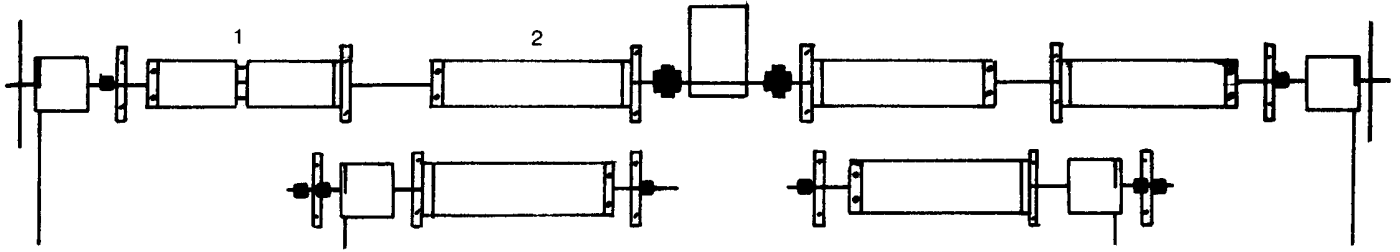


DDM ENTERPRISES OVERHEAD DOOR REPAIRS



Spring Replacement 1

© 1983

A. Prepare

IMPORTANT

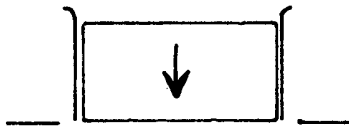
These are general guidelines and specific details may differ in the repair of your doors. You are responsible for working safely, and you assume all risk involved in installing or repairing the door and operator equipment. DDM Enterprises disclaims all liability regarding installation or repair of the equipment. These instructions do not create a warranty for either parts or instructions.

1

GATHER TOOLS:

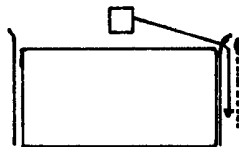
<p>ratchet wrench 1/2" drive 6 pt. sockets: 3/4, 9/16 8 pt. sockets: 1/2, 3/8 adjustable wrench open end wrenches: 7/16, 1/2 vise grips 10" curved jaws (6) winding bars flat file 10" or larger marking crayon or paint ladders or scaffold oil can</p>	<p>torch & shield safety glasses gloves hammer large screwdriver strap wrench comealongs (2) cable chokers (4) allen wrench set rope 10 ft.</p>
--	---

2



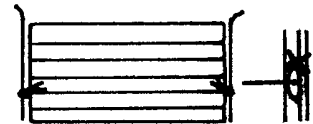
Close door.

3



Disengage operator. Tie off rope & chain.

4



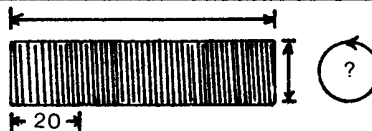
Visegrip tracks above 3rd rollers on both sides.

5



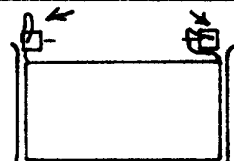
Turn off power.

6



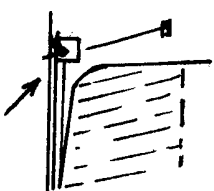
Double-check measurements & winds of old springs against new springs.

7



Inspect cables on drums. Reinstall if needed.

8

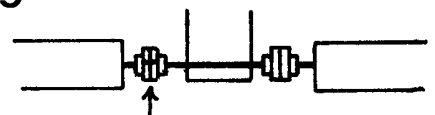


Visegrip shaft just outside headplate.

B.

Remove Old Springs.

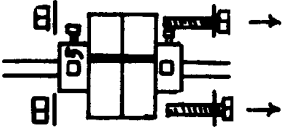
9



Mark coupler on side with broken spring.

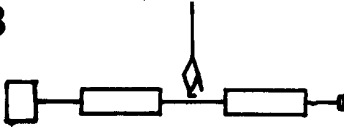
DDM ENTERPRISES

10



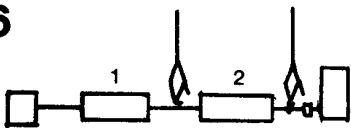
Loosen set screws & remove bolts.

13



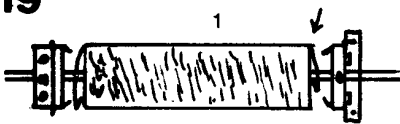
Hang comealong securely from barjoist.

16



Hang 2nd comealong securely from barjoist to shaft.

19



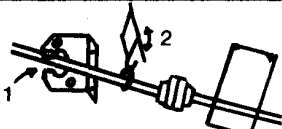
Free other end of spring in same way.

22



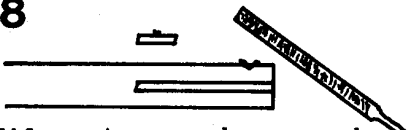
Cut 1 1/4" slot out of bracket if not done earlier. Do not cut anchor holes or bearing.

25



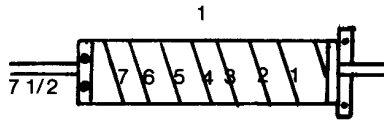
Slot bracket as before. Connect 2nd comealong. Raise until shaft is free.

28



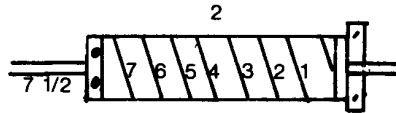
File set screw burrs and any other rough spots on shaft or key.

11



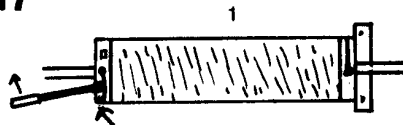
Count No. winds & record.

14



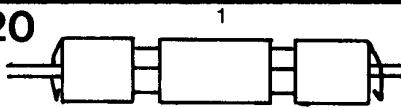
Count No. winds & record.

17



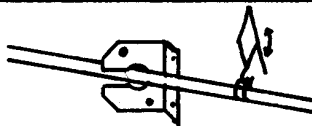
Heat spring wire 4" from end. Pry end out of plug.

20



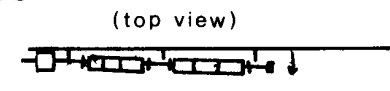
Cut spring into 3 parts. Do not burn up wood blocking.

23



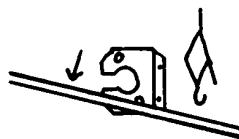
Connect comealong. Raise shaft until free to remove from bracket.

26



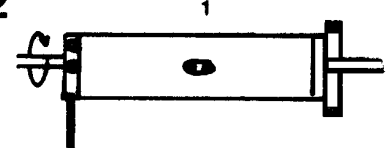
Pull spring shaft out of brackets & away from wall about 4".

29



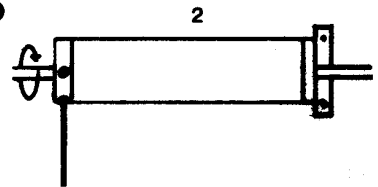
Lower shaft and disconnect bottom of comealong.

12



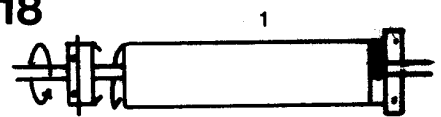
Carefully unwind spring if clamped & wound earlier.

15



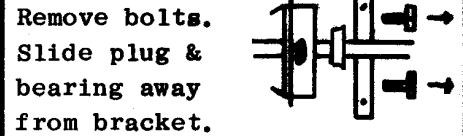
Carefully unwind spring.

18



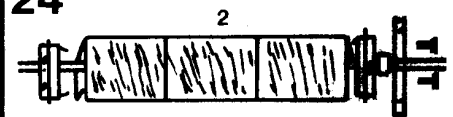
Twist plug until free from spring. Hammer end of spring if needed.

21



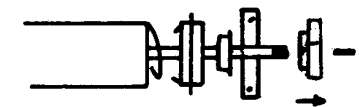
Remove bolts. Slide plug & bearing away from bracket.

24



Free 2nd spring as before. Cut into 3 sections.

27





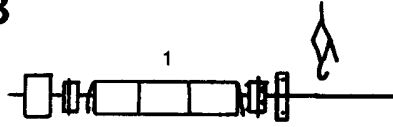
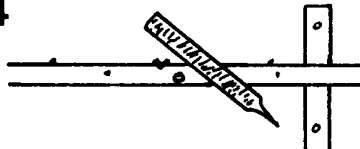
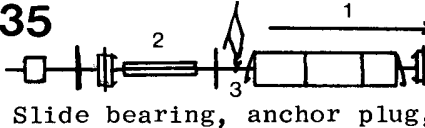
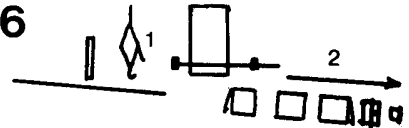
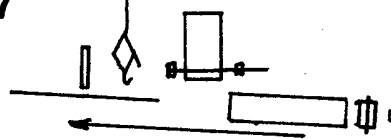
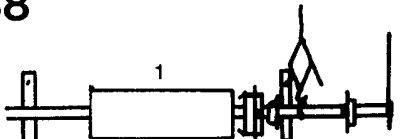
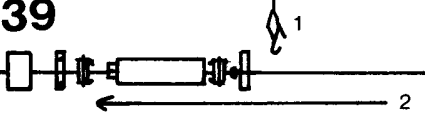
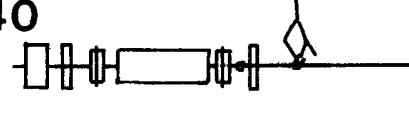
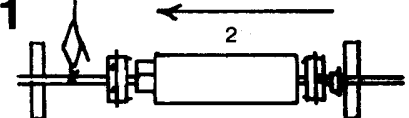
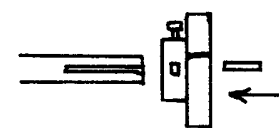
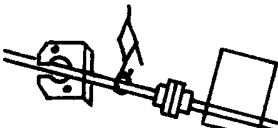
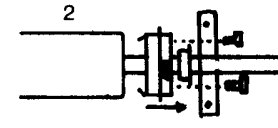
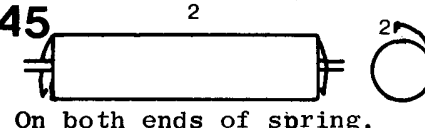
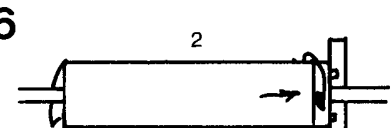
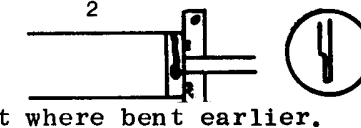
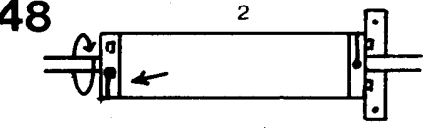
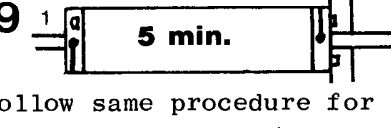
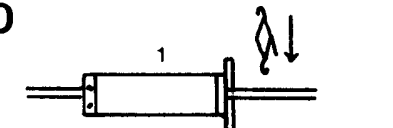
Remove coupler. Do not lose key.

30



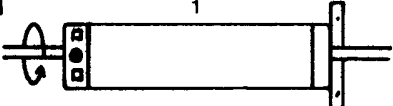
Slide bearing, plug, and spring #2 off shaft. Pull down on end of shaft as needed.

DDM ENTERPRISES

<p>31</p>  <p>Remove spring blocking and winding plug. Inspect and repair blocking if needed.</p>	<p>32</p>  <p>Reconnect comealong.</p>	<p>33</p>  <p>Disconnect comealong next to spring #1.</p>
<p>34</p>  <p>File set screw burrs and any other rough spots.</p>	<p>35</p>  <p>Slide bearing, anchor plug, & spring to right of comealong. Repair blocking if needed. Rehang comealong.</p>	<p>36</p>  <p>Disconnect comealong next to operator. Slide bearing, plug, & spring 1 off shaft.</p>
<p>C.</p> <p>Install New Springs.</p>	<p>37</p>  <p>Slide new spring 1, plug, & bearing onto shaft.</p>	<p>38</p>  <p>Reconnect comealong.</p>
<p>39</p>  <p>Disconnect left comealong. Slide spring onto blocking, plug & bearing beyond brkt.</p>	<p>40</p>  <p>Reconnect comealong & raise until shaft is free to slide into bracket.</p>	<p>41</p>  <p>Slide winding plug, spring, blocking, anchor plug & bearing beyond bracket.</p>
<p>42</p>  <p>Reinstall coupler and key. File or replace key if necessary.</p>	<p>43</p>  <p>Raise & slide shaft into bracket.</p>	<p>44</p>  <p>Fasten anchor plug to anchor bracket, with hole facing front.</p>
<p>45</p>  <p>On both ends of spring, heat & bend spring wire 4" from end. Shape ends of wire like ends on old springs.</p>	<p>46</p>  <p>Twist spring onto anchor plug.</p>	<p>47</p>  <p>Heat where bent earlier. Hammer end of spring into plug. Trim end of wire if too big for hole.</p>
<p>48</p>  <p>Twist winding plug into spring. Heat & hammer end of spring into plug.</p>	<p>49</p>  <p>Follow same procedure for attaching spring 1 to plugs and bracket. Allow 5 min. for spring to cool.</p>	<p>50</p>  <p>Remove comealong from barjoist & shaft.</p>

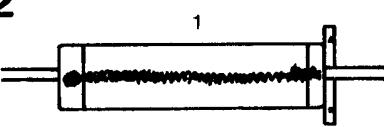
DDM ENTERPRISES

51



Wind spring up 3/4 turn.
Unwind just until there is no more tension.

52



Mark spring lengthwise with crayon or spray paint.

53

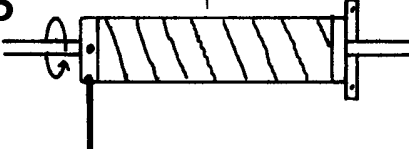
Determine No. winds as recorded earlier.

54

If unable to determine earlier:

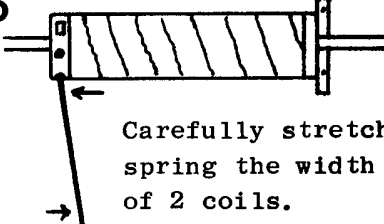
1. Measure door ht. to shaft.
2. Measure drum circumfer.
3. Divide door ht. by drum circumference & add one.

55



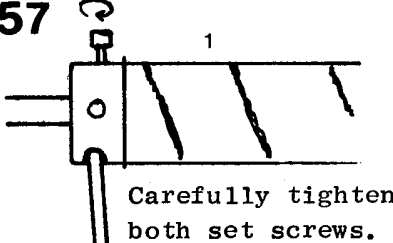
Wind spring up to number of turns determined before.

56



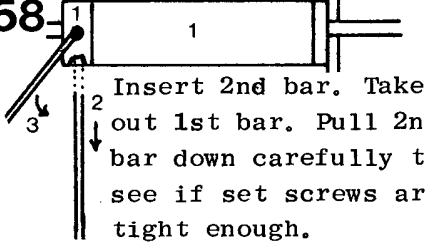
Carefully stretch spring the width of 2 coils.

57



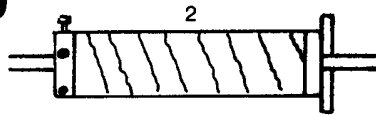
Carefully tighten both set screws.

58



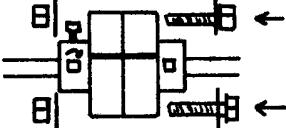
Insert 2nd bar. Take out 1st bar. Pull 2nd bar down carefully to see if set screws are tight enough.

59



Follow the same procedure for winding, stretching, & anchoring spring 2.

60




Line up coupler marks, insert & tighten coupler bolts. Tighten set screws last.

D.

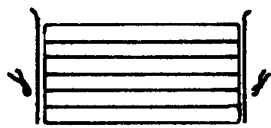
Complete Final Adjustments.

61



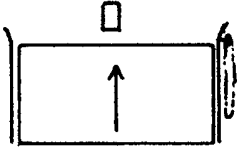
Remove visegrip on shaft just outside headplate.

62




Remove visegrips from tracks on both sides.

63



Carefully loosen hoist chain & raise door.

64



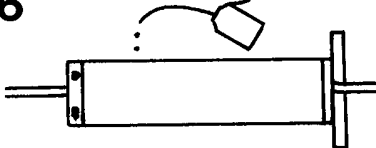
Count # winds on spring with door completely open. It should have 3/4 to 1 1/2.

65

Adjust spring tension 1/4 turn at a time if:

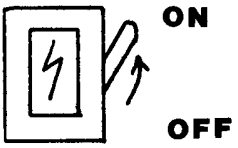
1. Door is heavy at floor & at head. Add tension
2. Door is light & goes up by itself. Remove tension.

66



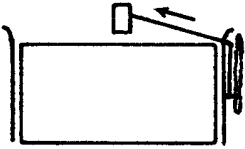
Close door & oil springs with 3 streams across tops.

67



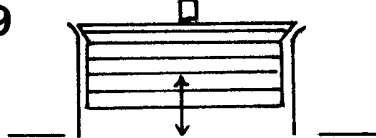
Turn on power.

68



Reengage operator & tie or fasten hoist chain.

69



Check electrical operation of door. Adjust if needed.

70

Put away tools, discard old springs, and take a coffee break.