8	Screw, no. 10-32 thread x 1/2" long .....	4
4	PE14	Lock washer, no. 10 .....	4
5	RF1519	Elbow .....	1
6	LK25	Hose clamp .....	1
7	LL208	Breather line .....	1
8	QD860	Gasket .....	1
9	LO194H	Adapter .....	1
10	LO194A	Element .....	1
11	SD308	Decal .....	1

## Dry Element Air Cleaner Kits, Tri-Phase And Cyclopac

ADAPTABLE TO WISCONSIN SINGLE, TWO AND FOUR CYLINDER MODELS (Not available for house units)

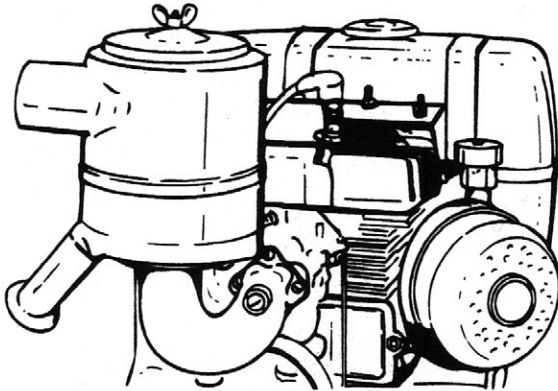


Fig. 1. TRI-PHASE AIR CLEANER FOR SINGLE AND TWO CYLINDER MODEL ENGINES

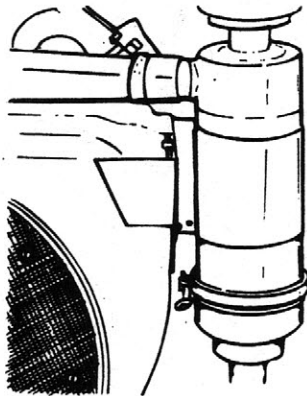


Fig. 2. CYCLOPAC AIR CLEANER FOR FOUR CYLINDER ENGINES

### GENERAL INFORMATION, Fig. 1 and Fig. 2

The United Specialties Tri-Phase and Donaldson Cyclopac dry element air cleaners are two of the most advanced and efficient type cleaners, designed to give maximum engine performance in extreme dusty and dirty conditions. The automatic dust discharge valve at the bottom of cleaner bowl minimizes the amount of attention and service normally required by other air cleaners.

### MAINTENANCE

1. Squeeze rubber dust discharge valve once or twice a day, to make certain it is not plugged with dirt or chaff. Valve can easily be removed for cleaning.

2. Inspect cup of Cyclopac air cleaner daily until experience indicates the frequency of dust cup service. Remove baffle from cup and dump dust.
3. Keep weather cap, or pre-cleaner at air intake, clean and free of any obstruction.
4. The filter element is easily removed and should be cleaned according to the service instructions.
5. The paper element can either be dry-cleaned with compressed air, or washed with water. Do not use gasoline, kerosene or solvent. Do not oil element.

Carry a spare element in a dust-proof container for quick replacement in the field. Clean dirty element when convenient.

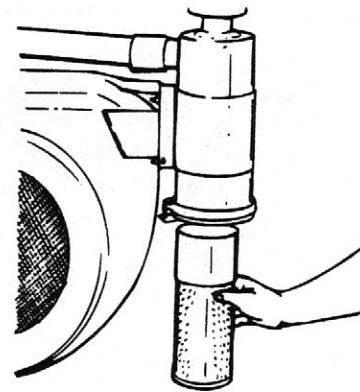


Fig. 3. ELEMENT REMOVAL

### CYCLOPAC INSTALLATION, Fig. 3

When installing new or clean Cyclopac element, inspect wing nut washer — tighten element securely in place. Remove baffle from dust cup and clean. In reassembly tighten cup clamp securely.

Note: Models VE4D, VF4D and VH4D require a minimum clearance of 6-1/4" from bottom of discharge valve to engine base, for removal of filter element for service.

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## Dry Element Air Cleaner Kits, Tri-Phase And Cyclopac (Cont.)

ADAPTABLE TO WISCONSIN SINGLE, TWO AND FOUR CYLINDER MODELS (Not available for house units)

### SERVICE INSTRUCTIONS

Service paper filter element once every week under normal conditions. Excessive smoke or loss of power are good indications that the element should be replaced. A better method is to measure air restriction, from air cleaner to carburetor, with a restriction indicator (Wisconsin Motor part no. LP59A).

The restriction indicator can be permanently installed by tapping into the steel tube connecting the air cleaner and carburetor (see Fig. 4).

Clean element of Tri-Phase air cleaner per instructions on decal mounted to cleaner cover. Procedures for the Cyclopac air cleaner are inside, printed on the element.

New elements are available at your Wisconsin Motor dealer. Refer to parts list for part number of replacement element.

Clean the inside and outside of air cleaner of all accumulated dirt. Check for air leaks caused by loose connections.

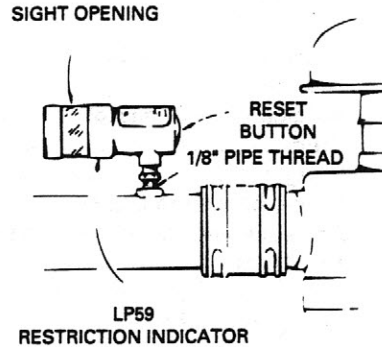


Fig. 4. RESTRICTION INDICATOR MOUNTING



## Tri-Phase Dry Element Air Cleaner Kits

**FOR CONVERTING FROM OIL BATH AIR CLEANER (Simply replace the parts now on engine with the corresponding parts included in kit)**

### LO187S2 — USE WITH MODELS ACN, BKN (Zenith carburetor)

PART NO.	DESCRIPTION	QTY
BI344-1	Bracket, 1-5/16" air horn .....	1
BI377	Adapter .....	1
LO187	Air cleaner with gasket .....	1
PC619	Stud .....	1
PD147	Wing nut .....	1
PG338	Brace, bracket to crankcase .....	1
PG1238	Brace, cleaner to cylinder head .....	1
QD647	Bracket clamp gasket .....	1
QD744A	Adapter to bracket gasket .....	1
SD258	Instruction decal .....	1
PD77	Nut .....	1
PE3	Lock washer, brace mounting nut .....	1
PE4	Lock washer, brace mounting screw .....	1
XA38	Screw, bracket clamp .....	1
XA140	Screw, cylinder head and brace mounting .....	1
QD540A	Gasket .....	1

### LO187S3 — USE WITH MODEL S8D

PART NO.	DESCRIPTION	QTY
BI377	Adapter .....	1
LF142	Spacer .....	1
LO187	Air cleaner with gasket .....	1
PC619	Stud .....	1
PD147	Wing nut .....	1
PG1237	Brace .....	1
QD744A	Adapter to bracket gasket .....	1
QD800	Carburetor air horn spacer gasket .....	2
SD258	Instruction decal .....	1
PD77	Nut .....	1
PE3	Lock washer .....	1
XA53	Screw, bracket and spacer to carburetor .....	2
XD5	Screw, brace to cylinder head .....	1
QD540A	Gasket .....	1

### LO187S4 — USE WITH MODELS S10D, S12D

PART NO.	DESCRIPTION	QTY
LO187	Air cleaner with gasket .....	1
PC618	Stud .....	1
PD147	Wing nut .....	1
PG1235	Support brace (drill hole) .....	1
SD258	Instruction decal .....	1
PD77	Nut .....	1
PE3	Lock washer .....	2
XD4	Screw .....	1
QD540A	Gasket .....	1

### LO187S5 — USE WITH MODELS AENL, AGND

PART NO.	DESCRIPTION	QTY
LO187	Air cleaner .....	1
PC445	Stud .....	1
PD147	Wing nut .....	1
SD258	Instruction decal .....	1
QD540A	Gasket .....	1

### LO187S6 — USE WITH MODELS THD, TJD

PART NO.	DESCRIPTION	QTY
LO187	Air cleaner .....	1
PC598	Stud .....	1
PD147	Wing nut .....	1
SD258	Instruction decal .....	1
QD540A	Gasket .....	1

### LO187 AIR CLEANER SERVICE PARTS

PART NO.	DESCRIPTION	QTY
LL189	Discharge valve .....	1
LO188	Filter element .....	1
QD540A	Base gasket .....	1
SD258	Instruction decal .....	1

## Cyclopac Dry Element Air Cleaner Kits

**FOR CONVERTING FROM OIL BATH AIR CLEANER (Simply replace the parts now on engine with the corresponding parts included in kit)**

### LO176S2 — USE WITH MODELS VE4D, VF4D, VH4D

PART NO.	DESCRIPTION	QTY
LO176	Air cleaner .....	1
LO62	Air stack cap .....	1
LJ131	Tube .....	1
LK9	Hose clamp, 2-3/8" I.D. ....	3
LK10	Hose clamp, 2" I.D. ....	1
LL18	Rubber hose .....	1
LL150	Carburetor elbow .....	1
PG512-1	Strap .....	1
SD296	Instruction decal .....	1
PD198	Lock nut .....	2
XA74	Screw .....	2

### LO176S3 — USE WITH MODEL VG4D

PART NO.	DESCRIPTION	QTY
LO176	Air cleaner .....	1
SD296	Instruction decal .....	1
PD198	Lock nut .....	2
XA74	Screw .....	2

### LO189S2 — USE WITH MODELS V461D, V465D

PART NO.	DESCRIPTION	QTY
LO189	Air cleaner .....	1
LO190	Air stack cap .....	1
LJ449	Tube .....	1
LK9	Hose clamp .....	2
LK12	Hose clamp, 2-5/8" I.D. ....	1
LK24	Hose clamp, 2-1/4" I.D. ....	1
LL190	Rubber hose .....	1
LL191	Carburetor elbow .....	1
PG1241	Strap .....	1
SD302	Instruction decal .....	1
PD198	Locknut .....	3
XA74	Screw .....	3
22P10-2510	Rubber boot for bottom cover	

### LO176, LO189 AIR CLEANER SERVICE PARTS

PART NO.	DESCRIPTION	QTY
LL192	Discharge valve .....	1
LO177	Filter element (LO176) .....	1
LO191	Filter element (LO189) .....	1
SD296	Instruction decal (LO176) .....	1
SD302	Instruction decal (LO189) .....	1

# LO163S1, LO163S2 Tri-Phase Dry Air Cleaners With Automatic Dust Unloader Maintenance And Installation Instructions

USE WITH MODELS VE4D, VF4D, VH4D (LO163S1); VG4D, V460D, V461D (LO163S2)

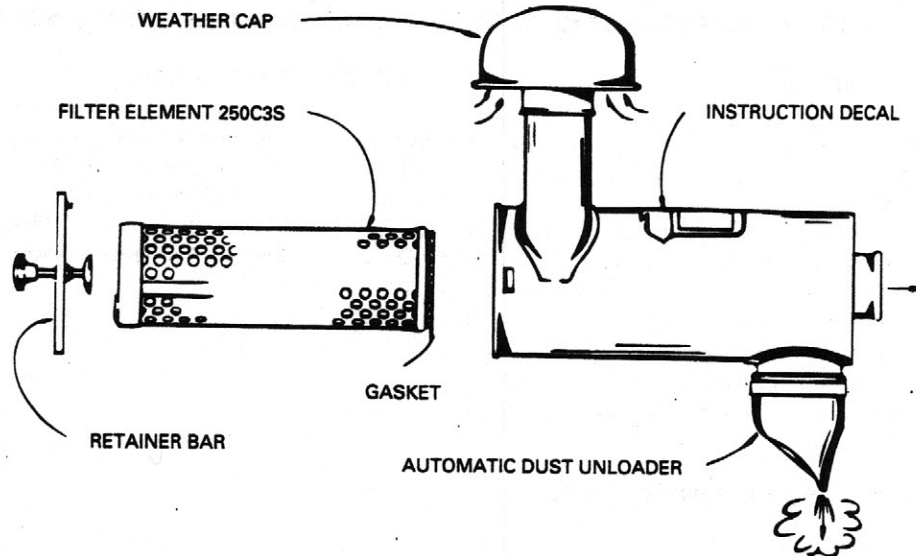


Fig. 1.

## GENERAL INFORMATION

The United Tri-Phase dry-type air cleaner was developed for engines operating in extreme dusty and dirty conditions and is one of the most advanced air cleaners to come about in recent years. Its automatic dust unloader eliminates the need of a dust cup, is almost 100 percent efficient and requires a minimum amount of service. This unit is easily adaptable to the Wisconsin 4 cylinder engine models listed above, and is used in conjunction with the oil bath air cleaner presently mounted on the engine.

## MAINTENANCE (See Fig. 1)

1. Squeeze rubber automatic dust unloader once or twice a day, to make certain it is free from dust and dirt.
2. Be sure that screen at bottom of weather cap is not obstructed.
3. The filter element is easily removed and should be cleaned according to the service instructions or those on the decal mounted to the cleaner body.

Carry a spare element in a dust-proof container for quick replacement in the field. Clean dirty element when convenient.

4. The paper element can either be dry-cleaned with compressed air, or washed with water. Do not use gasoline, kerosene or solvent. Do not oil element.

## SERVICE INSTRUCTIONS

5. Service paper filter element once every week under normal conditions or when loss of power is noted, which is usually accompanied by black smoke visible in the engine exhaust.
6. Dry Cleaning Method:  
Remove element by means of the retainer bar, and tap gently on a flat surface to remove excess dirt. Use compressed air not to exceed 90-100 pounds pressure, insert nozzle inside element and blow out dust.
7. Washing Method:  
Rinse element under faucet with cold water, then wash by repeated dipping for several minutes in a solution of luke-warm water and a mild, non-sudsing detergent. Rinse in cold water from the inside out, and allow to dry overnight before installing in air cleaner. In cold weather, protect element from freezing until dry.

Do not attempt to dry wet element with compressed air as the pressure will damage the paper element.

# LO163S1, LO163S2 Tri-Phase Dry Air Cleaners With Automatic Dust Unloader Maintenance And Installation Instructions (Cont.)

USE WITH MODELS VE4D, VF4D, VH4D (LO163S1); VG4D, V460D, V461D (LO163S2)

8. Inspect gasket on end of element. Do not use element if gasket is damaged or missing.
9. Wipe out inside of air cleaner body, before installing clean or new element. Tighten element securely in place by means of the retainer bar.

It is recommended that the filter element be replaced after 10 washings or at the end of the season, whichever comes first.

New elements are available at your Wisconsin Motor dealer. Refer to parts list for part number of replacement element.

## INSTALLATION INSTRUCTIONS (See Fig. 2)

The following instructions apply to engines with the air cleaner mounted to the right hand side of the flywheel air shroud. If engine has the oil bath air cleaner mounted on the left hand side, refer to additional instructions in the framed portion of Fig. 2.

1. Remove and discard tubing and fittings from the carburetor air horn to the air cleaner, since new connection fittings are furnished in the kit. Take oil bath air cleaner off from pad on side of shroud, by taking out the screws which mount the strap to the pad. Retain screws, nuts and lock washers for adapter plate mounting.

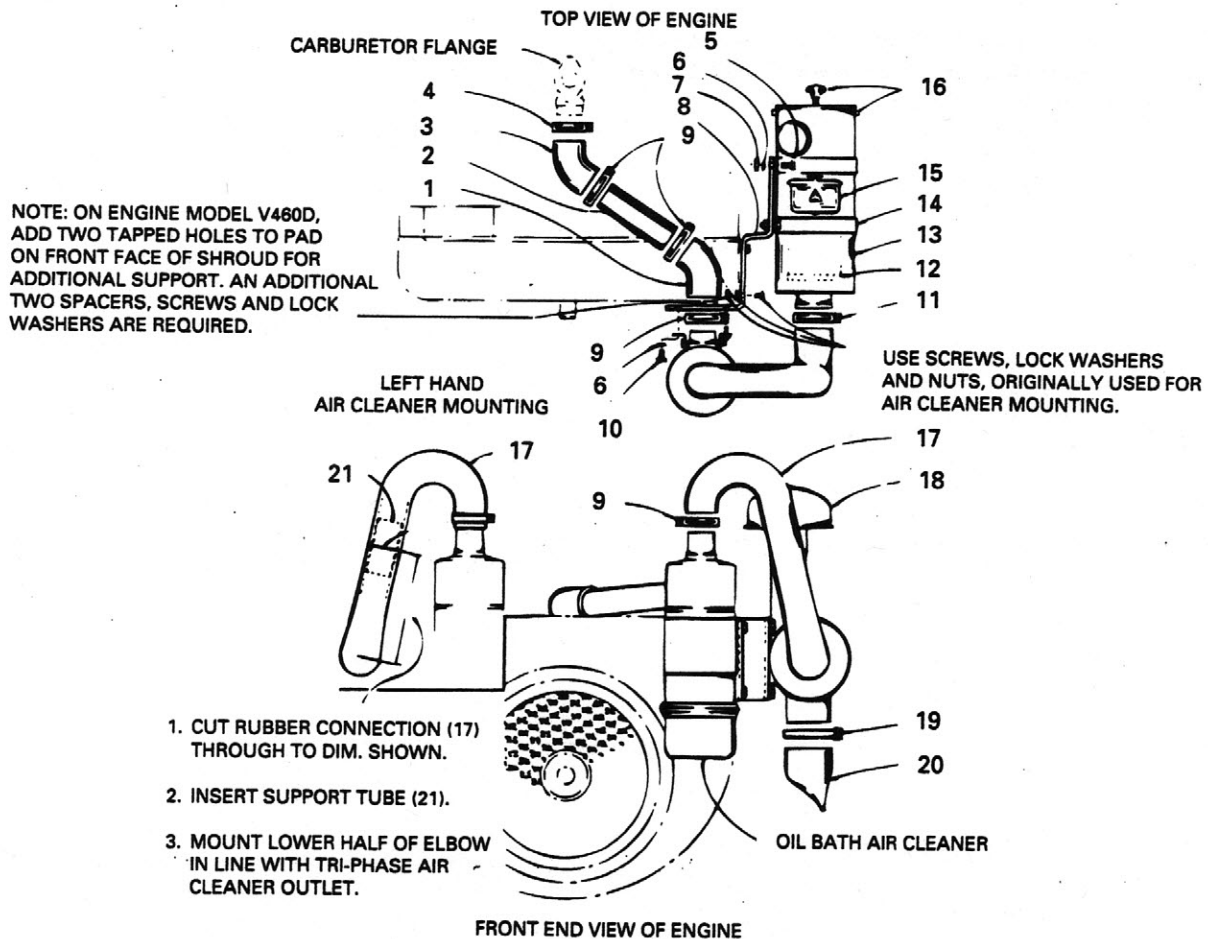


Fig. 2.

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## **LO163S1, LO163S2 Tri-Phase Dry Air Cleaners With Automatic Dust Unloader Maintenance And Installation Instructions (Cont.)**

**USE WITH MODELS VE4D, VF4D, VH4D (LO163S1); VG4D, V460D, V461D (LO163S2)**

2. Mount adapter plate (8) to the side of shroud, using the four screws, nuts and lock washers that were originally used for mounting the oil bath air cleaner, and retained in paragraph 1.  
  
**Note:** On the model V460D engine, the adapter plate (8) can be supported on the front face by adding two tapped holes to the shroud cleaner bracket. Insert two 1/4" thick spacers between the bracket and adapter plate, and secure in place with two screws and lock washers.
3. Assemble oil bath air cleaner to front face of adapter plate (8) by means of four screws and lock washers (6, 10).
4. Make connection from oil bath air cleaner to carburetor air horn using tube (2), elbows (1, 3) and hose clamps (4, 9).
5. Mount hose clamp (9) to oil bath air cleaner end of hose connection (17), and clamp (11) to Tri-Phase air cleaner end. Assemble hose to oil bath air cleaner.
6. Mount Tri-Phase air cleaner (13) to adapter plate (8) with two straps (14) and screws, lock washers and nuts (5, 6, 7). Align and press hose connection (17) to neck of Tri-Phase cleaner. Tighten hose clamps.
7. Press weather cap (18) on to Tri-Phase cleaner air intake, and mount dust unloader (20) with clamp (19) to bottom of cleaner.

## LO163S1, LO163S2 Tri-Phase Dry Air Cleaners With Automatic Dust Unloader

USE WITH MODELS VE4D, VF4D, VH4D (LO163S1); VG4D, V460D, V461D (LO163S2)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	LL121	Elbow, for air cleaner (LO163S1) .....	1	10	XD13	Screw, 5/16"-18 thread x 1/2" long (LO163S1) .....	4
—	LL109	Elbow (LO163S2) .....	1	—	XD14	Screw, 5/16"-18 thread x 5/8" long (LO163S2) .....	4
2	LJ132	Tube, for air cleaner connection (LO163S1) .....	1	11	LK12	Hose clamp, 2-5/8" I.D. ....	1
—	LJ358	Tube (LO163S2) .....	1	12	LO169	Filter element .....	1
3	LL67	Elbow, at carburetor (LO163S1) .....	1	13	LO163	Tri-Phase air cleaner (includes 12, 15, 16) .....	1
—	LL89	Elbow (LO163S2) .....	1	14	PG1058	Mounting straps .....	2
4	LK10	Hose clamp, 2" I.D. (LO163S1) .....	1	15	SD258	Instruction decal .....	1
—	LK24	Hose clamp, 2-1/8" I.D. (LO163S2) .....	1	16	193B2K030	Retainer bar assembly .....	1
5	XD15	Screw, 5/16"-18 thread x 3/4" long .....	4	17	LL159	Rubber hose connection (LO163S1) .....	1
6	PE4	Lock washer, 5/16" .....	8	—	LL158	Hose connection (LO163S2) .....	1
7	PD78	Nut, 5/16"-18 thread .....	4	18	LO125	Weather cap .....	1
8	PG1064A	Adapter plate .....	1	19	LK29	Hose clamp .....	1
9	LK8	Hose clamp, 2-1/8" I.D. (LO163S1) .....	4	20	LL155	Rubber dust unloader .....	1
—	LK9	Hose clamp, 2-3/8" I.D. (LO163S2) .....	4	21	LJ326	Tube (inserted in hose connec- tion for left hand air cleaner mounting) (LO163S1) .....	1
				—	LJ212	Tube (LO163S2) .....	1