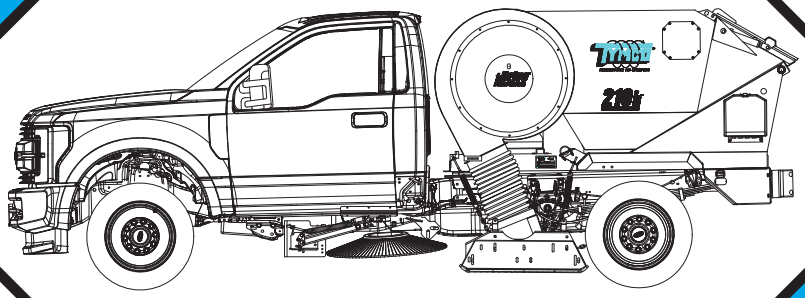
MODEL 210h



REGENERATIVE AIR SWEEPERS

PARTS & SERVICE MANUAL

2021

TYMCO, INC.
P.O. BOX 2368, WACO, TEXAS 76703
(Shipping Address)
225 EAST INDUSTRIAL BLVD. WACO, TEXAS 76705
PHONE: 254-799-5546 • FAX: 254-799-2722
WEB SITE: www.tymco.com
E-MAIL ADDRESS: info@tymco.com

California Proposition 65

⚠ WARNING:

Operating, servicing and maintaining a passenger vehicle or off-highway motor vehicle can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your vehicle. For more information go to www.P65Warnings.ca.gov/passenger-vehicle.

REGENERATIVE AIR SWEEPERS

INTRODUCTION

The Model 210h Parts and Service Manual is a very important part of the sweeper unit. The manual is broken down into sections as listed under the General Contents. Each section is named after the most important part or assembly in that section. In order to simplify the contents, a separate table of contents is placed at the beginning of each section. This table breaks the part or assembly down and enables the operator, maintenance director or parts man to pinpoint even a single part, troubleshooting method or maintenance operation when needed. It also consists of a general explanation describing that sections function on the sweeper unit.

TYMCO REGENERATIVE AIR SWEEPER
MODEL 210h

SOLD & SERVICED BY:

NOTE: DO NOT destroy any part of this manual. It contains pertinent information on parts, operation and maintenance of your TYMCO REGENERATIVE AIR SWEEPER and truck chassis.

An informed mechanic will do a better job. Make sure he/she has an opportunity to study this manual.

2021 Edition

GENERAL

TABLE OF CONTENTS

IMPORTANT

When ordering parts give:	Examples
1. Sweeper Serial Number	2021 03 SNH 22752 H
2. Part Number	5010206
3. Part Description	Blower Wheel
4. Quantity	One or (1)
5. Assembly Number	500006

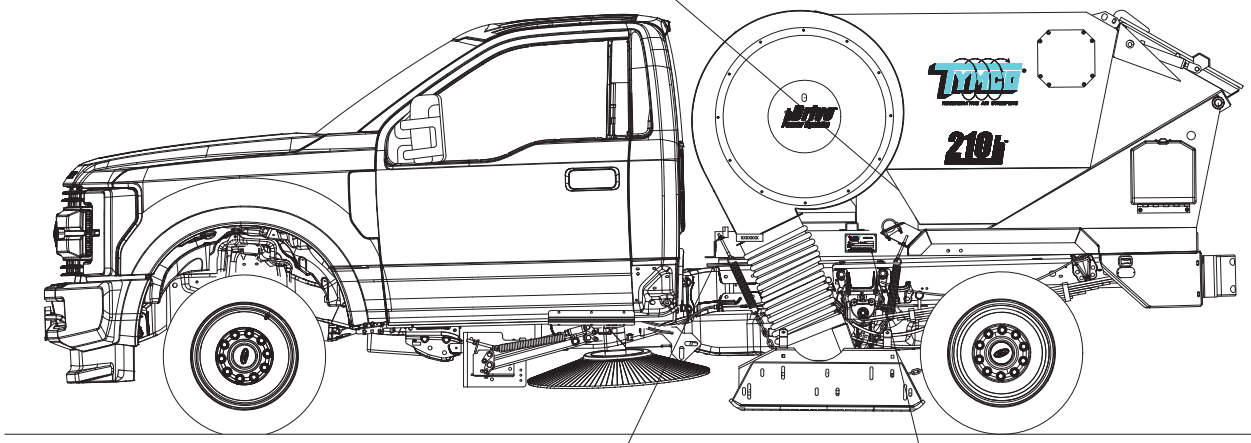
NOTE: Always remember - Correct and complete information will result in a speedy reply.

TYMCO®
REGENERATIVE AIR SWEEPERS

MODEL 210h
IDENTIFICATION PLATE LOCATIONS
(M02422) REV A
05-11-2011
9:45 am
DG

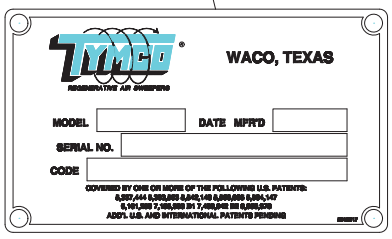
HOPPER NUMBER PLATE

2H10701



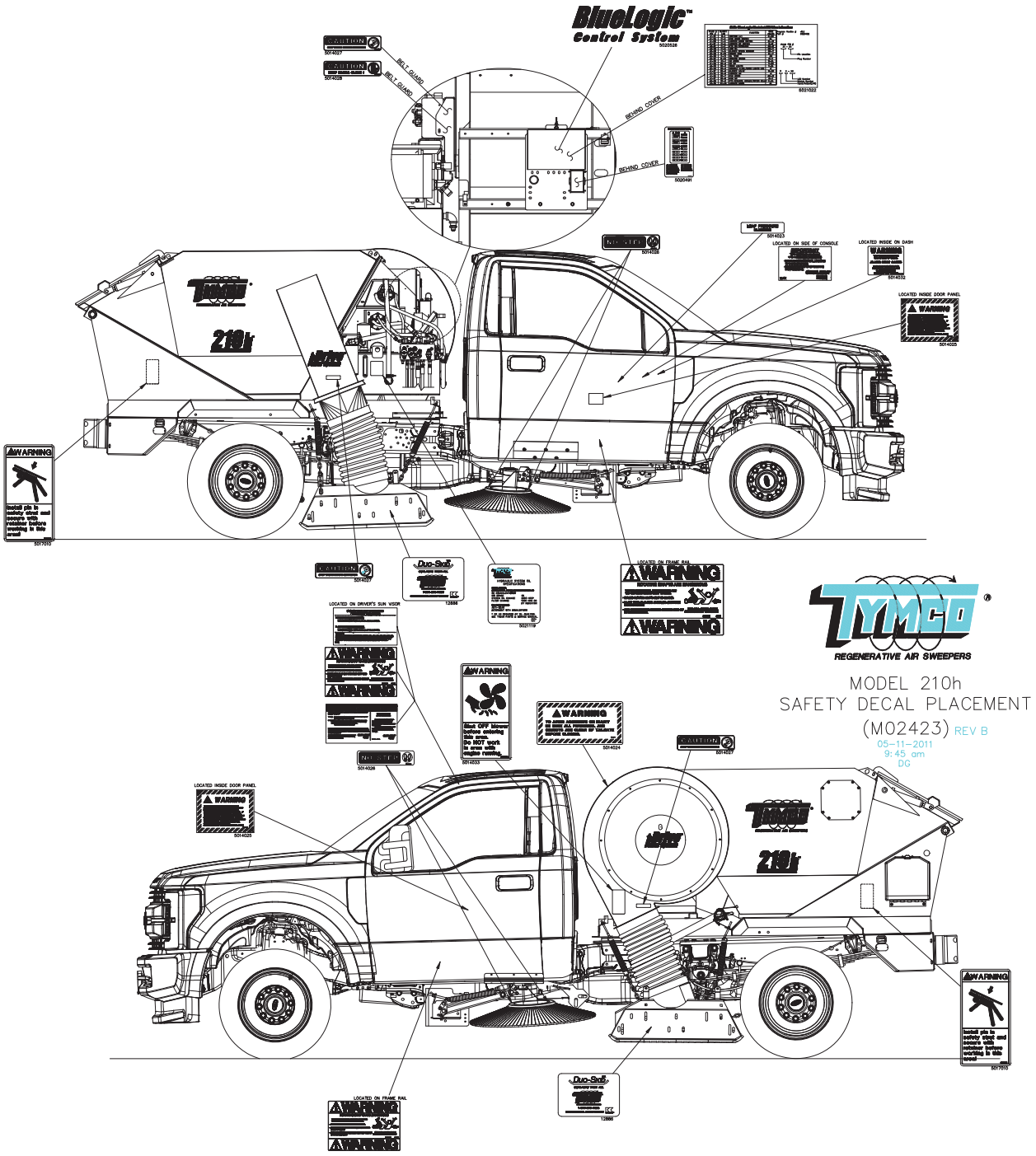
FRAME NUMBER PLATE

2F10701

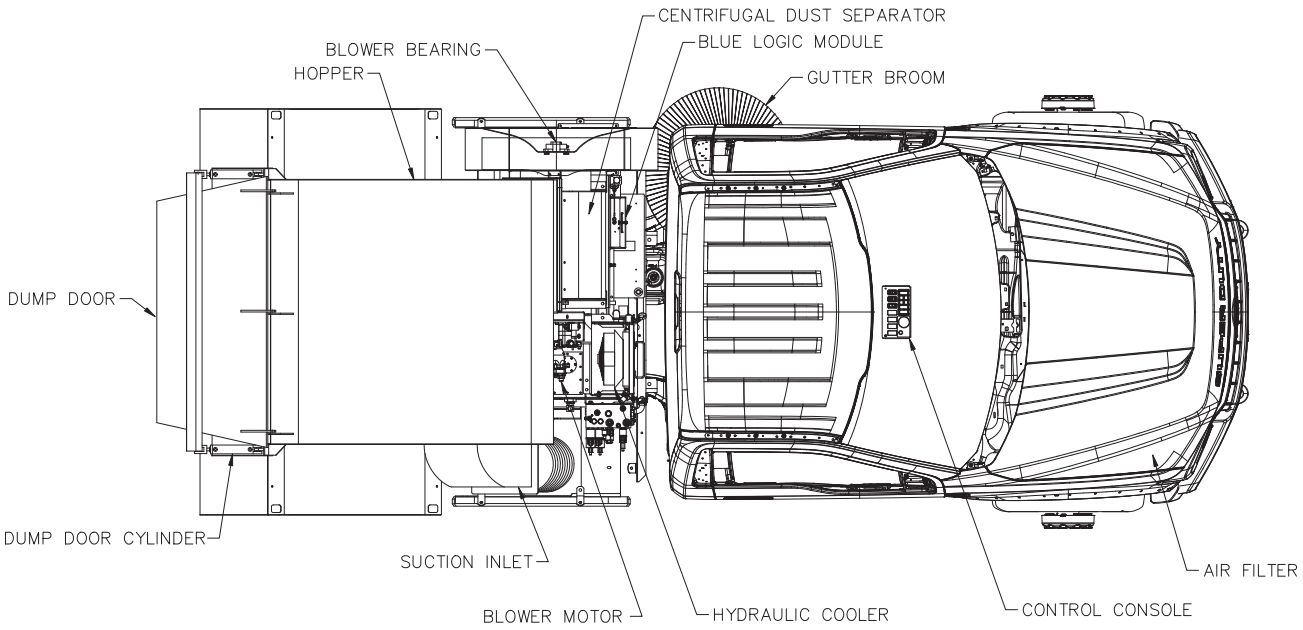


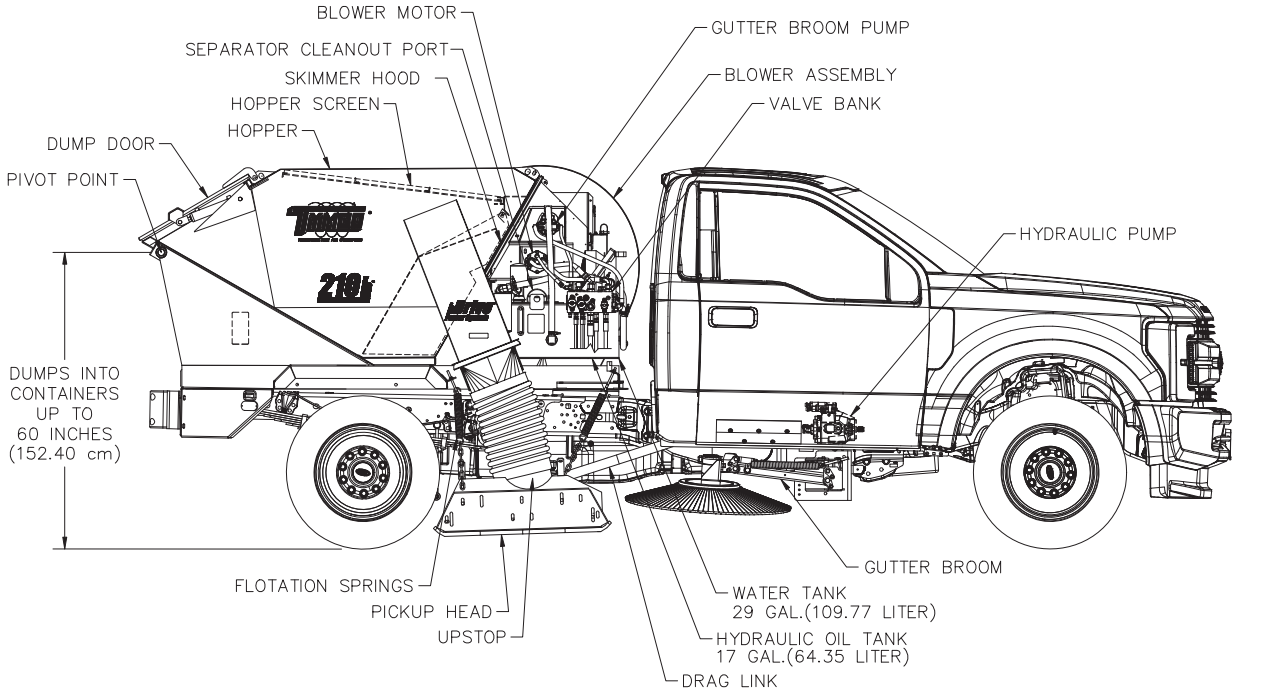
TYMCO SERIAL NUMBER PLATE

MODEL 210h SAFETY DECAL PLACEMENT



MODEL 210h
COMPONENTS
(M02424) REV A





210h Operating Procedure Guidelines

Complete Sweeper Inspection

- Check Hydraulic Oil level
- Check for Seal leaks
- Check Warning and Work Lights
- Inspect Pick-Up Head
- Check Gutter Broom (s)
- Adjust Mirrors
- Fill Fuel Tank
- Fill Water System

Sweeper Start-Up Procedures

1. Start Chassis Engine
2. Turn on Warning Lights
3. Turn on Water System
4. Lower Pick-Up Head
5. Pull Sweeper Forward to tuck Pick-Up Head Curtains
6. Turn on Blower
7. Lower Gutter Broom (s)
8. Begin Sweeping
9. Use caution when backing up with the Pick-Up Head down.
   (Reverse Pick-Up Head Chains allow you to back up with the head down.)

Leaf Pressure Bleeder Procedures

- Closed for heavy debris such as Sand, Gravel, Dirt, Etc.
- Open 100% when sweeping light debris such as Leaves, Paper Cups, Etc
- Adjust opening 25% & 75% for mixed debris.

Sweeper Shutdown Procedures

1. Raise Gutter Broom - (Must hold switch in the up position to fully retract Gutter Broom
2. Turn off Blower.
3. Raise Pick-Up Head - (Must hold switch in the up position to retract to the travel position)
4. Turn off Water System.
5. Turn off Warning Lights.

Wash Out Procedures (DAILY)

- Clean Hopper Screens
- Clean out Hopper
- Clean out Dust Separator
- Clean under Pick-Up Head
- Wash exterior of Sweeper and Chassis
- Wash off Radiators & Coolers

Parking Procedures

- Raise Hopper and lower on 2x4 Wood Blocks - Do not close rear door.
- Leave Hopper Door and Inspection Door(s) open.

TYMCO REGENERATIVE AIR SWEEPER INSPECTION AND REPETITIVE TASK SCHEDULE

Inspect	
Gutter broom(s) for impact damage/ wear	Daily
Pick-up head blast orifice for lodged foreign material/adjustment	Daily
Pick-up head skid plates for wear/ impact damage	Daily
Pick-up head curtains for wear/ damage	Daily
Hydraulic system for plumbing or component leakage	Daily
All hopper and transition seals for wear/damage	Daily
Hopper screen for damage	Daily
Tires	Daily
Hydraulic oil return line filter restriction	Daily
Water pump oil level	Daily (If applicable)
Water filler hose filter screen	Daily (If applicable)
Water pump suction hose pre-filter	Daily (If applicable)
Dust separator liner for wear/damage	Daily (If applicable)
Dust separator door closed before operating	Daily (If applicable)
Engine air intake filter restriction indicators	Daily (If applicable)
Pick-up head turning vanes for wear/ foreign material	Weekly
Blower belt tension	100 Hours (Minimum) (If applicable)
Pressure and suction hoses for wear	100 Hours
Blower wheel for wear/damage	100 Hours
Accessible areas of blower housing liner for wear/damage	100 Hours
Blower lip for wear/damage	100 Hours

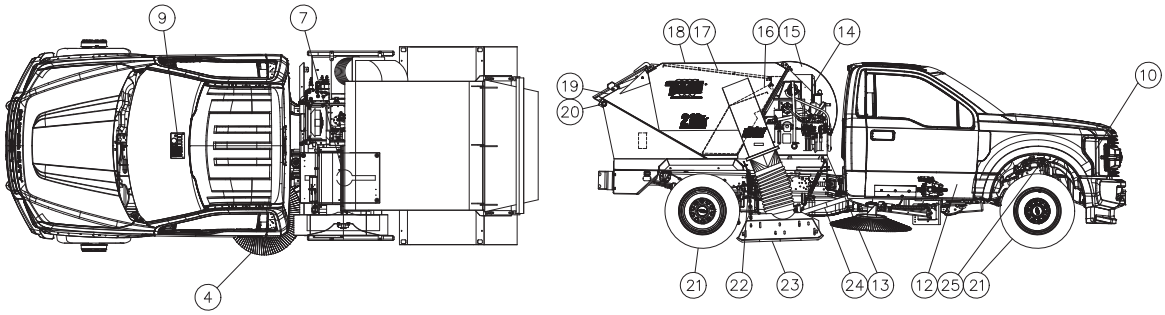
Perform	
Cleaning of gutter broom torque motor shaft area	Daily
Check of hydraulic tank fluid level	Daily
Draining water tank	Daily
Cleaning of hopper and dust separator	Daily
Wash down of engine radiator(s)	Daily
Functional test sweeper lights	Daily
Functional test truck brakes	Daily
Functional test truck lights	Daily
Check of truck fluid level	Daily
Check of auxiliary engine fluid level	Daily (If applicable)
Rotation pressure and suction hoses 1/4 turn	100 Hours
Change of water pump oil	150 Hours (If applicable)
Change of hydraulic oil return line filter	1000 Hours or when Indicated
Change of hydraulic system oil	2000 Hours or by oil analysis
Adjustment of gutter brooms	As required
Cleaning of spray nozzle tips and screens	As required

TYMCO®
REGENERATIVE AIR SWEEPERS

MODEL 210h

QUICK REFERENCE SERVICE CHART

(M02425) REV A



ITEM	DESCRIPTION	RECOMMENDED SERVICE
1.	Blower Bearings	Grease approximately every 25 hours of operation.
2.	Blower Power Band	Re-tension after initial 10 hours; then check every 100 hours.
3.	Blower Wheel	Inspect monthly for wear. DO NOT REACH INTO BLOWER HOUSING FOR ANY REASON!
4.	Gutter Broom / Wafer	Check DAILY for string, cassette tape, etc on motor shaft. Re-tension spring when new wafers are installed.
5.	Hydraulic Reservoir	Change oil every 2000 hours or by oil analysis recommendation. Check oil level DAILY.
6.	Hydraulic Oil Filter	Change every 1000 hours or as indicated by restriction indicator.
7.	PTO Driveshaft	Grease every 100 hours of operation.
8.	-	-
9.	Fuse Panel	Always replace fuse with identical amp rating.
10.	Engine Radiator	Check DAILY. CAUTION - Check only when cold.
11.	Truck Air Cleaner	Service every 25 hours or when restriction gauge indicates.
12.	Transmission	Change oil & filter every 15,000 miles or once a year.
13.	Water Tank	Drain tank DAILY.
14.	Centrifugal Separator	Wash out DAILY! Cleanout door provided on engine side.
15.	Separator Seal	Clean seal DAILY. Hopper must be airtight and fit snuggly against seal when lowered.
16.	Skimmer Hood	Inspect DAILY! Skimmer hood must swing freely when hopper is raised in order to clean itself of debris.
17.	Hopper Screen	Wash DAILY to prevent air blockage.
18.	Hopper	Wash out at end of each shift to prevent rusting.
19.	Dump Door Seal	Inspect DAILY; replace if damaged.
20.	Hopper Pivot Hinge	Grease every 25 hours of operation or once a week. CAUTION: Hopper must be raised in order to grease hinge. Always Install Pin in Lower Safety Strut!
21.	Truck Tires	Check DAILY for flats and correct air pressure.
22.	Spring Tension	Check skid plates weekly for wear; adjust spring tension as required.
23.	Pick-Up Head Curtains	Inspect DAILY; replace when worn out .
24.	Drag Link	Inspect DAILY for condition
25.	Truck Engine	Change oil and filter every 100 hours or 3000 miles of operation.

NEVER REACH INTO BLOWER HOUSING FOR ANY REASON!

REGENERATIVE AIR SWEEPERS

REGENERATIVE AIR SWEEPER® WARRANTY

TYMCO REGENERATIVE AIR SWEEPERS ("TYMCO Product") are warranted to be free from defective materials and workmanship for a period of 12 months or 1,000 hours from date of delivery and such period being hereinafter referred to as "warranty period." It is the sole responsibility of the dealer in whose territory the TYMCO Products are used, with respect to the warranty period to replace, free of charge, F.O.B. Waco, Texas, any original TYMCO part or parts which may prove to be defective due to defective workmanship or materials within the warranty period. This warranty does not apply to instances where there has been use of unauthorized parts or changes to the TYMCO Product, whether done voluntarily or by incompetence, carelessness, negligence, accident or need of attention upon the part of the purchaser, agents, employees or other parties.

This warranty shall not cover normal maintenance and adjustments, and shall not include, nor shall Seller or TYMCO be liable or responsible for, material for normal wear and usage.

TYMCO reserves the right to change the design and construction of the TYMCO Product when, in its sole discretion, any such change represents an improvement to the TYMCO Product.

All non-Tymco purchased equipment and accessories are subject to that manufacturer's guarantee to the extent that such guarantee may apply and are not subject to this warranty nor to any implied warranty by TYMCO or the Seller.

THIS WARRANTY BY TYMCO AND/OR SELLER IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NEITHER TYMCO NOR SELLER SHALL BE LIABLE FOR ANY DAMAGES OF ANY KIND OR NATURE, WHETHER DIRECT OR INDIRECT, INCIDENTAL OR CONSEQUENTIAL WITH RESPECT TO THE SALE, USE OR PURCHASE OF THE TYMCO PRODUCT. FURTHER, NEITHER TYMCO NOR SELLER SHALL BE LIABLE FOR ANY DAMAGES BY REASON OF LOSS OF PRODUCTION, DOWN TIME, LOSS OF PROFITS OR LOSS OF INCOME ARISING FROM ANY REASON WHATSOEVER.

NO PERSON IS AUTHORIZED TO GIVE ANY OTHER WARRANTIES OR TO ASSUME ANY OTHER LIABILITY ON TYMCO'S BEHALF UNLESS MADE IN WRITING BY TYMCO, AND NO PERSON IS AUTHORIZED TO GIVE ANY WARRANTIES OR TO ASSUME ANY LIABILITIES ON THE SELLER'S BEHALF UNLESS MADE IN WRITING BY THE SELLER.

This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

TRUCK

TABLE OF CONTENTS
FORD

FUNCTION

The purpose of the truck is to adequately and safely serve as the prime mover for the sweeper unit and its accessories. Its specification parameters are such that this can be accomplished from very slow sweeping speeds up to and including legal speed limits with the hopper empty or fully loaded.

It is intended that the operator be as comfortable as possible, thus, TYMCO Sweepers are mounted on a standard automotive type truck. The recommended specifications for mounting a TYMCO Model 210 is a truck with a minimum GVW rating of 14,000 lbs (6350 kg) and cab to axle dimension of at least 60 inches (152.4 cm), and an automatic transmission. For more information about specifications, contact TYMCO or your TYMCO dealer.

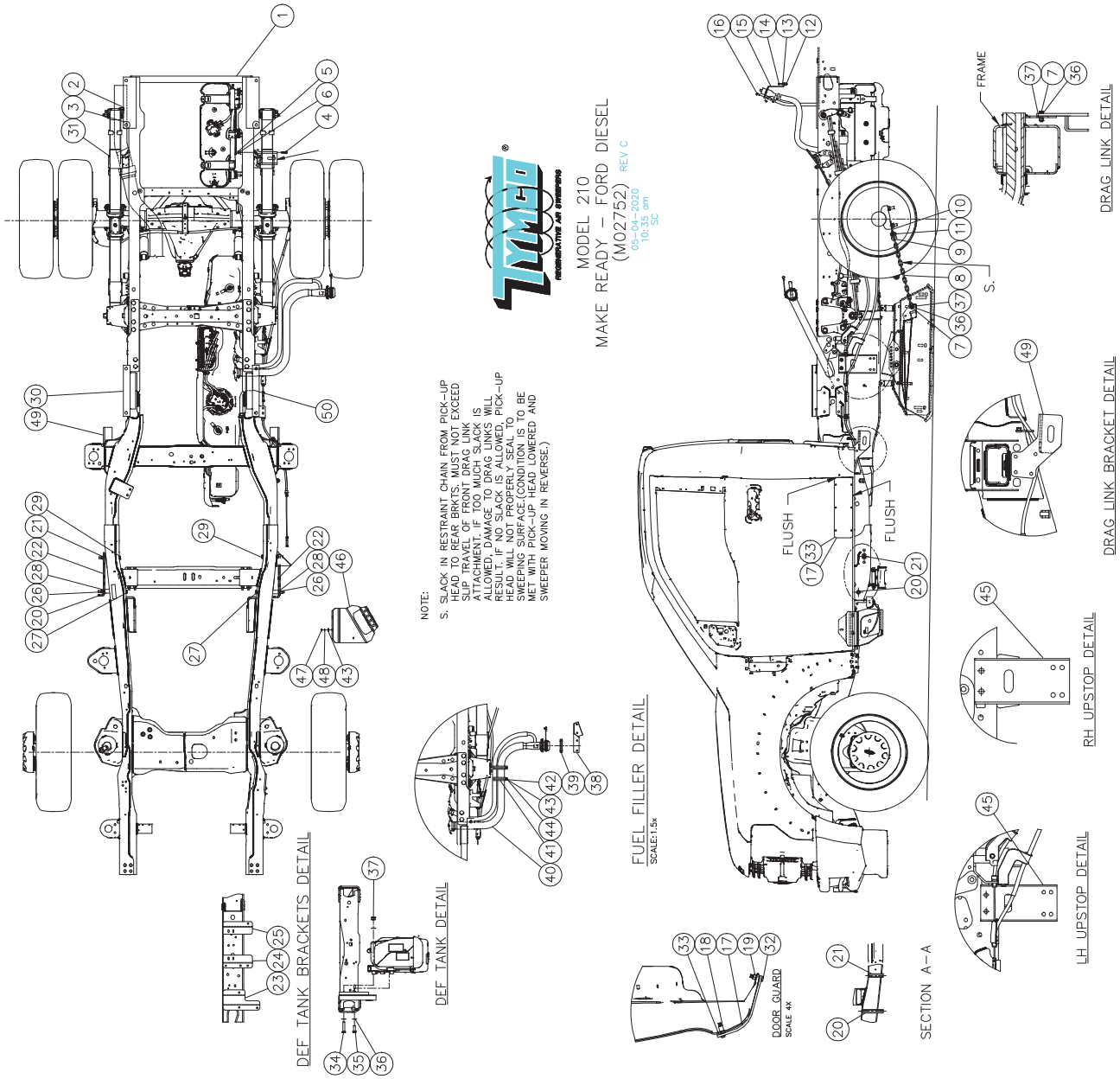
TROUBLESHOOTING, SERVICE AND MAINTENANCE

In order to simplify the service and maintenance of the truck on which your unit is mounted, refer to the truck operators manual for the routine service and maintenance procedures and schedules (by days, hours, miles, etc.).

Since the unit will be driven in the dirtiest part of the street, namely the gutter, where conditions are the worst, TYMCO suggests that for longer truck life the manufacturers servicing and maintenance schedules be performed somewhat more often than normal.

WARNING: Before servicing, stop auxiliary engine (210)/chassis engine (210h) and remove ignition key or disconnect negative battery cable.

A


MODEL 210
MAKE READY – FORD DIESEL
(M02752) REV C
05-04-2020
10:35 am
SC
NOTE:
S. SLACK IN RESTRAINT CHAIN FROM PICK-UP HEAD TO REAR BRKTS. MUST NOT EXCEED SLIP TRAVEL OF FRONT DRAG LINK ATTACHMENT. IF TOO MUCH SLACK IS ALLOWED, DAMAGE TO DRAG LINKS WILL RESULT. IF NO SLACK IS ALLOWED, PICK-UP HEAD WILL NOT PROPERLY SEAL TO SWEEPING SURFACE.(CONDITION IS TO BE MET WITH PICK-UP HEAD LOWERED AND SWEEPER MOVING IN REVERSE.)
DEF TANK BRACKETS DETAIL
DEF TANK DETAIL
FUEL FILLER DETAIL
SCALE:1.5x
DOOR GUARD
SCALE 4X
SECTION A-A
FLUSH
FLUSH
S.
FRAME
DRAG LINK DETAIL
DRAG LINK BRACKET DETAIL
RH UPSTOP DETAIL
LH UPSTOP DETAIL

TRUCK ASSEMBLY PARTS LIST
FORD F-350/F-450 - DIESEL
DWG-M02752

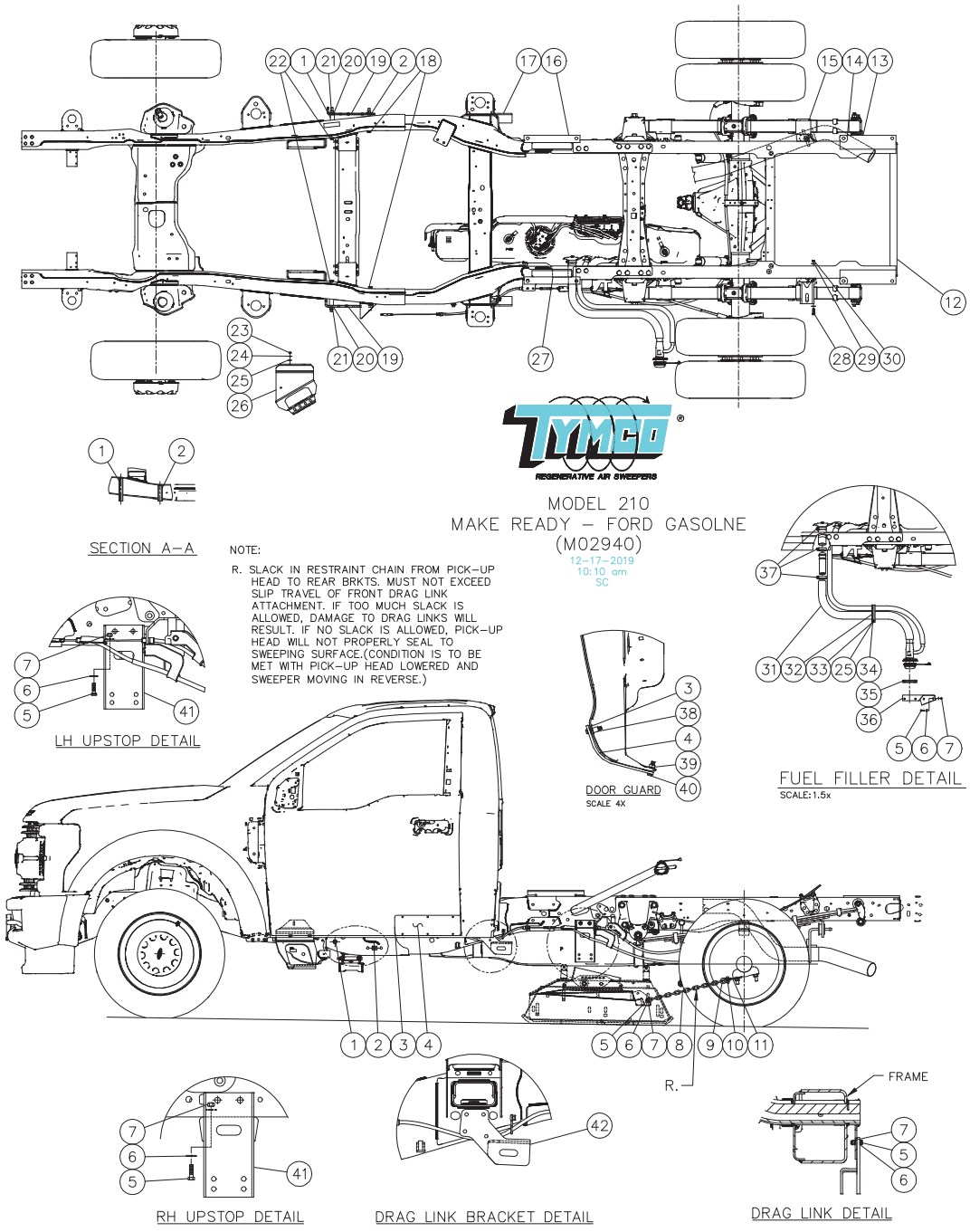
ITEM	QTY.	PART NO.	DESCRIPTION
	1	508816	Ford Make Ready - Diesel
1	1	5016704	Rear Cross Member
2	2	5018357	Sill Mount, Rear - Ford F-350 (210)
3	8	10301	3/4” Flat Washer, Z/P
4	8	40157	Bolt - 3/8-16 x 1 1/4 Gr. 8
5	8	20218	Nut - 3/8-16 Lock Gr. 8
6	16	10390	3/8 Flat Washer Gr. 8
7	12	10129	Bolt - 3/8-16 x 1 1/4 HHCS
8	2	2012666	1/4” Chain - 16 Links (1.6 Ft.)
9	2	12154	5/16 Anchor Shackle
10	2	5018242	Rear Bracket
11	2	12155	Hitch Pin
12	4	10274	Nut - 1/4-20 Kept
13	4	10303	1/4- Flat Washer
14	2	10110	Bolt - 1/4-20 x 3/4 HHCS
15	1	5020420	Mount - DEF tank Filler Neck
16	2	20193	Screw - 1/4-20 x 3/4 Truss
17	1	5021721	Door Protector
18	2	13368	5/16 Nut Insert
19	3	10229	Nut - 5/16-18 Top Lock
20	1	2021742	Front Mount Tube
21	1	5021741	Rear Mount Tube
22	1	5021724	Shoulder Plate
23	1	5021702	DEF Tank Bracket
24	1	5021704	DEF Tank Bracket
25	1	5021703	DEF Tank Bracket
26	6	10231	Lock Nut - 1/2 UNC
27	1	13372	Bolt - 1/2-13 UNC x 7 1/2 HHCS
28	16	10311	1/2” Flat Washer
29	4	30111	Bolt - 1/2-13 UNC x 5 1/2 HHCS
30	2	5016545	Sill Mount (Front)
31	2	13017	Bracket - Front Overload Spring
32	5	30186	Screw - 5/16 x 3/4 Phillips Truss HD
33	1	10591	Foam Tape - 1/8 x 1 x 48
34	5	10131	Bolt - 3/8-16 UNC x 1 3/4
35	1	10128	Bolt - 3/8-16 UNC x 1
36	26	10307	3/8 - Flat Washer
37	7	10225	Nut - 3/8-16 Top Lock
38	1	5011431	Fuel Filler Neck Mount
39	1	11309	Exhaust Clamp
40	1	5017182	Hose 1-1/2 Fuel x 42
41	2	11345	Clamp - 3” Adel
42	2	10272	5/16-18 Kept Nut
43	5	10305	Flat Washer 5/16
44	2	10117	Bolt - 5/16 UNC x 1 HHCS G5
45	2	508877	Upstop Weldment
46	1	5021739	Step (F-450)
47	3	10299	Nut - M8 - 1 1/4 Hex (F-450)
48	3	10306	Lock Washer 5/16 (F-450)
49	1	509170	Drag Link Bracket - LH
50	2	5021749	Sill Spacer

A

ITEM	QTY.	PART NO.	DESCRIPTION
Not Shown	1	508786	Timbren Kit w/1/2” Spacers (F-350)
Not Shown	1	508775	DEF Tank Wiring Harness Extension
Not Shown	1	21799	Work Light - LED
Not Shown	1	509007	Control Console Assy. - 210
Not Shown	1	509078	Control Console Assy. - 210h
Not Shown	1	508765	DEF Injector Hose
Not Shown	2	21749	LED Stop/Tail/Turn Light w/o Lic. Light

RH GUTTER BROOM OPTION

17	1	5021721	Door Protector
18	2	13368	5/16 Nut Insert
19	3	10229	Nut - 5/16-18 Top Lock
20	1	5021742	Front Mount Tube
21	1	5021741	Rear Mount Tube
22	1	5021724	Shoulder Plate
26	6	10231	Lock Nut - 1/2 UNC
27	1	13372	Bolt - 1/2-13 UNC x 7 1/2 HHCS
28	16	10311	1/2” Flat Washer
29	4	30111	Bolt - 1/2-13 UNC x 5 1/2 HHCS
32	5	30186	Screw - 5/16 x 3/4 Phillips Truss HD
33	1	10591	Foam Tape - 1/8 x 1 x 48
49	1	509171	Drag Link Bracket - RH
Not Shown	1	21799	Work Light - LED



TRUCK ASSEMBLY PARTS LIST
FORD F-350/F-450 - GASOLINE
DWG-M02940

ITEM	QTY.	PART NO.	DESCRIPTION
	1	509322	Ford Make Ready - Gasoline
1	1	2021742	Front Mount Tube
2	1	5021741	Rear Mount Tube
3	4 Ft.	10591	Foam Tape - 1/8 x 1 x 48
4	1	5021721	Door Protector
5	10	10129	Bolt - 3/8-16 x 1 1/4 HHCS
6	20	10307	3/8 - Flat Washer
7	10	10225	Nut - 3/8-16 Top Lock

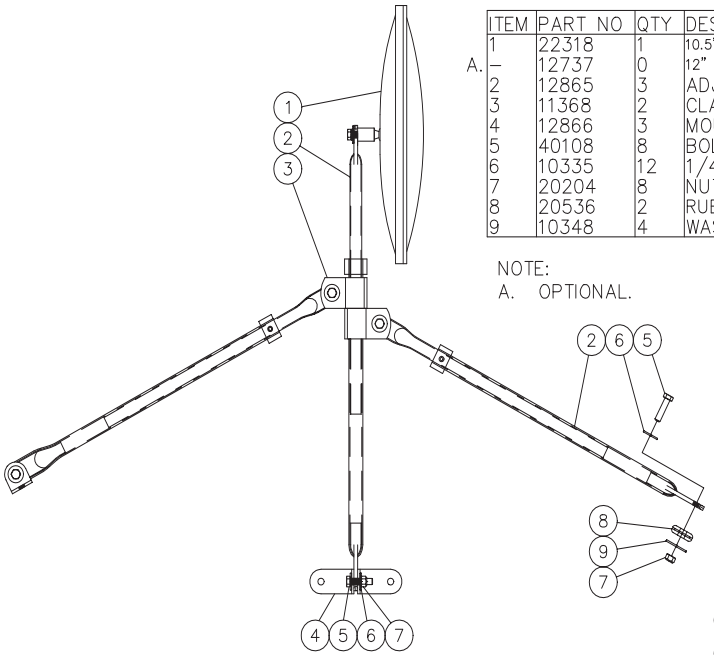
A

ITEM	QTY.	PART NO.	DESCRIPTION
8	2	2012666	1/4” Chain - 16 Links (1.6 Ft.)
9	2	12154	5/16 Anchor Shackle
10	2	12155	Hitch Pin
11	2	5018242	Rear Bracket
12	1	5016704	Rear Cross Member
13	2	5018357	Sill Mount, Rear - Ford F-350 (210)
14	8	10301	3/4” Flat Washer, Z/P
15	2	13017	Bracket - Front Overload Spring
16	2	5016545	Sill Mount (Front)
17	1	509171	Drag Link Bracket - RH
18	16	30111	Bolt - 1/2-13 x 5-1/2 HHCS
19	1	5021724	Shoulder Plate
20	16	10311	1/2” Flat Washer
21	6	10231	Lock Nut - 1/2 UNC
22	1	13372	Bolt - 1/2-13 UNC x 7 1/2 HHCS
23	3	10299	Nut - M8 - 1 1/4 Hex (F-450)
24	3	10306	Lock Washer 5/16 (F-450)
25	5	10305	Flat Washer 5/16
26	1	5021739	Step (F-450)
27	2	5021749	Sill Spacer
28	8	40157	Bolt - 3/8-16 x 1 1/4 Gr. 8
29	16	10390	3/8 Flat Washer Gr. 8
30	8	20218	Nut - 3/8-16 Lock Gr. 8
31	3 Ft.	13401	Hose - 1-1/4 I.D. EZForm Fuel
32	1	11345	Clamp - 3” Adel
33	1	10117	Bolt - 5/16 UNC x 1 HHCS G5
34	1	10272	5/16-18 Kept Nut
35	1	11309	Exhaust Clamp
36	1	5011431	Fuel Filler Neck Mount
37	3	11334	Hose Clamp - 1-1/4 x 2-1/8
38	2	13368	5/16 Nut Insert
39	3	10229	Nut - 5/16-18 Top Lock
40	5	30186	Screw - 5/16 x 3/4 Phillips Truss HD
41	2	508877	Upstop Weldment
42	1	509170	Drag Link Bracket - LH
Not Shown	1	508786	Timbren Kit w/1/2” Spacers (F-350)
Not Shown	1	21799	Work Light - LED
Not Shown	1	509007	Control Console - 210
Not Shown	1	509078	Control Console - 210h
Not Shown	2	21749	LED Stop/Tail/Turn Light w/o Lic. Light

RH GUTTER BROOM OPTION

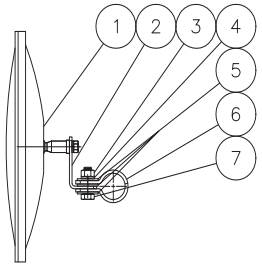
1	1	5021742	Front Mount Tube
2	1	5021741	Rear Mount Tube
3	4 Ft.	10591	Foam Tape - 1/8 x 1 x 48
4	1	5021721	Door Protector
18	4	30111	Bolt - 1/2-13 UNC x 5 1/2 HHCS
19	1	5021724	Shoulder Plate
20	16	10311	1/2” Flat Washer
21	6	10231	Lock Nut - 1/2 UNC
22	1	13372	Bolt - 1/2-13 UNC x 7 1/2 HHCS
37	2	13368	5/16 Nut Insert
38	3	10229	Nut - 5/16-18 Top Lock
39	5	30186	Screw - 5/16 x 3/4 Phillips Truss HD
Not Shown	1	21799	Work Light - LED

PARABOLIC MIRROR ASSEMBLY
CONV. CAB – 435/500X/600
504954



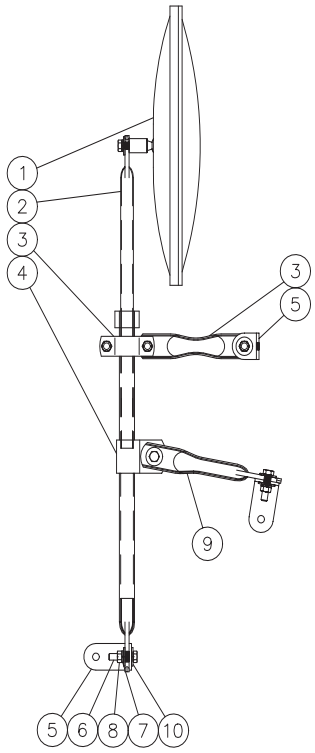
	ITEM	PART NO	QTY	DESCRIPTION
A.	1	22318	1	10.5" ROUND CONVEX MIRROR–CENTER MNT. SS HEAD
A.	–	12737	0	12" ROUND CONVEX MIRROR–CENTER MNT. SS HEAD
	2	12865	3	ADJUSTABLE MOUNT
	3	11368	2	CLAMP–3/4" 2 PC.
	4	12866	3	MOUNTING FOOT
	5	40108	8	BOLT–1/4–20 X 1.0 HHCS S.S.
	6	10335	12	1/4–FLAT WASHER S.S.
	7	20204	8	NUT–1/4–20 NYLON LOCK SS
	8	20536	2	RUBBER GROMMET–0.313 I.D. X 1.0 O.D.
	9	10348	4	WASHER–0.250 I.D. X 1.0 O.D. FENDER

NOTE:
A. OPTIONAL.



PARABOLIC MIRROR ASSEMBLY
CABOVER – 210/210h/435/DST–4
506851

ITEM	PART NO	QTY	DESCRIPTION
1	22518	1	10 1/2" ROUND CONVEX MIRROR
–	12737	1	12" ROUND CONVEX MIRROR(OPTIONAL)
2	22364	1	MIRROR "J" BRACKET
3	10248	1	NUT– 5/16–18 HEX SS
4	10332	1	LOCK WASHER 5/16 SS
5	10336	3	FLAT WASHER 5/16 SS
6	11384	1	DOVE TAIL CLAMP 1.00"
7	20143	1	BOLT– 5/16–18 X 1.00 HHCS SS



TYMCO® REGENERATIVE AIR SWEEPERS

ALL MODELS
PARABOLIC MIRROR ASSEMBLIES
(M01231) REV D

06–17–2021
11:23 am
SC

PARABOLIC MIRROR ASSEMBLY
CONV. CAB – 210
507474

ITEM	PART NO	QTY	DESCRIPTION
1	22518	1	10.5" ROUND CONVEX MIRROR–CENTER MNT. SS HEAD
–	12737	0	12" ROUND CONVEX MIRROR–CENTER MNT. SS HEAD
2	12865	1	MAIN ADJUSTABLE MOUNT
3	22479	1	4" LEG
4	11368	1	CLAMP–3/4" 2 PC.
5	12866	3	MOUNTING FOOT
6	40108	4	BOLT–1/4–20 X 1.0 HHCS S.S.
7	10331	4	1/4–LOCK WASHER S.S.
8	10247	4	NUT–1/4–20 HEX S.S.
9	12870	1	BRACE–MOUNT
10	10335	8	1/4–FLAT WASHER S.S.
NOT SHOWN			
–	10284	3	NUT–1/4–20 INSERT
–	10335	3	1/4–FLAT WASHER SS
–	40108	3	BOLT–1/4–20 X 1.0 HHCS SS
–	10345	3	1/4–BONDED SEAL WASHER

FRAME

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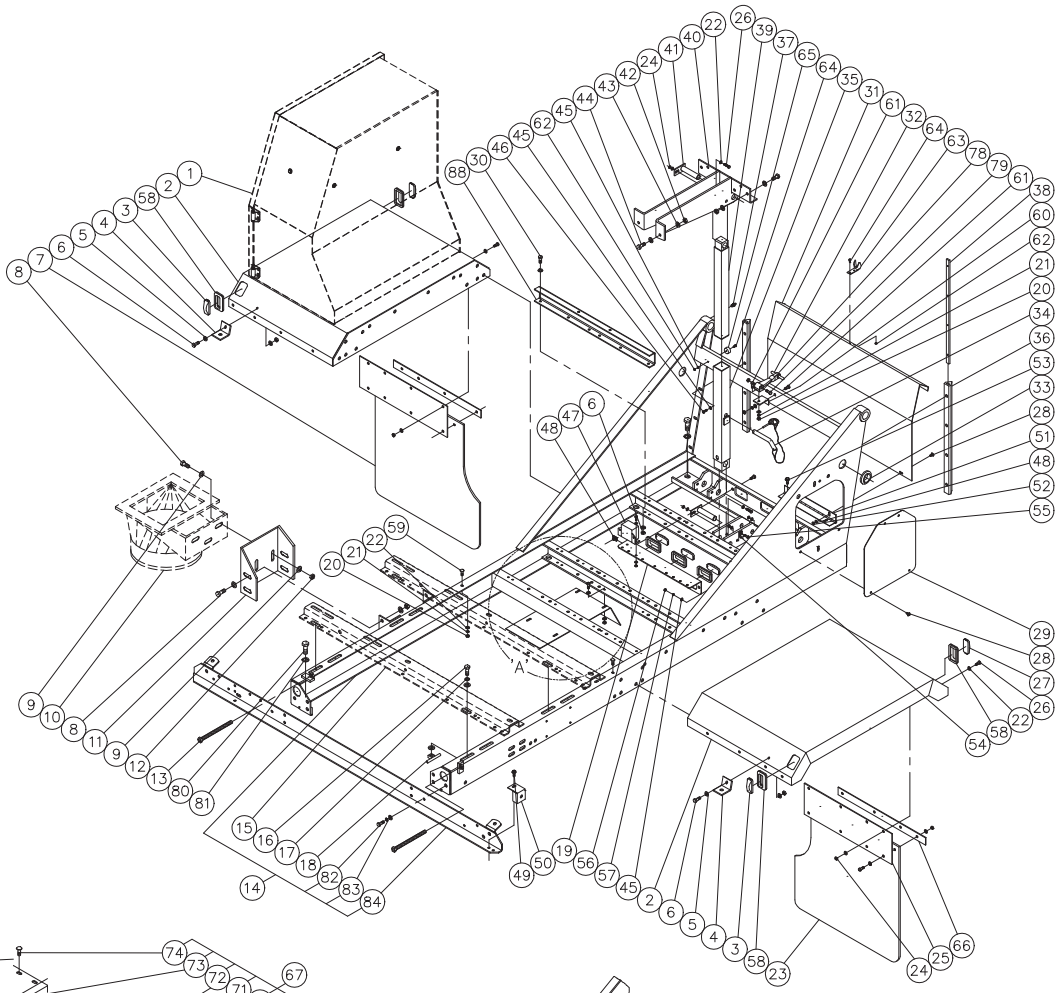
FUNCTION

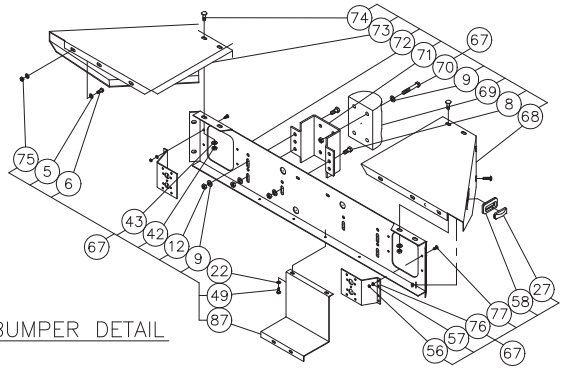
The Frame Assembly is designed to adequately support all of the major sweeper assemblies or systems with exception of the gutter broom and the control panel. A number of the parts associated with the frame are bolted onto the frame to make replacement easy and to facilitate ease in initial assembly at the factory. The frame has a high strength to weight ratio.

WARNING: Before servicing, stop engine and remove ignition key or disconnect negative battery cable.

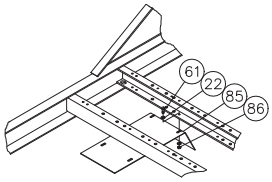
When working under or around raised hopper *ALWAYS install pin in lower safety strut.*

B





BUMPER DETAIL



DETAIL 'A'

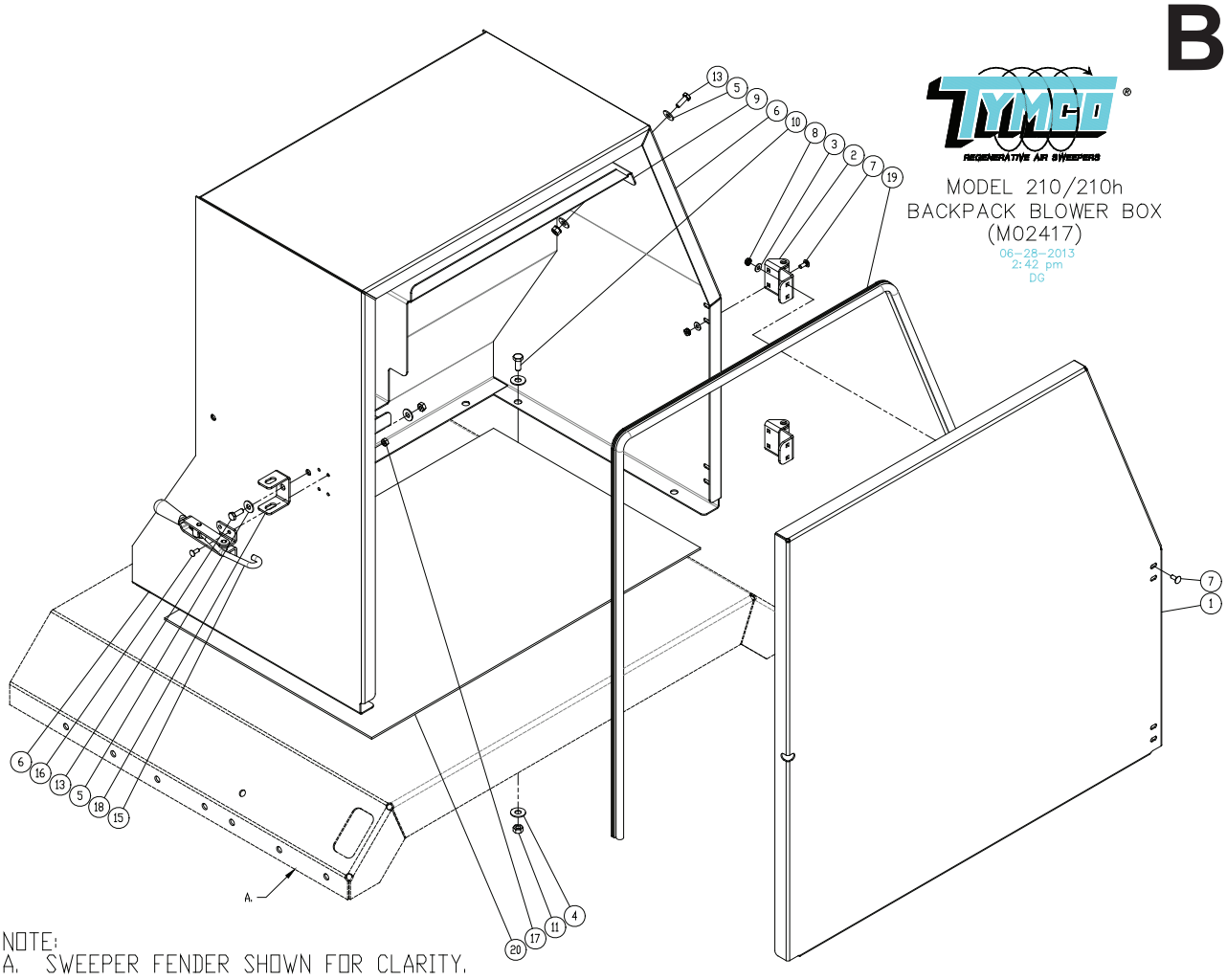
MODEL 210h
SWEEPER FRAME ASSEMBLY
(M02150) REV C
1/27/17
4:19 PM
SC

TYMCO MODEL 210h
FRAME ASSEMBLY PARTS LIST
DWG-M02150

ITEM	QTY	PART NO	DESCRIPTION
	1	507522	Frame Assembly
1	(Shown for Clarity)	508126	Back Pack Blower Box (See Page B-5)
2	2	504805	Fender
3	2	21573	Clearance Light - Amber
4	2	5010057	Spring Bracket
5	16	10307	3/8" Flat Washer
6	14	10129	Bolt - 3/8-16 x 1-1/4 HHCS
7	1	10515	Mud Flap - Dual Wheels (RH)
8	29	10167	Bolt - 1/2-13 x 1-1/4 HHCS
9	28	10311	1/2" Flat Washer
10	(Shown for Clarity)	500033	Suction Transition
11	1	5010149	Adjustment Plate - Suction Transition
12	23	10231	Nut - 1/2-13 Top Lock
13	2	500951	Adjustment Screw Assembly
14	1	504141	Sweeper Frame Weldment
15	(Shown for Clarity)	5010062	Power Unit Rail
16	8	10139	Bolt - 1/2-13 x 1-1/2 HHCS
17	8	10312	1/2" Lock Washer
18	8	500945	Butterfly Nut - Engine Bracket
19	1	5016580	Mount - Rear Identification Lamps
20	2	10205	Nut - 5/16-18 Hex
21	4	10306	5/16" Lock Washer
22	50	10305	5/16" Flat Washer
23	1	10514	Mud Flap - Dual Wheels (LH)
24	19	10229	Nut - 5/16-18 Top Lock
25	2	5014512	Mud Flap Extension
26	18	10118	Bolt - 5/16-18 x 1-1/4 HHCS
27	7	21572	Clearance Light - Red
28	10	20135	Bolt - 1/4-20 x 1/2 Phillips Truss Head
29	1	5020369	Cover Plate
30	6	10128	Bolt - 3/8-16 x 1.00 HHCS
31	1	5016986	Rear Access Door - Drop Down
32	1	12739	Rubber Fastener
33	1	10525	Grommet - 1-1/2 ID
34	1	10431	Pin Assembly
35	1	504472	Safety Strut - Lower
36	2	5010302	Bumper - Bumper Assembly
37	2	12042	Zerk - Hinge Collar
38	2	5010303	Insert - Bumper Assembly
39	1	504471	Safety Strut - Upper
40	1	504185	Pin Eye Mount Plate (Hopper)
41	2	501597	Dump Pin Assembly
42	8	10228	Nut - 7/16-14 Top Lock
43	16	10309	7/16" Flat Washer
44	8	10136	Bolt - 7/16-14 x 1-1/2 HHCS
45	27	10303	1/4" Flat Washer
46	10	10110	Bolt - 1/4-20 x 3/4 HHCS
47	1	12074	Back-up Alarm
48	2	10224	Speed Clip
49	1	10104	Bolt - 5/16-18 x 3/4 Taptite
50	1	5012987	Mount - Dump Switch

B

ITEM	QTY	PART NO	DESCRIPTION
51	2	5016680	Hinge
52	4	10274	Nut - 1/4-20 Kept
53	4	30126	Bolt - 5/16-18 x 1/2 Taptite
54	1	12354	Clamp - 3/8" Dipped
55	1	10111	Bolt - 1/4-20 x 1 HHCS
56	4	10203	Nut - 1/4-20 Hex
57	4	10304	1/4" Lock Washer
58	7	11591	Rubber Grommet - Clearance Lights
59	2	20198	Bolt - 5/16-18 x 3/4 Carriage Head
60	1	5013982	Bracket - Rubber Fastener
61	6	20112	Bolt - 5/16-18 x 3/4 HHCS
62	4	10241	Nut - #10-32 Kept
63	1	12759	Latch - Rubber Fastener
64	4	30133	Screw - #10-32 x 1/2 Phillips Pan Head
65	2	10581	Door - Bumper Pad
66	2	5014511	Strap - Mud Flap
67	1	502384	Bumper Assembly - Rear
68	1	505751	Bumper - End Cap Weldment (LH)
69	2	10579	Rubber Bumper
70	8	10101	Bolt - 1/2-13 x 2-1/2 HHCS
71	2	5016987	Mount - Rubber Bumper
72	1	5014405	Bumper
73	1	505750	Bumper - End Cap Weldment (RH)
74	8	10155	Bolt - 7/16-14 x 1 CHCS
75	6	10225	Nut - 3/8-16 Top Lock
76	2	5014410	Brake Light - Mount Bracket
77	8	20193	Screw - 1/4-20 x 3/4 Truss Head
78	1	12741	Anchor Bracket - Rubber Fastener
79	1	10119	Bolt - 5/16-18 x 1-3/4 HHCS
80	8	10153	Bolt - 5/8-18 x 1-3/4 HHCS
81	8	10385	5/8" Flat Washer SAE
82	6	10128	Bolt - 3/8-16 x 1 Hex Head
83	6	10308	3/8" Lock Washer
84	1	505629	Front Cross Member
85	1	5019701	Heat Shield - Ford
86	4	10272	Nut - 5/16-18 KEPT
87	1	5021782	Cover - DEF Tank (Ford)
88	1	5021389	Frame Stiffener
Not Shown	1	5015817	TYMCO Model Plate
Not Shown	1	5015818	Naval Data Plate
Not Shown	1	5015819	Air Force Data Plate
Not Shown	1	504919	Clearance Light Harness, Integral
Not Shown	1	12107	Dump Door Switch
Not Shown	1	12265	License Plate Light (Conventional Cab)
Not Shown	1	504923	Schematic - Truck/Sweeper Light Wiring
Not Shown	8	10314	5/8" Lock Washer
Not Shown	8	10242	Nut - 5/8-18 Hex
Not Shown	2	10282	Jam Nut - 5/8-18 Hex (F-450 Only)



TYMCO MODEL 210/210h
BACKPACK BLOWER BOX ASSEMBLY PARTS LIST
DWG-M02417

ITEM	QTY	PART NO	DESCRIPTION
	1	508126	Backpack Blower Box Assembly
1	1	5021080	Door
2	2	5021082	Door Hinge
3	8	20311	Flat Washer - #10 SS
4	12	10305	Flat Washer - 5/16
5	10	10303	Flat Washer - 1/4
6	1	508127	Backpack Blower Box Weldment
7	8	40148	Bolt - 10-24 x 1/2 CH SS
8	8	20215	Nut - #10-24 Kept SS
9	1	5021081	Shelf
10	6	20112	Bolt - 5/16-18 UNC x 3/4
11	6	10229	Lock Nut - 5/16 UNC
12	1	10246	Lock Nut - 1/4 UNC
13	5	10110	Bolt - 1/4-20 x 3/4 HHCS
14	4	10274	Nut - 1/4-20 UNC Kept
15	1	5014316	Latch
16	4	10107	#10-24 Self Tap Screw
17	4	10267	Nut - 10-24 Kept
18	1	5021088	Holder - Latch
19	1	5016893	Seal
20	1	5021083	Mat

HOPPER

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FUNCTION

The hopper is designed to contain the load of material swept up during sweeping operations. It is shaped so as to distribute the load evenly and centrally over the rear axle, and to aid in breaking loose the load as it shifts toward the rear door opening when dumping. The shape of the hopper allows dumping into containers up to 60 inches (152.4 cm) high.

Simply engaging the dump toggle switch while idling the auxiliary engine (210)/chassis engine (210h) will open the rear door, and when it is fully opened, the hopper will raise and dump. Engaging the dump toggle switch to the opposite position will lower the hopper and then close the door. 210h Only: BlueLogic will prevent the hopper from raising if the chassis is traveling more than 4 mph. If the blower is on when the dump toggle switch is activated, BlueLogic will turn off the blower and then raise the hopper.

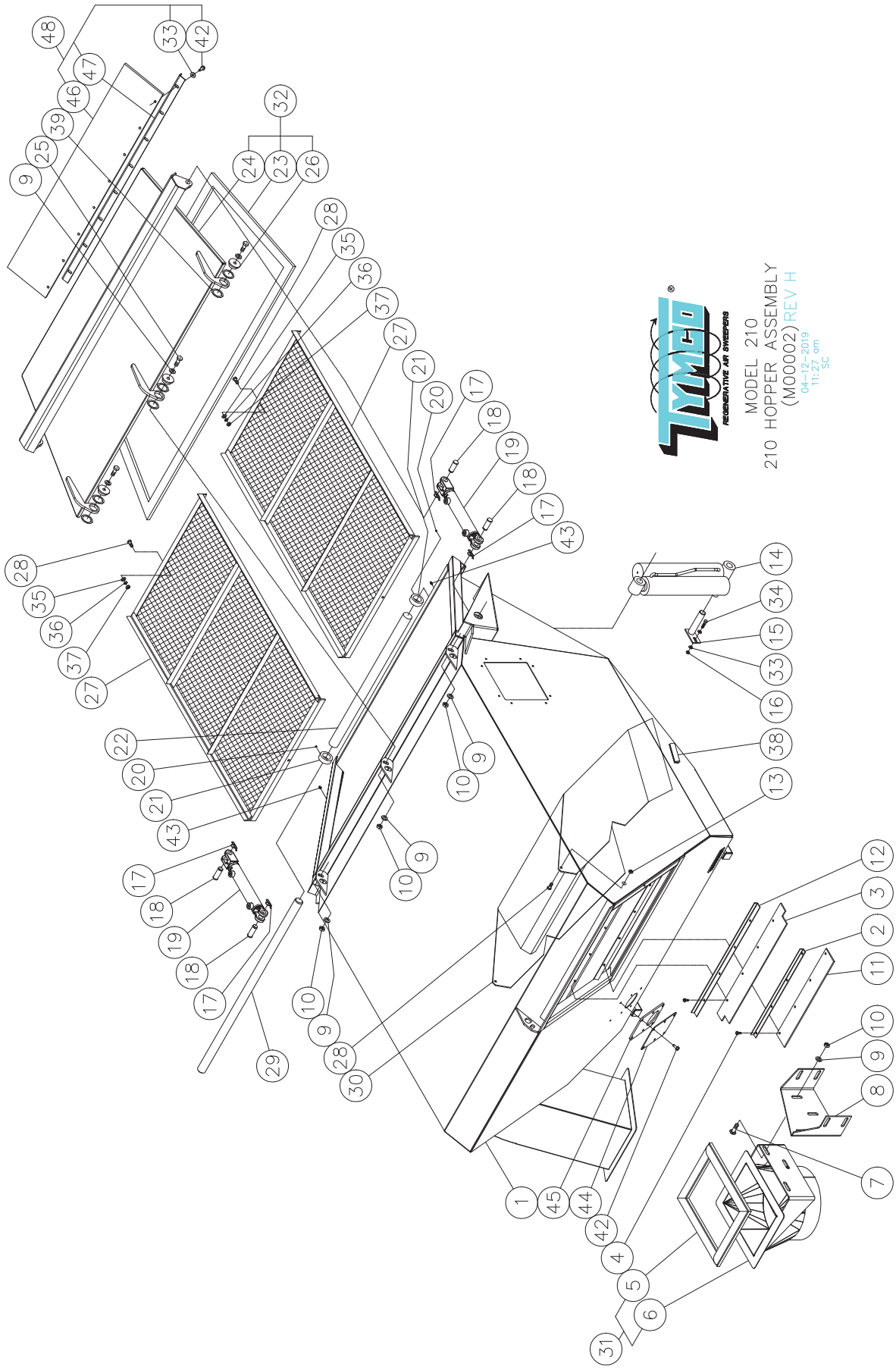
A two piece removable screen inside the hopper near the top serves to filter out course material from the air after it enters the hopper.

TROUBLESHOOTER'S GUIDE

WARNING: Before servicing, stop auxiliary engine (210)/chassis engine (210h) and remove ignition key or disconnect negative battery cable. When working under or around raised hopper, *ALWAYS install pin in lower safety strut.*

PROBLEM	CAUSE	SOLUTION
Low sweeper efficiency	Faulty seals	Check door seal. Check suction intake seal. Check separator seal.
Excessively dusty condition	Screen clogged	Check cleanliness of screen.
	Dust control system inoperable	Check water tank (See Water System Troubleshooting Section)
Rear door will not open or close and hopper will not raise or lower	Loss of hydraulic pressure	See HYDRAULIC SYSTEM Section.
	Hydraulic valve will not operate	(See Hydraulic Troubleshooting Section.)
	Hydraulic leak	Check for leak in hydraulic system.
	Truck Moving	Dump Switch will not activate if truck is traveling more than 4 mph.
Rear door creeps open	Leak in hydraulic lock valve	Check for leak in hydraulic lock valve or hoses. Replace seals in valves. Replace valve.

C


TYMCO
REGENERATIVE AIR SWEEPERS
MODEL 210
210 HOPPER ASSEMBLY
(M00002) REV H
04-12-2019
11:27 am
SC

TYMCO MODEL 210/210h
HOPPER ASSEMBLY PARTS LIST
DWG-M00002

ITEM	QTY.	PART NO.	DESCRIPTION
	1	502913	Hopper Assembly
1	1	500056	Hopper Weldment
2	1	5017381	Lower Clamp
3	1	5017334	Upper Flap Seal
4	12	30104	Bolt - 1/4-20 x 3/4 HHCS Self Tap
5	1	500453	Seal - Suction Transition
6	(Shown for Clarity)	500033	Suction Transition Weldment
7	(Shown for Clarity)	10146	Bolt - 1/2-13 X 1-1/4 CHCS
8	(Shown for Clarity)	5010149	Adjustment Plate-Suction Transition
9	6	10311	1/2" Flat Washer
10	3	10231	Nut - 1/2-13 Top Lock
11	1	5017335	Lower Flap Seal
12	1	5010181	Upper Clamp
13	2	10225	Nut - 3/8-16 Top Lock
14	2	(See Hyd Section)	Dump Cylinder (Part of Hydraulic Assembly)
15	4	501597	Pin - Dump Cylinder
16	4	10205	Nut - 5/16-18 Hex
17	4	(See Hyd Section)	Rue Ring Locking Cotter - 3/4" (Part of Hyd Assy)
18	4	(See Hyd Section)	Cylinder Clevis Pin (Part of Hydraulic Assembly)
19	2	(See Hyd Section)	Dump Door Cylinder (Part of Hydraulic Assy)
20	2	(Comes w/Collar)	Set Screw, Collar, 3/8-16 x 3/8”
21	2	12001	Collar - Hinge Pin
22	1	5010013	Cover - Hinge Pin
23	1	500142	Dump Door Seal
24	1	505747	Dump Door Weldment
25	3	10139	Bolt - 1/2-13 x 1-1/2 HHCS
26	3	8010987	Bushing - Dump Door
27	2	500045	Hopper Screen Weldment
28	4	10128	Bolt - 3/8-16 X 1 HHCS
29	1	5010150	Hinge Pin - Dump
30	1	503541	Skimmer Scoop High Volume
31	1	500780	Seal/Suction Transition Assembly
32	1	505748	Seal/Dump Door Assembly
33	8	10305	5/16 Flat Washer
34	4	10118	Bolt - 5/16-18 X 1-1/4 HHCS
35	2	10307	3/8" Flat Washer
36	2	10308	3/8" Lock Washer
37	2	10209	Nut - 3/8-16 Hex
38*	2	5017031	Extruded Bumper - Skimmer Hood Slam Protector
39	6	5021636	Shim - Centering Hopper/Dump Door (210)
40	-	-	-
41	-	-	-
42	14	10104	Bolt - 5/16-18 x 0.750 Taptite
43	2	10242	Zerk - Str. 1/4”-28
44	1	5022005	Cover Plate - Drain
45	1	5016535	Gasket - Drain Cover Plate
46	1	5020612	Hopper Drip Edge Extension
47	1	5020613	Clamp - Hopper Drip Edge Extension
48	1	507674	Drip Edge Extension Assembly
Not Shown**	1	5011631	Cover - Port Hole Rear - Hand Hose
Not Shown	1	5016106	Seal - Frame - Hand Hose Door

ITEM	QTY.	PART NO.	DESCRIPTION
		STAINLESS HOPPER OPTION	
1	1	S500056	Hopper Weldment SS
4	12	40192	Bolt - 1/4-20 x 3/4 HHCS Self Tap SS
9	6	10338	1/2" Flat Washer SS
10	3	10250	Nut - 1/2-13 Hex SS
-	3	10334	1/2 - Lock Washer SS
13	2	20240	Nut - 3/8-16 Nylon Lock SS
24	1	S505747	Dump Door Weldment SS
25	3	20149	Bolt - 1/2-13 x 1-1/2 HHCS SS
27	1	S503386	Slide Out Screen Assembly SS
28	4	20146	Bolt - 3/8-16 x 1 HHCS SS
30	1	S503541	Skimmer Scoop High Volume SS
35	2	10337	3/8" Flat Washer SS
36	4	10333	3/8" Lock Washer SS
37	2	10249	Nut - 3/8-16 Hex SS
42	22	40133	Bolt - 5/16-18 x 0.750 Taptite SS
Not Shown**	1	S5011631	Cover - Port Hole Rear - Hand Hose SS

* Use only when hopper is coated
** Omit when sweeper is equipped with Hand Hose Option

SERVICE & MAINTENANCE

REMEMBER: "A CLEAN MACHINE RESULTS IN LONGER LIFE AND MAXIMUM PERFORMANCE."

After sweeping route is completed, the first procedure in maintaining the unit must be to clean and wash unit thoroughly. Raise the hopper/door to access internal parts of the hopper. Wash all built-up mud from the dirt deflector scroll and surrounding areas. Make sure to clean mud and debris from between the deflector scroll and the hopper door.

Wash all debris from the screen and surrounding area. Raise the hopper to full height and wash out all remaining debris. Visually inspect all openings and seals for debris. Make sure that the skimmer hood swings freely when hopper is raised. Check hinge pin and dump cylinder pins for proper security. Wash any mud and debris in suction transition and suction hose.

When hopper washing has been completed, lower hopper until suction transition is almost touching its seal and leave in this position while sweeper is not in use to allow the seals to conform to their original shape. This will extend the wear life of the seals. Visually inspect the screen to insure snug fit against hopper front panel.

WARNING! When working under or around raised hopper, *ALWAYS place pin in lower safety strut on cylinder.*

SEPARATOR

TABLE OF CONTENTS

FUNCTION

The dust separator is intended to remove the major portion of fine dust from the air stream before the air is re-routed through the blower and back down to the pick-up head. A cleanout port on the right hand side of the separator allows for periodic cleanout.

TROUBLESHOOTER'S GUIDE

WARNING: Before servicing, stop auxiliary engine and remove ignition key or disconnect negative battery cable.

PROBLEM	CAUSE	SOLUTION
Excessively dusty condition	Faulty seals	Check seals
	Separator clogged	Clean separator Check gripper plug and seal
	Skimmer slot clogged	Clean as required. Check daily.
	Dust control system not operative	See Section "J" in this manual.
	Skimmer hood clogged	Clean and check for freedom of movement while dumping

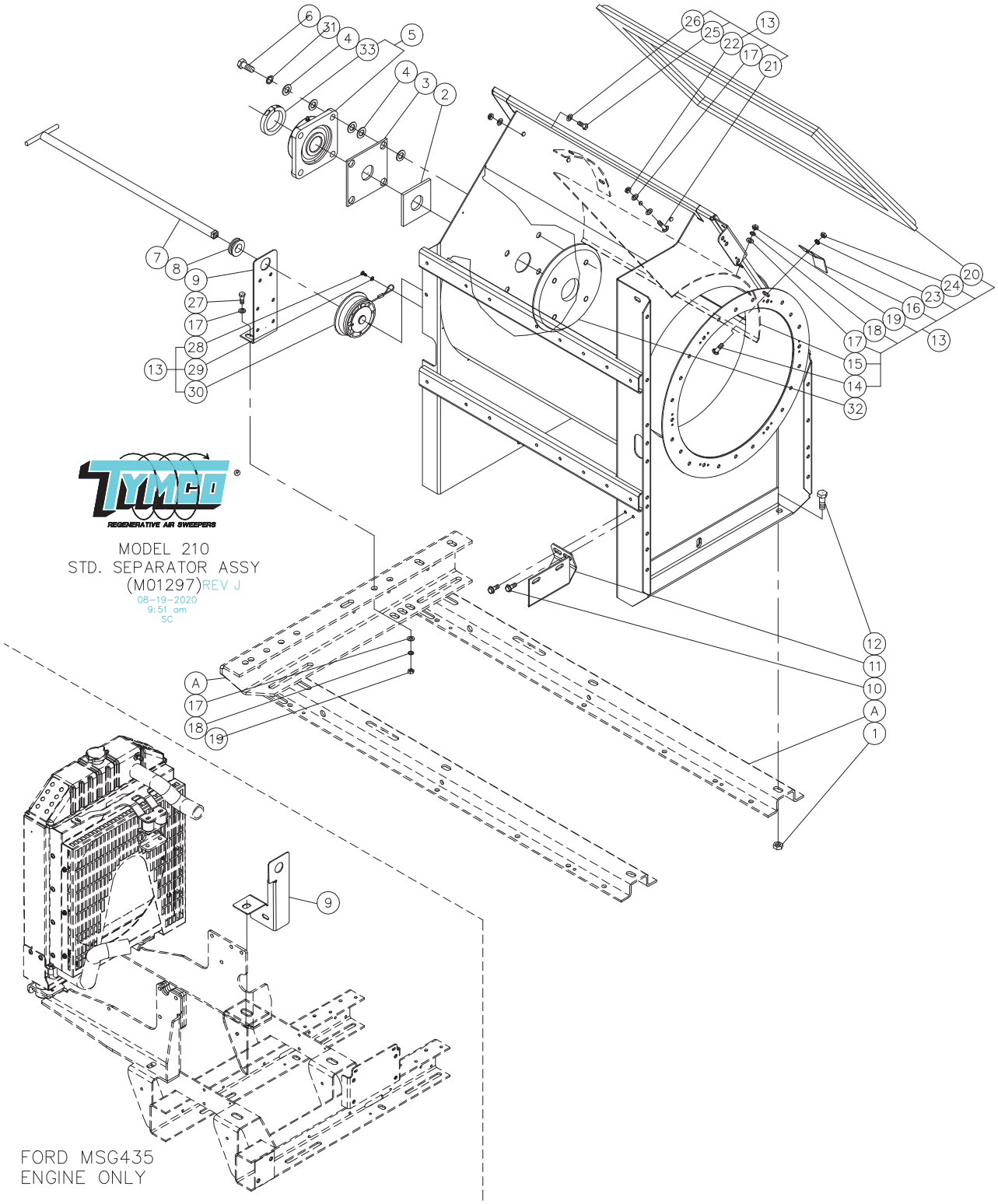
SERVICE & MAINTENANCE

REMEMBER: "A CLEAN MACHINE RESULTS IN LONGER LIFE AND MAXIMUM PERFORMANCE."

After sweeping through normal work hours, the first procedure in maintaining the unit should be cleaning and washing thoroughly.

Raise hopper and PLACE PIN IN LOWER SAFETY STRUT ON CYLINDER. Open cleanout gripper plug and wash inside of separator. Inspect seals on separator opening and cleanout gripper plug for condition and remove any loose debris. Check separator skimmer slot to be free and clear of debris.

D


TYMCO
REGENERATIVE AIR SWEEPERS
MODEL 210
STD. SEPARATOR ASSY
(M01297)REV J
08-19-2020
9:51 am
SC
FORD MSG435
ENGINE ONLY

TYMCO MODEL 210/210h
STANDARD SEPARATOR ASSEMBLY PARTS LIST
DWG-M01297

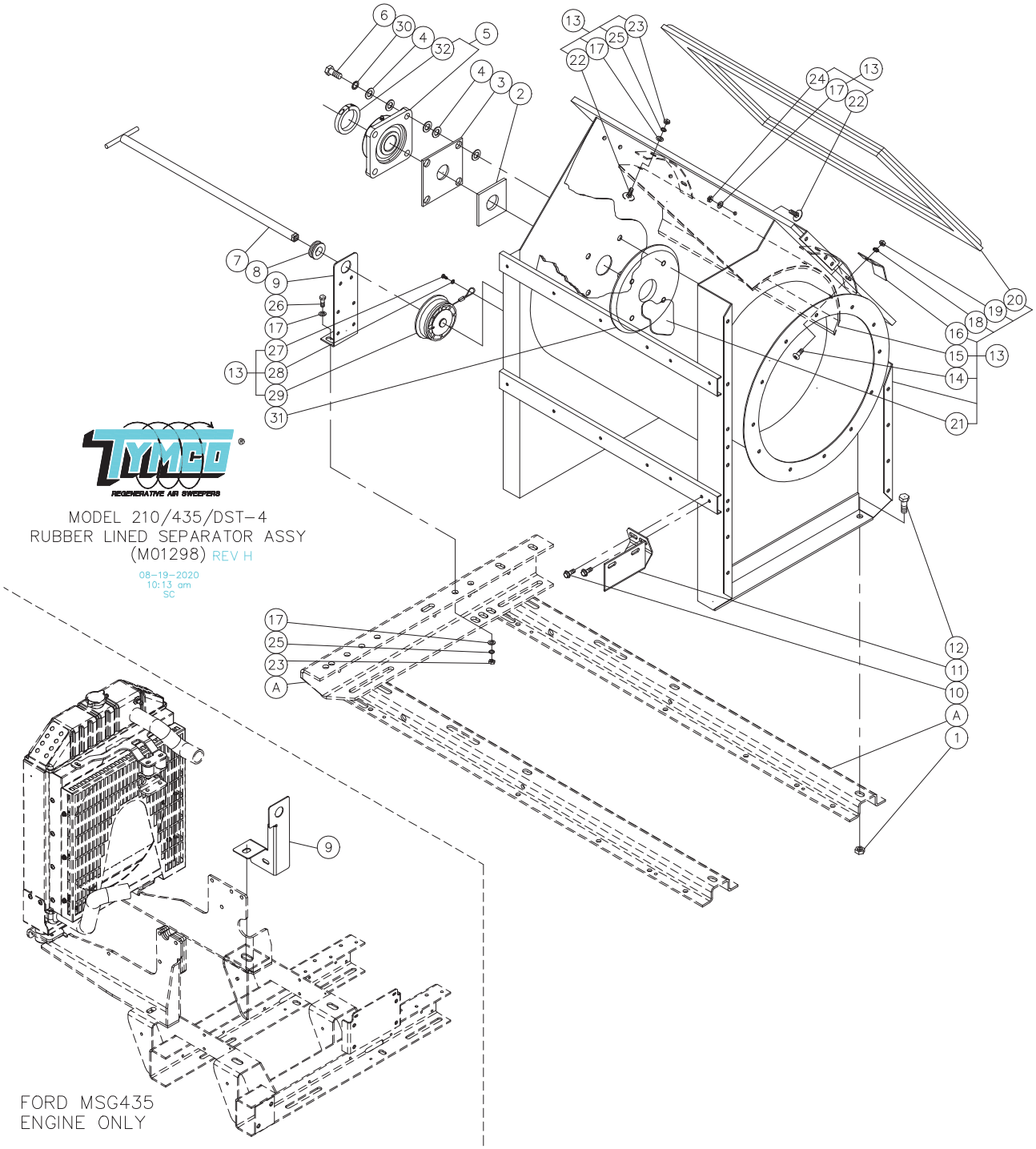
ITEM	QTY.	PART NO.	DESCRIPTION
	1	505022	Separator Assembly
1	4	10231	Nut - 1/2-13 Top Lock
2	1	5011381	Felt Seal - Flange Bearing
3	1	5011380	Retainer Plate - Seal
4	16	10311	1/2" Flat Washer
5	1	13566	Flange Bearing
6	4	10141	Bolt - 1/2-13 x 2 HHCS
7	1	507376	Handle Extension
8	1	30512	Grommet - 7/8 I.D. x 1 5/8 O.D.
9	1	5020381	Mount Bracket (Kubota Auxiliary Engine Only)
-	1	5022106	Mount Bracket (Ford Auxiliary Engine Only)
10	4	10104	Bolt - 5/16-18 x 3/4 Taptite
11	1	5017938	Brace - Housing
12	4	10167	Bolt - 1/2-13 x 1-1/4 HHCS
13	1	504991	Separator - Standard
14	4	20198	Bolt - 5/16-18 x 3/4 CHCS
15	1	5017329	Skimmer Plate
16	2	5017333	Filler Tab
17	2	10305	5/16" Flat Washer
18	2	10306	5/16" Lock Washer
19	4	10205	Nut - 5/16-18 Hex
20	1	500452	Seal - Separator
21	4	20124	Bolt - 5/16-18 x 1 Butt Socket Head
22	4	10272	Nut - 5/16-18 KEPT
23	2	10327	5/16-18 Kept
24	2	20206	Nut - 5/16-18 Hex Jam
25	2	10117	Bolt - 5/16-18 x 1 HHCS
26	6	10302	5/16 - Bonded Seal Washer
27	2	10118	Bolt - 5/16-18 x 1 1/4 HHCS
28	1	40155	Screw - #10-24 x 3/4 Pan Head Tap
29	1	10339	#10 Flat Washer
30	1	507094	4” Plug Assembly
31	4	10312	1/2” Lock Washer
32	1	5021710	Reinforcement Plate
33	(Comes w/13566)	13735	Lock Collar - Bearing

STAINLESS OPTION

13	1	S504991	Separator SS - Standard
14	4	20156	Bolt - 5/16-18 x 3/4 CHCS SS
17	2	10336	5/16 - Flat Washer SS
18	2	10332	5/16 - Lock Washer SS
19	4	10248	Nut - 5/16-18 x 3/4 Phillips Truss HD SS
21	4	40160	Bolt - 5/16-18 x 3/4 Phillips SS
22	4	10248	Nut - 5/16-18 Hex SS
-	4	10332	5/16 Lock Washer SS
23	2	20310	5/16 - Ext/ Tooth Lock Washer SS
24	2	20244	Nut - 5/16-18 x 1 HHCS SS
25	2	20143	Bolt - 5/16-18 x 1 HHCS SS
28	1	30138	Screw - #10-24 x 3/4 Pan Head Tap SS

NOTE: The Stainless Option Bill of Materials (BOM) is NOT a complete list. The items in the stainless option list replace the items in the standard BOM. The items are numbered subsequent.

D


MODEL 210/435/DST-4
RUBBER LINED SEPARATOR ASSY
(M01298) REV H
08-19-2020
10:13 am
SC
FORD MSG435
ENGINE ONLY

TYMCO MODEL 210/210h/435/DST-4
RUBBER LINED SEPARATOR ASSEMBLY PARTS LIST
DWG-M01298

ITEM	QTY.	PART NO.	DESCRIPTION
	1	505023	Separator Assembly
1	4	10231	Nut - 1/2-13 Top Lock
2	1	5011381	Felt Seal - Flange Bearing
3	1	5011380	Retainer Plate - Seal
4	16	10311	1/2" Flat Washer
5	1	13566	Flange Bearing
6	4	10141	Bolt - 1/2-13 x 2 HHCS
7	1	507376	Handle Extension
8	1	30512	Grommet - 7/8 I.D. x 1 5/8 O.D.
9	1	5020381	Mount Bracket (Kubota Auxiliary Engine Only)
-	1	5022106	Mount Bracket (Ford Auxiliary Engine Only)
10	3	10104	Bolt - 5/16-18 x 3/4 Taptite
11	1	5017938	Brace - Housing
12	4	10167	Bolt - 1/2-13 x 1-1/4 HHCS
13	1	504992	Separator - Rubber Lined
14	2	40115	Bolt - 5/16-18 x 3/4 Elevator
15	1	5017330	Skimmer Plate - Rubber Coated
16	2	5017333	Filler Tab
17	6	10305	5/16" Flat Washer
18	4	10327	5/16" Ext. Tooth Lock Washer
19	2	20206	Nut - 5/16-18 Hex Jam
20	1	500452	Seal - Separator
21	1	5017332	Separator Liner
22	6	10123	Bolt - 5/16-18 x 1 Elevator
23	6	10205	Nut - 5/16-18 Hex
24	4	10272	Nut - 5/16-18 KEPT
25	2	10306	5/16 - Lock Washer
26	2	10118	Bolt - 5/16-18 x 1 1/4 HHCS
27	1	40155	Screw - #10-24 x 3/4 Pan Head Tap
28	1	10339	#10 Flat Washer
29	1	507094	4” Plug Assembly
30	4	10312	1/2” Lock Washer
31	1	5021710	Reinforcement Plate
32	(Comes w/13566)	13735	Lock Collar - Bearing

STAINLESS OPTION

13	1	S504992	Separator SS - Rubber Lined
14	4	50111	Bolt - 5/16-18 x 3/4 Elevator
17	2	10336	5/16 - Flat Washer
18	2	20310	5/16 - Ext. Tooth Lock Washer SS
19	4	20244	Nut - 5/16-18 Hex Jam
23	4	10248	Nut - 5/16-18 Hex
24	4	10248	Nut - 5/16-18 Hex
-	4	10332	5/16 Lock Washer
25	2	10332	5/16 Lock Washer
27	1	30138	Screw - #10-24 x 3/4 Pan Head Tap

NOTE: The Stainless Option Bill of Materials (BOM) is NOT a complete list. The items in the stainless option list replace the items in the standard BOM. The items are numbered subsequent.

BLOWER

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FUNCTION

The blower is the most important part of the TYMCO AIR SWEEPER® as it furnishes both pressure for the blast orifice as well as suction for the suction nozzle. The blower is designed for maximum performance with low noise and is constructed of an aluminum alloy for light weight. Blower life can be effectively increased by keeping the dust separator clean and functioning properly.

Operation of the blower is controlled by the blower switch on the control console. The blower has two speeds, 1600 and 1800 RPM. For other programmable blower speed options, see the controls section. To engage the blower, lower the pick-up head and press the "+" side of the momentary blower switch once for 1600 RPM and twice for 1800 RPM. To go straight to 1800, press the switch and hold it for 1 second. This action will engage the PTO and then turn on the blower. When the PTO is engaged, the chassis engine controller will elevate the minimum engine speed to 750 until the PTO is disengaged.

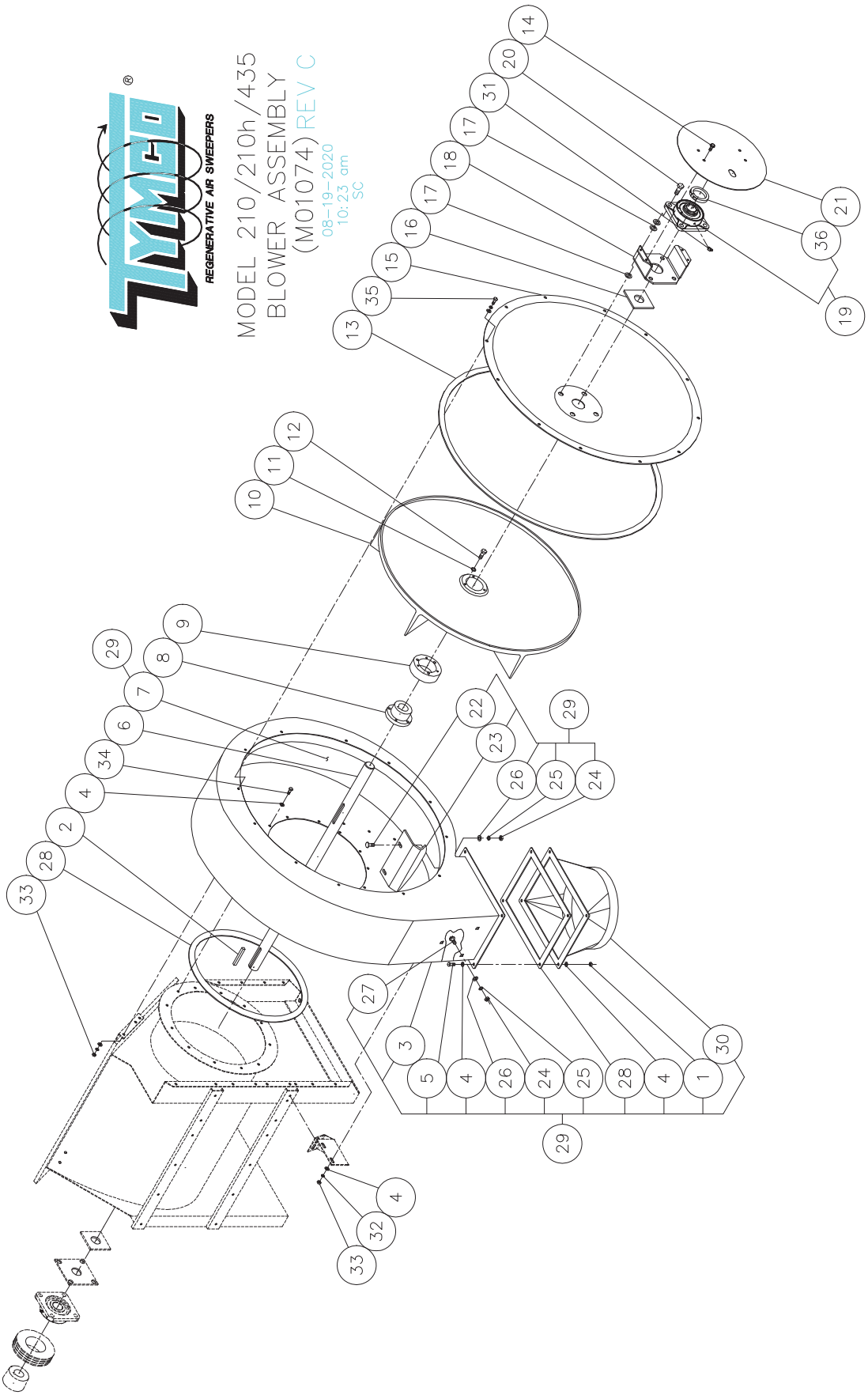
For gasoline chassis, full blower speed will not be achieved until the engine RPM is elevated above 750 RPM for low speed and 830 RPM for high speed.

The blower is powered by an open loop hydrostatic hydraulic circuit. For details on the hydraulic drive and control, see the hydraulics section.

TROUBLESHOOTER'S GUIDE

WARNING: Before servicing, stop engine and remove ignition key or disconnect negative battery cable.

PROBLEM	CAUSE	SOLUTION
Unusual noise/vibration	Blower wearing, out of balance, worn bearings	Remove & replace
Blower bearings overheating	Worn bearings	Replace
	Bearings need grease	Lubricate
Reduced blower performance	Blocked blast orifice, suction hose, screen	Clean
	Cut or torn pressure hose	Replace
Blower will not turn on	Blown fuse	Replace
	Worn drive coupling	Replace
	Low hydraulic oil	Add oil
	High oil temperature	Allow oil to cool
Blower operates less than 1600 RPM	Blower speed sensor not working	Check and replace
Blower shuts off	Low hydraulic oil or high oil temperature	Check oil level and temperature, add oil as needed. Low oil input must be off. See Control System section for more information.
	Maximum truck engine speed of 2100 RPM or ground speed exceeding programmed maximum sweeping speed	This is normal operation. Maintain speed within limits and reengage blower
	Hopper dump switch activated	This is normal operation. Lower hopper and reengage blower.


TYMCO
REGENERATIVE AIR SWEEPERS
MODEL 210/210h/435
BLOWER ASSEMBLY
(M01074) REV C
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TYMCO MODEL 210/210h/435
BLOWER ASSEMBLY PARTS LIST
DWG-M01074

ITEM	QTY	PART NO	DESCRIPTION
	1	504491	Blower Assembly
1	4	10229	Nut - 5/16-18 Hex Top Lock
2	2	5010074	Key - Blower Shaft
3	1	504242	Blower Housing Weldment
4	40	10305	5/16" Flat Washer
5	4	10117	Bolt - 5/16-18 x 1 Hex Head
6	1	5016934	Blower Shaft
7	1	5013035	Liner - Blower
8	1	11137	Q.D. Bushing
9	1	8010111	Hub - Blower Wheel
10	1	5011165	Blower Wheel - Plain
-	-	5011626	Blower Wheel - Coated (Optional)
11	3	10310	7/16" Lock Washer
12	3	20183	Bolt - 7/16-14 NC x 1-3/4 HHCS Allen Head
13	1	5010937	Seal - Blower Housing Cover
14	4	10104	Bolt - 5/16-18 x 3/4 Taptite
15	1	504490	Blower Cover Assembly
16	1	5011381	Felt Seal - Flange Bearing
17	12	10311	1/2" Flat Washer
18	1	5016931	Bearing Plate
19	1	13566	Flange Bearing
20	4	10141	Bolt - 1/2-13 x 2 Hex Head
21	1	5016933	Guard - Bearing
22	2	40179	Bolt - 3/8-16 x 1 1/2 Carriage Head
23	1	5015563	Lip - Blower (210)
24	8	10209	Nut - 3/8-16 Hex Head
25	8	10308	3/8" Lock Washer
26	8	10307	3/8" Flat Washer
27	6	20187	Bolt - 3/8 x 1-1/4 Elevator
28	5 FT.	12334	Tacky Tape (60")
29	1	504243	Blower Housing Assembly w/Transition
30	1	504241	Transition Weldment
31	1	12376	Zerk - 1/4-28 x 45°
32	24	10306	5/16" Lock Washer
33	24	10205	Nut - 5/16-18 Hex
34	24	20124	Bolt - 5/16-18 x 1 Button Socket
35	12	10117	Body Bolt 5/16-18 x 1 HHCS
36	(Comes w/13566)	13735	Lock Collar - Bearing

STAINLESS BLOWER HOUSING OPTION

3	1	S504242	Blower Housing Weldment SS
22	2	20148	Bolt - 3/8-16 x 1 1/2 CHCS SS
24	8	10249	Nut - 3/8-16 Hex SS
25	8	10333	3/8 - Lock Washer SS
26	8	10337	3/8 - Flat Washer SS
27	6	40113	Bolt - 3/8-16 x 1 1/4 Elevator SS
29	1	S504243	SS Blower Housing Assembly w/Transition

WARNING: Before servicing, stop engine and remove ignition key or disconnect negative battery cable.

Read complete instructions before disassembly and assembly.

TO DISASSEMBLE:

1. Refer to Blower Assembly Drawing M01074 on Page E-3.

2. Start engine and raise hopper for maintenance access. **INSTALL HOPPER SAFETY STRUT PIN IN LOWER SAFETY STRUT PRIOR TO WORKING IN THIS AREA.**

3. Remove the protective cover guard (21) over the outer bearing allowing access to bearing.

4. Loosen set screws from bearing (19) using an Allen wrench.

5. Remove the 5/16-18 bolts (14) from blower housing cover (15) and slide cover/bearing assembly off blower shaft. Blower assembly will drop and come to rest inside the blower housing.

   NOTE: It may be necessary to use a gear puller or similar tool to slide bearing off shaft.

6. Remove the three Allen bolts (12) from the blower hub (9). At this point, the blower is free from the Q.D. bushing (8). Using fine emory cloth, lightly sand the shaft from the blower to the outer end and lubricate it.

7. Using a 2" x 4" (50.8 mm x 101.6 mm) piece of wood or similar implement from inside the dust separator, bump the blower toward outer end of the shaft. Shaft must be held in such a position as to align blower so it can be removed from the blower housing.

   NOTE: If for whatever reason the blower will not slide off the shaft using the above method, it may be necessary to remove the blower drive coupling, tone ring, gutter broom pump sheave. See hydraulic section. Loosen inside bearing set screws and remove blower and shaft as an assembly and then remove blower from hub. In either case, it is **NOT** necessary to disturb the Q.D. bushing's (8) position on the shaft unless a plain blower is being replaced with a rubber coated blower or vise versa. If that is the case, position Q.D. bushing/blower hub to the applicable dimension shown on drawing M00569 - Page E-6.

TO ASSEMBLE:

1. If Not already installed, slide the Q. D. bushing (8) onto the blower shaft (6) along with the blower hub (9). Attach the Q. D. bushing (8) to the blower hub (9) and leave loose. Mark the blower shaft (6) at the appropriate distance from the end of the shaft (6) as shown in illustration (M00569). Align the blower hub (9) with the mark on the blower shaft (6) and tighten the Q. D. bushing (8) by torqueing the bolts to 15 ft. - lbs.

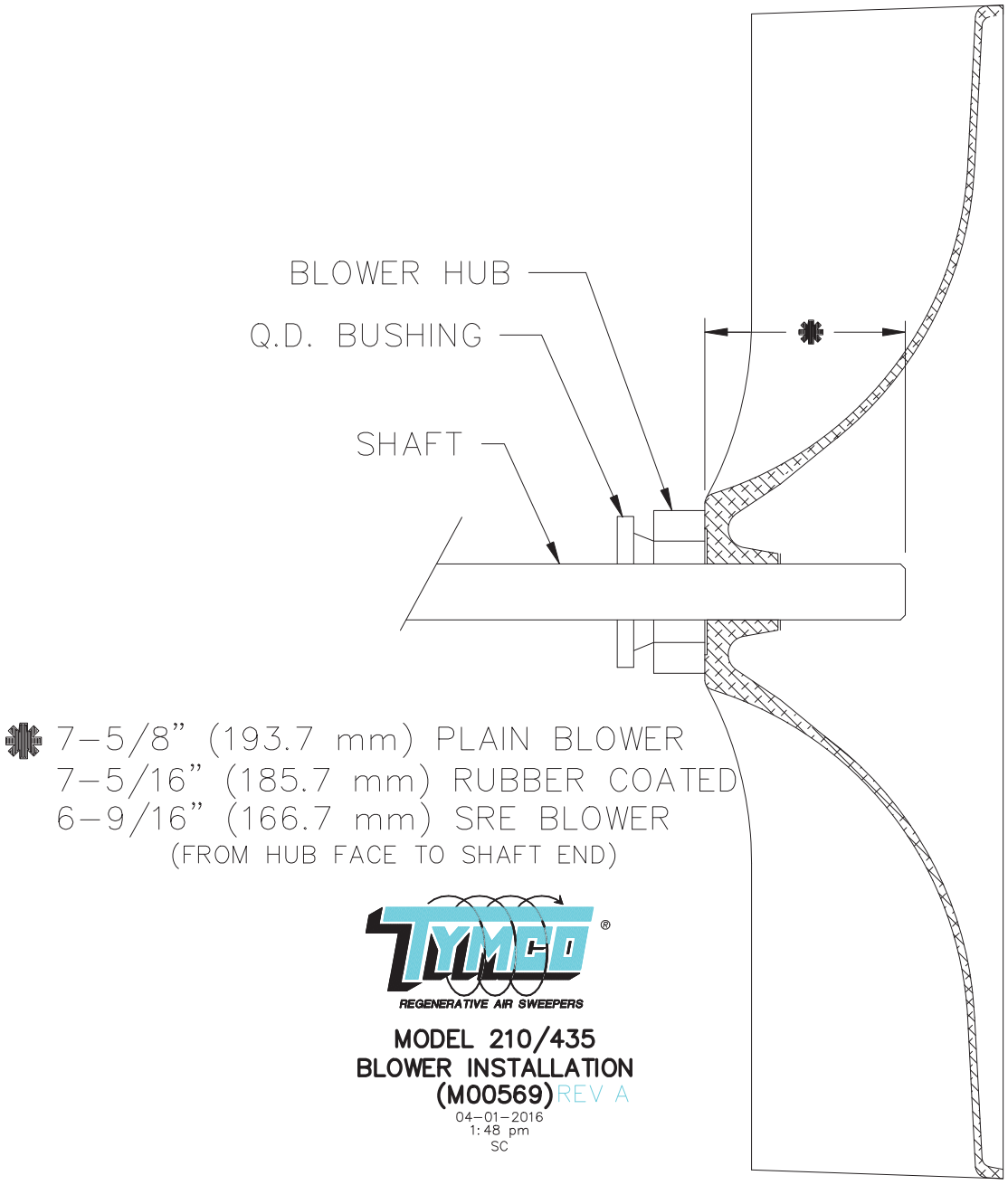
2. Place new blower wheel (10) with vanes toward housing over shaft (6) and slide it into the housing against the hub and align the three mounting bolt holes. Install the three bolts (12) with the lock washers (11). Tighten the three bolts holding the blower onto the hub by torqueing the bolts to 50 ft. - lbs.

3. If cover seal (13) is damaged, replace. The seal material comes in 3/16” X 1” (4.8 mm x 25.4 mm) strips with a peel and stick back. Peel paper and stick seal on cover. Bolt placement holes can be knocked out by using a ball-peen hammer.

4. Place cover (15) into position, align bearing (19) which is already mounted to cover (15), with shaft (6) and slip into place. Match holes in cover (15) with holes in blower housing (3) so that bearing zerk fitting is oriented at 9 o’clock. Bolt bearing cover to blower housing cover matching access hole with zerk.

5. Screw twelve bolts (14) in cover (15). Tighten set screws onto bearing (19) to shaft (6).

6. Replace protective bearing cover guard (21) with bolts (14). Re-adjust auxiliary engine mount and set blower belt tension.



PICK-UP HEAD

CONVENTIONAL CAB
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FUNCTION

The pick-up head is the most important assembly on the sweeper. With proper cleaning, care and adjustment, the unit will perform as it was designed to perform.

Pressurized air from the blower enters the pick-up head through the pressure inlet assembly where turning vanes distribute it equally across the full width of the pick-up head pressure chamber. The air then exits the pressure chamber at a very high velocity through a slot called the Blast Orifice. The approximate 45 degree forward pitch of the blast orifice results in debris being dislodged from the sweeping surface and entrained in the swirling left to right movement of the high speed airstream. After reaching the extreme right side of the pick-up head, the debris- laden air encounters a suction inlet nozzle where it is drawn up the suction tube and into the hopper. The turbulent high velocity air is contained beneath the pick-up head by seal curtains in front and back and skid plates on either side.

NOTE: Any modification or restriction of the blast orifice, pressure inlet nozzle, tube or suction inlet will greatly effect overall performance of the machine.

WARNING: Before servicing, stop auxiliary engine and remove ignition key or disconnect negative battery cable. When working under or around raised hopper, *ALWAYS install pin in lower safety strut.*

The raising and lowering of the pick-up head is accomplished hydraulically with the control valve being actuated by a toggle switch located on the operator's console inside the truck cab. When lowered, the pick-up head lift chains have slack so that its weight is suspended on the four flotation springs. With the sweeper engine at operating RPM, the springs should be adjusted so that the pick-up head can be lifted off the ground slightly with one hand and slide from side to side with ease.

A break-away transition is provided on the suction side of the machine to allow the operator to check for build up of dirt and debris in the suction hose. A check of the suction and pressure hose at various times may reveal wear. As areas of wear become evident, rotate the hose until wear is even on all inside surfaces.

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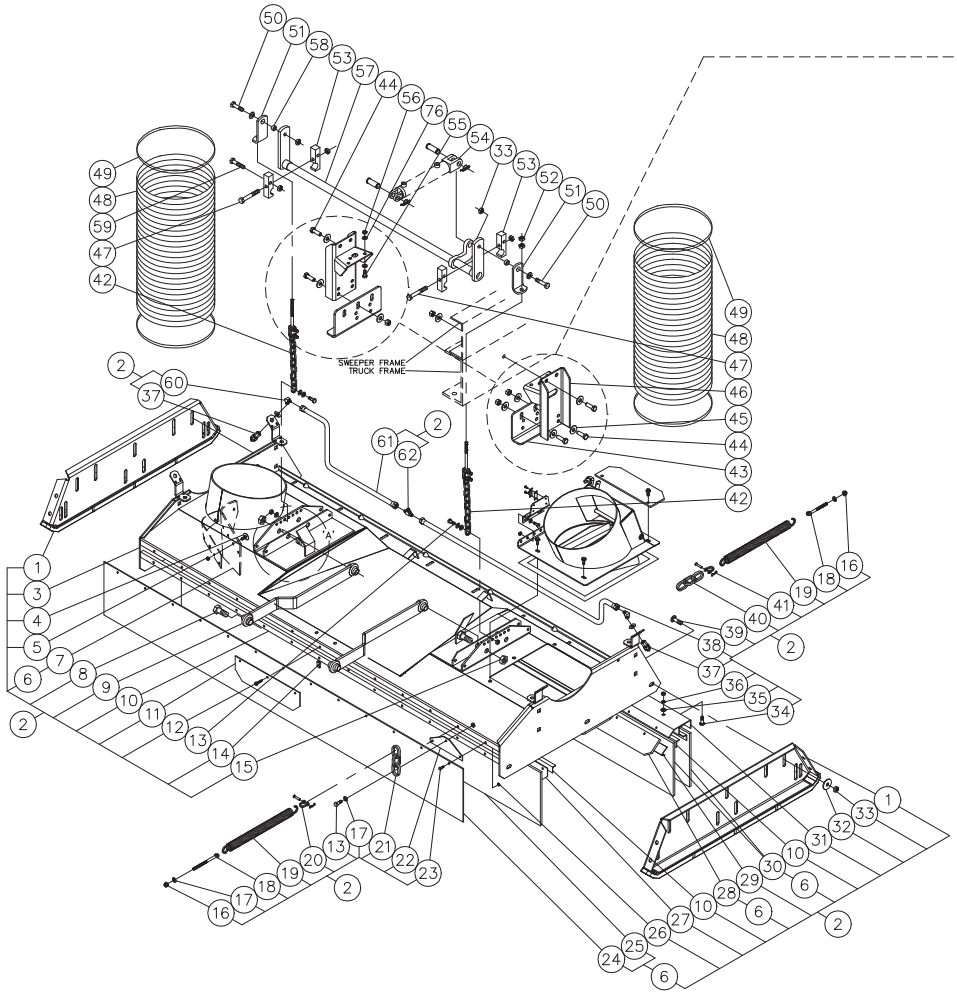
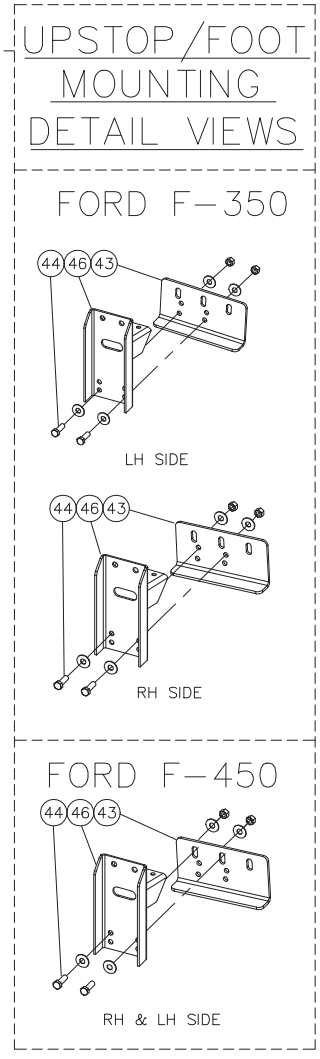
CAUTION: For safety, check the pick-up head drag links for loose nuts or damage. Failure to do so could cause serious damage to truck rear tires and axle. Prevent an accident: check it!

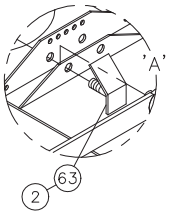
TROUBLESHOOTER'S GUIDE

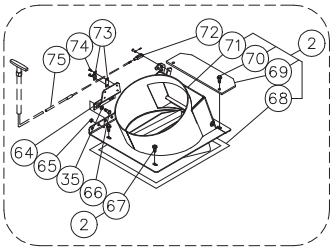
PROBLEM	CAUSE	SOLUTION
Low sweeper efficiency, excessively dusty condition	Faulty seal	Check all seals for leaks. Following seals should be air tight: Cleanout gripper plug (Separator) Dump door Pressure & Suction hose Separator Suction Transition Rubber flap seals (Hopper air entrance)
	Dirty dust separator	Repair or replace any worn or damaged parts Check cleanout gripper plug - be sure it is secure. Check for unusually large build-up of dust. Clean skimmer slot.
	Pick-Up head problem	Worn curtains. Measure blast orifice opening so it is adjusted as noted in service and maintenance instructions.. Check for blockage. Check pressure & suction hose for blockage, build-up or holes. Check skid plate adjustment. Clean skimmer hood inside hopper and check for free movement at hinge points.
	Hopper screen restricted	Clean as required.
	Blower wear	Check for excessive wear. Replace as required.
	Water spray nozzles blocked (If applicable)	Check and clean as required.
Blast orifice damage	Striking large objects, curbs or deep holes	Repair as required. Check daily for condition and proper gap.

NOTES









PRESSURE BLEEDER CABLE ASSEMBLY

MODEL 210/210h CONVENTIONAL CAB
PICK-UP HEAD ASSEMBLY
(M02754) REV A

TYMCO MODEL 210/210h CONVENTIONAL CAB
PICK-UP HEAD ASSEMBLY PARTS LIST
DWG-M02754

ITEM	QTY.	PART NO.	DESCRIPTION
	1	508876	Pick-Up Head Assembly - Conventional Cab
1	2	502569	(RH & LH) Duo-Skid Plate Assembly
2	1	507477	Pick-Up Head Subassembly
3	1	507476	Pick-Up Head Weldment
4	6	10123	Bolt - 5/16-18 Elevator X 1
5	14	10205	Nut - 5/16-18 - Hex
6	1	507479	Curtain Set
7	1	5020418	Suction Baffle Curtain
8	2	10171	Bolt - 3/4-10 X 3-1/2
9	2	500161	Drag Link (Short)
10	4	5015001	Curtain Clamp
11	1	5010833	Front Curtain Retainer
12	65	20165	Screw - 1/4”-14 x 1-1/4”
13	6	10128	Bolt - 3/8-16 X 1
14	65	10224	#14-14 U-Type Speed Nut
15	4	10233	Lock Nut - 3/4-10
16	4	20246	Nut 3/8-16NC Flexloc
17	8	10307	3/8” Flat Washer
18	4	10163	3/8” Eye Bolt
19	4	5016923	Spring
20	4	12154	Clevis
21	2	5010226	Front Chain - 6 Links (F-350)
-	2	5012665	Front Chain - 9 Links (F-450)
22	2	5012965	Spring Attachment
23	4	10111	Bolt - 1/4-20 X 1
24	1	5011143	Curtain - Front Light Weight
25	1	5011144	Curtain - Front Heavy
26	4	10246	Nut - 1/4-20 Top Lock
27	1	8010809	Front Curtain Stiffener
28	1	5010584	Blast Orifice Curtain
29	1	5015295	Blast Orifice Stiffener Clamp
30	2	5010221	Rear Curtain
31	1	505271	Adjustable Blast Orifice Weldment
32	26	10378	.531 x 1-3/4” Washer
33	30	10231	Lock Nut - 1/2-13
34	8	10125	Bolt - 5/16-18 Carriage Head X 1
35	12	10305	5/16” Flat Washer
36	8	10306	5/16” Lock Washer
37	2	10857	Spray Nozzle w/800050 Tip
38	1	501339	Hose Assembly 1/4 x 25” Water
39	10	10146	Bolt - 1/2-13 Carriage Head X 1-1/4
40	2	5020192	Rear Chain - 2 Links (F-350/GMC/Chevrolet)
-	2	5010226	Rear Chain - 6 Links (F-450)
41	4	12155	WW3 Hitch Pin Z/P
42	2	502402	Lift Chain Assembly
43	2	5021803	Upstop Foot
44	8	10139	Bolt - 1/2-13 x 1 1/2 HHCS
45	20	10311	1/2” Flat Washer
46	2	508877	Upstop Weldment
47	2	10142	Bolt - 1/2-13 X 3

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ITEM	QTY.	PART NO.	DESCRIPTION
48	2	5010378	Suction & Pressure Hose
-	2	5017410	Heavy Duty Suction Hose
49	4	11304	Light Duty Hose Clamp
-	4	11340	Heavy Duty Hose Clamp - 12-3/4" Dia.
50	2	10140	Bolt - 1/2-13 x 1 3/4 HHCS
51	2	5010163	Swing - Lift Arm
52	4	10201	Nut - 1/2-13
53	2	5010128	Bearing Block
54	(Shown for Clarity)	503364	Hydraulic Cylinder (See Hyd. Section)
55	4	10129	Bolt - 3/8-16 x 1 1/4 HHCS
56	10	10225	Lock Nut - 3/8-16
57	1	500029	Lift Arm Weldment
58	2	5010836	Bushing
59	4	10141	Bolt - 1/2-13 X 2 HHCS
60	2	10818	Fitting - 1/4 MPT x 1/4” SAE 90° Elbow
61	1	500689	Hose Assembly - 1/4 x 68” Water
62	1	10816	Fitting - Tee 1/4 45° SAE
63	2	504348	Alignment Bolt
64	1	5020617	Base Mount - L.P.B. Cable
65	2	10229	Nut - 5/16-18 Top Lock
66	2	20112	Bolt - 5/16-18 x 3/4 HHCS
67	2	10104	Bolt - 5/16-18 Taptite
68	1	5013037	Seal - Pressure Tube Inlet
69	1	5017175	Leaf Pressure Bleeder Wear Pad
70	2	30120	Bolt - 5/16-18 x 1-1/4 Taptite
71	1	508735	Pressure Inlet w/L.P.B. Actuator Tab
72	1	10412	Clevis, Pin & Clip Assembly
73	1	11325	Cable Clamp & Shim
74	2	10107	#10 X 24 Phillips Taptite
75	(Shown for Clarity)	5010973	Cable - Leaf Bleeder - 108”
76	12	10307	3/8 Flat Washer

SERVICE AND MAINTENANCE

WARNING: Before servicing, stop auxiliary engine (210)/chassis engine (210h) and remove ignition key or disconnect negative battery cable.

BLAST ORIFICE OPENING - LOCATION & ADJUSTMENT

The blast orifice directs the high velocity air from the blower at an approximate 45 degree angle to the ground. Its opening should measure 3/8 inch (9.5 mm) on the left side of the pick-up head tapering to 7/8 inch (22.2 mm) opening on the right side. A larger opening will reduce the velocity and a smaller opening will restrict the air volume. To adjust, loosen the eight (8) bolts at the rear of the pick-up head and slide blast orifice assembly in or out in slotted holes until proper gap is achieved. Tighten the eight (8) mounting bolts and re-measure to be sure assembly has not moved.

NOTE: All Blast orifice measurements must be taken with auxiliary engine off!

BLAST ORIFICE OPENING - PROPER CLEARANCE

The blast orifice opening must be maintained as noted above. The distance from the ground to the opening is also critical and must be maintained. See Cross Section Drawing for proper ground clearance setting. Loosen five bolts and slide skid plate up or down in slotted holes for proper adjustment. Removing the skid plate for this adjustment is not necessary.

SUCTION AND PRESSURE HOSES

It is advisable to rotate the suction and pressure hoses 1/4 turn (90°) every 25-50 hours of use to prolong their wear life. This procedure distributes “Hot Spot” wear.

CURTAIN REPLACEMENT
USE ONLY TYMCO CURTAINS FOR REPLACEMENT

1. Remove pick-up head from under sweeper. Turn pick-up head over to expose bottom of head and curtains. Remove the screws and angle iron clamps. (Make note how angle iron clamps are oriented so they can be reinstalled correctly.) Remove small suction baffle curtain near the nozzle.

CAUTION: If sweeper is equipped with dust control system, take care not to damage water spray nozzles on pick-up head when turning it over.

2. Scrape off all debris accumulated on bottom of the pick-up head and wash off for easier rebuilding.

3. If sides of pick-up head are bent, straighten as close as possible to original configuration. Lay new curtains in place (see Cross Section drawing.) If a curtain is a little too long, trim equal amounts off each end until curtain lays perfectly flat in place.

4. Before bolting curtain in place, look closely at side of curtain and notice that it is made of a 2-ply material with a thicker layer of rubber on one side of the curtain. The thick layer is the wear surface and should be installed oriented toward the front of the pick-up head.

5. The curtains are now ready to be bolted on. If speed clips and screws are worn out, a complete replacement set is available from TYMCO, Part No. 500506. Make certain the angle iron clamps are installed properly.

6. When beginning to install the curtains, it is best to finger start all the curtain screws and then start tightening them from the center working gradually to each side. Do not skip around or a wavy curtain will result and faster curtain wear will occur.

7. The last curtain to install is the suction baffle curtain around the suction nozzle. Special elevator bolts are used here because their flat heads reduce restriction and do not wear as easily.

8. With all new curtains installed, adjust blast orifice opening and install pick-up head under the sweeper.

MODEL 210
PICK–UP HEAD CROSS SECTION – CONV. CAB
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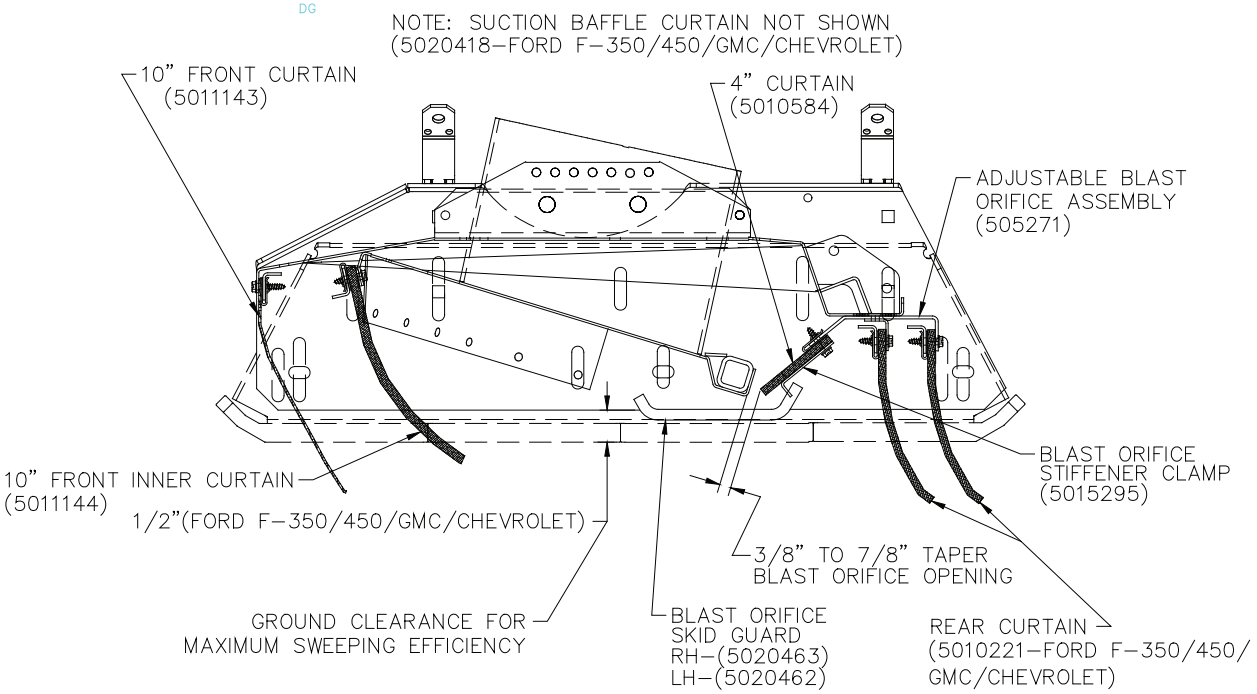

GUTTER BROOM

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CONVENTIONAL CAB

FUNCTION

As a complement to the REGENERATIVE AIR SYSTEM, the gutter broom is designed to dig material loose from the gutter or similar areas and move it in front of the pick-up head where it can be easily picked up by the air sweeping action of the pick-up head. The gutter broom is designed to hydraulically relieve and flex up and over or in-and-out around stationary obstacles. When not in use, the gutter broom is retracted under the cab, off the pavement, and hydraulically locked in position. Operation of the broom is controlled by a switch in the cab and by the BlueLogic control system. The gutter broom is powered by a hydraulic pump which is belt driven by the blower shaft, therefore, the broom will not operate unless the blower is running. With the blower off, the broom will drop down when the truck key is in the “ON” position, but will not turn. The broom is also inoperable for the first 10 seconds after activating the blower.

H

WARNING: Before servicing, stop auxiliary engine (210)/chassis engine (210h) and remove ignition key or disconnect negative battery cable.

WARNING: Never check for hydraulic leaks using bare hand as pressure in system could cause oil to be injected into the skin; thus causing serious injury.

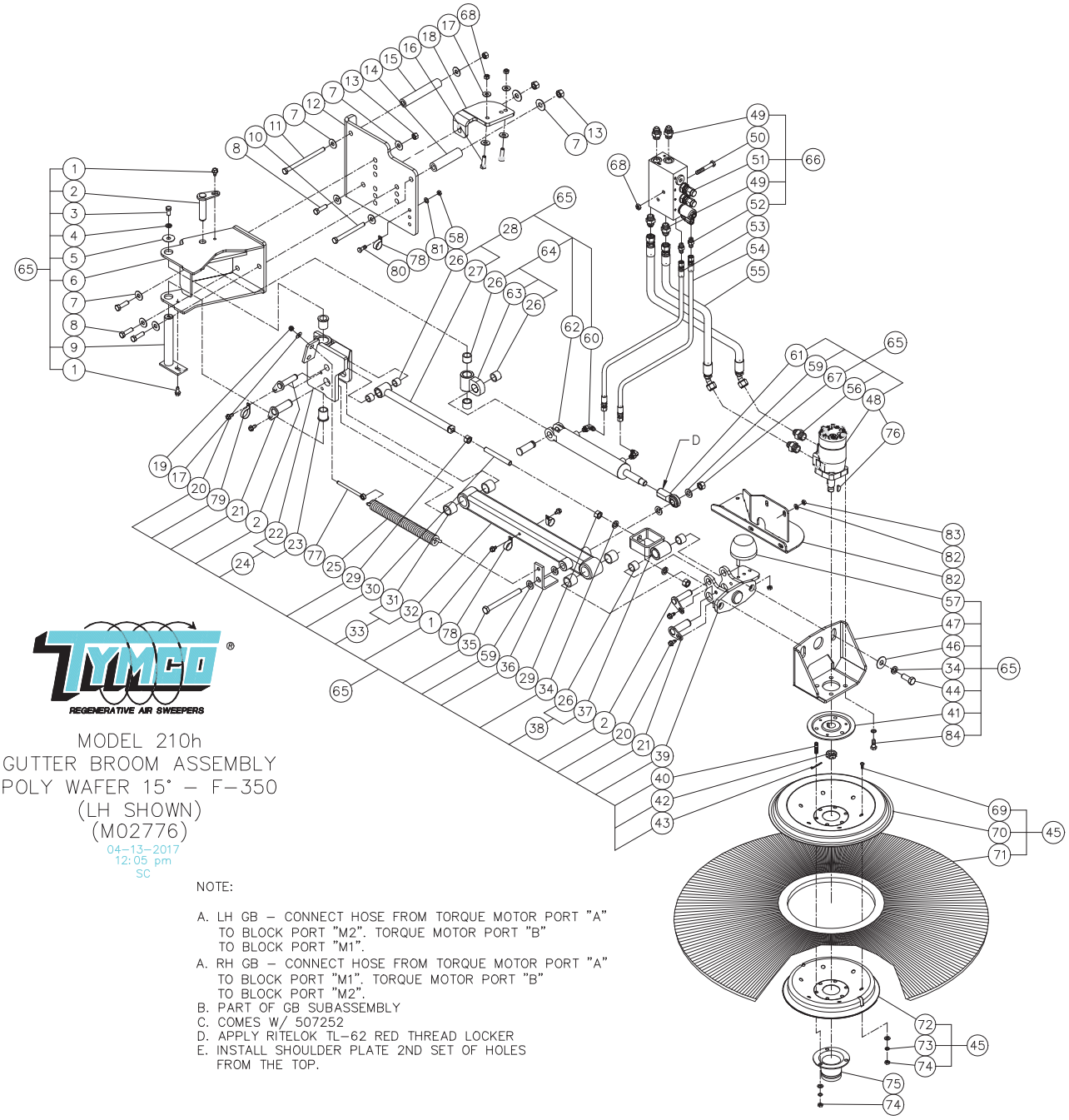
TROUBLESHOOTER'S GUIDE

PROBLEM	CAUSE	SOLUTION
Gutter broom lowers but will not raise	No electrical power to valve bank coil.	Check for defective switch and/or wiring problem. Replace/repair as required to obtain full 12V to coil.
	Flow control valve out of adjustment or clogged	Adjust and/or clean (see SERVICE AND MAINTENANCE Section)
	Valve bank coil defective	Check for 6.2 OHM resistance reading on ohmmeter RX1 scale.
	No ground between valve bank coil and sweeper	Check ground wire connectors.
	Defective cylinder packing or components	Repair/replace as required.
	Bent or damaged structural components in boom arm or mounting	Repair or replace.
Gutter broom motor stalls easily	Replace O-ring; check sequence valve block bore for burrs or rough spots.	
	Cartridge valve poppet not seating properly	Clean foreign material from valve seat. Replace cartridge if damaged seat/poppet exists.
	Note: Gutter broom will rotate backward while switch is in "up" position if either or both of the above two conditions exist	
	Gutter broom torque motor defective	Rebuild or replace (See SERVICE AND MAINTENANCE Section).
	Hydraulic pump pressure low	See Hydraulic Section.
Gutter broom raises but drifts back down	Cylinder by-passing internally	Re-pack or replace cylinder.
	Electric lock valve defective	Replace lock valve.
Gutter broom will not lower but motor turns	No electrical power to lock valve coil	Check electrical circuit for 12V to lock valve coil repair as required.

PROBLEM	CAUSE	SOLUTION
	Lock valve coil not grounded	Check ground wire, check connector ground and common power.
	Defective coil	Check for 7.0 OHMS resistance on RX1 scale. Replace a required. Check coil cold.
	Lock valve stuck closed	Replace
Gutter broom drops down but will not extend	Sequence valve improperly adjusted	Gutter broom sequence valve suggested adjustment is: Steel Vertical Digger bristles - 2-1/2 turns in. Poly Vertical Digger and Poly Wafer bristles - 2 turns in. Refer to SERVICE AND MAINTENANCE in this manual section for more detail.
	Spring improperly adjusted	Tighten eye bolt adjustment (See SERVICE AND MAINTENANCE Section).
	Damaged structural components	Repair or replace.
	Universal joints stuck or damaged	Replace
Excessive bristle wear	Improper adjustments	See SERVICE AND MAINTENANCE Section.
Gutter broom does not move debris in front of pick-up head properly	Bristles worn out	Replace.
	Improper angle adjustments	See SERVICE AND MAINTENANCE Section.
Gutter Broom tilt will not move	No electrical power to tilt system	Check switch and electrical wiring.
	Wrist at motor mount binding	Free up mechanical bind. Note: Wrist attaching bolts must be loose enough to allow free movement of motor mount assembly.
	Flow restrictor plugged	Remove and Clean. Location at control valve
	No hydraulic pressure	See Hydraulic Troubleshooting section.
Tilt will move in one direction only	Defective control valve coil	Check for shortened or defective coil. Should read 6.2 OHM resistance on Ohmmeter RX1 scale.
	Improper ground	Check ground wire for good connections.

PROBLEM	CAUSE	SOLUTION
	Defective control valve	See Hydraulic Troubleshooting Section
Tilt drifts out of position after setting	Defective lock valve	Remove and replace lock valve cartridge.
	Tilt cylinder by-passing	Re-pack cylinder.
Torque motor cap seal leaks or failure	Gutter broom retraction speed to fast	Set flow control to regulate retraction time to 2-1/2 to 3 seconds.

WARNING: Never check for hydraulic leaks using bare hand as pressure in system could cause oil to be injected into the skin; thus causing serious injury.



MODEL 210h
GUTTER BROOM ASSEMBLY
POLY WAFER 15° – F–350
(LH SHOWN)
(M02776)

04–13–2017
12:05 pm
SC

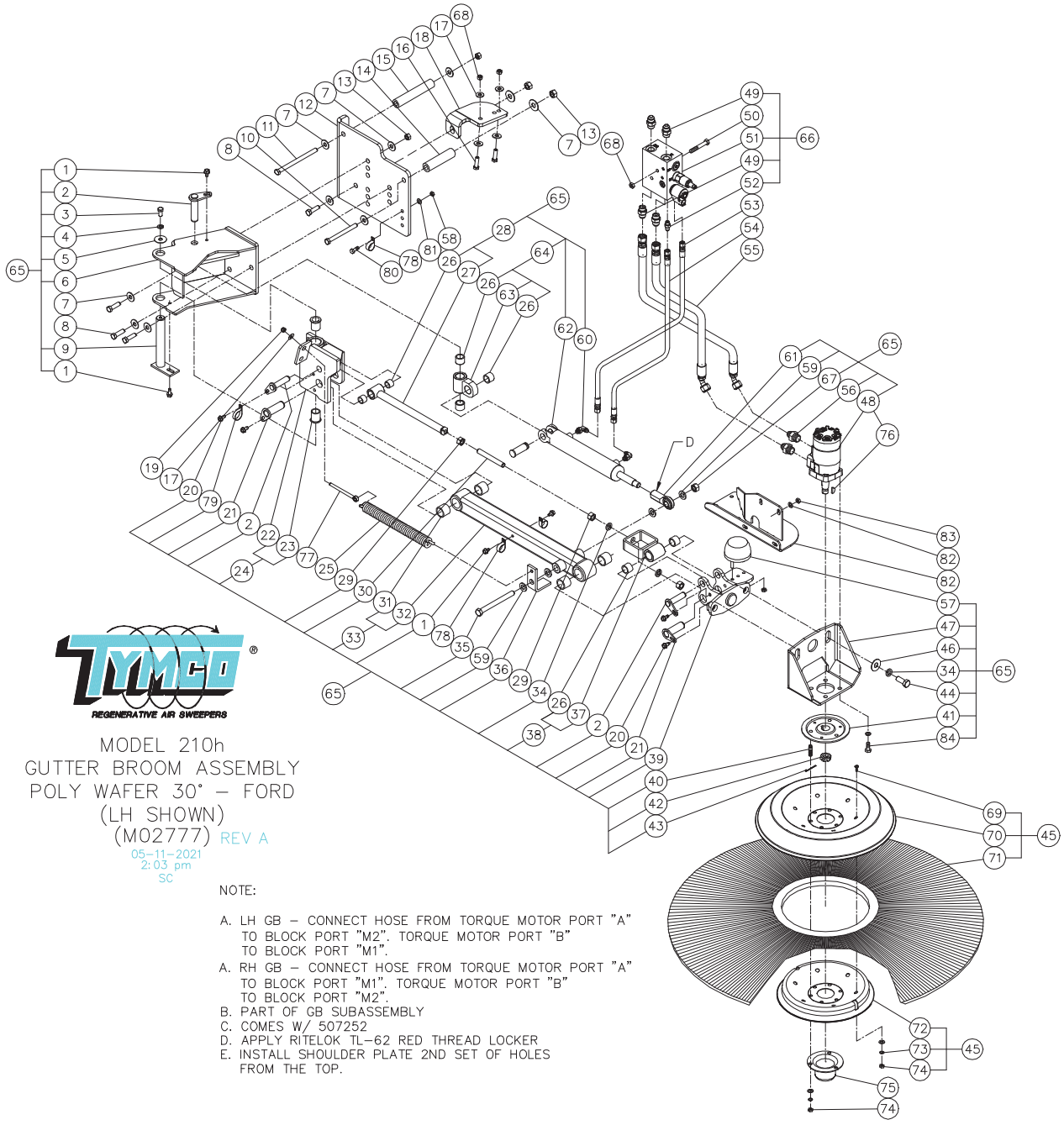
NOTE:

A. LH GB – CONNECT HOSE FROM TORQUE MOTOR PORT "A" TO BLOCK PORT "M2". TORQUE MOTOR PORT "B" TO BLOCK PORT "M1".
A. RH GB – CONNECT HOSE FROM TORQUE MOTOR PORT "A" TO BLOCK PORT "M1". TORQUE MOTOR PORT "B" TO BLOCK PORT "M2".
B. PART OF GB SUBASSEMBLY
C. COMES W/ 507252
D. APPLY RITELOK TL–62 RED THREAD LOCKER
E. INSTALL SHOULDER PLATE 2ND SET OF HOLES FROM THE TOP.

TYMCO MODEL 210h
GUTTER BROOM ASSEMBLY POLY WAFER 15° - F-350 PARTS LIST
DWG-M02776

ITEM	QTY.	PART NO.	DESCRIPTION
	1	508870	Gutter Broom Assembly Poly Wafer 15° (LH), 210h
	1	508871	Gutter Broom Assembly Poly Wafer 15° (RH), 210h
1	2	10104	Self Tap - 5/16-18 UNC x 3/4
2	3	507860	Pin - Gutter Broom Cylinder Pivot
3	1	10127	Bolt 3/8-16 UNC x 3/4
4	5	10308	Lock Washer - 3/8
5	1	10397	Fender Washer - 3/8 x 1 1/4
6	1	508859	Shoulder Weldment - LH
-	1	508881	Shoulder Weldment - RH
7	12	10311	Flat Washer - 1/2
8	4	10140	Bolt - 1/2-13 UNC x 1 3/4 G5
9	1	507861	Pivot Pin - Boom Arm
10	1	30111	Bolt - 1/2-13 UNC x 5 1/2
11	1	13372	Bolt - 1/2-13 UNC x 7 1/2
12	1	5021724	Shoulder Plate
13	6	10231	Lock Nut - 1/2 UNC
14	1	5021741	Rear Mount Tube
15	1	5021742	Front Mount Tube
16	2	10129	Bolt - 3/8-16 UNC x 1 1/4
17	5	10307	Flat Washer - 3/8
18	1	5021719	Bracket - Lower Mounting LH
-	1	5021756	Bracket - Lower Mounting RH
19	1	20246	Nut - 3/8-16 Flexloc
20	4	30128	Bolt - 3/8 x 3/4 Self Tap
21	2	508789	Pin Weldment
22	1	508857	Shoulder Weldment - LH
-	1	508882	Shoulder Weldment - RH
23	2	11040	Bronze Flange Bushing
24	1	508858	Shoulder Assy - LH
-	1	508883	Shoulder Assy - RH
25	1	5010232	Gutter Broom Spring
26	8	13344	Polygon Bushing - 3/4 x 1
27	1	508801	Level Arm Weldment
28	1	508802	Level Arm Assembly
29	3	10219	Nut - 5/8 UNC
30	1	5021738	Level Arm Threads
31	4	13367	Poly Bushing - 1 x 1 1/4
32	1	508795	Arm Weldment
33	1	508796	Arm Assembly w/Bushings
34	4	10314	Lock Washer 5/8
35	1	13373	Bolt - 5/8-18 UNF x 6 1/2
36	1	5021789	Spring Lug
37	1	508797	Wrist Adjust Weldment
38	1	508798	Wrist Adjust Assembly
39	1	508791	Wrist Weldment - LH
-	1	508808	Wrist Weldment - RH
40	3	30112	Stud - 5/16-18 x 1.313
41	1	5014697	Drive Hub
42	1	10264	Castle Nut - Motor
43	1	10402	1/8 x 1 1/2 Cotter Pin
44	2	10147	Bolt - 5/8-11 x 1 1/2 HHCS G5

ITEM	QTY.	PART NO.	DESCRIPTION
45	1	504147	Poly Wafer Option - 15° Slope
46	2	10313	Flat Washer - 5/8
47	1	508856	Hand Weldment
48	1	507252	6 CID “T” Motor
49	4	10786	Fitting - 1/2 JIC - 1/2 Boss Str
50	1	10172	Bolt - 3/8-16 x 3.0 HHCS
51	1	509396	Manifold w/Spin On
52	2	20751	Fitting - 1/4 JIC - 1/4 Boss Str.
53	1	501320	Hose Assembly - 1/4” x 75”
54	1	507583	Hose Assembly - 1/4” x 66”
55	2	503057	Hose Assembly - 1/2” x 96”
56	2	20713	Fitting - 1/2 JIC - 5/8 Boss Str.
57	1	13148	Round Bumper
58	1	10229	Lock Nut - 5/16
59	3	5011735	Spacer Washer - GB Rod End
60	2	20782	Fitting - 1/4 JIC - 1/4 Boss 90°
61	1	5010230	Rod End
62	1	508381	Gutter Broom Cylinder
63	1	507862	Cylinder Pivot Lug
64	1	507863	GB Cylinder Pivot
65	1	508868	210h GB Sub Assy. LH Side Ford
-	1	508869	210h GB Sub Assy. RH Side Ford
66	1	509374	GB Manifold Assy.
67	1	10227	Lock Nut - 5/8
68	3	10225	Lock Nut - 3/8 UNC
69	6	20195	Screw - 5/16-18 x 1 Truss
70	1	5016063	Top Disc - 15°
71	2	5010231	Poly Element
72	1	5013167	Bottom Disc Clamp
73	3	10306	5/16 - Lock Washer
74	3	10205	Nut - 5/16-18 Hex
75	1	504177	Nut Cover Heavy Duty
76	1	22099	Woodruff Key Motor
77	1	10163	Bolt - 3/8-16 x 5 Eye
78	3	11362	Clamp - 1 1/8” Dipped HD
79	1	11353	Clamp - 2” Dipped HD
80	1	10117	Bolt - 5/16 x 1 HHCS
81	7	10305	Flat Washer - 5/16
82	1	508807	LH Bumper Stop Weldment
-	1	508810	RH Bumper Stop Weldment
83	3	10299	Nut - 8mm 1 1/4 Hex
84	4	10128	Bolt - 3/8-16 x 1 HHCS



MODEL 210h
GUTTER BROOM ASSEMBLY
POLY WAFER 30° – FORD
(LH SHOWN)
(M02777) REV A
05-11-2021
2:03 pm
SC

NOTE:

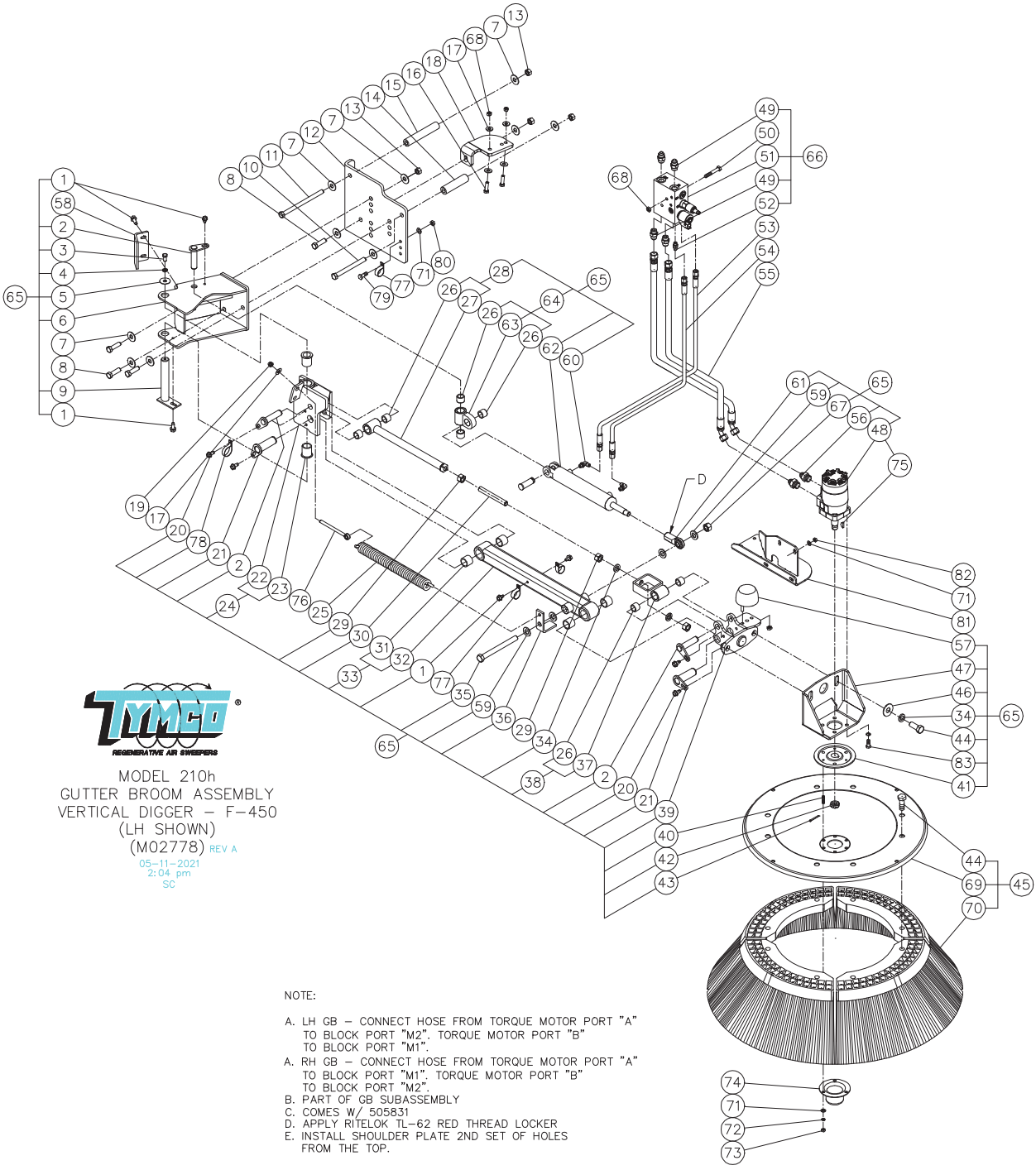
A. LH GB – CONNECT HOSE FROM TORQUE MOTOR PORT "A" TO BLOCK PORT "M2". TORQUE MOTOR PORT "B" TO BLOCK PORT "M1".
A. RH GB – CONNECT HOSE FROM TORQUE MOTOR PORT "A" TO BLOCK PORT "M1". TORQUE MOTOR PORT "B" TO BLOCK PORT "M2".
B. PART OF GB SUBASSEMBLY
C. COMES W/ 507252
D. APPLY RITELOK TL-62 RED THREAD LOCKER
E. INSTALL SHOULDER PLATE 2ND SET OF HOLES FROM THE TOP.

TYMCO MODEL 210h
GUTTER BROOM ASSEMBLY POLY WAFER 30° - FORD F-450 PARTS LIST
DWG-M02777

ITEM	QTY.	PART NO.	DESCRIPTION
	1	508872	Gutter Broom Assembly Poly Wafer 30° (LH), 210h
	1	508873	Gutter Broom Assembly Poly Wafer 30° (RH), 210h
1	4	10104	Self Tap - 5/16-18 UNC x 3/4
2	3	507860	Pin - Gutter Broom Cylinder Pivot
3	1	10127	Bolt 3/8-16 UNC x 3/4
4	5	10308	Lock Washer - 3/8
5	1	10397	Fender Washer - 3/8 x 1 1/4
6	1	508859	Shoulder Weldment - LH
-	1	508881	Shoulder Weldment - RH
7	12	10311	Flat Washer - 1/2
8	4	10140	Bolt - 1/2-13 UNC x 1 3/4 G5
9	1	507861	Pivot Pin - Boom Arm
10	1	30111	Bolt - 1/2-13 UNC x 5 1/2
11	1	13372	Bolt - 1/2-13 UNC x 7 1/2
12	1	5021724	Shoulder Plate
13	6	10231	Lock Nut - 1/2 UNC
14	1	5021741	Rear Mount Tube
15	1	5021742	Front Mount Tube
16	2	10129	Bolt - 3/8-16 UNC x 1 1/4
17	5	10307	Flat Washer - 3/8
18	1	5021719	Bracket - Lower Mounting LH
-	1	5021756	Bracket - Lower Mounting RH
19	1	20246	Nut - 3/8-16 Flexloc
20	4	30128	Bolt - 3/8 x 3/4 Self Tap
21	2	508789	Pin Weldment
22	1	508857	Shoulder Weldment - LH
-	1	508882	Shoulder Weldment - RH
23	2	11040	Bronze Flange Bushing
24	1	508858	Shoulder Assy - LH
-	1	508883	Shoulder Assy - RH
25	1	5010232	Gutter Broom Spring
26	8	13344	Polygon Bushing - 3/4 x 1
27	1	508801	Level Arm Weldment
28	1	508802	Level Arm Assembly
29	3	10219	Nut - 5/8 UNC
30	1	5021738	Level Arm Threads
31	4	13367	Poly Bushing - 1 x 1 1/4
32	1	508795	Arm Weldment
33	1	508796	Arm Assembly w/Bushings
34	4	10314	Lock Washer 5/8
35	1	13373	Bolt - 5/8-18 UNF x 6 1/2
36	1	5021789	Spring Lug
37	1	508797	Wrist Adjust Weldment
38	1	508798	Wrist Adjust Assembly
39	1	508791	Wrist Weldment
-	1	508808	Wrist Weldment - RH
40	3	30112	Stud - 5/16-18 x 1.313
41	1	5014697	Drive Hub
42	1	10264	Castle Nut - Motor
43	1	10402	1/8 x 1 1/2 Cotter Pin
44	2	10147	Bolt - 5/8-11 x 1 1/2 HHCS G5

H

ITEM	QTY.	PART NO.	DESCRIPTION
45	1	500787	Poly Wafer Option - 30° Slope
46	2	10313	Flat Washer - 5/8
47	1	508856	Hand Weldment
48	1	507252	6 CID “T” Motor
49	4	10786	Fitting - 1/2 JIC - 1/2 Boss Str
50	1	10172	Bolt - 3/8-16 x 3.0 HHCS
51	1	509396	Manifold w/Spin On
52	2	20751	Fitting - 1/4 JIC - 1/4 Boss Str.
53	1	501320	Hose Assembly - 1/4” x 75”
54	1	507583	Hose Assembly - 1/4” x 66”
55	2	503057	Hose Assembly - 1/2” x 96”
56	2	20713	Fitting - 1/2 JIC - 5/8 Boss Str.
57	1	13148	Round Bumper
58	1	10229	Lock Nut - 5/16
59	4	5011735	Spacer Washer - GB Rod End
60	2	20782	Fitting - 1/4 JIC - 1/4 Boss 90°
61	1	5010230	Rod End
62	1	508381	Gutter Broom Cylinder
63	1	507862	Cylinder Pivot Lug
64	1	507863	GB Cylinder Pivot
65	1	508868	210h GB Sub Assy. LH Side Ford
-	1	508869	210h GB Sub Assy. RH Side Ford
66	1	509374	GB Manifold Assy.
67	1	10227	Lock Nut - 5/8
68	3	10225	Lock Nut - 3/8 UNC
69	6	20195	Screw - 5/16-18 x 1 Truss
70	1	5010095	Top Disc
71	2	5010231	Poly Element
72	1	5013167	Bottom Disc Clamp
73	3	10306	5/16 - Lock Washer
74	3	10205	Nut - 5/16-18 Hex
75	1	5012504	Nut Cover
76	1	22099	Woodruff Key Motor
77	1	10163	Bolt - 3/8-16 x 5 Eye
78	3	11362	Clamp - 1-1/8” Dipped
79	1	11353	Clamp - 2” Dipped HD
80	1	10117	Bolt - 5/16 x 1 HHCS
81	7	10305	Flat Washer - 5/16
82	1	508807	LH Bumper Stop Weldment
-	1	508810	RH Bumper Stop Weldment
83	3	10299	Nut - 8mm 1 1/4 Hex
84	4	10128	Bolt - 3/8-16 x 1 HHCS



MODEL 210h
GUTTER BROOM ASSEMBLY
VERTICAL DIGGER – F–450
(LH SHOWN)
(M02778) REV A
05–11–2021
2:04 pm
SC

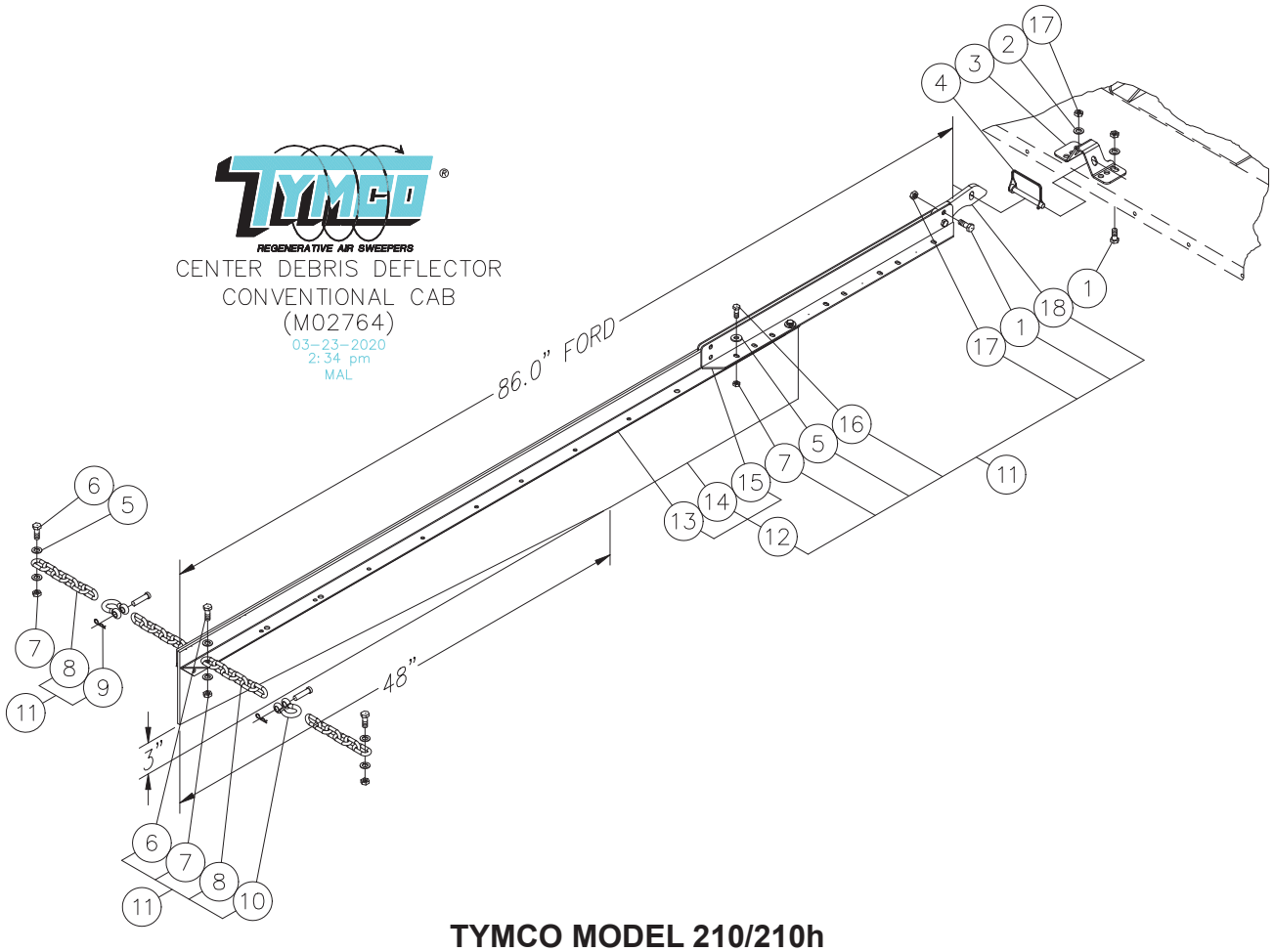
NOTE:

A. LH GB – CONNECT HOSE FROM TORQUE MOTOR PORT "A" TO BLOCK PORT "M2". TORQUE MOTOR PORT "B" TO BLOCK PORT "M1".
A. RH GB – CONNECT HOSE FROM TORQUE MOTOR PORT "A" TO BLOCK PORT "M1". TORQUE MOTOR PORT "B" TO BLOCK PORT "M2".
B. PART OF GB SUBASSEMBLY
C. COMES W/ 505831
D. APPLY RITELOK TL–62 RED THREAD LOCKER
E. INSTALL SHOULDER PLATE 2ND SET OF HOLES FROM THE TOP.

TYMCO MODEL 210h
GUTTER BROOM ASSEMBLY VERTICAL DIGGER - FORD F-450 PARTS LIST
DWG-M02778

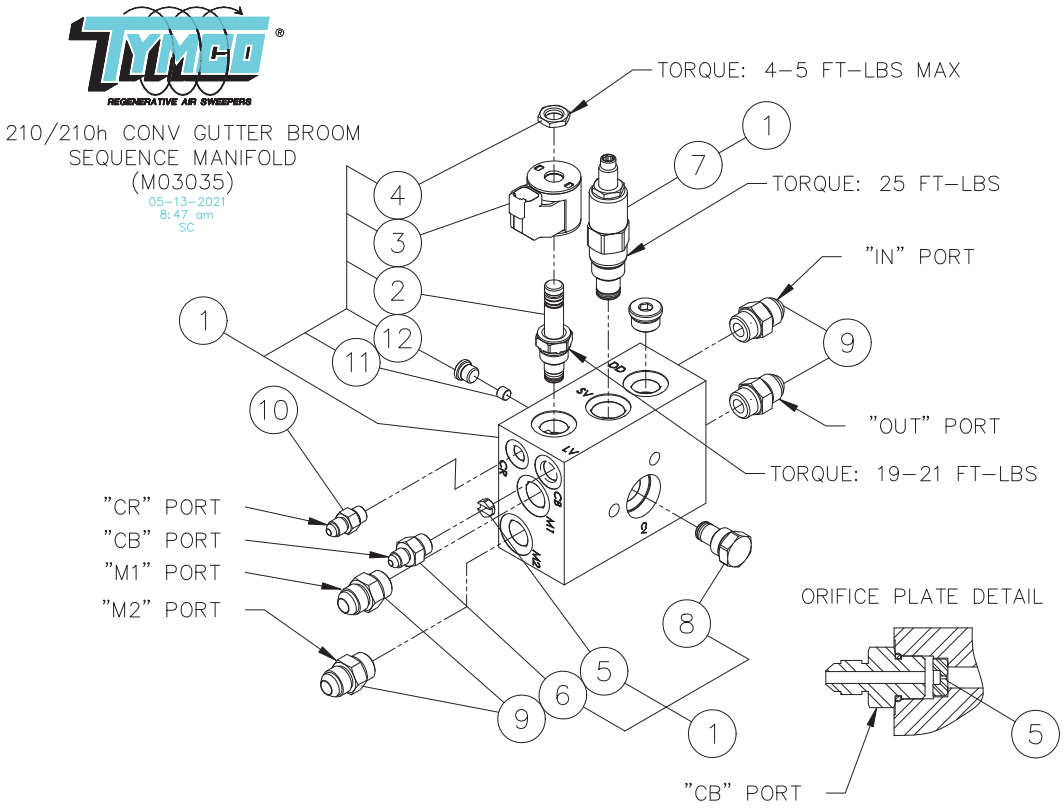
ITEM	QTY.	PART NO.	DESCRIPTION
	1	508874	Gutter Broom Assembly Vertical Digger (LH), 210h
	1	508875	Gutter Broom Assembly Vertical Digger (RH), 210h
1	6	10104	Self Tap - 5/16-18 UNC x 3/4
2	3	507860	Pin - Gutter Broom Cylinder Pivot
3	1	10127	Bolt 3/8-16 UNC x 3/4
4	5	10308	Lock Washer - 3/8
5	1	10397	Fender Washer - 3/8 x 1 1/4
6	1	508859	Shoulder Weldment - LH
-	1	508881	Shoulder Weldment - RH
7	12	10311	Flat Washer - 1/2
8	4	10140	Bolt - 1/2-13 UNC x 1 3/4 G5
9	1	507861	Pivot Pin - Boom Arm
10	1	30111	Bolt - 1/2-13 UNC x 5 1/2
11	1	13372	Bolt - 1/2-13 UNC x 7 1/2
12	1	5021724	Shoulder Plate
13	6	10231	Lock Nut - 1/2 UNC
14	1	5021741	Rear Mount Tube
15	1	5021742	Front Mount Tube
16	2	10129	Bolt - 3/8-16 UNC x 1 1/4
17	5	10307	Flat Washer - 3/8
18	1	5021719	Bracket - Lower Mounting LH
-	1	5021756	Bracket - Lower Mounting RH
19	1	20246	Nut - 3/8-16 Flexloc
20	4	30128	Bolt - 3/8 x 3/4 Self Tap
21	2	508789	Pin Weldment
22	1	508857	Shoulder Weldment - LH
-	1	508882	Shoulder Weldment - RH
23	2	11040	Bronze Flange Bushing
24	1	508858	Shoulder Assy - LH
-	1	508883	Shoulder Assy - RH
25	1	5010960	Spring - Wire Vertical Digger
-	1	5010232	Spring - Poly Vertical Digger
26	8	13344	Polygon Bushing - 3/4 x 1
27	1	508801	Level Arm Weldment
28	1	508802	Level Arm Assembly
29	3	10219	Nut - 5/8 UNC
30	1	5021738	Level Arm Threads
31	4	13367	Poly Bushing - 1 x 1 1/4
32	1	508795	Arm Weldment
33	1	508796	Arm Assembly w/Bushings
34	4	10314	Lock Washer 5/8
35	1	13373	Bolt - 5/8-18 UNF x 6 1/2
36	1	5021789	Spring Lug
37	1	508797	Wrist Adjust Weldment
38	1	508798	Wrist Adjust Assembly
39	1	508791	Wrist Weldment
-	1	508808	Wrist Weldment - RH
40	3	30112	Stud - 5/16-18 x 1.313
41	1	5014697	Drive Hub
42	1	10264	Castle Nut - Motor
43	1	10402	1/8 x 1 1/2 Cotter Pin

ITEM	QTY.	PART NO.	DESCRIPTION
44	2	10147	Bolt - 5/8-11 x 1 1/2 HHCS G5
45	1	503446	Vertical Digger Broom Assembly
46	2	10313	Flat Washer - 5/8
47	1	508856	Hand Weldment
48	1	507252	6 CID “T” Motor
49	4	10786	Fitting - 1/2 JIC - 1/2 Boss Str
50	1	10172	Bolt - 3/8-16 x 3.0 HHCS
51	1	509396	Manifold w/Spin On
52	2	20751	Fitting - 1/4 JIC - 1/4 Boss Str.
53	1	501320	Hose Assembly - 1/4” x 75”
54	1	507583	Hose Assembly - 1/4” x 66”
55	2	503057	Hose Assembly - 1/2” x 96”
56	2	20713	Fitting - 1/2 JIC - 5/8 Boss Str.
57	1	13148	Round Bumper
58	1	5021799	Digger Shim
59	4	5011735	Spacer Washer - GB Rod End
60	2	20782	Fitting - 1/4 JIC - 1/4 Boss 90°
61	1	5010230	Rod End
62	1	508381	Gutter Broom Cylinder
63	1	507862	Cylinder Pivot Lug
64	1	507863	GB Cylinder Pivot
65	1	508868	210h GB Sub Assy. LH Side Ford
-	1	508869	210h GB Sub Assy. RH Side Ford
66	1	509374	GB Manifold Assy.
67	1	10227	Lock Nut - 5/8
68	3	10225	Lock Nut - 3/8 UNC
69	1	503329	Hardware Kit - Vertical Digger Assembly
70	1	5013553	Disc Drive
71	1	501679	Wire Vertical Digger Set - Set of 4
-	1	505605	Poly Vert. Digger Seg. Assy - Set of 4
72	7	10305	5/16” Flat Washer
73	3	10306	5/16 - Lock Washer
74	3	10205	Nut - 5/16-18 Hex
75	1	5012504	Nut Cover
76	1	22099	Woodruff Key Motor
77	1	10163	Bolt - 3/8-16 x 5 Eye
78	3	11362	Clamp - 1-1/8” Dipped - RH
79	1	11353	Clamp - 2” Dipped HD
80	1	10117	Bolt - 5/16 x 1 HHCS
81	2	10229	Lock Nut - 5/16
82	1	508807	LH Bumper Stop Weldment
-	1	508810	RH Bumper Stop Weldment
83	3	10299	Nut - 8mm 1 1/4 Hex
84	4	10128	Bolt - 3/8-16 x 1 HHCS



TYMCO MODEL 210/210h
CENTER DEBRIS DEFLECTOR - CONVENTIONAL CAB
DWG-M02764

ITEM	QTY	PART NO	DESCRIPTION
	1	508845	Center Debris Deflector Assembly
1	4	10128	Bolt - 3/8-16 x 1 HHCS
2	4	10307	3/8” Flat Washer
3	1	5021783	Hanger Mount
4	1	13231	Snap Pin - 3/8 x 3
5	2	10305	5/16” Flat Washer
6	2	10119	Bolt - 5/16-18 x 1-3/4 HHCS
7	2	10229	Nut - 5/16-18 Top Lock
8	2	5010226	1/4” Chain x 6 Links
9	2	12155	Hitch Pin Z/P
10	2	12154	Clevis - 5/16
11	1	508841	Center Dirt Deflector
12	1	800387-E	Sub Assembly - Adjustable Dirt Deflector
13	2	8010578	Curtain Mounting
14	1	5011376	Debris Curtain
15	2	8010955	Angle Bracket
16	6	10117	Bolt - 5/16-18 x 1 HHCS
17	4	10225	Nut - 3/8-16 Top Lock
18	1	5021784	Hanger
Not Shown	12	10224	#14-14 U-Type Speed Nut
Not Shown	12	20165	Screw - 1/4”-14 x 1-1/4”



TYMCO MODEL 210/210h CONVENTIONAL CAB SEQUENCE MANIFOLD PARTS LIST DWG-M03035

ITEM	QTY	PART NO	DESCRIPTION
	1	509374	Gutter Broom Sequence Manifold Assy w/Fittings
1	1	509396	Gutter Broom Sequence Manifold
2	1	13586	Lock Valve
3	1	21811	Coil - Size 8
4	1	(Comes w/13586)	Nut
5	1	13665	Orifice Plate - 0.037 Dia.
6	1	20742	Fitting - 3/8 Boss x 1/4 JIC
7	1	13582	Gutter Broom Sequence Valve
8	1	13584	Spin Down Check Valve
9	4	10786	Fitting - 1/2 Boss x 1/2 JIC Str.
10	1	20751	Fitting - 1/4 Boss x 1/4 JIC Str.
11	1	13752	Orifice Plug .063 Dia.
12	1	-	Fitting - 1/4 ORB Plug

SERVICE AND MAINTENANCE

There are four adjustments related to proper performance of the gutter broom. When making any of the following adjustments, refer to the proper drawing and components:

1. Gutter Broom Initial Down Pressure - Sequence Valve Block Cartridge Valve
2. Gutter Broom Bristle Wear - Gutter Broom Spring
3. Gutter Broom Angle - Gutter Broom Angle Bracket (Wrist)
4. Gutter Broom Tilt - Gutter Broom Mounting Plate and Motor Mount Bracket (Hand)

DOWN PRESSURE ADJUSTMENT

Always place broom on a smooth surface when making adjustments. The hydraulically operated gutter broom is spring suspended to help counter the hydraulic cylinder force for proper down pressure (depending on the bristle type) the cartridge sequence valve must be properly adjusted. Using a 3/16 Allen wrench, set the adjustment screw on the top of the valve as follows - suggested settings:

- Steel Vertical Digger Bristles - 2-1/2 turns in on sequence valve, 1 turn in on flow control valve
- Poly Wafer and Poly Digger Bristles - 2 turns in on sequence valve, 1 turn in on flow control valve

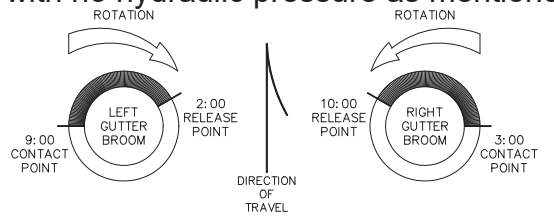
Once adjusted, no further sequence valve setting should be required unless the bristle type is changed.

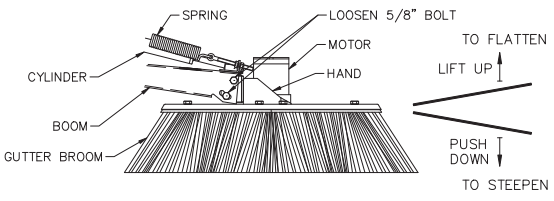
Attention: Adjusting the sequence valve adjustment screw too far into the valve will make the broom too rigid and may result in damage to the broom components!

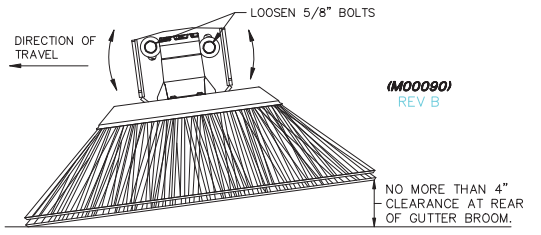
BRISTLE WEAR ADJUSTMENT

The most frequent adjustments made on the gutter broom will be spring tension and angle. Operating the gutter broom with a minimum of bristle wear is encouraged and, by keeping proper spring tension, the bristles will have a much longer life.

Do not adjust the cartridge valve to raise or lower the broom. The gutter broom spring counteracts the hydraulic cylinder force. With the gutter broom turned off and in the down position, the spring should be adjusted to hold the broom from 1 to 2 inches (25.4 to 50.8 mm) off the ground without the help of hydraulics. As the bristles wear, the broom should be lowered with spring adjustment to compensate for the shorter bristles. Simply loosen the nut on the eye bolt. The steel gutter broom bristles are replaced when the wire becomes approximately four inches long. When replacing broom with new filler, the spring must be tightened so that the tips of the bristles are 1 to 2 inches (25.4 to 50.8 mm) off the ground with no hydraulic pressure as mentioned.







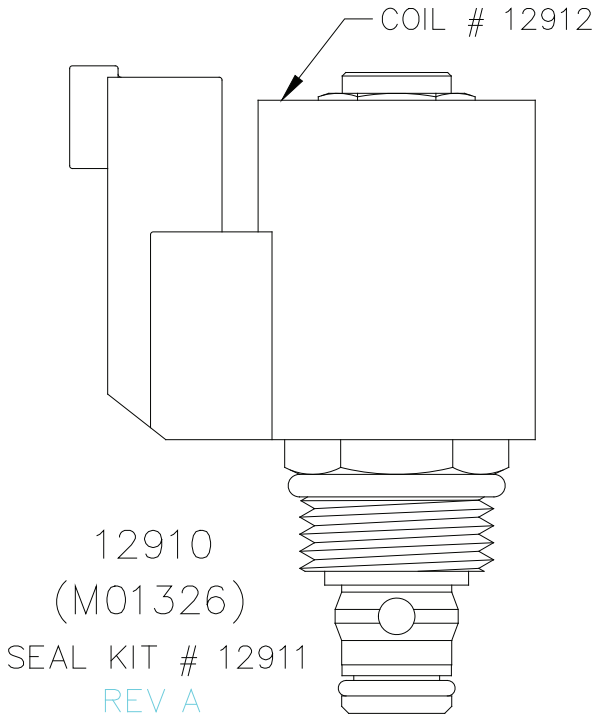
ANGLE ADJUSTMENT

The Gutter Broom Tilt referred to in this manual is regulated by adjusting the gutter broom hand up or down. This adjustment allows you to achieve the desired pattern. A steeper pattern would be used for severe variations in gutter depth; a flatter pattern is used if the gutter broom is needed for a wider path.

The Gutter Broom Angle (or forward tilt) refers to the twist of the gutter broom hand. This can be adjusted to achieve the desired contact area of the broom (contact and release points) with the ground.

(A)
ELECTRIC LOCK VALVE
DWG-M01170

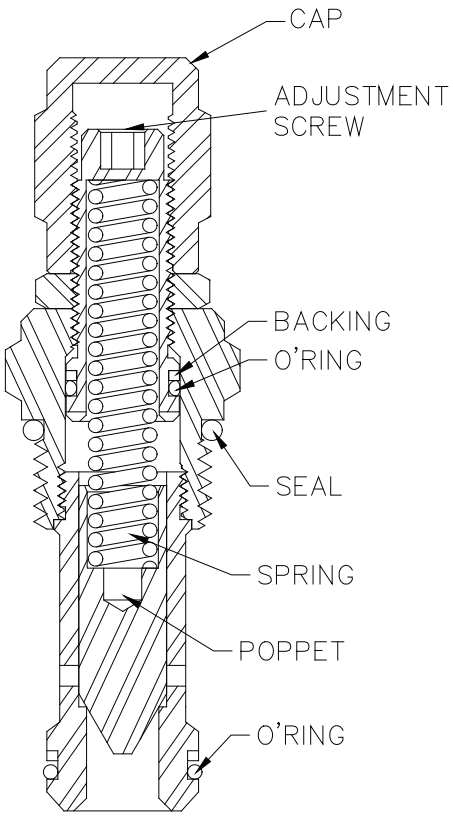
The Electric Lock Valve is used to hold the gutter broom up when the sweeper is in transit or the broom is not in use. A 12V DC current to the lock valve coil is required to lower the broom. No maintenance is required for the lock valve assembly. However, adequate voltage and ground is necessary for proper function. Normal coil resistance when cold is 7.0 OHMS.



(B)
CARTRIDGE SEQUENCE VALVE
DWG-M01327
(505172)

The cartridge valve is found screwed into the top of the aluminum sequence valve block. An adjustment screw is found on the top of the valve and is adjusted using a 3/16 Allen wrench. This setting puts just enough hydraulic pressure to base end of cylinder so that broom will go down and stay extended but also lets broom retract if it hits the curb or any other solid object. If adjustment screw is adjusted too far into the valve head, too much hydraulic pressure at the base end of gutter broom cylinder will occur and broom could be damaged if run into the curb. Always tighten jam nut and reinstall cap after adjusting.

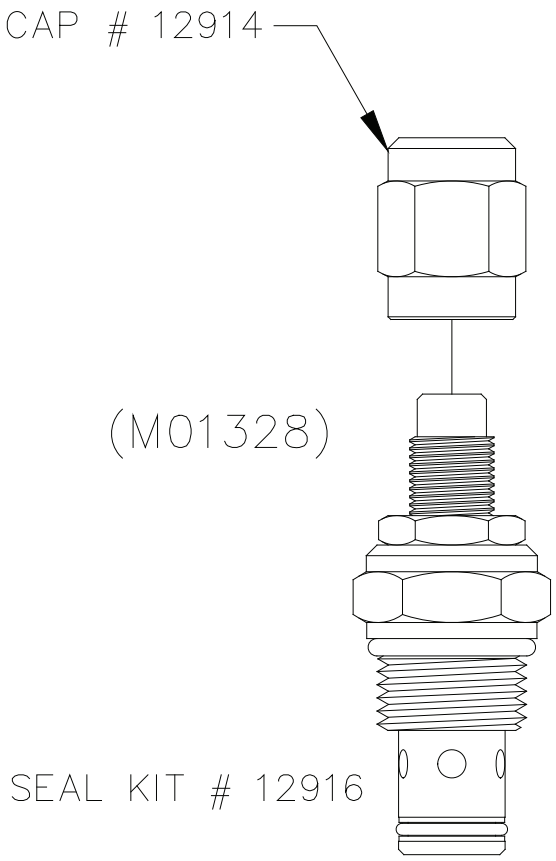
Seal Kit Part No. 5011237

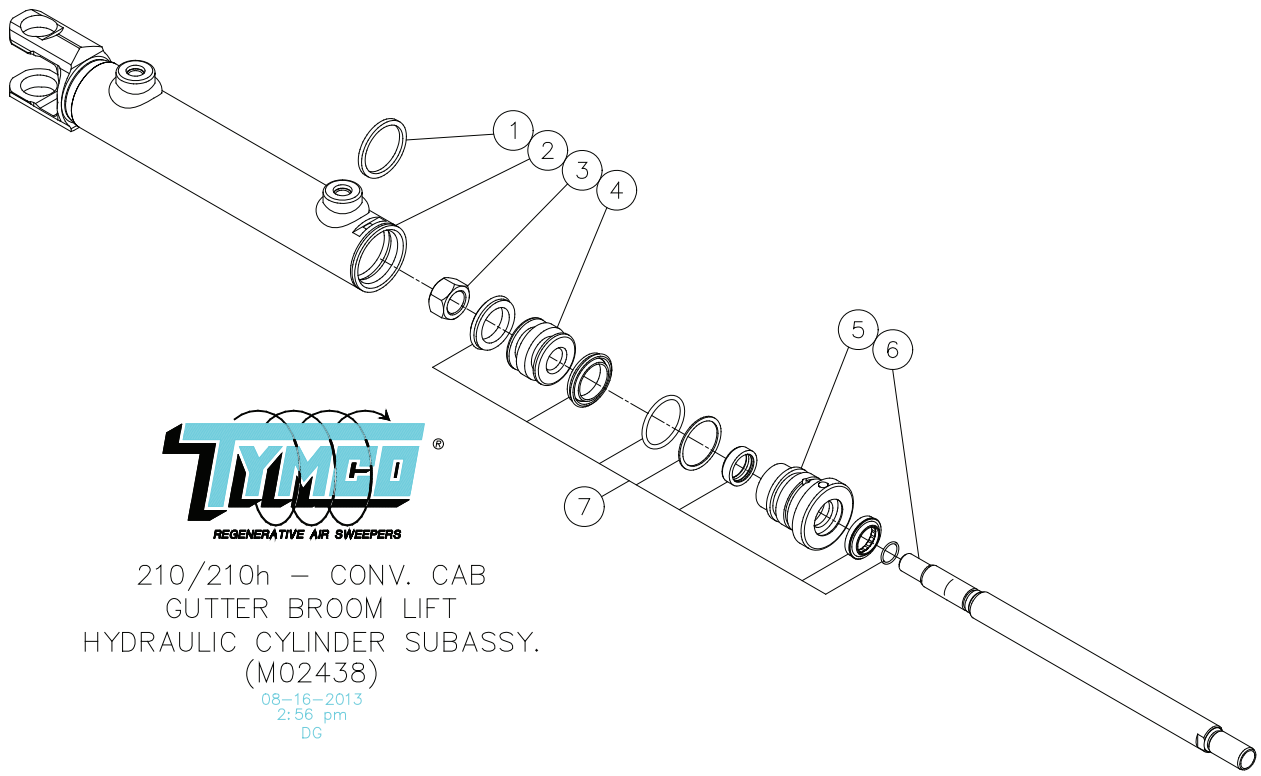


SEAL KIT # 5011237
CARTRIDGE VALVE ASSY
(M01327)

(C)
FLOW CONTROL VALVE
DWG-M01328
(12915)

The flow control valve controls how fast the gutter broom raises by restricting the flow of oil from the base end port of the gutter broom cylinder. Set broom retraction speed from 2.5 to 3.0 seconds. Faster speeds can cause torque motor seal damage. The flow control valve has an adjustable screw used to set the upward speed for the gutter broom. Before the screw can be adjusted, a jam nut must be released to unlock the screw. To slow upward speed of the gutter broom, turn the screw clockwise using 3/16 Allen wrench. Once the desired rate of ascent is obtained, tighten jam nut and reinstall cap.





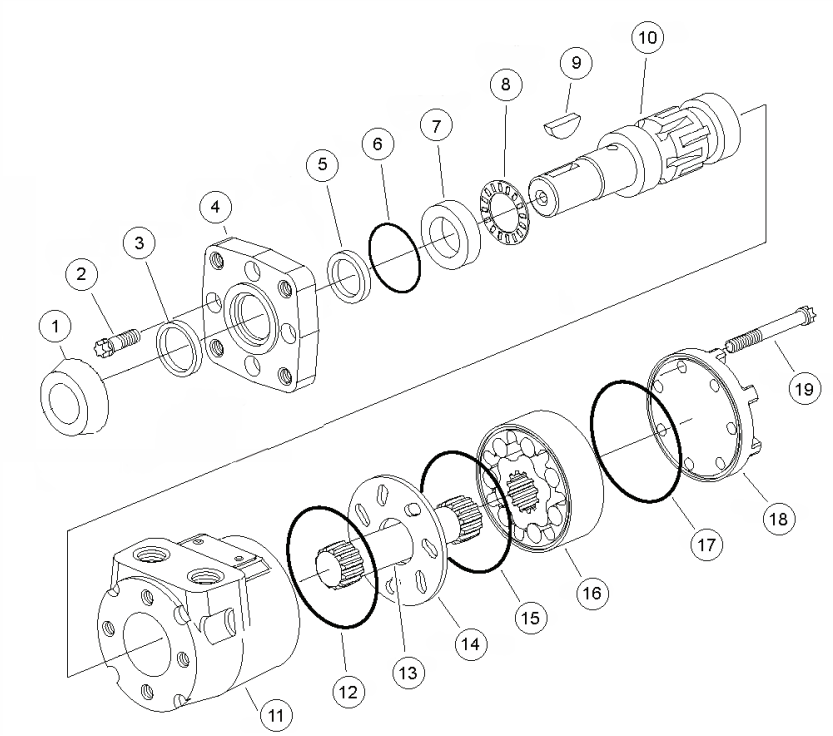
TYMCO MODEL 210/210h - CONVENTIONAL CAB
GUTTER BROOM LIFT CYLINDER ASSEMBLY PARTS LIST
DWG-M02438

ITEM	QTY.	PART NO.	DESCRIPTION
	1	505677	Gutter Broom Lift Cylinder Assembly
1	1	12203	Retaining Ring
2	1	-	Tube Assembly
3	1	12204	Lock Nut
4	1	12205	Piston
5	1	12207	Head
6	1	-	Rod
7	1	5012771	Seal Kit

NOTE: TYMCO does not stock any base parts. (Seal Kits Only)

Refer to Hydraulic Section for Hydraulic Cylinder Disassembly/Reassembly

TYMCO MODEL 210/210h
TORQUE MOTOR ASSEMBLY PARTS LIST
DWG-M00717



TORQUE MOTOR ASSEMBLY PARTS LIST
DWG-M00717

ITEM	QTY	PART NO	DESCRIPTION
	1	507252	Torque Motor Assembly (6 CID)
1	1	22096	Seal Protector
2	4	22098	Cap Screw - Mounting Flange
3*	1	———	Exclusion Seal
4	1	———	Mounting Flange
5	1	———	High Pressure Seal
6*	1	———	Seal
7	1	22093	Bearing Race
8	1	22094	Needle Thrust Bearing
9	1	22099	Woodruff Key
10	1	22095	Output Shaft
11	1	———	Housing
12*	1	———	Seal
13	1	———	Drive Link (6 CID)
14	1	———	Spacer Plate
15*	1	———	Seal
16	1	———	Geroler
17*	1	———	Seal
18	1	———	End Cap
19	7	22097	Cap Screw
-	-	22089	Tool - Seal Kit
-	-	22088	Seal Kit - ‘T’ Motor

NOTE: TYMCO DOES NOT STOCK ANY BASE PARTS UNLESS NOTED. (Seal Kits Only)
* Indicates item included in seal kit.

BROOM TORQUE MOTOR
(507252)

TO DISASSEMBLE:

> **WARNING: Before servicing, stop engine and remove ignition key or disconnect negative battery cable.**

Cleanliness is extremely important when repairing hydraulic motors. Work in a clean area. Before disconnecting the hydraulic lines, clean the port area of the motor. Then plug the ports and thoroughly clean the exterior of the motor. Check the output shaft, remove any burrs, nicks, or sharp edges.

1. Clamp the motor in a vise so the shaft is vertical and the end cap is on top. Clamp on the mounting flange using just enough clamping force to hold the motor securely. Protect the mounting flange with soft vise jaws.

2. Remove the seven cap screws from the end cap and disassemble the motor as shown in Figure 1. Do not disassemble the Geroler.

3. Unclamp the motor and remove the output shaft, thrust needle bearing, and thrust bearing race (see Figure 2).

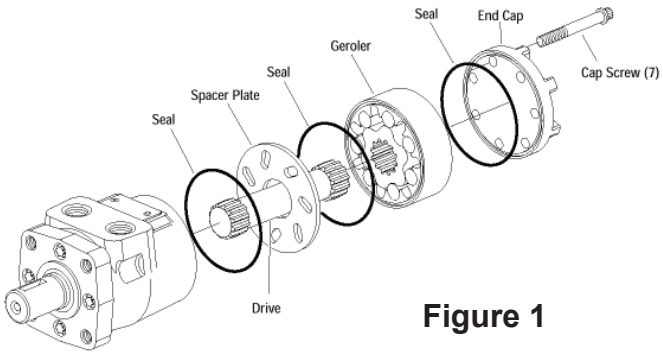


Figure 1

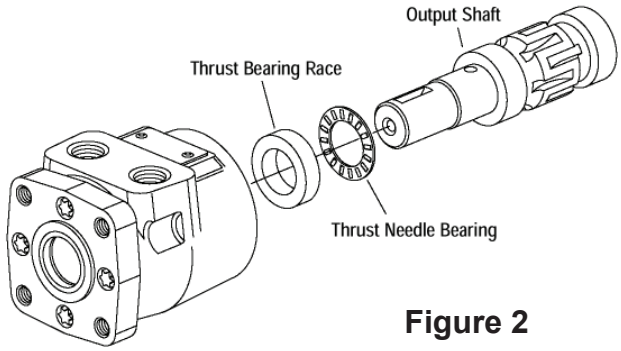


Figure 2

4. Clamp the motor in a vise so the mounting flange is on top. Clamp across the port area. Do not clamp on the motor housing. Use just enough clamping force to hold the motor securely.

5. Remove the four cap screws that hold the mounting flange to the motor housing.

> **Caution: These screws were applied with thread lock during assembly. Do Not exceed 56 Nm (500 lb-in) of removal torque.**

If the thread lock is holding the screws too tightly, heat the motor housing with a propane torch, while turning the screw. Apply heat to where the screw threads into the motor housing, see Figure 3. Apply just enough heat to remove the screw, do not overheat the motor housing or mounting flange.

6. Remove the mounting flange from the motor housing. The exclusion seal and pressure seal will come off with the mounting flange.

7. Carefully remove the exclusion seal and pressure seal from the mounting flange. A seal removal tool may be fabricated by bending and rounding the end of a small blade screwdriver, see Figure 4.

Important: Do not damage the mounting flange where the shaft passes through it.

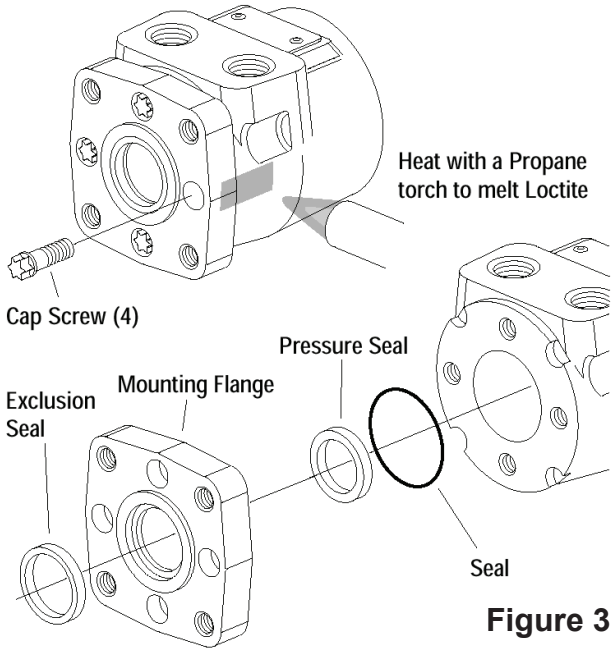


Figure 3

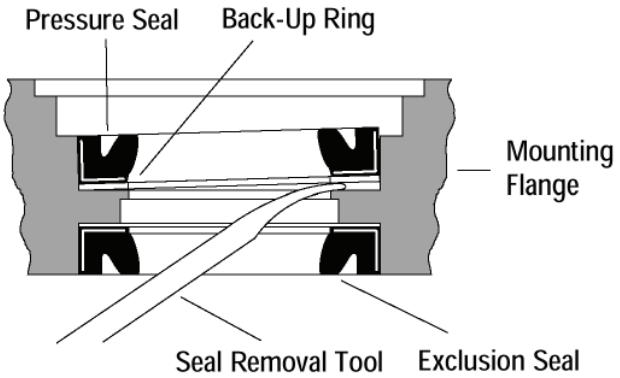


Figure 4

TO ASSEMBLE:

Check all mating surfaces. Replace any parts with scratches or burrs that could cause leakage. Wash all metal parts in clean solvent. Blow them dry with pressurized air. Do not wipe parts dry with paper towels or cloth as lint in a hydraulic system will cause damage. Check the key way and chamfered area of the output shaft; remove any nicks, burrs, or sharp edges that could damage the shaft seals during reassembly.

Note: Always use new seals when reassembly hydraulic motors. Refer to parts list 6-146 for seal kit part numbers, replacement parts, and ordering information.

IMPORTANT: During reassembly lubricate the new seals with a petroleum jelly such as Vaseline. Also lubricate machined surfaces and bearings with clean hydraulic fluid.

1. Remove all of the old Loctite from the mounting flange cap screws and their threaded holes. The threads must be clean and dry for the new Loctite to hold properly.

2. Lubricate and install the output shaft, needle thrust bearing, and bearing race into the housing.

IMPORTANT: Do not permit oil to get into the four threaded holes.

3. Lubricate the exclusion seal and press it into its seat in the mounting flange. Figure 5 shows the correct seal orientation.

4. Lubricate and install the pressure seal. Use seal installation tool no. 600523 to press the pressure seal into place (see Figure 5).

IMPORTANT: Be sure the exclusion seal and pressure seal are undamaged and properly seated.

5. Apply three or four drops of Loctite 277 to the threads of the four holes in the motor housing where the mounting flange will be attached. Apply the Loctite so that it coats the threads. Remove all excess Loctite.

6. Install a protective sleeve or bullet over the output shaft. Lubricate the inner edges of the exclusion and pressure seals. Lubricate and install the 49 mm (1-15/16 in.) diameter o-ring seal on the mounting flange. Then slide the mounting flange down over the shaft.

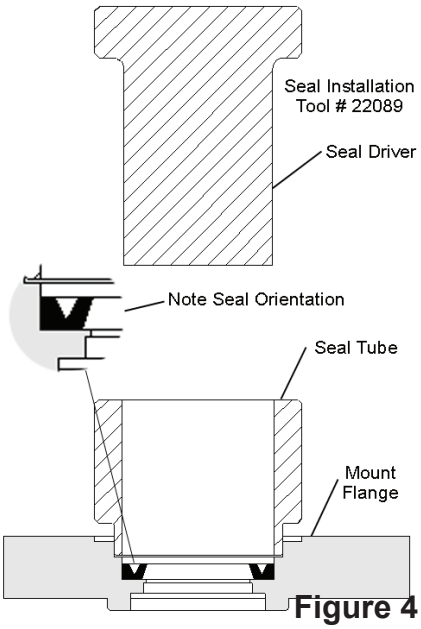


Figure 4

7. Remove the protective sleeve and install the four cap screws. Tighten the cap screws, in a crisscross pattern, to 28 Nm (250 lb-in). Be sure the output shaft does not fall out of the housing.

8. Pour clean hydraulic fluid into the motor to provide start-up lubrication.

9. Lubricate and install one of the three largest diameter seals in the groove in the motor housing.

10. Install the drive

NOTE: If the spindle ends of the drive are different lengths, install the longer end into the shaft.

Motor Timing

11. Align shaft timing dot with any bolt hole. Bolt hole will be used for timing reference.

12. Install spacer plate, and note the position of the threaded hole in housing aligned with the timing dot on shaft.

IMPORTANT: Be sure the slots in the spacer plate provide passage for hydraulic fluid as well as the cap screws. If the spacer plate is flipped the motor will not operate.

13. Lightly stretch, lubricate and install the second of three large diameter seals in the groove in the Geroler.

14. Install the Geroler.

Standard Timing Align any star point with the threaded hole noted for the location of the timing dot (see Figure 6).

Reverse Timing Align any star valley with the threaded hole noted for the location of the timing dot (see Figure 6).

15. Rotate the Geroler to align the screw holes and install drive spacer if applicable.

16. Lubricate and install the last one of the three large diameter seals in the groove in the end cap.

17. Install the end cap and seven cap screws.

18. Tighten the cap screws in a crisscross pattern, to 27-28 Nm (235-250 lb-in).

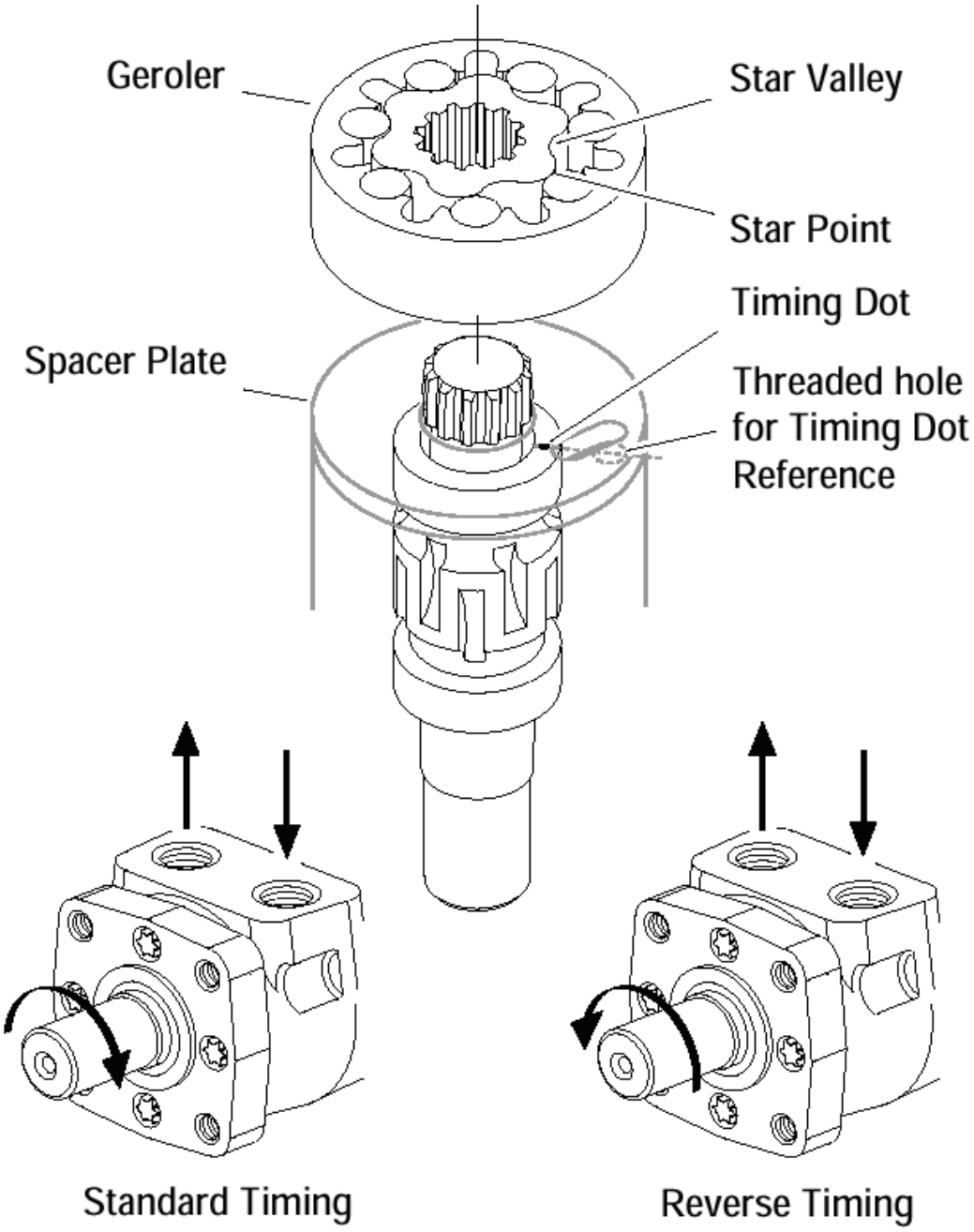


Figure 6

HYDRAULIC SYSTEM

TABLE OF CONTENTS

FUNCTION

The Model 210h hydraulic system consists of two pumps. The main pump is variable displacement, load sense pump which is driven by the transmission PTO. The main pump directly powers the blower, pick-up head, and dump circuits. When one of these functions is activated, a load sense signal causes the pump to stroke and provide the needed flow. The gutter broom is powered by a secondary pump. This pump is a fixed displacement and is belt driven from the blower shaft. This pump will only provide flow when the blower is running.

NOTE: The hydraulic system requires ISO 46 grade hydraulic oil (See end of section for oil spec).

WARNING: Never operate chassis engine without hydraulic oil in the hydraulic tank and hydraulic pump belt not installed. Remove the drive belt from the main pump before operating engine without hydraulic oil.

TROUBLESHOOTER'S GUIDE

PROBLEM	CAUSE	SOLUTION
Extreme heat; poor pump performance	Oil cooler not operating	Check fan motor controller and circuit breaker.
	Worn hydraulic pump	Replace
No hydraulic functions operating	PTO is not engaged	Make sure output 9 (PTO request) and input 7 (PTO feedback) are on. Check system fuses.

TROUBLESHOOTER'S GUIDE
(continued)

PROBLEM	CAUSE	SOLUTION
	Low hydraulic oil (indicated by red switch LEDs)	Check reservoir and fill as needed.
	Overheated oil (indicated by red switch LEDs)	Check oil cooler fan operation. Check temperature sensor, fan motor controller, and circuit breaker. Fan motor controller will turn fan on at 145°F
	Load sense compensator is not seeing circuit pressure	
	Check for clogged L.S. port adapter fitting w/ screen (located on pump); if not clogged, consult factory	
	Switch not functioning	Check output 4 status, Check fuses
Hopper will not raise	Vehicle not stopped	Stop vehicle to raise hopper
Hopper or pick up head not operating	Control valve coil not energizing	Check module output status. Check for 12V at the valve coil. With PTO engage, manually shift control valve by pushing/ pulling the red manual override control
	Bad coil in control valve	If function operates when shifted manually and electrical power is okay, swap coil from another valve. If valve operates, replace the bad coil.
	Contamination jamming control valve	Manually override the valve to attempt to dislodge the contamination. If valve will not shift manually, disassemble and check for foreign debris.
	Low hydraulic pressure	Check for clogged load sense line

TROUBLESHOOTER'S GUIDE
(continued)

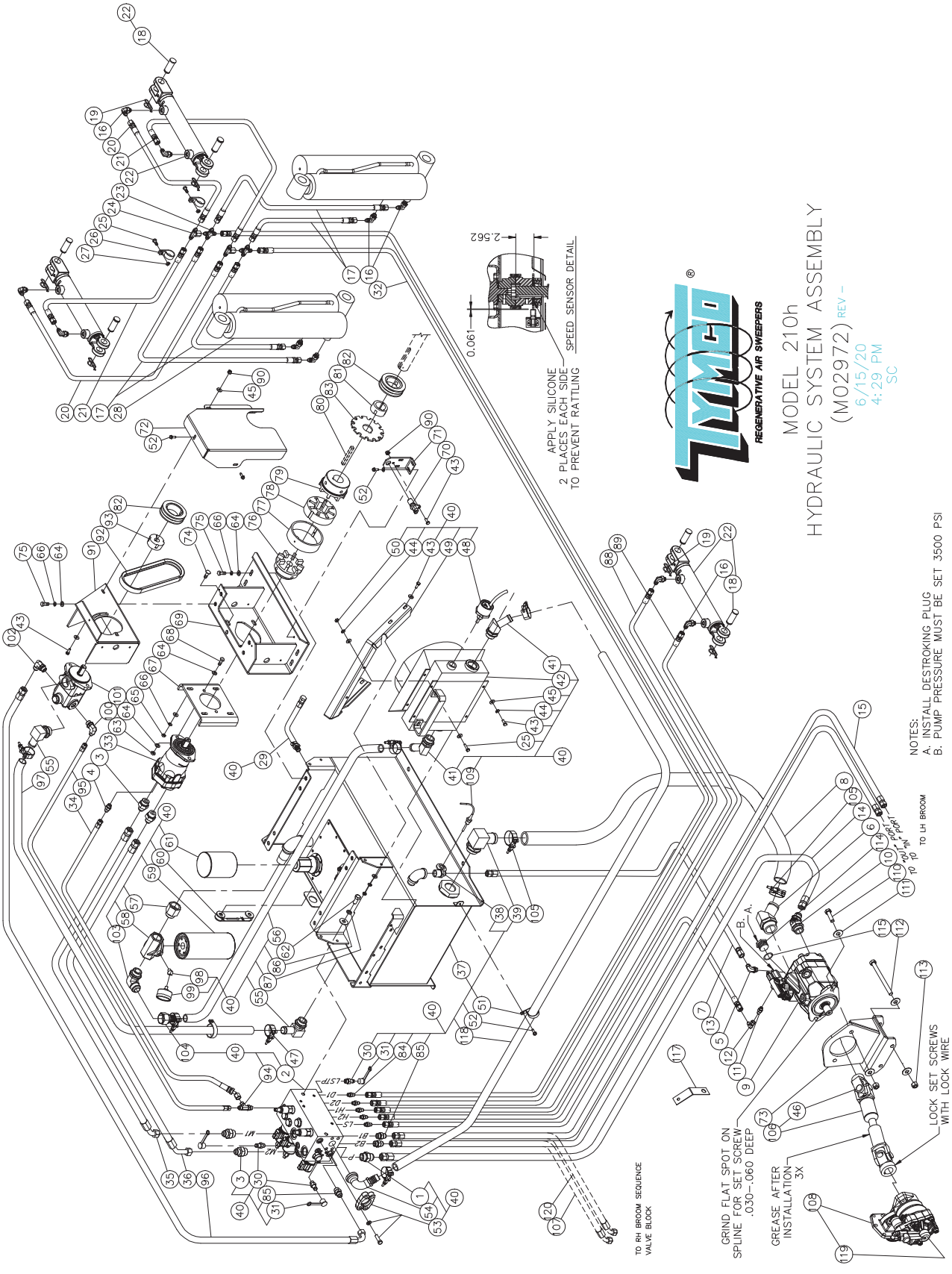
PROBLEM	CAUSE	SOLUTION
	Blocked hydraulic hose	If hydraulic pressure is reaching hose and the function does not move, check for foreign material in hose.
	Cylinder leak	Check cylinder for internal leaks. Remove cylinder from sweeper and disassemble. See service information in this manual.
Hopper raises, but dump door will not open	Dump door seal stuck to opening	Raise hopper until travel is stopped and continue to hold toggle switch in UP position. Dump hatch should open due to increase in system pressure. If not, have assistant pry door open.
Gutter broom will not operate	Blower not engage	Turn blower on, wait 10 seconds, then turn on gutter broom
	Gutter broom pump belt failed	Check belt and tighten or replace as needed

⚠ WARNINGS:

Never work under or around model 210/210h hopper without first *installing pin in the lower safety strut.*

Never check for hydraulic leaks using bare hand as pressure in system could cause oil to be injected into the skin; thus causing serious injury.

Do not work on or around sweeper when engine is running. Use caution when performing troubleshooting tests that require engine to be running.


TYMCO
REGENERATIVE AIR SWEEPERS
HYDRAULIC SYSTEM ASSEMBLY
MODEL 210h
(M02972) REV -
6/15/20
4:29 PM
SC
NOTES:
A. INSTALL DESTROKING PLUG
B. PUMP PRESSURE MUST BE SET 3500 PSI
APPLY SILICONE
2 PLACES EACH SIDE
TO PREVENT RATTLING
SPEED SENSOR DETAIL
2.562
0.061
TO RH BROOM SEQUENCE VALVE BLOCK
TO LH BROOM
GRIND FLAT SPOT ON SPLINE FOR SET SCREW .030-.060 DEEP
GREASE AFTER INSTALLATION 3X
LOCK SET SCREWS WITH LOCK WIRE

TYMCO MODEL 210h
HYDRAULIC SYSTEM PARTS LIST
DWG-M02972

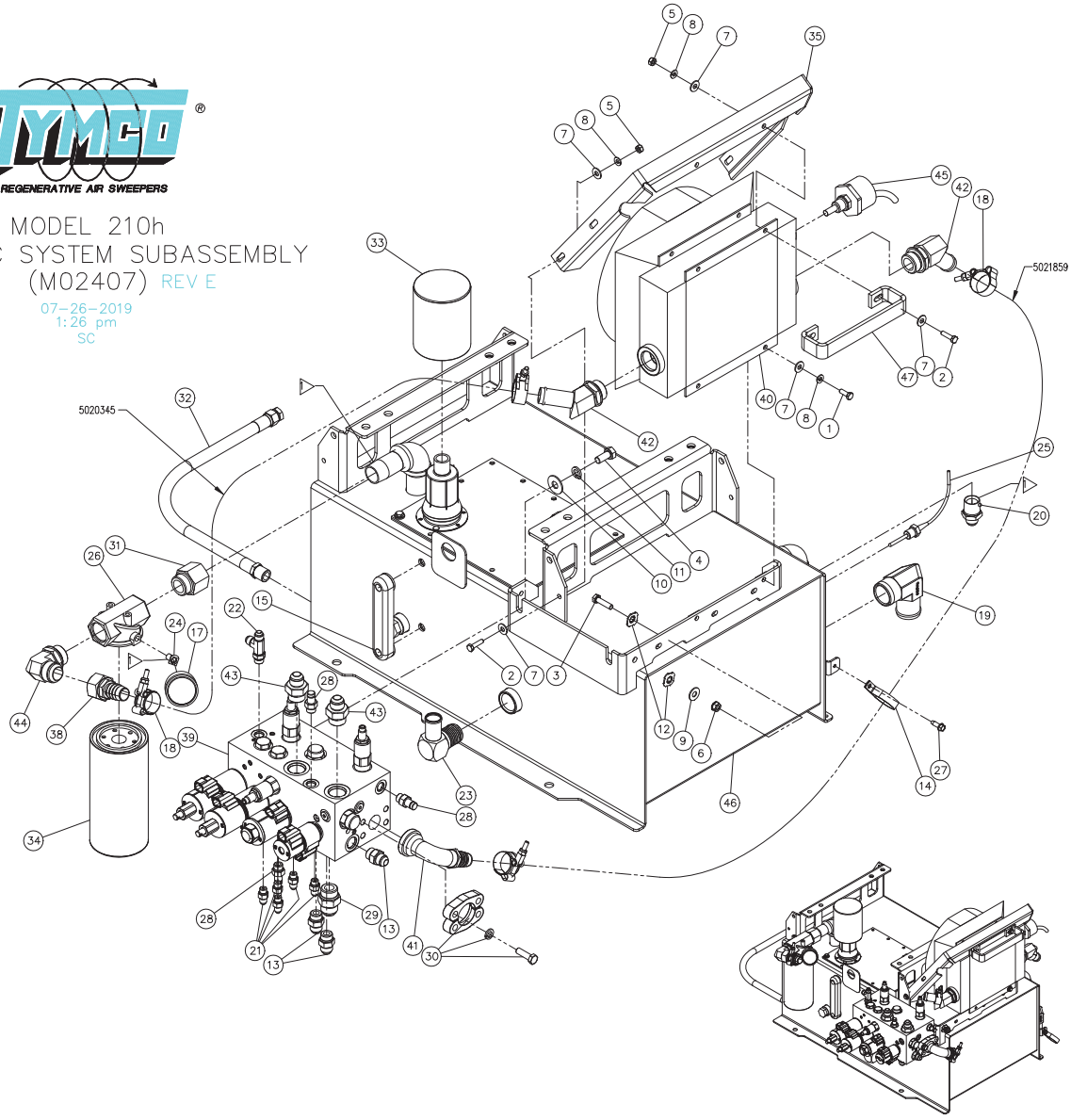
ITEM	QTY.	PART NO.	DESCRIPTION
	1	509347	Hydraulic System - 210h/2020 Ford Diesel
	1	509348	Hydraulic System - 210h/2020 Ford Gasoline
1	1	40753	Fitting - 3/4 Boss x 3/4 JIC Str.
2	1	507247	Load Sense Manifold
3	2	50736	Fitting - 3/4 Boss x 5/8 JIC Str.
4	1	10712	Fitting - 3/8 Boss x 3/8 JIC Str.
5	1	20799	Fitting - 5/8 Boss x 1/2 JIC Str.
6	1	50738	Fitting - #24 Boss x 1 1/2 HB Str.
7	1	502010	Hose - 1/2” x 86” Hyd.
8	1	5021785	Hose - 1-1/2” x 55-1/2” Suction
9	1	507972	Load Sense Pump CCW
10	1	50739	Fitting - 1” Boss x 3/4 JIC 45°
11	1	50737	Fitting - 1/4” Boss x 1/4 JIC w/Scrn. Str.
12	1	20719	Fitting - 1/4 JIC SWV x 1/4 JIC 90°
13	1	506544	Hose - 1/4” x 118” Hyd.
14	1	508848	Hose - 5/8” x 105” Hyd.
15	2	502010	Hose Assembly - 1/2” x 86” Hyd. (LH Broom)
16	6	20782	Fitting - 1/4 Boss x 1/4 JIC 90°
17	4	500079	Hose Assembly - 1/4” x 25” Hyd.
18	6	10405	Cylinder Clevis Pin
19	6	10434	Rue Ring Locking Cotter - 3/4”
20	2	501207	Hose Assembly - 1/4” x 66” Hyd.
21	2	505364	Hose Assembly - 1/4” x 75” Hyd.
22	3	503364	Cylinder - Dump Door/PUH
23	2	30760	Fitting - 1/4 JIC Union Cross
24	2	30761	Fitting - 1/4 JIC SWV Branch Tee
25	2	10111	Bolt - 1/4-20 x 1.0 HHCS
26	2	11338	Clamp - 1” Dipped
27	2	10246	Nut - 1/4-20 Top Lock
28	2	504120	Cylinder - Hopper Dump Piggyback
29	1	500378	Hose Assembly - Oil Drain
30	2	30749	Fitting - 3/8 Boss Test Port
31	2	12395	Test Port Cover
32	2	507160	Hose Assembly - 1/4 x 112” Hyd.
33	1	506329	Blower Motor
34	1	507325	Hose Assembly - 3/8 x 12” Hyd.
35	1	507323	Hose Assembly - 5/8” x 17”
36	1	507322	Hose Assembly - 5/8” x 18”
37	1	508049	Hydraulic Tank Sub Assembly
38	1	20737	Fitting - 3/4 MPT x 1/2 JIC Str.
39	1	50731	Fitting - #20 Boss x 1 1/2 HB 90°
40	1	508050	Hydraulic System Sub Assembly
41	2	50730	Fitting - 1” Boss x 1” HB 45°
42	1	507253	Oil Cooler Assembly
43	1	10110	Bolt - 1/4-20 x 3/4 HHCS
44	8	10304	Lock Washer - 1/4”
45	4	10303	Flat Washer - 1/4”
46	2	13305	U-Joint Kit
47	2	11387	T-Bolt Clamp - 1-9/16
48	1	508733	Electric Fan Motor Controller w/Harness
49	1	5020278	Cooler Brace

ITEM	QTY.	PART NO.	DESCRIPTION
50	3	10203	Nut - 1/4 Hex
51	2	11332	Clamp - 1-1/2” Dipped
52	6	30104	Bolt - 1/4-20 x 3/4 Self Tapping
53	1	40758	Fitting - 1” Split Flange Kit Code 61
54	1	50729	Fitting - 1” Code 61 Flange x 1” HB 90°
55	1	10783	Fitting - 1” Boss x 1” HB 90°
56	1	5020345	Hose - 1” x 27” Hyd.
57	1	40761	Fitting - 1” Boss x 1” NPT
58	1	22138	Spin on Filter Head - 1” Boss
59	1	5018628	Hydraulic Filter - Long
60	1	12356	Site Gage
61	1	5010080	Hydraulic Filter - Short
62	2	10135	Bolt - 7/16-14 x 1.00 HHCS
63	2	10225	Lock Nut - 3/8
64	12	10307	Flat Washer - 3/8
65	4	10209	Nut - 3/8 Hex
66	8	10308	Lock Washer - 3/8
67	1	5020283	Motor Mount Bracket
68	2	10129	Bolt - 3/8 x 1 1/4 HHCS
69	1	507264	Motor Mount Weldment
70	1	21746	Speed Sensor
71	1	5020480	Speed Sensor Bracket
72	1	5020281	Safety Guard
73	1	507971	Pump Mount Bracket
74	4	10134	Bolt - 3/8-16 x 1.00 C.H.
75	8	10128	Bolt - 3/8-16 x 1.00 HHCS
76	1	22461	Hub - 7/8 Bore
77	1	22157	Cover - Flex Coupling
78	1	22158	Shear Element - Flex Coupling
79	1	22155	Hub - 1 1/2 DIA
80	(Shown for Clarity)	5010074	Key - 3/8 x 3 1/8
81	1	11152	Taper Lock Bushing - 1610 x 1 1/2
82	2	11169	Sheave - 2/3V 3.65 DIA
83	1	5020366	Tone Ring - 1 1/2 Bore
84	5	20751	Fitting - 1/4 Boss x 1/4 JIC Str.
85	3	10786	Fitting - 1/2 Boss x 1/2 JIC Str.
86	2	10310	Lock Washer 7/16
87	2	10309	Flat Washer 7/16
88	1	501207	Hose - 1/4 x 66” Hyd. 10908
89	1	800615	Hose - 1/4 x 54” Hyd. 10908
90	1	10274	Nut - 1/4-20 KEP
91	1	507487	Gutter Broom Pump Mount
92	1	11248	Belt - 2G 3V 280
93	1	11170	Taper Lock Bushing - 1610 x 3/4
94	1	20759	Fitting - 3/8 STR THD Run Tee
95	1	507532	Hose Assembly - 3/8 x 21”
96	1	800613	Hose Assembly - 1/2 x 39”
97	1	5020493	Hose - 1” x 38” Hydraulic Suction
98	1	20862	Fitting - 1/8 MPT 45° STR ELL
99	1	12711	Gauge - Hyd. Filter Restr.
100	1	10722	Fitting - 1/2 ORB x 3/8 JIC 90°
101	1	508063	V10 Pump, 2 GPM Ring, 2300 psi
102	1	20711	Fitting - 1/2 ORB x 1/2 JIC 90°
103	1	50742	Fitting - 1” ORB x 1” JIC 90°
104	1	50716	Fitting - 1” JIC x 1” HB

ITEM	QTY.	PART NO.	DESCRIPTION
105	2	13576	T-Bolt Clamp - 1.88” - 2.19”
106	1	509365	PTO Prop Shaft 20 1/4” Ext.
107	1	503755	Hose Assembly - 1/2 x 22” Hyd. (RH Broom)
108	1	509345	Chelsea 249 PTO (Diesel)
-	1	509346	Chelsea 249 PTO (Gasoline)
109	1	21835	Temperature Thermistor
110	2	10140	Bolt - 1/2 UNC x 1 3/4 Gr. 5
111	8	10311	Flat Washer 1/2
112	2	30111	Bolt - 1/2-13 UNC x 5 1/2 Gr. 5
113	4	10231	Locknut - 1/2 UNC
114	1	13580	Destroking Plug, 38.5cc (Diesel)
-	1	13581	Destroking Plug, 38.5cc (Gasoline)
115	1	13518	O-Ring
116	-	-	-
117	1	5021771	Fuel Line Bracket
118	1	5021859	Hose - 1” Hydraulic Return x 38”
119	1	13405	PTO Pressure Switch
120	1	503171	Hose Assembly - 1/2 x 25” Hyd. (RH Broom)

TYMCO
REGENERATIVE AIR SWEEPERS

MODEL 210h
HYDRAULIC SYSTEM SUBASSEMBLY
(M02407) REV E
07-26-2019
1:26 pm
SC

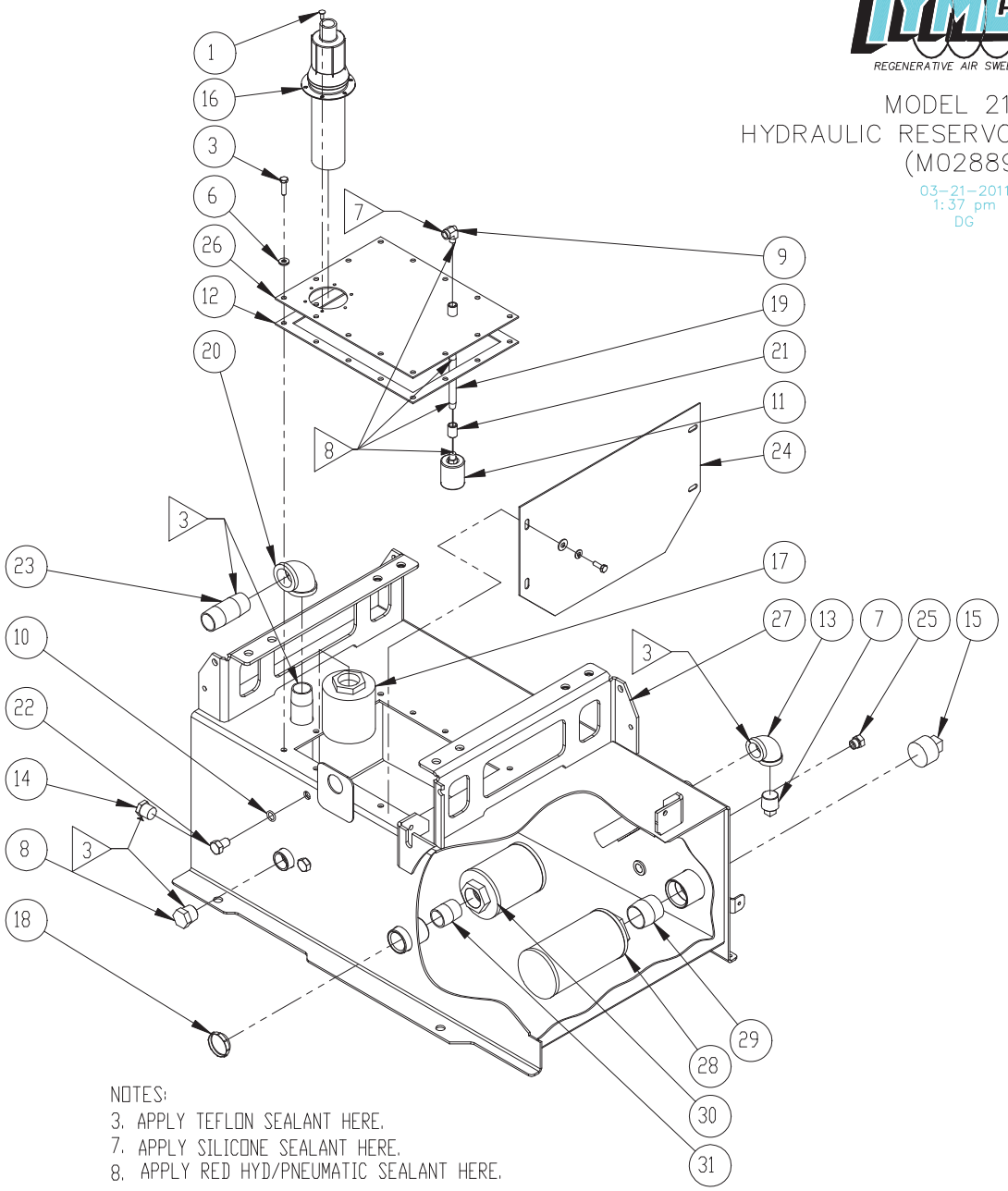


TYMCO MODEL 210h
HYDRAULIC RESERVOIR PARTS LIST
DWG-M02407

ITEM	QTY.	PART NO.	DESCRIPTION
	1	508050	Hydraulic System Subassembly
1	2	10110	Bolt - 1/4-20 x 3/4 HHCS
2	4	10111	Bolt - 1/4-20 x 1 HHCS
3	1	10118	Bolt - 5/16-18 UNC x 1 1/4
4	2	10135	Bolt - 7/16-14 x 1 HHCS Gr. 5
5	4	10203	But 1/4 UNC
6	1	10272	Nut - 1/16-18 Kept
7	10	10303	Flat Washer - 1/4
8	6	10304	Lock Washer - 1/4
9	1	10305	Flat Washer - 5/16
10	2	10309	Flat Washer - 7/16
11	2	10310	Lock Washer - 7/16
12	2	10358	Ground Washer - 5/16
13	3	10786	Fitting - 1/2 ORB x 1/2 JIC
14	1	11332	Clamp - 1-1/2” Dipped
15	1	12356	Sight Gauge
16	-	-	-
17	1	12711	Gauge - Hydraulic Filter Restriction
18	4	13404	T-Bolt Clamp - 1.25 - 1.41 DIA
19	1	13493	Fitting - 1-1/4” MPT x 1-1/2” HB 90°
20	1	20737	Fitting - 3/4 NPT x 1/2 JIC
21	5	20751	Fitting - 1/4 ORB x 1/4 JIC
22	1	20759	Fitting - 3/8 Str. THD Run Tee
23	1	20790	1” Beaded Pipe Fitting
24	1	20862	Fitting - 1/8 MPT 45° Street Elbow
25	1	21835	Thermistor Temperature Sensor
26	1	22138	Spin-On Filter Head
27	1	30104	Self Tap - 1/4-20 UNC x 3/4
28	3	30749	Fitting - 3/8” Boss x QD Test Port
29	1	40753	Fitting - 3/4 ORB x 3/4 JIC Str.
30	1	40758	Fitting - 1” Split Flange Kit Code 61
31	1	40761	Fitting - 1 ORB x 1 NPTF
32	1	500378	Oil Drain Hose Assembly
33	1	5010080	Spin-On Filter Element
34	1	5018628	Hydraulic Filter - Long
35	1	5020278	Cooler Brace
36	1	5020345	Hose - 1” x 27” Hyd.
37	1	5021859	Hose - 1” Hyd. Return x 38”
38	1	50716	Fitting - 1” JIC x 1” HB
39	1	507247	Load Sense Manifold
40	1	507253	Oil Cooler w/Fan
41	1	50729	Fitting - Code 61 x 1” HB 90°
42	2	50730	Fitting - ORB x 1” HB 45°
43	2	50736	Fitting - 3/4” Boss x 5/8” JIC Str.
44	1	50742	Fitting - 16 ORB x 16 JIC 90°
45	1	508733	Electric Fan Motor Controller w/Harness
46	1	509159	Hydraulic Reservoir Assembly - Painted
47	1	8010560	Grab Handle
Not Shown	3	12395	Test Port Cover

TYMCO
REGENERATIVE AIR SWEEPERS

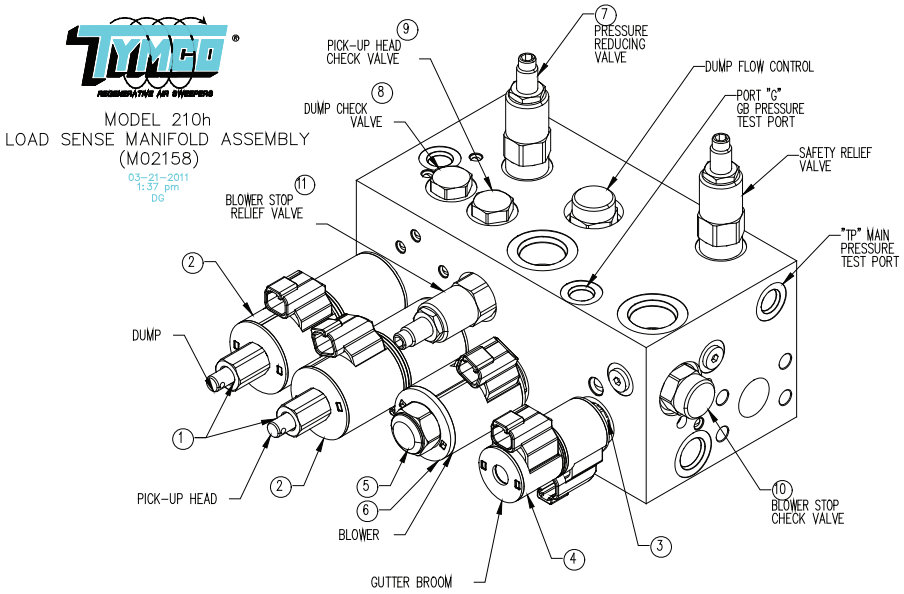
MODEL 210h
HYDRAULIC RESERVOIR ASSEMBLY
(M02889) REV A
03-21-2011
1:37 pm
DG



NOTES:
3. APPLY TEFLON SEALANT HERE.
7. APPLY SILICONE SEALANT HERE.
8. APPLY RED HYD/PNEUMATIC SEALANT HERE.

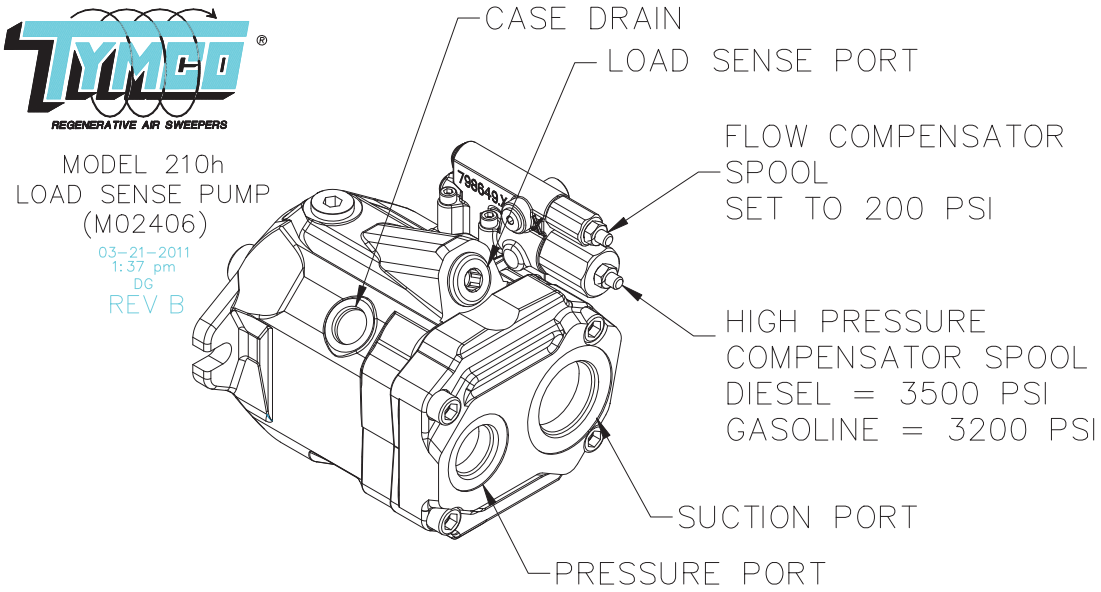
TYMCO MODEL 210h
HYDRAULIC RESERVOIR PARTS LIST
DWG-M02889

ITEM	QTY.	PART NO.	DESCRIPTION
	1	509159	Hydraulic Reservoir Assembly - Painted
1	6	10107	#10-24 Self Tap Screw
2	4	10110	Bolt - 1/4-20 x 3/4 HHCS
3	14	10111	Bolt - 1/4-20 x 1 HHCS
4	4	10303	Flat Washer - 1/4
5	4	10304	Lock Washer - 1/4
6	14	10345	1/4 - Flat Washer Neoprene
7	1	10616	Pipe Plug, SQ - 3/4
8	1	10723	Pipe Plug, Hex - 3/4
9	1	10733	Street 90 - 1/8 NPT
10	2	12503	O-Ring - 112
11	1	12733	Float Switch
12	1	20559	Gasket - Hyd. Res.
13	1	20636	3/4 NPTF Elbow
14	1	20653	Plug - 1/2 MPT - Nyl.
15	1	20680	Plug - 1-1/4 MPT Galv.
16	1	22141	Filler/Breather
17	1	22481	Reservoir Diffuser
18	1	22527	Threaded Plug - 1” NPT
19	1	30621	Pipe - 1/8 NPT x 4.00
20	1	30692	1.00 NPT Elbow, Black
21	1	30743	Coupling - 1/8 NPTF
22	2	40125	Bolt - 1/2-13 UNC x 3/4 G5
23	1	40773	Pipe Nipple - 1.00 x 3.00
24	1	5020277	Hydraulic Reservoir Baffle
25	1	50722	Plug SAE #6
26	1	508054	Tank Cover Plate Weldment
27	1	209158	Tank Full Weldment - NPT
28	1	13491	Suction Strainer - 20 GPM, 1-1/4” MPT
29	1	40604	Fitting - 1-1/4” Close Nipple - Black
30	1	13759	Suction Filter - 14 GPM, 1” FPT
31	1	40605	Fitting - 1” Close Nipple - Black



TYMCO MODEL 210h
LOAD SENSE MANIFOLD PARTS LIST
DWG-M02158

ITEM	QTY.	PART NO.	DESCRIPTION
	1	507247	Load Sense Manifold
1	2	13136	Solenoid Valve - Cartridge Only
2	4	21810	Coil - 10 Size
3	1	22492	Solenoid Valve - Cartridge Only
4	2	21811	Coil - Size 8
5	1	22493	Proportional
6	1	21812	Coil - Proportional Valve
7	1	22494	Pressure Reducing Valve - 1500 psi
8	1	22495	Double Check Valve
9	1	22496	PO Check Valve
10	1	22503	Check Valve
11	1	22504	Relief Valve - 1000 psi



WARNING: Before servicing, stop engine and remove ignition key or disconnect negative battery cable.

SYSTEM DESCRIPTION

The main pump provides hydraulic power to all hydraulic components except the gutter broom. The pump is driven by the transmission PTO. To engage the PTO, the vehicle speed must be below the programmed maximum sweeping speed and the engine speed must be below 1050 RPM. Pressing one of the hydraulic functions (blower on, pick up head up/down, or hopper up/down) will activate the PTO. After pressing a hydraulic function, wait approximately 2 seconds for the PTO to engage. Once the PTO engages, the red “PTO On” indicator will illuminate. The engine speed will be elevated to a minimum of 750 RPM and be governed to a maximum of 2000 RPM. The PTO will stay active until:

- No hydraulic functions are active for 15 seconds
- Ground speed exceeds the programmed maximum sweeping speed (default is 18 MPH)
- Engine speed exceeds 2100 RPM for more than 5 seconds.
- Chassis temperature limits are exceeded.

The main pump is a load sensing, variable displacement, piston pump. The load sense pump and load sense manifold work together to provide hydraulic flow and pressure to components based on demand. The load sense pump has three modes of operation: low pressure stand-by, load sense operation, and high pressure stand-by.

Low Pressure Stand-By Mode
Low pressure stand-by occurs when the pump output flow is blocked (all valves are closed). The load sense pump holds approximately 200 psi (13.8 bar) of stand-by pressure, priming the pump while minimizing load on the engine.

Low Pressure Stand-By Pressure Test:
To test the low pressure stand-by pressure, a gauge rated to 3500 psi (241 bar) with a Parker PD242 female coupler (TYMCO #12394) is required to adapt to the pressure test port at the load sense manifold. This port can be used to measure the load sense pump output pressure. Prior to testing the hydraulic pressure, the hydraulic oil in hydraulic tank should be raised to a approximately 100 °F (38 °C) by operating the blower.

1. With the engine off, remove the rubber pressure port cover located on the “TP” port of the load sense manifold and install a 3500 psi (241 bar) gauge.

2. Start engine

3. The gauge should read approximately 200 psi (13.8 bar) at 100°F oil temperature.

Load Sense Operation Mode
Load sense operation occurs when any one of the hydraulic circuits is turned on (opened). The load sense pump senses the pressure created by the load downstream of the circuit flow regulator valve. During hydraulic circuit operation, it automatically increases or decreases pump displacement (stroke or destroke) based on the flow compensator spool valve and the pressure in the load sense line. The result is an efficient system that delivers a constant flow to the load as well as an additional 200 psi of pressure to overcome restriction through the flow regulator.

High Pressure Stand-By Mode
High pressure stand-by occurs when the pump outlet pressure reaches pressure compensator setting. The diesel chassis is set to 3500 psi (241 bar) and the gasoline chassis is set to 3200 psi (220 bar). The pressure compensator spool valve in the load sense pump forces the pump to fully destroke stopping all flow but maintaining pressure in the circuit. The safety relief valve in the load sense manifold limits the system pressure to 3700 psi (255 bar) in the case that the high pressure standby spool fails to destroke the pump.

OPEN LOOP HYDROSTATIC BLOWER DRIVE
The blower is powered by an open loop hydrostatic hydraulic circuit. When the blower switch is activated, the proportional blower control valve is a turned on in the load sense manifold which sends oil to the blower motor. The speed of the blower shaft is monitored by the BlueLogic system which then adjusts the proportional control valve to maintain the preset blower speed of 1600 or 1750 RPM. The engine must be running at a minimum of 750 RPM, in order for the pump to maintain the flow require for 1750 RPM blower speed. When the PTO is engaged, the engine low idle speed will increase from 600 to 750 RPM.

The proportional valve is driven by a pulse width modulated (PWM) output from the VMM BlueLogic module. This output is a 100 Hz square wave signal with maximum voltage equal to battery voltage, usually around 13.6 volts. The percentage of on time versus off time of the square wave signal is varied to adjust how far the proportional valve opens. Only 6.5 volts is require to fully open the valve, so to improve the resolution of control, some of the voltage is “burned off” through a 4 ohm resistor which is located on the electrical panel near the BlueLogic module. Also a flyback diode is located in the harness near the proportional valve to drain the current from the coil during the off cycle of the PWM signal.

HYDRAULIC SYSTEM ADJUSTMENTS
In order to check or set the pressures, a gauge with a pressure range of 0 to 3500 psi (0 to 240 bar) is necessary. See the chart below for the correct pressure settings

Hydraulic Pressure Settings	
Flow compensator	200 psi (13.8 bar)
Diesel chassis pressure compensator (Main pump)	3500 psi (241 bar)
Gasoline chassis pressure compensator (Main pump)	3200 psi (220 bar)
Gutter Broom pressure	2300 psi (159 bar)
Pick-up Head and Dump	1500 psi (104 bar)

With auxiliary engine off, install test gauge on male quick disconnect test port “TP”. **NOTE**: All pressure testing should be done with hydraulic oil at operating temperature. Start the engine, lower the pick-up head and turn on the blower. Elevate the engine RPM to above 1000 to 1500 RPM. Raise the gutter broom. Hold the broom switch to “raise” position after gutter broom has completed its travel and read primary pressure. This pressure is set by the compensator on the main pump. This setting is preset at the factory. Consult the factory before adjusting the pressure. To adjust the pressure, loosen the jam nut in the high pressure compensator spool. Turn the spool in to increase pressure.

To test the secondary 1500 psi pressure, leave test gauge in the same position and with the engine running, lower the hopper to its full travel, hold the switch to the “Lower” position and read the test gauge. 1500 psi (103.5 bar) should be the pressure reading. If adjustment is required, loosen jam nut on pressure reducing valve, (Item 7-DWG M02158) and turn setting clockwise to raise pressure and counterclockwise to lower pressure and tighten jam nut.

To test gutter broom pressure, move the pressure gauge to the “G” port on the top of the load sense manifold. Lower the pick-up head and turn on the blower to engage the gutter broom pump. Turn on the blower. Press the GB raise switch to fully raise the broom. Hold the GB raise switch and read the pressure. The pressure should be 2300 psi (158.6 bar). This pressure is set by a shims internal to the gutter broom pump and is not adjustable.

HYDRAULIC OIL SPECIFICATION

The standard hydraulic fluid used in all TYMCO sweepers is Mobil DTE 25 Ultra. This fluid is an ISO grade 46 hydraulic oil with anti-wear, anti-foaming, anti-corrosion, and demulsifying additives with a wide operating temperature range. This oil also provides long filter and oil service life.

TYMCO also recommends that customers periodically have a hydraulic oil analysis preformed. The analysis provides important information about the health of the hydraulic system and oil. It can provide a warning of premature component wear, level of oil cleanliness, and oil performance. A proper oil analysis can potentially prevent changing the hydraulic oil that is still within specification and can extend the drain interval well beyond TYMCO's recommend hydraulic oil service interval. TYMCO recommends having the oil analyzed every 500 hours. Oil distributors will most likely be able to provide a suitable oil analysis solution.

WARNING: Some oils can degrade hydraulic components so ALWAYS consult the factory before switching hydraulic oils to prevent loss of warranty. Also, DO NOT mix oils because this could cause chemical and viscosity problems. DO NOT use Dextron II, Universal Tractor Fluids (UTF), or Transmission Differential Hydraulic Oil (TDH). Hydraulic component warranty will be lost if these hydraulic fluids are used.

Hydraulic Oil Service Interval

When using Mobil DTE 25 Ultra, TYMCO recommends servicing the hydraulic oil ***every 2000 hours or by oil analysis recommendation.*** To maintain warranty on hydraulic components, oil service and/or oil analysis records will be required in the event of a hydraulic component failure. TYMCO also recommends cracking the reservoir drain plug open every 6 months or 500 hours to drain any water that may have accumulated in the hydraulic reservoir.

Hydraulic Oil Inspection

The hydraulic oil level and color should be checked daily. The hydraulic oil color should be a clear amber. The sight gauge located on the hydraulic reservoir can be used to check the oil level and color. A milky oil color indicates water contamination, and dark oil indicates over heating or a chemical reaction.

If the hydraulic oil reservoir is low, only fill the reservoir when the hopper is down in the stowed position. Never overfill the reservoir. See Hydraulic Oil Reservoir section. Stop filling reservoir at the full level line on the sight gauge. This will allow room for oil expansion when it increase to operating temperature. Always filter (10 micron absolute to maintain warranty) new oil that is being added to the reservoir especially if oil is taken out of a drum.

FILTER SERVICE REQUIREMENTS AND SPECIFICATIONS

NOTE: The oil and filter service requirements must be followed to maintain hydraulic parts warranty. See Hydraulic Oil Specification section for recommended oil usage.

There are two hydraulic filters in the hydraulic system. A return filter and a reservoir vent filter. Only recommended filters should be used so that the hydraulic components warranty is maintained. Keeping accurate service records is required for warranty purposes.

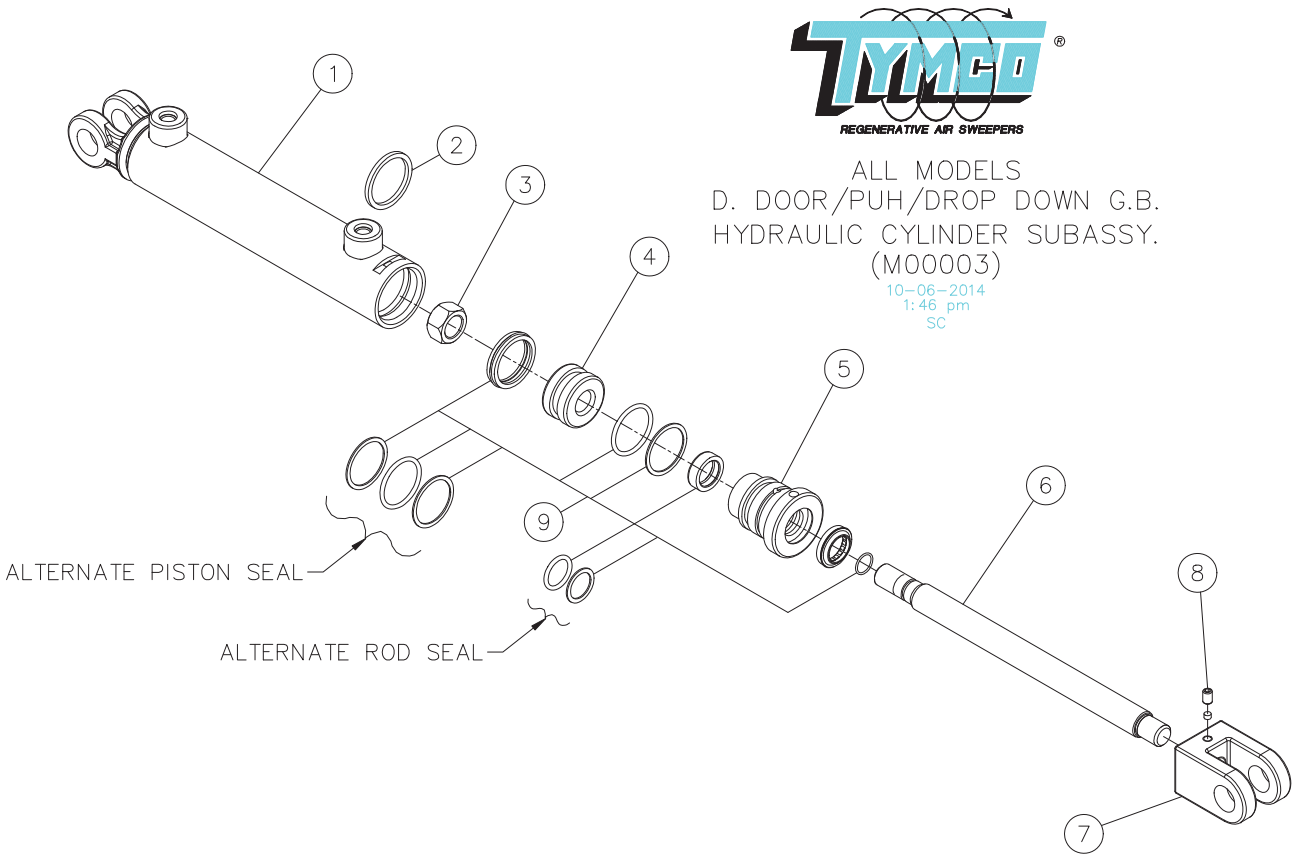
Recommended Return Filter Service (Screw-On Filter, P/N 5018628)

The return filter has a restriction indicator on it that should be checked daily. The hydraulic oil temperature should be above 100°F before checking restriction indicator. The blower and gutter broom should be running when checking the restriction indicator gauge. The filter needs to be changed before the restriction indicator needle reaches the red region of the gauge. The filter must be replaced with a synthetic media, 10 micron absolute filter with a Betax (2/20/75) rating of 4/10/12.

Recommend service interval is ***1000 hours or by restriction indication.***

Recommended Hydraulic Reservoir Vent Filter Service (Screw-On Filter, P/N 5010080)

The vent filter should be replaced every 500 hours. The filter should be replaced with a 10 micron filter.



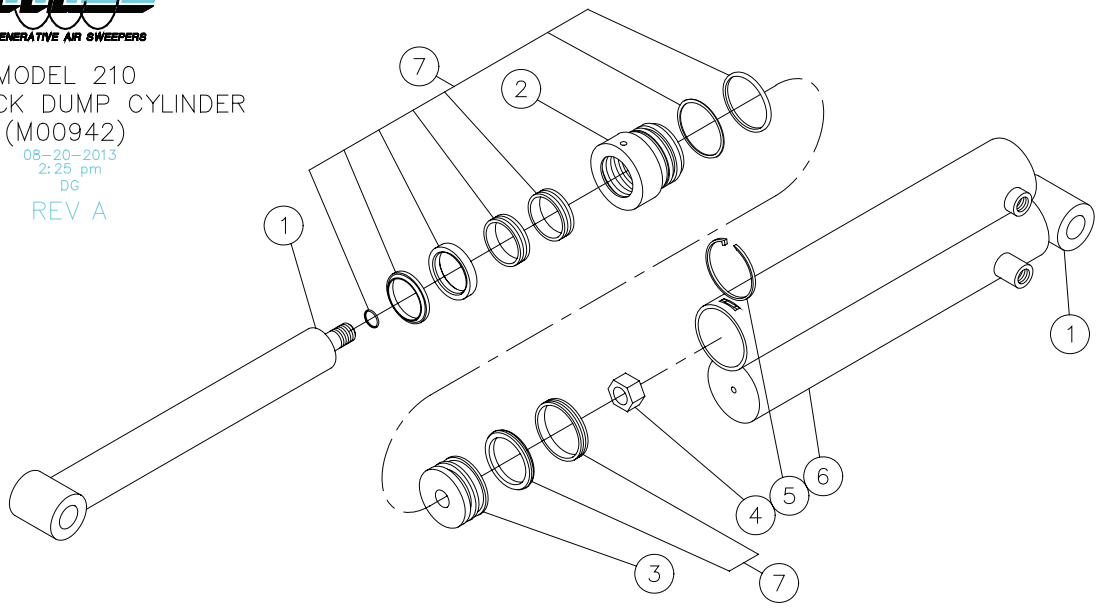
TYMCO MODEL 210/210h/435/DST-4
DOOR/PICKUP HEAD/DROP DOWN GUTTER BROOM CYLINDER ASSEMBLY
DWG-M00003

ITEM	QTY.	PART NO.	DESCRIPTION
	1	503364	Door/Pickup Head Cylinder Assembly
1	1	-	Tube Assembly
2	1	12203	Ring Retainer
3	1	12204	Lock Nut
4	1	22269	Piston
5	1	12207	Head
6	1	-	Rod
7	1	12362	Clevis
8	1	-	Set Screw
9	1	5010388	Seal Kit - Universal

NOTE: TYMCO DOES NOT STOCK ANY BASE PARTS. (Seal Kits Only)

Universal Seal Kit contains seals for both o-ring style cylinders and u-cup and crown seal style cylinders.

MODEL 210
PIGGYBACK DUMP CYLINDER
(M00942)
08-20-2013
2:25 pm
DG
REV A



TYMCO MODEL 210/210h
DUMP CYLINDER "PIGGY BACK" ASSEMBLY
DWG-M00942

ITEM	QTY.	PART NO.	DESCRIPTION
	1	504120	Dump Cylinder Assembly
1	2	-	Rod Assembly
2	2	5021035	Head
3	2	-	Piston
4	2	-	Lock Nut
5	2	12213	Ring Retainer
6	1	-	Tube Assembly
7	1	20511	Seal Kit

NOTE: TYMCO DOES NOT STOCK ANY BASE PARTS. (Seal Kits Only)

HYDRAULIC CYLINDER DISASSEMBLY/REASSEMBLY

WARNING: Before servicing, stop auxiliary engine and remove ignition key or disconnect negative battery cable. When working under or around raised hopper, *ALWAYS install pin against safety prop.*

TO DISASSEMBLE:

Before beginning disassembly, prepare an oil bath of clean hydraulic oil to receive parts as described in the following procedures. Refer to appropriate hydraulic cylinder assembly drawing.

NOTE: See appropriate Hydraulic Cylinder Parts List for seal kit part numbers.

1. Cap off cylinder ports and wash and wipe cylinder clean and free from all dirt. Remove caps and pull rod slowly until fully extended and all oil has been dispersed. Push the rod back in.

2. Clamp vise around cylinder tube near base end (not too tightly to avoid distorting tube) with retaining ring slot face up.

3. Use spanner wrench (if available) or pipe wrench and gently turn head until the separation of retaining ring is in sight through retaining ring slot. Turn to a suitable position so that a small screwdriver can be inserted underneath retaining ring sharp edge. Hold screwdriver in place and turn head in a direction that will result in retaining ring starting outside of slot. Remove screwdriver and turn head until retaining ring has “walked” its way out of the slot and remove.

4. Pull on rod and remove complete rod assembly.

5. Remove nut, slide components free from rod. Discard seals. Place small components in oil bath and wash clean. Check for burrs and metal objects on small components, rod, and tube.

TO REASSEMBLE:

1. Lubricate all new seals and place them on matching parts as shown in Drawing.

2. Slide head onto rod. Place piston on end of rod and screw nut down tight.

3. Assemble rod assembly into tube, giving a slight twist while inserting into tube. Push rod until it has bottomed out.

4. Tap head into tube and turn until retaining ring hole aligns with slot in tube. Insert bent end of retaining ring into hole and turn head until ring is completely inside of tube: then turn head a quarter turn.

WATER SYSTEM

TABLE OF CONTENTS

FUNCTION

The TYMCO dust control system is designed to maximize dust suppression without minimizing sweeping efficiency. The REGENERATIVE AIR sweeping system is designed to remove fine particulates from the sweeping surface. Mechanical sweepers flood the surface creating a paste out of the fines, thereby, leaving them behind stuck to the pavement as a film. The TYMCO dust control system injects water spray into dust generation areas controlling the dust at its source which allows the fine particulates on the sweeping surface to be easily removed by the unique REGENERATIVE AIR sweeping system.

The dust control system is responsible for suppressing airborne dust created by a properly functioning sweeper under normal sweeping conditions. Excessively dusty sweeping is often not the fault of the dust control system, but that of a poorly functioning sweeper. It is extremely important for proper dust suppression that the sweeper pickup head curtains be of adequate length, the hopper is properly sealed and that the pressure and suction tubes are in good condition. Even a small seal leak causes excessive dust and poor sweeping performance.

NOTE: This water system is **NOT** designed to flush the surface.

The 210h water system incorporates a liquid level sensor for water supply monitoring. The liquid level sensor system is an electrically controlled water level sensor which provides water pump protection when the water level in the water tank becomes depleted. The liquid level sensor circuit is controlled by an electronic module and two relays located at the sweeper electrical panel on the front of the separator. The liquid level sensor probe is usually located at the water tank suction/drain assembly. For information on Water System circuits and electrical components, refer to the Control System Section L.

OPERATION

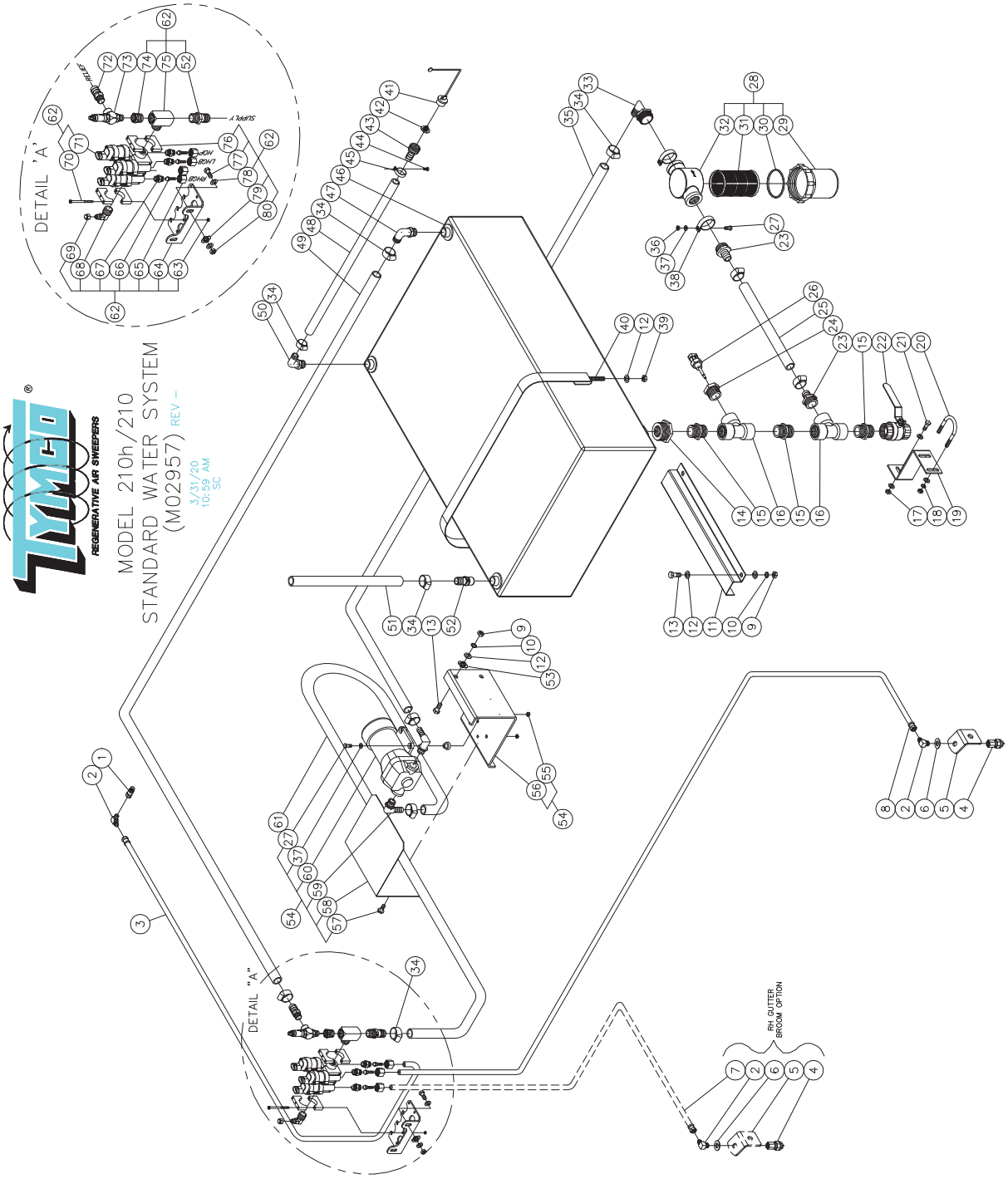
The water pump is controlled by the main water switch on the console in conjunction with the BlueLogic control system. The water system consists of a water tank, water pump, and spray nozzles in three locations (gutter broom, hopper and pick-up head). The water pump will only run when the PTO is engaged and the tank has water. To activate the water system, fill the tank with water, and activate a hydraulic function to engage the PTO. Press the main water system switch to the on position. Once the pump engages the green status light on the bottom side of the main water switch will illuminate. All nozzles will be active and working. If the pump disengages, due to low water or the PTO turning off, the green status bar will turn off. A water test mode is provided to allow testing the water system with the PTO off.

WATER TEST MODE

To engage the water test mode, with the transmission in park, turn on the ignition but do not crank the engine. Press and hold the “Blower +” switch for 1.5 seconds. This will cause output number 9 to come on enabling the water system, and cooler fan. With water in the water tanks, turn on the main water switch. The pump should engage and all nozzles should be spraying. To exit water test mode, crank the engine or turn off the ignition.

TROUBLESHOOTER’S GUIDE

PROBLEM	CAUSE	SOLUTION
Low Pressure	Worn pump head	Replace (see SERVICE & MAINTENANCE Section).
	Worn nozzles	Replace with nozzles of proper size.
	Nozzle screens clogged	Clean.
	Air leak in pump inlet plumbing	Disassemble, reseal and reassemble.
	Inlet suction strainer clogged	Clean, check more frequently.
	Leaky discharge hose	Repair or replace.
Pump motor will not run	Blown fuse	Check fuse in main console panel.
	Defective console switch	Remove and replace.
	Electrical problem	Check liquid level sensor relays at control console.
	Defective pump motor	Remove and replace.
	Water tank empty	Refill.
	PTO not engaged	Activate a hydraulic function
Pump continues to run for a few seconds after water tank is depleted	Normal condition, result of slosh filter circuit liquid lever sensor control module	None required.


TYMCO
REGENERATIVE AIR SWEEPERS
MODEL 210h/210
STANDARD WATER SYSTEM
(M02957) REV -
3/31/20
10:59 AM
SC
DETAIL 'A'
DETAIL "A"
RH GUTTER BROOM OPTION

TYMCO MODEL 210/210h
30 GALLON WATER SYSTEM PARTS LIST
DWG-M02957

ITEM	QTY.	PART NO.	DESCRIPTION
	1	509343	Water System - 30 Gallons, Electric Pump
1	1	30881	Nozzle - Hopper Spray
2	2	10818	Fitting - 1/4 MPT x 1/4 JIC 90°
3	1	505446	Hose Assembly - 1/4 x 231”
4	1	20811	Fitting - 1/4 T Fan Nozzle w/ 11002 Tip
5	1	5010057	Water Nozzle Bracket
6	1	10311	1/2” Flat Washer
7	-	-	-
8	1	505781	Hose Assembly - 1/4 x 112”
9	4	10209	Nut - 3/8-16 Hex
10	4	10308	3/8” Lock Washer
11	1	5014965	Poly Water Tank Brace
12	10	10307	3/8” Flat Washer
13	4	10129	Bolt - 3/8-16 x 1-1/4 HHCS
14	1	30606	Fitting - 1-1/2 MPT x 1 FPT Reducer
15	3	30608	Fitting - 1” Close Nipple Nylon
16	2	30650	Fitting - 1 FPT Tee Nylon
17	2	10272	Nut - 5/16-18 KEPT
18	2	10306	5/16” Lock Washer
19	1	5021875	Bracket - Water Valve (Conventional Cab)
20	1	11357	U-Bolt - 5/16-18
21	1	10158	Bolt - 5/16-18 x 1-1/2 HHCS
22	1	12861	1” Ball Valve
23	2	20682	Fitting - 1 MPT x 3/4 HB Straight (Nylon)
24	1	20893	Fitting - 3/8 FPT x 1 MPT Reducer
25	1	5016407	Hose - 3/4 x 24”
26	1	11748	Liquid Level Sensor
27	6	10111	Bolt - 1/4-20 x 1 HHCS
28	1	508346	Strainer Assembly
29	1	5021282	Bowl - Strainer
30	1	5015315	Gasket - Strainer
31	1	5015314	Screen - Strainer
32	1	5021283	Cap - Strainer
33	1	20658	Fitting - 1 MPT x 3/4 HB 90° (Nylon)
34	10	11318	Hose Clamp - 5/8-3/4
35	1	5016408	Hose - 3/4 x 68”
36	2	10204	Nut - 1/4-20 Top Lock
37	2	10303	1/4” Flat Washer
38	2		Clamp - 1.75 Dipped
39	4	10275	Nut - 3/8-16 Kept
40	2	500386	Strap Assembly - Water Assembly
41	1	10820	Cap - Garden Hose
42	1	20803	Screen/Washer - Garden Hose
43	1	20802	Fitting - Female Garden Hose Swivel
44	1	10107	Screw - #10-24 x 1/2 Taptite Pan Head
45	1	11338	Clamp - 1” Dipped
46	1	503988	Water Tank Assembly
47	1	20655	Fitting - 1/2 MPT x 3/4 HB 90° (Nylon)
48	1	5014526	Hose - 5/8 x 32”
49	1	5013699	Hose - 3/4 x 77”

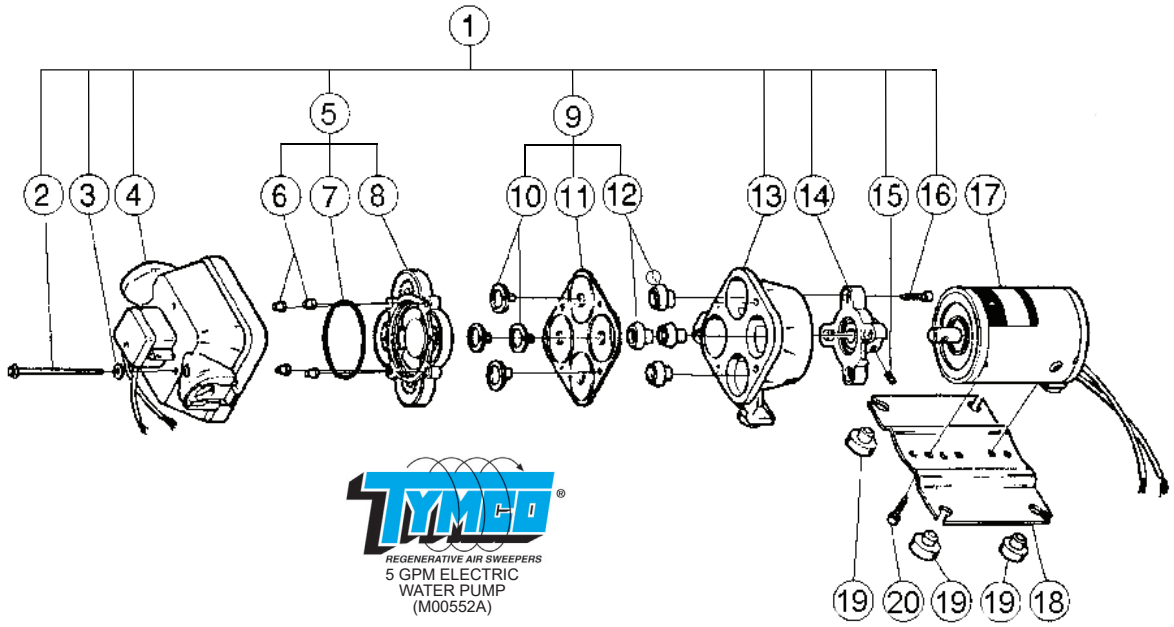
ITEM	QTY.	PART NO.	DESCRIPTION
50	1	20683	Fitting - 1/2 MPT x 5/8 HB 90° (Nylon)
51	1	5017146	Hose - 3/4 x 8-1/2”
52	1	20672	Fitting - 1/2 MPT x 3/4 HB Straight (Nylon)
53	1	10359	3/8” Toothed Dished Washer
54	1	504929	Electric Water Pump Assembly
55	8	10204	Nut - 1/4-20 Top Lock
56	1	5016402	Mount Bracket - Electric Water Pump
57	1	30126	Bolt - 5/16 x 1/2 HWH Rolock Self Tap
58	1	5016403	Water Pump Cover (Electric)
59	2	10695	Fitting - Elbow Adapter - 3/4” Hose
60	1	502556	5 GPM Electric Water Pump
61	1	5016558	Hose - Pump To Manifold
62	1	505407	Remcor Water Manifold Assembly - 3 Station
63	4	10260	Nut - 8-32 Kept
64	1	5018053	Mount Bracket (Water Manifold)
65*	2	30683	Fitting - FPT Swivel Nut
66*	2	30682	Fitting - 1/4 HB Insert
67	2	30681	Fitting - 1/4 JIC x 1/4 MPT Straight
68	1	30833	Fitting - 1/2 MPT x 1/4 SAE 90°
69	1	20855	Fitting - 1/4 JIC Cap
70	4	40124	Screw - 8-32 x 2-1/2 Pan Head
71	1	505395	Water Manifold - 3 Station
72	1	20861	Fitting - 3/8 MPT x 3/4 HB Straight
73	1	5015570	25 PSI Relief Valve
74	1	10814	Fitting - 1/2 NPT x 3/8 NPT Reducer
75	1	20895	Fitting - 1/2 NPT x Male Branch Tee
76	4	12938	Valve Body Clamp
77	2	10117	Bolt - 5/16-18 x 1 HHCS
78	8	10305	5/16” Flat Washer
79	1	10357	1/4” Toothed Dished Washer
80	2	10227	Nut - 5/16-18 Top Lock

* Part of hose assembly after installation of hose.

GENERAL SERVICE AND MAINTENANCE

The electric pump used in the TYMCO Water System requires no service except for freeze protection during freezing weather. To protect the pump from freezing, use the following procedures:

1. Remove the pre-filter bowl, clean out and fill with propylene glycol.
2. Screw bowl back onto the pre-filter.
3. Turn pump on for just an instant to charge pump cavities.
4. Pump is now freeze protected.



ELECTRIC WATER PUMP - 5 GPM
DWG-M00552A

ITEM	QTY.	PARTS NO.	DESCRIPTION
	1	502556	Electric Water Pump Assembly
1	1		Pump Head Assembly
2	4		Pump Head Screw
3	4		Washer
4	1		Upper Housing
5	1	5014452	Check Valve Assembly
6	4		Ferrules
7	1		O-Ring
8	1		Check Valve
9	1	5014451	Diaphragm and Piston Kit
10	4		Outer Piston
11	1		Diaphragm
12	4		Inner Piston
13	1		Bearing
14	1		Cam Bearing
15	1		Allen Screw
16	4		Screw
17	1	5015539	Electric Motor
18	1		Base Plate
19	4		Rubber Isolators
20	2		Bolt

SERVICE AND MAINTENANCE
ELECTRIC WATER PUMP - 5 GPM
(502556)

Refer to Pump Assembly drawing M00552 for item identification.

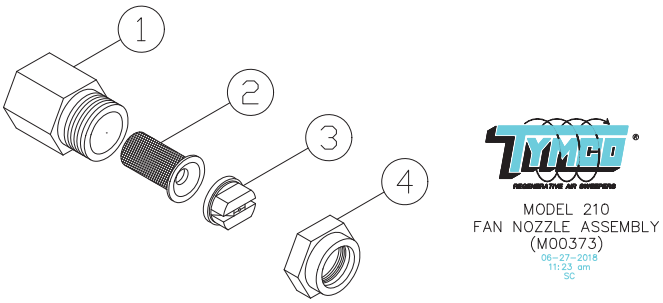
TO DISASSEMBLE:

1. Loosen four pump head cap screws (2).
2. Rotate bearing cover (13) so that drain notch at its base is aligned with the cam/ bearing assembly set screw (15).
3. Using a 1/8" Allen wrench, loosen set screw and slide pump head off motor shaft.
4. Disassembly pump head.

TO ASSEMBLE:

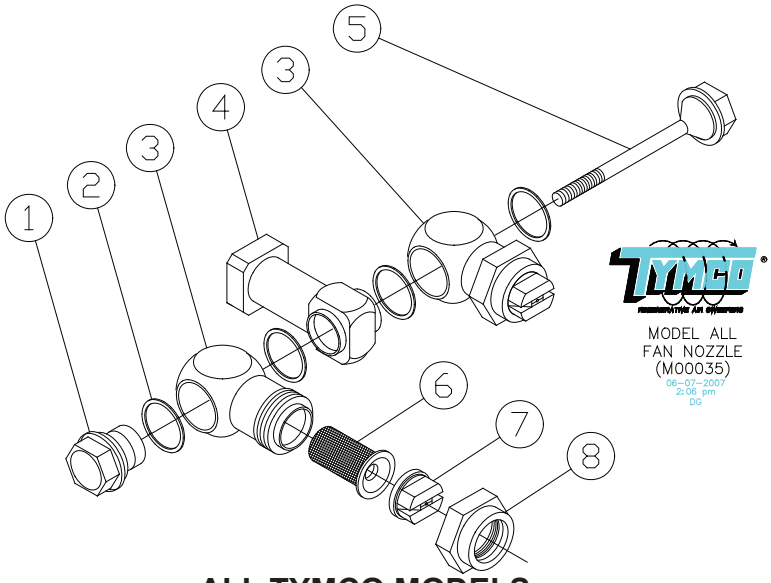
1. Apply light coat of grease to motor shaft prior to assembly.
2. Assemble diaphragm/piston kit (9) with raised side of diaphragm facing away from motor, flat side of outer pistons facing motor, and hex stem of inner pistons aligned into hex holes in outer pistons.
3. Align outer pistons with slots in cam assembly (14) making sure screw holes line up, also. Otherwise, diaphragm will leak.
4. Install and partially tighten cam piston screws, center pistons in diaphragm, and torque screws to 18 lbs. in (2 Nm).
5. Install bearing cover and cam/bearing assembly on motor shaft and tighten set screw.

   NOTE: Set screw MUST be positioned in shaft indentation prior to tightening. Position of set screw is critical.
6. Using care, properly seat O-ring in check valve assembly (5).
7. Position ferrules in upper housing (4) and push check valve assembly into upper housing.
8. Insure that fitting slip locks are positioned properly in their respective slots prior to installing the upper housing (4) onto the bearing cover.
9. Install upper housing assembly onto bearing cover and evenly torque pump head screws (2) to 25 lbs. in. (2.8 Nm).



TYMCO MODEL 210/210h
FAN NOZZLE PARTS LIST
DWG-M00373

ITEM	QTY.	PART NO.	DESCRIPTION
	1	10857	Fan Nozzle
1	1		Body
2	1	10837	Strainer
3	1	10836	Tip - 800050
4	1	10838	Cap



ALL TYMCO MODELS
DOUBLE SWIVEL FAN NOZZLE PARTS LIST
DWG-M00035

ITEM	QTY.	PART NO.	DESCRIPTION
	1	20810	Double Swivel Fan Nozzle Assembly
1	1		Nut
2	4		Shim
3	2		Swivel Body
4	1		Tee Swivel
5	1		Tie Bolt
6	2	10837	Strainer
7	2	20809	Tip - 11003
8	2	10838	Cap

CONTROL SYSTEM

TABLE OF CONTENTS

⚠ WARNING: Before servicing, stop engine and remove ignition key or disconnect negative battery cable.

FUNCTION

The operator control panel provides for all sweeper functions to be controlled from inside the cab with the exception of the Dump System. A dump switch is provided on the sweeper frame in front of the blower housing. A blower hour meter is provided on the control console. A sealed fuse and relay panel, Blue Logic module, and low water module are located on a electrical panel on the front of the separator.

The 210h control system utilizes a BlueLogic control system to interface the truck chassis and control sweeper functions. BlueLogic is a multiplexing control system which has the ability to process logic and communicate with other electronic devices on the sweeper. Interface to the truck chassis is accomplished via chassis PTO interface connections located above the left kick panel. The control panel utilizes a 5 bank CAN switch pack. This switch pack communicates with the BlueLogic control module via a CAN datalink cable consisting of a three wires (green, yellow, and a shield wire). The control module monitors truck parameters such as engine RPM and ground speed as well as sweeper parameters such as blower speed, control panel switch status, and hydraulic oil level and temperature. The control module uses these input conditions to activate outputs which engage sweeper functions. This system allows the 210h to provide important safety interlocks as well as operator convenience features.

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USER INSTALLED “EXTRA” LIGHTS OR ELECTRICAL ACCESSORIES

Adding circuits to the sweeper control system should be done with the utmost consideration to the effects on the TYMCO installed electrical wiring. No additional lights or accessories should be added to the TYMCO control panel without first consulting the factory. If additional lights or switches are needed, six prewired upfitter switches are provided with the chassis. The switches are located on the overhead control panel and are labeled AUX1, AUX2, AUX3, AUX4, AUX5, and AUX6. The switches are active with the key on accessory or run. The connection wires for the switches are under the hood near the upfitter auxiliary relay box that can be found on the driver’s side of the engine compartment.

Switch	Wire Color	Amperage
AUX 1	Brown/Green	25A
AUX 2	Violet/Orange	25A
AUX 3	Blue/Green	25A
AUX 4	Gray/Brown	25A
AUX 5	Brown/Blue	40A
AUX 6	Gray/Orange	40A

NOTE: The information above is provided for reference and was taken from Ford Service Bulletin Q-252. Please check the service bulletin for your chassis before making connections.

If additional electrical power is needed, an auxiliary fuse panel is available.

BLUELOGIC MODULE

The 210h control system includes one BlueLogic control module. This module has 12 inputs which monitor these items: chassis ignition, reverse gear, dump switch, PTO status, engine RPM, oil temperature, and ground speed. The module also has 10 outputs which engage the gutter broom valve, blower valve, pick-up head valve, dump valve, work lights, console and warning light power, and chassis PTO control. Each of these outputs are solid state circuit protected and include diagnostic functions. The BlueLogic module also constantly monitors the switch state of the CAN switch pack. The module contains a custom program which tells the device how to control the outputs.

Programmed Safety Interlocks

The BlueLogic control system is programmed with safety interlocks. It will not allow certain output functions to occur if it receives specific inputs from sensors located about the sweeper. Some interlocks are for operator safety, some are for protection of the hDrive system and some are for operator convenience.

1) The gutter broom will not operate for the first 10 seconds after the blower is engaged or at all when the engine is running and the PTO is not engaged.
2) The PTO will only engage when the ground speed is below the programmed maximum sweeping speed (default 18 mph) and the engine speed is below 1000 RPM.
3) Programmable Auto Sweep Interrupt
   a) Level 0: The system is off and no hydraulic functions are automated
   b) Level 1: (Default setting) gutter broom will raise when chassis is in reverse and lower upon leaving reverse.
   c) Level 2: Upon entering reverse, the blower will disengage, the pick-up head will raise, and the gutter broom will raise. After leaving reverse, the head will lower, the blower will turn back on, the broom will turn back-on.
4) Low hydraulic oil or high hydraulic temperature will stop the blower, raise the gutter broom and prevent activation of raising dump circuit or lowering the pick-up head or reengaging the broom. The system will still allow raising the pick-up head.

5) If the engine RPM is above 750 RPM, the output to the proportional blower control valve will be automatically adjusted to maintain the set blower speed within 15 RPM.
6) The PTO and all hydraulic functions will be disabled in the event that the engine RPM exceeds 2100 RPM for more than 5 seconds or ground speed exceeds programmed maximum sweeping speed.
7) The hopper raise function will not operate unless the sweeper is traveling below 4 mph. The hopper lower function will operate at any speed below the programmed maximum sweeping speed (default 18 mph).
8) If the hopper raise function is activated while the blower is running, the blower will turn off and the hopper will raise as normal. Note that the system does not prevent the operator from reactivating the blower with the hopper raised.
9) The work lights will automatically turn on while the transmission is in reverse.
10) PTO will not engage or will turn off if chassis powertrain temperatures are out of range. Engine coolant temperature must be above 20°F for diesel, 40°F for gasoline, and below 234°F. Transmission temperature must be above 20°F and below 240°F.

Troubleshooting the BlueLogic Control System
Troubleshooting the BlueLogic control system is much easier than trouble shooting a traditional electrical system. The BlueLogic module has an LED indicator light for individual inputs and outputs, data link communication, and module power. These LED indicator lights can be used for diagnosing the sweeper control system.

Input LEDs: When the module is receiving an input signal (grounded or closed circuit), the corresponding input LED indicator light will turn on. If an input is not receiving a signal (not grounded or open circuit) then the LED indicator light will be off.

Output LEDs: When a module output is on, the corresponding output LED will also turn on. The modules have current overload/short circuit/no power fault protection. If loss of power or a current overload is detected in one of its outputs, the corresponding output LED indicator light will flash, and the module will turn off power to that output.

POW LED: The POW LED indicator turns on when the BlueLogic module is powered up and turns off when the module is not receiving power or the power control input (Input 1 on all modules) is not receiving a signal. The POW LED will fl ash to indicate a system fault such as a loss of communication with one or more modules in the system.

NET LED: The NET LED light will flicker indicating communication is being received and transmitted. Because of the amount of information being transmitted and received, the NET LED may appear to be ON constantly. If the data link is disconnected from a module, the NET LED indicator light will remain OFF.

5 Bank Switch Pack Module Diagnostics
The switch pack module communicates each switch position over the CAN datalink to control module. Each switch controls a function such as gutter broom, pick-up head, etc. The switch pack has feed back LED indicators for each switch position on all switches. Below is a LED color chart to explain the switch and switch function status.

LED SWITCH / FUNCTION STATUS
OFF: switch inactive, function inactive
CYAN: switch active, function inactive
GREEN: switch active, function active
AMBER: switch active, function stand-by
BLUE: Low blower speed selection
RED: switch active, function faulted

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USER PROGRAMMABLE FEATURES: There are three user programmable features.

Programmable Blower Speed

1) Selectable 2 speed (default setting):
   Low = 1600 RPM (indicated by blue LED on switch)
   High = 1800 RPM (indicated by green LED on switch)
   Press the Blower increase switch once for low and twice for high or press and hold for 1 second to go straight to high.
2) Low Speed only- Blower speed will be 1600 RPM
3) High Speed only- Blower speed will be 1800 RPM

Programmable Sweeping Speed

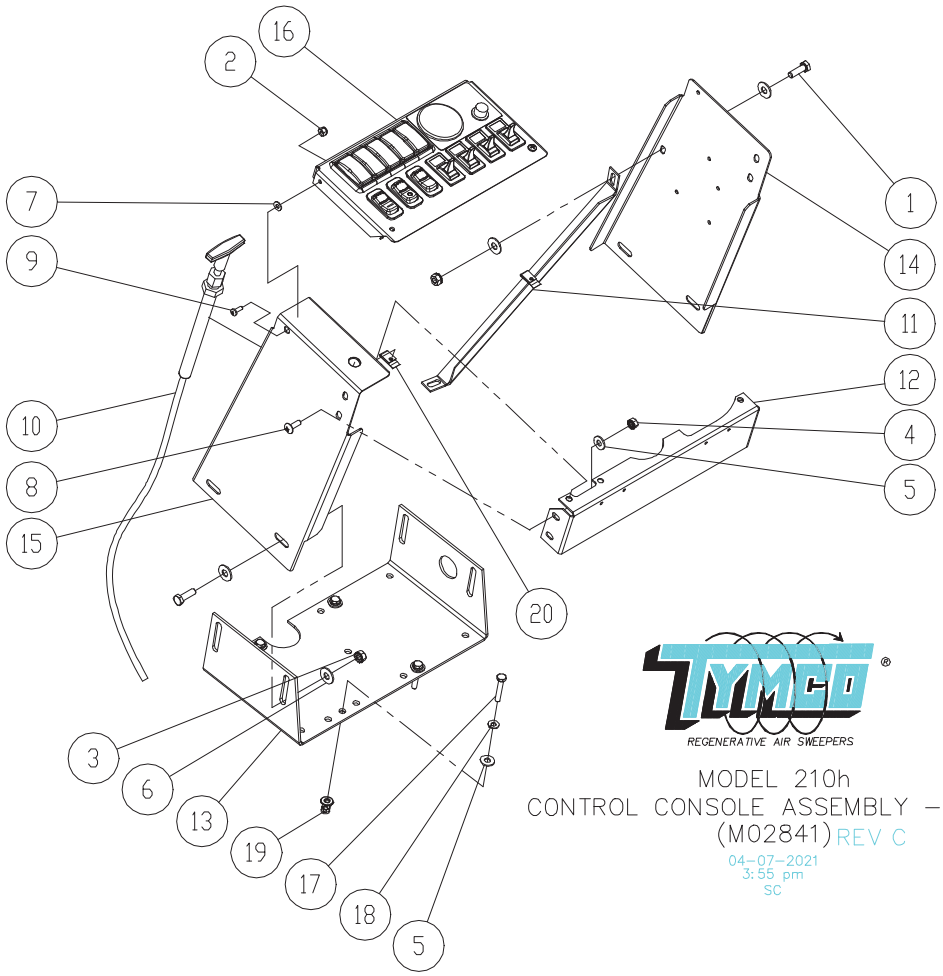
The maximum speed for sweeping mode is adjustable from 12 mph to 18 mph in 2 mph increments. The default setting is 18 mph. The PTO cannot be engaged above the set speed. If the set speed is exceeded white the PTO is engaged, the pick-up head will raise, and the POT will disengage. The hydraulic function switches will illuminate red for 5 seconds as an indication to the operator of the shutdown condition.

Programmable Auto Sweep Interrupt (ASI)
The ASI system has three modes:

1) Off - No automated functions
2) Broom only (default setting) - the gutter broom will raise when the transmission is shifted to reverse. The broom will turn back on when the transmission leaves reverse.
3) Full ASI - all sweeping is interrupted while in reverse. First the blower and water will turn off. The GB will raise up. Once the blower is sufficiently slow, the PUH will raise. When the transmission leaves reverse, the PUH will lower. After a 1 second delay, the blower will come on. Once the blower is up to speed, the broom will turn back on.

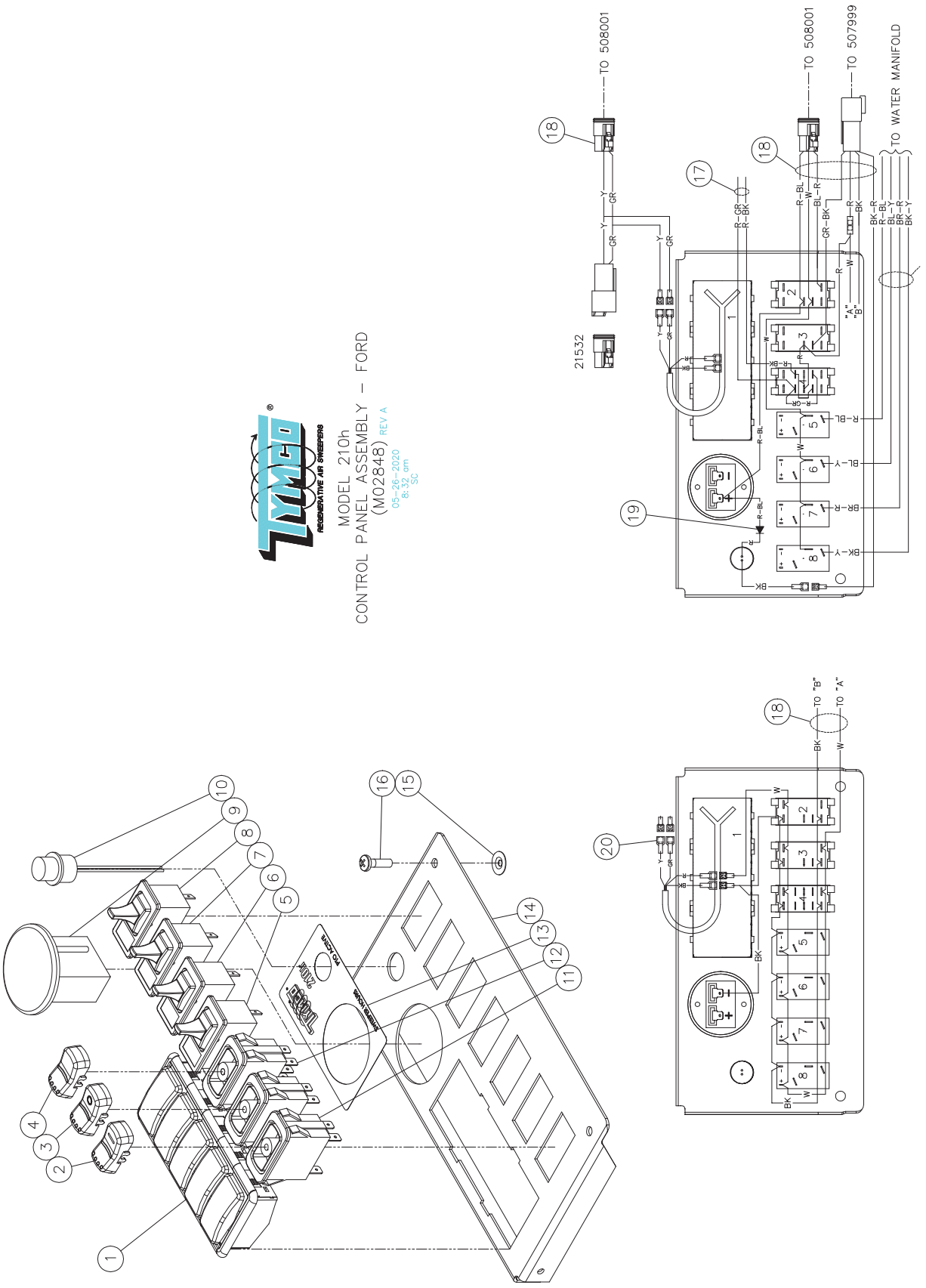
To change the user programmable settings:
1) Turn chassis key, but do not crank the engine
2) Press and hold blower up and pick-up head up switches for 5 seconds.
3) Once the switch lights change colors, release the switches. You are now in programming mode.
4) To change the blower speed setting, press the blower switch up or down. 2 speed will be indicated by a green LED. Low speed only will be indicated by a blue LED. High speed only will be indicated by a magenta LED.
5) To change ASI mode: press PUH up or down switch to toggle among the available settings. ASI off will be indicated by a red LED. Broom only ASI will be indicated by an amber LED, Full ASI will be indicated by a green LED.
6) To change the maximum sweeping speed, press the in cab or outside the hopper switch up or down. Each press will increment the set speed by 2 mph. If equipped with an in cab dump switch, the dump switch will illuminate to indicate the set speed. The following colors correspond to the following speeds: blue 12 mph, green 14 mph, amber 16 mph, and red 18 mph (default setting). For a frame rail dump switch only, press switch down a minimum of 3 times to reach 12 mph setting. Press up the number of times to reach desired setting with each press increasing 2 mph.
7) A selection must be made every 10 seconds or the program mode will turn off.
8) To end program mode, crank the engine, turn off the ignition key, or do not hit a switch for 10 seconds.

Failure to follow these guidelines may VOID any warranties applicable as determined by TYMCO.



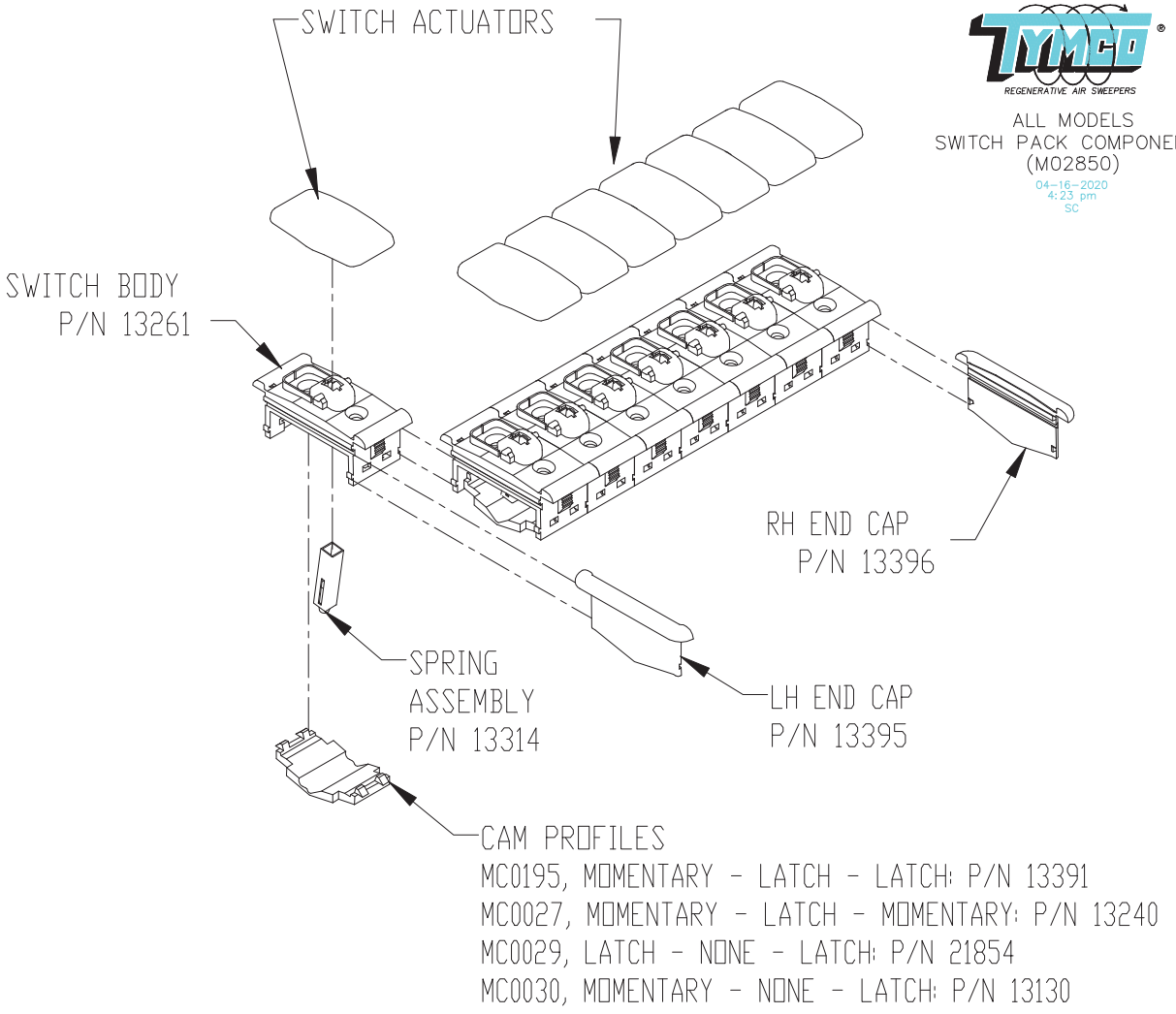
MODEL 210h - FORD
CONTROL CONSOLE ASSEMBLY PARTS LIST
DWG-M02841

ITEM	QTY	PART NO	DESCRIPTION
	1	509078	Control Console Assembly - Ford
1	5	10117	Bolt - 5/16-18 UNC x 1
2	2	10202	Nylon Lock Nut - 10-32
3	5	10272	Nut - 5/16-18 Kept
4	4	10274	Nut - 1/4-20 UNC Kept
5	8	10303	Flat Washer - 1/4
6	10	10305	Flat Washer - 5/16
7	2	10339	Flat Washer - #10
8	4	20193	Truss Screw - 1/4-20 x 3/4
9	2	30133	Screw - #10-32 x 1/2
10	1	5010973	Cable - T Handle 108”
11	1	5013282	Brace - Console Legs Conventional Cab
12	1	5016665	Cross Support
13	1	5016668	Floor Pan - Ford
14	1	5021961	Side Plate - RH
15	1	5021962	Side Plate - LH
16	1	509085	Control Panel Assembly
17	4	10112	Bolt - 1/4-20 x 1.50 HHCS
18	4	10304	Lock Washer - 1/4
19	4	20216	Nut - 1/4-20 x 0.731 Jack
20	2	20202	Receptacle - #12 “J” Clip


TYMCO
REGENERATIVE AIR SWEEPERS
MODEL 210h
CONTROL PANEL ASSEMBLY - FORD
(M02848) REV A
05-26-2020
8:32 am
SC
TO 508001
TO 508001
TO 507999
TO WATER MANIFOLD
21532
TO "B"
TO "A"

MODEL 210h - FORD
CONTROL PANEL ASSEMBLY PARTS LIST
DWG-M02848

ITEM	QTY	PART NO	DESCRIPTION
	1	509085	Control Panel Assembly - Ford
1	1	507991	Switchpack - 5 Position
2	1	5020361	NGR Rocker - Water
3	1	5020362	NGR Rocker - Warn Light
4	1	5020364	NGR Rocker - Leaf Pressure Bleeder
5	1	503845	Switch - Broom Water
6	1	503849	Switch - Hopper Water
7	1	503851	Switch - Head Water
8	1	505419	Switch Transition Water
9	1	22410	Gauge - Hour Meter
10	1	13110	PTO Light
11	2	21685	NGR Switch, SPST - On/Off
12	1	21789	NGR Switch, DPDT - Mom/Off/On
13	1	5020993	Decal
14	1	5020994	Control Panel
15	2	12834	Retainer
16	2	30189	Screw #12 - Captive
17	1	507372	Harness - LPB (Optional)
18	1	508007	Console Harness Set
19	1	501240	Diode - Inline w/Spades
20	6	11503	Terminal - 1/4 Male Slip-On
Not Shown	-	11776	Switch Blank Cover
Not Shown	-	5020885	Stationary Switch Cover
Not Shown	-	13169	Gutter Broom Switch Actuator Service Part
Not Shown	-	13170	Pick-Up Head Switch Actuator Service Part
Not Shown	-	13171	Engine RPM Switch Actuator Service Part

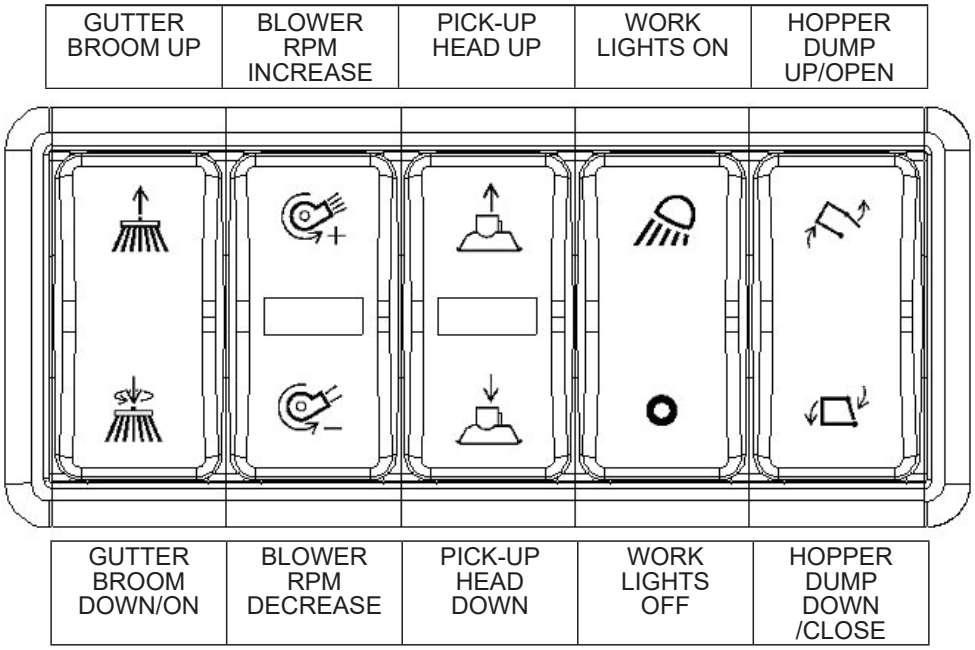


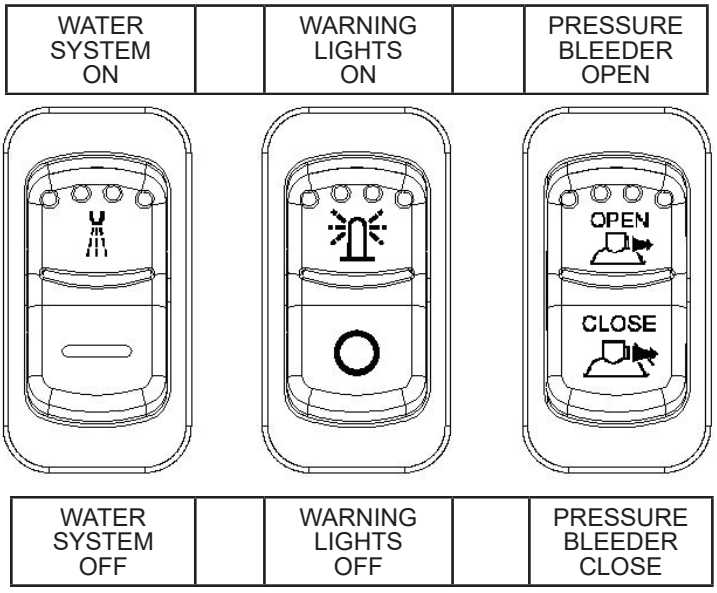
TYMCO REGENERATIVE AIR SWEEPERS

ALL MODELS
SWITCH PACK COMPONENTS
(M02850)

04-16-2020
4:23 pm
SC

SWITCH ICON DESCRIPTIONS





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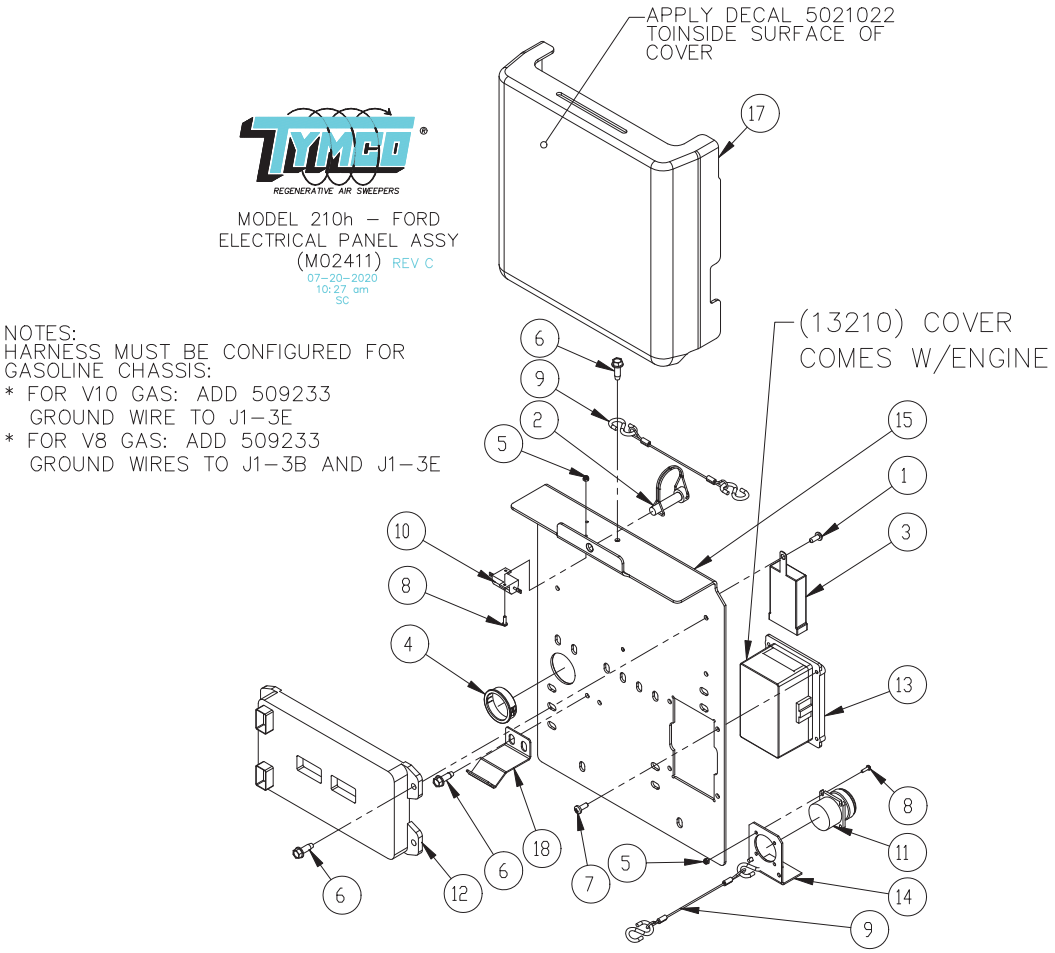


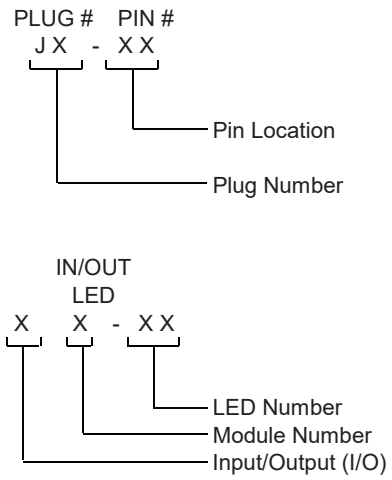
MODEL 210h - FORD
ELECTRICAL PANEL ASSEMBLY PARTS LIST
DWG-M02411

ITEM	QTY	PART	NO DESCRIPTION
	1	508070	Electrical Panel Assembly - Ford
1	1	10107	#10-24 Self Tap Screw
2	1	10422	Safety Snap Pin - 3/8
3	1	11747	Liquid Level Control Module
4	1	12269	Snap Bushing - 1 1/2” OD
5	6	20251	Lock Nut - #4-4D Nylon
6	7	30104	Self Tap - 1-4-20 UNC
7	4	30133	Screw - #10-32 x 1/2
8	6	50125	Screw - #4-40 x 3/8 Phil Pan HD Z/P
9	2	506879	Steel Wire Lanyard
10	1	507998	Harness - VMM Plug J1
11	1	507999	Harness - VMM Plug J2
12	1	508071	VMM 1210 w/Program
13	1	508734	Harness - Fuse Panel (Ford)
14	1	5019211	Diagnostic Plug Bracket
15	1	5020279	Electrical Panel
16	1	5021022	Decal - VMM 1/0 210H V4.X
17	1	5021896	VMM Cover
18	1	5021919	VMM Cover Latch
Not Shown	1	13540	Fuse Panel Cover Latch
Not Shown	-	509233	Programming Ground (Gasoline Only)

210h BlueLogic Module LED/Wire Information

PLUG # PIN #	IN/OUT LED	FUNCTION	WIRE COLOR
J1-1E	I1-1	IGNITION (+)	R-BK
J1-2A	I1-2	REVERSE	BL
J1-2C	I1-3	HOPPER DOWN SWITCH	BL-W
J1-2F	I1-4	HOPPER UP SWITCH	O-W
J1-3B	I1-5	ENGINE TACH SELECTOR	BK
J1-3E	I1-6	GASOLINE ENGINE	BK
J2-1E	I1-7	PTO ON FEEDBACK	BK-R
J2-1B	I1-8	LOW OIL	BR-Y
J2-2B	I1-9	BLOWER SPEED SENSOR	GR-Y
J2-2D	I1-10	ENGINE RPM	BL-Y
J2-2C	I1-11	OIL TEMP	BR
J2-2E	I1-12	GROUND SPEED	P-Y
J1-3C	O1-1	GB DOWN	W-BL
J1-3D	O1-2	GB UP	Y-BK
J2-1C	O1-3	WORK LIGHTS	Y-BL
J2-3C	O1-4	CONSOLE ILLUM./WARN LIGHTS/LPB	R
J1-3F	O1-5	BLOWER VALVE	W-GR
J1-1C	O1-6	HOPPER UP	O
J1-1D	O1-7	PUH DOWN	BK-W
J1-1F	O1-8	PUH UP	R-Y
J2-3D	O1-9	PTO REQUEST, COOLER/WATER RELAY	R-BL
J2-1D	O1-10	HOPPER DOWN	BL

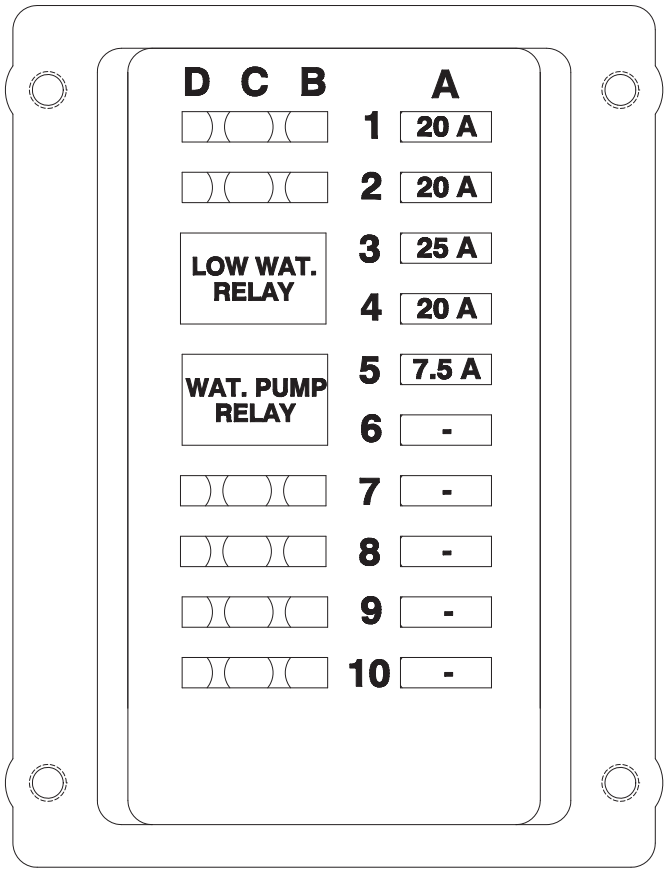
Program Version # v5.x
Part # 5021022



210h FUSE PANEL
LOCATED ON ELECTRICAL PANEL ON FRONT OF SEPARATOR

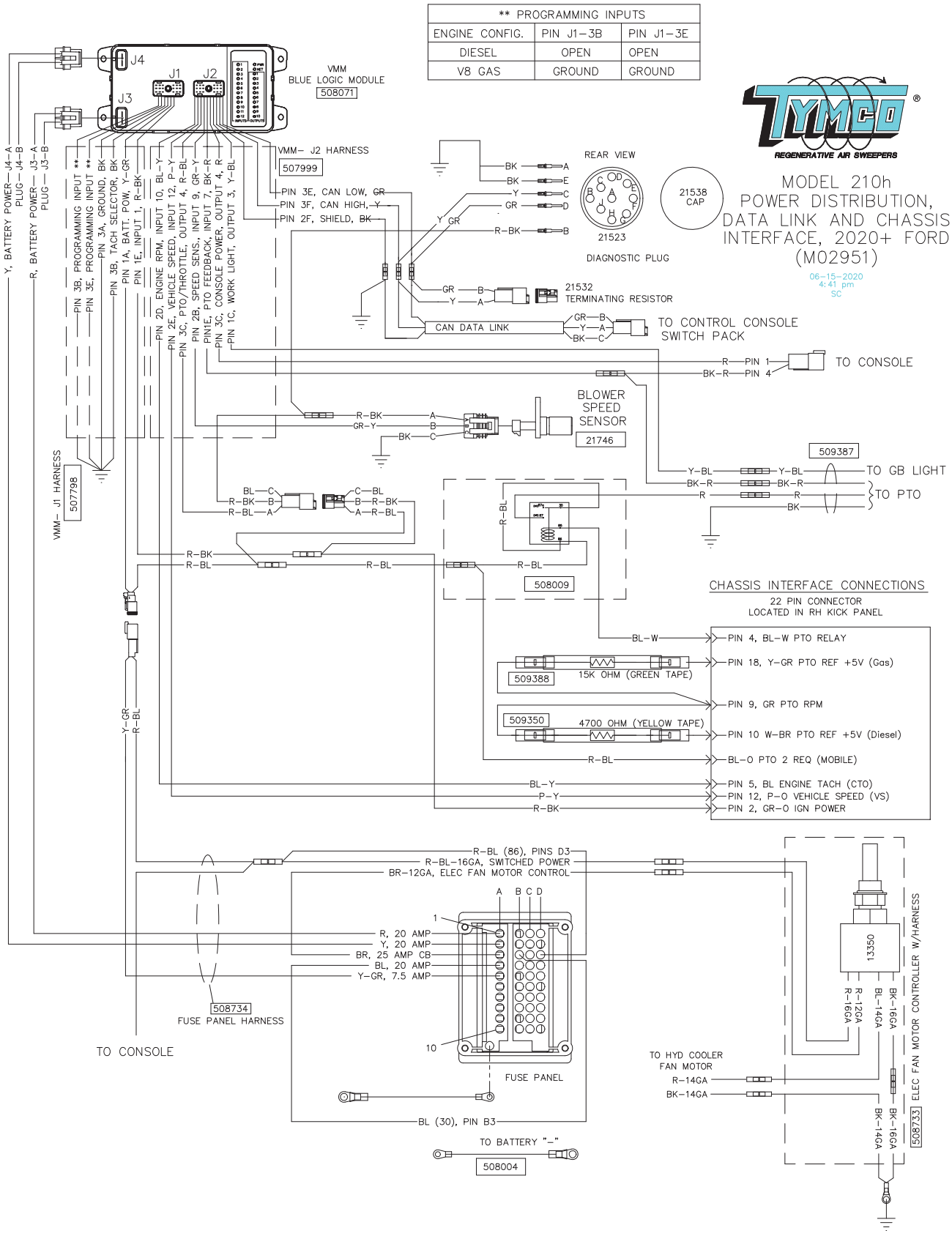
REGENERATIVE AIR SWEEPERS

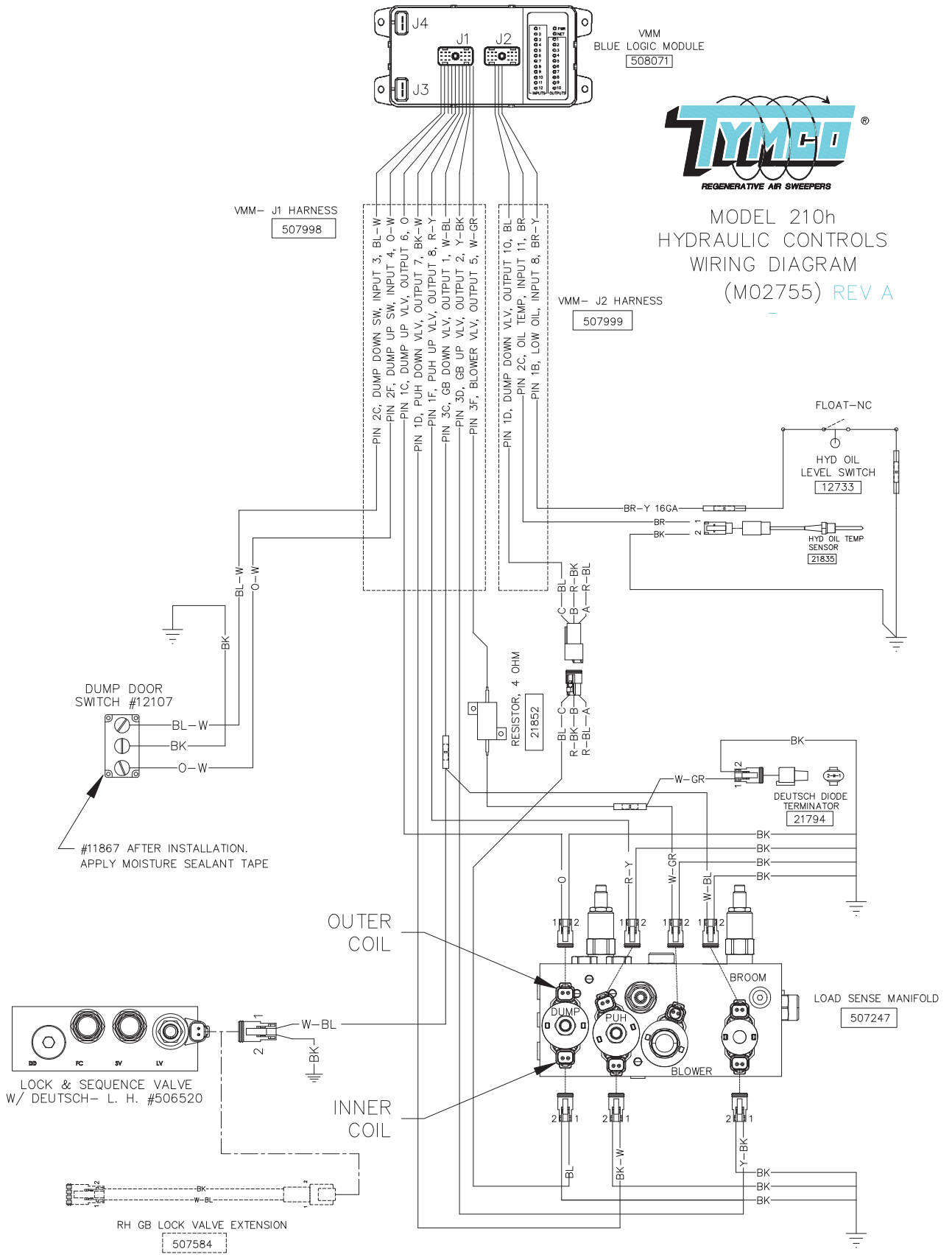
MODEL 210h – FORD
FUSE PANEL
(M02416) REV A
07–20–2020
10:38 am
SC

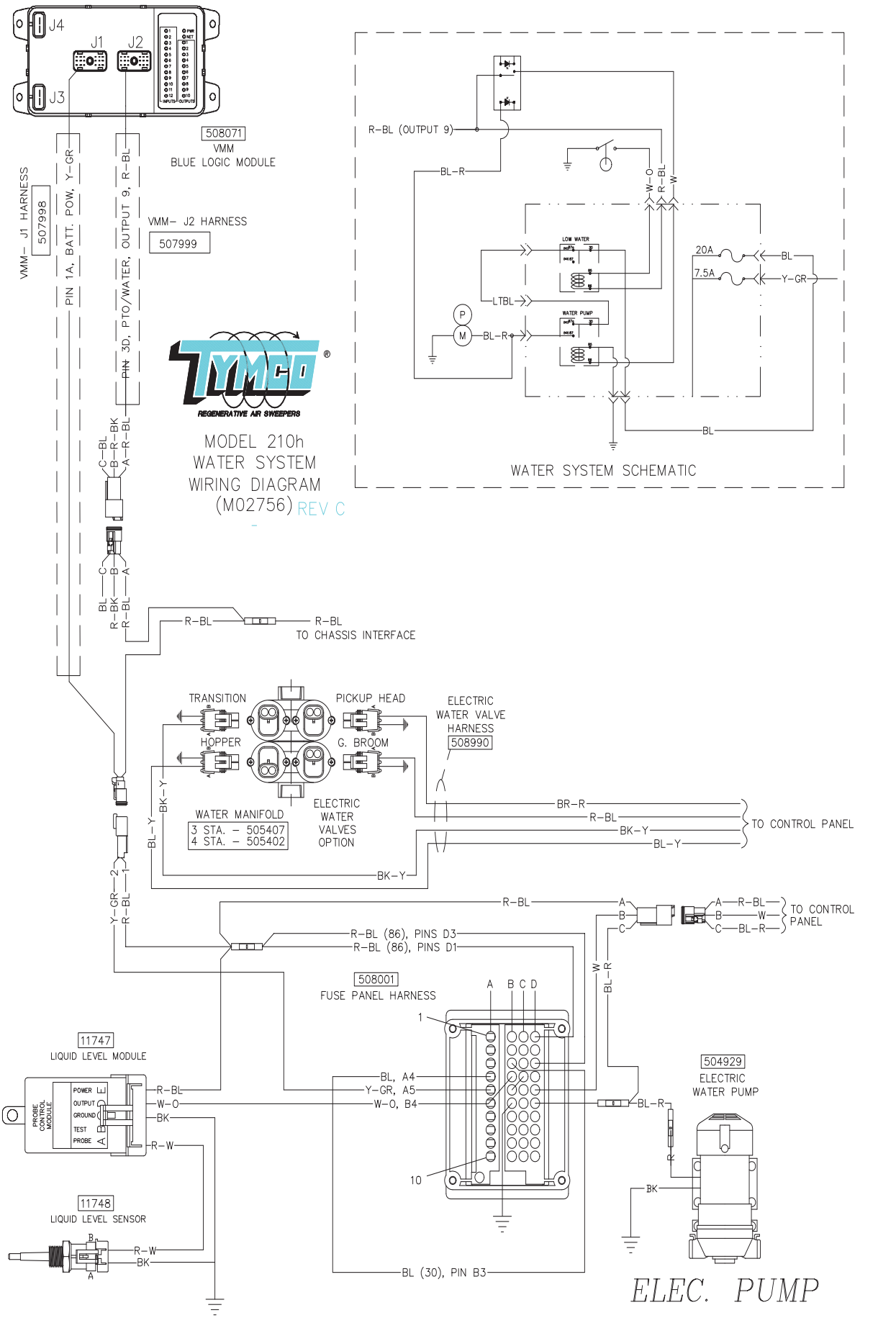


NOT SHOWN – COMES WITH ENGINE
13210 – FUSE PANEL COVER
13540 – FUSE PANEL COVER LOCK

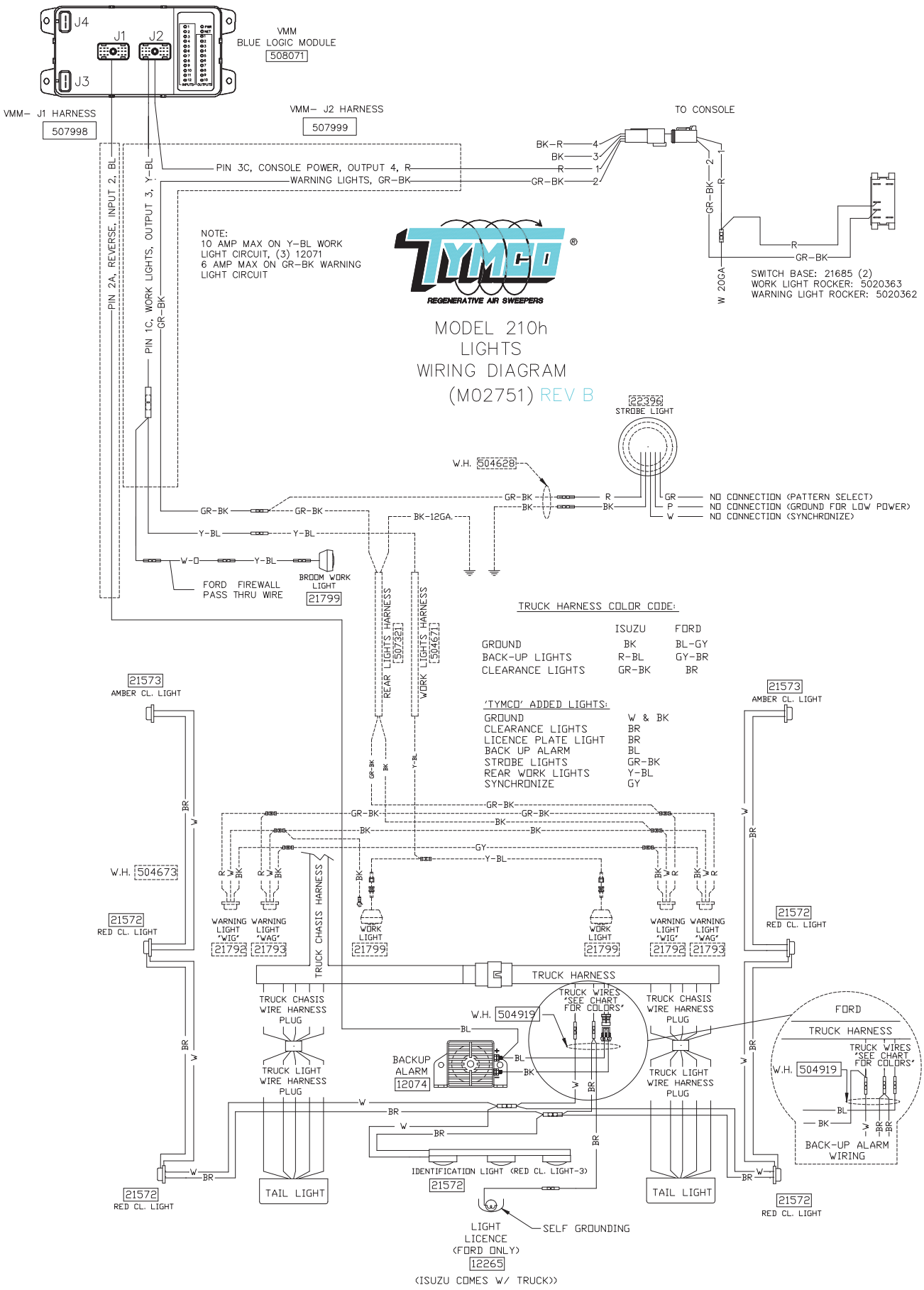
210H FUSE PANEL			
HARNESS 508734 (INCLUDES FUSE PANEL)			
ROW	AMPERAGE	P/N	DESCRIPTION
A1	20 AMP	21695	VMM BUS 1, OUTPUTS 1,2,4,5,9,10
A2	20 AMP	21695	VMM BUS 2, OUTPUTS 3,6,7,8
A3	25 AMP CB	21787	COOLER FAN
A4	20 AMP	21695	WATER PUMP
A5	7.5 AMP	21697	VMM PROCESSOR
		21691	LOW WATER RELAY
		21691	WATER PUMP RELAY

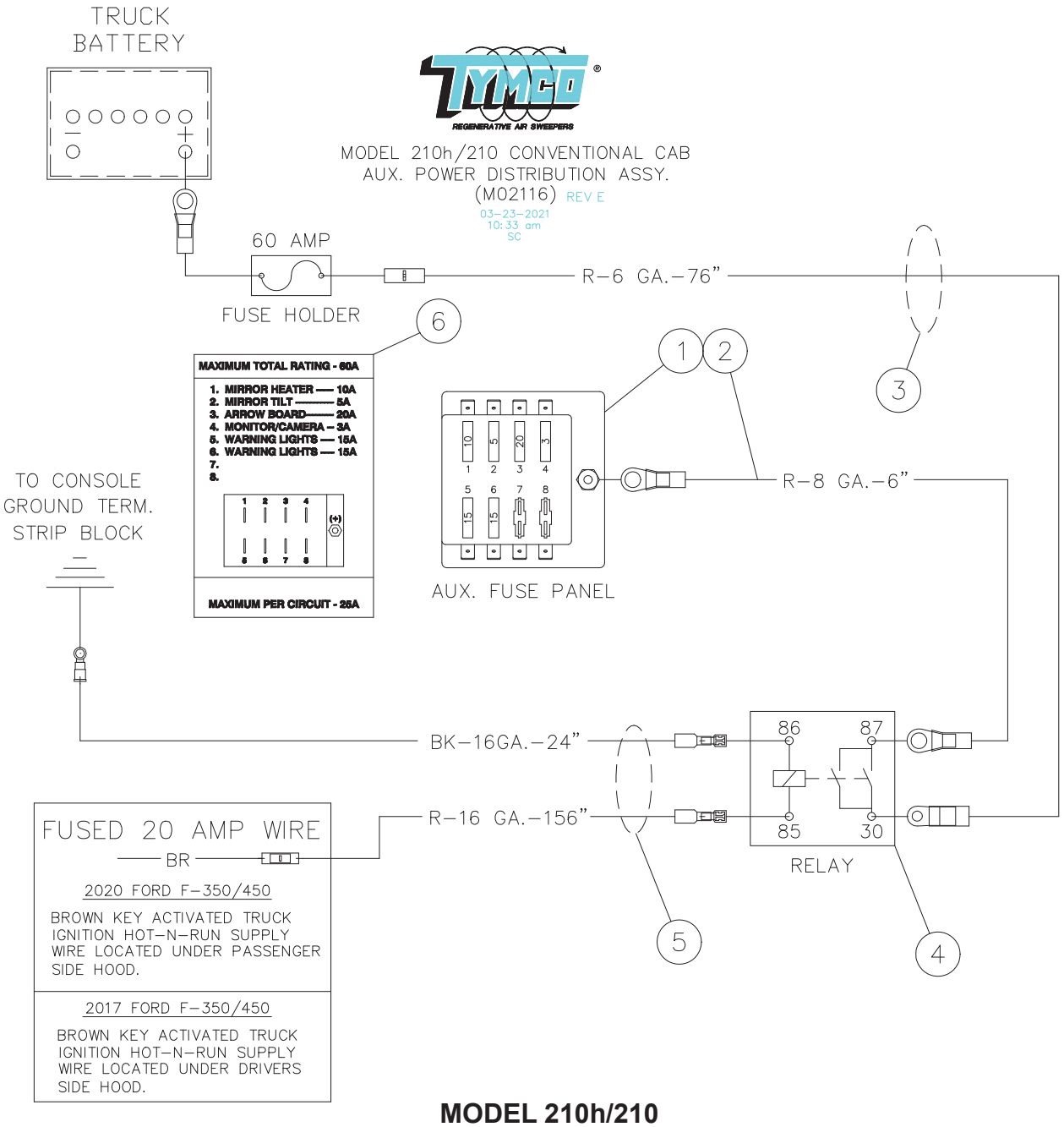

** PROGRAMMING INPUTS
ENGINE CONFIG. | PIN J1-3B | PIN J1-3E
DIESEL | OPEN | OPEN
V8 GAS | GROUND | GROUND
VMM BLUE LOGIC MODULE 508071
VMM- J2 HARNESS 507999
VMM- J1 HARNESS 507798
REAR VIEW
21523
DIAGNOSTIC PLUG
21538 CAP
MODEL 210h POWER DISTRIBUTION, DATA LINK AND CHASSIS INTERFACE, 2020+ FORD (M02951)
06-15-2020 4:41 pm SC
21532 TERMINATING RESISTOR
CAN DATA LINK
TO CONTROL CONSOLE SWITCH PACK
TO CONSOLE
BLOWER SPEED SENSOR 21746
509387
TO GB LIGHT
TO PTO
508009
CHASSIS INTERFACE CONNECTIONS
22 PIN CONNECTOR LOCATED IN RH KICK PANEL
PIN 4, BL-W PTO RELAY
509388 15K OHM (GREEN TAPE)
PIN 18, Y-GR PTO REF +5V (Gas)
PIN 9, GR PTO RPM
509350 4700 OHM (YELLOW TAPE)
PIN 10 W-BR PTO REF +5V (Diesel)
BL-O PTO 2 REQ (MOBILE)
PIN 5, BL ENGINE TACH (CTO)
PIN 12, P-O VEHICLE SPEED (VS)
PIN 2, GR-O IGN POWER
R-BL (86), PINS D3
R-BL-16GA, SWITCHED POWER
BR-12GA, ELEC FAN MOTOR CONTROL
R, 20 AMP
Y, 20 AMP
BR, 25 AMP CB
BL, 20 AMP
Y-GR, 7.5 AMP
508734 FUSE PANEL HARNESS
TO CONSOLE
FUSE PANEL
BL (30), PIN B3
TO BATTERY "-"
508004
13350
TO HYD COOLER FAN MOTOR
R-14GA
BK-14GA
508733 ELEC FAN MOTOR CONTROLLER W/HARNESS


J4
J1
J2
J3
VMM
BLUE LOGIC MODULE
508071
TYMCO
REGENERATIVE AIR SWEEPERS
MODEL 210h
HYDRAULIC CONTROLS
WIRING DIAGRAM
(M02755) REV A
VMM– J1 HARNESS
507998
VMM– J2 HARNESS
507999
PIN 2C, DUMP DOWN SW, INPUT 3, BL–W
PIN 2F, DUMP UP SW, INPUT 4, O–W
PIN 1C, DUMP UP VLV, OUTPUT 6, O
PIN 1D, PUH DOWN VLV, OUTPUT 7, BK–W
PIN 1F, PUH UP VLV, OUTPUT 8, R–Y
PIN 3C, GB DOWN VLV, OUTPUT 1, W–BL
PIN 3D, GB UP VLV, OUTPUT 2, Y–BK
PIN 3F, BLOWER VLV, OUTPUT 5, W–GR
PIN 1D, DUMP DOWN VLV, OUTPUT 10, BL
PIN 2C, OIL TEMP, INPUT 11, BR
PIN 1B, LOW OIL, INPUT 8, BR–Y
FLOAT–NC
HYD OIL
LEVEL SWITCH
12733
BR–Y 16GA
BR
BK
HYD OIL TEMP
SENSOR
21835
BL–W
O–W
BK
DUMP DOOR
SWITCH #12107
BL–W
BK
O–W
#11867 AFTER INSTALLATION.
APPLY MOISTURE SEALANT TAPE
BL–BK
R–BK
R–BL
C
B
A
RESISTOR, 4 OHM
21852
BK
W–GR
DEUTSCH DIODE
TERMINATOR
21794
OUTER
COIL
INNER
COIL
O
R–Y
W–GR
W–BL
BROOM
DUMP
PUH
BLOWER
LOAD SENSE MANIFOLD
507247
W–BL
BK
LOCK & SEQUENCE VALVE
W/ DEUTSCH– L. H. #506520
BL
BK–W
Y–BK
BK
W–BL
RH GB LOCK VALVE EXTENSION
507584


J4
J1
J2
J3
508071
VMM
BLUE LOGIC MODULE
VMM– J1 HARNESS
507998
PIN 1A, BATT. POW, Y–GR
VMM– J2 HARNESS
507999
PIN 3D, PTO/WATER, OUTPUT 9, R–BL
C–BL
B–R–BK
A–R–BL
R–BL
R–BL
TO CHASSIS INTERFACE
MODEL 210h
WATER SYSTEM
WIRING DIAGRAM
(M02756) REV C
R–BL (OUTPUT 9)
BL–R
LOW WATER
LTBL
WATER PUMP
BL–R
20A
7.5A
BL
Y–GR
BL
WATER SYSTEM SCHEMATIC
TRANSITION
PICKUP HEAD
HOPPER
G. BROOM
ELECTRIC
WATER VALVE
HARNESS
508990
WATER MANIFOLD
3 STA. – 505407
4 STA. – 505402
ELECTRIC
WATER
VALVES
OPTION
BK–Y
BL–Y
BR–R
R–BL
BK–Y
BL–Y
TO CONTROL PANEL
Y–GR
R–BL
R–BL
R–BL (86), PINS D3
R–BL (86), PINS D1
TO CONTROL
PANEL
508001
FUSE PANEL HARNESS
A B C D
1
10
11747
LIQUID LEVEL MODULE
POWER
OUTPUT
GROUND
TEST
PROBE
PROBE
CONTROL
MODULE
R–BL
W–O
BK
R–W
11748
LIQUID LEVEL SENSOR
R–W
BK
BL, A4
Y–GR, A5
W–O, B4
BL (30), PIN B3
504929
ELECTRIC
WATER PUMP
BL–R
BK
ELEC. PUMP

L

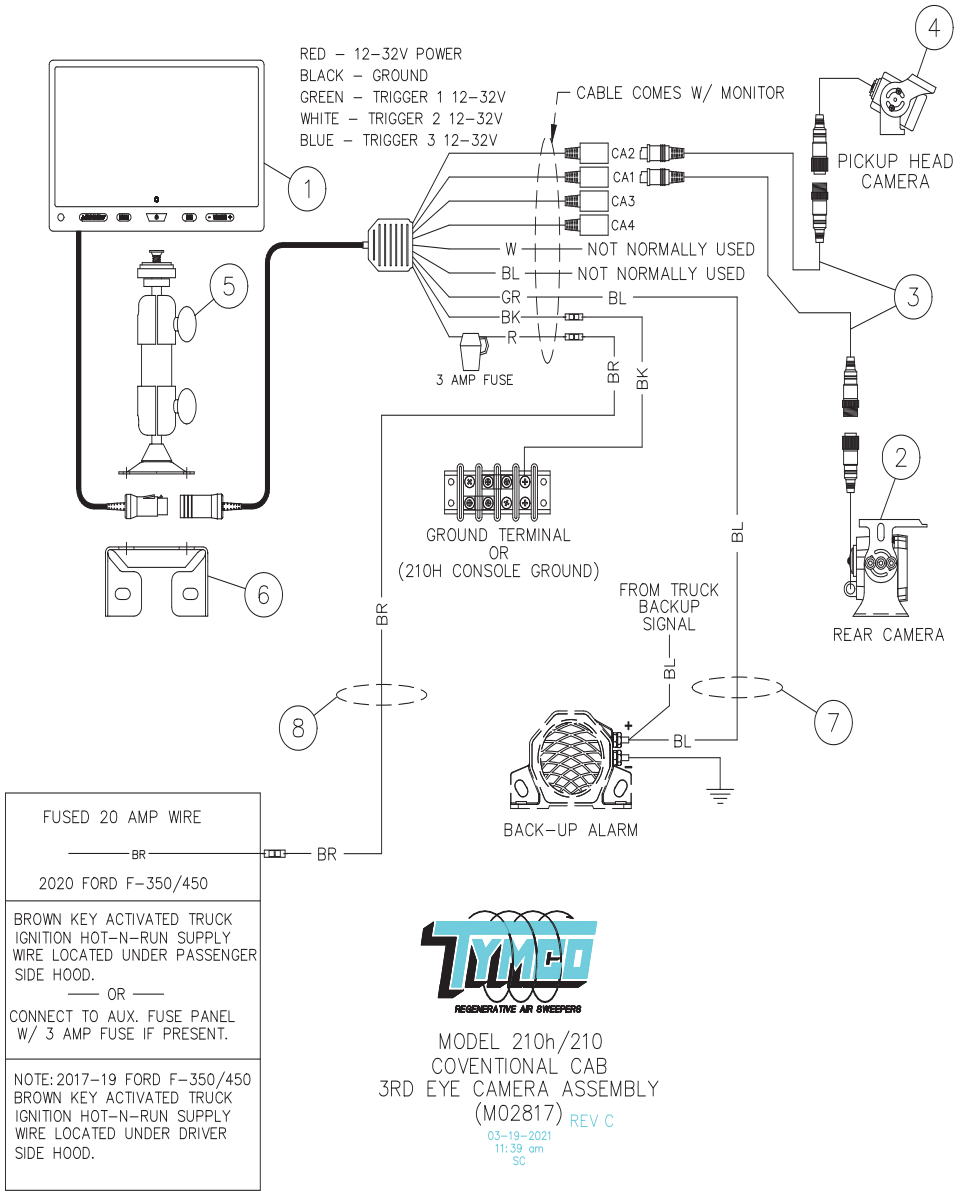

J4
J1
J2
J3
VMM
BLUE LOGIC MODULE
508071
VMM– J1 HARNESS
507998
VMM– J2 HARNESS
507999
TO CONSOLE
PIN 3C, CONSOLE POWER, OUTPUT 4, R
WARNING LIGHTS, GR–BK
PIN 2A, REVERSE, INPUT 2, BL
PIN 1C, WORK LIGHTS, OUTPUT 3, Y–BL
GR–BK
BK–R
BK
R
GR–BK
W 20GA
SWITCH BASE: 21685 (2)
WORK LIGHT ROCKER: 5020363
WARNING LIGHT ROCKER: 5020362
NOTE:
10 AMP MAX ON Y–BL WORK LIGHT CIRCUIT, (3) 12071
6 AMP MAX ON GR–BK WARNING LIGHT CIRCUIT
TYMCO
REGENERATIVE AIR SWEEPERS
MODEL 210h
LIGHTS
WIRING DIAGRAM
(M02751) REV B
22396
STROBE LIGHT
W.H. 504628
GR–BK
BK
BK-12GA.
Y–BL
W–O
GR
P
W
NO CONNECTION (PATTERN SELECT)
NO CONNECTION (GROUND FOR LOW POWER)
NO CONNECTION (SYNCHRONIZE)
FORD FIREWALL PASS THRU WIRE
BROOM WORK LIGHT
21799
REAR LIGHTS HARNESS
507321
WORK LIGHTS HARNESS
504671
TRUCK HARNESS COLOR CODE:
ISUZU
FORD
GROUND
BK
BL–GY
BACK–UP LIGHTS
R–BL
GY–BR
CLEARANCE LIGHTS
GR–BK
BR
'TYMCO' ADDED LIGHTS:
GROUND
W & BK
CLEARANCE LIGHTS
BR
LICENCE PLATE LIGHT
BR
BACK UP ALARM
BL
STROBE LIGHTS
GR–BK
REAR WORK LIGHTS
Y–BL
SYNCHRONIZE
GY
21573
AMBER CL. LIGHT
21572
RED CL. LIGHT
W.H. 504673
WARNING LIGHT 'WIG' 21792
WARNING LIGHT 'WAG' 21793
WORK LIGHT 21799
TRUCK CHASIS HARNESS
TRUCK HARNESS
TRUCK CHASIS WIRE HARNESS PLUG
TRUCK LIGHT WIRE HARNESS PLUG
TRUCK WIRES "SEE CHART FOR COLORS"
W.H. 504919
BACKUP ALARM 12074
FORD
BACK–UP ALARM WIRING
TAIL LIGHT
IDENTIFICATION LIGHT (RED CL. LIGHT–3)
21572
LIGHT LICENCE (FORD ONLY) 12265
(ISUZU COMES W/ TRUCK))
SELF GROUNDING



MODEL 210h/210
AUXILIARY POWER DISTRIBUTION ASSEMBLY PARTS LIST - CONVENTIONAL CAB
DWG-M02116

ITEM	QTY	PART NO	DESCRIPTION
	1	505528	Aux. Power Distribution Assembly - Conventional
1	1	11714	Aux. Fuse Panel
2	1	505287	Harness - Aux. Fuse Panel Jumper
3	1	508931	Power Supply Harness (Diesel)
-	1	509389	Power Supply Harness (Gasoline)
4	1	11948	Power Relay Aux. Fuse Center
5	1	508981	Wire Harness - Aux. Relay Activate
6	1	12942	Decal - Aux. Fuse Panel
Not Shown	1	5017923	Cover Aux. Power (210 Only)
Not Shown	1	20201	Insert Nut - 10-32
Not Shown	1	10109	Screw - 10-32 x 7/8" Pan Head

L



TYMCO MODEL 210h/210
3RD EYE CAMERA ASSEMBLY - CONVENTIONAL CAB
DWG-M02817

ITEM	QTY	PART NO	DESCRIPTION
	1	509029	3rd Eye Camera Assembly - 210h/210 Conv. Cab.
1	1	21816	Color Monitor - 7”
2	1	21817	Rear Camera
3	2	21820	Coax Cable - 25’
4	1	21818	Compact Camera
5	1	13197	Dual Swivel Mount - Monitor
6	1	5022027	Mount Bracket - Monitor
7	1	507285	Wire Harness - Reverse Signal
8	1	509028	Wire Harness - Camera Power
Not Shown	4	30133	Screw - #10-32 x 1/2 Pan HD
Not Shown	4	10241	Nut - #1-32 Kept
Not Shown	3	20135	Screw - 1/4-20 x 3/4 Ph. Truss
Not Shown	3	10274	Nut - 1/4-20 Kept (M2)

AUXILIARY HAND HOSE

TABLE OF CONTENTS

FUNCTION

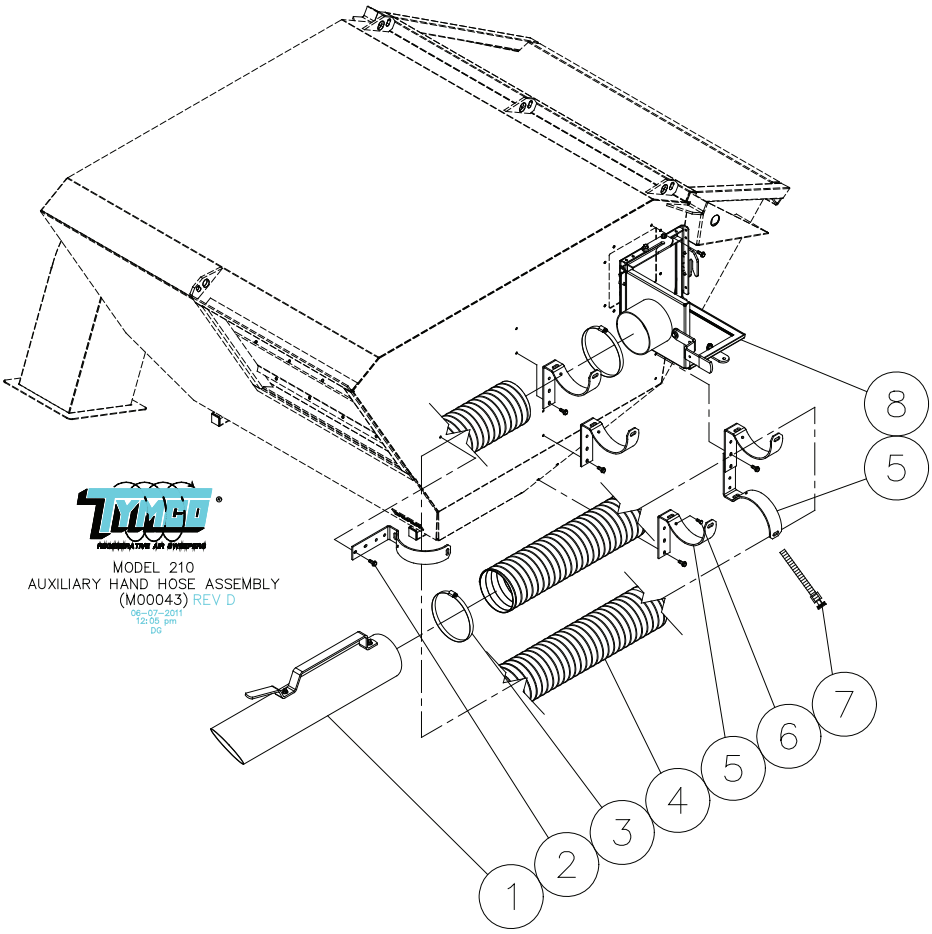
The auxiliary hand hose is designed to clean areas inaccessible to the sweeper, pick-up head and gutter broom. The standard hand hose is a 10 foot (304.8 cm) piece of flexible hose with an aluminum 40 inch (101.6 cm) extension and is 6 inches (15.2 cm) in diameter. A shutter plate is provided to place between the removable suction transition and hopper so that the air suction can be diverted from the pick-up head to the auxiliary hand hose.

WARNING: Before servicing, stop auxiliary engine and remove ignition key or disconnect negative battery cable.

TROUBLESHOOTER'S GUIDE

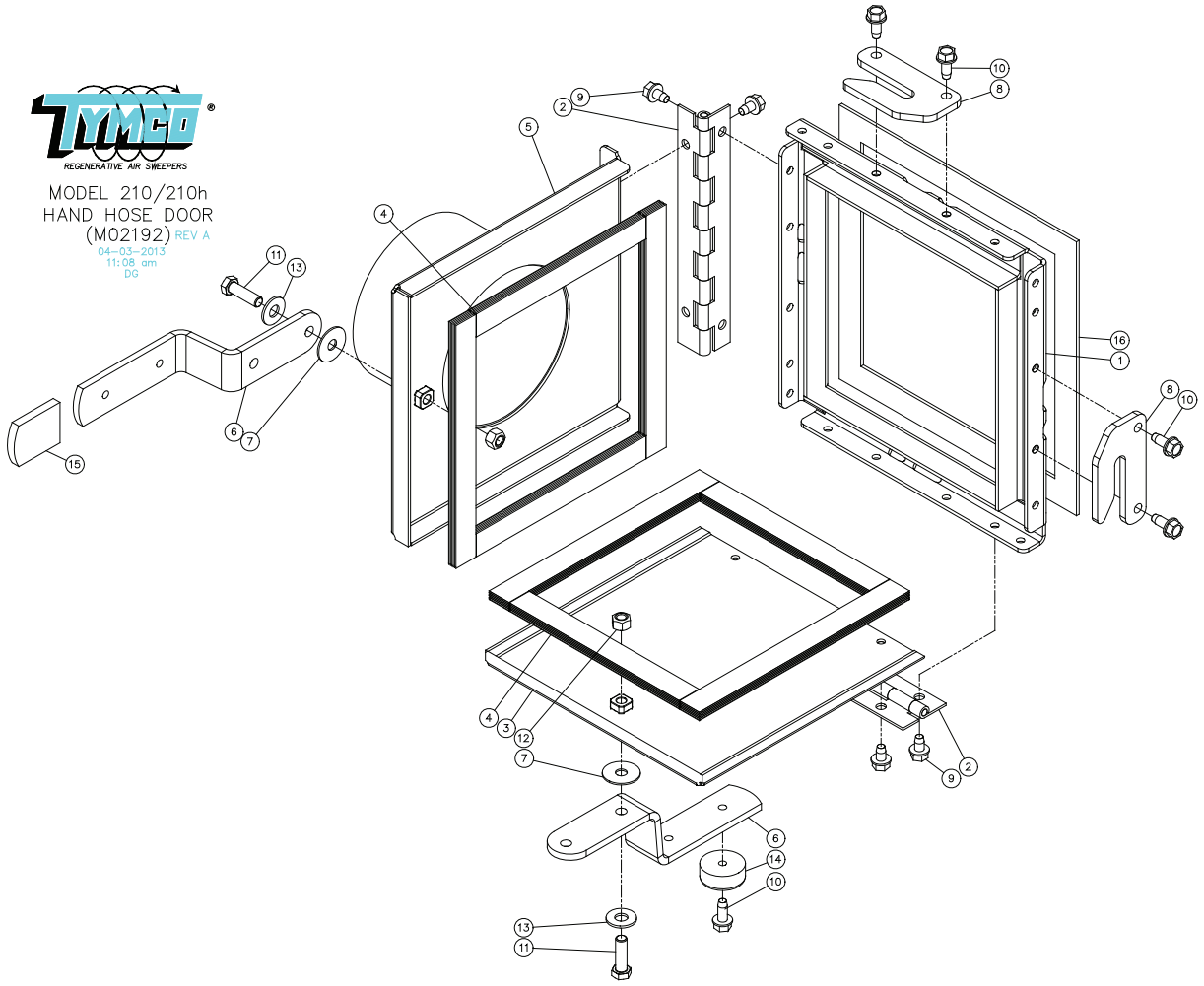
PROBLEM	CAUSE	SOLUTION
Poor hand hose performance	Air leak	Check shutter plate for leaks.
		Check hose for tear or hole.
	Reduced air flow	Slightly raise pick-up head so air is exhausted on left side.
	Blocked hose	Check hose for material stuck inside.

M



TYMCO MODEL 210/210h
AUXILIARY HAND HOSE ASSEMBLY PART LIST
DWG-M00043

ITEM	QTY.	PART NO.	DESCRIPTION
	1	503651	Auxiliary Hand Hose Assembly
1	1	502691	6" Tube Assembly
2	18	10104	Bolt - 5/16-18 x 3/4 Taptite
-	18	40133	Bolt - 5/16-18 x 3/4 Taptite (Stainless Steel Option)
3	2	11312	Hose Clamp
4	1	5010821	Hose - Hand Hose
5	6	5011624	Hose Bracket
6	6	20193	Bolt - 1/4-20 x 3/4 Phillips Truss
7	6	5013129	Strap - Hand Hose
8	1	507510	Hand Hose Door Assembly
Not Shown	1	5010541	Shutter Plate (Located in Cab)



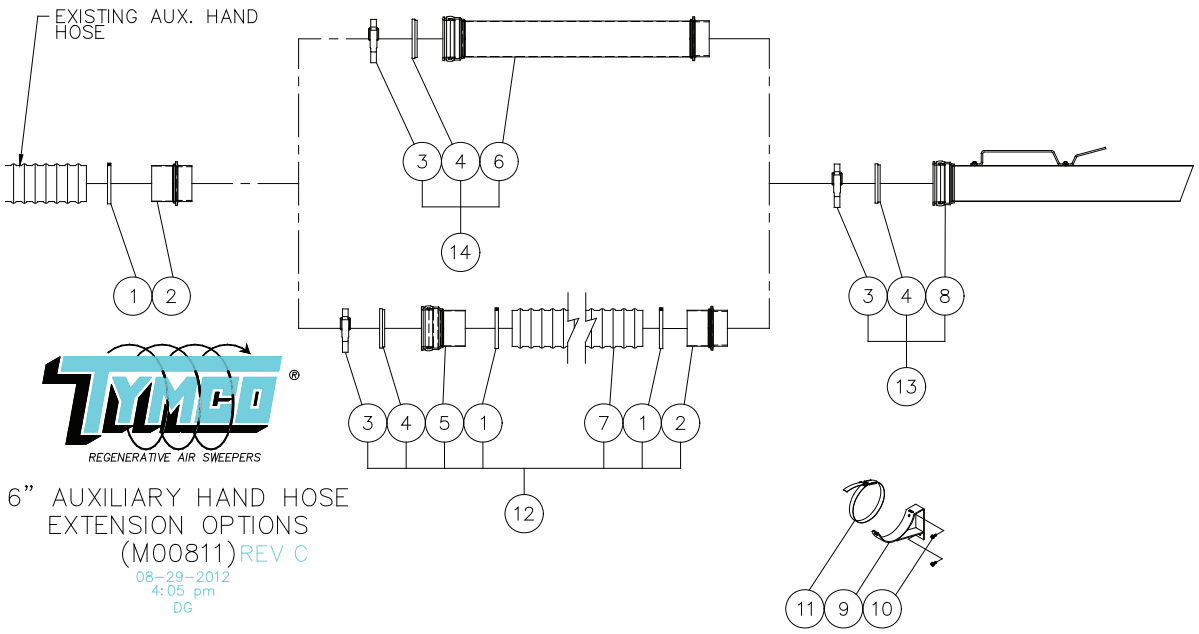
TYMCO MODEL 210/210h
HAND HOSE DOOR PARTS LIST
DWG-M02192

ITEM	QTY	PART NO	DESCRIPTION
	1	507510	Hand Hose Door Assembly
1	1	507486	Frame Weldment
2	2	5020407	SS Hinge
3	1	507507	Inspection Door Weldment
4	2	5016105	Seal - Inspection Door
5	1	507508	Hand Hose Door Weldment
6	2	5020499	Latch
7	2	20314	1.25 O.D. x 0.390 I.D. x 0.062 TH-Flat Washer Nylon
8	2	S5020496	Handle Catch SS
9	8	30126	Self Tap - 5/16-18 UNC x 1/2
10	5	10104	Self Tap - 5/16-18 UNC x 3/4
11	2	10129	Bolt - 3/8-16 UNC x 1 1/4
12	2	10225	Lock Nut - 3/8 UNC
13	2	10307	Flat Washer - 3/8
14	1	10589	Bumper
15	1	5021375	Handle Grip
16	1	5015943	Rear Seal - Inspection Door

TYMCO MODEL 210/210h
HAND HOSE DOOR STAINLESS STEEL HOPPER OPTION PARTS LIST
DWG-M02192

ITEM	QTY	PART NO	DESCRIPTION
1	1	S507486	Frame Weldment SS
3	1	S507507	Inspection Door Weldment SS
5	1	S507508	Hose Door Weldment SS
6	2	S5020499	Latch SS
9	8	40133	Self Tap - 5/16-18 UNC x 3/4 SS
10	5	40133	Self Tap - 5/16-18 UNC x 3/4 SS
11	2	40126	Bolt - 3/8-16 UNC x 1 1/2
12	2	20240	Nut - 3/8-16 Nylon Lock SS
13	2	10337	Flat Washer - 3/8 SS

NOTE: The stainless steel hand hose door BOM is NOT a complete list. The items in the stainless steel BOM replace the items in the Standard BOM. The items are numbered subsequent. The stainless steel hand hose door is standard on the stainless steel hopper option.



TYMCO MODEL 210/210h/435/DST-4
EXTENSION OPTIONS PARTS LIST
DWG-M00811

ITEM	QTY	PART NO	DESCRIPTION
1	*	11312	Hose Clamp (For Standard Hose)
2	*	500735	Hose Adapter - Male
3	*	5011969	Q.D. Clamp - Adapter
4	*	20517	Seal - Q.D. Adapter - Female
5	*	500949	Hose Adapter - Female
6	*	500758	Nozzle Extension Adapter - 42"
7	*	5010821	Hand Hose (Standard - 10' Extension)
8	*	505469	Q.D. Nozzle Assembly (40")
9	*	5011624	Bracket Assembly - Hand Hose
10	*	10104	Bolt - 5/16-18 x 3/4 Taptite (2 Reqd. Per Bracket)
11	*	5013129	Hand Hose Strap
12	*	507428	6" x 10' Std. Duty Hand Hose Ext. w/Q.D. Couplings & Clamp
13	*	507429	6" Hand Hose Nozzle w/Q.D. Coupling & Clamp
14	*	507790	6" Nozzle Ext. Adapter w/Q.D. Couplings & Clamp

* Quantities are dependent on configuration.

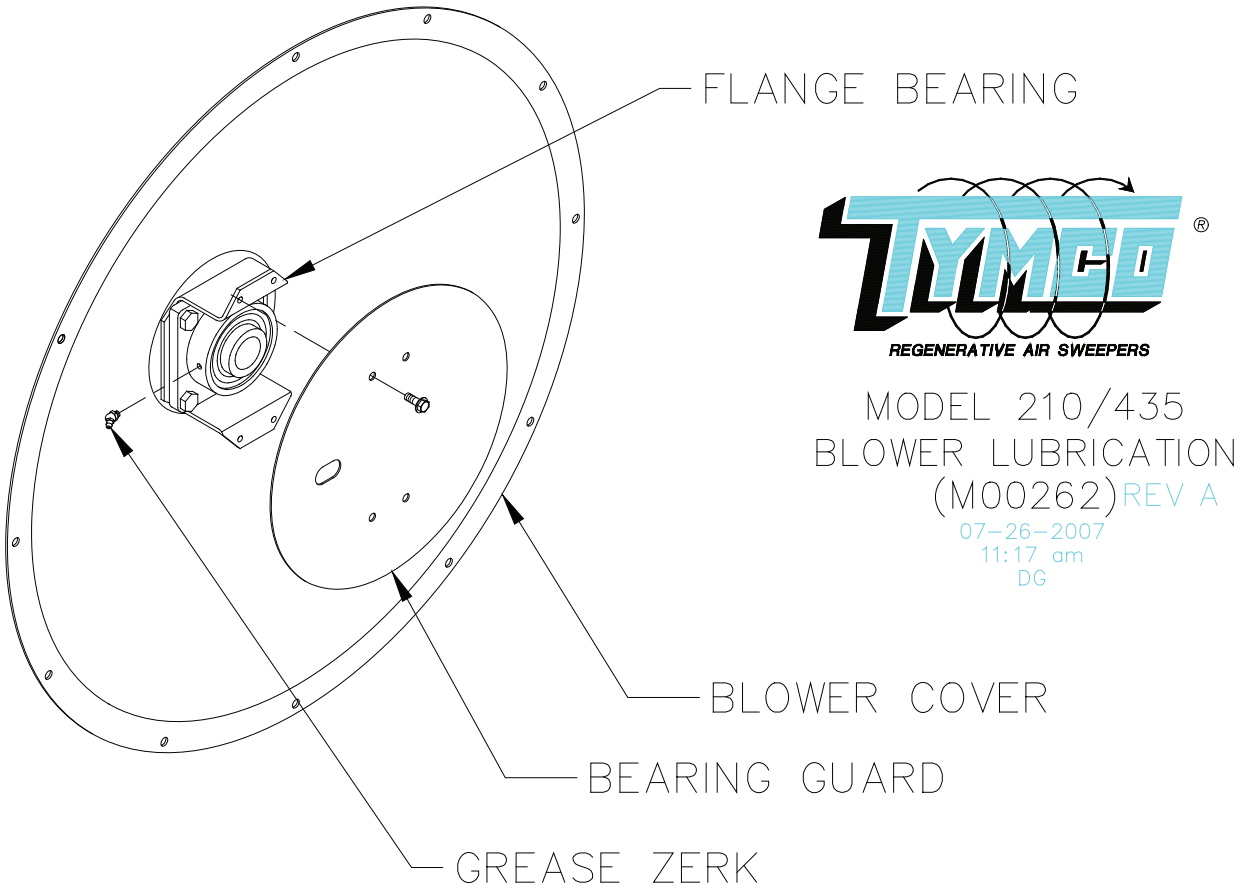
LUBRICATION

TABLE OF CONTENTS

BLOWER LUBRICATION

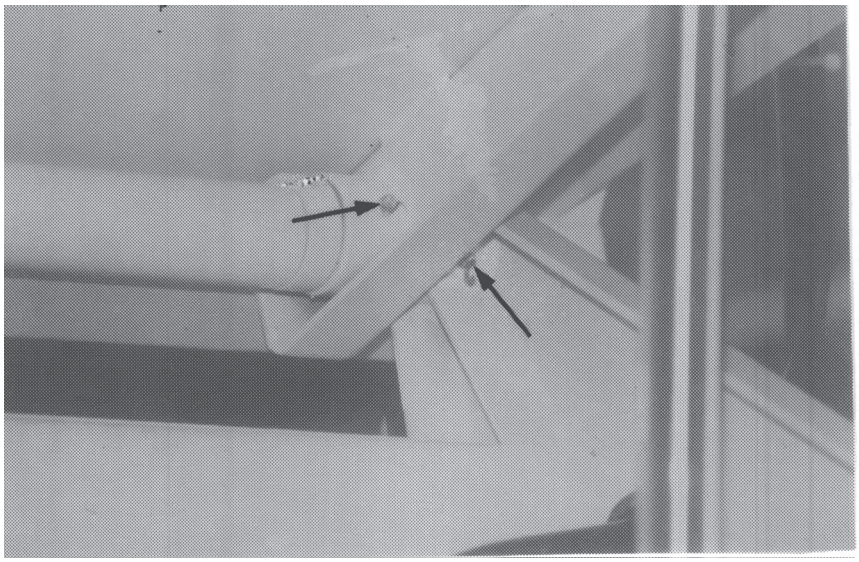
Located on the right side of the dust separator and the left side of the blower housing are the blower bearings. Each has a grease zerk which should be lubricated every 25 hours or once a week. Use NLGI-2 high temperature grease only (TYMCO P/N 12925 - Zeniplex 2). This is an aluminum complex grease with extreme pressure water resistance. Using a hand operated grease gun, gently apply grease until a small bead is extruded around the seal. Never use a pneumatic grease gun as grease seals can be blown out of bearings resulting in bearing failure.

WARNING: Turn OFF engine and remove ignition key before lubricating bearing on right side of dust separator.



HOPPER HINGE LUBRICATION

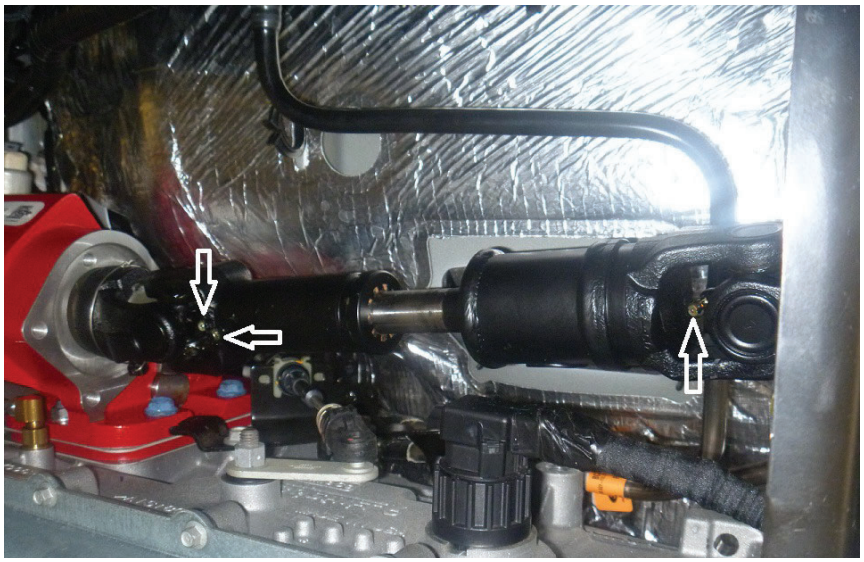
Lubrication on the hopper is performed where the hopper hinges to the frame at the rear of the sweeper. There are four (4) zerk fittings as shown which should be serviced every 60 hours or once a week.



(M00264)

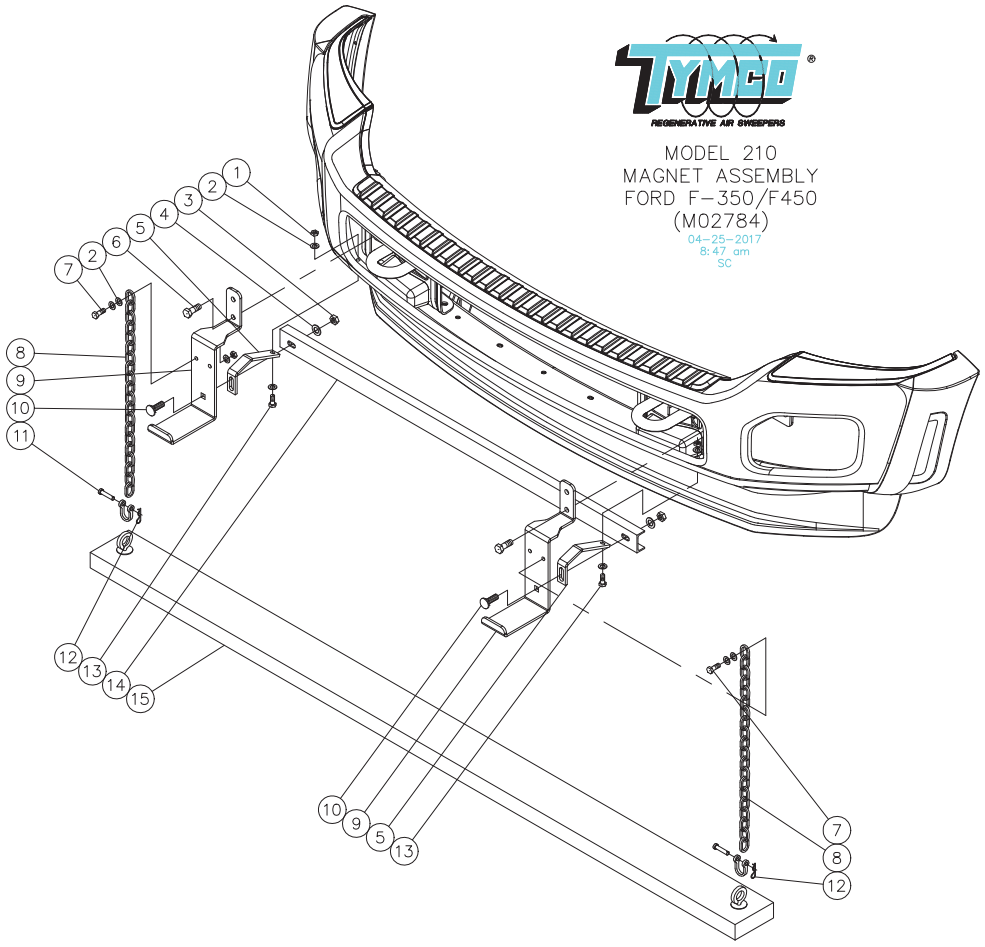
PTO DRIVESHAFT LUBRICATION (210h ONLY)

The PTO driveshaft should be greased every 100 hours of operation. There are (3) grease zerks as shown.



(M02421)

MAGNET



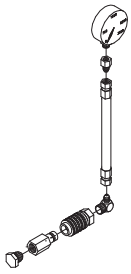
TYMCO MODEL 210 - FORD F-350/F450
LIGHT DUTY MAGNET ASSEMBLY PARTS LIST
DWG-M02784

ITEM	QTY.	PART NO.	DESCRIPTION
	1	508933	Magnet Assembly 84” - Ford F-350/F-450 2017+
1	4	10225	Nut - 3/8-16 Top Lock
2	10	10307	3/8” Flat Washer
3	2	10231	Nut - 1/2-13 Top Lock
4	2	10311	1/2” Flat Washer
5	2	5021849	Support Bracket
6	4	(Comes w/Truck)	Bolt
7	2	10129	Bolt - 3/8-16 x 1-1/4 HHCS
8	2	5015993	1/4” Chain - 20 Links
9	2	5020888	Mount Bracket
10	2	40103	Bolt - 1/2-13 x 1/2 CH
11	2	12154	5/16” Round Pin Anchor Shackle
12	2	12155	Hitch Pin - WW3
13	2	10128	Bolt - 3/8-16 x 1 HHCS
14	1	5020890	Channel
15	1	22384	Magnet Assembly

SWEEPER TOOLS

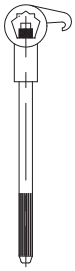
The TYMCO Sweeper Tools consists of a variety of tools designed to provide ease of maintenance and/or testing tasks. Although basic mechanic tools will suffice in most cases, it is felt these tools will assist in thorough, accurate maintenance and testing in the day-to-day operation and upkeep of your TYMCO Sweeper. They have been developed over a number of years through experience and have proven to be cost effective in reduced downtime and labor expenses. The following Figure Drawings and Instructions are provided for your convenience.

TYMCO SWEEPER TOOLS
ALL MODELS
(M02557)
09-19-2014
11:34 am
SC

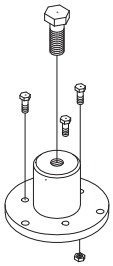


501110
HYD. PRESS. GAUGE

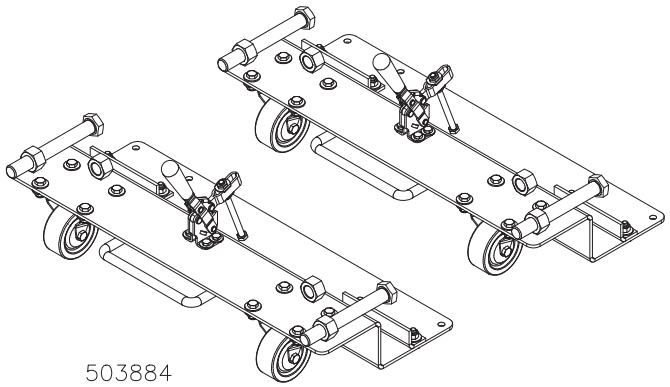
501111
WATER PRESS. GAUGE



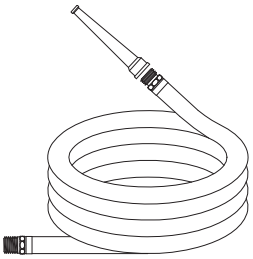
5011829
WATER HYDRANT WRENCH



501785
PULLER-G.B. HUB



503884
DOLLY-P.U. HEAD(2)



501784
HOSE WASH DOWN

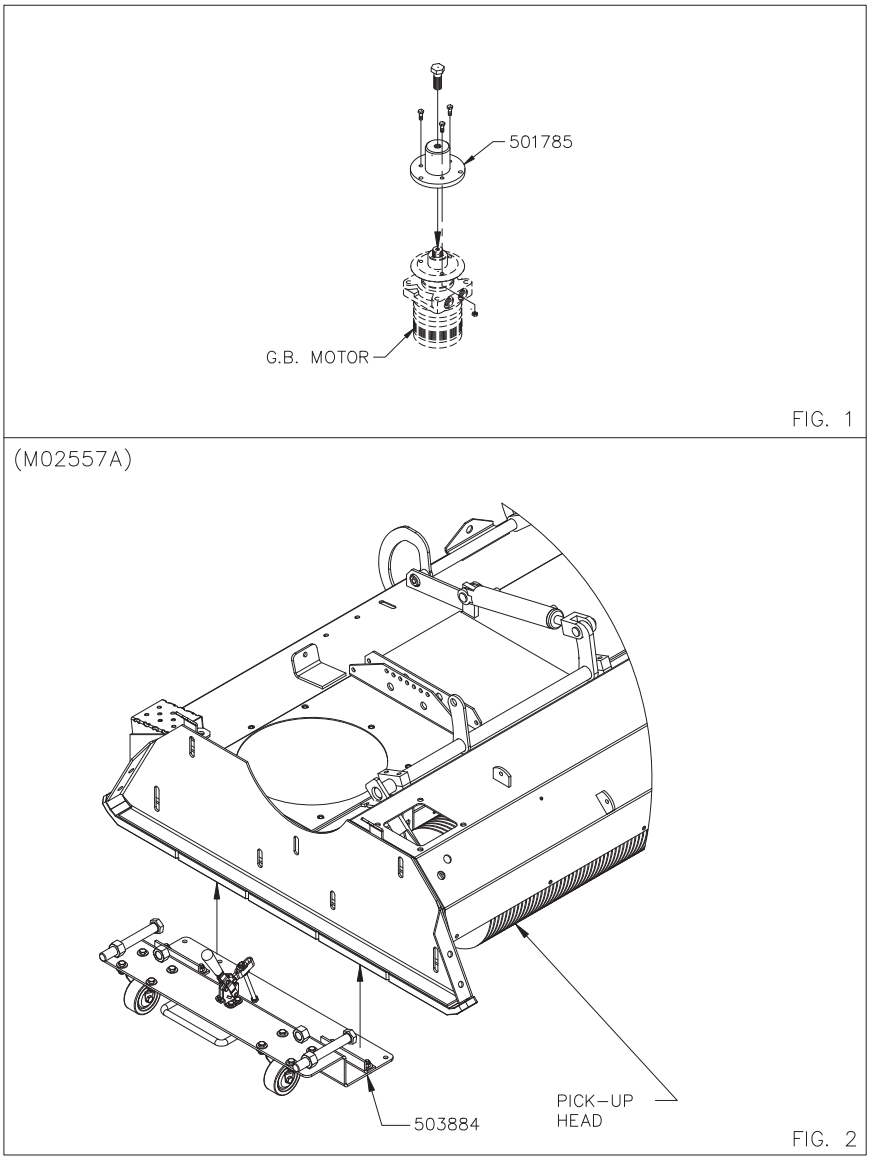
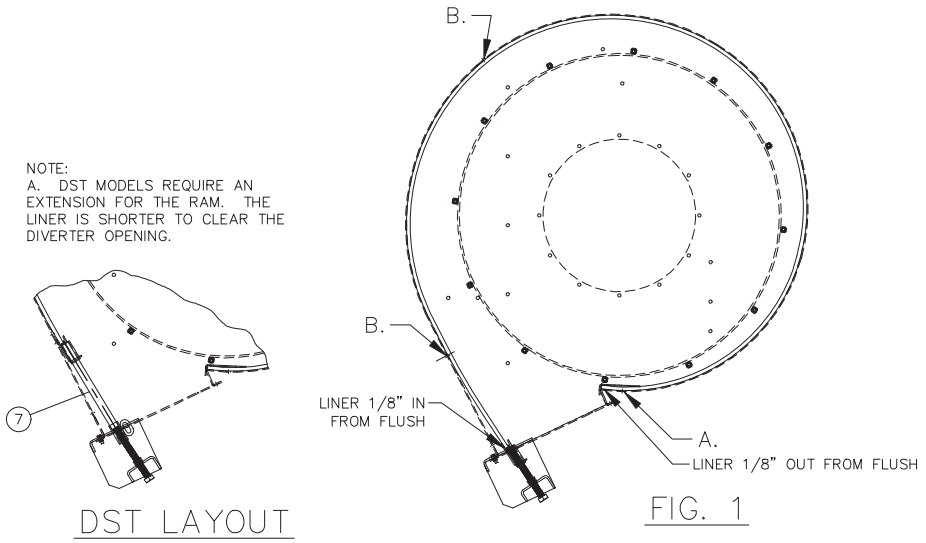


FIG 1. - Removing gutter broom motor hub (All TYMCO Models)

1. After removing the gutter broom torque motor/drive hub assembly, set the gutter broom hub puller (501785) on top of the gutter broom motor drive hub.
2. Line up the holes in the hub puller with the holes in the drive hub.
3. Install all 3 bolts finger tight.
4. Tighten the large bolt on the puller until the drive hub comes loose from the shaft.

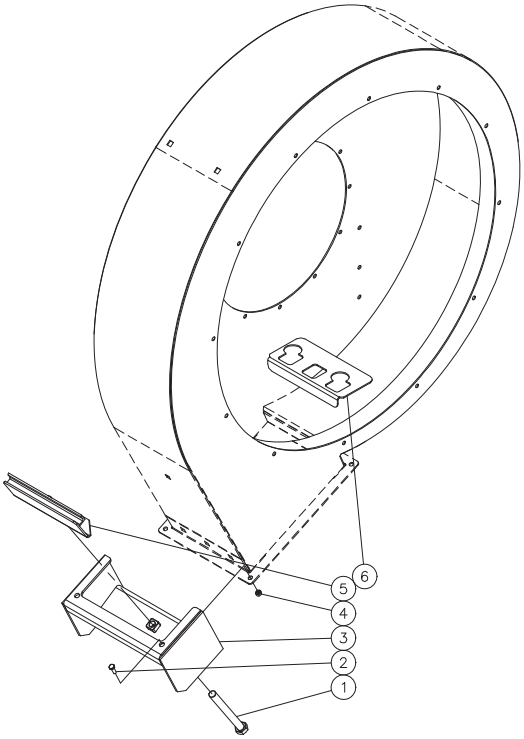
FIG 2. - Installing pick-up head dolly (All TYMCO Models)

1. To install the pick-up head dolly, lift dolly so that the bottom of the skid plate is resting in the dolly flange.
2. While holding the dolly in place, secure to pick-up head with the attached clamp. Some adjustment may be necessary for proper tightness.



DST LAYOUT

FIG. 1



MODEL 210/435/DST-4
BLOWER LINER PRESS TOOL KIT
(M02584)
05-18-2015
3:32 pm
SC

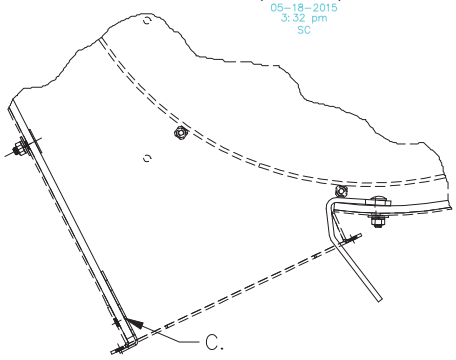


FIG. 2

MODEL 210/210h/435/DST-4
BLOWER PRESS TOOL KIT
DWG-M02584

ITEM	QTY	PART NO	DESCRIPTION
	1	508392	Blower Press Tool Kit
1	1	40188	Bolt - 5/8-11 x 6 Tap HHCS
2	2	10110	Bolt - 1/4-20 x 3/4 HHCS
3	1	508394	Base Weldment
4	2	10203	Nut - 1/4-20 Hex
5	1	508393	Ram Weldment
6	1	5021356	Backup Drill Plate
7	1	508456	DST Ram Extension (DST-4 Only)
Not Shown	1	12654	Spring Snap Link - 7/16"

BLOWER LINER INSTALLATION PROCEDURE

1. Slide liner into blower housing with “TYMCO wear side” decal visable and positioned to be at “C” side of the housing. Slide until approximately 1/8” of liner is sticking out from flush at “A”. Make sure liner is against the separator side of housing wall. Install back up drill plate (item 6) at “A” using clamps to secure in place. Using a 7/16” drill bit, backdrill the liner through the 2 square holes for the blower lip. Install blower lip and hardware.

2. Attach base weldment (item 3) and insert liner into the ram (item 5). Apply tension by tightening the bolt (item 1) until liner is approximately 1/8” in from flush. Tap liner using a rubber mallet to keep liner tight against the housing scroll wall. Backdrill the liner through the 3 square holes at “B” and install hardware. Remove liner press.

3. Install back up plate at “C” using clamps to secure in place. Backdrill liner through the 3 square holes. Remove plate and install hardware.

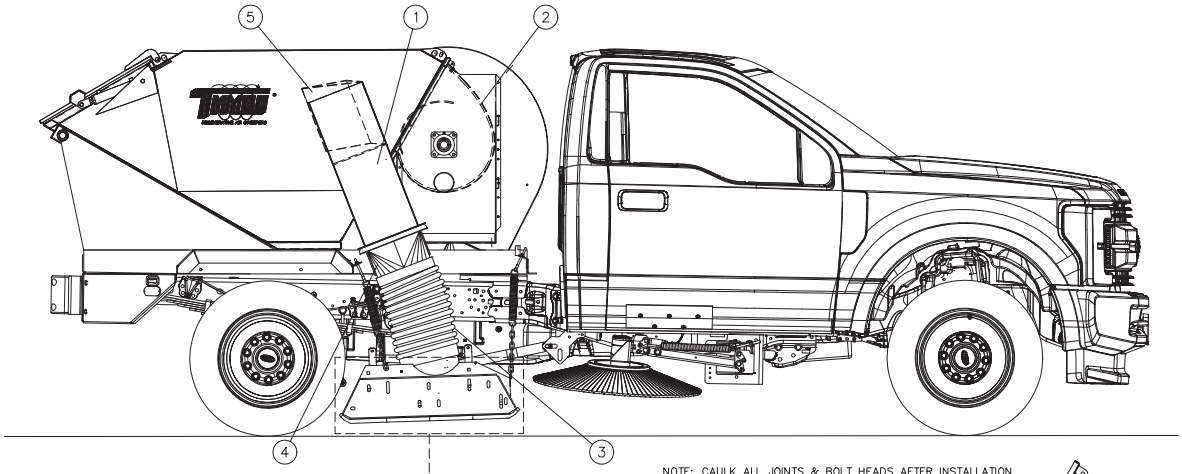
4. Liner is now ready for caulking.

OPTIONS SECTION

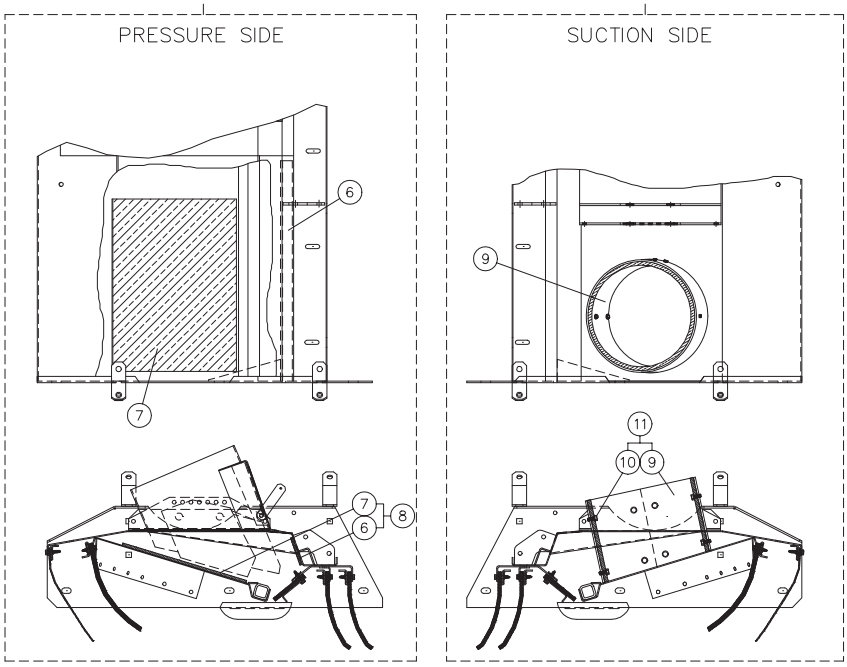
MODEL 210h

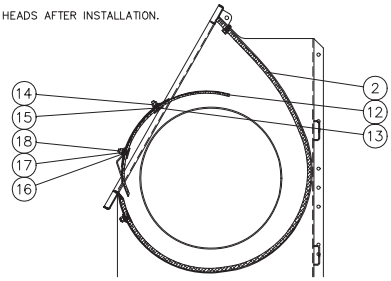
TABLE OF CONTENTS

OPT 1



NOTE: CAULK ALL JOINTS & BOLT HEADS AFTER INSTALLATION.





MODEL 210/210h CONVENTIONAL CAB
ABRASION PROTECTION PACKAGE
(M02805)

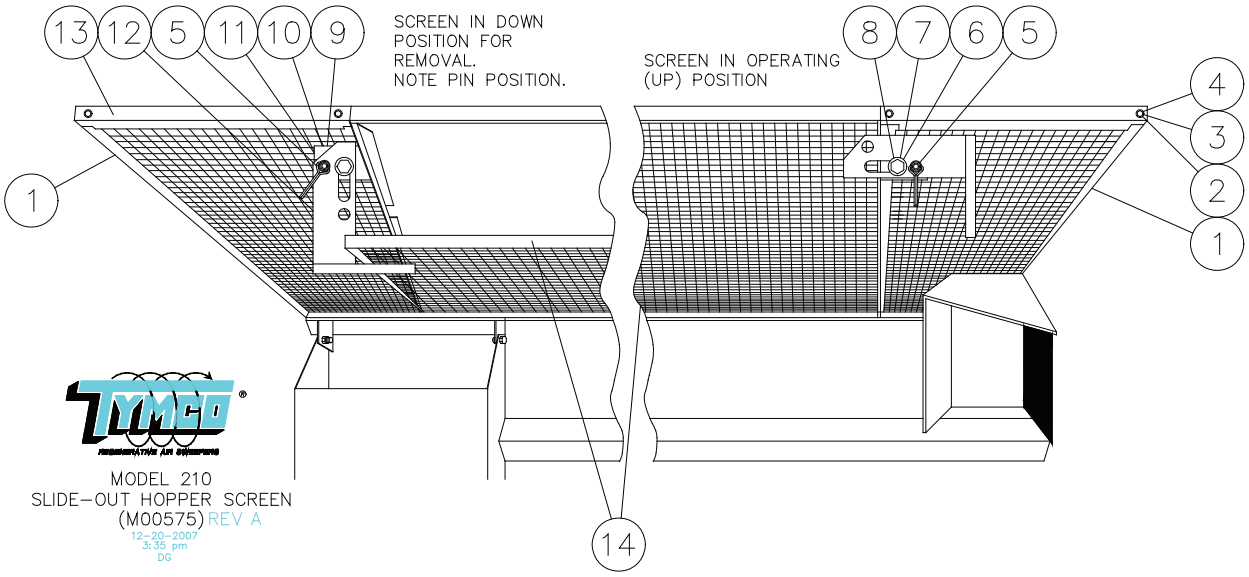
07-21-2017
11:53 am
SC

OPT 1

MODEL 210/210h CONVENTIONAL CAB
ABRASION PROTECTION PACKAGE PARTS LIST
DWG-M00554

ITEM	QTY	PART NO	DESCRIPTION
	1	507494	Abrasion Protection Package - Conventional Cab
1	1	5015479	Suction Inlet Liner
2	1	5017332	Separator Liner
3	2	5017410	Heavy Duty Hose - 11-3/4" I.D.
4	1	5015480	Suction Transition Liner
5	1	5015481	Deflector Liner
6	1	5020483	Wear Strip - Pressure Chamber
7	1	5015151	Wear Pad - Pressure Chamber
8	1	507493	Pressure Chamber Wear Kit
9	1	5015511	Suction Nozzle Liner
10	5	10104	Bolt - 5/16-18 x 3/4 Taptite
11	1	503272	Suction Nozzle Liner Kit
12	1	5017330	Inlet Scroll - Rubber Coated
13	17	10123	Bolt - 5/16-18 x 1 Elevator
14	19	10205	Nut - 5/16-18 Hex
15	8	10305	5/16" - Flat Washer
16	21	10306	5/16" - Lock Washer
17	2	20206	Nut - 5/16-18 Hex Jam
18	2	40115	Bolt - 5/16-18 x 3/4 Elevator
			NOT SHOWN
	4	11340	Clamp - Hose (Heavy Duty)
	2	10118	Bolt - 5/16-18 x 1-1/4 HHCS
	2	12771	Caulk

OPT 2



TYMCO MODEL 210/210h
SLIDE-OUT HOPPER SCREEN
PARTS LIST

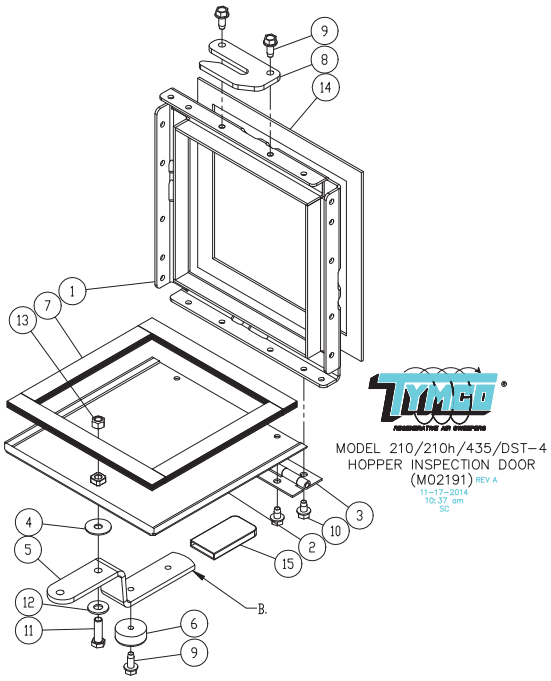
ITEM	QTY	PART NO	DESCRIPTION
	1	503386	Slide-Out Screen Assembly
1	2	503384	Side Screen Assembly
2	4	20193	Bolt - 1/4-20 x 3/4 Pan Head Truss
3	4	10304	1/4" Lock Washer
4	4	10203	Nut - 1/4-20 Hex Head
5	2	10422	Safety Snap Pin
6	2	10129	Bolt - 3/8-16 x 1-1/4 Hex Head
7	4	10307	3/8" Flat Washer
8	2	10225	Nut - 3/8-16 Top Lock
9	4	10117	Bolt - 5/16-18 x 1 Hex Head
10	4	10229	Nut - 5/16-18 Top Lock
11	2	5015622	Latch Mount
12	2	503385	Latch Assembly
13	2	5015621	Screen Track
14	1	503383	Center Screen Assembly
Not Shown	2	5016648	Shim

STAINLESS STEEL OPTION
PARTS LIST

	1	S503386	Stainless Slide-Out Screen Assembly
1	2	S503384	Side Screen Assembly
2	4	20135	Bolt - 1/4-20 x 1 Phillips Truss Hd
3	4	10331	1/4” Lock Washer
4	4	10247	Nut - 1/4-20 Hex
5	2	10422	Safety Snap Pin
6	2	40126	Bolt - 3/8-16 x 1-1/2 HHCS
7	4	10337	3/8” Flat Washer
8A	2	10249	Nut - 3/8-16 Hex
8B	2	10333	3/8” Lock Washer
9	4	20143	Bolt - 5/16-18 x 1 HHCS

OPT 2

ITEM	QTY	PART NO	DESCRIPTION
10A	4	10248	Nut - 5/16-18 Hex
10B	2	10332	5/16” Lock Washer
11	2	S5015622	Latch Mount
12	2	S503385	Latch Assembly
13	2	S5015621	Screen Track
14	1	S503383	Center Screen Assembly
Not Shown	2	S5016648	Shim



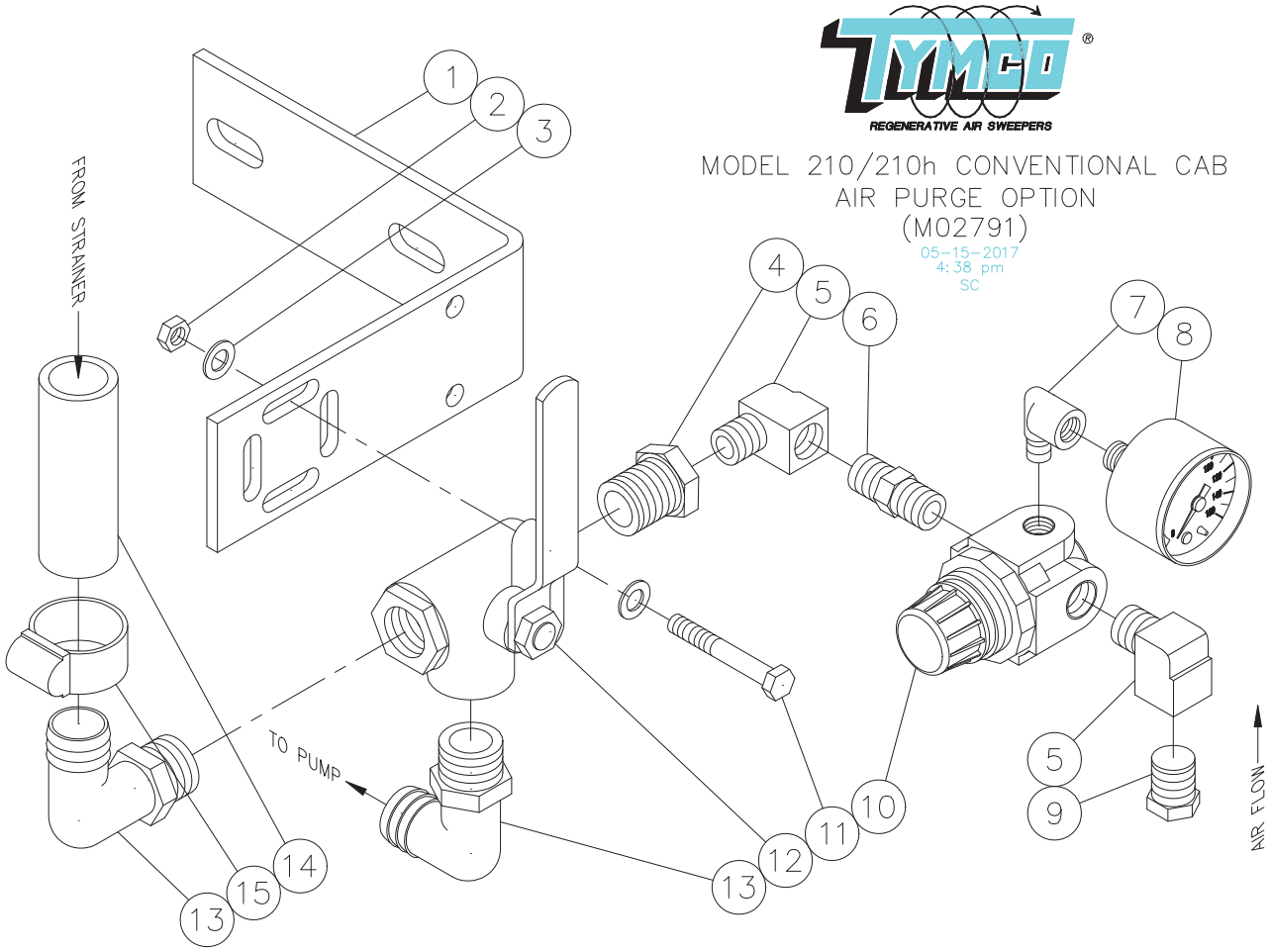
TYMCO MODEL 210/210h/435/DST-4
INSPECTION DOOR PARTS LIST
DWG-M02191

ITEM	QTY	PART NO	DESCRIPTION
	1	507509	Inspection Door Assembly
1	1	507486	Frame Weldment
2	1	507507	Inspection Door Weldment
3	1	5020407	SS Hinge
4	1	20314	1.25 O.D. x 0.390 I.D. x 0.062 TH-Flat Washer Nylon
5	1	5020499	Latch
6	1	10589	Bumper
7	1	5016105	Seal - Inspection Door
8	1	S5020496	Handle Catch SS
9	3	10104	Self Tap - 5/16-18 UNC x 3/4
10	4	30126	Self Tap - 5/16-18 UNC x 1/2
11	1	10129	Bolt - 3/8-16 UNC x 1 1/4
12	1	10307	Flat Washer - 3/8
13	1	10225	Lock Nut - 3/8 UNC
14	1	5015943	Rear Seal - Inspection Door
15	1	5021375	Handle Grip

STAINLESS STEEL HOPPER OPTION

1	1	S507486	Frame Weldment SS
2	1	S507507	Inspection Door Weldment SS
5	1	S5020499	Latch SS
9	3	40133	Self Tap - 5/16-18 UNC x 3/4 SS
10	4	40133	Self Tap - 5/16-18 UNC x 3/4 SS
11	1	40126	Bolt - 3/8-16 UNC x 1 1/2
12	1	10337	Flat Washer - 3/8 SS
13	1	20240	Nut - 3/8-16 Nylon Lock SS

NOTE: The stainless steel inspection door BOM is NOT a complete list. The items in the stainless steel BOM replace the items in the Standard BOM. The items are numbered subsequent. The stainless steel inspection door is standard on the stainless steel hopper option.



TYMCO MODEL 210/210h CONVENTIONAL CAB
AIR PURGE OPTION
DWG-M02791

ITEM	QTY	PART NO	DESCRIPTION
	1	508934	Air Purge Option - Conventional Cab 2017+
1	1	5016401	Air Purge Bracket
2	2	10246	Nut - 1/4-20 Top Lock
3	4	10303	1/4” Flat Washer
4	1	10845	Fitting - 1/2 P x 1/4” P Reducer
5	2	10815	Fitting - 1/4 Street Elbow
6	1	10828	Fitting - 1/4 Hex Nipple
7	1	20887	Fitting Street Elbow 1/8” x 90°
8	1	12821	Pressure Gauge 0-160 PSI
9	1	10847	Fitting - 1/4 NPT HD Plug
10	1	12820	1/4 NPT Mini Regulator
11	2	20110	Bolt - 1/4-20 x 2 HHCS
12	1	12199	3-Way Diversion Valve 1/2 FPT
13	2	20655	Fitting - 1/2 MPT x 3/4 HB 90° Elbow
14	1	5016404	Hose - 3/4 x 2 3/4” Water
15	1	11318	Hose Clamp - 3/8 x 3/4
Not Shown	1	5017472	Decal - Water System Purge

NOTE: TYMCO recommends a female quick disconnect on customer’s air line to prevent contamination.

OPT 6

WATER SYSTEM AIR PURGE

FUNCTION: To purge water system of all water in freezing weather.

NOTE: Water tank should have adequate water to avoid low water system shutoff.

DIRECTIONS

NOTE: Before beginning, the sweeper must have enough water to keep the Low water light OFF (this will allow the pump clutch to stay on so you can bump the engine a few times to fully purge the Cat pump cylinders). The electric pump will be running the entire time you are purging the system.

1. Hook up shop air to the air purge.
2. Adjust regulator if needed to 20 psi (1.38 Bar). **DO NOT Exceed 20 PSI (1.38 Bar).**
3. Turn the air purge valve to air position.
4. Turn ON main water system switch.
5. Using auxiliary hydraulics, open hopper door until hopper door indicator light turns ON.
6. Hold blower RPM Increase switch until water system indicator light stops blinking.
7. Momentarily turn ON, then OFF, EACH water nozzle circuit, allowing enough time to purge water lines, valves, and water nozzles.
8. Cat pump only: Leave at least one water nozzle circuit on and then bump the starter **(DO NOT run engine)** a few times to make sure all three cylinders of the Cat pump are purged.

⚠ CAUTION: DO NOT START AUXILIARY ENGINE AS DAMAGE TO PUMP CAN OCCUR!

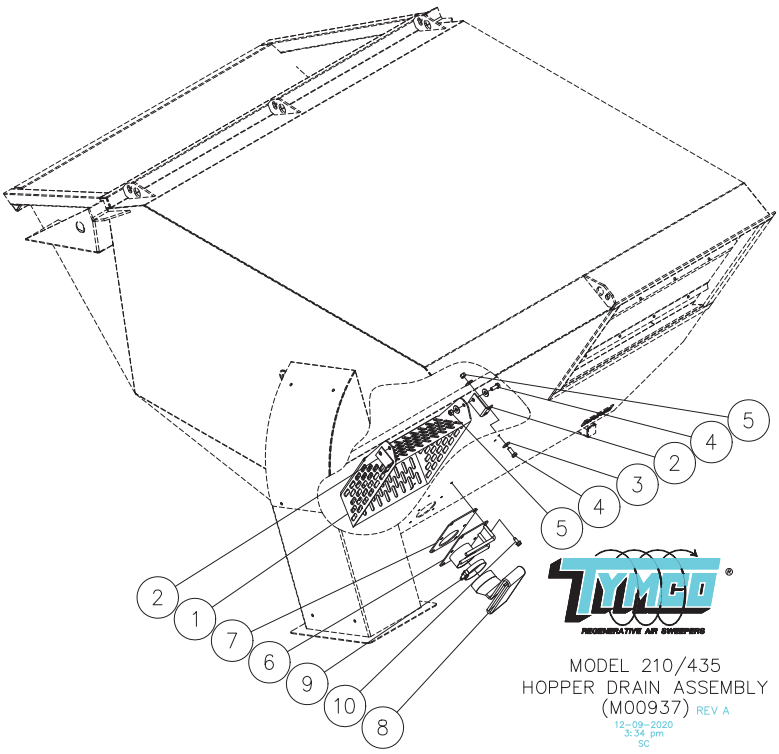
9. Drain the water tanks.
10. Turn the air purge valve back to the water position and remove shop air.
11. Drain the pre-filter bowl (Don’t lose rubber seal!)
12. There may be some water in the hose that connects the drain manifold to the air purge valve so you may want to pull the hose clamp off the hose and let it drain completely.

NOTICE

Sweeper dust control systems with liquid level sensor probe will experience pump failure due to piston cup wear if air purge valve is left in purge position when water system pump is turned on with water in tank(s). The liquid level sensor will allow the pump to run, but pump draws air through purge valve causing pump piston cups to fail due to friction. Dry run time of piston cups is approximately five minutes.

Always check purge valve position before running the system.

OPT 8



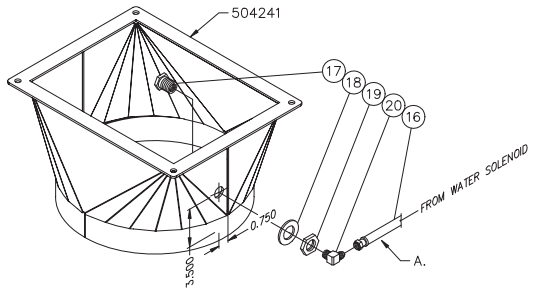
TYMCO MODEL 210/210h
HOPPER DRAIN ASSEMBLY OPTION PARTS LIST
DWG-M00937

ITEM	QTY	PART NO	DESCRIPTION
	1	501664	210 Hopper Drain Assembly
1	1	5022271	Screen
2	2	5013521	Bracket - Screen
3	4	10307	3/8" Flat Washer
4	2	10128	Bolt - 3/8-16 x 1 HHCS
5	6	10225	Lock Nut - 3/8
6	1	501650	Water Drain Outlet Assembly
7	1	5016535	Gasket
8	1	5013525	Drain Hose 3” x 18”
9	1	11317	Hose Clamp
10	6	10104	Bolt - 5/16-18 x 3/4 Taptite

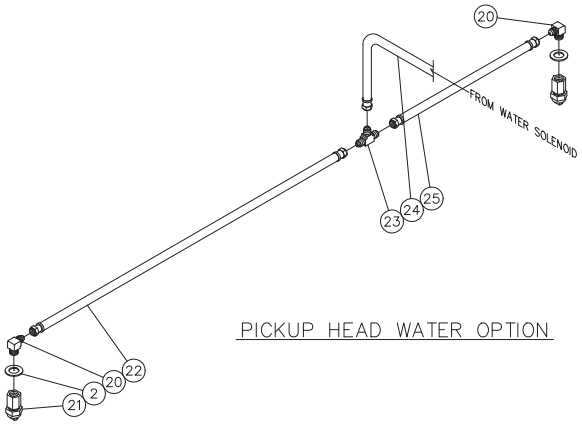
STAINLESS STEEL HOPPER DRAIN ASSEMBLY OPTION PARTS LIST

ITEM	QTY	PART NO	DESCRIPTION
1	1	S5022271	Screen
2	2	S5013521	Bracket - Screen
3	4	10307	3/8” Flat Washer
4	2	20146	Bolt - 3/8-16 x 1 HHCS
5	6	20240	Lock Nut - 3/8
6	1	S501650	Water Drain Outlet Assembly
7	1	5016535	Gasket
8	1	5013525	Drain Hose 3” x 18”
9	1	11317	Hose Clamp
10	6	40133	Bolt - 5/16-18 x 3/4 Taptite

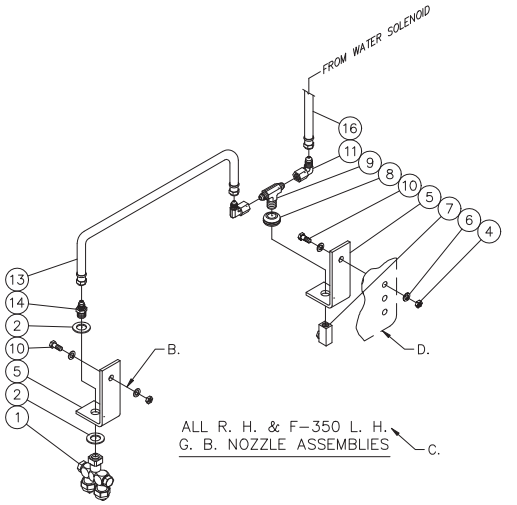
OPT 15



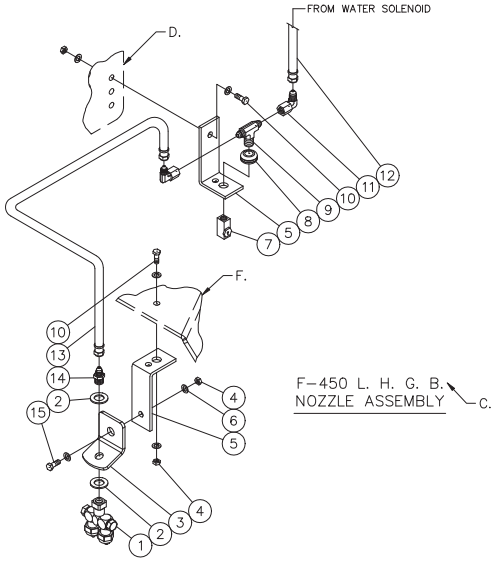
PRESSURE TRANS. NOZZLE
HOLE LAYOUT



PICKUP HEAD WATER OPTION



ALL R. H. & F-350 L. H.
G. B. NOZZLE ASSEMBLIES C.



F-450 L. H. G. B.
NOZZLE ASSEMBLY C.

MODEL 210h – FORD
LOW EMISSION PACKAGE OPTION
(M02814)
9/20/17
9:26 AM
SC

NOTE:
A. OMIT STD. PICK UP HEAD WATER NOZZLES & HOSES UNLESS HEAD WATER OPTION IS ORDERED.
B. R. H. AND F-350 L. H. G. B. NOZZLE ASSYS. MOUNTED IN EXISTING HOLE IN FLASHING JUST FORWARD OF CAB DOOR.
C. QUANTITY 1 ASSY. PER GUTTER BROOM.
D. NOZZLE ASSY. MOUNTED IN EXISTING HOLE ON G. B. EXTENSION PLATE.
E. OPTIONAL HEAD WATER CONTROLLED WITH ADDED SWITCH & SOLENOID.
F. F-450 L. H. G. B. NOZZLE MOUNTED IN EXISTING HOLE ON STEP.

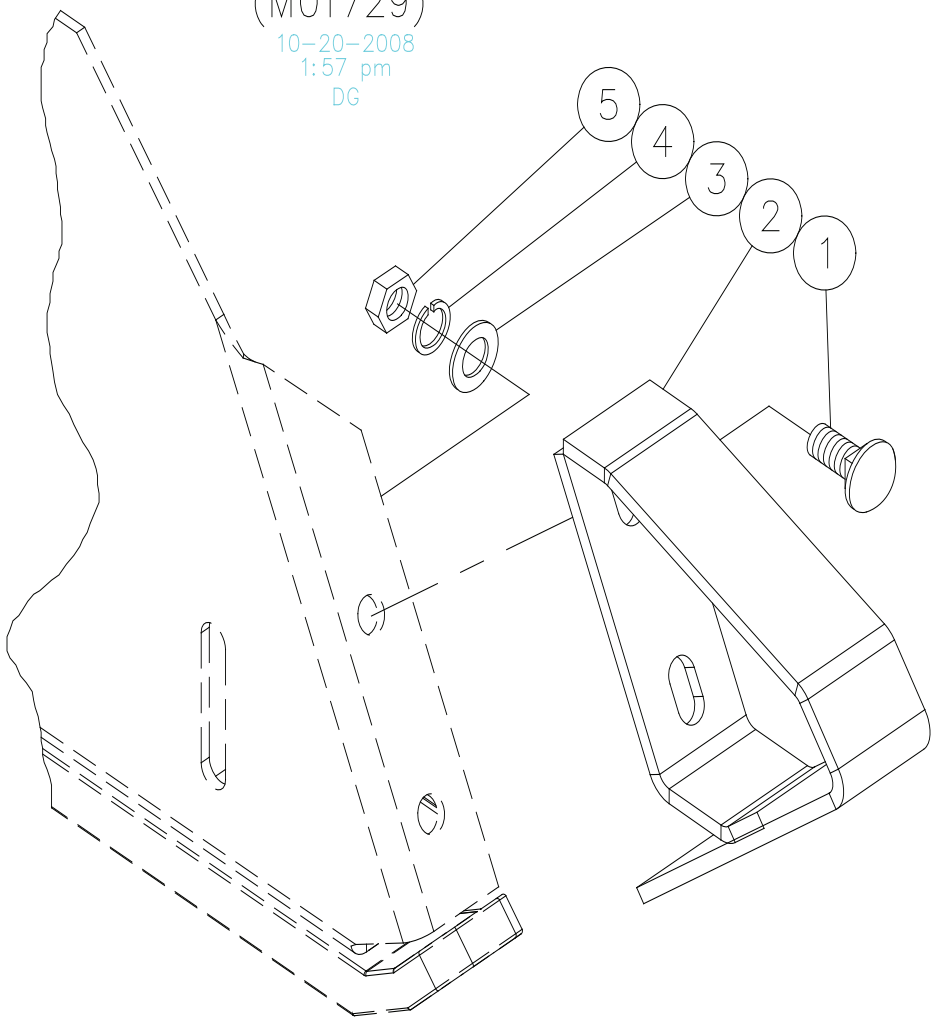
OPT 15

210h LOW EMISSION PACKAGE PARTS LIST
DWG-M02814

ITEM	QTY	PART NO	DESCRIPTION
	1	508991	210h Low Emission Package - 2017+ Ford
1	1 (+2 PUH)	20810	Duo Swivel Fan Nozzle w/11003 Tip
2	2	10311	1/2” Flat Washer
3	1	5010057	Angle Mount - Nozzle
4	3	10274	Nut - 1/4-20 Kept
5	2	5012672	Mount - Gutter Broom Nozzle
6	6	10303	1/4 - Flat Washer
7	1	20859	Fitting - 1/4 FPT Whirljet Nozzle
8	1	12576	Grommet - 0.500 I.D. x 0.750 O.D.
9	1	10715	Fitting - 1/4 MPT x 1/4 JIC Tee
10	2	10115	Bolt - 1/4-20 x 1 1/4 HHCS
11	2	20719	Fitting - 1/4 Swv. x 1/4 JIC 90°
12	1	505781	Hose Assembly - 1/4 Water x 112”
13	1	508340	Hose Assembly - 1/4 Water x 42”
14	1	20829	Fitting - 1/4 MPT-1/4 JIC Str.
15	1	10111	Bolt - 1/4-20 x 1 HHCS
16	1	505445	Hose Assembly - 1/4 x 92”
17	1	5016335	Spray Nozzle - .063 Dia.
18	1	10361	Brass Washer
19	1	10291	Nut - 3/4-16 NF Brass
20	1 (+2 PUH)	10818	Fitting - 1/4 JIC x 1/4 MPT 90°
21	0 (+2 PUH)	10857	Fitting - Spray Nozzle w/800050 Tip
22	0 (+1 PUH)	500689	Hose Assembly - 1/4 Water x 58”
23	0 (+1 PUH)	10816	Fitting - 1/4 SAE Tee
24	0 (+1 PUH)	505450	Hose Assembly - 1/4 Water x 68”
25	0 (+1 PUH)	501339	Hose Assembly - 1/4 Water x 25”
Not Shown	1	505407	Remcor Water Manifold Assy. - 3 Station
Not Shown	-	505402	Remcor Water Manifold Assy. - 4 Station
Not Shown	2	10117	Bolt - 5/16-18 x 1 HHCS
Not Shown	4	10305	5/16 - Flat Washer
Not Shown	2	10272	Nut - 5/16-18 Kept
Not Shown	1	10357	1/4” Toothed Dish Lock Washer
Not Shown	1	509001	Control System

REGENERATIVE AIR SWEEPERS

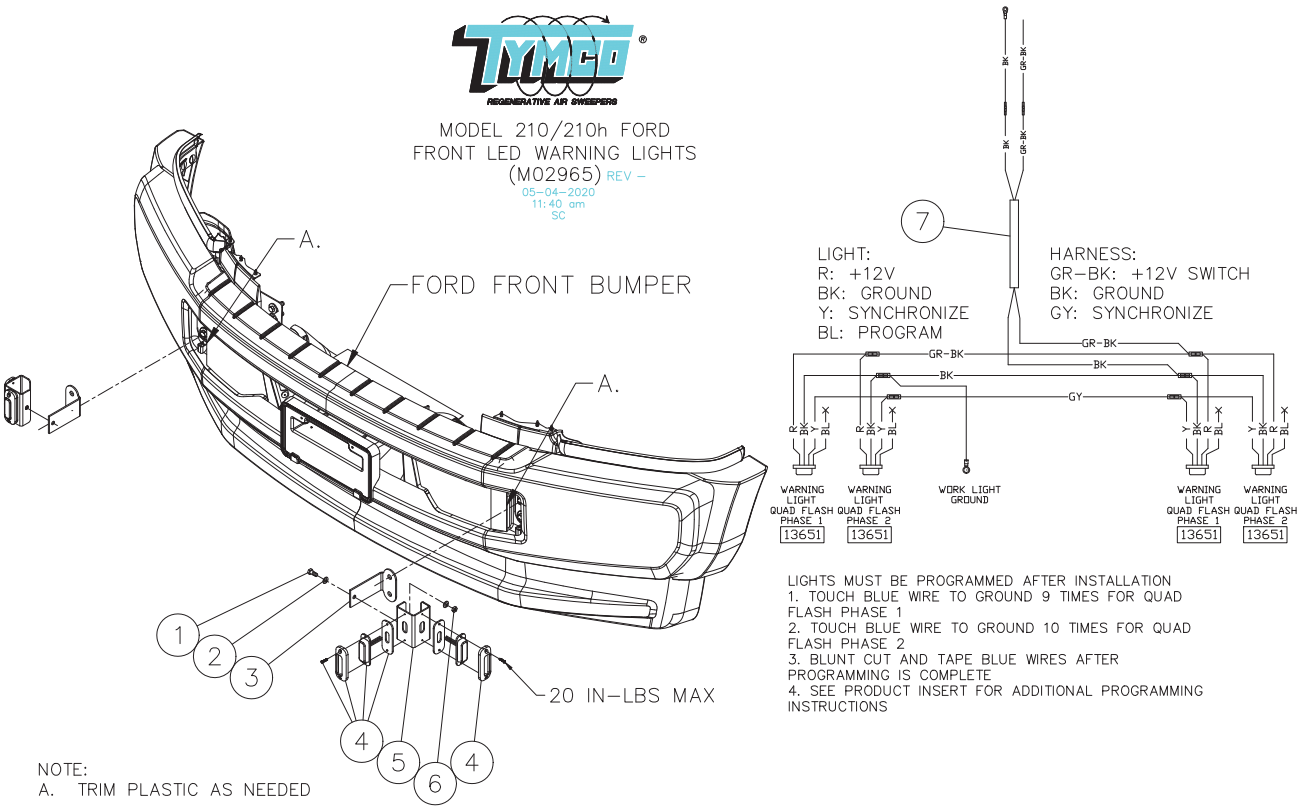
ALL MODELS
SKID BUMPER EXTENSION SET ASSEMBLY
(M01729)
10-20-2008
1:57 pm
DG



ALL TYMCO MODELS
SKID BUMPER EXTENSION SET ASSEMBLY PARTS LIST
DWG-M01729

ITEM	QTY.	PART NO.	DESCRIPTION
	1	507157	Skid Bumper Extension Set Assembly
1	4	40103	Bolt - 1/2-13 x 1-1/2 CHCS
2	2	505026	Bumper Extension Weldment
3	4	10311	1/2” Flat Washer
4	4	10312	1/2” Lock Washer
5	4	10201	Nut - 1/2-13 Hex

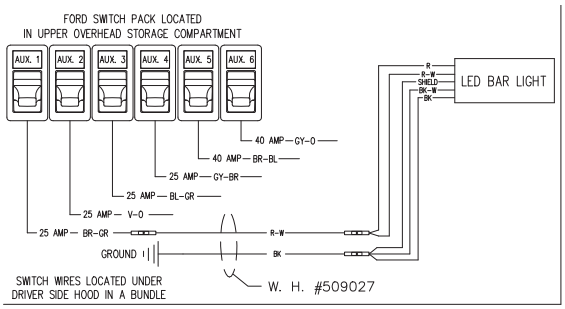
OPT 26



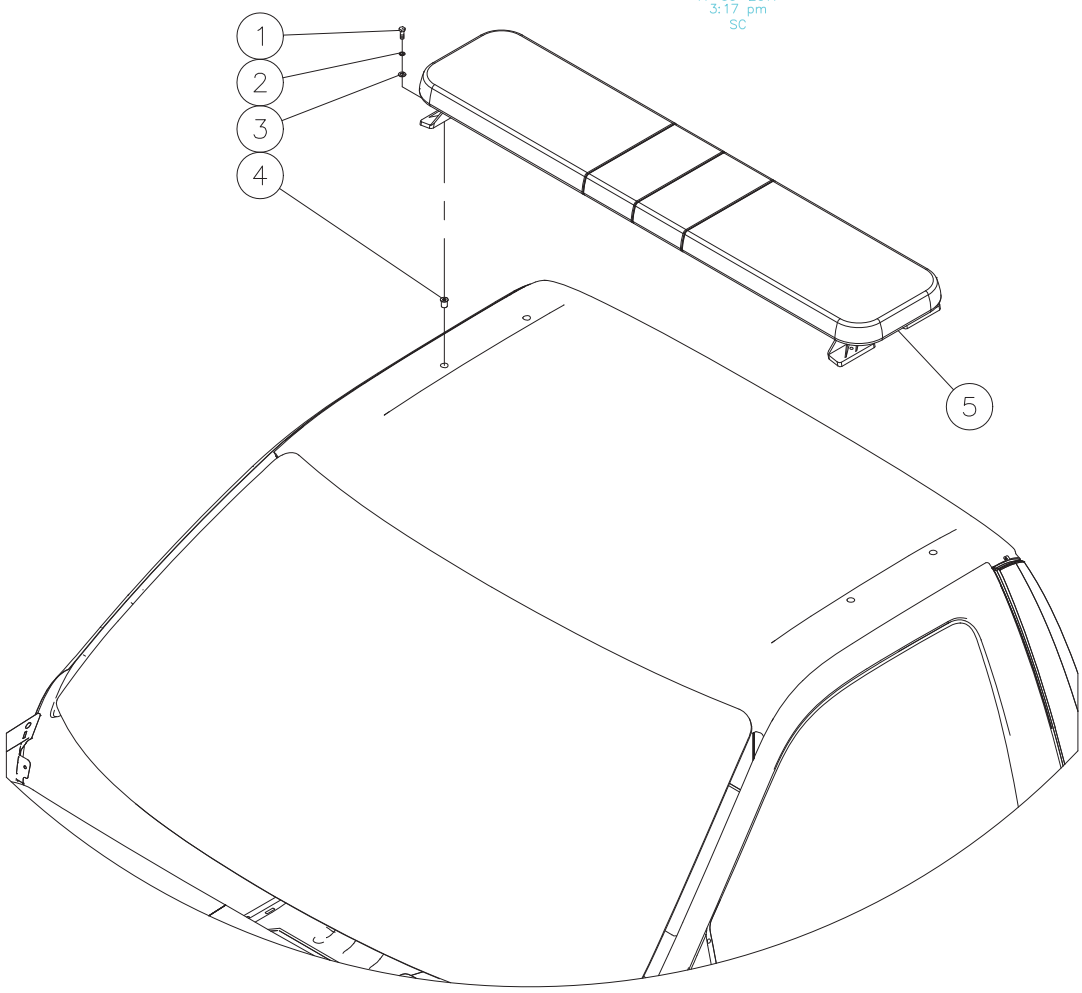
TYMCO MODEL 210/210h FORD
FRONT LED WARNING LIGHTS
DWG-M02136

ITEM	QTY	PART NO	DESCRIPTION
	1	509371	Front Bumper LED Warning Lights - Ford
1	2	10117	Bolt - 5/16 x 1.00 HHCS
2	4	10305	Flat Washer - 5/16
3	2	5021787	Mount- Ford
4	4	13651	Amber Strobing LED
5	2	5022202	Warning Lights Bracket
6	2	10272	Nut - 5/16-18 Kept
7	1	808916	Wire Harness

OPT 30



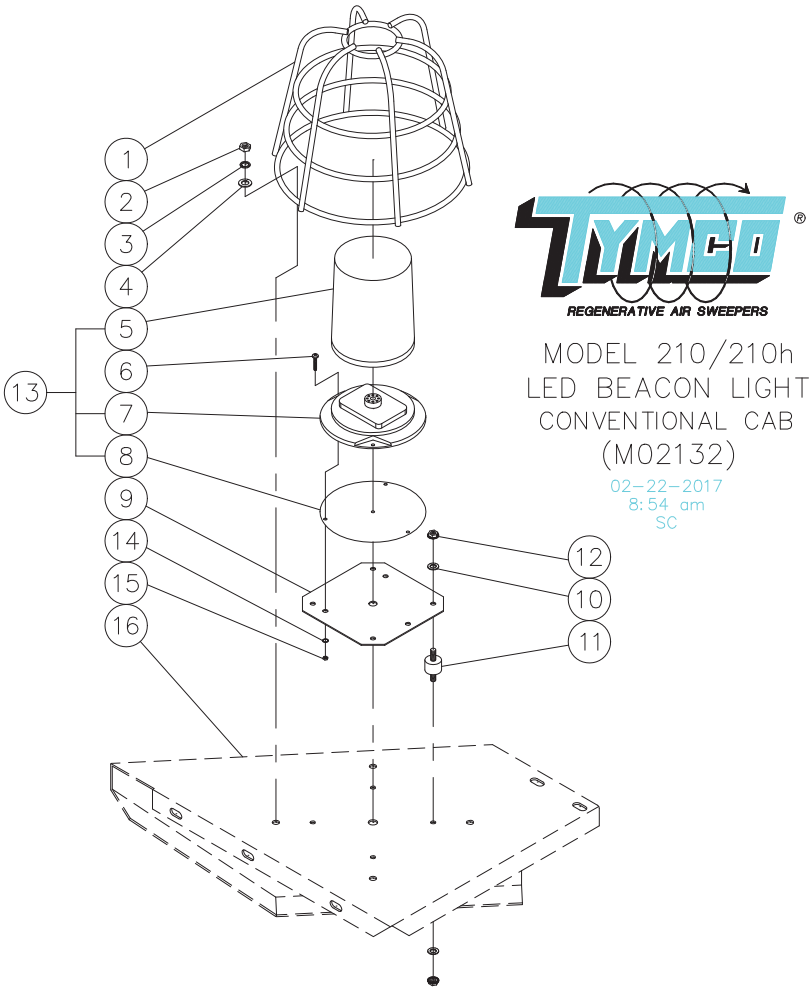
MODEL 210/210h
LED BAR LIGHT ASSEMBLY
FORD
(M02536) REV A
11-09-2017
3:17 pm
SC



TYMCO MODEL 210/210h - FORD
LED BAR LIGHT ASSEMBLY - CAB MOUNTED PARTS LIST
DWG-M02536

ITEM	QTY	PART NO	DESCRIPTION
	1	508265	LED Bar Light Assembly - Ford
1	4	10117	Bolt - 5/16-18 x 1 HHCS
2	4	10306	5/16” Lock Washer
3	4	10305	5/16” Flat Washer
4	4	10285	Nut Insert - 5/16-18
5	1	22469	56” LED Light Bar - Amber
Not Shown	4	12354	3/8” Dipped Clamp
Not Shown	4	10107	Screw - 10-24 x 1/2
Not Shown	4	10345	1/4” Bonded Seal Washer
Not Shown	1	509027	Wire Harness - Bar Light - 2017 Ford

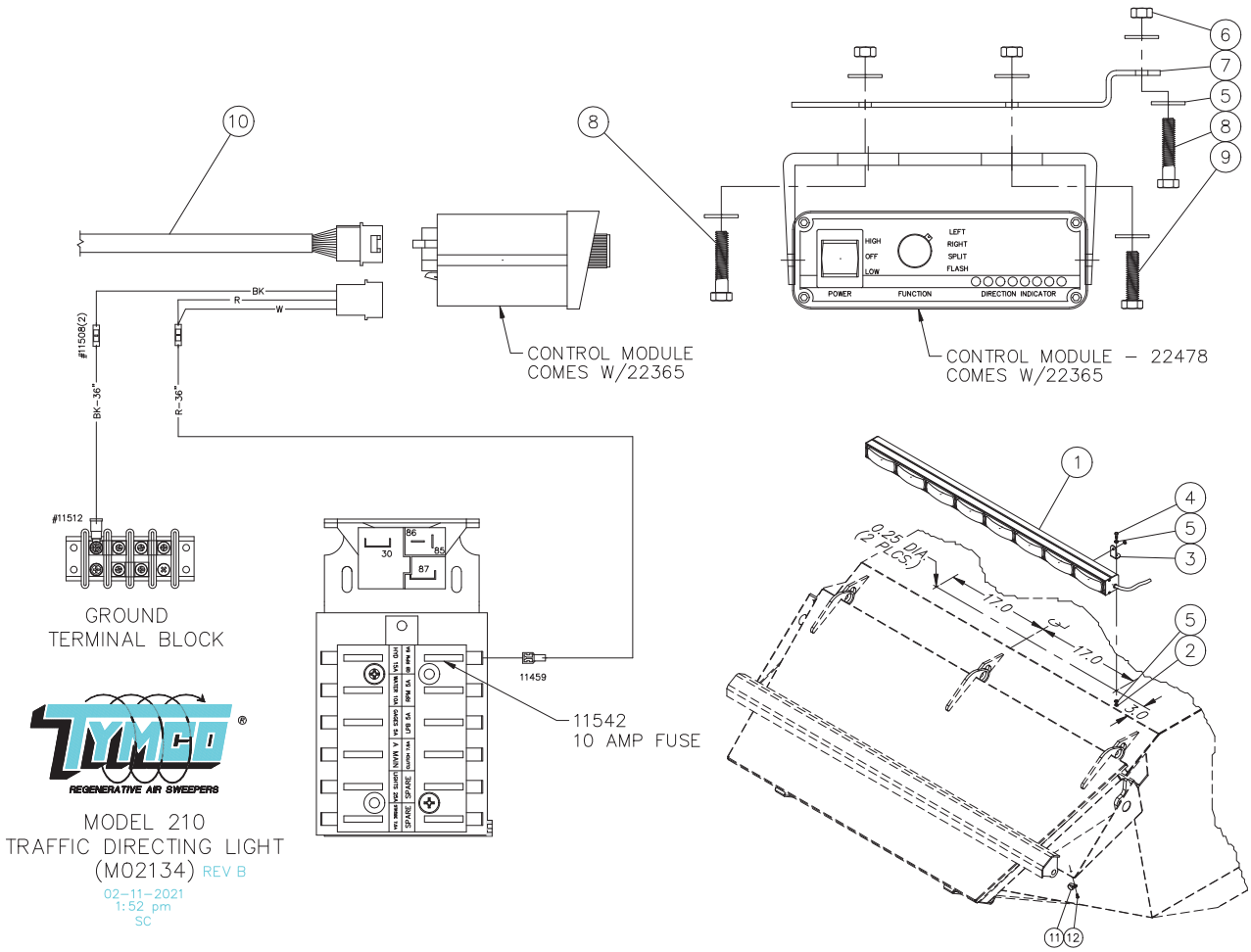
OPT 31



TYMCO MODEL 210/210h
LED BEACON LIGHT - CONVENTIONAL CAB ASSEMBLY PARTS LIST
DWG-M02132

ITEM	QTY	PART NO	DESCRIPTION
	1	507422	LED Beacon Light Assembly - Conventional Cab
1	1	5014434	Guard - Strobe Light
2	4	10209	Nut - 3/8-16 Hex
3	4	10308	3/8 Lock Washer
4	4	10307	3/8 Flat Washer
5	1	22306	Amber Lens - Beacon Assembly
6	3	30133	Bolt - 10-32 x 1/2 Phil. Pan HD
7	1	-	Base - LED Lights
8	1	-	Sealing Pad
9	1	8018418	Mount - LED Light (Star)
10	16	10305	5/16 Flat Washer
11	4	20577	Sandwich Flexbolt
12	8	10272	Nut 5/16-18 Hex Kept
13	1	22396	LED Beacon Assembly
14	3	10339	#10 Flat Washer
15	3	10241	Nut - 10-32 Kept
16	(Shown for Clarity)	505750	RH Bumper Weldment
Not Shown	2	504628	Wire Harness - Strobe Light Opt.

OPT 32

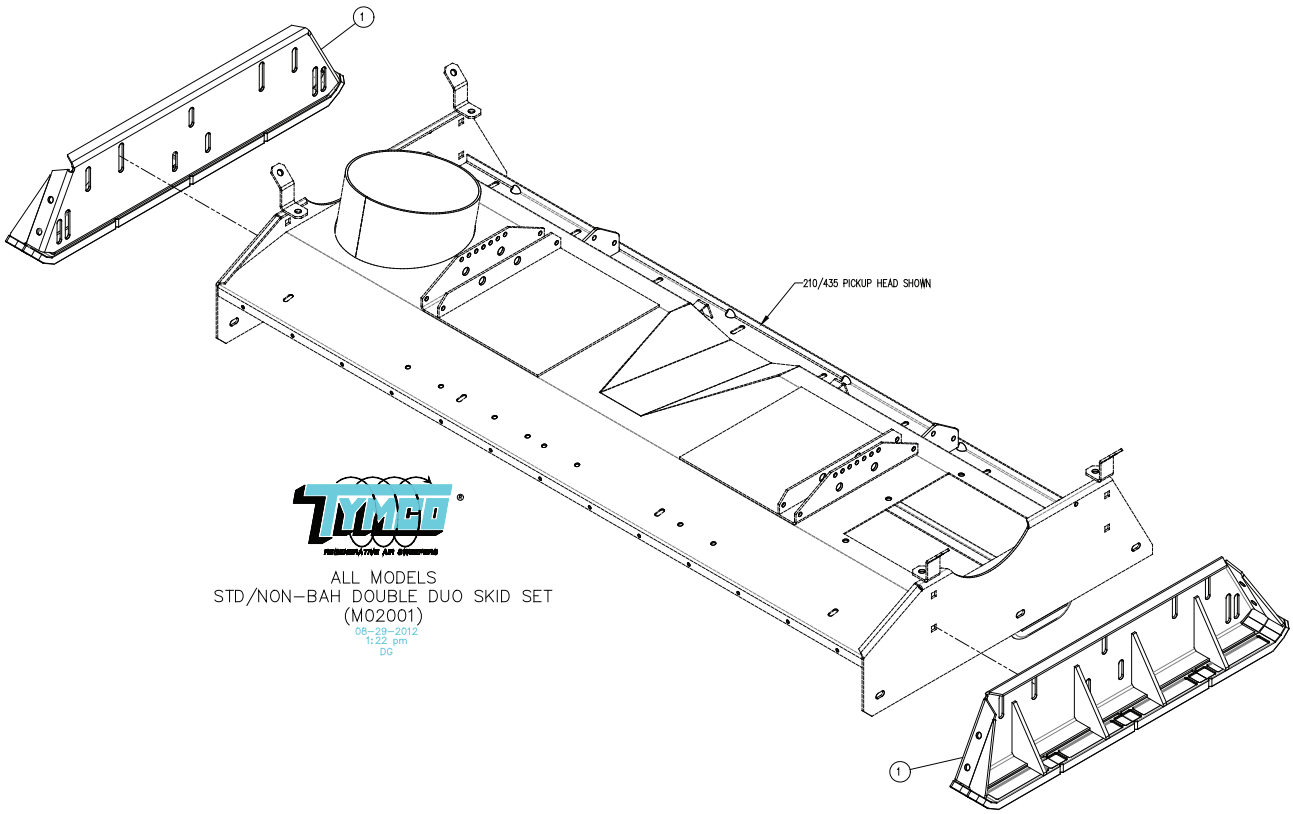


MODEL 210
TRAFFIC DIRECTING LIGHT
(M02134) REV B
02-11-2021
1:52 pm
SC

TYMCO MODEL 210/210h
TRAFFIC DIRECTING LIGHT ASSEMBLY PARTS LIST
DWG-M02134

ITEM	QTY	PART NO	DESCRIPTION
	1	507424	Traffic Directing Light Assembly
1	1	22365	LED Traffic Advisor Arrow Stick Light - 8 Lamps
2	2	10246	Nut - 1/4-20 Top Lock
3	2	12866	Mount Angle - Light
4	2	10110	Bolt - 1/4-20 x 3/4 HHCS
5	10	10303	1/4 - Flat Washer
6	3	10274	Nut - 1/4-20 Kept
7	1	5020018	Mount Bracket - Module
8	2	10115	Bolt - 1/4-20 x 1 1/4 HHCS
9	1	10111	Bolt - 1/4-20 x 1 HHCS
10	1	22343	15’ Cable Extension
11	3	11331	1” Dipped Clamp
12	3	10107	Screw - 10-24 x 1/2 Phillips Pan Rollock

OPT 34

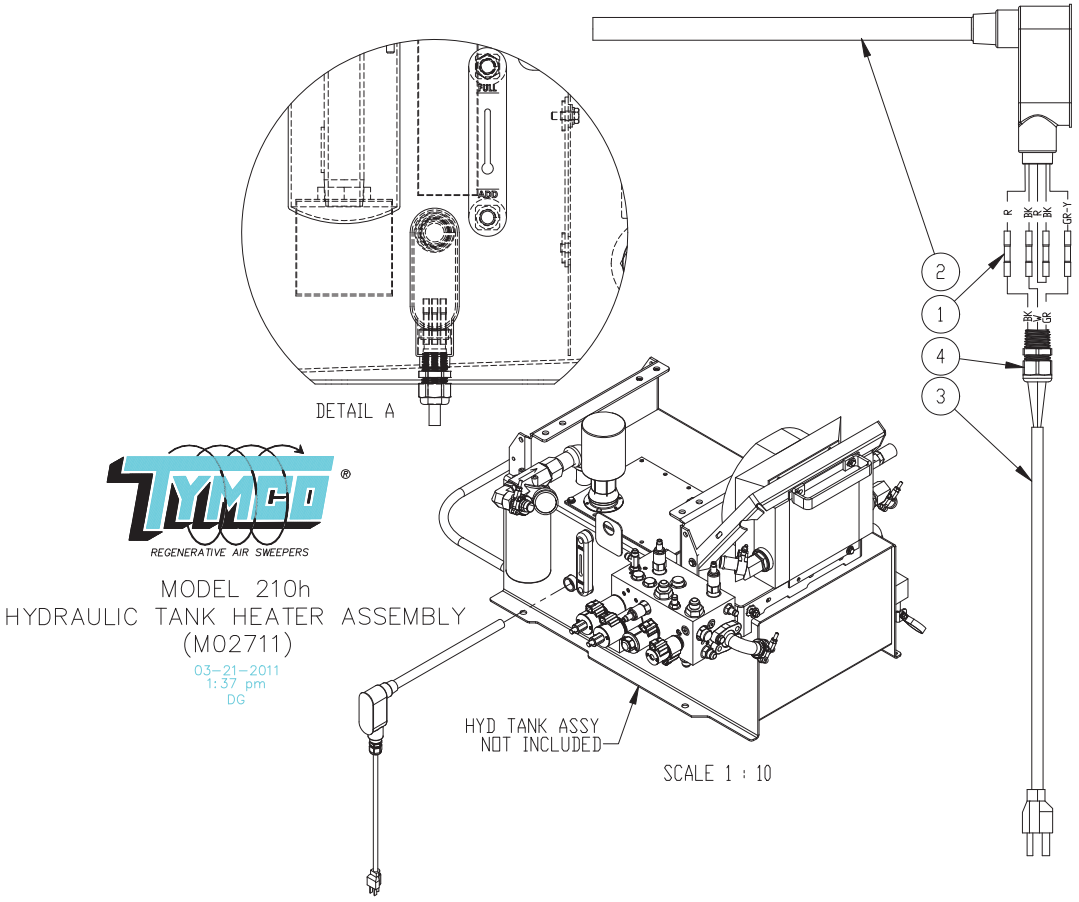


ALL TYMCO MODELS
STANDARD/NON-BAH DOUBLE DUO SKID SET
DWG-M02001

ITEM	QTY.	PART NO.	DESCRIPTION
	1	507784	Standard/Non-BAH Double Duo Skid Set
1	2	504503	Standard/Non-BAH Double Duo Skid

NOTE: Pick-up head shown for clarity.

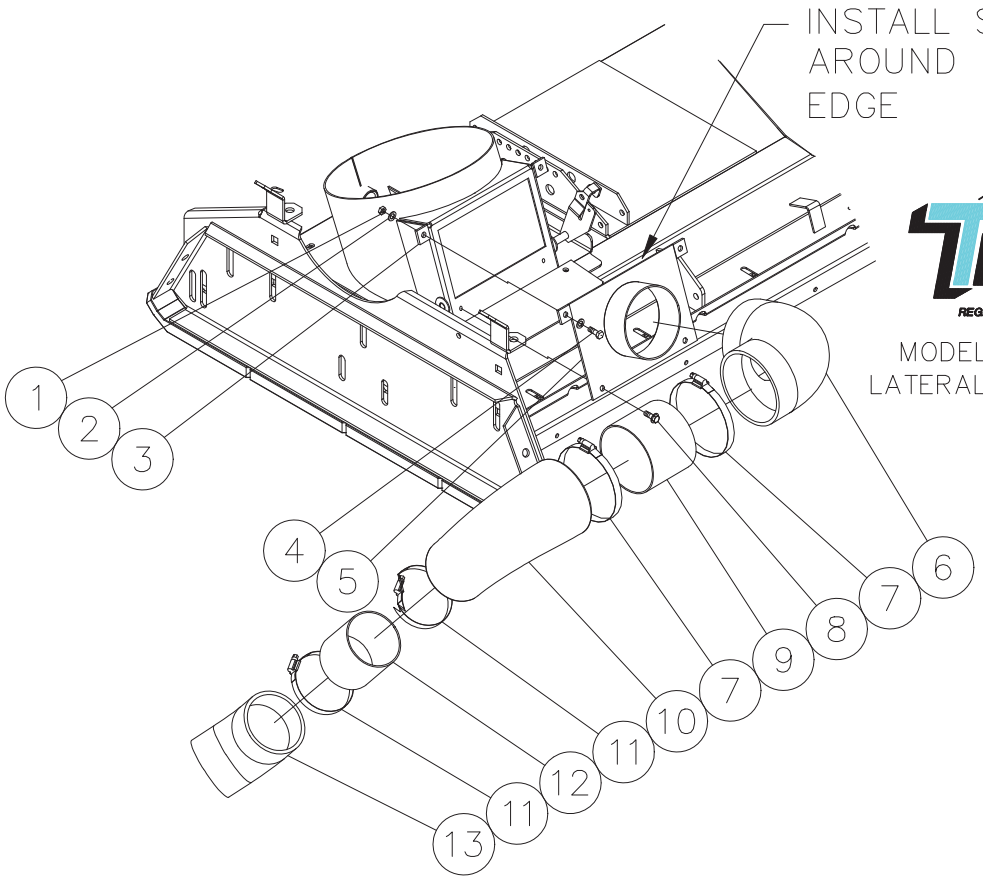
OPT 38



TYMCO MODEL 210h
HYDRAULIC TANK HEATER
DWG-M02711

ITEM	QTY	PART NO	DESCRIPTION
	1	508688	Hydraulic Tank Heater Heater - 210h
1	4	11854	Butt Connector - 14-16 Ga.
2	1	13333	Immersion Heater
3	1	21765	Power Supply Cord - 8 ft.
4	1	21766	Liquid Tight Cordgrip

OPT 40

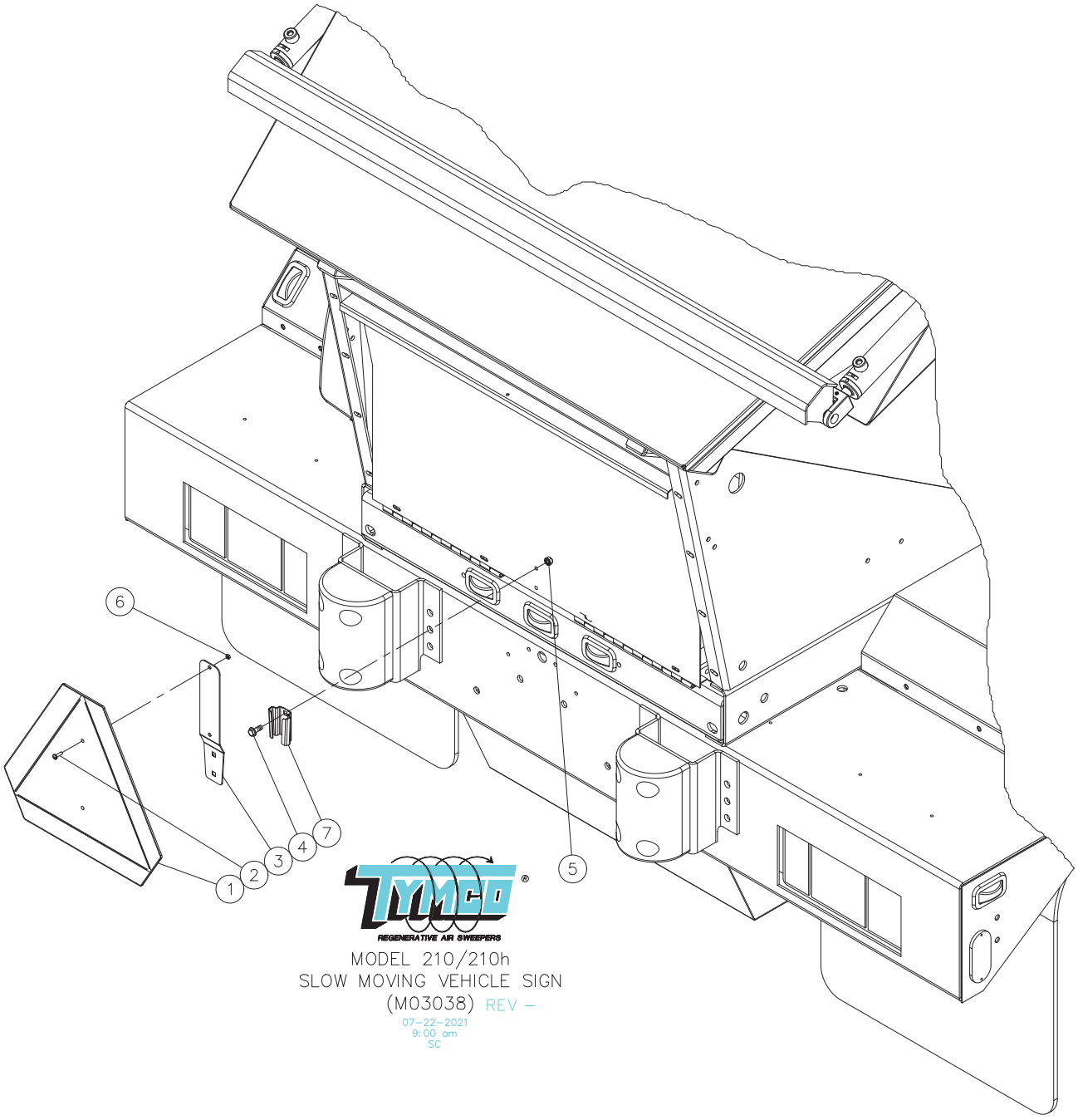


MODEL 210/210h/435
LATERAL AIRFLOW NOZZLE
(M02782)
04-14-2017
8:59 am
SC

TYMCO MODEL 210/210h/435
LATERAL AIRFLOW NOZZLE ASSEMBLY
DWG-M02782

ITEM	QTY	PART NO	DESCRIPTION
	1	508927	Lateral Airflow Nozzle Assembly
1	2	10229	Nut - 5/16-18 Top Lock
2	4	10305	5/16” Flat Washer
3	2	5021836	Cover Plate Transition Weld Tab
4	2	10117	Bolt - 5/16-18 x 1” HHCS
5	1	508926	Transition Cover Weldment
6	1	13397	Rubber Elbow - 5 x 5”
7	2	11339	Hose Clamp - 5 - 5 1/2”
8	2	10104	Screw - 5/16-18 x 3/4” Self Tap
9	1	5021839	5 x 4” LAN Tube
10	1	13398	5 x 4” Elbow Reducer
11	2	11324	Hose Clamp - 3 1/2 - 4 3/8”
12	1	5021840	4 x 4” LAN Tube
13	1	20565	Rubber Elbow - 4” ID x 45º
Not Shown	1	5015943	Seal - 30”

OPT 46



MODEL 210/201h
SLOW MOVING VECHLE SIGN
DWG-M03038

ITEM	QTY	PART NO	DESCRIPTION
	1	509245	Slow Moving Vehicle Sign Assembly
1	1	12126	Slow Moving Vehicle Sign
2	2	(Comes w/Sign)	Sign Bolt
3	1	13572	Mount Emblem
4	2	10104	Screw - 5/16-18 x 3/4” Self Tap
5	2	10272	Nut - 5/16-18 Hex Kep
6	2	(Comes w/Sign)	Sign Nut
7	1	13573	Base Mount - Emblem